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| param2.app | 16201 Parameters of nibbles away II for various

Apple II Textfiles

www.textfiles.com/apple/
18 September 2000

With the introduction of the Apple II family of computers, the wonders of programming, communicating, and just plain going out became affordable for an entire generation of budding enthusiasts and their families. By the end of the 70's an entire culture had risen up around the Apple II, and the energy of thousands of hardware and software hackers went into learning every last op-code and settable switch within the machine.

It can't be discounted that Apple's successful foray into the educational market resulted in schools countrywide brimming with Apple IIs, and social groups collecting around the labs after school hours. All manner of things happened there, some documented below.

These files range from explicit memory maps of the Apple II to long tutorials on how to "crack" games, that is, remove all copy protection and make the game easier to distribute between other pirates.

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Apple II Computer Info
If you wish to have the entire directory conveniently archived and compressed into one file, please download either apple.tar.gz (615920 bytes) or apple.zip (649886 bytes) instead of all the files separately.
As a large amount of programs were illegally copied on the Apple (a situation that was common on pretty much every Microcomputer platform), it became necessary for users to share the documentation from the original package so that the disks were useable.

A small number of these "Soft Dox" are also for pirating programs themselves, which supplied their own documentation, often with a very entertaining bent in the writing.
The monsters are on the loose, heading out of their caves in the badlands and into the cities. They are coming to cause chaos, wreck havoc and inflict terrible destruction, as they search for the Roc's eggs.

The giant horned ogre and the hideous lizard are out to seek revenge on the humans who have for so long driven them back into the highlands.

CRUSH! MAIN! DESTROY!

Pulverize towns to find Roc's eggs, take them back to your cave, then providing that you can beat off the challenge from the other monsters and collect a hoard of five eggs, you will head off to the volcano and find the golden egg to win the game.

OGRE

Born in a damp cave in the north of the island, you have always had a hard life. When you were just a little ogre none of the other monster children would play with you, and now if you go into town, all the humans scream and fire cannon at you. It could have something to do with the fact that you are twenty feet tall, with 2 horns that could have something to do with the fact that you are twenty feet tall, with 2 horns, 2 flippers and a long tail. Alternatively, it could be your halitosis, which is so bad it sets things on fire. Even the fact that you can knock down stone wall with your fists. Anyway, now it is your turn to get your revenge, you are going to claim the golden egg.

LIZARD

So what do you do if you happen to be an eighteen foot tall green scaly lizard, with a spiked tail and a penchant for young ladies, preferably flame grilled in your own breath? Well, you set up home in the mountains and start work on your first hoard and try and terrorize the neighborhood. So when you learn that that infuriating ogre is after the golden egg that lies under the volcano, there is nothing to do but to head into town and try and get there first.

THE ISLAND

Dance is a quiet, peaceful island, where the humans go about their daily business with a smile on their face and a song in their heart, ah! They are totally unaware that they are about to receive a visit from two of the most terrible and ferocious monsters ever to see the light of day.

THE CITIES

Awaiting your destruction there are ten cities. These include a primitive village of straw huts, a wild west fort, a Chinese pagoda, an Indian temple, and many others before your final goal of the famous volcano.

GAME PLAY

In each city you need to destroy the buildings until you find the Roc's eggs. There is an egg hidden in most but not all of the cities. You will need to punch the...
buildings to demolish them, or flame them to set them on fire, while fighting off the 
other creatures on the screen. Watch out for the hornets that fly across the screen 
and sting you. Be wary of the weapons the humans try to bring to bear. You will 
need to destroy these before they destroy you.

FOOD
You can eat the junk food and the people. These increase your health, thus enabling 
you to continue your destruction for longer.

FIRE POWER
Eat the lightning to revitalize your fire power.

HEALTH
Every time you are hit your health decreases. Your health is represented by the word 
"Aaargh," by your character at the top of the screen. When the word is completely 
formed, you will die a very bloody death.

COMPLETING A LEVEL
When you have captured the egg you will take this back to your treasure cave. 
Unfortunately, life is never easy and you will need to fight to keep your treasure.

When you have succeeded in gathering a hoard of five eggs, you can go to the volcano 
and try to capture the big one, the final Roc's egg, a golden egg to surpass all 
others.

CONTROLS
Either joystick or keyboard.

To flame, first face the direction you want to flame. Then press the appropriate 
joystick button.

To punch, first face the direction you want to punch. Then press the appropriate 
joystick button to punch straight out, or press the joystick button while pushing the 
stick up or down to punch up, punch down, or to pick up people or other nourishment.

KEYBOARD
Use the number keypad to move left, right, up, down, or diagonally. Press 5 to stop.

To flame, first face the direction you want to flame. Then press the spacebar to 

To punch, first face the direction you want to punch. Then press the Shift key to 
punch straight out, or press shift and the directional key to punch up, punch down, 
or to pick up people or other nourishment.

OTHER CONTROLS
ESC - Pause
S - Sound off/on
Q - Quit
R - Restart
AND I ONLY DO SO AFTER IT HAS BEEN ON THE SYSTEM FOR MORE THAN A MONTH. ITEMS AND PRICES OF ITEMS OFFERED FOR SALE THROUGH THE CLUB STORE. THESE PRICES ARE NOT OFFICIAL, AS THIS IS NOT A COMMERCIAL BULLETIN BOARD. POTENTIAL CUSTOMERS SHOULD CALL THE CLUB STORE FOR FURTHER, DEFINITIVE INFORMATION.

THE "Q" COMMAND WILL LIST THE CURRENT SUMMARIES: SALE THROUGH THE CLUB STORE. THESE CAN BE OBTAINED WITH EITHER THE "Q" COMMAND OR THE "S" COMMAND. THE SYSTEM FOR MORE THAN A MONTH.

THE "Q" COMMAND WILL GIVE YOU THE MESSAGE NUMBERS OF MESSAGES SENT TO YOU, TO ALL, AND FROM YOU. WHEN YOU SIGN ON, THE ABBS ALSO LISTS THE NUMBERS OF MESSAGES SENT TO YOU. THE "S" COMMAND ASKS YOU HOW FAR BACK YOU WISH TO SEARCH, AND WHETHER YOU WISH TO FLAG MESSAGES FOR LATER READING IN FULL. THE "S" COMMAND WILL LIST THE SENDER, THE RECIPIENT, THE MESSAGE WAS SENT, AND THE SUBJECT OF THE MESSAGE.

DELETING A MESSAGE:

THE "O" COMMAND WILL LIST THE SUMMARY OF THE MESSAGE AND ASK YOU IF YOU WANT TO DELETE IT. ONLY THE SENDER, THE RECIPIENT (IF NOT TO ALL) AND THE SYSOP CAN DELETE MESSAGES. SO THAT EVERYONE CAN USE THE ABBS, PLEASE DELETE YOUR OLD MESSAGES!!

AMENDING A MESSAGE:

THE "A" COMMAND AND THE EDIT OPTION ALLOW YOU TO CHANGE THE RECIPIENT, SUMMARY OR TEXT OF A MESSAGE. IF THE MESSAGE HAS FEWER THAN 10 LINES, YOU MAY ADD A LINE. YOU CAN'T DELETE A LINE, BUT REPLACING IT WITH 1 OR 2 SPACES WILL HAVE THE SAME EFFECT.

INFORMATIONAL PRINTOUTS:

THE "H" COMMAND GIVES A SHORT DESCRIPTION OF ALL AVAILABLE COMMANDS AND CONTROL CHARACTERS. NEW USERS MAY WANT TO MAKE A PRINTOUT OF THIS LIST FOR HANDY REFERENCE. (IF YOUR PRINTER IS TOO SLOW, SEE THE "M" COMMAND, EXPLAINED BELOW.)

THE "M" COMMAND LISTS ONLY THE LETTERS OF ALLOWED COMMANDS, AND IS FOR QUICK REFERENCE. THE "B" COMMAND LISTS OTHER COMPUTER BULLETIN BOARD SYSTEMS. IF YOU KNOW OF ANY CHANGES THAT SHOULD BE MADE -- AND CHANGES OCCUR FREQUENTLY AS SYSTEMS START UP OR SHUT DOWN -- PLEASE LEAVE THE SYSOP A MESSAGE.

THE "S" COMMAND WILL PRINT OUT THE BULLETIN THAT YOU WERE GIVEN THE OPTION OF SEEING WHEN YOU SIGNED ON. IT ALSO PRINTS OUT THE LIST OF MESSAGES FOR YOU.

THE "H" COMMAND LISTS THE MEETING DATES, TIMES AND LOCATIONS OF ALL MEETINGS OF WASHINGTON APPLE PI AND THE NORTHERN VIRGINIA APPLE USERS GROUP, NOVAPPLE. ALSO LISTED IS INFORMATION ON MEETINGS OF W.A.P.'S SPECIAL INTEREST GROUPS, KNOWN BY THE ABBREVIATION "SIG", AND TUTORIALS, CLASSES ON SPECIAL SUBJECTS FOR WAP MEMBERS.
This text file contains 5 entries: today's date (in a special form), ENJOY!, every-where else will always be upper case.

CHATTING WITH THE SYSOP:

Occasionally, I will be able to chat with you. To see if I am available, enter "C". If I am listed as "not available", it does not mean that I am not physically here, it means only that I am otherwise occupied with my mundane existence (eating, sleeping, doing chores, etc.). If I am listed as available, you can ring me. Continue using the abbs, and when I come to the keyboard, I will break in for a friendly chat about whatever interests us.

FILE TRANSFER SUBSYSTEM:
The "V" command enters a file transfer subsystem. It has a separate help command.

GENERAL INFORMATION:

This system runs on an apple II in Applesoft and assembly language using a D.C. Hayes Micromodem II under a program written by Thomas S. Warrick (based on some earlier work done by John Moon) for Washington Apple Pi. The world's second largest apple computer users' group.

Your current SYSOP is: (insert your name)

The policy of this abbs prohibits commercial messages. "Commercial" means any offer or solicitation of an offer for a product or service by anyone in the trade or business of selling that product or service. Casual sales of personal property are permitted. These rules should not be circumvented through the activity of others. They exempt for control characters C, H (backspace), K, L, M (return), S, and U (right-arrow), all control characters are ignored. (This means no "beep".)

I welcome all your comments and suggestions. This is one of them. I will be online as soon as they can be incorporated into the program. Many of the most useful features in the system were suggested by users.

MY MUNDANE EXISTENCE (eating, sleeping, doing chores, etc.) is otherwise occupied with my mundane existence (eating, sleeping, doing chores, etc.). If I am listed as available, you can ring me. Continue using the abbs, and when I come to the keyboard, I will break in for a friendly chat about whatever interests us.

SYMPATHY NOTES

Congratulations! You are now about to become a Computer Bulletin Board System (CBBS) Operator. As System Operator (SYSOP), you will be responsible for maintaining a useful and informative service for your club, your organization, your friends, or the general public.

This program is called an Apple Bulletin Board System (ABBS), since it is a CBBS that runs on an Apple II+. As to hardware, you will need an Apple II+ computer (or an Apple II+) with a Hayes Smartmodem or a Hayes Modem II interface card in slot 1 or 2. (You may move it to slot 2 after making certain changes in the program.)

The two disks containing this file, the WAPABBS program and sample files ready for your own adaptation;

A viewing device such as a monitor, CRT, or TV set that will allow you to see what the abbs is doing;

A text editor for the addition, deletion and maintenance of the text files that the abbs uses. The DOS Tool Kit, sold by Apple Computer, is adequate for your needs; a word processing program that uses text files will probably also work. Many apple users' groups have excellent text editors in their program libraries.

A Mountain Hardware CPS Multifunction Card in slot 4 (this is optional -- the abbs will work without the clock card, but you must change the date manually); a printer to print out listings and preserve a record of messages (this is optional also). In order for the printer to record what the abbs is doing while in operation, you must have a printer that uses an apple parallel interface card in slot 1 or is otherwise able to print out a character POKEd to $C090; and

Additionally, you will want to give serious consideration to giving the abbs its own private telephone line. No matter what times you tell your users that your system is up, they will call in at all hours of the day or night. This is not a "turn-on" system. In order to use the abbs effectively, you will need to know BASIC reasonably well. It would not hurt to know some assembly language. You should either know or expect to acquire by experience some knowledge of modems. You should have the apple and Micromodem II manuals; try also to obtain a copy of manuals for the Novation Apple Cat II and the D.C. Hayes Smartmodem because people with these popular modems will probably ask you questions.

This program is copyright (1982) by Thomas S. Warrick. Sale of these programs for any price more than a nominal amount in excess of the value of the media is prohibited without express permission of the copyright holders. (In other words, you can't sell a copy of anything on these disks for a profit.)

THE FILES ON THESE DISKS:
The files on these disks are designed to run in specific disk drives. In drive 1 should be the disk with these files:

WAPABBS -- This is the abbs program. Disk 1 will run this program on boot-up so that if your system suffers a temporary power outage the system will restart itself. This program will read in the program. Many of the most useful features in the system were suggested by users.

ABBSS1.BOB -- This binary file contains the input/output routines and the "I" routines, which handle the message summary strings. To run the abbs with your Micromodem in slot 2, change one of the run numbers in the program's source code (on disk 2) and re-assemble it. (You will also have to change line 10 of WAPABBS to set SL = 2.)

ABBSS3.BOB -- This binary file loads several machine language routines into page 3. Most important is the line input routine, which begins at 766 ($300). The source file, ABBSS3, is on disk 2.

STARTUP -- This text file contains 5 entries: today's date (in a special form discussed below in connection with field 3 of the messages file), the date of the last bulletin, the password for uploading files to the abbs, the userid (pronounced yoo-zer-eye-dee, this string is used to identify a person, such as WAP001 or WP2027) for a person other than the SYSOP who is allowed to change the date, and the userid for a person other than the SYSOP who is allowed to change the date and to look at
the password file. Note that if you have the CPS card, you will not need to worry about setting the date (except for the bulletin date). These will be discussed more below.

MESSAGES -- This is the principal file to which your users will be reading and writing thus, it is first on the disk in order to make disk access as fast as possible. Understanding the structure of Messages is very important to an understanding of WAPABBS. Messages is a random-access text file with a record length of 452 characters. The file is initialized with 138 "EMPTY *" records. When a message is in use, it consists of up to 14 fields, each followed by a return: The userid of the sender (6 characters); The userid of the recipient (6 characters); The date of the message (13 characters in the form YYMMDD.HHMMSS, where YY=year, MM=month, DD=day, HH=hour, MM=minute, SS=second); The length of the message. In all cases the field for a message that must always be used in the startup file) A summary of the message (20 characters); and The text of the message in up to 15 lines of up to 39 characters each. If the message is less than 10 lines, the last line of text is followed by a null line, i.e., a line with no characters prior to the return that ends the line. 

USERS -- This text file contains 40-character records with this information: characters 1-4: The numeric portion of the userid, in 4-digit form. Thus user 1 is "0001"; user 2027 is "2027*"; characters 5-8: The password; characters 9-23: The user's name with last name first; characters 24-33: The last date the user called in, in the form YYMMDD.HH; where X is 1/10ths of an hour. This is the maximum precision of Applesoft; characters 34-37: The number of times the user has signed on; character 38: The letter "N." This character is available for manipulation; you, may, for example, use this character to record whether or not someone has answered the Opinion question; character 39: The "#" character. This is used to make a border on printouts of the file. It is also available for manipulation by your own revisions of WAPABBS; and character 40: A carriage return. Note that after the return that ends the last user record there must be another return, except at the end of the file. Change passwords should be able to show you the length of this file. It must always be 1 greater than a number even divisible by 40 (e.g., 41 or 361) in order for WAPABBS to work. WAPABBS accesses this file as a random-access file in order to check the passwords of users when they sign on, but as a sequential text file when printing out a list of passwords in response to a several command. 

USERS.OBJ -- This binary file allows the USERS file to contain non-sequential userid numbers. Each location contains 255 (SFF) if the user is allowed on the system or 0 if the user is not allowed on the system. Where the USERS file begins with user numbers 0001, 0002, 0004, 0006 and 0008, USERS.OBJ would begin SFF 00 $00 $00 00 SFF 00 00 00 00 SFF. USERS.OBJ is loaded into memory at $8400 and is $1000 (4000 decimal) bytes long; the first userid, 0001, is stored at $8401 and thus WAPABBS can have userid numbers up to 4095. An Applesoft program on disk 2, BUILD USERS.OBJ, allows you to update this file after you change the USERS file. 

USERS.OBJ is a sequential text file, and -- as with virtually all such files used by WAPABBS -- the last line entered must be a null line in order for the program to work. To keep your users' interest, you should change the Bulletin at least weekly.

BBBS -- This sequential text file gives phone numbers and other information of other CBBS systems in your area. Asterisks have been added as a border for esthetic purposes. This file also ends with a null line.

MEETINGS -- This sequential text file gives the dates, times and places of meetings of potential interest to your users. As this file comes to you, it gives the meeting information for Washington Apple II. This file also ends with a null line.

CLUB STORE -- This sequential text file provides information about any quasi-commercial ventures you, your organization, or anybody else may have. If you don't have any such activity, you may want to use this file as a "Shopper's Guide" to produce a "club store" for your area and stores in your area.

In drive 2 should be the disk with these files:

INSTRUCTIONS -- This sequential text file gives instructions in the use of the ABBS to your few users. You should read these carefully. This file also ends with a null line. Insert your name in the file where appropriate.

OPINION -- This file is available for downloading. You should execute it with ESC-O, and BSAVE it as it says. This is, if may say, an excellent terminal program for the Micromodem II. Non-commercial distribution is permitted, and this program may not be sold without express permission of Washington Apple II.

REMEMBER II -- This text file is available for downloading. You should execute it in the same manner to create a file called REM II.OBJ. WHICH REMEMBER II will access when you request instructions in its use.

ARBS1 and ARBS3 are source code for the binary files discussed above.

AN ANALYSIS OF THE PROGRAMS:

1. THE INPUT/OUTPUT ROUTINES

ABBS1 and ABBS3 are source code for the binary files discussed above. ABBS1.OBJ0 handles I/O for WAPABBS. The I/O routines are activated by a "CALL 37888" in line 32 of WAPABBS. This routine changes the CSW/KSW vectors ($36-$39) to the ABBS's 1/O routines, sets the "E" vector ($3F5-$3F7), and jumps to the DOS routine at $2000.35

The Output routine, which begins at $9420, first does a test to see if the character being output is lowercase. If so, the character is OR'ed against LOCSE.

Next, the keyboard is checked for an interrupt character such as ctrl-C. Since only the SYSDP can enter a key from the ABBS's Apple, this is given priority. If a keyboard interrupt occurs, it is passed to the user program through the modem. If not, the character in the accumulator is sent out through the modem, the A, X, and Y registers are restored, and the character is printed at the terminal. 

Next, the keyboard is checked for an interrupt character such as ctrl-C. Since only the SYSDP can enter a key from the ABBS's Apple, this is given priority. If a keyboard interrupt occurs, it is passed to the user program through the modem. If not, the character in the accumulator is sent out through the modem, the A, X, and Y registers are restored, and the character is printed at the terminal.

If a character was entered at the keyboard or from the modem while output was in process, several tests are made. If the character was a ctrl-S, the program waits for another character to be received or entered before resuming output. Next, if a different character is checked, if a ctrl-C or ctrl-X is allowed. If either is allowed (i.e., if CMASK is set), the program clears the stack and jumps to AppleSoft line 2000. If the character received was neither a ctrl-C nor a ctrl-X, it is ignored and the character is sent out anyway.
were not the case if a human had dialed the ABBS by mistake. ACTIVE is set to 2; the characters are restored, and the input routine is concluded. If the carrier is not detected, ACTIVE is unchanged, and the next request for input will continue to be sent to the ABBS.

The next sequence of code hangs up the phone, using the Micromodem routine at $4AB5. ACTIVE is reset to 0, LOCSE is set to $20 so that lowercase characters will be transmitted for the next caller, the stack is cleared, and control falls into the GOTO routine.

The GOTO routine, at $4900, immediately outputs a return to clear any active input buffer. A ctrl-D followed by a return to terminate any active DOS commands. The line number passed to GOTO in the A,Y registers is used to set Applesoft's TXTPTR vector ($B8-$B9), the stack is cleared, and execution of the appropriate Applesoft line number begins.

The Hang routine, at $4FB8, forces the ABBS's Apple to freeze up if program execution terminates for any reason. This prevents anyone from getting "inside" your computer. You will see a flashing "$33" if this routine has been triggered. Ctrl-C will return you to BASIC.

The regular input routine resumes at $591B. The timer is incremented by one. This timer will automatically hang up the phone if no one has entered a character for 7 minutes, 8 seconds. This prevents someone from tying up the ABBS by leaving their computer connected inadvertently.

If bit 6 of ACTIVE is set, the ABBS will ignore the modem. This is so that when you want to use the ABBS yourself, WAPABBS will not answer the phone. Thus if ACTIVE is no longer input.

If modem input is allowed, the modem is checked to see if the user's modem's carrier tone has been lost. If it has, WAPABBS hangs up the phone. If not, the modem is polled for data. If a character has arrived, the most significant bit is set and processing begins. If no data has arrived from the modem, the keyboard is checked. If a ctrl-A has been pressed by the SYSOP, WAPABBS responds:

```
> M II
```

You may now enter characters with these results:

- ctrl-Z ends the input line and asks for another one. X and Y are returned to the left margin, and control falls into the GOTO routine.
- ctrl-I flashes an "I" on the screen, meaning that the SYSOP is now "in" where T means "test", J and K have their usual meaning, and A$ refers to the string being input.
- ctrl-O flashes an "O" on the screen, meaning that the SYSOP is now "out"
- ctrl-R sends a ctrl-R out over the modem
- ctrl-T sends a ctrl-T out over the modem
- ctrl-U(rightarrow) Prints the userid of the current user (or the most recent user if no one is on the ABBS at the moment)

Otherwise, the character is ignored and input resumes. Note that anything sent by the user during the interval between the ctrl-A and the next character is neither received nor echoed.

If a character has been received, the ABBS's screen is set to non-flashing, which is Apple convention to let you know that a character has been received. If a rubout has been received (ASCII $7F), the user is sent a bell and the character is ignored. If carrier has been lost, WAPABBS hangs up the phone, and a parity error, receiver overrun error, or framing error is detected, the character is ignored. The user will notice that his character was not echoed.

At this point, FLGS is checked to ensure that DISPO, TRAN and KBDE are always set. (See the Micromodem manual.) Unpleasant results would ensue if one of these bits was cleared by static electricity or a cosmic ray.

If the character is lowercase and lowercase is not allowed by the ABBS, it is converted to uppercase. The most significant bit of a lowercase character must be cleared in order to fool the Apple's System Monitor.          A$ = MID$ (A$,1)

If the character is a control character, special handling may be required. A carriage return is treated normally. A backspace is ignored with a beep if you are not backspacing. A backspace on the modem is converted to a backspace, and its sync is saved.

The next group of routines handle the ampersand ("&"). These routines manipulate the message summary strings, which begin at $6800. These strings would require more than 1K of overhead if executed as traditional Applesoft strings.

1. Assign a string to the message summary array:
   CALL 892,J,K
   where J and K have the same meaning as above.

2. A simple assignment statement such as A$ = "HELLO"

3. A$ refers to the string being input.

The next group of routines check to see if a ctrl-C or a ctrl-X is permitted. If so, and if no one is on the ABBS at the moment, the input routine is concluded. If the character is a control character, special handling may be required. A carriage return is treated normally. A backspace is ignored with a beep if you backspace before you have entered anything that could be backspaced-over. A backspace on the modem is converted to a backspace, and its sync is saved.

The short routines that follow handle the ignore-this-character routine and the cursor.

The next group of routines handle the amperands ("&"). These routines manipulate the message summary strings, which begin at $6800. These strings would require more than 1K of overhead if executed as traditional Applesoft strings.

1. Assign a string to the message summary array:
   CALL 892,J,K
   where J and K have the same meaning as above.

2. Assign one of the elements of the array to B$:
   CALL 804,A$,B$,
   where B means "LET B$ = ", and J and K have the same meaning as in string assignment.
   Note that only the previous variable B$ can be used in this manner. Furthermore, B$ must already have been set equal to something by an earlier program line or direct command such as:  B$ = "HELLO"
   Note that a simple assignment statement such as B$ = A$ will not work.

3. Assign one of the elements of the array to A$:
   CALL 804,A$,B$,
   where B means "LET B$ = ", and J and K have the same meaning as in string assignment.

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password entry in the USERS file. If user 538 were not on the system, J would become 0. Note that this routine is used in the signon process and in the W and Y commands.

I. VARIABLES USED IN WAPABBS

A$ must be the first variable used in the program in order for the machine language routine at $300 to work. A$ is the workhorse string variable; all string input passes through A$. Note that if A$ has been set by the routine at $300, for so long as A$ is not assigned to another variable, A$ will not take up regular memory space and will not create "garbage."

ACTIVE is a flag used to tell the I/O routines whether the SYSOP, a user, or no one is currently using the ABBS. See above for a further description of the values ACTIVE can have.

AC$ [Allowable Commands] is a list of the letters of allowable commands. CALL 804 uses this to compute the index value of the response to the "COMMAND?" prompt for use by the ON J GOTO in line 2011. The CALL 804 routine requires that AC$ be a variable.

AL$ is "ALL ", and is used by the message handling routines to prevent errors that would occur if a user entered "ALL", which is only 3 characters long, instead of the 6-character response that the ABBS expected.

BS is the secondary string variable. It is used by the "*" message summary routines and for other general purposes.

BD$ [Bulletin Date] is a 4-character string that tells users when the bulletin was most recently updated.

B(6) is an array used by the sorting routine that organizes the messages into date order.

BC$ is a comma (","). This must be a variable so that the CALL 804 routine can tell whether what should have been a file name has a comma.

CRDLY is the delay (in 0.1 seconds) sent after each carriage return if the user has specified linefeed insertion. This is the standard Micromodem delay. Note that setting this to 0 is equivalent to specifying a delay of 2.56 seconds.

D$ is ctrl-D.

D1$ [Date1] is "> " and is used to create a date value higher than any valid date. In this way, WAPABBS will sort the messages in proper date order.

DAS [DaSate or date] is the current date as specified in the STARTUP file or by the clock.

DA$ is the current date as specified in the STARTUP file or by the clock.

DA(1) is equal to the message number of the oldest message, DA(2) is the number of the second oldest, etc.

DA(MS) [DaSeate order; see below for meaning of MS] is used to store the messages in date order. DA(1) is equal to the message number of the oldest message, DA(MS) works, DA(MC) is the number of the most-recently entered message and DA(MC+1) is the message number of the most recently-deleted message and will become the message number assigned to the next-entered message. Think about this for a while.

D$ contains "K" and is used by CALL 804 to check that a number entered was not in exponential notation.

EMS [Emty] contains "EMPTY ", and is used to erase the "From" value in message summaries and on disk.

EM$ [Emty] contains "EMPTY ", and is used to erase the "From" value in message summaries and on disk.

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M$(13) is used to enter and edit messages. M$(0) has the user id of the sender of the message, M$(1) has the user id of the recipient, M$(2) has the date the message was entered, M$(3) has the message summary, and M$(4)-M$(13) store the lines of the text of the message.

NM$ is ctrl-D + "NOMON C,I,O". See MI$ for an explanation of why this is necessary.

R [Record number] is used by the random-access file routines to select the message number to be read or written.

S1$ [Sysop1] has the SYSOP's user id in 4-digit numeric form. If the SYSOP's number were WAP001, for example, S1$ should be set to "0001". This is necessary to keep the "Y" routine from printing the SYSOP's password.

SL [Slot] contains the Micromodem's slot number.

SO [SignOns] contains the number of users who have successfully signed on. If someone signs on more than once, they are counted more than once.

SYS$ [SYSOP] contains the user id of the SYSOP. Observe when going through the program listing that the SYSOP can do many things forbidden to others.

T1$ [T user 1] is the user id of a person who is able to change the date if you are unable to do so.

T2$ [T user 2] is the user id of the person who can change the date and print the password file. If you have no one to whom you want to allow access to the date or password file, set these to your own user id to prevent anyone from having this much access.

U$ [Userid] is the user id of the user currently on the ABBS. In case you have not guessed, a user id is a 6-character string with a 2 or 3 letter prefix and a numeric suffix in the range 1-4095.

U1$ [Upload] contains the letters of the four commands allowed during uploads. CTRL-J = enable joystick

UP$ [Upload] is the password necessary to begin uploading a file into the ABBS.

Z is a general-purpose numeric variable.
MidiMate is a program for the Apple IIGS that allows users to convert Industry Standard Midi Sequence Files to the new format supported by the new SynthLab. SynthLab is a powerful instrument editor and Midi-compatible sequencer written by Apple Computer that allows users to build instruments and play them with their Apple II Computer. SynthLab uses the new Apple IIGS Tool 35 (MidiSynth).

With MidiMate, standard Midi files from MasterTracks Pro, MasterTracks Jr, Audio Animator, and others can be converted to the SynthLab format. Version 1.1 of MidiMate will convert the first 7 midi tracks of standard files up to file sizes of about 40K (the actual limitation is 64K of SynthLab format, but the maximum size of the midi standard file depends somewhat on the type of midi data). Only Midi file format 1 (multi-track) is supported, which means that if your sequencing software gives you a choice of midi standard files to produce, always choose the multi-track option. The program also supports NDAs (but see bug report below).

MIDIATE REQUIREMENTS: The program requires an Apple IIGS with at least 1 MB of memory running GSOS 5.02. The program will run in any disk configuration, but special instructions are required for single disk drive users (see installation, below). The program does NOT require Tool 35, SynthLab, or a Midi Interface.

MMDEMO - This is a demo version of the program that is installed and run exactly like the actual program. MMDEMO will let you load and convert files, allowing the user to get the look and feel of the program. The demo will not save converted files.

INSTALLATION OF MIDIATE OR MMDEMO: For users of hard disk drives or more than a single 3.5 inch drive, just launch the MIDIATE application file from the Finder. Users of single disk drives must create a bootable system disk containing the MIDIATE or MMDEMO file, re-boot with that disk, and launch the program. If necessary, get rid of extra fonts, or unneeded disk accessories. The program doesn't use custom fonts. MidiMate needs constant access to the system (boot) disk so make sure that the system disk is in another disk drive (or on the hard disk) while MidiMate is running. If you like icons and have the option, copy the file MidiMate.Icon to the Icon folder of your boot disk (optional).

RUNNING THE PROGRAM - To convert a Midi Standard File, perform the following 3 steps in order:

1) Choose "Load Midi Sequence" from the File Menu. After a brief pause, you will see a "Standard Midi File Window", showing, among other data, the actual midi data in hex format. You can use the scrollbar to scroll through the midi data (if you're interested). You don't HAVE to do anything with this window - it's just there to tell you that the file was loaded correctly. Since the TextEdit tool was used in displaying the midi hex data, you can also EDIT the midi data. However, in the present version of the program, MidiMate will ignore whatever you do to the data.

2) To convert the loaded midi data, choose "Std Midi --> SynthLab" from the Convert Menu. Depending on the file size, the conversion makes take several minutes. During the conversion, MidiMate tells you exactly what it's doing (info on number of tracks, number of seq items converted, etc). At any point during the conversion, you can interrupt this process and go back to the Midi Window by choosing the "Cancel" button at the bottom of the screen. MidiMate informs you of any problems encountered during the conversion. At the end of a successful conversion, you will see a "SynthLab" window displaying data on the converted file. If, for any reason, the conversion was not successful, the program informs you and tells you the nature of the problem (e.g. bad file, file too big, etc.). MidiMate can convert files up to 64K of converted sequence image, which corresponds to 8,192 seq items (seq items are counted on screen during conversion).

3) When the file has been successfully converted, choose "Save Sequence (Synthlab)" from the File menu. You can save it to any folder with any name. The file created has the "Synth" instrument has the default for SynthLab. Of course you can change that after the file is loaded into SynthLab, but it is most convenient to place converted sequences in a folder with "Synth.bnk" and "Synth.wv" files (see the SynthLab manual). MMDEMO will not save converted files.

BUGS AND BUG REPORTING - So far there is only 1 known bug. The program is incompatible with some NDAs, but I'm not sure why. When the program can't translate a file, it almost always tells you and tells you why. So it seldom crashes. However, it does translate a file incorrectly once in a while - no problems with MidiMate, but SynthLab gags on it (crashes while playing). Use "turn off all notes" option in synthlab if needed, and also choose "view sequence". Sometimes you will see the seq items out of ascending order with a crash like this. THE FIX for this problem is removing NDAs. I can't tell you which ones cause the problem -- only that file translation errors like this are not reproducible (they produce different bad files, not the same bad files) and they are ALWAYS (so far) fixed by removing the desk.Accs folder from my hard disk. What DAs do I have? Memory, WriteIt, IIGS Text Printer, along with BG sound and label grabber. I haven't had time yet to figure out who the culprit is.

If you have a reproducible bug or a file that won't convert after removing ALL NDAs (by renaming Desk.Accs), please record the sequence of events that causes the bug, and send me the report, along with the file that wouldn't convert and the file that MidiMate produced if any (that file won't play):

Lindsay Hough
PO Box 212
Slingerlands, NY 12159

To Order MidiMate, send $18.00 + $3.00 shipping and handling to the above address. Include your AOL handle for E-mail shipping, which saves you the $3.00

E-mail (AOL): LindsayGS
INTRODUCTION

There is a place in the Western Atlantic, where more than 100 planes and ships have literally vanished into thin air. Many people refer to this area as The Devil's Triangle. Of more than 1000 lives have been lost in this area in the last 26 years, not one body or piece has been ever found.

As an experienced adventurer, you are asked to explore this area of hopes of finding an explanation and possible solution to this mystery. Many top top scientists have come up with several possible explanations. The most widely excepted explanations is the possibility of submerged crystals, acts as laser beams which destrub or destroy navigational equip- ment of ships and planes. These crystals are thought to been used by the 'ancient' Atlanteans as a power source, specifically located in the 'Tongue of the Ocean'.

VOCABULARY

Words such as sea-fan, vase-sponge, and sand-dollar, should be broke with a (-) hyphen.

GLOSSARY

ABYSSAL- pertaining to the lowest depths of the ocean.
ATLANTIS- a 'mythical' island in the Atlantic ocean that was said to sunk into the sea.
BLUE HOLES- a group of ancient under-water limestone caves that were once above water. Due to the odd reflective light in these caeves, fish are often found swimming upside down.
SEAMOUNT- an underwater volcano
TONGUE OF THE OCEAN- the name of a trench located in the Devil's Triangle. The largest percentage of ships and planes occur in this location.
TRENCH- a deep area in the ocean floor, generally deeper than 6,000 meters. Accounts for less than 2% of the ocean's floor.

Here is a quick and dirty way to give yourself more lives in Space Ace:

1) Before booting the game, enter the monitor by typing CALL -151 from BASIC. Type in $ and then return. This will enable the ENTER MONITOR CDA.

2) Boot Space Ace.

3) Whenever your lives are running low, enter the control panel. The ENTER MONITOR CDA should be active, so select it and you will be in the monitor.

4) Type in 1846:09 and then return. Music will still be playing and interrupts active, so type slowly or some characters will be missed.

5) Type CTRL-Y to return to the game.

You now have 9 lives. This process can be repeated whenever your lives starts to get low. DO NOT GIVE YOURSELF MORE THAN NINE LIVES! If you attempt to do so, the game will probably crash. When displaying the graphics screen with the number of lives, it tends to mess up if there are more than two digits present.

P.S. I realize this is not the greatest cheat, but if someone wants to look into it further, it should not be difficult to find the code which decrements location $1846. However, this location is not references absolutely, so you'd have to do some dissasembling and poking around to find the code.

I can be reached on:

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Mini - Cheat

By Mach Three 10/9/90

Apple II Computer Documentation Resources (a2_docs_documentation.msw) DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 22 of 1262
Document your playing pleasure.

MOVEMENT. If the hollow square or "frame" is on your side, it's your turn. (Simple, eh?) Use your joystick to move the frame atop the icon you want. Once you push the button to confirm your choice, you must move that icon (Simple, eh?) Use your joystick to move the frame atop the icon you want. Once you push the button to confirm your choice, you must move that icon somewhere. (If an icon has nowhere to go, the computer will not allow you to "pick it up"). Once you move the icon to its destination (again with the joystick), push the button again, and the obedient image will freeze in place. Movements are always legal; one cannot move through occupied squares; fliers are restricted only in where they land. fliers can also move diagonally; ground icons cannot. Only the Wizard can teleport, but for practical purposes you can think of them as fliers in disguise. As far as its range allows in any direction or combination of directions. It can stop on any square not already occupied by one of your own icons. Note: If you change your mind while maneuvering a ground mover, you must backtrack. Otherwise, the computer, being very literal-minded, will assume you are trying to extend your move unlawfully.

ARCHON - MAGIC SPELLS

Magic is arguably the most significant strategic element of ARCHON. Only the two mages - the Wizard and the Sorceress - can cast spells, and each mage can cast each spell only once. While the spells are powerful, they are one drawback; each spell weakens the mage casting it, leaving that mage progressively less able to fend itself against direct attack. A spell may be cast instead of a regular move on the strategy screen. Simply move the mage to the square to be affected and press the button. The usual message appears. Without moving the icon, however, just push the button again, and you will get a new message: SELECT YOUR SPELL.*
Push the joystick up or down to survey the spells still available, and push the button when you find the one you want. If further actions on your part are required, additional messages will direct you appropriately. Remember that you can't conjure the same spell more than once, and you can't cast a spell against power points or icons on them. Details are given below.

----------

**TELEPORT**

**EFFECT:** This spell moves—teleports—any one of your icons any distance from one square on the strategy screen to another.

**ACTIONS REQUIRED:** After selecting the spell, move the frame to the icon you want; push the button; and then move the icon to its destination—just as if it were a normal move.

**RESTRICTIONS:** You cannot move an enemy icon. You cannot move onto a square already occupied by one of your own icons (as usual). You cannot teleport onto or off a power point. You cannot teleport an imprisoned icon. (See IMPRISON.)

**ADDITIONAL NOTES:** Do not confuse this spell with a mage's normal three-square movement. That is minor magic, on the same order as casting fireballs, and is not bound by the restrictions of the seven major spells.

**------

**HEAL**

**EFFECT:** This spell instantly heals any icon of all wounds it has sustained in the combat arena.

**ACTIONS REQUIRED:** After selecting the spell, move the frame to the wounded icon, and push the button.

**RESTRICTIONS:** You cannot heal an icon resting on a power point. You can "heal" an already healthy icon, but why bother?

**-----

**SHIFT TIME**

**EFFECT:** Two effects are possible. Most often, the spell reverses the flow of time: i.e., the direction of the luminosity cycle of the delta squares. Squares that had been growing gradually darker would now grow lighter—until the cycle peaked. However, if the spell is cast when the luminosity cycle is at either peak, Shift Time will cause the cycle to shift abruptly to the opposite extreme (from black to white, or vice versa).

**ACTIONS REQUIRED:** None after selecting the spell.

**RESTRICTIONS:** None.

**----------

**EXCHANGE**

**EFFECT:** This spell causes any two icons on the strategy screen to trade places.

**ACTIONS REQUIRED:** Move the frame to one of the icons you wish to transpose, the Light Side. In battle, the Wizard casts devastating balls of fire. He rarely ventures from the safety of his home power point, however, and is more commonly used to cast on of the seven spells.

**------------------

**UNICORN.** Resembling a great white horse with the tail of a lion and a sharp, spiral horn set at its brow, the UNICORN is swift and agile. The beautiful creature can fire a blinding bolt of energy from its magical horn.

**ARCHERS.** The ARCHERS are fearless Amazon warriors of legendary skill with their fine whitewood bows. They are endowed with magical quivers that can never be emptied.

**--------

**REVIVE**

**EFFECT:** This spell restores to the game an icon previously lost in combat.

**ACTIONS REQUIRED:** The procedure is similar to a Teleport spell or a normal move, except that the revived icon comes from a special display by the side of the strategy screen, and its destination must be a vacant square next to the mage.

**RESTRICTIONS:** You cannot "revive" an icon not already dead. One of the squares adjoining your mage must be vacant, and you must put the revived icon on one of those vacant squares.

**----------

**IMPRISON**

**EFFECT:** This spell keeps an icon on the strategy screen from leaving its square. The icon can fight its attackers in the combat arena, but it cannot be moved off its square. Important: an imprisoned mage cannot cast spells! Imprisonment is temporary. A Dark Side icon would remain imprisoned until the delta squares turn black; a Light Side icon would be freed when delta squares turn white.

**ACTIONS REQUIRED:** Once the spell is cast, move the frame to the target icon, and push the button.

**RESTRICTIONS:** No action required. You cannot imprison an icon at a time when the luminosity cycle would automatically free it.

**----------

**CEASE CONJURING**

This is not a spell; it is a way to avoid casting a spell if you miscalculate. If you change your mind while selecting a spell, or if the spell you want is unavailable or canceled, you may push the button when CEASE CONJURING is displayed. This will allow you to start your turn over.

**------------------

**ARCHON — THE OPPOSING FORCES**

**LIGHT SIDE**

**WIZARD.** An ancient man of vast supernatural power, the WIZARD is the leader of the Light Side. In battle, the Wizard casts devastating balls of fire. He rarely ventures from the safety of his home power point, however, and is more commonly used to cast on of the seven spells.

**UNICORN.** Resembling a great white horse with the tail of a lion and a sharp, spiral horn set at its brow, the UNICORN is swift and agile. The beautiful creature can fire a blinding bolt of energy from its magical horn.

**ARCHERS.** The ARCHERS are fearless Amazon warriors of legendary skill with their fine whitewood bows. They are endowed with magical quivers that can never be emptied.

**------------------

**SUMMON ELEMENTAL**

**EFFECT:** This spell allows you to attack any enemy icon with a new, temporary icon representing one of four elementals—animated spirits of the ancient elements of earth, air, fire, and water. Combat is conducted in the combat arena as usual, except that the elemental vanishes after the battle, win or lose.

**ACTIONS REQUIRED:** Once the spell is selected and the elemental appears on your side of the strategy screen, move it to the icon you wish to attack. In the combat arena, direct the elemental just as you would any other icon.

**RESTRICTIONS:** You cannot attack an icon on a power point. You cannot direct the elemental to a vacant square or one occupied by one of your own icons. You cannot choose which elemental will respond to your summons.

**----------

**EXCHANGE =-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=

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ARCHON - THE OPPOSING FORCES

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LIGHT SIDE

WIZARD. An ancient man of vast supernatural power, the WIZARD is the leader of the Light Side. In battle, the Wizard casts devastating balls of fire. He rarely ventures from the safety of his home power point, however, and is more commonly used to cast on of the seven spells.

UNICORN. Resembling a great white horse with the tail of a lion and a sharp, spiral horn set at its brow, the UNICORN is swift and agile. The beautiful creature can fire a blinding bolt of energy from its magical horn.

ARCHERS. The ARCHERS are fearless Amazon warriors of legendary skill with their fine whitewood bows. They are endowed with magical quivers that can never be emptied.
GOLEM. A GOLEM is an artificial being, shaped from stone and gleaming metal, and animated by magic. Roughly man-shaped, it is huge, twice the height of a man. Its weapons are boulders ripped from the earth and hurled with devastating force.

VALKYRIES. VALKYRIES are beauteous blonde war maidens from the legions of Valhalla. Each of these ferocious females is endowed with two great magical gifts: first, the ability to stride the air as if it were solid ground; and, second, an enchanted spear, which, when thrown, returns to her hand of its own accord.

DJINNI. The DJINNI is a magical being from another dimension, a plane of tempest and storm. In form he is a huge superbly muscled man whose body is partly flesh and partly swirling currents of air. A cousin to the wind itself, the Djinni can raise a small tornado with a gesture and control it with a thought.

PHOENIX. The PHOENIX is a flaming bird of immense size and power. In battle it can explode into a seething mass of fire, scourching anyone on the perimeter of the blaze and burning severely any enemy unfortunate enough to be caught near the incandescent core. Not only is the Phoenix unscathed by its own flames, but, while undergoing its fiery metamorphosis, it cannot be harmed by any attack known.

KNIGHTS. The KNIGHTS are foot soldiers armed and armored against foes far larger than themselves. Although they cannot withstand more than one blow from many of their enemies, they need not be mere cannon (or dragon) fodder. Provided they are swift and clever, their speed of attack gives them a chance to survive and triumph.

ARCHON QUICK REFERENCE CHART

THE LIGHT SIDE

WIZARD

MOVEMENT: Teleport-3

SPEED: Normal

ATTACK MODE: Fireball

ATTACK FORCE: Great

ATTACK SPEED: Medium

ATTACK INTERVAL: Average

LIFESPAN: Average

NUMBER ON SIDE: 1

UNICORN

MOVEMENT: Ground-4

SPEED: Normal

ATTACK MODE: Energy bolt

ATTACK FORCE: Moderate

ATTACK SPEED: Fast

ATTACK INTERVAL: Short

LIFESPAN: Short

NUMBER ON SIDE: 2

ARCHER

MOVEMENT: Ground-3

SPEED: Normal

ATTACK MODE: Arrow

ATTACK FORCE: Minor

ATTACK SPEED: Medium

ATTACK INTERVAL: Average

LIFESPAN: Short

NUMBER ON SIDE: 2

GOLEM

MOVEMENT: Ground-3

SPEED: Slow

ATTACK MODE: Boulder

ATTACK FORCE: Great

ATTACK SPEED: Slow

ATTACK INTERVAL: Long

LIFESPAN: Long

NUMBER ON SIDE: 2

VALKYRIE

MOVEMENT: Fly-3

SPEED: Normal

ATTACK MODE: Magic spear

ATTACK FORCE: Moderate

ATTACK SPEED: Slow

ATTACK INTERVAL: Average

LIFESPAN: Average

NUMBER ON SIDE: 2

DJINNI

MOVEMENT: Fly3

SPEED: Normal

ATTACK MODE: Whirlwind

ATTACK FORCE: Moderate

ATTACK SPEED: Medium

ATTACK INTERVAL: Average

LIFESPAN: Long

NUMBER ON SIDE: 1

Prolonged exposure to the terrifying shriek can be fatal.

GOBLINS. GOBLINS are hideous dwarves, twisted of limb and misshapen of feature, unfriendly and often violent. Their mutual antagonism is kept in check only by the powers of the Sorceress. On dark ground their gnarled clubs are more than a match for the swords of the Knights, and if well-directed they can bring down the most potent of enemies.

APPLE II COMPUTER INFO

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

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everyone involved with computers is familiar with BASIC because it comes standard with most personal computers. Since the aim was to make ACOS as easy to use as possible, it was modeled after BASIC. At the same time, there are also many differences as well.

This package contains a proprietary ACOS compiler which you will be using. Unlike many interpreted BASIC's which have their editor built in, ACOS requires the use of some form of text editor for you to manipulate your source files. All ACOS source files are stored as text, so any editor that can modify standard text files can be used.

**Writing a program**

Since actually doing something tends to be a better teacher than just reading about something, we will be writing a small sample program in ACOS. The first thing you need to do is start your text editor/word processor you plan on using to write your code. Once you are ready, enter the following program:

```
LOOP
  print "this is an acos program"
  print "i hope it works!"
  goto loop
```

The important points to note are these: ACOS is not based around line numbers as is the BASIC language. It is free form like PASCAL or ASSEMBLY LANGUAGE. It uses labels as markers for groups of code instead of line numbers that marks the beginning of a line of code when the requirement arises to identify a specific point within the program. Since your labels can have descriptive names to begin a section of code, it makes it easier to see what this code does. Also, you can add extra blank lines at the top and bottom of a group of code to identify it more clearly. If you add comments within your code it helps you remember what you are trying to do in that section.

When you begin to write your program there are a few rules that must be followed in order for ACOS to process your code. LABELS must ALWAYS begin at the column 0 of the first line of the screen. The rest of the code always begins in column 1. The only exception to this deals with the use of quotes ("), to identify text. When you open a quote at the start of the print statement, all following text will be printed to the screen until another quote is encountered. This includes normal text, any control character and blank lines as well.

Once you have typed in this test program, save it to your ACOS compiler disk under the name "TEST.S". You must ALWAYS add a ".S" to the end of any source file for ACOS to accept it as a "source" file. Then exit from your editor back to your operating system. Insert the disk with the ACOS compiler and log to that disk. Execute the ACOS compiler with the appropriate operating system command (-ACOS, BRUN ACOS, ACOS).

At this time, the ACOS loader will execute and check through your directory for any ACOS source files and do some file maintenance at the same time. You will then be asked for the name of the ACOS program to be executed. Hitting return will execute the default starting program which is indicated in brackets. This default filename will differ from application to application. Type in "TEST" and return. You will see "TEST" displayed as the default filename. Enter a return and the compiler will start to execute.

The screen will clear and you will get a "COMPILING 1..." message. This means that the compiler is in the first phase of its two phase compile. This first phase takes the longest. After a quick wait, the message will change to "COMPILING 2...". This indicates that the compiler is in the second phase. This generally is very fast. Once the second phase is complete and has created a new file, which in this case is called "TEST.G", the message will be cleared and the program executed.

In this case, the following will be displayed:

```
THIS IS AN ACOS PROGRAM
```

I HOPE IT WORKS!
THIS IS AN ACOS PROGRAM
I HOPE IT WORKS!
THIS IS AN ACOS PROGRAM
I HOPE IT WORKS!

The two lines will be repeated over and over again, unless you stop the program via the \texttt{RESET} key. Let's see how this program worked.

The first line that happens is that the ACOS interpreter looked at the first line of code for a label that begins at the very last most column of the screen. This told ACOS that the first line is actually a label. A label is a reference point in a program to a section of code. A label has no effect when the program flow passes through it, but it directs the operation from the line executing from one section of code to the beginning of the section where the label is.

Execution then is passed to the next line, the first having no actual effect. ACOS looked and saw that the second line did not start at the leftmost column but started at column 1 instead. This tells ACOS that the data on the line is the actual program code. ACOS then looked at the first word which in this case was \texttt{PRINT}. ACOS then went into its internal \texttt{PRINT} routine as you asked it.

Once within the \texttt{PRINT} routine, special rules take over that govern the \texttt{PRINT} statement. Summing up quickly, \texttt{PRINT} will display to the console whatever text or data is in between the " " marks. In this case, it printed \"I HOPE THIS WORKS\". This data was placed within quotes to show that it was text. Once the end of the line was encountered, execution passed to the next line.

The next line was another \texttt{PRINT} statement which was displayed: \"I HOPE THIS WORKS\". This is the same text that you typed in when you wrote the short program. It works in the same way as the first \texttt{PRINT} statement. This is the simplest form of the \texttt{PRINT} statement. It is very tolerant of different styles of programming. You are allowed to add blank lines and comments anywhere in your code for ease of reading. Any line within an ACOS source program must be in one of the following formats:

\textbf{Blank Line:} If the line is blank, this line will be skipped by the compiler. Blank lines are a good way to separate blocks of your code apart from other blocks for ease of reading.

\textbf{Comment Line:} By placing a semi-colon (\texttt{;} as the first character of the line in column 0, all data until the end of the line will be ignored. In this way, you can enter comments so that when you come back to work on a program, you will have some idea of what you were trying to accomplish.

Label Line: By entering just a keyword of your choice starting at column 0 of the line, you can enter a label. The first character of a label must be alphabetic. The rest of the label can consist of alphabetic characters. The first 8 characters of the label are significant. That is, the label TEST and TEST2 are considered different labels by ACOS while SHOWFILE2 and SHOWFILE2 would appear the same to ACOS since the first 8 characters are the same.

\textbf{Statement Line:} A statement line is always indented 1 space from the the left side. That is, at column 1, not column 0 like the previous line types. Statements are just entered on the line in the order you want them executed. If you wish to put multiple statements on a line, separate the statements with a colon (;). Statements may be typed in either upper, lower or mixed case.

\textbf{SPECIAL CHARACTERS}

There are several special characters that ACOS recognizes within your program code and uses them for different purposes. The following line show characters that have special meanings to ACOS. There are other characters which when encountered will be ignored. Any character including those below can be displayed by the program without problem, they just have special meanings when encountered outside the \texttt{PRINT} statement.

\begin{itemize}
  \item \texttt{SPACE} or blank
  \item \texttt{=} equals sign and also used for assignment statements
  \item \texttt{+} plus sign also used for adding strings
  \item \texttt{-} minus sign used for subtraction
  \item \texttt{*} multiply sign used for multiplication
  \item \texttt{/} divide sign used for division
  \item \texttt{(} open parenthesis used to begin a function
  \item \texttt{)} close parenthesis used to end a function
\end{itemize}
$ - dollar sign used to indicate a string function
, - comma used as a data separator
; - semi-colon used for text formatting
* - colon used as a statement separator
" - double quote or string delimiter
? - question mark or PRINT formatting
backslash or new-line character
< - less than for IF statement
> - greater than for IF statement

RESERVED WORDS

Under ACOS, certain reserved words have predefined meanings. These words all correspond to ACOS statements, functions, and operands. When encountered, they will be executed as an ACOS command. These may NOT be used for variable names.

It is always best if you separated reserved words from data or each other by use of a space or a colon or whatever special characters the particular command syntax allows.

One of the keys behind writing a good program is making sure you can understand what you wrote. For example, PRINT A$,$B$,C PEEK(27):HOME uses a ( ), a ( ), a ( ) space and a (:) between data.

The following is a list of reserved words:

ADDINT APPEND BYTE CHR$ CLEAR CLOCK CLOSE
COPY CREATE DAT$ ECHO EDIT END FILL
FLAG FOR FREE GET GOSUB GOTO HOME
IF INFO INPUT INTR KEY KILL LEFTS
LEN LINK LOG MARK MIDS MODEM MOVE
MSG NEXT NIBBLE NOT ON NCAR OPEN PDL
PEEK POKE POP POSITION PRINT PUBLIC PUSH
RAM RAM2 RND READ READY RETURN REWIND
RIGHT$ RIPOC RND SET SETINT STR$ TEXT
THEN TIMES TONE UPDATE USE VAL WRENS
WIDTH WRITE

ARITHMETIC OPERATORS

There are several standard arithmetic operators that can be applied to numeric and string variables. Though they are somewhat limited in nature under ACOS, most common functions can be accommodated.

Addition: A+B or A+B$ or A+B$+C$ are all legal operators. Whenever a number is needed for whatever purpose, an equation may be substituted with its place. A+B$ or A+B$+C$ or A+B$+"1000B" or A+$"THIS IS A TEST" are all legal string addition commands.

Subtraction: A-B or A-B$ or A-B$-C$ are all legal operators. It is very similar to using the addition operator. There is no string subtraction operator.

Multiplication: A*B or A*B$ or A*B$*C$ are all legal operators. If you combine multiplication/division operators with addition/subtraction operators, the division/multiplication will be executed first. ex: 4*5+3=19 not 27.

Division: A/B or A/B$ or A/B$÷B$ or A/B$÷B$÷B$ are all legal operators. Since ACOS is an integer based language, with division operands, the results are rounded to the nearest integer and the remainders are thrown away. Thus 10/2=5, 10/3=3, 10/7=1, 10/11=0.

Modulo: A=B MOD C or A=B MOD$ or A=B MOD$+C$ are all legal operators. The MOD operand is a sub function of division. Instead of returning the quotient as with division, the remainder is returned. Thus, 10 MOD 2=0, 10 MOD 3=1, 10 MOD 7=3.

Grouping: By using the parenthesis, you can create complex expressions and control the method of expression evaluation. Arguments within a set of parenthesis are always evaluated first. You may also nest several levels of parenthesis if needed. Thus ((4+1)*5)/(3+4) is evaluated in the following steps: step 1 (7)*5/3+4 step 2 35/3+4 step 3 35/7 step 4 result is 5.

RELATIONAL OPERATORS

Relational operators are used to compare two values and return a true/false result. Strings may be compared with other strings but not to numbers. The same is true for numbers. A "TRUE" result is returned as the value of 1 while a "FALSE" result is returned as the value of 0. The following are the legal relational operators:

Operator Relation Example
= equality X=Y
<> or <> inequality X>Y or X<Y
< less than X<Y
> greater than X>Y
<= less than or equal to X<Y or X=Y
>= greater than or equal to X>Y or X>=Y

examples: (1=0) with the result of false or (0), (1=1) with the result of true or (1), (5=4) with the result of false or (0), (5=4) with the result of true or (1), (7=7) with the result of false or (0), (7=7) with the result of true or (1). You may always substitute more complex variables in place of simple variables. You can replace ((X)>Y)) with a more complex expression like ((4+5*6)>3/412)) or

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expressions that are even more complex. If you do have a complex expression on a
side, you should put parenthesis around it to separate it from the relational
operator so it is processed as one side.

When used in conjuction with the IF statement, you have one of the most powerful
statements in ACOS. When used with the IF statement, you have a conditional
branch, the single most important program execution statement.

LOGICAL OPERATORS

Logical operators perform simple logic operations on numeric values. They can be used
to increase the power of the IF statement by allowing more conditions to be
evaluated. Under their simplest form, logical operators work with true (1) and false
(0) values. The following truth tables show the results of all the possible logical
operators in action.

<table>
<thead>
<tr>
<th>z</th>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>x</td>
<td>not x</td>
<td></td>
</tr>
<tr>
<td>y</td>
<td>x and</td>
<td></td>
</tr>
<tr>
<td>z</td>
<td>x or</td>
<td></td>
</tr>
<tr>
<td>x</td>
<td>y</td>
<td>z</td>
</tr>
<tr>
<td>y</td>
<td>x</td>
<td>y</td>
</tr>
<tr>
<td>z</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following examples show the IF statement being used with the relational and
logical operators:

IF (X=5) AND (Y=9) GOTO label

IF (NAME$="SHIT") AND (UN=1) GOTO label

IF NOT ((A=3) OR (B=4)) GOTO label

Again it is important to use parenthesis when complex equations are being evaluated
so that ACOS can understand the order the operand is processed. Since execution order
is normally sequential, without grouping, ACOS will be on its own to decide what
order you wanted to do things. Many times it will guess correctly, but on occasion,
it will guess wrong. Using grouping is an easy way to avoid this problem.

PRINT STATEMENTS

The two most frequently used versatile statements have to be PRINT and INPUT. These
are the basic means by which you input data into variables and print data out to the
screen. Dur to the frequency of use, a basic understanding of these two statements is
very important.

The PRINT statement has the function of taking data and displaying it on the
console/modem. There are many options in PRINT that can be used. The basic form of
print is PRINT [expression]. In the simplest form you can use PRINT [any absolute
data]. This would include numbers (PRINT 563) or text within quotes (PRINT "HELLO").

To include multiple arguments, you need not even separate them, though a space or
semi-colon between them makes it easier to read. PRINT "THE VALUE 4+5=":9.

Of course, in place of absolute data, you can have statements, equations, and
variables. For example the above print statement could be written as: PRINT"THE VALUE
4+5":4+5. If we wish to print a function, just enclose the function within the print
statement. For example, PRINT PEEK(456), would display the contents of memory
location 456.

To print a variable, just include the name of the variable in the PRINT statement. A
PRINT NAME$ would print the contents of NAME$ on the screen. To combine multiple
statements, just use the semi-colon or a space. PRINT NAME$;UN;PEEK(465);4+5 would
display all the above data.

There are several special characters that can be used with the PRINT statement to
format the data. If you use a comma instead of a semi-colon, the comma will also be
printed. There is also a print-at character (@) that can be used. PRINT@5,0;"HELLO"
will display the word HELLO at vertical location line 5 horizontal location column 0.

INPUT STATEMENTS

The INPUT statement is used to enter data in variables from the console/modem by the
user. It also has a quick directive so the text can be displayed (like a PRINT
statement) before the data is entered. This works well as a prompt.

In its simplest form, INPUT is used to enter either a string or numeric variable from
the console/modem. INPUT NAME$ would wait for the user to enter a string from the
keyboard. That string would then be put into NAME$.

To enter multiple variables, separate the variable names with either the comma or the
backslash character. When you separate variables with a comma, the input must
correspond to the number of commas used in the input. For example, INPUT A,B,C would
wait for 3 numbers to be entered. Typing 1,2,3 would enter 1 for A, 2 for B, and 3
for C.

If you enter a backslash between variables, then each value must be on a separate
line. This avoids having to do multiple INPUT statements all in a row. Thus INPUT
A\B$, would enter two lines worth of data into the two string
would enter two lines worth of data into the two strin...
DISK FILES
The last part of this introduction deals with using disk files. This is one of the most important features of ACOS. You can OPEN a file, manipulate the data within, and then CLOSE the file. If you wish to use a new file, the CREATE statement can be used. if you wish to delete an old file, the KILL statement can be used. The following is a list of disk commands:

APPEND  CLOSE  CREATE  INPUT
KILL    LOG     MARK    OPEN
POSITION PRINT  READ  WRITE

The first thing to do is open the file. You use the OPEN#channel,filename statement. There are 2 disk channels that may be used. The two channels are 1 and 2. Only one file per disk channel may be open at any one time. Thus, there are a maximum of two files open at any one time. The filename format differs from operating system to operating system. ex: OPEN #1,"USERS" would open the file USERS on disk channel 1.

Once you have opened a disk file, all further access is done with reference to the disk channel you opened the file under. At this point, the following commands can be used to access the file.

APPEND #channel - This will set the file so that all new data written to the file will be appended onto the end of the file.

INPUT #channel,expression - This is just like the normal INPUT statement except that input will be taken from the open disk file instead of the console/modem.

MARK (channel) = current byte location within the file. With the MARK statement, you can select the actual byte number from the beginning of the file. This is generally not used.

POSITION #channel,label - This is just like the normal POSITION statement used in conjunction with random access files. If you wanted to use a file as random access with record lengths of 64 bytes, you can use: POSITION #1,64, record number. The offset argument is optional and defaults to 0 if not used.

PRINT #channel,expression - The PRINT statement can be used in the normal way except that the output will be directed to the disk file instead of the modem/console.

READ #channel,expression, number of bytes to read - This is a direct disk to memory transfer method. A maximum of 255 bytes can be read at a time.

WRITE #channel,expression, number of bytes to write - This is a direct memory to disk transfer method. A maximum of 255 bytes can be written at a time.

After you are finished with the file you are using, you must issue a CLOSE command to tell ACOS you are finished with the file. If you add a #channel after the CLOSE statement, only that channel will be closed. If you just issue a CLOSE without an argument, all the open files will be closed. If you are only using one file at a time, it is generally a good practice to issue just a CLOSE command with no channel number.

ACOS ERROR MESSAGES
starting module not found
ACOS was not able to locate the starting program module. By default, this file is named "LOGON.SEG", but may be changed via the ACOS loader program.

module too large
the compiled segment was too large to be loaded into memory. If this error occurs, you may want to break the program into several segments.

label not found
The ACOS compiler could not find a label that was referenced in the program.

symbol table full
There are too many labels in the symbol table. ACOS will only allow a maximum of 255 labels within a segment.

missing symbol
There is no label following a GOTO, GOSUB or a PUSH.

definition label
Execution phrase label. This occurs when a segment is being executed and cannot find a label. During the compiling phase, you will also be informed that the label was not found.

missing data
Occurs when a program statement has no valid argument. For example, X=CLOCK() is missing data because there is no valid number between the parenthesis.

type mismatch
The left hand side of an assignment statement was a numeric variable and the right hand side was a string, or vice versa, or a function which expected a string argument was given a numeric one or vice versa.

overflow > 32767
ACOS cannot handle numbers which exceed 32767.

division by zero
dividing by zero is always an error.
string too long
An attempt was made to create a string larger than 255 characters.

gosub stack full
ACOS will not allow you to nest more than 16 GOSUB or PUSH statements.

return without gosub
A RETURN or POP statement was encountered without a corresponding GOSUB or PUSH being executed.

bad device number
You have accessed a device that is not OPEN or READY, or you have accessed a device that does not exist.

illegal filename
The syntax of the filename is illegal or an attempt is made to use a disk channel that is already open.

for stack full
ACOS will not allow you to nest more than 16 FOR statements.

next without for
A NEXT statement was encountered without a corresponding FOR statement being executed.

link label not found
you attempted to LINK into a segment at a label that is either PUBLIC or does not exist.

message file not found
You tried to READY a message file that doesn't exist.

end of program
An END statement has been encountered or ACOS has reached the end of a shell.

bad drive specifier
An attempt was made to access a drive or pathname that does not exist.

unable to load external
ACOS was unable to find and execute an external module.

unclosed quote at EOF
You didn't end a PRINT statement with a quotation mark.

ACOS MEMORY MAP

$C000 | PRODOS MLI
$BF00 | 
$BE00 | 
$BC00 | 
$BB00 | 
$BA00 | 

PROGRAM BUFFER

$6000 | MODEM BIOS
$5E00 | CLOCK BIOS
$5D00 | PRINTER BIOS
$5C00 | CONSOLE BIOS
$5B00 | CONFIG DATA

ACOS

$2000 | FILE BUFFER #1
$1C00 | FILE BUFFER #2
$1800 | EDITOR BUFFER
$0800 | TEXT PAGE #1
$0400 | PRODOS DATA
$03D0 | SCRATCH RAM
$0300 | INPUT LINE
$0200 | 6502 STACK
$0100 | ZERO PAGE
$0000 | 

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PRODOS QUIT

$D000

PRODOS I/O

$D000

SCRATCH RAM

CURRENTLY UNUSED BY ACOS OR SHELL

$03D0

64 BYTE BUFFER [RAM2]

$0380

64 BYTE BUFFER [RAM]

$0340

64 BYTE BUFFER [RAM]

$0300

*A end of file

[Ripco] Which 1-241 ?=menu,<CR>=abort:

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ACOS COMMANDS & FUNCTIONS

ADDINT

syntax: ADDINT (string1 [,string1...])

the ADDINT command will add more keys to the existing interrupt keys table. previous keys will not be cleared. the functions of the keys is the same as with the SETINT command.

APPEND

syntax: APPEND #device

the APPEND statement is generally used to add data to an existing file. if you issue an APPEND statement, the file pointer will be moved to the end of the file. you can also find out the length of a file by doing an APPEND and then using the MARK function. Mark will then return the length of the file in bytes.

BYTE

syntax: BYTE=number

syntax: BYTE=(number)

syntax: BYTE=(number)=number256

the BYTE function is similar to the FLAG function. it is a low overhead data storage unit. just point to where in memory you want the data to be stored using the first syntax, and you can then access the data using the second or third syntax's.

CHR$

syntax: string=CHR$(ascii code [,number chars])

appears to be same as in Applesoft with the exception of [,number chars] which allows user to define how many ascii codes are to be assigned to string.

CLEAR

syntax: CLEAR

syntax: CLEAR #device

the forms to clear share only one thing in common; they both clear data in one form or another. in the first syntax, without an argument, CLEAR will reset all the variables to nil, clear all the addresses from the for-next and gosub-return stack, and close all open files. suggested use is at beginning of program.

in its second syntax, CLEAR is used to clear out device buffers. the legal device channels are 8, 9, 10. CLEAR #8 will clear the editor so that any output into the editor will be appended to a clear editor. CLEAR #9 will clear the top of screen display. you must clear the top of screen display before you write any info into it. CLEAR #10 will clear the ram drive. any further writes will be appended on to the end.

CLOCK

syntax: CLOCK(0)

syntax: CLOCK(1)=expression

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the CLOCK function/statement is used for setting a time limit. It can also be used to find out how long someone has been using the system. The following options are available:

**CLOCK(0)** - This statement is used to reset the clock time to zero. It should be executed when your program begins.

**CLOCK(1)** - You will need to set CLOCK(1) equal to the number of minutes you want as a time limit, or 0 for no limit. When the time limit expires, it will be handled as a "no carrier" situation. The program will jump to the NOCARD routine.

**CLOCK(2)** - The CLOCK(2) function will return the number of seconds that a user has been connected. Divide this number by 60 to find how many minutes they have been connected.

---

**CLOSE**

Syntax: **CLOSE #device**

The CLOSE command is used to close a disk file after you are done with it. If you give a device channel with the close command, only that file will be closed. If you CLOSE by itself, all open files will be closed.

---

**COPY**

Syntax: **COPY filename [, #device]**

The COPY command is used for displaying and copying information from device to device. The first argument can be a filename, in which case, the file is opened and input is taken from that file, or it can be a device. The second device is optional. If present, all output will be routed there, otherwise it will be displayed to the modem/console. The second argument may not be another filename. If you wish to copy to a file, open the file with the OPEN command, and copy to that device.

---

**CREATE**

Syntax: **CREATE filename**

The CREATE statement is used to create an empty file on the disk. The new file can be opened and read and written to just as any other file would be. This is the only way to create a file under ACSO. Unlike some other basics, ACSO will NOT create a file using the OPEN command.

---

**CRUNCH**

Syntax: **CRUNCH**

The CRUNCH statement is used in conjunction with the MSG commands. It is used to "CRUNCH" together a message file in while messages have been killed. This allows you to maintain a sequential message file and get rid of all the blank deleted entries that might be there.

---

**DATES**

Syntax: **string=DATES**

The DATES function returns the current date in MM/DD/YY format. The input will be taken from whatever device was configured as a clock. If 00/00/00 is returned, then there is no clock in the system and the date hasn’t been set.

---

**ECHO**

Syntax: **ECHO=string1**

The ECHO statement is used to set the echo character to be used with the INPUT statement. Once the echo has been set, that character will be sent each time a user types a character when entering text. The ECHO statement in the second syntax will reset the echo to the character that is being typed.

---

**EDIT**

Syntax: **EDIT(number)**

The EDIT statement is the command used to interface ACSO with its editor. With the different EDIT statements, you can clear the editor, see how much space is free, etc. The following list gives all legal calls...

**EDIT(0)** - Clears the editor. There will be a total of 4096 bytes free after a clear takes place.

**EDIT(1)** - Enter the editor. If no data is present, the editor will start to accept input right away. If other data is present, the editor will start in the prompt mode.

**EDIT(2)** - This is a function that returns the number of bytes used within the editor. If this number equals 0 the editor is empty.

**EDIT(3)** - This is used to set the video width to be used within the editor. Any value from 1 to 255 is legal. The most often used widths are 32, 40, 64, 80, 128. All operations within the editor will be based around this width. You can also read the current width using EDIT(3) as a function.

**EDIT(4)** - This is used to set the 'back-space mode' that the editor will use. Certain modes allow more control than others. Mode 0 indicates that the actual mode is not known. The editor will work fine, but some functions will be disabled. Under mode 1, the editor will assume that the user has a 'non-destructible' backspace. This allows all the editor functions to be used and is how the local console is setup. Mode 2 tells the editor that the user has a 'destructible' backspace. Under this mode, some functions are disabled, but the editor speeds up certain other functions.

---

**FILL**

Syntax: **FILL start,length,data**

The FILL statement is used to fill an area of memory with some bytes of data. Generally, it is used to zero out memory. START is a 16 bit memory address, length is an 8 bit [0-255] number, and DATA is the byte that will be used to fill memory.

---

**FLAG**

Syntax: **expression=FLAG**

Example: **FLAG=number**

Example: **FLAG(number)=number1**

---

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the FLAG function is a low overhead way to store 1 bit information. you just need to point the FLAG function to a point in memory that you wish to store your data in, and you can manipulate as many flags as you need. each byte of memory can contain 8 flags. to setup the FLAG function, use the first syntax to point the function to a point in memory where the flags will be stored. once the pointer is setup, you can use the FLAG just like a variable using the second and third syntax for reading and writing the flags.

`---------------------------------------------------------------------`

`FOR syntax: FOR numvar=number TO number STEP number ; NEXT` appears to have same function and limits as applesoft FOR-NEXT loops.

`------------ --` appears to have same function as applesoft FREE(0) command.

`FREE syntax: FREE` appears to have same function as applesoft FREE(0) command.

`------------------------ syntax: expression=KEY(0) function` the GET statement is used to get a single keypress from the keyboard. when encountered, the system will wait until a key is pressed. the key will be returned in <varstr>. control characters will not be filtered out as they are with INPUT.

`------------ --` appears to have same function as applesoft GOTO, again with the exception that acos uses labels as targets instead of line numbers.

`GOTO syntax: GOTO label` appears to have same function as applesoft GOSUB. only thing worth noting is that acos uses labels as targets instead of line numbers.

`------------ --` the GET statement is used to get a single keypress from the keyboard. when encountered, the system will wait until a key is pressed. the key will be returned in <varstr>. control characters will not be filtered out as they are with INPUT.

`------------ --` appears to have same function as applesoft GOTO, again with the exception that acos uses labels as targets instead of line numbers.

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`------------ --` appears to have same function as applesoft GOTO, again with the exception that acos uses labels as targets instead of line numbers.

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--- ---

INFO(0) r is there a caller online? (0=no)
INFO(1) r capacity of current message file.
INFO(2) r callers baud rate /300 (1=300)
INFO(3) r/w current number of nulls.
INFO(4) w top screen stats. (1=chat, 2=exec)
INFO(5) r/w executive user online? (1=yes)
INFO(6) r checks bit map for mail/msg bases for room.

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the KILL statement can be used in two different ways. in both ways it is used to delete data. in the first form, with the filename, it will delete the file from disk. in its second form, it will kill a message within the currently active message base. after using KILL on a message, it is always a good idea to follow it with an UPDATE.

-------------------------

LEFT$ syntax: string=LEFT$(string,length) appears to have same function as applesoft LEFT$.

-------------------------

LEN syntax: expression=LEN(string) appears to have same function as applesoft LEN.

-------------------------

LINK syntax: LINK filename [,string-label] this statement will allow two program segments to be linked together. it is in this way that the problem of not enough memory is dealt with. the filename argument is mandatory and is in standard filename syntax. if you wish the execution to begin at a point other than the beginning of the module, then add on a comma followed by the name of the label in STRING FORM. the label must be enclosed in quotes or must be in a string. ex: LINK "A:MSG.SEG","BULLETINS". you must also make use the PUBLIC command within the segment you are linking to so that the labels address is available to the link command.

-------------------------

LOG syntax: LOG drivespec the LOG statement simply changes the default disk drive to the <drivespec> drive. if the drive is not legal, a BAD DRIVE SPECIFIER error will occur.

-------------------------

MARK syntax: expression=MARK(device) MARK(device)=number the MARK function will allow you to either set or check the point at which a file is doing i/o. if you want to go to the beginning of a file, you would issue a MARK(1)=0 assuming it was file 1. MARK has a second function in that it can be used to see if a file exists. normally acos will not generate an error if a file exists, so it can be hard to tell if there is one. to see if a file exists: IF MARK(i) PRINT *FILE EXISTS* CLOSE #i

-------------------------

MIDS syntax: string=MIDS(string,start [,length]) appears to have same function as applesoft MIDS.

-------------------------

MODEM syntax: MODEM(number) the MODEM command is multiple function for controlling the modem. MODEM(0)- this command needs to be issued before any other modem command is used. its function is to initialize the modem driver for later use.

MODEM(1)- this command causes the modem to hangup. all further output will be sent to console only.

MODEM(2)- this command waits for an incoming call and establishes a connection. execution will continue when either a call is connected or the user goes into local mode.

MODEM(1)- this command waits for an incoming call and establishes a connection. execution will continue when either a call is connected or the user goes into local mode.

-------------------------

MOVE syntax: MOVE start,length TO destination the MOVE statement is used to move segments of memory around. the only limitation is that only a maximum of 255 bytes can be moved at any one time, both START and DESTINATION are 16 bit memory addresses while LENGTH is an 8 bit [0-255] number.

-------------------------

MSG syntax: expression=MSG(number) MSG(number)=expression device={#MSG(number)} the MSG function is a specialized function for the acos message handling routines. once a message file has been opened via the READY command, the MSG function is used to access individual messages within the message file. the MSG function has two radically different syntaxes. under the first and second syntax, it is being used to access and set information about a message. for each message, you can maintain one number that gives information about it via the MSG function. the MSG(0) function returns the number of messages within the message file and may not be changed. to access a message, it is used as a device channel. while to show the editor COPY#B would suffice, since the message file is made up of many messages, it is necessary to tell which message you want to work with. COPY#MSG(3) would show message number three within the currently open message file.

-------------------------

NEXT syntax: NEXT similar to the applesoft NEXT statement which is used with FOR-NEXT loops but with the exception you cannot use a variable after NEXT. (NEXT X is illegal).

-------------------------

NIBBLE syntax: NIBBLE=number NIBBLE(number)=number16 the NEXT function is similar to the FLAG function in that it is a low overhead data storage method. with the NIBBLE function, you can store 4 bit numbers that have the range 0-15. use the first syntax of NIBBLE to point to the point in memory where the data will be stored. use the second and third syntax to read and write the actual data.

-------------------------

NOT syntax: expression= NOT expression the NOT operator is a boolean logic operator. it changes the value of an expression from true to false or from false to true. in boolean logic, false is considered to be zero while not false or true, is considered to be any other number. the NOT operator is most commonly used in IF statements.

-------------------------

ON NOCAR syntax: ON NOCAR GOTO label the ON NOCAR statement is used to setup a routine that can be used when carrier is lost from a remote user. when the carrier is lost, acos will then hang up the modem.
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OPEN
syntax: OPEN #device, filename
the OPEN statement is used to make disk files ready to do i/o with out a program. you open a disk file using either device channel 1 or 2, and all further references to that channel will access the file associated with it. when you are finished with the file, use the CLOSE command. this will free up the device channel for later use. if you try to use a channel that is already in use, or one besides channel 1 or 2, you will get a BAD DEVICE CHANNEL error. if the file you open does not exist, no error will be generated. if you try to read from the file, it will appear to be empty. use the CREATE command to make a file.

-------------------------
PDL
syntax: expression=PDL(number)
the PDL function is used to read one of the paddles on the system. you can read paddle zero through three. the number returned will be in the range 0-255.

-------------------------
PEEK
syntax: expression=PEEK(address)
appears to be the same as the applesoft PEEK function.

-------------------------
POKE
syntax: POKE address,value
appears to be the same as the applesoft PEEK function.

-------------------------
POP
syntax: POP
appears to be the same as the applesoft POP statement with the exception of it also can be used with the acos PUSH command.

-------------------------
POSITION
syntax: POSITION #device,number,number [,number]
the POSITION statement is used to position within a random access file. the first argument is the disk device channel number that was used to open the file. the second field is the length of each record. the third field is the record number to be positioned to. the fourth field is the offset within the record that is to be positioned to.

-------------------------
PRINT
syntax: PRINT [#device,] [expression] [,expression] ;
rules for PRINT:
  control: ',' - the comma is used to separate expressions within the print statement and will be printed literally.
  control: ';' - the semi-colon is also used to separate expressions it will not be printed when encountered, if a semi-colon is the last character in the line, then the carriage return will be suppressed.
**PUBLIC**

The PUBLIC statement is used to make a label within a program module available to other modules to link to. If you wish to link to another program module, and start execution at a point other than the beginning of the module, you will need to make that point public. You can have a maximum of 8 public labels within a program module.

**PUSH**

The PUSH statement is a sub-set of the GOSUB statement. It does not actually change the current point of execution, but places a return address in a table so that the next time a RETURN statement is encountered, control will return to the present point. A POP statement will remove the last address added to the return table.

**RAM**

The RAM function is really just a constant pointer. It just points to a free 64 bytes of memory that has been set aside for program use.

**RAM2**

The RAM2 function is the same as the RAM function except that it points to a different 64 bytes that are available for program use, generally this memory is used in conjunction with the READ, WRITE, NIBBLE and BYTE functions.

**RANDOM**

The RANDOM function is used to generate a random number within the range 0-number. A new random number will be generated every time the system goes to get input. If you take two random numbers in a row, they will always be the same. If you need more than one, use the RND$ string between. The will do a temporary re-random.

**READY**

The READY statement is used to make a message file ready for use. It is similar to an OPEN statement being used before a file is accessed. After a message file is ready, all the following references to MSG will be directed to that file. Once a message file has been made ready, it can also be used in its second syntax to ready a specific message within the file. This is generally used if further references to the file will use the device channel associated with the message base.

**READ**

The READ statement is used to load data from a file into memory in its binary form without any processing or changing. The input does not have to come from a file, it can come from the editor or a message file. It is similar to an apple dos READ command.

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
syntax:  string=STR$(number)
appears to have same function as the applesoft STR$.

-------------------------

TEXT syntax: TEXT
used to clear the screen and any window on the local console.

-------------------------

THEN syntax: THEN
same as applesoft THEN, separates statements within IF statements.

-------------------------

TIMES$ syntax: string=TIMES$
the TIMES$ function is used to get the current time from your clock. if your system is equipped with a clock, the time will be returned in a "HH:MM:SS XM" format. if your clock is in the 24 hour configuration then it will be returned in the "HH:MM:SS" format. if you have no clock, then your estimated time on will be returned. the estimated time is based upon the number of characters output and the speed they were sent. the format for estimated time is "HH:MM:SS ET". when the clock is first reset via a MODEM(0) command, the time will be "00:00:00 ET" and will advance from there.

-------------------------

TONE syntax: TONE (number,number)
the TONE function is used to generate a tone from the speaker in your computer. the first argument is the pitch and the second is the duration.

-------------------------

UPDATE syntax: UPDATE
the UPDATE statement is used to write any information about the current message base from memory out to disk. normally, certain things are buffered and will stay within memory for long periods of time. in the event of a power failure or a system reset, this data will be lost before it is written out to disk. use the UPDATE statement to force the data to be written out to disk.

-------------------------

USE syntax: USE filename [,any options]
the USE statement is used to access a routine that is external to the acos language. what happens is that the USE statement loads in an external command and transfer control to that command. the command will normally get parameters from the continuation of the line after the filename argument.

-------------------------

VAL syntax: expression=VAL(string)
appears to have same function as applesoft VAL.

-------------------------

WHENS$ syntax: WHEN$=address
string=WHEN$
WHEN$=string
the WHEN$ function is really just a data compression scheme. you initially point WHEN$ to a address in memory. at this address there must be 2 free bytes. when you read from WHEN$, the 2 bytes will be retrieved from the memory location and translated into a "MM/DD/YY" format. when you assign WHEN$ a value, the current date will be read and changed into a 2 byte compressed format and saved at the current address pointer.

-------------------------

WIDTH syntax: expression=WIDTH(number)
the WIDTH function is really an interface to the config program. it will return 4 widths that were setup as the most commonly used widths under config, along with the width that should be used for a default when the video width is not known. WIDTH(1-4) will return the 4 most commonly used widths. WIDTH(0) will return the number of the width(1-4) that should be used as a default.

-------------------------

WRITE syntax: WRITE #device,memloc,number
the WRITE statement is the opposite of the READ statement. it is used to write unprocessed binary data from memory to a file or other device. almost all the device channels can be written and none will generate errors. just specify the memory location and length to be written.

-------------------------

* end of file

[Ripco] Which 1-241 ?=menu,<CR>=abort:
Welcome to the SCI-FI Acrostic Solver. This program presents three acrostic puzzles with famous science fiction authors as the topics. The author's last name is the answer down. Each letter in the author's name is used as the first letter of a word across. By solving the words across, you will spell the author's name down. A clue for the word down appears at the bottom of your screen. Use the ^ arrow keys or Control A and Control Z @ to move from row to row. As you move up and down, a clue for the row where you are working will appear at the top of the screen. You may guess, but the program expects you to solve all words across. Correct words are marked. If you need help with a word, use ^ Control F @ to see the first letter. Once you have completed the first puzzle, the program will automatically move on to the second. If you want to skip a puzzle, use ^ Control N @ to ask for the Next puzzle. You can quit completely by using the (ESC) key. The program will ask you to confirm your choice. If you do quit, you will go back to the UPTIME Menu. If you do not, you will go back the puzzle, resuming where you left off.

--- Modifying Acrostics -@---

In this program, you will find a set of acrostics with the same theme. If you are a bit familiar with BASIC, you might look at the data statements starting at line 12000 and change them to create your own acrostics. You may want a set of puzzles for a favorite topic of yours. If digging into Applesoft is a bit beyond your wishes, you can send your suggestions to UPTIME. If we receive enough response, we will either include a new acrostic or (preferably) a set of programs that will allow you to make your own acrostics and save them on the disk for other people to solve. Let us know if you would like a utility which will print these puzzles for you as well.

^ Files Needed @

ACROSTICS -- Program used to setup the machine for SCIFI
UPTIME.TITLE -- The introduction to the program
SCIFI -- The main program
FP -- EXEC file used to exit.
GARBAGE -- A quick garbage collection routine
CURSORS -- Various cursors used by programs
]BLOCK -- The following files are the character sets used to
]SMALL STANDARD
--- screen.
]SMALL STANDARD
---
AE PRO is part of the "Professional Series" pioneered by Southwestern Data Systems. For the first time ever, there is communications software which operates similarly in all three major operating systems of the Apple II computer; CP/M, Pascal, and the native Apple DOS. The same operating set of software is available on both of them. AE PRO can be set up to simultaneously with other CP/M programs, and even some Apple II programs. The forms for these programs may operate in the same way as AE PRO, or even better.

- 3.4x Version 714/562-3670
Copyright 1982

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[ The Courts of Chaos ] - [ 312/915-0947 ]

ASCII Express Southwestern Data Systems
"The Professional" Santee, California 92071
3.4x Version 714/562-3670
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This mode of operation, your minimum buffer size will be increased to 18k bytes. AE PRO provides you with the ultimate in flexibility. Complete system parameter configuration as part of the normal macro library. Now not only do you have full macro libraries with which to make complex operations, but each separate library can completely reconfigure AE PRO. Things such as the system phone number, baud rate, parity, various menu parameters, even terminal emulation tables are part of this powerful system. Once configured, all you need to do is tell AE PRO which system to call. It will call, connect, reconfigure itself, and complete the log-on automatically. If you sit back and watch.

- AUTO-ANSWER BACK ***

AE PRO also has the ability to function as an ANSWERBACK DDS or TWX mode to forwarding mail systems such as Telenet's Telemail and many others. This mode, AE PRO will pick up the phone, and wait for the forwarding system to activate it with special HERE-IS character. AE PRO will then identify itself, and accept the incoming data into its buffer. Before the conclusion of the exchange, the forwarding computer will hangup, and AE PRO will automatically save its buffer to disk (the printer may be simultaneously supported also) and wait for the next call.

- ERROR FREE TRANSFERS ***

A wide range of send modes are provided. Everything from the simplest blind block dump, to a very complex packet-oriented error checking mode ensures that data will be able to terminals that transfer all sorts of data to practically any host computer you can find. Even the slowest or most awkward systems are easily accommodated.

- MENU DRIVEN ***

AE PRO is unobtrusive. It remains quietly on the sidelines until you request something. It can display extensive help menus if you want them, or none if you don't. An extra feature, the BRIEF mode allows the more experienced operators to run off a very large range of operations. The screen clear of announcements and prompting you may not always need.

- SOPHISTICATED INSTALL PROGRAM ***

AE PRO's install program is very user friendly and easy to use. It requires no programming knowledge to operate but encompasses all aspect of the basic set-up of AE PRO including various automatic modes which allow you to move AE PRO from one system to another of different hardware configuration. It will figure out what is there and work correctly without further attention. There are no lines numbers to change or internal programming changes to make. If AE PRO cannot adjust for a particular hardware configuration, it will inform you and automatically run the INSTALL program if present on that drive.

- MANUAL ABBREVIATIONS: ***

Throughout this manual, certain abbreviations for keys or characters may be used:

c\r carriage return key
BS backspace character (^H)
RUB returns to character
ESC Escape character
^ Control character
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found in many reasonably equipped Apple II's used in the home. It would consist of:

1. Apple II Plus, 48k RAM
2. Apple IIe, 16k RAM card - any manufacture
3. Apple mini-drives on one controller card
4. 80 Column board (optional)
5. Hayes Associates MicroModem II
6. Epson MX70/80/FT Printer
7. Parallel Printer Interface

First, like running any other new software, MAKE A COPY OF AE PRO DISKETTE. Any conventional copy program may be used. When done, put the master aside, and "use the copy". Insert the AE PRO copy disk in boot drive, and either power up the computer or type PR#6 to initiate the boot process. After a few seconds of disk activity, AE PRO will attempt to run and discover it has not yet been installed. It will display a message on the 40 column screen.

The first install--RUNNING INSTALL

Another few seconds will pass the screen will again clear and you will see:

ASCII EXPRESS "THE PROFESSIONAL"
INSTALLATION PROGRAM
FOR AE VERSION 3.4x
(C) 1982 BY SOUTHWESTERN DATA SYSTEMS

If you can ON THE DEVICE THAT WILL BE USED WITH AE PRO, answer YES.
If you cannot under any circumstance, display lower case, answer NO.
Then it will ask: CAN YOU DISPLAY IS NOW? (Y/N)
If you can, at the moment, display lower case on your 40 column screen,
answer yes. This question only affects the display of Install's menus.
Since you are running AE PRO for the first time, the screen will again clear and you will see the next display stage:

A TYPICAL QUICKIE SET-UP

For our example, we'll take a pretty "standard" hardware configuration

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No other hardware adjustments need be made.
The printer hardware may be set with the "P" option and the display slot with the "T" option. Note other user parameters have already been set for you and need not be changed at this stage.

Look at the various options of Install and their descriptions in the instructions. You need not make any further changes now, but take note of any changes you might want to make in the future after you understand this program better.

When your through looking around, use the "S" command at Install's main menu to save the changes you have made and run the program.

--- End Of Dox File #1 <=-
THE FIRST RUN:
As AE PRO is running, it configures itself for the various hardware you have installed in your computer. It should always come up onto the selected display device with:

ASCII EXPRESS "The Professional"
Version 3.4.x (c) 1982 by
Southwestern Data System

*->*
The "*->" is the system prompt as long as you are NOT currently connected to a host computer. At this point you can type "*?" or "*1" to display command menu #1 or "*2" to display command menu #2.

DIALING A NUMBER:
You type "D" to dial a number. AE PRO responds: Number?
You enter the phone number of the system you wish to call and hit return. If you change your mind, just enter a c/r (carriage return) alone to abort this command.

AE PRO has the number now and displays: AE: Dialing: 853-1212

The numbers are output to the screen as they are dialed. When dialing is completed, it reports: AE: Waiting for connect.

Once carrier is established, sign on to the system as you did before. Remember that now we are copying all data on your screen to the copy buffer, so wait for the host computer (the one you called) to ask you a question (a time when it is not sending anything) and type "*Q". AE will display something like: AE: Used-456, Free- 17009

AE: Term->
this means you have 456 characters in the copy buffer, and 17,009 unused. Remember, you are back in terminal mode at this point.

Now type "*QV". What happened. You just saw a repeat of everything you just did in signing on to that computer. This was the "*V" view buffer command. At any time, you can view the contents of your buffer.

To clear the current buffer at any time, type "*QC". AE PRO will respond:

Ok to clear? (def=n)
to make sure you really want to do this.

Answer "Y" if you do, or any other response if you don't.

Experiment with some of the other basic commands such as "*W0" to write the current buffer to disk or "*Q1" to catalog the currently disk. Remember that most any of the commands can be executed while on or off line and AE PRO will always keep you informed of your connect status and various other parameters.

If at any time you want a complete summary of current system parameters, type "*1" or "*Q1" from the terminal mode.

WHAT ARE MACROS?:
Now that you have been able to connect to a system and operate the dial option, the copy buffer and possible the printer, we'll take a brief look at another powerful section of AE PRO-Macros!

By definition, and AE PRO macro is a two key sequence that represents a whole string of characters. The first character begins with the TERMINAL PREFIX CHARACTER defined in INSTALL (the shipped default is "W". When the terminal prefix character is typed, a special mode is set within AE PRO which performs an analysis of the NEXT character you type. If that second character is not designated in the keyboard substitution table, it will be treated as the macro table either, the character you typed will be sent out to the host as-is.

Macros are numbered form 0 to ";" in this order: 0,1,2,3,4,5,6,7,8,9,;,

If you were to type "*W0" from terminal mode, the string in the zeroth element of the currently loaded macro, would be sent to the host computer.

It can consist of any data and is programmed by you in the "U" section of the program.

MACRO STRUCTURE FUNDAMENTALS:
AE PRO's macro system is quite versatile and allows you to define a whole set of basic parameters for each host computer you intend to communicate with. There are four basic pieces to the macro system structure:

1. THE MACRO LIBRARY FILE:
The library file which indexes all other macro files is "MACRO.LIB". Its sole purpose is to keep track of the other macro related data on disk, and provide quick access to it for loading or display purposes. It is this file's contents that are displayed when the "N/" command is issued.

2. THE MACRO DATA FILE:
The macro data file is that which contains all data pertaining to configuration, emulation and the actual macro elements themselves. You can create a separate data file for each host computer you intend to deal with, and each of these data files can be configured, saved or loaded from within.
APPLE II COMPUTER INFO

APPLE II COMPREHENSIVE USER'S GUIDE

We won't get thru all this now, but rather step through a basic macro set-up to get you going in the right directions. First pick a system that you can call so you have a "target" for this macro fill. We'll consider it a bulletin board for simplicity, but the same procedure would apply to any set-up. Update the phone number displayed to that of the system you are creating this macro for. Do this with the "P" command.

APPLE II will respond:
Enter new number:
Enter the phone number of the new system followed by c/r. For the purpose of demo, we'll call it "BBS Yourtown". After the number is correctly entered, the menu will re-display and the number just entered should be in place. Change any other obvious parameters dealing with that system, such as baud rate or parity in a similar manner. Once you are done with the parameters section, enter the "D" command to enter the actual macro element editing section.

EDITING MACRO STRINGS:
APPLE II will display:
#
#0 g;n
#2 yourid
#3 alt'%)y'
D  Source      source
E  Online      online
I  MicroNet    mnet
J  Smartmodem  hayes

Basicallly this is giving you a library list of the various macro files you have to choose from. Of course, this can be customized to suit your individual needs. If you were now to type "M" "A" you would be directing APPLE II to load the file for PMS Santee which on the diskette is an "S" file names "STPMS.MAC". The second field displayed is the system which the first field selection represents, and the third field is the name of the macro data file which will be loaded at that time.

APPLE II should respond: PMS Santee <macro loaded> -->

DISPLAYING MACRO PARAMETERS:
Now let's check out what we actually loaded. Type the "U" command (this is displayed on menu 2) to enter the macro configuration section. You'll see a complete display of the data parameters of that file:

Current loaded: STPMS,MAC
Phone: 561-7277!
B = Baud rate     300
D = Macros display/edit
E = Duplex        FULL
F = Data word format  E71
K = Chat mode     OFF
L = Load macro from disk
N = XON character $11="Q"
O = XOFF character $13="S"
P = Change macro phone #
S = Set terminal parameters
T = Transpose "R/RUB" OFF
U = Update from current macro
W = Write macro to disk
X = Exit to main command prompt
Z = Format screen    OFF
$ = Emulation mode ON
^ = Apple CAT port INT
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0 = Auto
1 = User routines (PRINTER.USER)
2 = 6522 parallel card
3 = Comm-card
4 = Apple serial card
5 = Apple parallel card
6 = Special
7 = CPS
8 = CCS-7728 parallel card

Current 0  New:

Choices are somewhat similar to video display options. If zero is selected and as long as AE PRO can, it will recognize the interface card installed & configure automatically. ALWAYS SELECT ZERO OPTION UNLESS YOU HAVE SPECIFIC REASON NOT TO!!

Like video, if you do not desire the auto function, or have a card not recognized by AE PRO select one of the below.

1 = User routines is a custom section, you may install a custom driver.
2 = An interface using the 6522 chip.
3 = Comm-type card in any interface using the 6850 chip.
4 = Apple HS Serial Card: Only one card that fits this - the original Apple High Speed Serial some firmware is used on these cards, but part of it dealing with linefeeds or protocol.
5 = Apple Parallel card - This is the most popular, as well as the most copied interface mode. Most printer cards designated as parallel will fall into this section, including many of the universal types of EPSON printer, its own parallel card and many others.
6 = Special is any type card using TYPE 6 FIRMWARE protocol.
Apple SSC BOARD, GRAPPLER & MICRO-BUFFER.
7 = CPS - only one card in this category - MOUNTAIN COMPUTER CPS card - may be used as serial or parallel driver. If selected you will be asked as to the mode of drive. Be careful here if using same CPS card for both modem, screen driver, as well as printer driver. Inadvertently specifying the same section as two different drivers may cause unusual results. As screen driver, it may be used ONLY in the serial mode.
8 = CCS 7728 Parallel card or Micro-Buffer system.

L=LINEFEED STRIP:
AE PRO supplies linefeeds directly to the printer at all times. This normal default mode is not dependent on the type of printer interface you are using, only the printer internal drivers themselves. If printer is doing double-linefeeds all the time when driven by AE PRO set this to YES. Otherwise set at NO.

M=PRINTER MESSAGE:
If your printer requires any kind of initialization characters be sent when accessed, set them up here. These don't include sequences which are normally designated as Firmware initialization. Things such as "I are usually firmware initialized are ineffective here. Thus it is unnecessary to send "I commands to set printer column width as that is a function of the interface card firmware rather than the printer itself. The message to the printer can be entered directly from the keyboard, including all control characters.

Current printer setup message:
Enter new message or RETURN:

U=UNATTENDED REMOTE PARAMETERS:

Of course, HELLO THERE ^S ^S ^[^ is an example. Entering c/r as the FIRST character of the line, will immediately exit this mode and leave the original string intact. Note each time printer is enabled from AE PRO these characters are sent. If you want to clear the entire contents of the printer set-up buffer, enter the printer terminator character as the first and only character.

0 = No printer installed
1-7 = Printer interface slot

Note: If you are operating install prog. totally in upper-case, or intend to use AE PRO in upper-case only, some of these characters will actually display as their upper-case counterpart. Thus {,|,},~ will be [,",],^,.

The terminal prefix key is very powerful. It commands all macro functions as well as a means of producing any ASCII character from the keyboard.

In the prefixed terminal table, you program which characters are to be converted, and to what, when preceded by the terminal prefix key, up to 16 substitutions.

NOTE: If you are operating install prog. totally in upper-case, or intend to use AE PRO in upper-case only, some of these characters will actually display as their upper-case counterpart. Thus {,|,},~ will be [,",],^,.

This is unavoidable because Apple see some ASCII values this way.

A=ADD character:
This mode allows you to add a character substitute. Either the character prefixed, or the character to be output, you can enter from the keyboard, or "0xx" as the HEX value.

D=DELETE character:
Just like the above "A" mode, except it deletes the character and its substitution from the existing table.

R=REMOTE password: A.E.

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S = Slots remotely accessible:
   4 5 6
X = Exit
Choice?
C=Ring count before answer:
   Sets the number of incoming rings before AE PRO will pick up the phone.
Values are from 1-9.
R=Remote password:
   This is the sequence of characters which must be entered by a called at the
   "ENTRY:" level of AE PRO. No reaction from AE will occur unless exactly
   the correct combination of characters is entered. Any alphanumeric
   characters including control char. are legal except "M", (c/r), "N","J.
   A maximum of six char. may be installed.
S=Disk slots remotely accessible:
   Only those slots specified here will be legal for remote access.
   If not legal, will be ignored.
--------------------------------------------------------------------------
1=SYSTEM DEFAULTS (menu 1)
B = Auto disconnect .... ON
C = Copy .................... OFF
D = Duplex .................... FULL
E = Emulation ................ ON
F = Data word format .... $N1
G = Screen formatting .... OFF
H = Chat..... ................ OFF
I = Baud rate................. 4
J = Apple CAT using aux port.. NO
K = Keyclick ................ OFF
L = XON char..... "O" ($11)
M = XOFF char.... "S" ($13)
N = Printer... ............... OFF
P = Control-show... .......... OFF
Q = Transpose "N/RUB" OFF
X = Exit Choice?

B=Auto disconnect:
   Determines the run-time default of the ":" auto-disconnect function.
C=Copy:
   Determines whether the "R" copy flag comes up on or off.
D=Duplex half/full:
   Determines if the duplex default comes up half or full.
   This may be superseded by a macro file, if active.
E=Emulation:
   Determines if the AE emulation mode ($) mode comes up on or off.
   This too may be changed by a macro file.
F=Data word format:
   Determines the default word length, parity and number
   of stop bits the modem will default at run-time.
   Can be changed by macro file.
G=Screen format default:
   Determines whether the "Z" screen format command in on or off.
H=Chat:
   Set run-time for the chat (K) mode.
   1=Baud rate (0-8):
      Sets default baud rate, also modifiable by macro files.
      0= deaf (45.5 BAUDOT) 4= 300
      1= 50 5= 1200
      2= 75 6= 2400
      3= 110 7= 4800
      8= 9600
   not all baud rates are supported by all modems and interfaces,
   consult modem or interface manuals.
J=Apple CAT using Aux port:
   Set port default. NO means the internal modem is being used.
   YES directs all I/O to external port. Macro files can also modify.
K=Keyclick:
   Set the default for the audible key-click option (*).
L=XON character:
   Sets the char. which is used to re-start a sending host temporarily on
   "hold" by the auto-save mode. Install displays the ASCII char. as well
   as its HEX value. When Install request input, you can type from the local
   keyboard or type in "$xx" Hex value.
O=XOFF character:
   Sets the run-time default of the transpose (T) mode.
T=Transpose "N/RUB":
   Sets the run-time default of the transpose (T) mode.
--------------------------------------------------------------------------
2=SYSTEM DEFAULTS (menu 2)
B=Prefixed break key:
   This is the second char. of the break key sequence. In the current
   setting, to send BREAK, you would type "^B" from within the terminal
   mode. "^B" can be defined as can this, the second char. It is
   recommended that it be a control char., as a dual control char.
   sequence is easier to type that if the second of the two is non-control.
   "^B" is easy to remember for the word break.
C= Break send time:
   The standard BREAK time is actually 250ms (milliseconds) but many systems
   may require a break to be sent for as long as 500ms (one half sec.).
   Try this way first (menu setting) and redefine it necessary.
D=Dial mode default:
   Novation Apple CAT only.
   Set the dialing default mode, pulse (rotary type) or TouchTone.
F=Screen clear char.:
   Actual screen clear char... $0C ^L  Lead-in ...
   $00 ^0 (none)
   Defines the char. when used internally will cause the display screen to
   clear.
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Note:
This serves a different purpose that the similar function in the Terminal emulation table. The emulation table converts incoming characters to those required by your display. This option, is used only by AE PRO during interaction with a screen option. The "Actual" screen clear char. above serves an additional function when used in the 40 col. screen mode. In 40 col. the defined char. determines which INCOMING char will cause 40 col. screen to display while in terminal mode.

F=Screen clear delay:
Some external terminals may require a small "settling" time directly after a clear screen before it can accurately accept further data. This value is equivalent to the time delay in milliseconds.

G=Backspace char.:
This causes your display device to move the cursor one space to the left-non-destructively. DO NOT confuse this with the key to type on your keyboard. That will ALWAYS be the BS or HOBout (left-arrow) key. There are a handful of terminals that might require a char. other than "H" to perform this act.
DO NOT CHANGE THIS FOR LOCAL SCREEN OR 80 COL. BOARD USAGE.

H=Copy ON char.:
Like the "here-is" char., the copy on char. is that which when received in terminal mode cause AE to immediately turn on its copy buffer. It is normally at "A". To disable, enter zero.

I=Copy OFF char.:
Corresponds to the copy on char., except that when encountered in terminal mode, instruct AE to turn OFF its copy buffer. Normally set to "T". To disable, enter zero.

J=Literal send mode:
This mode sets whether or not blank lines in ASCII text file are being sent. If set from ^G's caret (left-arrow) key. This determines whether or not AE should dial in the number at run-time. Note the difference between this and the "D" char.指定 the cause of the macro to be automatically dialed after a macro is loaded any time except right after boot or the first run of a session.

B=Bells after connect:
This works only if you are in auto-redial loop with a cycle number ("/x" or "/*"). It selects the number of "G"s(bells) your Apple or external terminal will sound if and when you are connected to the host. Set from 0 to whatever you can tolerate up to 255. If a high number is chosen is pressure by pressing any key.

C=Case toggle key:
Is the key in 40 col. mode which will shift between upper and lower case. Lower case is the starting default. Typing this key once, shift to upper case for the next character only. Twice in a row is a shift lock. Once again after twice returns to lower case & etc. The key is normally (and recommended) as the ESCape key.

D=Dial after loading a macro:
This determines whether or not AE should dial in the number at run-time. If set, dialing will start immediately after a successful macro load. If not set, dialing may be done only by first selecting "D" to dial followed by "M" to select macro.

E=Terminal escape key:
This key, if in terminal mode, exits that mode and takes your to the prompt "*>". You will remain connected to the host.

F=80 column board firmware:
This determines whether or not blank lines in ASCII text file are being sent. If set from ^G's caret (left-arrow) key. This determines whether or not AE should dial in the number at run-time. If set, dialing will start immediately after a successful macro load. If not set, dialing may be done only by first selecting "D" to dial followed by "M" to select macro.

B=Bells after connect:
This works only if you are in auto-redial loop with a cycle number ("/x" or "/*"). It selects the number of "G"s(bells) your Apple or external terminal will sound if and when you are connected to the host. Set from 0 to whatever you can tolerate up to 255. If a high number is chosen is pressure by pressing any key.

C=Case toggle key:
Is the key in 40 col. mode which will shift between upper and lower case. Lower case is the starting default. Typing this key once, shift to upper case for the next character only. Twice in a row is a shift lock. Once again after twice returns to lower case & etc. The key is normally (and recommended) as the ESCape key.

D=Dial after loading a macro:
This determines whether or not AE should dial in the number at run-time. If set, dialing will start immediately after a successful macro load. If not set, dialing may be done only by first selecting "D" to dial followed by "M" to select macro.

E=Terminal escape key:
This key, if in terminal mode, exits that mode and takes your to the prompt "*>". You will remain connected to the host.

F=80 column board firmware:
This determines whether or not blank lines in ASCII text file are being sent. If set from ^G's caret (left-arrow) key. This determines whether or not AE should dial in the number at run-time. If set, dialing will start immediately after a successful macro load. If not set, dialing may be done only by first selecting "D" to dial followed by "M" to select macro.

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modes except C)haracter mode. It is continuously variable during the
actual send with the "<" & ">" keys (non-shifted). Each time "<" key is
pressed the speed will slow one "notch". The reverse is true for the ">" key.
Range is 0 (full speed) to 7 (very very slow).

T=Terminal prefix key:
This key serves as the prefix to special chars and macros.

=> End of AE Doc File #3 <=

[ The Courts of Chaos ] - [ 312-915-0947 ]

[09/10/88 ] [ 10:04:21 AM ]

[ Library ] Read #(1-193)/(U)pload a file/[Q]uit:

This key, if in terminal mode, exits that mode and takes you to the
prompt "+>". You w
Copy       Printer
Auto-save   Over-back
Auto-discard Keyclick
Chat        Cat
Brief       Duplex

Above display a status report of parameters.
It can be called any time from "->" or "->" by "*"

C=Clear Buffer:
Clears any data currently in copy buffer. If brief mode is OFF,
you will be asked if you're sure you want to continue.

D=Dial or Connect:
Prepares to accept a number to dial or macro dial.
If you modem doesn't support dialing capabilities, this is ignored.
"#" & "*" are valid. Also special characters.

Special dialing command char.:
A=AutoSearch mode this char. appears as the first and only char. specified.
AE will pick up the line and search back & forth between answer and
originate until it finds a valid carrier. This auto mode ends the need
to know which you.
C=Carrier wait - use this to "pace" dial. Novation CAT modem will stop the
dialing in progress to wait for a second "carrier" or steady tone.
You would use this for "pace" or switchboard outgoing lines. Tone waiting
is auto at the initiation of the dialing
H=Hold for keypress- this will work with any dialing modem. Halts any
dialing sequence in progress, displays the fact on screen and prompts
user to type any key to continue dialing, or ESC to abort.
M=(as first and only char.)- dial from currently selected macro file.
Mx=(as first and only char.) - dial from currently selected macro file and
auto-log with element "x" of macro instead of one selected. If space is
specified instead of "x", direct AE to auto-log at all,even if auto-log
is off.
P=Pulse mode. Only effective with Apple CAT modem. Will start or continue
dialing with pulsing dial instead of TouchTone.
T=Tone mode. APPLE CAT only - Returns to Touchtone mode if previously set
at pulse mode.
V=Voice mode APPLE CAT only. If at end of dialing string, will enter voice
mode at completion of dial sequence. If encountered prior to end, will
hold for keypress and abort dialing at current position and jump to voice mode. If
dialing is completed a human answered, manually enter "#" if first char. in
dialing string the receiver will activate immediately when on-line, if first
"#" is picked up instead of first digit is actually dialed.
E=Voice mode APPLE CAT only. If at end of dialing string, will enter voice
mode at completion of dial sequence. If encountered prior to end, will
hold for keypress and abort dialing at current position and jump to voice mode. If
dialing is completed a human answered, manually enter "#" if first char. in
dialing string the receiver will activate immediately when on-line, if first
"#" is picked up instead of first digit is actually dialed.
F=FREE BUFFER SPACE:
Number of bytes currently used in the date buffer & total space remaining.
G=GET FILE FROM HOST (protocol)
Special protocol file receive mode. Note: "*" =if used with "Filename?"
will recall the last filename, optional drive params can be specified.
Example: "TEST,S6,D1" is the same as "TEST,S6&D1" either is OK.
Also c/r with "Filename?" =catalog current drive, any key displays next
page of catalog. c/r or ESC will return to "Filename?".
H=HANG UP:

Only effective with modem with auto-dialing.
If Brief is OFF, there will be a double-check to hang-up.

I=DISK COMMANDS:
CATALOG,DELETE effective. Catalog will also show remaining space on disk.
One page at a time-SPACE BAR =continue.Abdot=c/r or ESC
Delete - after specified a c/r alone will catalog disk.
J=VIEW DISK FILE:
Display any sequential text file--any key will stop or start.
ESC or c/r will abort. "<" "->"(non-shift) --fast/slow speed.
If "F" enabled file will go to printer.
Other commands same as "G" this instruction
L=LOAD FILE TO BUFFER:
Loads sequential text file into buffer. Same as "G" in editor, also
append to file is active here. If buffer size is exceeded by file being
loaded, option given to restore buffer to original (no new data) or
accept data that has been loaded so far. If latter buffer will be in
full status
M=MACRO SELECT/REVIEW:
Select "*/" or "*/" to review particular macro group.
N=MACRO SELECT/REVIEW:
Select */ or */ to review particular macro group.
P=PRINTER ON-OFF:
Turns printer on/off. If turned on will initialize printer with string
from Install pgm. "-IBM" and others are not necessary.
For most printers the 255 byte "ring" buffer is automatic, except Apple
High Speed and customer user drivers.
Q=COPY BUFFER ON-OFF:
Toggles buffer on/off. ON-all data seen on screen in terminal mode is
stored in buffer. If free space is exceeded "BUFFER-FULL-COPY-OFF
"beep" is displayed and copy flag is disabled.
R=SEND A FILE:
Sends a disk file or current memory (M) to the host. Enter filename,
and file size, or file name, if the file is available.
M=send Memory-the contents of the current buffer. Contents can be data
loaded from disk,created in editor, or captured from another host, or any
combination. If sent from memory all send modes except Christensen
protocol are supported. If Char (M) is enabled, the send is non-protocol
method. For Apple CAT modem, line sends will be appended to outgoing text's
c/r's automatically.

SEND Options-Protocol- send a file in the Christensen protocol
Standard- L= text will be sent line by line until whole file is
transferred. <*> apply here also
C = data will be sent one char. at a time, the next char. will not be sent
until echo of previous is received.
Prompt? - c/r = text will be sent in continuous stream, with specific
delay after c/r or "M" option. Any other char. typed at this level will
be taken as the char. to wait for after each line.
Example-Bulletin board- boards line prompt "?", you would enter "?", one
line of data would be sent and then wait for host to send the "."
You could also set up a manually controlled "pulse" send mode by specifying a
prompt char. that could not come from the host, and enter the char.
manually each time from your own keyboard to send another line.
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prompt char. that could not come from the host, and enter the char.
manually each time from your own keyboard to send another line.

W=WRITE BUFFER TO DISK:
Writes current buffer data contents to disk. When the data has been saved to
disk, it will automatically clear buffer.
X=EXIT PROGRAM:  Terminates and returns to operating system it was in at execution time.  
If BRIEF is on, and double-checks will be in effect.

--DISPLAY PREFIXED CHARACTERS:  
This shows its character substitute table as defined in Install pgm.  
It's a visual "reminder" to you as to the set-up.

2=DISPLAY MENU TWO:  
Will display menu 2, when pressed.

SECONDARY COMMAND MENU: Menu 2

MENU DISPLAY IS: A,B,E,K,N,O,T,U,Y,Z,1,: , +, /, S, #, : 
40 col.display/ 80 col.will be split.  Anytime connected to host, 
you can re-enter terminal mode by pressing SPACE BAR.

-> = NOT on-line  
+= ARE on-line

A=SHOW CONTROL CHARACTER ON/OFF:  
If enabled, shows the upper case equivalent of control characters being represented.  
RUBout is displayed as "^#".  Linefeed not preceded by c/r is shown.  This is useful in trouble-solving problems.

B=BAUD RATE:  
Displays current baud rate.

E=ECHO DUPLEX FULL-HALF:  
Will echo to full from half duplex, or half to full.  In full, chars, you type do not appear on your screen unless echoed by host.  In half it is assumed that host is not echoing.  If you see two of each char. you type, none or all at one time give both full or half.

K=TERMINAL CHAT ON-OFF:  
Enable or disables the interactive terminal chat mode.  
Used when typing to another terminal package, or when typing to a host which requires linefeeds after any c/r typed.  It also puts you in half duplex so out-going chars. are displayed on the local screen.  If Chat is enabled during a text file send (not protcol mode), linefeeds will be appended to each c/r sent during transfer.  If linefeeds are necessary during keyboard communication, they will be needed during transfers as well.

N=SET DELAY (0-9):  
This is used in standard send mode when line at a time with no prompt is entered.  It sets a fixed delay interval after sending each line of data.  Zero is standard, approx. 60 ms delay.  If host has no prompt to handshake, and host cannot receive incoming data without losing some of the first chars. entering, try setting this mode.  Increase by one, the number of default for each char. that seems to be lost.  This value is not used in send mode using prompted handshaking.

O=AUTO-SAVE ON-OFF:  
If a file is specified, this option will be enabled.  All disk options are valid.  c/r alone will disable command.  After name is specified the copy flag "R" is enabled.  When the buffer gets to within 1k of full, used defined XOFF char. will be sent and a wait for data sending stop will go into effect.  Data will be automatically saved to disk when buffer is full, the added name "^AX" will be added to the file name.  (we save cycle number).  First line will be .AE1, second .AE2, etc.  After save, buffer will be cleared, there will be a beep to indicate that another buffer is being started and the XON char. to the host is sent to tell it to continues sending.  This process is indefinite as long as there is space on the disk.  You are free to exchange disks between saves, should you get a full disk message during one of the saves, put in new disk, use

the "W" command to continue.  Used "^A" as the filename to save under.  This will get the files intact.  When the save is over, manually type the XON char. from the keyboard to signal the host to continue.  From then on its back to automatic mode.  By using the "^S" command you are recalling the last name used in the related buffer.

T=TRANSPOSE "H/RUB ON-OFF:"  
Left arrow sends the BS (backspace) char. which tells the host to put the host to backspace one char.  Some systems, require a RUBout char. to be sent to perform the same operations.  RUBout is not available on the Apple keyboard.  Two solutions-- One = define the char. in the substitution table, then invoke by typing "^WM" (H is a backspace, or left arrow) this retains the left arrow key.  Two if you do not want to do two keystrokes you can enable Transpose mode (T), this converts the left arrow key to send a RUBout instead of a backspace.

If Transpose OFF = "H and "WH is RUBout  
"WH is "ON = H Is RUBout and "WH Is "H

U=ENTER MACRO UPDATE/DISPLAY SECTION:  
See section on MACROS

Y=EDITOR:  
System Editor.  It has its own command chars. Contents of data buffer will remain intact and become that of the editor unless you clear it either before or after entering the editor mode.  Upon entry, display will be the buffer status and your prompt will become the next new line after the existing text.

Z=SCREEN FORMAT ON-OFF:  
Normally ON, when OFF it does not modify the display of incoming data.  When ON it will cause the screen to wrap to the next line at a pre-set column width, which you set up with the master Install pgm.  This is useful for 80 col. that does not handle its own line wrap when the column width is exceeded.  If must be OFF to use terminal emulation mode for actual emulation.

--> End Of AE Dox File #4 <=--

DISPLAY MAIN MENU:  
Displays the main command menu.

/ = AUTO DISCONNECT ON-OFF:  
Normally ON.  When ON, and AE loses carrier while connected to host it instructs AE to immediately terminate the connection by hanging up.  If disabled prompt "+" will return indicating carrier is lost, but will not have disconnected the line.  This is useful when you have to deal with unstable connections and there are momentary losses of carrier, that are so short that connection can be maintained as far as host is concerned.  Press SPACE BAR to re-enter terminal mode.  If host has hung-up, you can't re-enter terminal mode.  To end issue the "H" command.

= APPLE CAT PORT SWITCH: (INTernal/EXternal)

Normally internal.  The EXternal port will function at any baud rate, whereas the INTernal port external 212a card mode will function only at 1200 baud.

= AUTO ANSWER (data)  
This command enters the unattended remote mode.  It works only with modems capable of direct dial and answer capabilities, or externally interfaced modems that can answer independently of the Apple and control the DCD (data carrier detect) line to indicate valid carrier.

=KEYCLICK ON-OFF:  
Default is in master Install pgm.  If ON, speaker will emit a "click" for each key pressed.  Intensity of sound is adjustable.
Enter the Christensen receive mode. Will open specified filename (drive to the end (this case 10) would be deleted.

NOTE: since editor is line c/r will catalog. ESC or c/r will abort. This will delete a single line or range of lines. The line ranges are 

Display the directory of currently logged or specified drive. .D=Delete lines:(Dxx,<yy>)

C=Copy incoming data: with dot, is taken literally. To type a line that ends up with a dot as 

Take place, or are talking to host, that does not sent l/f char. after each c/r, you must disable. L/R's will be appended by AE.

% RUN INSTALL PROGRAM:

Quick update of Install program. Must operate on 40 col.ONLY. Be prepared to switch if in 80 col.

' =ANSWERBACK ON-OFF:

This is used when you wish to operate a mail receive node for automatic DDD or TWX forwarding messages. Much like auto-save in command and filenames. "O" performs exactly the same when enabled.

# =BRIEF MODE ON-OFF:

This mode determines how much operator prompting AE does when various commands or displays are issued. When OFF, its in VERBOS mode. If will ask for confirmations to various commands or display additional information to other commands when issued. It is recommended that you use this program for awhile with brief OFF and become familiar with the various options.

UNATTENDED OPERATION— Christensen Protocol:

SDS THE PROFESSIONAL,Z-TERM,P-TERM,PASCAL,CP/M

Auto-answer mode:

"*" enter mode by this command. Called received = number of call received to date since the running of pgm. Waiting for ring = pick up line and wait for carrier without seeing initial ring pulse add another ".+

Apple CAT= auto-search between 300 - 1200 baud and select the rate of the caller to operate.

Press user abort key (ESC) will exit and return to command prompt. Whether "*" is in and prompt Entry: is displayed, caller is required to type the password defined in the Install pgm. If not password or incorrect AE will hang-up and recycle. Once the correct password is issued "->" will appear at this point caller must use the following commands:

C=Copy incoming data: Will ask for filename under which to save, if ok prompt "!" will appear, signaling that AE is ready to receive data. It can handle dumps at full speed with no regard to c/r or l/f. If file already exists caller will be notified. Two "C"s received in a row will cause the copy mode to close and save it contents to disk. No further data can be received until another "*" is issued. Two "P"s in a row will abort the copy mode and return to remote. Data in buffer will be cleared and no data will be saved.

D=Directory: Display the directory of currently logged or specified drive. c/r will catalog. ESC or c/r will abort.

H=Help: Short menu of options available at this level.

R=Receive file: Enter the Christensen receive mode. Will open specified filename (drive parms accepted) and let you know when its ready to receive data. If file exists and message will number appear. If a maximum of errors is exceeded during receive, abort will be valid. Re-dial and try again.

S=Send file: Enter the Christensen send mode. Any file of any type or size may be sent to another AE PRO in this mode. The file will be opened and the caller will be told how many Christensen protocol blocks there are to send and the wait for the receiving AE PRO to signal it is ready. Ten consecutive sending errors will abort transfer. In certain type of files sending might be in LETTERED instead of NUMBERED blocks. This is a special info packet of data.

V=View ASCII text file:

Same as previous commands, display of the contents of any sequential text file. "S" will stop display any key continue. c/r or ESC will abort.

REMOTE ANSWER-BACK OPERATION:

To be used with DDD or TWX forwarded messages. "here-is" function valid here. The calling computer will dump forwarded mail at 300 baud (if DDD) or 110 baud (if TWX).

THE EDITOR:

This powerful editor can be used anytime, on-line or off-line. You can modify data, be it just loaded from disk, captured from another system or from any other source. It's really a minimal word-processor for composing letters, mail, or other data files, or creating programs or EXEC files. You have line oriented editing for listing and text display or screen oriented edition on an individual line of text. You can enter and exit the editor anytime, the editor is a "overlay".

Expanded Buffer:
The editor shares the same buffer as the capture buffer (18K).
The editor is the special mode, that enlarges it by 7K. This is the "M" command. In this mode the editor is NOT common to the main data buffer & the two may not co-exist. Therefore, to continue work on data that originally was in 

file buffer, you have to save it to disk, issue the "M" command and re-load from disk. The reverse is true on exiting. If you wish to save the editor buffer, the data must be saved to disk.

Editor Commands:

Commands may be displayed in brief form any time from within the editor, by typing .H or .? command. All editor commands are in the DOT COMMAND. Each command begins with "." as the first char. of a line of text. It can be input at any level within editor, as long as the first char and not the line being currently edited with "B" edit command. Any text NOT preceded with dot, is taken literally. To type a line that ends up with a dot as its first character, you must type two dots.


.C=Clear buffer:(Coy)

This resets the buffer to zero. You will be asked to confirm before actual clearing. If you get tired of being asked and wish to anticipate inputting the answer, you can type "CY".

.D=Delete lines:(Dxx,\cy)

This will delete a single line or range of lines. The line ranges are optional. If not specified, AE will ask. If a single line is specified as ".D4", just line 4 will be deleted. If a range is desired ".D4,6" will delete lines 4,5,6. If FROM or TO is out of range a range error will be displayed. If NO range is high, it will take the highest line number as a wild card. If you had 10 lines of data and typed ".D4,50" all lines from 4 to the end (this case 10) would be deleted. NOTE: since editor is line
oriented, it is assumed each line is ended with a c/r. If it is not, the new line will be the same number as the last line listed, AE will give a range error. Solution hit c/r once as a new line, the use ".D" to delete it. Also you can't edit a line that is not properly terminated by c/r. Example: editing data that was just captured--when the ."F" command is turned off it sets the end of file. This may not correspond to the c/r at end of line. Thus, there may be several char. left-over that are not ended by c/r.

.E=Edit line: (Exx)

This is the screen oriented edit mode. This means actual display of data you about to edit. You can move the cursor around within the line to add, exchange, or delete chars. The chars. that affect cursor movement are setable by you,from the factory they are set as follows:

"A" = cursor left one WORD. Cursor will settle on first char. of a word.
"S" = cursor left one character. Control chars. are displayed as uppercase, with "**".
"D" = cursor right one "U,(right arrow) is the same, but not redefinable.
"F" = cursor right one WORD. Same rules as "A."
"X" = cursor to beginning of line.
"C" = cursor to end of line.
"P" = prefix character. Example: If you want to enter "C" into text, you type "F". "C" normally can't be entered cause its a cursor command.
To enter "P" itself enter "PPP."
"G" = goble character. Destructive forward delete and not user definable.
"H" = delete char. to left of current cursor position. (left arrow).
If using external terminal RUBout key will do same.
These keys are not definable.
"R" = recalls original line unedited.
Use to quickly restore garbled line to original condition.
"V" = toggles insert-insert. If ON,any char. typed will be inserted into existing text at cursor position. If OFF, any char. typed will be exchanged for whatever char. cursor is currently on. As insert is toggled, the bell will sound to indicate change. Do not confuse this with the editor .I operation in the editor itself.
"Z" = zaps the current line. Completely eliminates the contents of the line being edited. If accidentally pressed, typed restore with .R. To exit this level, c/r. Note: Since editor is line oriented each line is terminated with a c/r. If not new-line prompt will be same number as the last line listed.

.F=Free space/buffer status:
Displays current number of chars. in buffer, as well as the number remaining.

.G=Get file from disk:
Load sequential text from disk. If no file is specified, AE will ask. The last file can be recalled by "A". A c/r alone will Catalog Directory can be scrolled by pressing any key. c/r will abort catalog. AE will check to see if buffer is full, and you will be asked to append/load a new file if buffer has data. If buffer has data typing anything except "A" (including c/r), will clear the buffer. If file is large for buffer message will be displayed-any key except "H" will cause whatever has just been added to the buffer to be disregarded. If "N" is entered, whatever part of the file that was loaded will remain to the end of buffer.

.H=Help:
Displays the editor menu-all options available in edit mode.

.I=Insert lines:
Enteres repeating insert loop starting at whatever line number specified. The "D" key pressing (which is usually "n" (n is the line where you're working), will change to ">n>" in insert mode. You can remain as long as you like, all dot commands are valid here. If N is included in the insert directive, the line numbers prompt will be turned OFF (this is "blind" insert mode). .I = OFF .In = ON

.L-List lines:
List line on screen. If no starting point, list will start from beginning. A specified range is possible. .lx,y= xx is starting line, yy is ending line. .N = valid and "><" > .

.Modem set (right):
Sets the column that will no longer accept input in any mode, also screen edit.
Present to 78 chars. per line, can be modified by the Install pgm.

.O=Output to printer:
Outputs specified range of line to printer. Normally line numbers are not printer, but if "N" is also entered line number will be supplied too. All insert or delete chars. are the same as .L.

.P=Put file to disk:
Write the current buffer contents to disk. Options same as .G command.

.R=Reset maximum memory:
This is a special mode that expands memory capabilities (buffer size) by just over 7k. If does this by overwriting particular parts of AE that are disposable when your NOT using them at this time. You cannot maintain your current buffer when you enter this mode. Buffer must be written to disk, mode activated and file loaded back in. Also you cannot exit the editor without first clearing your buffer. If you wish to retain data with the .C command, then you can exit. When exited, overwritten part is restored automatically. Use the mode when you just need the editor itself with a larger buffer and not on-line.

.S=String search:
Searches entire buffer for the specified string (series of chars.). When match is found, the line the match is on will be displayed on screen. To find the next occurrence on any other char. type ".I" if no match the message "Nothing" will appear. If you want to edit the line where the match was found type .E by itself, the cursor will position itself at the end of the match found, edit the line and accept with c/r. If you want more matches after edit type ".I" again to continue. If any other command is issued the operation is aborted and must be restarted.
If ."Ixx,yy" (xx=line #) is added to search, the search will begin on the line specified instead of the beginning of the file.

.X=ExIt editor:
Exits the editor and returns to main command mode. May not exit if under the ".R" mode. If not in ".R" mode, you can move back and forth between edit and main part of pgm.with no changes to the current buffer.

.Z=Search for next occurrence:
A manual recursive search mode used only after a search has been initially entered.

--- End Of AE Docs File #5 ---

PREFIX CHARACTERS-SUBSTITUTION:
This prefix char. system allow complete versatility in producing char. that are not normally available on the Apple keyboard. A prefix char. is one that signals the system that the NEXT char typed should be acted upon a special way. By prefixing, new chars. & macros can be produced without sacrificing any other keys including the prefix key itself.
Example: Install pgm. table converts "," to a ",", we don't want to lose typing a "," so we prefix the comma with TERMINAL PREFIX KEY (usually a ".W"). Now when we type ",", we actually output a ","
it to halt an operation currently in progress, do something else for awhile and then resume what was going on originally. Under normal conditions the processor does only one thing at a time. Each step takes thousands of processor cycles to complete. When that project is done, it will do the next in line. Any pgm. may take millions of these operations to do something simple like printing a menu of commands on the screen. Since a new operation can’t begin until the processors has finished the previous one, it is clear to see that multiple operations cannot normally be carried out.

---Enter INTERRUPTS---

With Interrupts, a whole new world of possibilities emerges. When an interrupt occurs, the processor is internally told to "put on hold" what it is doing and to handle the interrupt request. When the interrupt request has been fulfilled, the processor will pick up exactly where it left off.

Interrupts will allow you to operate various menu commands, status displays or status changes such as COPY ON or OFF, PRINTER ON or OFF all without losing any incoming data. There are limitations, YOU MAY NOT PERFORM DISK ACCESSES SUCH AS LOAD, SAVE OR CATALOG and expect incoming data to be intact. DOS does not allow interrupts to remain enabled while accessing the disk, so a small portion of incoming data may be lost at these times. Also, modems do not support interrupts as shipped, & may need minor modifications before they become operative in that mode, there are a handful of modems that flat out do not support interrupts at all. It is possible employ interrupts.

CPS CARD:

Hardware modification is necessary—soldering again.

MicroModem:

Hayes: It is capable of operating in interrupt mode if a certain jumper is installed on the card itself. Soldering is necessary, if not experienced let a technician do it.

MicroConnection: hardware modification is necessary—soldering again.

LYNX:

No provision for operation of the ESI LYNX in an interrupt driven mode and is completely controllable from software. No hardware changes are needed. AE will automatically enter the interrupt mode with this modem.

终端机环境表—software/input—Vt52

INPUT is always what the data will be coming in, i.e. the codes for the terminal your host THINGS it is talking to. The output is what those incoming codes are actually converted to for whatever terminal you are actually using. 80 col. boards used the DATAMEDIA terminal, the codes are always entered in ASCII HEX.

Terminal emulation table—software/input—Vt52

INPUT is always what the data will be coming in, i.e. the codes for the terminal your host THINGS it is talking to. The output is what those incoming codes are actually converted to for whatever terminal you are actually using. 80 col. boards used the DATAMEDIA terminal, the codes are always entered in ASCII HEX.
UTILITY PROGRAMS: The following utilities are on the AE disk.

MFP.A - converts Applesoft Basic programs to ASCII text.

MFP.I - " Integer " " " " "

BF8/92 - Binary blocks of data to ASCII text.

Once conversion has taken place, this text may be transferred to any practically any dial-up computer system. Typical use is to forward a program file to anyone in another part of the country via the Source or other public access time sharing system. The file would be temporarily stored on the mainframe until downloaded, once transferred back to an Apple, it may be EXEC'd into memory and appropriately saved to disk.

MFP.A Applesoft->text:
To create a text file from an Applesoft pgm. first type "Fp" and "LOAD" the pgm. from disk. Then, type "EXEC MFP.A". MFP.A is an EXEC file that manipulates internal Applesoft pointers and the LOND PFM.A, which is the pgm. that actually does the file writing.

PFM.A is not runnable—it may only be used by MFP.A.

Next, you will be prompted for the filename to create & which slot/drive you want the file written to. When the file is written to disk, you will be asked if you want to CRUNCH it. Crunching removes all spaces and punctuation from a file which has been created from a pgm. This should be on occasion when crunching is not used unless it is on files that were not created from a Basic pgm. When CRUNCH begins, it asks what the maximum line length should be. Defaults 160 chars. uploading a pgm to another APPLE you could use 255. Example: uploading to the Source you use 140, cause that is the maximum legal line length. CRUNCH doesn't cut off lines, it just keeps track of which lines are too long & how much. If you need to modify the lines, load them into the editor. The crunched version of the file will be the same name as the original with a /C appended to the end. Crunched files can be 35 percent smaller that a non-crunch'd one.

MFP.I Integer->text:
MFP.I and PFM.I do the same as MFP.A & PFM.A doe for Applesoft, except the crunch is not built into it. A crunch'd Integer file will not show quite the savings an Applesoft file will.

SPACECRUNCH:
SPACECRUNCH is the pgm which is used in MFP.A. It can just as easily be used as a stand alone to crunch previously uncrunched files, or to crunch Integer files as well.

BF8/BFD92 Binary->text
These two create text files from binary blocks of data.
The only difference between the 2 versions is their location in memory. BF8 = $800 (2048 DEC.) BFD92 = $9200 (37376 DEC.) Select appropriate the one to use depending on where the binary block resides. BLOAD the block of data into memory, then BRUN BF8 from Applesoft basic. It will NOT work from Integer. You'll be asked starting & ending addresses of the block, give address in HEX & the new filename.

CREATING A PROGRAM FILE - SCENARIO
Example: Applesoft pgm called "KLUGE" that has a binary called "KLUGE.OBJ". You want to make a file from the two and send it.

Load pgm and a look at the really long lines, break them up into two smaller ones, {being careful of internal logical operation}. Then "EXEC MFP.A" and follow the prompting and crunch it. Now "BLOAD KLUGE.OBJ". Find out its starting & ending addresses. One way is to CALL-151, TYPE AA60,AA73, the last 2 bytes of the displayed block are the file name, the first 2 will be the length. Now "BRUN BF8", again follow prompting, after all of this is done type PP to reinitialize Applesoft pointers. Now "BRUN AE" and use the Y to get into the editor. In editor type .G to get converted file into the buffer. Keep in mind that this file will eventually be EXEC'd into another APPLE. INSERT at the beginning of the file (.I0):

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EMULATION

- Load Macro File - now the first time you access any old format macro file, whether it be in Macro Configuration or main command prompt (**"** or '-' ) with the 'MW' command, an automatic update will occur and the modified macro save back to the disk under the same name.

S= Set terminal parms -
M= Change single parms -
C= cursor down (before "extra") - most terminal this will be 'J' ($OA)
F= extra - reserved for additional conversions
G= Printer OFF - this option is only operational if on the INPUT side of the emulation table.
F= Printer ON -
M= Internal command char:
G= Get another macro file and execute a specified element "**"filename> This is an instruction to GET macro file (do not use .MAC extension) & when loaded, execute element "."
S= Set current macro parms,- synonymous with "U".
<xxyy> Macro string handshaking:
Handshake whole word or phrases syntax is ":string>.
"--xx--" are required to delimit the search string.

Example: ****<Ct:70315,1305"%password'password<ok>r maug
****=< wait 3 time intervals and send ctrl-c to "wake-up"
Compuserve node 
1: = handshake (wait for) the ";" char before outputting account number
70315,1305"% account number followed by c/r
4: = wait for next ";" char before sending password
password' = send account password follower by c/r 
<ok>= wait for OK string sent by Compuserve before sending next command (assuming you have default set to exit)
maug = following the above release of the macro send the "maug" command to Compuserve to Run the MicronetApple UsersGroup bulletin board (maug)

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Tony Marques 2602 Molitor Street, Terrace, B.C., V8G-3A2, Canada

AGATE was archived as AGATEx069.SHK and contains the following members:

AGATEx069 AGATE MANUAL Tony Marques

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Apple II Computer Info

AGATE's ANSI (DEC VT100) emulation has been further refined and now also supports ANSI Music (which may someday be tuned for all computers).

OMEN (OA-A)
The option menu allows you to configure some stuff. The left and right arrow keys shift menus while up and down select settings. Pressing OA-S saves whatever you have chosen to disk.

Of the several options two need to be explained.

SAY -o This option allows you to tell AGATE the system speed of your computer. AGATE is incapable of setting or reading the system speed and so it relies on you to SAY what the system speed is. The value of the system speed controls the cursor blinking rate, the length of the tones, and most crucially timing during file transfers. This is a MOST important setting.

OMEN (OA-A)

FILE UTILITIES

Generally, AGATE ignores all file errors. AGATE is also incapable of handling volumes which are off-line so it is necessary to keep the SOURCE and DESTIN paths in the drives at the same time — no disk swapping is supported.

PIZZA AGATE supports unZIPing and is capable of unSTOREing, unSHRINKing, EXPLODING members of .ZIP archives. AGATE is currently unable to unREDUCE members, but because of it's GREAT rarity no one should miss its presence. AGATE recognizes ZIP files by their .ZIP extensions. PKZIP and ZIP are registered trademarks of PKWARE.

ALZ Before writing PIZZA, I gained some practical experience in the field of data compression by writing my own shrinker. The 12bit LZW algorithm is capable of producing compressed files smaller than either LZW/1 from SHRKit or LZW/2 from GSHRKit, and this is taking into account the overhead produced by NuFX archives. It is not as effective as SHRKit as implemented within PKZIP, but not because I am not capable.

To prevent it from becoming used as a compression utility, this implementation intentionally lacks any means of preserving file attributes including filename or filetype, and it also is devoid support for multiple members, disk archival, or other any other features.

Compressed files are named 'FILE.ALZ', but they may be renamed and any file may be decompressed which has the '.ALZ' suffix. Decompressed files create or replace 'FILE.UNC'.

VIEW The view option may be slowed with the Open Apple or stopped with the Solid Apple. The space bar pauses while ESC abort the viewing.

TRANSFER PROTOCOLS

Currently, only YMODEM and ZMODEM downloading has been implemented.

Those of you who feel that the user interface is lacking, I must agree.

YMODEM This YMODEM implementation, by default, supports YMODEM-4k as proposed by Morgan Davis, but will also fall back supporting YMODEM-1k or -CRC, and even plain XMODEM. Optionally, you may select to use 4MODEM by responding 'Y' to the initial prompt. This variety of YMODEM has been implemented within METAL and ACOS, but it is also called YMODEM-4k.

Files downloaded without BATCH (i.e. with any of the XMODEMs) will be downloaded under the name 'DOWNLOAD'. Finally, all downloads will be placed within the current DESTIN path and will replace existing files.

ESC - Abort

ZMODEM The ZMODEM implementation will again download to the DESTIN path, but it will not replace existing files. Instead, it will attempt to resume the file transfer from the end of the file, and allow you to resume incomplete, interrupted, or aborted transfers.

ESC - Abort TAB - Skip file

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AIRBALL

Typed in by the ROAD WARRIOR (6/27/89)

System requirements:
Airball will run on an APPLE IIgs with at least 768k and a color monitor. A joystick is recommended, but not necessary. To load the game, simply place the master disk in your default disk drive, then double click on the "AIRBALL.NODRAG" icon (the fastest mode of play). Or "AIRBALL.DRAGONS" (has the dragon on both sides of the screen but sacrifices some speed) the game will then load.

Introduction
"Now you're really in trouble" said the Evil Wizard. "I've warned you about trespassing in my mansion. Now, since you did not take heed of my warnings, I'm turning you into a ball of air and sending you deep into my mansion of over 250 rooms, to search for my spellbook that may give you clues on how to transform yourself into a human again. It will not be a simple task, for you, as the ball of air, have a slow leak, and you'll need to jump on the air pump in some rooms to stay inflated. Take heed, for if you pump up too much you will burst! If you are lucky enough to find the spellbook in these rooms, you'll next have to pick up the objects I've left such as: crosses, tins of beans, a Buddha, a dragon statue, a pumpkin, a flask and even crates that you'll need to get over treacherous obstacles! This is your one chance of survival", he cackles.

"Sounds easy," you laughingly boast to the evil wizard. "Oh! Does it now!" He sneers. "Well I'm also putting spikes in these rooms that will take your breath away, as well as killer pads on the floor. You have no chance for success...Hee! Hee!"

Playing instructions
At the start of the game you will be put on a pump. As long as you remain on the pump your internal pressure will increase. If your pressure becomes too high you will burst. At the bottom of the screen your pressure is represented by a yellow bar, pay close attention to this bar because this is how much air you have left until you find another pump.

Once you have acquired sufficient pressure you must search for the spellbook. Watch out for hidden dangers, as your skin is easily punctured. There are rooms that require help to gain access. (Hint: you need to find the flashlight to enter the dark room.) If you are lucky enough to find the spellbook, return it to the starting room and follow the wizard's advice.

Game controls
Tab selects keyboard/joystick
Spacebar starts game
Escape pause/restart
Delete forfeit game/aborts demo
F key speeds up movement

S key slows movement
Control Q exits game
Control S sound on/off
Control M music on/off
Up/down arrows adjust volume
Note from the Author
=====================
Ok, the reason I didn't make one of my regular cheats is that AirBall required
modifications which couldn't practically be applied on a relocatable (S16)
file. The AirBall cheat is therefore a CDA. This in itself poses a problem,
as the program must be searched for in memory (after all, it IS relocatable).
The advantages of having extra code space for the cheat in memory, however,
outweigh the AirBall-relocation-searcher problems. Because of the CDA, I was
able to actually install an extra key-command into AirBall, as documented in
the use of the cheat below.

How to Use the Cheat
=====================
First of all, put the CDA into either your /AIRBALL/SYSTEM/DESK.ACCS/ sub-
directory, or in the corresponding subdirectory on your hard drive, if you like
to launch AirBall from the Finder or whatever. Reboot your system to get GS/OS
to load the CDA.

Next, launch either AirBall.Dragons or AirBall.NoDrag. The cheat does not
completely work with the dragons version; this is because I like the no-dragons
version better. Therefore, you're better off running the no-dragons version.

Get to the point where the AirBall is being inflated on those air-blower
gizmos, and press Control-Open Apple-ESC. Select "AirBall Cheat by >>Joe
User".

If the cheat installs fine, it will make a low-pitch to high-pitch chirp and
then put you on Quit in the Control Panel. If you haven't loaded AirBall and
you try to run the cheat (or AirBall has been damaged), the cheat will wait
some time then give you a high-pitch to low-pitch chirp. (The reverse of the
other one!)

The first thing you'll notice upon returning to AirBall is that you have
infinite men. (This works on either the dragons or the no-dragons version.)

When you press Control-C, the cheat will give you a low-high chirp, telling
you it's on. Your AirBall will no longer leak air, nor will it explode when
you stay too long on the blower gizmos, and it is now INVUNERABLE to those
various pointy objects lying around the castle. Press Control-C to turn the
cheat off again, giving you the high-low chirp. (Control-C crashes in the
dragons version.)

Hints
=====
Having an invunerable cheat can get you into T-R-O-U-B-L-E. The original
author of the game (Jason Harper) didn't intend for that little AirBall to be
in some of the places you can get it to with the cheat. Therefore, if you
find yourself hopelessly stuck somewhere (happens all the time), press Control-
C to turn off the cheat. You'll die, but you DO have infinite men, and you'll
be returned to the last air-blower gizmo you touched. This is a good reason
to land on evny air-blower gizmo you see, even though with the cheat you don't
need to use them.

Have fun!

>>Joe User
Apple II Computer Info

DOCUMENT airsim.3
==============================================================================

Scenery
*--------------------------------*

APPLE MANOR (716) 654-POOF!
* THE SOUTH POLE (312) 677-7140 *
* THE OUTPOST (312) 441-6957 *
* TEMPLE OF DOOM (805) 682-5148 *

*--------------------------------* @

PADDLE 0
Alleron/Rudder, clockwise right

PADDLE 1
Elevator, counterclockwise up

/  Toggle throttle
-> Increase throttle gradually
<- Decrease throttle gradually
. (Period) 
Brake

A  Toggle alleron sensitivity
E  Toggle elevator sensitivity
F  Toggle flaps
H  Toggle HSI/VOR display
I  Instruments only
J  Look left
K  Look right
L  Level the wing
M  Move with joystick mode
N  Navigational Aid adjustments
P  Initialize radar scale

R  Radar
S  Scenery
X  Toggle alleron/rudder coupling
   Increase radar scale gradually
   Decrease radar scale gradually
0  Initialize radar scale

CTRL C  Continue the simulation
CTRL I  Initialize the simulation
CTRL T  Transport the airplane
CTRL Y  Your approach mode
[ESC] 
Pause
ESC 0-9, Q-O
Select scenes
Alert Sound Control Panel Device (CDEV)

By Joshua M. Thompson

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Disclaimer

I have tested this program extensively and found no problems with it. However, this does not mean that the program is guaranteed to function under all possible conditions. Neither Joshua Thompson nor Frontier Technologies are responsible for any damages, direct or indirect, resulting from the use of this program.

Requirements

First and foremost, Alert Sound requires System Disk 5.0.4 or higher. While it will work with any version above 5.0, versions below 5.0.4 contain some nasty bugs with resources and may cause problems in the future.

System Disk 5.0.4 is available on America Online or from your local Apple dealer.

You boot volume will need at least 14k of free space to install Alert Sound Cdev. If you wish to install the default sounds as well, then you will need an additional 40k of free space. I strongly recommend a hard drive if you don't already have one.

Alert Sound will not function with the program launcher Wings by Vitesse. It appears that Wings installs its own beep routines for its custom beeps, and disconnects Alert Sound. At this time there is no known way around this.

Management

Alert Sound is an accessory to the graphic control panel NDA which allows you to change the beep sound on your IIGS. Unlike other such programs currently available, Alert Sound works from within the control panel, and also allows you to change your beep easily and instantly (no more copying a new beep file and rebooting!). Plus, Alert Sound gives you control over the sound volume and over the pitch of the standard beep, making the old Sound Cdev unnecessary.

Alert Sound is "shareware"! You may try this program out free for one week. After that, either send in the shareware fee of $8.00 or delete all copies of this program from your system. By paying the fee, you will help support future projects from Frontier Technologies. The address can be found at the end of this file (please make all checks payable to JOSHUA THOMPSON).

See the section "Revision History" for a list of changes made in this version.

Introduction

Alert Sound is a device manager for the System Disk 5.0.4 Cdev. By adding "Sounds.Empty" into your *:System folder and renaming the copy of the file to "Sounds", you can install additional sound entries into the list of sounds presented to you. To return to the normal DS beep, select the "Standard Beep", which is always at the top of the list.

You can hear the currently selected beep sound by clicking the "Beep" button.

To change your beep sound, you simply highlight it in the list of available sounds presented to you. To return to the normal DS beep, select the sound labeled "Standard Beep", which is always at the top of the list.

The "Extras" button is for future use, and is currently dimmed.

Functionally, the Alert Sound Cdev is very similar to the Macintosh Sound Cdev.

The first thing you must do is open the Control Panel NDA (isn't this so easy?). If Alert Sound is not already selected, then click on its icon to select it. After a short pause and some disk access, a list of available sounds will appear. Below the list will be four buttons: "Beep", "Add", "Remove", and "Extras". And below the four buttons will be two scroll bars labeled "Volume" and "Pitch".

The pitch scrollbar is only useful if you are using the standard beep. It is used to change the pitch of the beep, and like the volume control, the setting is saved in battery RAM. If you are not currently using the standard beep, then the pitch control will not affect the beep.

The "Add" button is used to add more sounds to the list of those available. After clicking this button, you are presented with a Standard File dialog from which you can select the sound file you wish to add to your list (this sound file must be a standard raw data file; Alert Sound cannot currently handle any special resources such as ASIFs). After selecting the file to add, you are presented with a window in which you can type in a 1-32 character title for the sound. When you are finished typing the name, click the Add button in this new window, and Alert Sound will go to work and add the file to your list. If for some reason an error occurs, Alert Sound does its best to clean up after itself, including removing any resources which were created. However, no error message is displayed since it will be obvious if an error occurred as the new sound will not be in the list.

To remove a sound from the resource file, simply select the sound in the list of sounds, and click on the "Remove" button. The sound will be removed from the Sounds file, and the Standard Beep entry will be selected. Please note that you cannot remove the Standard Beep sound.

Due to the nature of the Resource Manager, deleting a sound does not make the
Sounds file physically smaller. However, the space used by the deleted sounds will be freed up, and as you add new sounds to the file, this space will be automatically re-used.

The limit to the number of sounds you can have is 16,383. If you need more sounds then that, then perhaps you need a larger computer!

Quirks, etc.

---------

From time to time I have noticed that Orca/Pascal programs can do strange things. The Add and Remove function of Alert Sound is written with Orca/Pascal, so if they do anything strange, please let me know so I can attempt to remedy the problem. Often times I can simply "program around" bugs in Orca/Pascal.

Make sure that any sounds you add are terminated by at least four consecutive zero bytes. If you don't, you may get a small burst of static or noise (very short, but annoying) at the end of your beep sound. Many sound programs will do this for you when you save, so check the documentation of your favorite sound program.

I have noticed that some sounds would not play completely when added to the sound list. It turned out that these sounds had spurious zero bytes in them which caused them to end prematurely. Once I filtered them out, the sounds played perfectly. At this time I have absolutely no idea why Alert Sound seems to be more sensitive to these zero bytes then some other programs.

If the program which you are currently running makes use of the Sound Tools, then Alert Sound will simply beep normally (until you exit that program). Right now there is no way to avoid this, since Apple has stated that any program using the sound tools has total control over the sound hardware.

Alert Sound does not function with the program launcher Wings by Vitesse. It appears that Wings installs its own beep routines which disconnect Alert Sound.

At this time there is no way around this.

The Future
---------

At this time, I have further plans for this CDev, including ideas such as direct digitization and the ability to handle other sounds formats (ASIF, Sound Shop, etc). However, much of this depends on how much response I get regarding the cdev.

If you have any more ideas for Alert Sound, or even ideas for other nifty programs, drop me a line at one of the places listed at the end of the docs. I'm always looking for something to program!

Revision History
----------------

v1.0 : First release.

v1.1 : Added "volume" and "pitch" controls, making the old Sound Cdev unnecessary.

Added "Remove" button to remove sounds from the resource file. Also added an "Extras" button for future use.

Wrote a built-in check so that Alert Sound will realize when it's been disconnected (ie, by Wings). When such a situation occurs, Alert Sound simply displays an error message informing the user that Alert Sound has been disconnected and cannot function.

Fixed a strange bug that caused Alert Sound to blow up when the system beeped while inside BASIC System.

About the Author

I'm very pleased to be able to say that Frontier Technologies is again releasing another fine product by Joshua M. Thompson. I am proud to have Joshua as a fine partner in a growing company. Our first product, Nupak (an uncompression utility), some parts of the Metal BBS software, and Future Vision (a networking BBS which runs under Metal).

A Personal Message from Steven Yuhasz

When troubleshooting, please refer to the Technical Reference Manual for a description of Alert Sound's permanent user parameter block. I've also found the Apple Technical Documentation (available on floppy from an Apple II disk store) to be a very helpful resource.

At this time there is no way around this.

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If you're a CDev author, please contact me! I've got a ton of room in the Sounds file where you can put just about anything, like config information, desktop patterns (hint, hint!), or whatever. I really despise a bunch of little data files all over my hard drive (aren't the Finder.Data files enough?)

Credits, etc.

Most of Alert Sound is written in assembly, except the add and remove, which are written in Orca/Pascal.

Shareware fees (make checks payable to JOSHUA THOMPSON), as well as comments, questions, or ideas, can be sent to:

Snail Mail: Frontier Technologies
2128 Scotten
Detroit, MI 48209-1667

America Online: Frontier T
I can also be reached as The Magnetic Monopole (user #2) on:

The Electronic Gateway: (313)422-8073 300/1200/2400 bps

Home of the Future Vision software

Look for more great products from Frontier Technologies in the future!
equation can have several characters, the variable to solve for must be a single letter. Two adjacent operators must be separated by parentheses for clarity. For example, X^-2 must be written X^(-2) and A^X must be written as A*(X).

MAThematical operators must be clearly stated, not implied. For example, 2X must be written as 2*X. All variables are converted to upper case by the program for consistency.

If you choose number 5 in the Main Menu, the program will generate an equation for you to solve. First it will ask you what difficulty level you want. Press a number from 1 to 8. It's not necessary to press [RETURN]. The higher the number you choose, the more complicated the equation will be.

The computer will show you the equation in the form Y=function of X and will tell you to solve for X. The computer then asks you what level of explanation you want. The four levels of explanation are the same as the first four choices in the Main Menu. After you press the number of the level of explanation you want, the computer will solve the equation.

After the computer has solved the equation, whether it is one you gave it or computer generated, the computer will display the message "Finished". Press [ESC] for the Main Menu.

To Exit ALGEBRA TUTOR and return to UpTime choose option 6 from the main menu.

NOTE: When solving a long equation that requires many steps it is possible for the screen to scroll up.

Press [']-[?] to run Algebra Tutor.

Files needed:

ALGEBRA TUTOR

---

DOCUMENT alkenstone

---------------------------------------------------------------

CONTROLS:

<RET> FORWARD

--> TURN R

<-- TURN L

'S' SOUND (TOGGLE ON/OFF)

'U' LOOK UP

'D' LOOK DOWN

'P' BIRDS EYE VIEW

OBJECT:

FIND CLUES BY LOOKING ON WALLS TO SOLVE RIDDLES...SOUND FUN??

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==============================================================================
DOCUMENT alpha.plot
==============================================================================

Alpha Plot - brought to you by MasterDisk

TYPE & DRAW SWITCHES
---------------------
CTRL-T WILL DIRECTLY ENTER THE TYPING MODE FROM DRAWING MODE.
CTRL-D WILL DIRECTLY ENTER THE DRAWING MODE FROM TYPING MODE.

EXITING ALPHA PLOT
------------------
CTRL-@ HAS BEEN ADDED AS A QUIT-KEY. <RESET> AND CTRL-C ALSO WORK,
BUT COULD LEAVE A CURSOR IMPRINT ON YOUR PICTURE. ALWAYS SAVE BEFORE
QUITTING ALPHA PLOT.

DRAWING WITH PADDLES
---------------------
A PDL-0 BUTTON-PRESS CAUSES ZERO OFFSET (SAME AS <RETURN> IN KEY
MODE).
A PDL-1 BUTTON-PRESS DRAWS A LINE & CANCELS OFFSET (SAME AS "-" IN KEY
MODE).

APPLE COLOR BUGS
-----------------
COLOR LINES (NOT SOLIDS) ON COLOR BACKGROUNDS OFTEN PRODUCE STRANGE
EFFECTS DUE TO APPLE'S COLOR-GRAPHICS HARDWARE. RESULTS DEPEND ON
WHICH COLORS YOU ARE USING...
GREEN-ORANGE OR VIOLET-BLUE COMBINATIONS WILL MAINTAIN TRUE COLORS,
BUT LINES WILL BE THICK AND STAIR-STEPPED. OTHER COMBINATIONS WILL
PRODUCE A MIXTURE OF COLORS.
FOR MOST APPLE GRAPHIC APPLICATIONS, BLACK IS THE BEST BACKGROUND
"COLOR".
RELOCATING COLOR SECTIONS WILL PRODUCE INACCURATE COLORS IF YOU MOVE
OTHER THAN 14 PLOTS LEFT OR RIGHT (ARROW KEYS). MOVING SEVEN PLOTS
LEFT OR RIGHT WILL PRODUCE COMPLEMENTARY COLORS!

TYPING NOTES
------------
CTRL-E PRINTS A LEFT SQUARE BRACKET ([). CTRL-F PRINTS A BACKSLASH
(\). CTRL-I PRINTS AN UNDERSCORE (_).
LOWER CASE VERSIONS OF THE THREE SPECIAL CHARACTERS ABOVE, AS WELL AS
@, ] AND ^, WILL PRODUCE SOME NICE ASCII CHARACTERS YOU MAY NOT BE
FAMILIAR WITH. ALSO...
CTRL-B PRINTS ALPHA PLOT'S CAPS CURSOR. CTRL-P PRINTS THE LOWER-CASE
CURSOR.
The last normal character typed on a non-black background may appear
incomplete. Type a space or CTRL-J to fix it.
To include descenders, ALPHA PLOT'S INVERSE BLEEDS AT THE TOP INSTEAD
OF THE BOTTOM. IF YOU WANT, ADD A WHITE LINE TO THE TOP OF YOUR

Inverse characters.
And we should mention...

If you are using ALPHA PLOT and want to execute a DOS command (for
example, unlock a picture file), you must exit ALPHA PLOT (CTRL-@ OR
<RESET>), TYPE THE COMMAND, AND THEN "RUN ALPHA PLOT".

SCRUNCH WILL SAVE THE MOST SPACE ON IMAGES CONTAINING MUCH BLACK OR
WHITE.
THE X & O OF THE XO CURSOR WILL BECOME DOTS AT THE EDGE OF THE
SCREEN.
R WILL NOW ROTATE THE DRAWING CURSOR FROM DRAWING MODE.
SIDEWAYS PICTURES MAY BE EASILY CREATED WITH ALPHA PLOT BY TURNING
YOUR MONITOR ON ITS SIDE (LEFT OR RIGHT OPTIONAL).
AmDOS 3.5
Copyright 1985 Gary B. Little

AmDOS 3.5 (Amateur Disk Operating System version 3.5) is an Apple II program for initializing 3.5-inch UniDisk disks in such a way that they will boot the DOS 3.3 operating system and work properly with it. To use it, first LOAD your Applesoft greeting program into memory and then BRUN the program called AmDOS INIT. After you press the space bar to clear the "user-supported program" notice, enter the slot and drive number of the disk to be formatted and then the name of the greeting program; once you do this, insert the disk to be formatted and press "F" to start the process. Formatting takes approximately one minute.

AmDOS logically divides a formatted 3.5-inch disk into two discrete 400K volumes; there are 50 tracks per volume and 32 sectors per track. Use the ",D1" and ",D3" drive parameters (as well as a slot parameter, if necessary) with your DOS 3.3 commands to select the first and second volumes of drive 1. Use ",D2" and ",D4" to select the first and second volumes of drive 2. For example, to catalog the second volume on drive 1, use the command "CATALOG,D3". As with standard DOS 3.3, if you don't specify a slot or drive parameter, the most recently specified default value is implicitly used.

Memory Map

Here is a memory map showing the arrangement of buffers below the main AmDOS code and data area beginning at $9D00:

<table>
<thead>
<tr>
<th>AmDOS (DOS 3.3) code and data area</th>
<th>$9D00</th>
</tr>
</thead>
<tbody>
<tr>
<td>------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>AmDOS 512-byte buffer</td>
<td>$9AF9</td>
</tr>
<tr>
<td>File buffer #1</td>
<td>$98A6</td>
</tr>
<tr>
<td>File buffer #2</td>
<td></td>
</tr>
<tr>
<td>File buffer #3</td>
<td>$9653</td>
</tr>
<tr>
<td>(only if MAXFILES = 3)</td>
<td>$9400</td>
</tr>
</tbody>
</table>

AmDOS 3.5 is a user-supported program. Try it for 30 days and if you find it useful, send $15 (U.S.A. funds) or $20 (Canadian funds) to Gary B. Little, #210 - 131 Water Street, Vancouver, British Columbia, Canada, V6B 4M3 (Telephone: (604) 681-3371). Otherwise, pass your copies along to others or erase them.

COMPATIBILITY

With AmDOS installed, the INIT command is disabled. If you need to initialize a 3.5-inch floppy disk, you will first have to boot a disk that contains a standard copy of DOS 3.3. To reinstall AmDOS after you've loaded standard DOS 3.3, boot from a previously formatted 3.5-inch disk.

AmDOS makes use of two data areas in the high end of memory: $BD12-$BD14 and $BEAF-$BFA7. These areas must not be used by any DOS 3.3 "patches" you might install. AmDOS also uses a 512-byte I/O buffer at $9AF9-$9CF8; the standard DOS 3.3 file buffers are installed just below this area. AmDOS sets MAXFILES = 2 (two file buffers) when it boots up; this means that HIMEM (the top of memory pointer) initially contains $9653. The DOS 3.3 default of MAXFILES = 3 is not used because that would result in a HIMEM of $9400, instead of the usual $9600, and any program that used the area from $9400 and $95FF for data storage would not work properly because the file buffer area would be overwritten. Such programs erroneously assume that HIMEM is always $9600.

If you want to run a program that expects three file buffers to be active (there are not many programs like this), enter the DOS 3.3 "MAXFILES 3" command before running it.

You can use a slightly-modified version of the FID utility program on the DOS 3.3 system master disk to transfer files to and from AmDOS-formatted 3.5-inch disks. Here are the steps to follow to make the modifications to a copy of FID:

1. UNLOCK FID
2. BLOAD FID

CALL -151
*0973:1B5
*09BF:1B5
*13ED:4C 89 16
*1414:1B1
*1689:BD 31 19 B9 8B 19 BD 32 19
*1692:BD 8C 19 8D 33 19 0D 32 19
*1698:BD 31 19 4C F2 11
*3D0G
*BSAVE FID,A2051,L4686

This file must be called "AMDOS.INFO" on your computer.
TO LEAVE THE GAME
From the TITLE PAGE: Press + or - until "Quit" appears on the banner, then press Enter.
During a CAMPAIGN: If you want to continue a game later, you can save it by pressing Alt S (be sure to have a blank disk or data disk handy). If you don't want to continue later, press S to Surrender.
Quick EXIT: At any point in the game, press Ctrl, Alt and Del keys all at the same time. This will immediately exit the program and leave you with the A> prompt.

TRAINING SESSION: Prepare for WAR!

CHOOSING A CAMPAIGN: Campaign: A series of military operations that form a war.

Start at the title page. *GO TO WAR* should be displayed on the sail. If not, press + or - until it is. Press ENTER. The sea scroll will open, revealing the titles of a variety of campaigns. Most of the scrolls in the game are about two screens long, so use the + or - keys to see all of the information.

From this point, until you press ENTER after choosing your opponent, you can go back (all the way to the title screen, if you wish) by pressing Esc.

Following the directions at the bottom of the screen, make sure the sabre is pointing to "The Bane of Oldain" and ENTER. The sea scroll will close, and when it reopens, will reveal the story behind this campaign. After you read the rules, press ENTER. The sea scroll will open, and represents the heart of a side's homeland. When either side's crown is captured the game ends.

Crown: A crown provides both supplies and repairs to ships of the same color and represents the heart of a sides homeland. When either side's crown is captured the game ends.

HINTS:
- To receive supplies or repairs from a port or a crown, you must anchor where there is a flat shore across the entire length of the port. Check a squadron's "Info" to see if it is "in port".
- The cannons can only fire out of the sides of the ship and the crew can only be on one side of the ship at a time.

HOW THE CAMPAIGN ENDS:
[1] When the last ship on either side is captured or sunk, or
[2] When the last flagship on either side is captured or sunk, or
[3] When one side captures the other side's crown, or

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At the bottom of the current screen are several command options. Throughout the AWOAS, command options will appear, usually at the bottom of the screen. To select an option, press the letter key that corresponds to the first letter of the command. In this example, the commands are as follows:

- **(T)**ime -- You can alter the speed of the campaign at any point. When Time appears on the command line by pressing T, you can choose one of four different settings. It is possible. (You may want to use a slower speed when you're making your plans, then speed up when you've got everything set.)

- **(F)**leet -- Press F and the size of both fleets will be displayed. You will see the types and total number of ships on both sides. The game will freeze while you are doing this. Press End (or any other key) when you are done.

- **(C)**lear -- Use Clear to remove old messages from the bottom of the screen. Clear will not appear when there are no messages displayed.

- **(P)**ause -- Use Pause to freeze the game. To get things going again, press any key. Clear will sometimes take the place of Pause on the command line, but pause will still work.

- **(S)**urrender -- You can surrender at any time during the game when Surrender appears on the command line by pressing S.

- **(O)**rders: Change the ship's orders. If there is more than one ship in your squadron, use + or - to select another ship. The selected ship will blink and be centered in the view frame.

- **(Z)**oom -- This option appears on the command line when you place the marker over the battle symbol of crossed sabres. Zoom gives you an exciting, animated close-up view of the battle where you can give tactical commands to your ships.

- **(P)**ractice -- Use this option to familiarize yourself with tactical operations. Practice is the same as Zoom except it is used when the enemy is not present. When you are done practicing, you can resume playing where you left off at a later time. The computer will prompt you to insert a data (or blank) disk -- just follow the instructions on the screen.

- **(G)**un : Change broadsides to fire from the other side of the ship.

- **(D)**etach -- To detach part of a squadron, press D. Use the + or - keys to select a ship and then press S to switch it to the new squadron. When you are done, press E.

- **(J)**oin -- If two squadrons are close enough, you can Join them (up to a max of 3 ships in a squad). Press J and then join them in the same way you detached a squadron. If Join is not shown at the bottom of the screen, you can use the Move to bring the squadrons closer together.

- **(L)**eave: Leave the battle, return to the battle map.

Throughout the AWOAS, command options will appear, usually at the bottom of the screen. As you move through the campaign, you can use these options to give tactical commands to your ships.

**YOUR MISSION**

Win by capturing or sinking all of the enemy's flagships while protecting your own. You can also win by capturing a black crown. In the Ancient Art of War at Sea, the most skillful player does what it takes to win the campaign with a minimum of fighting.

**COMMAND OPTIONS**

The white cross-shaped object near the center of the screen is the marker which lets you scout out the enemy squadrons and command your own. The ship and anchor symbols represent squadrons of ships. You control the white squadrons, and the enemy controls the black ones. A squadron symbol with a flag on it means there is a flagship in that squadron.

- **(M)**ove -- To "move" a squadron, press M (notice that the marker changes its shape to an open box). Move the marker, using the keyboard or joystick, to trace the path you want the squadron to follow, and press M again to mark the destination (a small white mark will appear here). The squadron will follow the exact same route that the marker took. Collisions between squadrons will not occur. Occasionally, while you are tracing a squadron's path, the computer will mark a destination before you press M. This means the computer's memory for keeping track of squadron paths is temporarily full. Once the squadron reaches the marked destination, you will usually be able to move it ahead to the final destination. This shouldn't happen very often though.

- **(I)**nfow -- Press I to see what ships are in a squadron. It will show you their names, type, the condition of their hulls, supplies on board and sailing speed. While you are in Info, you can change the speed of the squadron by pressing S. A frigate at half sails will move at the same speed as the larger ships will full sails. Press E when you are done.

You can gather limited information about an enemy squadron by placing the marker over it, and pressing I for info. To return to a long view, press View.

- **(D)**etach -- To detach part of a squadron, press D. Use the + or - keys to select a ship and then press S to switch it to the new squadron. When you are done, press E.

- **(J)**oin -- If two squadrons are close enough, you can Join them (up to a max of 3 ships in a squad). Press J and then join them in the same way you detached a squadron. If Join is not shown at the bottom of the screen, you can use the Move to bring the squadrons closer together.

- **(Z)**oom -- This option appears on the command line when you place the marker over a battle symbol of crossed sabres. Zoom gives you an exciting, animated close-up view of the battle where you can give tactical commands to your ships.

Practice uses this option to familiarize yourself with tactical operations. Practice is the same as Zoom except it is used when the enemy is not present. When you are done practicing, you can resume playing where you left off. Time will move faster when using close view.

During a long view, you will see the view frame. While you are in Info, you can change the speed of the ship by pressing S. You can change broadsides to fire from the other side of the ship by pressing (G). You can change the barrel elevation to adjust the range by pressing (A)im. The selected ship and info about it is displayed at the top of the screen. You are "on board" the selected ship and info about it is displayed at the center of the view frame. The ship and anchor symbols represent squadrons of ships. You control their names, type, the condition of their hulls, supplies on board and sailing speed. While you are in Info, you can change the speed of the squadron by pressing S. A frigate at half sails will move at the same speed as the larger ships will full sails. Press E when you are done.

Occasionally, while you are tracing a squadron’s path, the computer will mark a destination before you press M. This means the computer's memory for keeping track of squadron paths is temporarily full. Once the squadron reaches the marked destination, you will usually be able to move it ahead to the final destination. This shouldn't happen very often though.

Info -- Press I to see what ships are in a squadron. It will show you their names, type, the condition of their hulls, supplies on board and sailing speed. While you are in Info, you can change the speed of the squadron by pressing S. A frigate at half sails will move at the same speed as the larger ships will full sails. Press E when you are done.

You can gather limited information about an enemy squadron by placing the marker over it, and pressing I for info. To return to a long view, press View.

- **(D)**etach -- To detach part of a squadron, press D. Use the + or - keys to select a ship and then press S to switch it to the new squadron. When you are done, press E.

- **(J)**oin -- If two squadrons are close enough, you can Join them (up to a max of 3 ships in a squad). Press J and then join them in the same way you detached a squadron. If Join is not shown at the bottom of the screen, you can use the Move to bring the squadrons closer together.

- **(Z)**oom -- This option appears on the command line when you place the marker over a battle symbol of crossed sabres. Zoom gives you an exciting, animated close-up view of the battle where you can give tactical commands to your ships.

Practice uses this option to familiarize yourself with tactical operations. Practice is the same as Zoom except it is used when the enemy is not present. When you are done practicing, you can resume playing where you left off. Time will move faster when using close view.

During a long view, you will see the view frame. The ship in the center of the view is the selected ship and info about it is displayed at the top of the screen. You are "on board" the selected ship and can use the Move to bring the squadrons closer together. If there is more than one ship in your squadron, use + or - to select another ship. The selected ship will blink and be centered in the view frame.

- **(S)**peed: Adjust the sails to control the speed of the ship.
- **(O)**rders: Change the ship's orders.
- **(T)**ime: Adjust the speed of the game.
- **(F)**ire: Shoot the cannon.

When you place the marker over the water, you will see the view frame. The white ships on the screen are yours and if the enemy ships are present, they will be black.

The long view lets you see the relative positions of all the ships involved. This is useful for setting up your tactical plan and watching the enemy's plan of attack. Time will move faster when using close view.

During a long view, you will see the view frame. The ship in the center of the view is the selected ship and info about it is displayed at the top of the screen. You are "on board" the selected ship and can use the Move to bring the squadrons closer together. If there is more than one ship in your squadron, use + or - to select another ship. The selected ship will blink and be centered in the view frame.

- **(S)**peed: Adjust the sails to control the speed of the ship.
- **(O)**rders: Change the ship's orders.
- **(T)**ime: Adjust the speed of the game.
- **(F)**ire: Shoot the cannon.

The selected ship and info about it is displayed at the top of the screen. You are "on board" the selected ship and can use the Move to bring the squadrons closer together. If there is more than one ship in your squadron, use + or - to select another ship. The selected ship will blink and be centered in the view frame.

- **(S)**peed: Adjust the sails to control the speed of the ship.
- **(O)**rders: Change the ship's orders.
- **(T)**ime: Adjust the speed of the game.
- **(F)**ire: Shoot the cannon.
If enemy ships are present, try moving the view frame so that enemy ships are within it's boundaries and press View to see the condition of their sails and hull.

If two ships are close enough where part of one is being covered by the other, the nearest ship will become partially transparent so you can see the hidden ship.

If a ship goes far enough off the edge of the battle area, it has retreated and you can no longer use it during this battle.

If a ship is stopped, it will drift in the direction of the wind.

If the battle takes place near a shore, avoid the hidden coral reefs and shoals that occur near land.

Time moves a little slower when you are using close view than during long view. But even the slowest time setting in the game is considerably faster than the pace real sailing ships moved at during actual battles.

Time, View and Pause can be used almost always in tactical battle mode, even if they are not displayed on the screen.

If you decide you want to leave a tactical battle before it is over, press Leave. You will return to the strategy level and the battle will continue and resolve on it's own.

COMMANDING A SHIP

When you have selected a ship in a tactical battle, you are responsible for the ship's speed, course, orders and cannons. When using a command, it will be highlighted. When appropriate, additional instructions will be shown on the command line at the bottom of the screen. To leave a command and clear the command line, press Enter.

If you are using a particular command you can usually go directly to another command without having to formally leave the first command. Just type the first letter of the new command.

SAILING SPEED

The speed of the ship is determined by the condition and trim of the sails and the direction of the wind.

The trim of the sails is represented at the top left corner by the Sail Indicator. Press S and then use + or - to adjust the trim. The more sail that is put to the wind, the faster the ship will move. If no sail is shown, the ship will come to a halt. Press Enter when you are done. To quickly go to full sails, press S twice. If the sails are already full when you do this, they will switch to no sails. As a ship's sails become damaged the Sail Indicator will start to turn blue, indicating decreased effectiveness of the sails.

The wind direction Indicator is to the upper left of the Sail Indicator. The wind can blow from any of the 4 primary compass points. The Wind Direction Indicator will only appear if wind is set to "realistic" in the Options shoppe.

Momentum is a factor when moving a ship through the water. A stopped ship will take a few moments to get up to speed after giving it full sails, and a moving ship will take a few moments to stop after cutting the sails all the way back. A ship that loses momentum will drift in the direction of the wind.

To the right of the Sail Indicator is the Speed Bar. It works like a speedometer. The Speed Bar will be full when a ship is in perfect condition, using full sails and on a course that takes full advantage of the wind. Trimming the sails, sail damage and beating into the wind contribute to reducing your speed and are reflected in the Speed Bar. If the wind is set to "not realistic" in the Options Shoppe, it will not affect the Speed Bar.

CANNONS

To the right of the Sail Indicator are the controls for the ship's cannons. You decide which side of the ship the men will be on and when to fire.

If ship is not selected, it will automatically shoot at enemy ships.

GUN

Your crew can man only one side of the ship at a time. If the crew is at the cannon on the right, the ship will fire out of the right starboard side. To change broadsides, press G for Gun and your crew will move to the left cannon.

To help you visualize which direction your cannons will fire, look at the gauge at the top right of the screen. Your ship is in the center and the red square shows the direction that your cannons will fire.

AIM

Aim is available to the player only when "Manual Aim" is selected in the Options Shoppe. If Manual Aim is not selected, the crew will automatically aim the cannons for you, and this option will not be available.

You cannot aim or fire a cannon unless your crew is on that side of the ship and in firing position (standing behind the cannon with the firing punk ready). To aim your cannons, press A. Use + or - to raise or lower the aim.

FIRE

On the top of the cannon barrel is a small hole with a bit of gunpowder in it. When you order "Fire!", a slow burning punk is touched to this hole. The flame from this flash runs down to the charge base of the cannon and the cannon fires. Your crew will quickly reload and you'll be ready to fire again.

When realistic reload is selected in the Options Shoppe your crewman go through a longer procedure. The crew may skip some of the loading procedures depending on the reload time setting in your Options Shoppe.

You will see a flash on the target ship when a cannonball hits. Damage from sail hits is evident as the ship's sails become increasingly tattered. A hit on the hull will destroy cannon and crew and leave holes. Damage to sails and hull can be seen most clearly when the side of the ship is facing you.

ORDERS

Battle orders are given to ships in your squadron individually. To change a ship's orders, press O, then use + or - to rotate through the available orders. You can also press O again if you prefer, since it works the same as +. Some of the orders are not always available. While Orders is selected, time stops. (Orders is selected ?? Shouldn't that be selected ??)

General Chase: Make your best speed and course to individually attack the enemy.

Follow Ship in front: Try to maintain a single-file line if it is behind another ship.

Mimic Ship in front: Copy the maneuvers of the ship ahead.

Avoid Battle: Stay away from the action.

Course: Player controls the heading of the ship. When you select this order, a box will appear on the perimeter of the gauge at the top right of the screen. Use + or - to move the box around the gauge, and the ship will turn to the heading indicated by...
The purpose of this training session was to show you how to use the program. Since a fleet cannot function without any Admirals, eliminate their flagships when either side surrenders. Before deciding to battle, compare the strength of your squadron to the enemy. There are two types of fighters, sailors and marines. Marines shoot rifles and their orders are to take their station and fire at will. Sailors fight with swords and will respond to your commands. If two ships come together, side by side, they will grapple. If neither ship is disabled or extremely overmatched, you will have the opportunity to command the battle yourself. When you receive the message that two ships have grappled, select Zoom to take command and meet the enemy man to man. There are two types of fighters, sailors and marines. Marines shoot rifles and their orders are to take their station and fire at will. Sailors fight with swords and will respond to your commands. Two ways to win when boarding:
1. Capture the enemy's flag.
2. Defeat the enemy sailors and marines.

The Four Zones:
The raised deck at the stern of your ship is the Poopdeck. (don't look at me). The lower deck is the Quarterdeck, except for the area by the enemy ship, which is called the Railing. The fourth zone is the area around the flag. Commands: You command your sailors by assigning them to a new zone to fight in. To do this, press the first letter of the zone the sailor is in, followed by the first letter of the zone you want him to move to. For example, to move a sailor from the Poopdeck to the Flag, press F and then F. To repeat a command, press (A)gain. If you select a zone to move from and then change your mind, you can cancel it by pressing Backspace or Esc. From the Poopdeck to the Railing you can command a sailor to (C)ross. A sailor with this command will try to fight his way across the enemy ship and try to reach their flag. Once a sailor is told to Cross, he will be dedicated to that mission and you will not be able to recall him.

To begin the battle, press (A)ttack. If you would rather leave and let them fight it out for themselves, press (L)eave.

SAILING TO WAR
Now you've learned how to command squadrons, gather information on a strategic level and command battleships on a tactical level! Remember the enemy squadrons are on the move while you're getting ready to meet them, so act quickly!!
The campaign can end in any of four ways:

[1] When the last ship on either side is captured or sunk.
[2] When the last flagship on either side is captured or sunk.
[3] When one side captures the other side's crown.

After the campaign is finished, you will see the results of the battle. A chart will show how many warships on each side were sunk or captured and the number of flagship that were sunk or captured.

END OF TRAINING SESSION
The purpose of this training session was to show you how to use the program.
and they will be defeated. Cut off the head and the body will die.

Use your crown or supply ports to keep your ships stocked. A well-fed crew is an efficient crew. Use your Crown or Repair ports to keep your ships in good condition. One fresh ship is better than two badly damaged ships. If a squadron’s supplies decrease below 20%, the condition of the ships in the squadron will start to deteriorate. This is because the crew has to ration food and can't work as hard to keep the ship in good condition.

Anchor near a food port to increase supplies. Anchor near a repair port to improve condition. To be sure your ship is receiving supplies or repairs from a port, check its info after it is anchored. Instead of indicating speed, it should say "In Port". A Crown will increase both the supplies and the condition of any ship in its harbor. A ship cannot be repaired unless its supplies are above 20%. Another way to increase a squadron’s supplies is to capture enemy merchantships or intercept friendly merchantships.

Frigates are the fastest ships on the high seas. But a squadron can only sail as fast as its slowest ship. If you need speed, make sure your squadron is made up exclusively of frigates.

**Merchantships and Ports**

Ports supply or repair any squadrons that are anchored in their harbor as long as the port has supplies. When a port’s supplies get low, it will send for a merchantship to replenish its depleted stock. If a merchantship is captured before reaching port, the port will send for another merchantship but may soon run out of supplies. When a port changes colors, it is out of supplies and closed to any squadrons in its harbor.

To blockade a port, use a squadron to intercept merchantships enroute to that port. The enemy will lose supplies and your squadron will gain supplies. Frigates are effective interceptors since they are the fastest ships on the sea.

You can also intercept your own merchantships at sea to increase a squadron’s supplies. If the squadron’s supplies are below 50%, the white merchantship’s supplies will be used up and it will disappear. You cannot capture a merchantship after it reaches a port’s harbor.

You may want to send warships to escort friendly merchantships if the enemy presents a threat to your supply line.

**Rough Water/ Shallow Water**

Larger ships (flagships and ships-of-the-line) can sail through rough water without fear or damage, but frigates will often sink, depending on how rough the water is. This factor can be adjusted in the Rules scroll just before starting a campaign.

It is very dangerous to try to sail large ships through shallow water. When a flagship is lost in shallow water, the Admiral will board another ship-of-the-line that is in the same squadron. If there is none, the Admiral will go down with his ship. Frigates have no trouble in shallow water. Merchantships can sail through rough or shallow water without fear or damage.

**Wind**

A major factor in the speed of sailing ships. If wind is set to realistic in Ye Olde Options Shoppe, look for the Wind Cherub on the map to see which way the wind is blowing. Generally, the more you try to sail into the wind, the slower your squadron will move. The wind may change during a campaign. Wind speed varies from 5 to 15 knots.

If you plan to attack an enemy squadron, try to gain the wind advantage by meeting him with the wind at your back. The position of the crossed sabre symbols in relation to the wind on the strategic level determines the two squadron’s position in relation to the wind after you zoom to the tactical level.

**ORDERS** Each ship in your squadron will be given individual orders. The orders that you can give will vary depend on the situation.

- **Course**: This is used when you want to take charge of a ship’s navigation.
- **General Chase**: Make your best speed and course to attack the enemy.
- **Follow Ship in Front**: You can use this order to try to maintain a line.
- **Mimic Ship in Front**: A ship with this order will turn the same amount as the ship in front of it even if they are on different headings.
- **Avoid Battle**: If your ship gets hurt badly you may want to use this.
- **Boarding**: A ship with this command will sail to and board a disabled enemy ship. It can also board a friendly ship and make enough repairs to put it back into action.

**THE PLAYER**

- **Strategy**: Your strategy is up to you.
- **Tactics**: Your cannon range is surpassed only by Jones and Nelson. The accuracy of your shots can be increased (or decreased) by taking charge of firing the cannons yourself. (manual)
- **When grappling**, the ship's supplies are 25% marines.
- **(Sailors are swordsmen, and marines are riflemen).**

**Crew Quality adjustable in rules**

**DUKE OF MEDINA SIDONIA 1588**

- **Strategy**: Sidonia tends to pick an objective and then move towards it en masse.
- **Tactics**: Sidonia's cannons can only shoot a short distance so his ships will try to fight at close range. His Spanish galleons are slow and bulky ships that were built to carry marines. His goal is to bound your ships where he can use
his superior marksmen to defeat you. His sailors are not skilled in the art of fencing. When grappling, 25% of his crew will be sailors and 75% marines.

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<thead>
<tr>
<th>Cannon Range</th>
<th>Reload Speed</th>
<th>Accuracy</th>
<th>Seamanship</th>
<th>Crew Quality</th>
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BLACKBEARD 1718

Strategy: Blackbeard will fight anyone in sight, regardless of strength, and will never surrender.

Tactics: Beware of Blackbeard's bloodthirsty pirate crew: they are the most deadly swordsmen on the high seas! He will try to close with your ships where he can board and fight man to man. Motivated by greed, the pirates can reload their cannons faster than any other crew.

When grappling, 95% of his crew will be sailors and 5% marines.

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MARTEN Tromp 1639

Strategy: Tromp is a conservative strategist and will patiently wait for an opening or weakness in his enemy's forces.

Tactics: His cannons are more accurate and will shoot farther than any enemy leader that came before him. The skill level of his marines and sailors are average. The maximum range of his cannons is equal to yours.

When grappling, 80% of his crew will be sailors and 20% marines.

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JOHN PAUL Jones 1779

Strategy: The "Yankee Pirate" does not back out of a fight and will never give up.

Tactics: His cannons shoot farther than any other leader's except Nelson's. The fighting skills of his sailors and marines are above average.

When grappling, 80% of his crew will be sailors and 20% marines.

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HORATIO Nelson 1805

Strategy: The finest strategic thinker in the age of the fighting sail, Nelson puts great emphasis on training. His crews are very efficient, and won't tire easily.

Tactics: Nelson will try to fight your ships from a distance to take advantage of his destructive, long-range cannons.

When grappling, 75% of his crew will be sailors and 25% marines.

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occurred a century apart. it will require strategic brilliance against the French on two fronts to avoid a visit to Davey Jone's Locker!

Difficulty: 6
Time: 5

1759 QUIBERON BAY
This time, you are placed in command of a French fleet that is being hard pressed by a strong British presence. to take a bold, offensive position or a more cautious defensive position, that is the question.

Difficulty: 4
Time: 4

1805 TRAFALGAR
This battle was Admiral Horatio Nelson's most brilliant victory, but what if you were in charge of the British sea force instead of Nelson? Can you find the weak link in the French chain?

Difficulty: 8
Time: 8

1941 BISMARCK
What if the battle of the Bismarck had taken place 200 years earlier? You command the mighty Bismarck but the British are sending every available ship on a single mission: to sink you!

Difficulty: 8
Time: 4

YOU ONLY LIVE THRICE
We saved this one for last. Some players swear that this one is impossible to beat. They're wrong.

Difficulty: 10
Time: 9

[ [ DATA DISKS ] ]

A data disk is used when you want to make your own campaigns, play a campaign that you made, or resume a campaign that was previously saved. You can make as many data disks as you want. Each data disk can hold up to 11 new campaigns and 1 saved game.

PREPARING A DATA DISK
Before you start, you will need to have a blank or expendable disk to use as your Data Disk. The program will tell you when you need to insert your disk. If your disk is not formatted, the program will do this for you. Just follow the prompts to swap disks when necessary, and the computer will do the rest. Make sure the Data Disk option is set properly in the "Options Shoppe."

PLAYING A CAMPAIGN
To play a campaign that you created and saved on a Data Disk, select "Go To War" at the title page and then choose the last selection on the titles scroll, "Data Disk".

If you are using the Data Disk and you want to play a campaign on your War Disk, choose the first selection "[WAR DISK]", on the data disk titles scroll.

SAVING A GAME IN PROGRESS
A game can be saved only on a Data Disk. If there already is a saved game on the Data Disk, that game will be ERASED when you save the new game.

You can save a game in progress when the war map is on the screen and the pointer is not over a squad (any time "View" is on the command line).

When you are ready to save the game, hold the Alt key down and press S. The program will tell you when to insert your Data Disk. You will automatically

exit the game after it is saved.

RESUMING A SAVED GAME
Select "Go to War" at the title page. Select the last title on the first scroll, "[DATA DISK]". The program will tell you when to insert the Data Disk with the Saved Game.

When the program asks if you want to continue with the saved game, press 'Y'.

These are not the full docs, but is a summary of all the important info.

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-----------------------------------------------------------------------
CAMPAIGN: A campaign is a series of military maneuvers that form a war. The AAoWaS comes with eleven separate campaigns, each set at a different location and time. Using the Game Generator you can design your own campaigns.

COMMAND OPTIONS: Are used to move through the program and to give orders to your ships and squadrons. Command Options will change during the game but can usually be found on the bottom line of the screen. After Zooming, command options can also be found at the top of the screen. To use a Command option, press the key that is indicated, or if no key is indicated, press the first letter of the command.

CONDITION: Cannonfire and low supplies will decrease a ship's condition. A ship's condition is determined by her hull and sail damage. When the condition of a ship's hull deteriorates, cannons are damaged and firepower decreases. When a ship's sails are destroyed, the ship will also be disabled. When the condition of a ship's hulls is low, the ship will sink.

CROWN: A crown represents the heart of a side's homeland. A war can be won by anchoring a ship next to a Crown of the opposite color, but first, all enemy ships at the Crown must be defeated. A Crown provides supplies and repairs to ships of the same color. Crowns are supplied from inland and do not require merchantships.

DETACH: If a squadron contains more than one ship, and there are fewer than 40 squadrons on the map (including any enemy squadrons not shown), you can divide the squadron into two. Put the marker over the squadron. When "Detach" appears on the command line, press D. Use + or - to select a ship and then press S to switch it to the new squadron. When you are done, press E. The new squadron will appear just to the right of the original squadron. By typing J (join) you can move ships back to the original squadron.

ENCOUNTER: If one of your squadrons comes close to an enemy squadron, an encounter will be reported, and both squadrons will turn into the shape of crossed sabres. You can either take command of that battle by pressing Y or let the ships fight without your help. If the two squadrons start flashing, they mean they have started fighting without you. You can check the flash of both squadrons while they are flashing to see who is winning but you cannot take command after the fighting has started. To adjust the amount of time between an encounter and the start of a battle, go to "Ye Olde Options Shoppe." With "fight delay" set to medium, you have about 30 seconds between an encounter and the start of a battle.

ENEMY: The enemy are the black squadrons and ships. The enemy are lead by one of six historical military minds, each with his own style of waging war.

The mass tactics of the Duke of Medina Sidonia.
The aggressive attack of Blackbeard.
The formal tactics of Marten Tromp.
The determination of John Paul Jones.
The brilliance of Lord Admiral Nelson.
The unpredictability of Thor Foothe.

FLAGSHIP: Is a strong ship-of-the-line with an Admiral on board. It is the most powerful ship on the high seas. Sinking the last flagship on either side wins the campaign.

HELP: Is just above the Command Line at the bottom of the screen. It appears when using certain commands to tell you what to do.

INFO: To get information about a squadron, move the marker over it until you see "Info" on the command line. Then press I. If two or more squadrons are directly over each other on the map, you will get information on only one squadron. Using the Info command, you can learn the name of the ships in the squadron, their type, condition and supplies. You can also adjust their sailing speed.

JOIN: If two squadrons are close enough, you can Join them (up to a max of 3 ships in a squadron). If "Join" is not shown at the bottom of the screen, you can use "Move" to bring the squadron closer together. Put the marker on the other squadron. When "Join" appears on the command line, press J. Use + or - to select a ship and then press the Space bar to move it to the new squadron. When you are done, press E.

MARKER: Is represented by the white crosshairs on the screen. Use the arrow keys or joystick to move it. Place it over the ship. By typing F (flagship) you can move information, give orders or move the bar to move it to the new squadron. When you are done, press E.

MERCHAND: Merchantships supply ports. Warships can intercept enemy merchantships, capturing their supplies and sinking them. Your warships can also get supplies by intercepting white merchantships. If the intercepting squadron's supplies are above 50%, the merchantship will have enough supplies left to continue on it's destination.

MESSAGES: During a campaign your ships will sometimes report information to you. Messages will appear at the bottom of the screen just above the help line. Up to two messages can be shown on the screen at the same time. When a new message comes in, the previous message will move down and the new message will take it's place on top. To remove the messages on the screen, press C to clear them. Reports and sightings are given in terms of map location, not in terms of the squadron sending the report.

Some of the messages are:

apple II computer documentation resources (a2_docs_documentation.msw)
documentation folder -- www.textfiles.com/apple/ -- 18 september 2000 -- 73 of 1262
x Enemy Sighted: One of your squadrons has visual contact with an enemy squadron. It will also report the enemy squadron's location on the map. *NOTE* Occasionally, tired sailors ill report a false sighting.

x Encounter: Your squadron is preparing to fight another squadron. You have a short time after receiving this message to Zoom to the battle before the fighting starts if you ant to command your ships individually.

x Fighting: The two fighting squadrons will flash to show that a battle is in progress. You cannot Zoom in on a squadron while it is fighting.

x Battle Won/Lost: The results of fighting will be given when you don't Zoom.

x Flagships: The capture of a flagship is a major event. When a flagship is won or lost, it will be reported.

x Lost in Rough Water: Rough water is a dangerous place for frigates to be.

x Lost in Shallow Water: Shallow water is a dangerous place for ships-of-the-line and flagships.

MOVE: To move a squadron, place the marker over a friendly squadron until "Move" is shown on the command line, then press M. Now trace the route you want the squadron to take. When you've reached the end of the route, press M again. A white dot will appear there, marking the destination.

PRACTICE: To improve your skills as a tactical commander, move the marker over one of your squadrons and press P. You can then practice using the combat encounters.

x PORT: A supply port will provide supplies to any ship anchored in its harbor. When a port receives supplies, it will gradually transfer them to any ships in port. Naturally, it will take longer to receive supplies in a crowded port. When a port runs out of supplies it will change colors and you will here a tone.

x ENEMY ADMIRAL: You may wish to change the rules of a campaign for variety.

RULES: Some rules will change with each campaign. You will see the rules scroll before a campaign begins. Advanced players may wish to change the rules of a campaign for variety.

TIME: The time option controls the speed of the game. Time can be varied during the game by your discretion. During Zoom the time setting uses a variable time speed. If all the ships in the battle are slowed down because of wind, damage or other factors, time will speed up to a superfast rate. This speeds up the pace of the game during slow periods.

ZOOM: After one of your squadrons reports an Encounter, and before they report a Battle, you can zoom down to the scene of the battle and take command of the individuals ships. To zoom, place the marker over one of the squadrons in the encounter and press Z. The amount of time between an Encounter and a Battle can be adjusted in Ye Olde Options Shoppe. If you don't zoom in time, the squadrons will begin fighting one their own, and you won't be able to zoom into that battle.

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--------------------------------------------------------------------------------
THE POINT OF ANKH IS TO PICK UP ALL THE TRIANGLES THAT ARE NOT RIGHT. ---- ! \ AND BY GOING INTO ALL 64 ROOMS. \ " \ ----

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HOUDINI SOFTWARE

1. THE MAP

KEY: - = PASSAGE
! = PASSAGE
# = ROOM
@ = ROOM WITH TREASURE
#’s = ROOMS

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2. THE KEYS

FIRE
MOVE
S
D
F
E
I
J
K
L

TO PICK UP THINGS, HOLD DOWN CONTROL, AND PUSH THE FIRE KEY FOR THE DIRECTION YOU WANT. TO MOVE SMALL DISTANCES, HOLD DOWN CONTROL AND PRESS THE MOVE KEY FOR THE DIRECTION YOU WANT. V CONTROLS THE VOLUME, ESCAPE PUTS THE GAME ON HOLD.

3. THE PIECES

DAGGER: SHOWS YOU HIDDEN TRIANGLES.
BLOCK WITH DOT IN MIDDLE: EITHER SHOOTS, OR CURVES SHOT
BLOCK WITH DASH IN MIDDLE: MOVES WHEN SOMETHING IS SHOT.
SMILEY FACE: OPEN DOOR WHEN SHOT
BLOCK OUTLINE: OPENS DOOR WHEN SHOT OR HIT WITH PICKER UPPERS. SOME ARE USELESS.

4. THE GAME

THIS IS ACCOMPLISHED BY OPEN DOORS (OBVIOUSLY). DOORS CAN BE OPENED BY SHOOTING A SMILEY FACE OR A BLOCK OUTLINE. IF THE BLOCK OUTLINE EXPLODES, DON'T WORRY. IT WASN'T NEEDED. WHEN YOU HEAR A BEEP, YOU KNOW THAT THE DOOR WILL OPEN, EITHER IN THE ROOM THAT YOU ARE IN, OR SOMEWHERE ELSE. MY FIRST RULE FOR THE GAME IS SHOOT FIRST, ASK QUESTIONS LATER. WHENEVER YOU SEE SOMETHING IN A ROOM, SHOOT IT. IF THERE IS NO BEEP, OR IT DOES NOT EXPLODE, TOUCH IT WITH YOUR FEELERS. THERE ARE MANY TRIANGLE IN THE ROOMS. IF THEY ARE NOT RIGHT TRIANGLE AND ARE IN ONE OF THE TREASURE ROOMS, THEN PICK THEM UP. IF THEY ARE RIGHT TRIANGLES, THEN SHOOT THEM. IF THEY DON'T EXPLODE, THEN PICK THEM UP. THEY ARE GOOD FOR SOMETHING. WHEN YOU HAVE ALL THE PIECES, AND HAVE BEEN IN ALL THE ROOMS, THEN YOU WIN. A COUPLE OF HINTS... IN THE NUMBERED ROOMS, SHOOT THE OUTLINE BLOCK, THEN THE SMILEY FACE TO OPEN THE DOORS TO THE NEXT NUMBERED ROOM. WHEN YOU GET THE RIGHT TRIANGLE, DROP IT IN THE ALCOVE IN ROOM ZERO WITH THE NON-RIGHT TRIANGLE. IN THE PIANO ROOM (WHEN YOU SHOOT THE BOX, IT PLAYS MUSIC), DROP ALL THE NON-RIGHT TRIANGLES, AND SHOOT THEM SO THE MUSIC THEY MAKE IS THE SAME AS THE MUSIC THE BOX MAKES WHEN SHOT. IN THE ROOM WHERE THE TWO THINGS SANDWICH YOU BETWEEN THEM, PUSH OUT YOU PICK UP BUTTONS AT THEM. THIS WILL PUSH THEM OFF, AND YOU WILL BE ABLE TO MOVE TO ANOTHER ROOM. ALSO, TRY NOT TO HAVE A DOOR CLOSE ON YOU. THIS HAS HAPPENED TO ME ONCE OR TWICE, AND USUALLY WHEN I WAS ABOUT TO WIN. TO GET STUCK IN A DOOR, YOU STOP IN ITS PATH, OR MOVE THROUGH IT'S PATH, AND NOT GET THROUGH FAST ENOUGH. SOMETIMES, YOU HAVE TO MOVE THROUGH A MOVING DOOR'S PATH, BUT TRY NOT TO GET CAUGHT.

5. CHEAT

TO CHEAT AT ANKH, TYPE THE FOLLOWING:

BLOAD ANKH <RETURN>
CALL-151 <RETURN>
6AEB:EA EA <RETURN>
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This will give you unlimited energy.
**Apple II Computer Documentation Resources**

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**Apple II Computer Info**

APBA Major League Players Baseball

[Dox by Pac-Rat]

[ Complete Documentation ]

---

**- INTRODUCTION**

APBA Major League Players Baseball puts you in the dugout as a manager of your favorite baseball team! The game is intended to be played by two players, each managing one team, but it can also be played by one player managing both teams. With the draft disk, you can set up your own league and organize teams, with players of your own choice.

The game simulates much of the complex decision making that goes on in a real baseball game. Before the game starts, you choose which teams you want to manage, and then your starting line-ups. Once the game begins, the defensive manager has several strategic options of his own. Bringing in relievers, pinch hitting, intentional walks, hitting and running are just a few of the strategic decisions to be made. Sometimes you will even have to make quick base running and throwing decisions, just like in the real game.

---

**- SYSTEM REQUIREMENTS**

To play APBA Major League Players Baseball you must have an Apple //c or //e with 128K RAM and an 80-column card, two 51/4 floppy disk drives, and a monitor.

---

**- QUICK START** (for complete game set-up, check next section)

Starting from the Rules and Data Screen, follow the instructions below and you will soon be playing APBA Major League Players Baseball. The program will prompt you when you need to change disks. If at any point you make an inputting error, you can often back out of it by pressing the [ESC] key.

1. Press [RETURN]. The Team Selection Screen will appear.

2. Press [SHIFT] and [1] simultaneously. Wait for the division champions team name to appear under HOME.

3. Press [B].


6. Press [L].

7. Press [1]. The visiting team's starting line-up will appear.

8. Press [RETURN]. The home team roster will appear.


---

**- RULE, TEAM AND LINE-UP SELECTION**

Once BASEBALL is loaded, you can start playing with just a few keystrokes.

**[Rules and Data Screen]**

Using [SHIFT] [1], choose to play with a designated hitter (DH) or without a designated hitter. Your choice is highlighted. The DH option has been implemented according to the Official Baseball Rules. If you choose to play with a DH, certain managerial moves may nullify your right to use a DH (for example—announcing a defensive player at the DH spot in the batting order after the game has begun). If you attempt to make such a move, a warning will appear on your screen.

Using [SHIFT] [2], choose the length of time available for dynamic decisions—Professional (10 seconds), Semi-pro (15 seconds), or Amateur (20 seconds). Your choice is highlighted.

Using [SHIFT] [3], choose to play with or without sound. Your choice is highlighted.

Using [SHIFT] [4], choose the speed at which you wish the outcomes to show Regular for dramatic play, Quick for "no pause" play.

Using [SHIFT] [5], determine which Data Disk you have inserted.

**[Team Selection Screen]**

Teams are arranged by organization, league, and division. The game comes with 676 players organized by the leagues and cities in which they play. You can play these teams immediately. To select a team, follow these steps.

1. Choose the organization you wish to play with by pressing [1] through [6]. (Before drafting your own teams, you will have only one choice: PROFESSIONAL BASEBALL.) Your choice will be highlighted.

2. Select a division using [A] through [L]. (Before drafting your own teams, your choices are [A], [B], [G], and [H].) Your choice will be highlighted. The teams in this division will appear under TEAMS with their won/lost records.

3. Select a team to play with using the up/down arrow keys. Your choice will be highlighted.

4. Indicate whether this team is the home or visiting team. Press [SHIFT] [1] to choose the home team and [SHIFT] [2] to choose the visiting team.

---

11. Insert the Play By Play diskette in drive 2. Press [RETURN] to continue. The Game Screen will appear. (Press [ESC] if you wish to shorten the National Anthem)

12. Press [P].

13. Press [RETURN]. You're playing this year's league championship!

Use the 'Quick Reference Card' for a summary of your managerial options.

Important Notes: [CONTROL] [X] will end the game at any time and start over.

---

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5. Repeat these steps to choose a second team.


**Important Notes:** You may change your mind about which teams to play for as long as you remain on the Team Selection Screen. Simply follow steps 1-4 above. Your new selection will replace the team you had previously selected.

To play teams from different years or Data Diskettes against each other, load the first team following the procedure above, then switch Data Diskettes, press [SHIFT] [5], and load the second team.

You may play any team from any organization against any other team. You may even play a team against itself.

**[The Line-up Screen]**

The name and year of the team is in the upper right hand corner. The line-up will be displayed in the upper left of the screen. The roster for the team appears in the lower half of the screen.

On the roster, non-pitchers start at letter A and proceed down; pitchers start at letter Z and proceed up. Non-pitchers are displayed with last name, primary position (Pos), fielding rating at that position (D), the side they bat from (B), and running speed (Sp).

Pitchers are displayed with last name, the arm they throw with (T), pitching grade (always as a starter, if they started during the actual season) (Gr), and control letters (Ctrl). Grades of relievers are marked with an asterisk.

See THE PLAYER SCREEN for a further explanation of player performance ratings.

**[Announcing a Line-up]**

You may either use a pre-stored line-up or announce players individually.

**[Announcing a Prestored Line-up]**

Space has been provided for five prestored line-ups in the upper right hand corner of the screen. A frequently used line-up for each team is provided as choice 1. After you have saved your own line-ups they will also appear on the list. To load a prestored line-up:

1. Press [L].
2. Select a number from [1] through [5].

Loading a line-up erases all previously announced players.

The names of the players on the starting line-up are displayed, followed by their defensive position and fielding ratings. Totals are given for team and infield fielding ratings.

If a designated hitter (DH) was stored in the line-up and you are not now playing with the DH, the DH will be dropped from the line-up and the pitcher, if there was one, will appear batting ninth. If a DH does not appear in the prestored line-up and you have chosen to play with one, the pitcher, if there was one, will be moved out of the batting order automatically, and you will need to select a DH.

**[Announcing Individual Players]**

To help make line-up decisions, you can display the complete player statistics.

1. Press [D].
2. Press either [A]...[Z] or the batting number [1]...[9] of the player to be studied.

The Player Screen will appear. For a complete description of the player ratings, see THE PLAYER SCREEN section.

**[Adding a Player to the Line-up]**

After selecting a player to announce, follow the steps below to add him to the line-up:

1. Press [A] to start an announcement.
2. Press [A]...[Z] to select the player.
3. Press [1]...[9] (or [P] if you elected to use designated hitters) to select his place in the batting order.
4. Press [1]...[9] (or [D] if you elected to use designated hitters) to select his defensive position.
5. The selected player and his ratings will appear in the line-up and his name will be highlighted in the roster.
6. Repeat this process until you have a valid defensive line-up.

**[Correcting a Line-up]**

Check the line-up to make sure it is the one you want. If the line-up is incorrect, press [R] for Remove followed by [1]...[9] or [P] to remove the incorrect player. Announce the correct player in the vacant position.

**BASEBALL** will tell you if your line-up is invalid. Examples of invalid line-ups: you have entered two players at the same position; you are missing a player; you have an ejected or injured player in the line-up; you have not designated a defensive position for a pinch hitter, a pinch runner, or his replacement. If your line-up is invalid, make the correction as described above.

After you have corrected an invalid line-up, if there is still a player marked with an asterisk, you must [M] Move that player to his proper defensive position to finish validating the line-up, even if it appears that he's already there. You may also use the [M] Move command to change the defensive position of a player without changing his line-up position.

Before finalizing your line-up, you may make as many changes as you want.

**[Saving a Line-up]**

1. Press [S].
2. Press [1]...[5] to choose the line-up number. If a lineup already exists at that position, the new line-up will replace the old line-up.
3. Enter a name for the line-up.
4. Press [RETURN].

This line-up will be saved to the data diskette. You will be able to load this line-up with the [L] Load command in the future.
Important note: [ESC] lets you back out of any incomplete command.

[Completing the Line-ups]

Announce a line-up for each team. When you press [RETURN] after announcing the second line-up, you are prompted to insert the Play By Play diskette. Insert this disk, press [RETURN], and the Game Screen will appear.

- PLAYING THE GAME

[The Game Screen]

The top part of the Game Screen displays the two line-ups, the line score with run, hit, and error totals, the inning, count, and number of outs, and a description of each play as it occurs. The current batter is highlighted and after the first inning the lead-off batter is marked with an asterisk.

To the left of the "INN," on the same line, is a space reserved for up to two scorer messages. The messages and their meanings are:

E1...E9 - Error on the defensive player indicated
WP - Wild pitch
PB - Passed ball
EAC - Sacrifice bunt or fly
FC - Fielder's choice

On some complex plays, further scoring messages appear in the description of the play.

The lower part of the Game Screen displays the diamond, the defensive alignment, the current batter (on the appropriate side of the plate), and base runners with their running speed. You will also see the base running results of each play, partial game statistics for the current pitcher (innings pitched, hits, earned runs, walks (BB), strike-outs), partial game statistics for the current batter (at bats, runs, hits, RBIs), the pitch, bat, and time-out indicators, and selected managerial calls when in effect ([IN], [STRETCH], [HOLD], [HIT & RUN]).

Important note: A HOME RUN graphic will flash repeatedly on the scoreboard after a home run is hit. You can stop the flashing by pressing any key.

Below or next to each defensive player's name are one or more ratings:

For all defensive players:
- The first number is the fielding rating for that player at that position.
- The arm he throws with (R-right, L-left) and his current pitching grade.
- His throwing arm rating for steal attempts.
- Their arm ratings.
- For offensive players you will find:
- His batting type and platoon factor.
- For base runners:
- Their base speed ratings.

See THE PLAYER SCREEN for complete explanations of player performance ratings.

[Managerial Decisions]

APBA Baseball can be a game of managerial coaching decisions. Choosing the team and the line-up are only the first of these decisions. As you play the game, the following options are available to you:

Options for the defensive manager <Team in field>

Before [P] Pitch:

[H] Hold - With a runner on first base, holding him on slows the runner somewhat for stealing and base advancement and provides the chance for him to get picked off. Of course, with the first baseman nearer the bag, it is easier to hit through the right side. Holding on is automatically in effect if there is a runner on first and no one on second, unless the defensive manager turns it off by pressing [H]. Press [H] again to reinstate HOLD.

[I] In - With a runner on third base, [I] draws the infield in and increases the chance of the play being made at home on a ground ball. If you play IN, though, more ground balls will get through the infield for hits. IN must be called before each pitch to remain in effect.

[S] Stretch - With a runner at third base, pressing [S] causes the pitcher to pitch from the stretch rather than from a full wind up. In all base situations except men on first and third, pitching from the stretch will prevent the runner on third from stealing home, but the pitcher will be a little less effective against the batter. With runners on first and third, the pitcher must pitch from the STRETCH.


[B] Batter - Either manager can display complete statistics for the batter by pressing [B].


[CONTROL] [D] - Allow defensive substitution. See DEFENSIVE SUBSTITUTIONS MOVES, and RELIEF PITCHING.

[CONTROL] [R] - Either manager can call up an instant replay by pressing

[CONTROL] [R] - If the play went more than size lines, press [CONTROL] [R] again to continue the play.

[CONTROL] [Q] - Toggles the Quick Play option. Quick Play speeds up the presentation of outcomes, but it does not affect the time allowed for dynamic decisions.
[W] Walk -
Press [W] to intentionally walk the batter.

[P] Pitch -
Press [P] to pitch the ball.

After [P] Pitch:
No defensive commands are allowed after the pitch.

<Options for the offensive manager>
<Team at bat>
Before [P] Pitch:

[1]...[9] - Display defensive player's statistics by positions (see defensive options).

[B] Batter -
Display batter's statistics (see defensive options).

[SHIFT] [1]...[SHIFT] [3] - Display base runner's statistics (see defensive options).

[CONTROL] [0] - Allows an offensive substitution, i.e., inserting the pinch hitter or pinch runner. See PINCH HITTING AND PINCH RUNNING.

[CONTROL] [R] - Instant replay (see defensive options).

[CONTROL] [Q] - Toggles the Quick Play option (see defensive options).

After [P] Pitch:

[RETURN] - (sets the play in motion) Hit away.

[R] Run (HIT & RUN) - (sets the play in motion) With a runner on first and no one on second, you may start the runner moving with the pitch by pressing [R]. Hitting and running will increase the probability of taking an extra base on a hit and will lower the chance of a double play, but calling for a HIT & RUN will result in a steal attempt if the batter takes the pitch or fails to make contact. Hitting & running takes some power away from the batter but increases the number of hits through the infield (mostly singles) as a defensive player moves to cover second. The chance of success for a HIT & RUN depends in part on the HIT & RUN ability of the batter and his strike-out frequency.

[B] Bunt - (sets the play in motion) With one or more runners on base, press [B] to call for a sacrifice bunt. Bunting ability is mostly a question of bat control. Players who do not strike out a lot will be better bunters. Drawing the infield in does NOT affect the chance of a successful sacrifice because the effects of surprise and defensive positioning have been built into the outcomes.

With a runner on third, runners on second and third, or the bases loaded, a bunt is assumed to be a squeeze play (the runner on third will be heading home with the pitch). With runners on first and third the offensive manager will almost always be given the option to hold the runner at third or to squeeze.

Important note: Plays which only change the count on the batter, like foul balls, do remove the bunt and Hit & Run calls. After each play, you must make these calls again if you still want them to be in effect.

[S] Steal - (sets the play in motion) With one or more runners on base, press [S] to call for a steal. With more than one base runner, you will be asked which base(s) you wish to steal. Exception: if you're stealing home with runners on second and third, or the bases loaded, the trailing runners will advance automatically.

A number of factors affect the chance of a successful steal. They're (in order of importance): the runners Steal Success Number; the runner's Steal Allowance rating, which reflects the frequency of his real life steal attempts (A-high to G-low, Rare, Never); the catcher's throwing arm; the pitcher's move to first; the base situation; and occasionally, the side from which the batter is batting.

Special situation: with runners at first and third, if the offensive manager calls for a double steal, the defensive manager must decide whether to make a throw. If he does not throw, the runner on first will steal second unmolested and the runner on third will hold. If he does throw, the catcher's throw will always go to second, and the defensive manager will be given the opportunity to cut the throw to home (the steal of home is a delayed steal). If the throw is not cut off, that is, if a play is made at second, and the runner is tagged out for out number three, the runner on third will score ahead of the out about half of the time.

[T] Time -
Press [T] to step out of the box (call time). Calling time nullifies the pitch. Only the manager whose team is at bat may call time. After time...
is called, either manager may make new managerial decisions. Play proceeds as if the pitch were never made, however, if the defensive manager has already called for HOLD, STRETCH, or IN, those calls will remain in effect.

Important notes: Hitting & running and bunting often create a count against the batter (more strikes than balls). A count against the batter increases the chance of a batter striking out.

Occasionally a sign - an offensive managerial call - will be missed by the batter or base runner. Play will proceed as if the sign had not been given.

**Dynamic Decisions: Base Advancement, Throwing, and Fielding**

Dynamic decisions are managerial calls which must be made during the play. The program allows a limited time to make the decisions. You determine the time limit in advance from the RULES AND DATA SCREEN.

Each dynamic decision demands a response. Press the number of the choice of your decision. If you do not respond (make a decision) in the time allotted, a decision will be made for you. This automatic decision is the default and generally is the "conservative" decision. Sometimes the default is the obvious decision; for instance, the default response to "MAKE THROW?" on a steal attempt is always "yes."

Important note: For dynamic decisions, the response marked with an asterisk (*) is the default. If you do nothing, the default response will guide what happens next.

Dynamic decisions for the offensive manager are base advancement decisions for example "TRY FOR THIRD!" and "TRY FOR SECOND ON THE THROW?" When the offensive manager is asked to make advancement decisions, the defensive manager has to make throwing decisions in response.

Occasionally the defensive manager will be asked to make fielding choices as well, for example: "GO FOR DOUBLE PLAY OR OUT AT HOME?" These fielding decisions will not require a response from the offensive manager.

You will need some information to help you decide when to advance base or when to try to throw out a base runner. This information is provided in four ways:

1) The description of the play gives you verbal clue about your chance of advancing successfully. These descriptions include such information as how far the ball was hit, where and how it was fielded, and the position of the runner.

2) The arm and fielding ratings of the defensive players are displayed by their names - the outfielder handling the ball is marked with a flag sign.

3) The speed ratings of base runners are displayed next to their names.

4) The number of outs is displayed on the scoreboard - with two outs the runners with be moving on contact.

**Cutting Off Throws**

When a manager chooses to advance an extra base on the outfielder’s throw, the defensive manager usually will be given an opportunity to cut off the throw (to make the play on a trailing runner). Any runner headed for home when the ball is cut off will score, and his run will count even if the third out is subsequently made on the play.

The chances of putting out a trailing runner depend largely on the speed of that runner and the chance of advancement of the runner on whom the play was originally being made; however, if the closer runner advancing successfully is an almost sure thing, then the chance of the trailing runner advancing even with the cutoff is also good. In this case it is usually better not to make a play for the lead runner.

There is no cutoff option when the runner is attempting to advance on the hit rather than the throw.

**Pinch Hitting and Pinch Running**

At any time in the game the offensive manager may choose a pinch hitter or pinch runner. To do this press [CONTROL] [O] (if the ball has been pitched, call [T] Time first). The Pinch Hitter/Runner Screen will appear. It contains the same information as the Line-up Screen.

To make a substitution, press [A], select the letter of the player entering the game, then select the [B] Batter or [1]...[3] base runner to be replaced. Players NOT available for pinching are highlighted (players playing the game) or marked OUT, EJECTED, or INJURED.

Important note: The only offensive [M] Move permitted during the game allows the pitcher to pinch-hit or pinch-run for the designated hitter. This [M] Move will invalidate the DH for the remainder of the game.

Important notes after play begins: Once a player is announced, he is in the game! Once a player is replaced, he is out of the game!

**Defensive Substitutions, Moves, and Relief Pitching**

At any time in the game before the ball has been pitched, the defensive manager may make a defensive substitution, move defensive players, or bring in a relief pitcher. Press [CONTROL] [D]. The Substitution Screen will appear. It contains the same information as the Line-up Screen.

To make a substitution: press [A]. Select the letter of the player entering the game, position in the batting order, and defensive position. Again, players NOT available for substitution are highlighted or marked OUT, EJECTED or INJURED. Remember: The Official Baseball Rules specify that once a player is announced, he is in the game.

To move a player to a new defensive position: press [M]. Select the batting position of the player to be moved, then select the new defensive position of the player. [M] Move is useful when you have used a pinch hitter or pinch runner and you wish to announce his defensive position. You can also use it to switch players in the field, for instance, to move a better "arm" to right field from left field.

To bring in a relief pitcher simply make a substitution in the appropriate spot in the batting order. Press [A]. Then select the letter of the pitcher entering the game, position in the batting order, and defensive position (pitcher).

Any player may be used as a relief or starting pitcher (if your own league rules permit it), but his grade, control, and endurance factors will be adjusted according to his probable skills. Remember: The Official Baseball Rules require a relief pitcher to face at least one batter or to pitch until the side is retired.

For all defensive substitutions, [ESC] will back you out of an incomplete announcement or move.

Important notes: Once the game begins, a player cannot be moved from one position in the batting order to another. If you wish to change the batting order before the game begins, a player can be removed and
reannounced at a different spot in the order.

If a player is INJURED or EJECTED, the manager will be required to replace him only when it becomes necessary, (that is, when he must bat, run the bases, or take a defensive position). If there is not a player eligible to play at that time, the understaffed team forfeits the game.

To help make pinch running, pinch hitting and other substitution decisions, you can examine the complete player statistics by using [D] Display and [A]...[P] or batting order number [1]...[9] of the player to be studied. When you choose a player in this manner, the Player Screen will appear.

[The Player Screen]
The player's name is in the upper left-hand corner.

<Defensive ratings and statistics>

Throws - The arm with which the player throws (Right/Left).

Arm - Rating of arm strength and accuracy: range 20 to 40 (higher is better). The arm rating of an outfielder is an important consideration for making base advancement and throwing decisions. The arm rating of an infielder who relays the ball also affects the outcome of the play.

Positions - A list of positions for which a player is rated defensively. If a player is rated at a position, then he appeared at that position in the season represented. His primary position is marked with an asterisk.

Rating - The defensive fielding rating. The following are ranges for fielding ratings by position (higher is better):

<table>
<thead>
<tr>
<th>Position</th>
<th>Rating Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitcher</td>
<td>1 to 2</td>
</tr>
<tr>
<td>Catcher</td>
<td>5 to 9</td>
</tr>
<tr>
<td>First baseman</td>
<td>2 to 5</td>
</tr>
<tr>
<td>Second baseman</td>
<td>3 to 6</td>
</tr>
<tr>
<td>Shortstop</td>
<td>6 to 10</td>
</tr>
<tr>
<td>Outfielder</td>
<td>1 to 3</td>
</tr>
<tr>
<td>Infielder</td>
<td>2 to 3</td>
</tr>
</tbody>
</table>

The total of defensive ratings for the infield (six players) is the Infield Rating. The total for the entire team (nine players) is the Team Rating. Although the individual fielding ratings are the most important factor in determining how well your team plays, the outcome of plays in which the ball is handled by several players is sometimes determined by the Infield and Team Ratings. Again, higher is better.

Important note: If you play a player at a position for which he is not rated, he will be given the lowest rating for that position. Exception: good-fielding shortstops and second basemen may be rated slightly better than "lowest" at other infield positions.

Any player may be played at any position, but for realistic outcomes, players should not be used at unlisted positions unless injuries or ejections require it.

Injury - Determines the seriousness of the injury should a player be injured (higher tend to be more serious injury): range 0 to 4.

Throw - A rating of the strength and accuracy of a catcher's throwing arm on steal attempts: range th-4 to th+6 (higher is better). Non-catchers who are playing catcher are always rated th-4.

Passed ball rating: range 0 to 3 (lower is better). This rating affects the frequency of passed balls. Non-catchers who are playing catcher are always rated 3.

Season and Game Statistics - Fielding percentages (PCT), defensive games played defensive games played (G), put-outs (PO), assists (A), and errors (E).

Season statistics are the officially published statistics for that season. Game statistics are updated after every play and are reset at the beginning of each game. Game statistics can be printed out at the end of the game by pressing [CONTROL] [P] (see END-OF-GAME OPTIONS). Game statistics can also be printed out at any time during the game, again by pressing [CONTROL] [P].

<Offensive ratings and statistics>

Bats - The side the player bats from: Right/Left/Both (R/L/B). A switch hitter (Both) is assumed to bat from the side opposite the throwing arm of the pitcher.

Type - The type of hitter: straightaway (SA), pulls to left field (PL), pulls to right field (PR), switch hitters who pull to both fields (PB). Type affects where and how hard the ball is hit. Only extreme pull hitters are given a PL, PR, or PB.

Platoon - A rating determining how much a batter gives up to a pitcher who is throwing from the same side as he is batting: range 0 to 5 (lower is better). Example: if a right-handed pitcher with grade 15 is facing a right-handed batter with platoon 5, the pitcher will perform as if he were a grade 20 pitcher.

Speed - Running speed: range 1 to 20 (higher is faster). Slow = 1 to 6, Average = 7 to 14, Fast = 15 to 20. Speed is an important consideration in making base advancement in many situations where no decision must be made.

Steal Allowance - Rates the frequency of steal attempts: range A to G, Rare, and Never (*A* rated players steal most frequently). The middle and lower ratings can substantially reduce the chance of a successful steal, except when the stealing runner on first is not being held on.

Steal Success - Rates the success of steal attempts: range 0 to 36 (higher is better - 36 means he was successful on every attempt). This is the primary rating used to determine steal attempt outcomes.

Hit & Run Ability - Rates the hitting-for-average ability of a player (how much his batting average will increase) when the HIT & RUN is called: range 0 to 5 (higher is better). General hit & run ability takes into consideration the batter's tendency to strike out. When the batter does miss the ball, a HIT & RUN becomes a steal attempt.

Season and Game Statistics - batting average (AVG), slugging average (SLG), on-base-percentage (OBP), games played (G), at bats (AB), runs (R), hits (H), total bases (TB), doubles (2B), triples (3B), home runs (HR), runs-batted-in (RBI), sacrifice hits or bunts (SH), hit-by-pitch (HP), total walks (TBB), strike outs (SO), stolen bases (SB), caught stealing (CS)

<Special ratings for pitchers>
Throws - Pitching arm (Right/Left). A pitcher will perform better than his base grade against a batter hitting from the same side as he throws if the batter has a platoon rating greater than 0. See platoon example.

Grade -
The basic rating of pitching skill: range 1 to 30 (higher is better). Poor = 1 to 5, average = 6 to 10, good = 11 to 15, very good = 16 to 20, super star = 21 to 25, immortal = 26 to 30.

A pitcher may be rated as a starter, a reliever (marked with an asterisk), or both. If a pitcher started any game during the regular season, he is rated as a starter. Some pitchers grades as starters on the Line-up Screen also have a separate grade for relieving. In this case, both ratings are displayed on his Player Screen. You can check a pitcher's official statistics for games appeared in (G) and games started (GS) to see if he pitched primarily as a starter or as a reliever during the actual season.

The grade can change during the game in several ways. If a poor pitcher goes 5 consecutive innings without allowing an earned run, his grade will advance by 5 each inning thereafter, up to a grade of 20, or until he gives up an earned run. An average pitcher will advance after 6 consecutive innings, a good pitcher after 7, and a very good pitcher after 8. Any pitcher's grade will go down 5 after allowing 5 earned runs in 3 consecutive innings. These changes will be displayed on the Game Screen under the pitcher's name.

Some grade changes are not displayed on the screen. Batter-to-batter changes caused by the platoon rating of the batter are not displayed. Relief pitchers are more effective against the first batter they face if they enter the game during an inning (not at the beginning of an inning). This increased grade of 5 is not displayed. Any effects of durability (see below) are not displayed.

Control -
Rates pitching control and strike-out ability: possible ratings are W, XY, X, Y, and Z.

W = wild (walks)
XY = super star strike-out ratio (strike-outs/innings pitched)
X = excellent strike-out ratio
Y = good strike-out ratio (X any Y both increase strike-outs)
Z = good walk ratio (decreases the number of walks, especially with men on base)

Move -
Rates the move to first: range 0 to 3 (higher is better). A pitcher's move affects steal attempts and base advancement of a runner on first if he's being held on. The better the move, the less chance of successful advancement.

Durability -
Rates how long a pitcher can be expected to go while retaining his initial effectiveness: range for starters 0 to 4, range for relievers 1 to 3 (lower is better).

You will have to learn to sense when your pitcher really loses it. A "4" rated starter generally can be expected to tire beginning in the seventh inning, a "1" rated starter in the ninth, and a "1" rated reliever in his fourth inning of work.

HB -
Rates the frequency of hit-batsmen: 0 or no rating (0 is better). A "0" rating reduces the number of batters hit by the pitch.

BK -
Rates the frequency of balks: 0 or no rating (0 is better). A "0" rating
reduces the number of balks.

WP -
Rates the frequency of wild pitches: range 0 to 3 (lower is better). A lower rating reduces the number of wild pitches.

HR -
Rates the tendency to prevent or give up home runs: possible ratings are G, H, L, M, or no rating. If a pitcher has a rating of G or H (H is better), he will allow fewer home runs. If a pitcher has a rating of L or M (M is worse), he will give up more home runs.

Season and Game Statistics for pitchers -
wins (W), losses (L), saves (S), winning percentage (PCT), earned run average (for the season only) (ERA), games appeared in (G), games started (GS), innings pitched (IP), hits (H), runs (R), earned runs (ER), home runs (HR), total walks (TBB), hit-batsmen (BB), strike-outs (SO), wild pitches (WP), balks (BK).

- END OF GAME OPTIONS

A game can end in several ways: one team can win after the regular nine innings or in extra innings, the game can be rained out, one team can forfeit the game by not being able to field nine eligible players, or the managers may choose to "call" the game using [CONTROL] [X].

When the game ends, you will be given these options:

[U] Update win-loss records -
Update will determine the winning team, if there is one, and if the teams come from the same data diskette and the same organization, it will add one to the Wins column for the winner and one to the Losses column for the losing team. It will also recalculate the games behind (GB) for all teams in the division. These updates are displayed on the Team Selection Screen. Update cannot be used for PROFESSIONAL BASEBALL.

Important note: Only an official game has a winner or loser. For the updating option, an official game is one that has gone 4 1/2 innings if the home team is ahead, or 5 innings if the home team is behind, whether the game was ended by rain or by [CONTROL] [X]. A game that ends in a tie is not considered an official game for the purposes of this program. A forfeited game is an official game. (A game is forfeited when one team is unable to field nine eligible players, or the managers may choose to "call" the game using [CONTROL] [X].)

Update and printing can be done in either order. The other options below - [S] and [R] - destroy the game statistics and eliminate the possibility of updating the win-loss records automatically with the current game results (but see [C] Correct).

[S] Same Teams in Same Park -
Allows you to play another game with the same teams in the same ball park. If you want a different home team or if you want to select new rules, you must use the [R] Restart option below. [S] Same Teams asks you new for a new line-up for each team.

[R] Restart -
Takes you back to the Rules and Data Screen, from which you will be able to change the rules, speed of dynamic decisions, sound, and the teams being played.

Important note: To review the game performance of a player screen at the end of a game, press [CONTROL] [O] or [CONTROL] [D], then [D] Display, followed by the appropriate player identification ([A]...[Z] or [1]...[9]). This must be done before choosing [S] Same Teams or [R] Restart, otherwise the game statistics will have been erased.

- INTRODUCTION TO DRAFTING

DRAFT will make you Commissioner, owner, general manager, and manager at the same time. You can set up your own baseball organization with leagues and divisions. Draft your own teams. Establish a farm system. When you have set up a league, be sure to send in your customer registration card to receive news of program updates and enhancements.

[How to Load Draft]

1. Put the Draft Diskette in drive 1 and side A of the Data Diskette in drive 2.
2. Turn on the computer, or, if it's on, simultaneously press [CONTROL] [Open Apple] [RESET].

The Copyright Screen will appear, followed by the Create/Modify Organizations Screen.

- CREATING A NEW ORGANIZATION

For each organization you wish to create, decide how many leagues you want (up to 2), how many divisions (up to 4 in each league, up to 6 total), and how many teams in each division (up to 14 in each division; up to 30 in each organization; up to 100 teams in all including PROFESSIONAL BASEBALL).

Below are three examples of baseball organizations that could be created:

[Example 1]

Organization Name: Home Baseball
League name(s): Home League
Division(s): Pro Farm
Team name(s): BUDAPEST Bombers BUDAPEST Farm
HONG KONG Kongers HONG KONG Farm
WOONSOCKET Rockets WOONSOCKET Farm

[Example 2]

Organization Name: Sunbelt League
League name(s): ---
Division(s): ---
Team name(s): TAMPA 2's

[Example 3]

Organization Name: Office Baseball
League name(s): League 1 League 2
Division(s): Div 1 Div 2 Div 1 Div 2
Team name(s): BALT CAL CHI ATL
HOS CHI MONT CIN
CLE KC NY HOU
DET MIN PH IL
MIL OAK PIT SD
NY SEA STL SF
TOR TEX

Notice that the organization title, Office Baseball, has the same structure used for major league baseball. Some people may want to replay the actual season represented by the Data Diskette. The Office Baseball organization will allow you to do this and keep team records and make roster changes as they actually occurred during the season represented by the Data Diskette. The rosters of the organization PROFESSIONAL BASEBALL cannot be modified, and neither can its win-loss records, but its rosters can be copied.

[Setting up the Organization, Leagues and Divisions]
Decide how best to structure your new organization (see examples above), and follow the steps listed below.

**Important note:** In draft, pressing [RETURN] will advance you to the next screen. Pressing [ESC] will bring you back to the previous screen.

**<Create the Organization>**

1. Press the number [2]..[6] under which you wish to store the name of your organization.

2. Type the name as you want it to appear on the organization list. You are allowed up to 25 characters. If you are planning to have only one league in your new organization, you may wish to name the organization using the league name - see example 2 above.

3. Press [RETURN]. A highlighted pointer will appear where the league names will be entered.

**<Create the First League>**

4. Type the name of the first league (20 characters maximum). Skip this step if you do not want any leagues - for instance, if you have given the league name to the organization. If you do not give a name to the first league, you will not be able to create a second league for this organization.

5. Press [RETURN]. A highlighted pointer will appear under the league name.

**<Create the Divisions in the First League>**

6. Type the name of the first division in the league. Up to 20 characters are allowed. Skip this step if you do not want any divisions in this league.

7. Press [RETURN].

8. Repeat steps 6 and 7 for additional divisions. Enter up to four divisions if you are planning to have one or two league, up to six if you have no leagues.

**Hint:** you may wish to establish a farm system as a division. Each FARM division would have the same number of teams as each PRO division (see example 1 above).

**<Complete the Organization>**

9. Repeat steps 4 through 8 for the second league.

10. Check that the organizations, leagues, and divisions are as you want them. If you have any changes, use [R] Rename and [D] Drop to correct them.

You cannot [D] Drop a league or division. You can only [D] Drop an organization. If you [D] Drop the organization, you will lose all of its teams and rosters. You can [R] Rename an organization, league, or division.

11. When you have finished naming the organization, leagues, and divisions, press [RETURN] to continue. The Add/Select Teams Screen will appear.

**<Adding Teams to the New Organization>**

1. Using [SHIFT] [1], choose the league to which you wish to add a team. Your choice is highlighted.

2. Using [SHIFT] [2], or the right/left arrow keys, choose the division to which you wish to add a team. Your choice is highlighted.


4. Type the team name (up to 15 characters).

5. Press [RETURN]. The arrow cursor will remain on the same line.

6. Type the team nickname (up to 9 characters). This name will be used on the line score on the Game Screen.

7. Press [RETURN].

8. Repeat steps 3 through 7 for the remaining teams in the division.

9. Repeat steps 2 through 8 for each division in the league.

10. Repeat all of the above for each league in the organization.

**When all of the teams for all divisions have been named, you are ready to add players to your teams.**

**[Adding Players]**

You may add players by either exporting an entire roster from an existing team and importing the roster to a new team, or by drafting individual players.

**[Exporting and Importing]**

To copy an entire roster from one team to another, use the [E] Export and [I] Import commands. [E] Export will copy the roster of a team into memory. [I] Import copies that roster under a new team name and writes it to disk.

This process is useful for setting up your own league in which you can modify to reflect roster changes made during the actual season. Try copying one of the teams in PROFESSIONAL BASEBALL to a new team with no current players.

To [E] export the team roster:

1. From the Create/Modify Organizations Screen, press [1] to highlight PROFESSIONAL BASEBALL (or another organization that contains the roster you want to copy).

2. Press [RETURN] to proceed to the Add/Select Teams Screen.

3. Choose the league and division of the team you wish to copy using [SHIFT] [1] and [SHIFT] [2].

4. Highlight the team using the up/down arrow keys.

5. Press [E] Export to load the team into memory.

6. Press [ESC] to return to the Create/Modify Organizations Screen.

**Important note:** You may [E] Export from any organization, not just from PROFESSIONAL BASEBALL.

To [I] import the team roster:

1. Select or create the organization which will contain the copied team. The organization will be highlighted.
2. Press [RETURN] to advance to the Add/Select Teams Screen.
3. Choose the appropriate league and division using the [SHIFT] [1] and [SHIFT] [2] keys.
4. Add or select the team to contain the roster you are copying. The team will be highlighted.
5. Press [I] Import to write the entire exported roster onto a disk. Importing will erase any players previously drafted for the team highlighted.

Important notes: You may not [I] Import to PROFESSIONAL BASEBALL. A roster may NOT be copied from one data diskette to another.

-- DRAFTING A TEAM

To add individual players to a team roster, proceed to the Add/Select Teams Screen.
1. Press [SHIFT] [1] to select a league.
3. Press the up/down arrow keys to select a team.

[The Draft Screen]
The upper left corner shows the name of the team being drafted. The upper right corner shows the number of major league baseball players available for the draft and the year (season) of the Data Diskette.
The top part of the Draft Screen displays nine names of major league baseball players. For a non-pitcher, the name is followed by primary position (Pos), defensive rating at that position (D), batting side (B), and speed (Sp). For a pitcher, the name is followed by position (Pos), throwing arm (T), pitching grade (GR), and control ratings (Ctrl).
The nine names that first come up on the screen are the first nine names in an alphabetical listing of all the players. You can move through the player list in several ways:
Up and down arrow keys will scroll the list of names.
[F] First will take you home to the top of the list.
[L] Last will take you to the end of the list.
[S] Search will take you directly to a part of the list you specify - press [S], then type the first three letters of the player's name, and press [RETURN].
[U] Update will save your roster.
The lower part of the screen displays the current team roster. Twenty-six (26) spaces are provided to allow an empty space between the pitchers and non-pitchers. If you choose to, you can draft up to 26 players.

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A team has a 25-player roster.

A team must have at least four starting pitchers.

A starting pitcher may not start before his turn in the rotation.

A starting pitcher may not relieve if there is a reliever available (unless he is also rated as a reliever).

A reliever must rest every third (or fourth) game.

INJURED players must sit out only one half of the specified injured time (used for leagues with shorter seasons).

Players are separated into groups of comparable skill/value. Only a certain number of players can be drafted from each of the higher level of skill, providing for more realistic teams.

- MODIFYING AN ORGANIZATION

From the Create/Modify Organizations Screen, press [2]...[6] to choose the organization to be modified.

Your choices are now to:

[D] Drop the entire organization, including leagues, divisions, teams, roster, win-loss records, and standings (GB = games behind).

[R] Rename an element in the organization - either the [O] Organization, [L] League, or [D] Division (use the backspace to edit the name in each case.)

[C] Clear the WIN-LOSS records for all teams in the organization.

To modify a team within the organization or to add a team, press [RETURN]. The Add/Select Teams Screen will appear.

To [A] Add a team, see ADDING TEAMS TO THE NEW ORGANIZATION.

To modify a team, press [SHIFT] [1] to select a league, press [SHIFT] [2] (or the right/left cursor keys) to select a division, and press the up/down arrow keys to select a team. You are now ready to modify the team highlighted.

Your choices are to:

[D] Drop the entire team, including roster, win-loss record, and standing.

[R] Rename the team, first the city name, then the nickname.

[C] Correct the W-L record, first WINS, then LOSSES.

To modify the team roster, select the team, press [RETURN], and add or release players as described above in DRAFTING A TEAM.

[End of Documentation]
This is performed in Lines 590 to 810. The logic in Lines 840 and 850 causes the DIM statement in Line 860 to reserve exactly enough space for the entries in the first root directory or sub directory. Line 840 uses HIMEM to locate the 1K buffer established for the OPENed directory file. Based on technical knowledge of file handling techniques used by BASIC.SYSTEM, the logic of Line 850 then picks up the number of entries as stored in the first block describing the entries in the directory.

The actual display or print of the desired catalog starts in Line 820. Notice the OPEN with the TDIR parameter in Line 820. Under ProDOS, a directory file may be opened and read just like a sequential file. What is returned by each INPUT statement is the same as that displayed by a CATALOG command with things like file name, file type, etc. returned in a fixed format. With this in mind, Line 870 reads the volume or subdirectory name, ignores the following blank line, and the CATALOG header line. Lines 880 to 940 input and collect each line in the CATALOG display. This logic uses the BLOCKS FREE... line as an end of file marker instead of using ONERR processing to trap a true end of file. After a line for a file is read, the input is processed by the subroutine in Lines 1540 to 1780. This subroutine returns a string whose contents are as follows:

<table>
<thead>
<tr>
<th>Position</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-16</td>
<td>File name</td>
</tr>
<tr>
<td>17-31</td>
<td>File type, e.g., SYSTEM PROGRAM</td>
</tr>
<tr>
<td>32-41</td>
<td>Modification date dd-mm-yy</td>
</tr>
<tr>
<td>42-49</td>
<td>Right justified file length in terms of K</td>
</tr>
<tr>
<td>50-...</td>
<td>Left justified file length in terms of K</td>
</tr>
</tbody>
</table>

This string is then added to the array for the volume or subdirectory entries.

Lines 990 to 1100 sort the array in ascending order by file name and/or directory name. This code is a modification of the code presented by Garry G. Kiziak in "The Compact Sorter", NIBBLE Vol4/No. 1. It is a very fast sort routine worthy repeating here in its more general form.

Lines 310 to 580 represent the code to provide the main menu control. Once a function is performed, control always returns to Line 360.

Lines 590 to 4120 provide the logic to display a catalog or print a catalog. Using a simple flag in PF$, the same code can be used for both functions. The logic starts with the necessary code to prompt for a volume or subdirectory name and initialize the display or print process. This is performed in Lines 590 to 810.
In the subdirectory, control is passed to line 2660 in which the D1$ array is deleted then control is passed to line 1950 to continue processing of the root entries.

If the subdirectory is not empty, Lines 2420 to 2540 sort the array using the sort algorithm described earlier. Lines 2550 to 2650 display the entries in the subdirectory with each line indented over three spaces. The final result of the display or print provides a layout in which subdirectories can be quickly located.

Once the subdirectory has been completely processed, Line 2660 deletes the array, garbage collection is forced, and control is passed to Line 1950 to continue processing of the root entries.

A subdirectory under the root can also contain subdirectories. If Line 2640 detects a subdirectory, control is passed to the logic in Lines 2740 to 3220. This logic is an exact duplicate of the logic in Lines 2230 to 2680 with D1 replaced by D2, R5 replaced with D1$, and L1 replaced by L2. Each displayed or printed line is indented over five spaces from the left margin. When this subdirectory is completely processed, Line 3200 deletes the array, garbage collection is forced, and control is passed to Line 2650 to continue processing in the first level subdirectory.

A subdirectory under a subdirectory can also contain subdirectories. If Line 3180 detects a subdirectory, control is passed to the logic in Lines 3320 to 3750. Again, logic is duplicated with D2 replaced by D3, D1$ replaced by D2$, and L2 replaced by L3.

The logic described here assumes only three levels of subdirectories under the root. Modifying the logic to include another level is relatively easy. Add a Line 3715 to look for a subdirectory entry using any Line 3180 as a model. Duplicate Lines 3320 to 3750 starting after the end of the program at Line 4870. Now change each D2 to D3, each D3 to D4, each D3$ to D4$, and each L3 to L4. Add a couple of spaces to the copied Line 3640 and delete a couple of periods from the copied Line 3690. Finally replace the GOTO 3190 in the copied Line 3750 to GOTO 3720.

Lines 4180 to 4370 handle the LOCK A FILE logic. Lines 4430 to 4620 handle the UNLOCK A FILE logic. Lines 4680 to 4870 handle the START UP APPLEWORKS logic. The logic of these three functions is reasonably straightforward and requires no technical discussion.

This program should be a very useful addition to any library - it certainly has been to mine. It has been tested by several non-technical types like my wife who rarely work outside the world of Appeworks.
Apple II Computer Info

HCOLOR:

- HCOLOR=0 OR 4: BLACK
- HCOLOR=1: GREEN
- HCOLOR=2: VIOLET
- HCOLOR=3 OR 7: WHITE
- HCOLOR=5: ORANGE
- HCOLOR=6: BLUE

DRAW AND XDRAW:

- DRAW means just that, draw a shape for a shape table, example command:
  99 DRAW 3 AT 100,90:REM(AT X,Y)

- XDRAW works like DRAW but ignores HCOLOR and plots dots in the opposite color of the dot being plotted.
  - BLACK(0/4) IS OPPOSITE WHITE (3/7)
  - GREEN(1) IS OPPOSITE VIOLET(2)
  - ORANGE (5) IS OPPOSITE BLUE(6)

HI-RES COORDINATES:

- To tell a shape where to appear, specify the coordinates (horizontal, vertical) of the shapes starting point. Don't specify outside of screen limits or it will CRASH.

  HORIZONTAL: 0 TO 279
  VERTICAL: 0 TO 191

  VERTICAL W/4: 0 TO 48

TEXT LINES: 0 TO 159

DRAWING WITHOUT COORDINATES:

- After first shape is drawn, you don't need to specify coordinates for the next DRAW or XDRAW. Each successive shape without coordinates will begin at the point where the previous shape stopped.

SCALE:

- You can enlarge a shape by setting SCALE equal to a number, 2-255 or 0.
- A SCALE of zero is equivalent to a SCALE of 256.

ROT:

- You can rotate a shape by setting ROT before you draw.
  - ROT=0: NORMAL
  - ROT=16: ROTATED 90 CLOCKWISE
  - ROT=32: * 180 (UPSIDE DOWN)
  - ROT=48: * 270 CLOCKWISE

ROT values between the above only apply when SCALE is set larger than the minimum(1). ROT values greater than 64 simply repeat the cycle until ROT=255

MOVING A SHAPE:

- More than one way to move a shape. Basically you have to DRAW the shape, ERASE it, and REDRAW it in a new position. This XDRAW does all that.

```
100 FOR X = 0 TO 279
110 XDRAW 5 AT X,100: REM DRAW SHAPE
115 XDRAW 5 AT X,100: REM ERASE SHAPE
120 NEXT X
```

With DRAW you erase the shape by re-DRAWing it in the background color.

OTHER EXAMPLES:

```
100 FOR X = 0 TO 279
110 HCOLOR=3: DRAW 5 AT X,100: REM DRAW
112 HCOLOR=0: DRAW 5 AT X,100: REM ERASE
120 NEXT X
```

OR

```
113 FOR I = 1 TO 50: NEXT
```
OTHER HI-RES MANIPULATIONS:

HGR - clears page 1 to black
HGR2 - clears page 2 to black
HCLR=H: HPLT 5,0; CALL 62454 - clears hi-res in HCOLOR X

The following *switches* do not clear the screen, but REVEAL whatever is currently on the page 1 or 2 text, hi-res, or lo-res screens:

POKE 49323,0 - view hi or lo res
POKE 49233,0 - view text screen
POKE 49234,0 - view full graphic, lo or hi res
POKE 49235,0 - view graphics plus 4 text lines (VTAB 21-24)
POKE 49236,0 - view page 1 (hi, lo res or text)
POKE 49237,0 - view page 2
POKE 49238,0 - view lo res
POKE 49239,0 - view hi res
POKE 230,32 - allows drawing on page 1
POKE 230,64 - allows drawing on page 2
POKE 230,96 - allows drawing on page 3 (not directly viewable)

FONT EDITOR:

95 hi res characters Use with HI-WRITER, XTYPER
SHAPE FONTS TAKE UP MORE MEMORY AND DISK SPACE THAN ANY OTHER HI-RES FONTS. 18 SECTORS FOR LARGE, 7 SECTORS FOR SMALL DOS TOOLKIT ONLY USE 5 SECTORS, REASON IS FLEXIBILITY AND ATTRACTIVENESS.

TO USE FONT EDITOR:

*RUN FONT EDITOR" USE 1-6 KEY INSTRUCTION IN BEGINNING OF THIS PROGRAM LOAD w/KEY 3 FONTS YOU MIGHT WANT TO SEE

EDITING: Key #1-gives you a striped flashing cursor, use ARROWS or A, Z keys. Also see ASCII value of the key that will type character. Hit RETURN, THREE OPTIONS:

(I)-Grid imprint-Prints selected character as a 10x blowup of grid.
(E)-Erase/Redraw- Temporarily erases character so can be redrawn.
(S)-Shadow Imprint-Prints a shadow of character on 10x grid. Shadow is for reference or tracing, does not effect final shape.

SPACE BAR changes cursor for SOLID to OUTLINED and back, representing PLOT and NO- PLOT.

DISPLAY- KEY #6:

Select 6 and type as you normally would. ESC = between upper and lower case. To type a save use Xtyper or Hi-Writer programs

XTYPER PROGRAM:
Apple II Computer Info

This method works only with white type on a black background. Align vertically, and position its left edge so it touches any part of the character to be erased.

CTRL-W: wipe out:
Erase entire line of type in black from the top of the caps cursor down.

OVERTYPING:
Place cursor over character, aligning the top and left edges, change typing color (0-30) to the color of the background, and type over the characters to be erased.

CTRL-F: FONT CHANGE:
Select CTRL-F will allow you to type a new font. Can't select a font number that has not been loaded into memory.

CTRL-O: COLOR CHANGE:
Select CTRL-O, gives you a new typing color. XTYPEP WILL NOT LET YOU CHOOSE AN ALTERNATE COLOR #7 (WHITE) OR #4 (BLACK)

CTRL-G: GRID:
Select CTRL-G will display a 4x4 grid. Hit CTRL-G again will erase the grid. DO NOT TYPE OVER GRID.

CTRL-R: RETURN TO MAIN MENU:
Select CTRL-R will give you main menu.

LEADING NOTES (LEADING):
DEFAULT ERASE COLOR:
Second non-REM program line in Xtyper. The variable BS is the erase color used by CTRL-B and CTRL-W.

HI-WRITER PROGRAM:
Hi-Write is meant to be used as part of your Applesoft programs!!!!!!
You can add instructions after line 500 to Hi-Writer instead of Xtyper as your main program, save disk space and typing.

LIST LINES 50-53 OF HI-WRITER:
50 FLAG=0: REM (0=LOAD 1=DON'T)
51 FT$(1)= "BLOCK"
52 FT$(2)= "SMALL STANDARD"
53 FT$(3)= "APPLE"
The variable FLAG in line 50, tells Apple whether or not to load the three fonts form Lines 51-53.

Hi-Writer lets you access up to three fonts at one time. Let FLAG = 0 and enter the names of your three fonts at lines 51-53. If you only want one or two fonts enter a blank FT$(3)=

PROGRAM VARIABLES: (lines 90-500) do a GOSUB 100
A$: Words to be printed
FT$: Current Font Number (1-3)
FT3$: Name of Font 3 to be loaded
VT$: Vtab (1-24)
HT$: Htab (1-40)
IN$: Inverse (1=Yes 0=No)
CT$: Auto-Center (1=Yes 0=No)
HC$: Hcolor type (0-7)
CL$: Hcolor for Clearing Screen (0-7)
RT$: Rot value for printing (0-3)

AS:
520 A$="HELLO":GOSUB 100

UPPER/LOWER CASE
590 A$="@EAGLE @ROS":GOSUB 90

FT & FT3$:
Set FT equal 1, 2, 3 any time you want to change fonts. You can replace 3 as many times as possible. To replace 1 & 2 change lines 51 & 52 reset FLAG in line 50 to zero, and re-run the program.

CT & GOTO 400: CENTERING
550 CT=1: VT=8.2: A$="FRIED EGGS": GOSUB 100
or A$="PITTSBURGH": FT=3: GOTO 400

INVERSE:
IN to 1 words that follow will be printed in inverse. IN is automatically reset to zero after each GOSUB 100. Add at least one space both before and after a word to be inverted.

HC: HCOLOR
HC determines HCOLOR of the words that follow.

RT: ROTATION
RT will print your words rotated.
1= 90 clockwise
2= 90 counter-clockwise
3= upside-down

CL: CLEARING SCREEN
Value 0-7 for HC followed by GOSUB 100 will clear screen in HCOLOR VR, HT and reset to 1.

POKE TXT,0 reveals the lower sixth of the text screen VTAB 21-24
POKE FULL, 0=-switch to full hi-res with text screen "hidden" behind.
TEXT= switch you entirely over to a text screen without erasing hi-res.
POKE ONERR, 0= switch you back to hi-res without clearing the screen.

OUT OF MEMORY?:
5000 ? CHR$(4): "RUN NEXT PROGRAM" insert in your program and entire new version of Hi-Writer will continue.

NON-KEY CHARACTERS:
CHR$(95) = underscore
CHR$(92) = backslash
CHR$(91) = left square bracket

ERRORS:
ONERR GOTO 450 in line 55. Type "TEXT" or hit RESET to find and correct the error

FONT SPLITTER:
Run FONT SPLITTER to reduce the number of characters in a font. Follow prompts on screen and let Apple do rest.

PAGE COPY:

With Page Copy text files, you can move image already in memory for one page to another.

20 INPUT "MOVE IMAGE FROM PAGE:";A
30 INPUT "MOVE IMAGE TO PAGE:";B
40 POKE 60,0:POKE 61,A*32
50 POKE 62,0:POKE 63,A*32+32
60 POKE 64,0:POKE 65,B*32+32
70 POKE 66,0:POKE 67,B*32
80 CALL-468

SHAPE ANALYZER:

8 - Hyphen - enter temporary "mode" ESC = will exit for mode RETURN = set default value where appropriate.

KEY #6
Arrow keys, A, Z

KEY #7
Draw, Undraw

KEY #8
Move current shape on screen A, Z, ARROWS, move 9 units vertically and horizontally. S, X, K, L, parallel 1 unit at a time

KEY #9
Arrow increase and decrease by 16 (90): A, Z, do the same by unit of 1. Hitting RETURN changes to zero(normal)

KEY #0
Arrow changes value, for increase or decrease A, Z

KEY #1: Arrow increases and decreases HCOLOR TEST (0-7). B = background
H = shape RETURN reset HCOLOR to 3 background 0

KEY #
Analyze a shape vector by vector.
1 = shapes permitted in table
2 = large font shape
0 = non-font.

Enter a shape number and watch the screen. Reading left to right you will see each vector of the shape (0-255). Inverse Move & Plot Normal = Move & Don't Plot. Hit ESC to see graphic display of shape, or RETURN for another vector analysis.

BYTE ZAP PROGRAM:

CURSOR
Arrow keys move numerically up or down one byte A, Z, move up or down one row RETURN = move up or down 16 bytes in the direction the cursor's arrows are pointing

KEY #1, #2, #3
1 and 3 tells program to read the previous and next sector on disk.
2 will let you name sector you want to read. Enter track and sector number in dec. or hex($hex)

KEY #4
N/NO-FLASH FORMAT
C/CATALOG FORMAT
KEY #5
Printer dump
KEY #6
Catalog, press any key to continue
KEY #7
Slot/Drive Change
KEY #8
Disk Map - Will read VTOC and display a "Map"
+ = used
. = free

KEY #9
Change a Byte-
HEX = "$" (00-FF)
DEC = (0-255)
ASCII = N-normal I-inverse C-control FG-flashing "G" (7) 14-inverse "t"
MO-normal "O" value (207)
CM-control-M(carriage return value (141) LA-lower case "A"

KEY #0
Quit
KEY #(-)
Write a sector to disk
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**DOCUMENT appleworks**

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**Part V for printer info.** This file was created with Appleworks' word processor.

Even word configure (type of printer, data drive) and to format a data disk.

**NOTE** When main menu appears use #5, other activities to deletion & insertion of text, correction of spelling errors, and then

Program in depth (data base, word processor, spreadsheet). Most of you know what a word processor is. When connected to a printer, it's a computerized typewriter. Like you see on TV, it allows deletion & insertion of text, correction of spelling errors, and then prints a nice, neat paper with no signs of correction or "white-out." This file was created with Appleworks' word processor. (Even word processors can't fix my typos so if you find some, please correct!)

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**Part I : Data base understanding & operation**

A data base is simply a program that keeps track of groups of data, called records. Each record is a group of entries in different categories, one entry from each category.

**Appleworks limits:**

- **Max. # of records** 1150
- **Max. # of records, average 64k ram:** 140 128k ram: 750
- **Max. # categories** 30
- **Max. length/record** 1024 characters (1k)
- **Max. length/entry** 76 characters
- **Max. length/category name** 20 characters

**Required equipment:**

Apple //e or //c

The disk will load PRODOS and ask you to switch disks. Do so and press #c, the number will be 55k. An un-expanded //e will show 10k.

To begin, insert the Appleworks startup disk and press ctrl-@-reset to boot up. (Or if the Apple is off, turn it on.)

The disk will load PRODOS and ask you to switch disks. Do so and press return.

Next you will enter the date. (If you have a clock card in slot 2 or 4, all you have to do is check the year.) Press return when all is well.

You should now be presented with the main menu. It says the following:

1. Add files to the desktop
2. Work with one of the files on the desktop
3. Save desktop files to disk
4. Remove files from the desktop
5. Other activities
6. Quit

The desktop is the area of memory where your files are kept. (Like having a mess of papers in folders on your desk.)

Knowing what they consider a desktop, all of the above are self-explanatory.

Instead of going into each menu option in depth (like I did for "Locksmith 5.0 documentation"), I will go into each function of the program in depth (data base, word processor, spreadsheet).

**NOTE** When main menu appears use #5, other activities to configure (type of printer, data drive) and to format a data disk. (See part V for printer info.)

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**Part II : Word Processor**

Most of you know what a word processor is. When connected to a printer, it's a computerized typewriter. Like you see on TV, it allows deletion & insertion of text, correction of spelling errors, and then prints a nice, neat paper with no signs of correction or "white-out." This file was created with Appleworks' word processor. (Even word processors can't fix my typos so if you find some, please correct!)
To enter a formula, type a plus sign followed by the formula. Then the cell name (+B7 will copy the value in B7). Part IV : Cut and Paste

To enter a value, type a number, or, to copy another cell, a plus sign ////////////////////////////////////////////////////////////////

label. @-arrows           Move one screen in direction of arrow
letter  or  a  quote (") to signify a label. Then type the rest of the @-?                Help
To enter a label into a cell (letters explaining another cell), type a @-1..@-9           Move through worksheet (same as data base)
cells available for use:126,873 (999 rows times 127 columns) @-y                Clear to end of cell
through AZ, BA through BZ, CA through CZ, D through DW.   Total  #  of @-w                Create windows
Filled  cells:  64k-1000  128k-6000 Rows- 999 Columns- A through Z, AA @-v                Set standard values for certain parameters
Restrictions: @-s                Save file to disk
and words, you can crete very meaningful information. @-p                Print rows or columns
You can put letter,numbers,or formulas in a cell. By lining up numbers @-n                Rename file
the column, the number is the row. Cell A1 is in column A and  row  1. @-m                Move rows or columns to/from clipboard
your  position as a numbered cell. (examples-A1,C4,AD27) the letter is @-l                Change layout
piece of paper. The computer controls where  you  are  by  referencing @-k                Calculate all cell values
HMMMM...a  spreadsheet...let  me  see....A  spreadsheet  is like a big @-j                Jump to other window
/////////////////////////////////////////////////////////////////////////// @-h                Screen dump
Part III : Spreadsheet @-f                Find an entry
/////////////////////////////////////////////////////////////////////////// @-e                Toggle cursors
@-space       Sticky space (prevent 2 words form being separate by wrap- @-b                Clear a cell
around) @-dn arrow    Move down 1 page @-a                Sort rows
@-up arrow    Move up 1 page
@-rt arrow    Move 1 word right keys of interest:
@-left arrow  Move 1 word left
@-?           Help Example: @IF(A14<A15,D3,Z14)      @IF(S23>=2,W2,E3)
@-1...@-9     Move through text (same as data base)
@-z           Display returns and printer settings                         If value is false, value2 is returned.
@-y           Clear to end of line
@-r           Replace text with other text @NA                     Display "na" (for not available)
@-q           Goto another file on desktop @LOOKUP(value,range)    Looks for largest entry less than/equal to value
@-p           Print document @ERROR                  prints "error"
@-o           Display printer options @COUNT(list)            # of numeric entries in list
@-n           Rename file @CHOOSE(value,list)     Like BASIC "on x goto zzzz,zzzz,..."
@-m           Move text to/from clipboard @SUM(list)              Sum of all values in list
@-k           Determine where page breaks will be when printed
@-h           Screen dump @MIN(list)              Smallest value in list
@-f           Find text @MAX(list)              Largest value in list
@-e           Toggle cursors @INT(value)             Integer value of argument
@-d           Delete text @AVG(list)              Average value in list
@-c           Copy text to/from clipboard @ABS(value)             Absolute value of argument

Other keys of interest:
@-c                Copy text to/from clipboard
@-d                Delete text
@-e                Toggle cursors
@-f                Find text
@-g                Rename file
@-h                Screen dump
@-i                Insert a column or row
@-j                Jump to other window
@-k                Calculate all cell values
@-l                Change layout
@-m                Move rows or columns to/from clipboard
@-n                Rename file
@-p                Print rows or columns
@-q                Goto another file on desktop
@-s                Save file to disk
@-u                Edit a cell
@-t                Set standard values for certain parameters
@-w                Create windows
@-x                Clear to end of cell
@-z                Toggle normal/formula displays
@-0..@-9             Move through text (same as data base)
@-?                Help
@-arrows            Move one screen in direction of arrow

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Q: What is the difference between @-m (move to clipboard) and @c (copy to clipboard)?
A: @-m will remove the information from where you got it and @c leaves the info. Where you got it and puts a copy where you're copying to.

Cut and Paste is a fancy term for moving text/records from one part of a file to another file or within a file. This is done using the "clipboard" to hold the text while you select where to "paste" it.

If you have an Apple DMP and no other printers: You can do nothing. Dmp is the default printer.

If you have one of the following printers, you can select it when you configure:
Apple daisywheel (dwp) Apple silentype Apple imagewriter Epson mx series or mx grafrax+ Epson rx Epson fx Qume sprint 5 or 11

Does it need line feed after each return? Will it accept a top-of-form command? Should the program pause after each page? How wide is the paper (in inches)?

The program will tell you how to enter the above.

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Epson, Grafrax, and Qume are trademarks of the respective companies.

One of the features of the Apple IIGS that makes it easy to use is that double clicking on a data file icon will cause GS/OS to automatically launch the application program for that data file.

If the application has also been programmed to include the "MESSAGE CENTER" feature of GS/OS, the application program will then automatically open the selected data file.

Making use of the "MESSAGE CENTER" feature of GS/OS must be specifically programmed into the application. Many applications were not programmed to make use of this feature. If an application is so programmed, it can not make use of the feature unless the data file icon parameters include the full pathname of the application program.

Many Apple IIGS users can not make use of this automatic application launch because they do not have an icon editor, do not understand the importance of providing an application pathname or do not understand how to use this feature.

ICON APPLICATOR is an easy to use program which will set the application pathname by using the Standard Open File Dialog with which every Apple IIGS user should be familiar.

After launching ICON APPLICATOR, the "About" dialog will appear. Click anywhere in the dialog to close it.

Then, under the "File Menu" select the "Open" item and open the icon file you wish to update. A window will then appear at the bottom of the screen. It will display the first icon in the file at the top-right of the dialog. Below the icon the current application pathname will be displayed in a long box. Below this there are five buttons: "Get Application", "Previous Icon", "Next Icon", "Cancel" and "Done".

You can change the application pathname in two ways. First, click in the long box and edit it manually. Second, click on the "Get Application" button.

NOTE: NEITHER METHOD WILL CHANGE THE "APPLICATION PATHNAME" FOR EITHER A ProDOS 8 or ProDOS 16 APPLICATION ICON. Double clicking on an application program icon cause the application to be loaded and started. It is not necessary nor desirable to set an application pathname for an application file.

GET APPLICATION
Clicking on the "Get Application" button will cause the Standard Open
Apple II Computer Info

File Dialog to appear. Only ProDOS 8 and ProDOS 16 application programs will be displayed. Select the application normally, that is, just as if you were going to launch an application or open a data file. Double click on the application's filename or click on the OPEN button. When you select the application in this way, the Open File Dialog will disappear and the full pathname of your application will appear in the long box below the icon.

If you click on the "Cancel" button in the Open File Dialog, nothing will change.

The other buttons in the Open File Dialog will operate normally.

PREVIOUS ICON

Clicking on this button will change the icon and pathname to the icon just after the current one in the file. If there is only one icon in the file or if you are at the last icon, clicking on this button will have no effect.

NEXT ICON

Clicking on this button will change the icon and pathname to the icon just before the current icon displayed. When you first open an icon file, the first icon will be displayed and clicking on this button will have no effect.

CANCEL

Clicking on this button will cancel the operation. The current icon file will not be saved to disk and no pathnames will be changed. The window will be closed and you can then open a new icon file.

DONE

Clicking on this button will bring up the Standard Save File Dialog.

If you change your mind about saving the modified icon file, you can abort the save by clicking on the "Cancel" button in the Standard Save File Dialog.

Icon files should ONLY be saved to the ICONS folder. GS/OS can not find icons anywhere else except in the ICONS folder.

The window will be closed and you can then open a new icon file.

-------------END------------------------------------
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Turn on the computer. Insert the diskette into drive 1 with the label facing upwards. If the GS Operating System is already up, insert the game disk into the drive. Click the mouse pointer twice on the TAITO.ARKANOID icon when it appears. Next, click the pointer twice on the ARKANOID icon. The game will now load. If you want to boot directly from the Arkanoid disk, reset the computer and the game will start automatically.

CONTROLS

This game is played with the Applemouse. When the title screen appears, press 1 for a one player game; 2 for a two player game.
Pressing the mouse button automatically starts a one player game.

During game play:
Press ESC to pause the game; press any key to continue play.
Moving the mouse from left to right causes the Vaus to travel in the corresponding direction. Press the mouse button to release the energy ball or fire the laser.

Option Keys

<table>
<thead>
<tr>
<th>Option Keys</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control + R</td>
<td>Restarts the game</td>
</tr>
<tr>
<td>Control + Q</td>
<td>Returns to the finder</td>
</tr>
<tr>
<td>Control + S</td>
<td>Turns the sound on/off</td>
</tr>
<tr>
<td>Left Arrow</td>
<td>Decreases Volume</td>
</tr>
<tr>
<td>Right Arrow</td>
<td>Increases Volume</td>
</tr>
</tbody>
</table>

HOW TO PLAY

The intergalactic carrier Arkanoid travels through the outer reaches of the galaxy, carrying planet Earth's remaining human survivors. They encounter DOH, a complex entity of incredible power. As the carrier falls prey to his attack, the crew escapes in the "Vaus" and enter a demention of living energy! The battle for freedom takes place over 33 levels of complex and intricate barriers. Will you survive the final onslaught of DOH?

Move the Vaus left and right. Use your skills to deflect an energy ball will gradually destroy the walls confronting you. Grey energy blocks must be hit more than once; some energy blocks are indestructible. Alien life forms randomly descend to hinder you. Eliminate them on contact with an energy ball or the Vaus.

Destroy the energy blocks and release these capsules to help you win the game:

<table>
<thead>
<tr>
<th>Capsule</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>(Pink) Advances you to the next level</td>
</tr>
<tr>
<td>C</td>
<td>(Green) Catch the ball, move to a new position and fire</td>
</tr>
</tbody>
</table>
**STEREO CARDS**

This game supports several stereo cards, such as the SUPERSONIC from MIDIdea. When this type of card is installed, Arkanoid provides rich stereo sounds for you listening enjoyment.

**HINTS AND TIPS**

- The dividing capsule is very useful if your ball is caught behind or enclosed within a wall.
- The laser is useful for breaking down energy block that require a sharper angle for maneuvering into restrictive places.
- Use the very edge of your Vaus to deflect the ball and give it a use to the keyboard to enter your initials. Press RETURN to return to the title screen.

**PS:** If you are an excellent Graphix drawer and would like to get your pics on the newst GS Releases please let a Club 96 Member know. Also, TAITO your protection *WAS* the best for the GS so far but it is now TOAST!!!!!!!!

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Alps are still a climber's paradise. Your way against hazardous rock and unpredictable weather, but if you plan well and climb skillfully, you'll earn yourself a place in the select company of Alpine conquerors.

GETTING STARTED

It's almost time to get started on your trek to the summit. You'll soon see the routes you can choose from. Some are harder than others, but none of them are easy. To begin, make your selections from the dialog box in the first game screen:

```
<table>
<thead>
<tr>
<th></th>
<th>NUMBER OF COURSES</th>
<th></th>
<th>TRAINING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3</td>
<td>RESUME</td>
<td></td>
<td>Disregard the RESUME selection for now. You'll use it later when you play a saved game.</td>
</tr>
</tbody>
</table>

If you want to practice first, press "T" (or move the pointer to Training and press the fire button or <RETURN>). The training trail is a real climb."
PACKING FOR THE TRAIL

Your rucksack is automatically supplied with a basic selection of provisions and climbing gear, but it's smart to check it out before you accept it. It may not contain everything you need, or it may have things you don't want. You're the best judge of what you need. If your trip is going to be long, for example, you should pack more food. On a short trip you might decide to bring more luxuries. Just like in real life you may find that your packing ability gets better with experience. To make sure that you don't leave out anything essential go through the packing list in this section while you make your selections. The total weight of your rucksack and rack (the climbing gear you carry outside your rucksack) can be seen in the upper left corner of the screen. You can see the weight of your rucksack on top of each article you have. The first layer you see includes the items that are packed on top. To seeth next layer, select next and press the fire button or <SPACE>. The rucksack icons include both rack and rucksack items. If you decide to accept the basic selection, press "A" (or select Accept and press the fire button or <SPACE>). If you want to modify the basic selection, press "R" (or select refuse and press the fire button or <SPACE>). You'll now see all your potential choices laid out for you. Move the pointer over each article in turn. Once again, you'll see it name, weight, and number. Press the fire button to remove the item. Press the fire button more than once to remove more than one of the same item. When all the items of one type are gone, you'll see everything's on the next level. As you add and discard, you'll see the weight of the rucksack to keep track of your total. Try to keep the weight to 25 kilograms or less. (A kilogram is 2.2 pounds.) If you exceed this limit, you'll tire out more quickly on the trek and you're more likely to slip on the ice or fall through the ice. Once you've packed the rucksack to your satisfaction, press "D" (or select done and press the fire button or <SPACE>).

PACKING LISTITEM

Ropec Break your falls when you're climbing. Be sure to pack at least one rope. Carabiners Metal loops used to hook the rope to your climbing gear. You can't use the rope without them. Ice pins Attach the Carabiners to an ice cliff. You must have ice pins in order to use the carabiners and rope on ice. Pitons Attach the carabiners to a rock face. You must have pitons or chocks in order to use carabiners on rock. Hammer Pounds in the ice pins and pitons. You can't use the ice pins or pitons without it. Chock A carabiner anchor you force in a crack in the rock. You don't need a hammer to use chocks. Strap Fastens you onto a rock face. You'll need this in order to get into your pack while climbing. Stirrups A support that protects you while you haul up the rope. Without it you may have to abandon the rope with you come to its end. Chalk Protection from falling rocks. Soft shoes Smooth-soled climbing shoes, very helpful for traction on ice cliffs. Improvement your...
Keep an eye on the little man to the right of the cliff. He'll tell you how far you have to go. If you have steady hands, you might be able to steady your crampons. Without them you'll find it takes several triest to set each foot. Climb this way until you're back on level ground. For best results move quickly enough to stop the little man, but not so quickly that he runs away. For opening cans (you can't eat the canned goods if you don't have a knife.) First Aid Box Emergency medical aid. Sun Cream, Sunscreen: Protects your skin from sun glare. Lamp, Candle Light in darkness. Stove, gas Cooking. Canteen coffee and water. Essential Matches, Stormproof. Light the stove. LighterRum, wine Warm you up. Champagne For celebrating at the top. Food & Drink Take what you like and need, but watch the weight. Save game Let's save this disc if you want. You can change the time. Set your departure time in the dialog box that appears. Trips are automatically set for a 9am start. If that's OK, move the pointer over the timespace and press the fire button or <SPACE> until you see the 24-hour time space. If you want to change the time, move the pointer to + or - and press the fire button or <SPACE> again.

Your first concern should be placing a hand or foot that doesn't have ahold. Then secure any hold that's weak (flashing icon). Your first concern should be placing a hand or foot that doesn't have a holding. Then secure any hold that's weak (flashing icon). If all your holds are better positioned so that your arms can pull and your legs can push, hoist yourself up. Move sideways to dodge boulders and get to some holds. Sometimes you'll have to move downward to change position. Sometimes you'll have to move downward to change position. Keep an eye on the little man to the right of the cliff. He'll tell you how far you have to go. If you have steady hands, you might be able to steady your crampons. Without them you'll find it takes several triest to set each foot. Climb this way until you're back on level ground. For best results move quickly enough to stop the little man, but not so quickly that he runs away. For opening cans (you can't eat the canned goods if you don't have a knife.) First Aid Box Emergency medical aid. Sun Cream, Sunscreen: Protects your skin from sun glare. Lamp, Candle Light in darkness. Stove, gas Cooking. Canteen coffee and water. Essential Matches, Stormproof. Light the stove. LighterRum, wine Warm you up. Champagne For celebrating at the top. Food & Drink Take what you like and need, but watch the weight. Save game Let's save this disc if you want. You can change the time. Set your departure time in the dialog box that appears. Trips are automatically set for a 9am start. If that's OK, move the pointer over the timespace and press the fire button or <SPACE> until you see the 24-hour time space. If you want to change the time, move the pointer to + or - and press the fire button or <SPACE> again.

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the pointer to the rucksack and press the fire button or <SPACE>. Find something that fills the bill, and press the fire button or <SPACE> again. If you're satisfied with your needs, the little climber and/or his message will disappear. Sometimes, though, whatever you've chosen isn't enough. For example, the little climber is shivering. You get him a wool hat, but he's still cold. Go back to the pack and get the anorak. That should do the trick. When the climber gets tired, he needs a nap. If you're on level ground, take out the tent. This automatically puts him to sleep. If you've forgotten a tent, take out the shovel to dig an igloo. If you've forgotten both the shovel and the tent, you're in trouble. You can keep on going, but you'll get more and more tired. If you get the cold message while in the tent, take out the sleeping bag. If that doesn't work, try the foil cover or some warmer clothes. The clock speeds up while the climber sleeps. The tired graphic or message will disappear when the climber's ready to get up. When it's time to get up, reverse the procedure to put the tent or shovel and the sleeping bag back in the pack. You'll probably want something to eat, and then it's time to get back on the trail. If you get hungry, thirsty, or tired while climbing, check your progress by looking at the little man on the right. If you're close to the top, keep going and then open your pack on level ground. If you don't want to wait, secure yourself with the strap, open your pack, and take out what you need. If you're on a rock face, you can even sleep during your climb, using the hammock instead of the tent. Of course, if you've forgotten the hammock you'll have to keep climbing.

If disaster strikes, mountaineering is dangerous, and no matter how skilled you become, you may still make a fatal miscalculation while climbing or overlook a crevasse while trudging across the glacier. If you've used up your beginner's luck, that's the end of the game. Fortunately, it's easy to bring yourself back to life and start over. Just press <ESC> and you'll find yourself at the trailhead, ready to start again. Better luck this time!

Ending a Game

To stop the clock while you take a break, press the "p" key. To save a game in order to resume it later, be sure to pack the save gamedisk when you're packing your rucksack. When your reading to stop and save, open your pack and take out the disk. Your game will be saved at that point. When you're ready to resume play, load the program. When you're asked to choose a route, select resume. You'll start climbing again from where you left off.

Triumph -- And a New Game

After a day or even longer of hard work and danger, you reach the summit of your trek. You may be tired, but this is your moment of triumph. Enter your name in the scoring screen that appears and then press <RETURN>. When you're ready to start again, press the fire button or <SPACE>. You'll find yourself back at the trailhead, ready to choose a new route and strive for new heights. To quit the program at any time, press "q".
Concept: The idea of the whole game is to successfully destroy each wave of enemy fighters and bombers. Those planes are: MIG-25's
MIG-23's
TU-26's
Your planes are:
F-15's
B-1's

You are an AWAC plane. A plane which flies around the screen and pinpoints the locations of enemy planes and relays them to missile silos on the ground. The keys for movement are...
I
J
K
M

Planes are indicated on the screen by flying numbers. They range from 1-9. To identify which type of plane a certain number is that is flying on the screen, you hit that number on the keyboard. Example... Say the number 3 was flying around on my screen. I hit the #3, and at the bottom of the screen the name and blueprints of the plane will appear. You can then decide whether to destroy it or leave it alone. To destroy a plane (or number flying on the screen) you must currently have that plane and its blueprints at the bottom of the screen. Example.... Since I hit 3 (above), the blueprints of whatever 3 is (let's a MIG) will appear at the bottom of the screen. I can then hit the RETURN key and a missile will launch from the nearest U.S. missile silo (indicated by the squares on the screen.) If I hit a number on my keyboard, and that number is not currently visible on my screen, no blueprints will appear and it will give the message NOT IDENTIFIED. A word of advice. A number will not necessarily be the same plane throughout the entire game. Example... The #3 could fly on my screen, and I could identify it as a MIG. Before I have time to blast it, however, it flies off. 10 seconds later the same number (3) could fly on again, but it might just be a U.S. plane. It's a good idea to check before you blast.

Fuel: The fuel indicator will get lower and lower as the game goes on. If you run out of fuel before you wipe out the enemy, the game is over. You do have 1 chance per wave of replenishing your fuel supply. If your fuel supply is running low, you can hit the T key. A funny little beep will sound, but other than that, that's all that happens. What has really happened is that one of your bases has dispatched a fuel plane, which is a KC 707. Don't blow this up if you see it! You only have one!! Once you hit "T", the KC 707 will automatically fly up to you (it will also be using a number) dock with you, and return home. You can only do this once per wave, so use it wisely. Another feature is the PANIC button. On the right side of the screen is the word PANIC written vertically. Along with the word will be either 1 or more warheads. If things ever get too crowded, and too many enemy planes are flying towards you, you can hit the */" key. This will alert all bases currently on the screen to help out, and they will destroy every enemy plane on the screen. Each time you hit the */" key, one warhead disappears from the side of the screen. Again, you only get one per turn. But unlike the fuel plane, if you don't use the panic button, you get to keep the warhead you didn't use, and get an extra warhead for completing the wave. Also... don't hit the "B" key. I don't know what the hell this is, but whenever I hit it, it drops me into the monitor. After a wave is completed, you recieve bonus points for however many bases are still up (the enemy planes like to drop bombs on your bases, that's why your destroying them). After all the bonus points have been tallied, your fuel tank will be filled, you will recieve an extra PANIC warhead, and a flashing READY will appear on the screen. Hit return, and the game will proceed with the next wave of enemy planes.
THE AXE PACKER TAKES A REGULAR 34 SECTOR HIRES PAGE AND CHANGES IT INTO A 10-14 SECTOR HI-RES PAGE

WRITTEN BY: THE AXE
HOUSTON TEXAS

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THE AXE PACKER V1.0
THE AXE PACKER UTILITY V1.0
PACK.OBJ

TO SEE THE GHOSTBUSTER HIRES PAGES YOU MUST GET THE AXE UNPACKER UTILITY.

:::: Sysop Note ::::: I have since revised the Axe Packer Utility with a catalog feature in the event that the file name entered is incorrect, hence version 1.1

The Avatar

Well, to start out with this game is tough. It says so on the front cover of the instructions, so it must be true!

Its June 5th 1999, your an archaeologist who has discovered a scrawl from what seems to be a old man, or thing. You call your old archaeologist professor and tell him of a stone with baal written on it. Hearing the word Baal caused so much interest that he told you not to touch it. He told you that the stone was *foretold by an old scottish monk way back in the 12th century.* The stone could cause death and destruction to the world at a time when man was reaching for the stars. Later it was discovered that the date June 5th 1999 would be 666 if the 1999 was turned upside down! The devil, satan!! The other archaeologist moved the stone an Baal rose, killing all in his sights! A War Council was formed to kill this monster, elite warriors have been selected to fight Ball....

YOU are in charge of the Time Warriors and here are your TOP SECRET MISSION INSTRUCTIONS. You must guide and control each Time Warrior in his quest. Although it is impossible to say what horrors you will encounter when you enter BAAL’s lair, his enormous power coupled with his huge army of monstrous bests make him an extremely dangerous enemy.

We pray you can do it, we know you can. Many lives will be lost in the numerous bloody battles but BAAL must be defeated. If not we run the risk of being ruled by a power crazy demon at best, at worst the earth as we know it is doomed. OUR FATE IS IN YOUR HANDS.....

The joystick or cursor keys are used to control the warrior as follows:

* Joystick center- Warrior is still and in firing position where appropriate.
* Up/Down- Warrior up or down ladders where appropriate.
* Left/Right- Warrior turn/move left or right where appropriate.

With fire button pressed:
* Joystick center- Warrior fires laser in direction faced where appropriate(including off the ladders).
* Up- Warrior jumps straight up where appropriate.
* Down- Same as joystick center.
* left/right- Warrior stops firing and transports where appropriate.
* Joystick diagonal - Warrior somersaults forward in direction he is facing where appropriate.

Further keyboard controls:

F1Toggle sound effects On/Off
1Select laser mode 1(on main keyboard no keypad)
2Select laser mode 2"
3Select laser mode 3"
4Select laser mode 4

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You'll get in a fight, and some woman named Tasha will save your butt. She'll tell you that Matabushi is your enemy, not the Black Widows, and that Kearny was just trying to get you killed. Go ahead and leave the bar.

If you read the news net, you'll see that Tasha gave you some files supposedly from Matabushi telling about your family's execution. Read on, and you'll find something about Matabushi announcing a new commercial strategy. Another news item from Jordan Rowe will tell you to meet up with Kearney on Albiero. Go there.

When you get there, you'll land in the middle of a battle, and see Tasha. Follow her. You will see Tasha and Kearney confronting each other, and have to decide whom to trust. I would suggest you trust Tasha.

When the smoke clears, Tasha will give you a data disk explaining the action which killed your family, and who was behind it. She'll also give you five million bucks, which isn't too bad. She'll tell you that the Chalice you're after is on a Kurita planet called Kirchbach (as far as I know, this is always the same) guarded by four Battlemasters and one Warhammer.

Another loose end to tie up is Grig. Head to the planet where you first found him (New Samarkind, Delacruz, or Tabayama) and you'll meet a bum. Ask him to go on with his story. Make a DEAL with him.

When you see Grig, WAIT for the situation to improve. You'll get a chance when there are only two guards with him, STRIKE now. He'll try to make a deal with you. Don't go for it, and PULL THE TRIGGER. You'll pocket some easy cash.

You've now done everything you need to do except get the Chalice back. The above actions should have taken about a year of game time, meaning you've got about four more years to go. You should have about 10.5 million bucks, so go ahead and invest in some mechs and crew. SAVE THE GAME before you try to hire any crewmembers, because the game will crash when you do. You'll want to end up with a good crew and some good mechs, I would suggest you get four Battlemasters. You'll need money for this, and there are two ways you can get it:

1. Go around buying Mechs at industrial planets and Mech-manufacturing planets (such as Alshain (Kurita), Herperus II (Steiner), Caloway Vf (Marik), Ares (Liao), and Marduk (Davion)). Other good planets include Amity, Alunen, and Galax. Buy mechs at these planets, and travel to various backwater and out of the way places like Land's End and Baxley. There are a huge number of these planets. Anyway, you can sell Mechs at these places for a nice profit.

2. Norton Utilities. Save the game, NU it, and give yourself some cash. Money is offset 73 (49h). Fill the three bytes with $FF, and you'll get about 16.7 Million. Or if you're REALLY greedy, go to byte 76 (4Ch), and change that one to 01h to 0Fh (OPh will give you about 250,000,000).

Once you get cash, hire a crew and start practicing doing jobs for the various houses. When your crew gets good enough (I suppose you could cheat for this also, if you wanted to), go to Kirchbach and kick some butt.

End of game.

I hope you enjoyed this little solve, and you'll see some more in the future. In addition, I have done a set of docs to Mechwarrior, as the cracking groups did not see fit to release them.

The Alternative -- When the "big" groups don't come through.
Ok, that's the basic background to the game. When you begin, you will find VISIT PARKVIEW -=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=

Keep in mind that this documentation is a supplement for the documentation included with the Ghostbusters II package. I've included some instructions that can be found in the regular Ghostbusters II manual for those of you who lost them (which most people frequently do). By the way, you HAVE read the original docs, haven't you? Oh, well. Let us begin.

Five years ago, in the city of New York, the Ghostbusters battled their first major spiritual manifestation, Gozer. Crossing the proton streams produced by their particle accelerators, they managed to reverse the dimensional gateway created by Gozer, and send him back through the portal. In the process, they destroyed much of the surrounding area, which just so happened to make the mayor a TAD upset. Over the years, they went out of business, due to various reasons, one being the fact that the supernatural occurrences had been halted dramatically, thus giving them no ghosts to bust. Upon declaring bankruptcy, they went their separate ways.

Peter Venkman become the host of a talk show called "The World of the Psychic", which basically only made fun of people who believed in such things. Ray Stantz and Egon Spengler opened up an occult bookstore, and entertained at children's parties. Egon Spengler took up scientific studies at a laboratory.

In the meanwhile, The New York Art Museum received a painting of an ancient tyrant, Vigo the Carpathian. The painting had an aura of evil around it, and with good reason, for it was the resting place of Vigo's spirit, waiting to get out. The spirit needed a spark of energy to emerge into the real world, and it just so happened that the spark needed was in the city's sewer, taking the form of psycho-reactant slime. This slime, being psycho-reactant, was created from the bad thoughts, actions, and attitudes of the bitter citizens of the Big Apple.

The slime soon rose to the city's surface streets, and it was soon discovered more than three times by wandering ghosts, you will fall into the river. If you catch the two ghosts successfully, you will experience the first quote digitized from the movie with great accuracy: "Two in the box! Ready to go! We be fast, they be slow!" The judge will then release you, and the Ghostbusters will be back in business! If you fail to capture the two ghosts, you will still be allowed to go back into business, but you will owe a debt of $10,000.

You will next find yourself in the firehouse. You have several options here, three being:

- Go to get more slime.
- Answer the phone.
- Test slime.
- Visit Parkview.

GETTING MORE SLIME

This should be the VERY FIRST move you make in the firehouse. This option will allow one of the Ghostbusters to be lowered into the city's sewer system in order to get a psycho-reactant slime sample. Lower yourself down to the river, and press the fire button to scoop up slime samples. You will need to fill up the vial with the slime that you'll come back up. Be careful. You must avoid the hand that pops out of the river, and also avoid getting slimed by any wandering ghosts or spirits. If the hand grabs you, quickly shake back and forth to break loose. You will only be able to do this three times. Also, if you get slimed more than three times by wandering ghosts, you will fall into the river.

ANSWER PHONE

You will get a chance to answer the phone six times. Each time, you will be answering a job call to bust some ghosts. Upon selecting this option, a window will appear with a picture of the Ghostbuster's secretary, Janine Melnitz. She will answer the phone by either saying "Ghostbusters...Whaddaya want?", "We got one!" or "Who you gonna call?". Again, each of these are digitized from the movies.

TEST SLIME

Since this is psycho-reactant slime, you will be testing its reaction to some types of music. To select which music to play, move the arrow so that it points to a small button on the recorder. After clicking on that, select the LARGE button to start playing the music. The slime will have a certain reaction. Either it will explode, start to dance, or it will just sit there. If it explodes, then you now have a sample of positive energy slime. If it explodes, you will have to get some more.

VISIT PARKVIEW
If any of the Ghostbusters fall into the river of slime, they will end up in the Temple of the Screaming Electron or the Taipan Enigma. If this is the case, and you wish to break them out, select this option. You will then find yourself climbing on the wall of the institution on a rope. Push to either the left or the right and press the fire button. You will crash through one of the windows and enter the room. There may be any number of things in the room. If one of the Ghostbusters is not there, escape as soon as possible. Staying too long will make the guards drop a net over you and take you away. To escape the room, wait for the rope to swing by the window and then push forward and press the button. If you do this correctly, you will be back outside on the rope. If for some reason you wish to leave the place entirely, move down until you reach the ground, where you will drive away in the Ecto-1.

After going through all this stuff for some time, Egon will make a Slime Blower to shoot the positive energy slime. You will now have an option to "Take Statue for a Walk", meaning you will animate the Statue of Liberty in order to go into battle with Vigo the Carpathian. DO NOT select this option until you have three vials of positive slime (the vials will be shown to the bottom right of the list with all the Ghostbusters' names). Just keep getting more slime and testing it. When you test all of the sound tracks, you will end up with three vials.

MOVING THE STATUE OF LIBERTY

Simply move your controller to the northeast and northwest. Observe the movement of the statue's feet, and how they interact with your controller. In time, you will get the hang of it and be able to move quickly. To stop the statue at an intersection in order to turn, maneuver both of its feet so that they are both resting on the ground.

A TIP: Like I said before, the FIRST MOVE in the firehouse you should make is getting some slime. After doing so, DO NOT test it. Rather, answer the phone. Egon will offer to stay behind and run tests. When you come back from the call, he will have finished his tests, and inform you that he found a bad sound track. He will, however, have kept the slime from exploding. That way, you will not have to go back for more slime! Answer the phone again to repeat this process. Keep in mind that WHENEVER you answer a call and there is a slime sample still intact, Egon will stay behind to test it.

Well, that should be enough information to get you started! I'll leave you to battle Vigo yourself <grin>. If you have any problems, or any other tips for this game, contact me at the number below. Also, I am getting into the habit of writing documentation files for other games, so if you happen to find a game with little or no docs whatsoever, give me a call, and I'll write one up if I can. Have fun!!!!
Here is a favorite board game of skill and luck. The object of the game is to remove all of your pieces from the playing field before your opponent (the computer) does. If you are unfamiliar with the game of Backgammon, please refer to a book that explains the rules prior to playing the game.

WARNING!!! WARNING!!! WARNING!!! Back up the disks that you are going to use INIT, ZAP, FIXCAT on or you are taking a big chance!

The board positions are numbered from 1 to 24 (or 24 to 1). To move type in the beginning position followed by a space and the ending position (Ex. 13 9). If you get knocked off the board your beginning position is 25. To bring a piece home type [H] for the destination (Ex. 1 H).

NOTE 1: To exit this game RE-BOOT your machine. Sorry, but there was no way to change it.

Press [']-[1] to run Backgammon.

Files needed:

BACKGAMMON

---

ome to make the game screens more readable. If you are unfamiliar with how to access the CONTROL PANEL please read your users manuals.

Files needed:

BACKGAMMON

---

1. Summary of TRAX commands

1.1 Analysis Mode commands

   Arrows Select track to read.
   R   Read current track.
   N   Read next track.
   P   Read previous track.
   F   Toggle disk format (13 or 16 secs).
   V   Verify disk and display errors.
   A   Display address checksums.
   D   Display data checksums.
   O   Recalibrate and read track 0.
   S   Change slot/drive configuration
   X   Enter raw dump mode.
   ESC Exit program.

2. Raw Dump Commands

   -> Scroll forward one line
   <- Scroll back one line
   N   Scroll to next page
   P   Scroll to previous page
   B   Go to beginning of buffer
   E   Go to end of buffer
   C   Change search byte
   X   Return to analysis mode

3. Summary of INIT Functions
Apple II Computer Info

3.1 Disk sectoring
This value is the number of sectors per track. The options are 13 or 16. A 16 sector selection will not work if you have an old disk drive which has not been updated for 16 sectors per track.

3.2 Disk format
This is the type of operating system being used on this diskette. For 13 sector both DOS and CP/M are available. For 16 sectors disks DOS, CP/M and PASCAL are available (the PASCAL option works for Apple Fortran).

3.3 Preserve data
This option will allow you to re-format a disk while preserving the data on it.

3.4 Skew direction
This prompt indicates the direction of the skewing to be used. The options are ascending and descending. Ordinarily, DOS reads sectors in descending order while CP/M and PASCAL read them in ascending order.

3.5 ??
TO 9, you could increase your disk speed up to 40%.

3.6 Slot
The number of the slot occupied by your disk controller.

3.7 Drive
The drive number of your disk drive.

3.8 Volume number
This is the volume number that will be used to format your diskette. The numbers 0-254 are available. You can use this to change a volume number.

3.9 Starting track
The track number which formatting is to start.

3.10 Ending track
The last track to be formatted.

4. The ZAP Program
EXP/ Moving the buffer cursor to the offset given by /EXP/. /EXP/ may range in value of 0 to 255.
+/EXP/ (The symbols +|- means you can put a plus or minus sign at that point.) Move the cursor to a new offset, computed by adding or subtracting the value of the expression, /EXP/ EX. +257.
R Read track and sector. Used in this format..R/EXP1/ ,/EXP2/
WRITE Write to current track and sector. Used in this format...WRITE/EXP1/ ,/EXP2/
N Next track.
P Read previous sector.
LC Lower case.
UC Upper case.
IMAGE Sets the ASCII translation on the right hand side of the screen so that minimal translation is done.
ASCII The opposite of IMAGE mode. ASCII is the default.
LOCK Lock ZAP so no writing can be done.
UNLOCK Opposite of LOCK, undoes LOCK.
DOS16 Informs ZAP the the disk has 16 sec format.
DOS13 Self explanatory.
CP/M For CP/M disks.
PASCAL For PASCAL disks.
OPEN You can open a file like...OPEN"HELLO" and it will read the VTOC and find the track sector list and display the sectors c
CLOSE Closes an opened file.
PRINT Copies entire screen to printer.

Here is a list of all the ZAP commands including the ones I didn't mention.

/EXP/ Set buffer cursor
+/EXP/ Move forward in buffer, disk, or file
-/EXP/ Move backward as above
R/TRK/ ,/SEC/ Read track, sector
R/REC/ ,/BYT/ Read record, byte (open file)
WRITE/TRK/ ,/SEC/ Writes track, sector
WRITE/REC/ ,/BYT/ Same as above
N Next sector
P Previous sector
% indirect read

5. Buffer Modify Commands
/STR/ Store string into buffer
SET Multiple store
& Logical and operation
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O                  Logical OR operation
X                  Logical Exclusive OR operation

6.  COMPARISON COMMANDS
L                  Look for string.
V                  verify strings matches buffer
COMPARE/BUFFER/    Compare buffers.

7.  Option Switch Commands
LC       Lowercase.
UC       Uppercase.
IMAGE    Print char in image form.
ASCII    Standard ascii translation.
LOCK     Prevent write operations.
UNLOCK   Allow write operations.
DOS16    DOS 3.3
DOS13    DOS 3.2 OR 3.1
CPM     Use CPM skew table (16 sector).
PASCAL   Use PASCAL skwe table.
NOWRAP   Prevent disk or file wraparound

8.  File Commands
OPEN     Open a file
RLEN     Set record length
CLOSE    Close file
WHERE    Open file containing sector

PH#       Set printer slot number
PRINT    Copy screen to printer
DUMP     Dump sector(s) to printer
NOTE     Print comment line
LOG      Log all changes
NOLOG    Stop logging changes

10.  Buffer command
  #        Select buffer

11.  Macro Commands

   (/NAME//TEXT/)   Define macro
   /NAME/          Invoke macro
   //NAME/         Delete macro
   MACROS          List of all macros
   MSWAP           Swap macro table with buffer
   NOLOG           Stop logging changes

12. Trace commands
   TRACK           Display trace table
   <                Back up in trace
   >                Advance in trace

13. Miscellaneous Commands
   AT/EXP/         Position but do not read
   AT               Mark buffer empty
   S/x/,/y/       Set disk slot to (x) and ,drive to (y)
   ?/EXP/         Calculator
   I               Disassemble to screen
   LOOP/CNT/,/LOC/ Repeat line
   HELP/EXP/      Shows help screen
   VTOC           Reads DOS VTOC
   CAT            Read first catalog sector
   STATUS         Show ZAP status variables
   END             Exit ZAP

14. Patching DOS using ZAP
14.1 Log note patch to avoid reload of language card
R0,9 D3 V8D00E0 D3:EAEAEA UNLOCK WRITE NOLOG

14.2 BRUN or EXEC the HELLO File
To BRUN
R0,D V06 42:34 UNLOCK WRITE NOLOG

To EXEC:
R0,D 42 V06 42:14 UNLOCK WRITE NOLOG

14.3 Removing the pause during a long CATALOG
14.4 Changing the HELLO File Name

R1,9 75:‘THE NEW NAME’ UNLOCK WRITE NOLOG

14.5 Put cursor on command which caused a DOS Err

R1,60 V6C FF:4C WRITE
R0,6 DF:C625:::2022FC6C5E9D WRITE
NOLOG

14.6 Allow the Value of the L Keyword of a BSAVE to Exceed 32k

R1,8 63 VFF7F 63:FFFF UNLOCK WRITE

15.  FIXCAT

This is a self explanatory program. But here are some notes
The way this program restores deleted files is that it goes looking
for track/sector lists. I found this program to be really great.
First, if you have an I/O err, use INIT, while saving the data. If
the I/O err is on the catalog track. No problem! Just run FIXCAT
after using INIT and you can either start from scratch (warning! I
have never done this so make a backup before using) or you can read
from present catalog. If you start from scratch look for deleted
files and restore all that you can.

TRAX: A track examination program. TRAX will read a track from a
diskette in its “raw” pre-nibbilized form and format it on the screen,
attempting to pick out the sector formatting, such as a protected
diskette or one which has been damaged in some way, TRAX will
highlight its anomalies. TRAX is also useful in conjunction with
the INIT program to determine the physical order or skewing of sectors on
a diskette.

TRAX COMMANDS
=============

[-ANALYSIS MODE COMMANDS-]

ARROW KEYS SELECT TRACK TO READ
R  READ CURRENT TRACK
N  READ NEXT TRACK
P  READ PREVIOUS TRACK
F  TOGGLE DISK FORMAT
V  VERIFY DISK & DISPLAY ERRS
A  DISPLAY ADDRESS CHECKSUMS
D  DISPLAY DATA CHECKSUMS
O  RECALIBRATE & READ TRACK 0
S  CHANGE SLOT/DRIVE CONFIG.
X  ENTER RAW DUMP MODE
ESC KEY EXIT PROGRAM

[-RAW DUMP COMMANDS-]

RIGHT ARROW SCROLL FORWARD ONE LINE
LEFT ARROW SCROLL BACK ONE LINE
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INIT: The INIT program can be used to reformat a single track on a diskette, a range of tracks, or the entire diskette. In addition, INIT will optionally attempt to preserve the contents of any readable sector it finds before reformatting. Thus, INIT can be used to fix a single sector whose formatting has been damaged so that it can no longer be read from or written to. This avoids having to initialize the entire diskette with the DOS INIT command. INIT will also allow you to specify the order of the sectors on any given track. Doing this can improve disk read times by about 40%.

INIT OPTIONS

Disk Sectoring:
THIS VALUE IS THE NUMBER OF SECTORS PER TRACK. THE OPTIONS ARE 13 OR 16.

Disk Format: This is the type of operating system being used on this diskette.

Preserve Data: This question asks whether the data currently on your diskette should be preserved.

Skew Direction: This prompt indicates the direction of the skewing to be used.

Skew Factor: This is the spacing placed between logically sequential sectors during formatting.

Slot: The number of the slot occupied by your disk drive controller card.

Drive: The drive number of your disk drive.

Volume Number: This is the volume number that will be used to format your diskette.

Starting Track: The track number upon which formatting is to start.

Ending Track: The last track to be formatted.

ZAP: ZAP in its simplest sense allows you to read and modify a diskette at the track and sector level. A sector may be read and displayed in hexadecimal and ascii and, optionally, modified and rewritten to the disk. ZAP provides over 50 commands, including some programmability with macros, labels, and loops, allowing you to perform complex manipulations on diskettes. Full support exists for DOS files of all types, CP/M files, and Pascal files as well. ZAP is perhaps the most complex of the four programs but you will probably find you use it most heavily.
Apple II Computer Info

# /EXP/    Select buffer

[-MACRO COMMANDS-]

(/NAME/ /TEXT/) Define macro
//NAME/ Invoke macro
//NAME/ Delete macro
MACROS List all macros
MSWAP Swap macro table with buffer

[-LABEL COMMANDS-]

LABELS Display all labels
=/NAME/ Define label
//NAME/ Delete label
/NAME/-/EXP/ Position to label
/NAME/-/EXP/ Position to label plus expression
LSWAP Swap label table with buffer

[-TRACE COMMANDS-]

TRACE Display trace table
< Back up in trace
> Advance in trace

[-MISCELLANEOUS COMMANDS-]

AT/EXP/ Position but do not read
AT Mark buffer empty
S/SLOT/;/DRIVE/ Set disk slot, drive
7/EXP/ Calculator
I Disassemble to screen
LOOP/CNT/;/LOC/ Repeat line
HELP/EXP/ Show help screen
VTOC Read DOS VTOC
STATUS Show ZAP status variables
END Exit zap

FIXCAT: The fixcat program is an automated utility which allows you to diagnose and correct errors in the catalog track of any DOS diskette. In addition, it takes the Find Track/ Sector lists program (FTS) of Beneath Apple DOS a step further by actually recovering lost files on a diskette automatically! Fixcat will also allow you to remove the DOS image from track 1 and 2 to provide more room for files and will recover lost sectors by correcting the VTOC freespace map.

FIXCAT MESSAGES

Display in what slot?

If you wish to have fixcat display its message only on the Apple screen, enter 0 (the default). If you want them to be printed on a printer, give the slot number of your printer here.

Automatic Timeout in Seconds?

Enter 0 (the default) if you want FIXCAT to always wait for your response to each question it asks. If you specify a number of seconds, in the other hand, each time FIXCAT prompts you for a response, it will wait that number of seconds before taking the default as your answer.

What Format is Your Diskette?

If your diskette is 16 sector format, type 16 (the default). If it is an older 13 sector diskette, type 13.

Read existing catalog from diskette or start from scratch? ("R" or "S")

If your catalog is at all intact, specify R (the default) to have FIXCAT use it as a basis for its operations. Only if there is not a single valid sector left in the catalog should you specify "S". In this case, FIXCAT will start with a zapped out catalog track and will build it up from scratch.

Does this diskette contain a DOS image on tracks 0, 1, and 2?

If this is a standard, bootable disk, reply Y (the default). If you want to recover track 1 and 2 for your own and never boot this diskette again, reply N. Also reply N if you have previously recovered these tracks using FIXCAT.

Scan for Lost or Deleted Files?

If you do not think you have any missing files, reply N (the default). If you wish to have FIXCAT search the entire diskette for "unattached" track/ sector list sectors, type Y.

Recover This File?

If you think that this is a file you want, reply Y (the default). If the file looks like an old deleted file you no longer wanted, reply N.

What type of File is it? (T,I,A,B,R,S)

If you were able to identify the file, you probably know its file type as well. If not, FIXCAT will prompt you with a pretty good guess. You'll find that FIXCAT will be correct in its guess about 95% of the time. If the wrong file type is given and you later detect this you can delete the file and rerun FIXCAT, supplying a different type this time.

Apply Accumulated Corrections to the VTOC/Catalog Track?

Reply Y if you want the corrections you have authorized up to this point to be applied to the catalog track on your diskette. Reply N if you want to forget the whole thing and not change your diskette at all.
INTRODUCTION TO BALTIC 1985:
THE SOVIET OFFENSIVE INTO SOUTHERN GERMANY HAS BEEN HALTED AT THE RHINE AFTER BITTER FIGHTING. IN THE PERSIAN GULF, THE BATTLE FOR THE OILFIELDS HAS PAUSED, AS BOTH SIDES RESUPPLY.

SATELLITE AND OTHER INTELLIGENCE REPORTS SHOW WIDESPREAD CIVIL DISOBEDIENCE IN WARSAW, GDANSK, AND OTHER POLISH CITIES. SOME EASTERN EUROPEAN UNITS HAVE BEEN CLASSIFIED AS UNRELIABLE BY THEIR SOVIET ALLIES, AND SOVIET RESERVES HAVE BEEN SENT TO SUPPRESS THE REbellions.

Radio reports from Berlin, breaking through intense Soviet jamming, show that American infantry units, bypassed by the Soviet Blitzkrieg into Southern Germany, are still holding out in the suburbs of West Berlin.

IN THE NATO BATTLEFIELD HEADQUARTERS, THE NATO COMMANDER REVIEWS THE INTELLIGENCE REPORTS, MEETS WITH HIS STAFF, AND ISSUES THESE ORDERS:

1. The Soviet move:

RADIO REPORTS FROM BERLIN, BREAKING THROUGH INTENSE SOVIET JAMMING, SHOW THAT AMERICAN INFANTRY UNITS, BYPASSED BY THE SOVIET BLITZKRIEG INTO SOUTHERN GERMANY, ARE STILL HOLDING OUT IN THE SUBURBS OF WEST BERLIN.

IN THE NATO BATTLEFIELD HEADQUARTERS, THE NATO COMMANDER REVIEWS THE INTELLIGENCE REPORTS, MEETS WITH HIS STAFF, AND ISSUES THESE ORDERS:

[1.3] UNIT IDENTIFICATION:
THE SOVIET PLAYER HAS ONE ADDITIONAL UNIT TYPE: Nato & Paratroop Infantry.

[1.4] MOVING UNITS:
PRESS [ESCAPE] TO FIND YOUR FIRST UNIT, AND TO ENTER ITS MOVEMENT PHASE. MOVE THE UNIT THE SAME WAY YOU WOULD MOVE THE CURSOR (CONSULT MAP ABOVE). WHEN YOU HAVE MOVED YOUR LAST UNIT, THE CURSOR ON THE SCREEN WILL BLINK. TYPE CTRL. E, AND THEN TYPE 'E' TO END YOUR MOVE.

[1.5] THE SOVIET MOVE:

[2.1] MOVEMENT DISPLAY:
THE MOBMENT DISPLAY IN BALTIC 1985 SHOWS THE WORD "SMOKE". IF IT IS HIGHLIGHTED, THE UNIT IS IN A SMOKE-FILLED HEX. MINE AND NUCLEAR CONTAMINATION DO NOT APPEAR, BECAUSE THEY PLAY NO PART IN THIS SCENARIO.

[2.5] AIR CAVALRY:
AIR CAVALRY UNITS CANNOT ENTER ENEMY-OWNED TOWN, URBAN OR OBJECTIVE HEXES.

[2.6] TRANSPORT MODE:
INFANTRY UNITS CANNOT CHANGE TO TRANSPORT MODE.

[2.8] RIVERS:
REGULAR UNITS CAN CROSS A RIVER IN RIVER MODE. AIR CAVALRY CAN CROSS A RIVER IN ANY MODE.

[2.9] BRIDGING:
NO BRIDGING IS NEEDED IN THIS SCENARIO. ENGINEER UNITS CAN CHANGE TO RIVER MODE MORE EASILY THAN OTHER UNITS, BUT OTHERWISE HAVE NO SPECIAL FUNCTIONS.

[3.0] MODES:
INFANTRY UNITS CANNOT CHANGE TO TRANSPORT MODE.
ENGINEER UNITS CAN CHANGE TO REORGANIZE MODE.

[4.0] THE ORDER PHASE:
PLEASE REFER TO "GERMANY 1985" DOCS TO FIND OUT THE ORDER PHASE (APPLE MANOR).

[5.0] ARTILLERY:
ONCE AGAIN, PLEASE REFER TO "GERMANY 1985" DOCS TO FIND OUT ARTILLERY RANGES.

[6.0] AIR POWER: [%] THE SIDE WITH AIR SUPERIORITY HAS A POSSIBLE MAXIMUM OF FIVE AIR STIKES PER TURN.

[%] THE NATO PLAYER HAS AIR SUPERIORITY FOR THE FIRST TWO TURNS.

[9.0] REORGANIZATION:
ENGINEER UNITS MAY REORGANIZE.

[10.0] HIDDEN UNITS:
ALL UNITS ARE EXPOSED WHEN THEY FIRST APPEAR ON THE MAP. HIDE EACH OF YOUR UNITS BY TYPING CTRL. H DURING ITS MOVEMENT PHASE. IF YOU ARE PLAYING SOLITAIRE, AND YOU HAVE CHOSEN THE HIDDEN OPTION, THE COMPUTER WILL AUTOMATICALLY HIDE ENEMY UNITS WHEN THEY MOVE.

[11.0] MINES AND NUCLEAR CONTAMINATION: MINES AND NUCLEAR CONTAMINATION PLAY NO PART IN THIS SCENARIO.

[13.0] %%% VICTORY! %%%

[13.1] VICTORY POINTS: THE NATO PLAYER RECEIVES:

[%] 1/2 POINT FOR EACH OBJECTIVE HELD

[%] 1 POINT FOR EACH SOVIET UNIT ELIMINATED THE SOVIET PLAYER RECEIVES:

[%] 1 POINT FOR EACH SOVIET UNIT ELIMINATED: AN OBJECTIVE HEX IS HELD BY THE SIDE WHOSE UNIT LAST ENTERED THE HEX. (OR ORIGINALLY WAS HELD BY THE PLAYER.)

[13.2] THE VICTORY DISPLAY:
TO SEE THE DISPLAY OF VICTORY POINTS EARNED BY EACH SIDE, TYPE CTRL. V AT ANY TIME DURING YOUR TURN. (PLAYERS CAN ALSO SEE THE VICTORY DISPLAY DURING SOLITAIRE GAMES WHEN THE COMPUTER IS MOVING ENEMY UNITS.)


[16.0] TACTICS:

[%] THE NATO PLAYER MUST MOVE QUICKLY TO TAKE ADVANTAGE OF HIS INITIAL AIR SUPERIORITY AND NUMBERS. THE RUSSIAN PLAYER STARTS WITH NO SPARE AIR SUPERIORITY POINTS AND IT WILL BE SEVERAL TURNS BEFORE THE NATO PLAYER CAN BE CHALLENGED IN THE AIR.

[%] KEEP DIVISIONS TOGETHER. PROTECT, AND, WHENEVER POSSIBLE, HIDE HEADQUARTERS UNITS IN THE REAR. USE THE D KEY FREQUENTLY TO CHECK THE LOCATION OF DIVISIONAL UNITS.

[%] WITHDRAW, HIDE AND REORGANIZE WEAKENED UNITS. THEY WILL BE NEEDED LATER IN THIS SCENARIO, WHEN SOVIET REINFORCEMENTS ARRIVE, AND THEIR LOSS COSTS VICTORY POINTS.

[%] HIDE UNITS WHENEVER POSSIBLE. THE COMPUTER CANT SEE YOU, AND AMBUSHES ARE AN EFFECTIVE TACTIC.

[5%] TAKE AND HOLD ONTO OBJECTIVES. YOU RECEIVE VICTORY POINTS EACH TURN THEY ARE HELD.

[5%] PREPARE ATTACKS CAREFULLY. USE A FEW SELECTED UNITS TO ATTACK AND DEFEND, WITH NUMEROUS SUPPORTING UNITS AND HEADQUARTERS NEARBY.

[5%] AIR SUPERIORITY IS CRUCIAL, NOT JUST FOR SUPPORTING AIR STRIKES, BUT BECAUSE AN ENEMY AIR SUPERIORITY HINDERS YOUR MOVEMENT. USE CTRL. A EACH TURN TO CHECK YOUR AIR POWER STATUS, AND ALLOT POINTS FOR FUTURE SUPERIORITY.

FREQUENTLY USED COMMANDS

O-GIVE ORDERS TO UNIT
C-CHANGE MODE OF UNIT
L-LOOK AT OTHER UNMOVED UNITS IN THAT DIVISION
Q-LEAVE UNIT WHERE IT IS
D-HIGHLIGHT & BLINK ALL UNITS OF A DIVISION
F-SHOW ENTIRE MAP
CTRL.C-ATTACK ADJACENT UNIT
CTRL.A-SHOW AIR POWER DISPLAY
CTRL.H-HIDE UNIT
CTRL.V-SHOW VICTORY DISPLAY
CTRL.E-END TURN
CTRL.P-TURN COMBAT PAUSE ON/OFF
CTRL.S-(FOLLOWED BY MAP SECTOR NUMBER OR LETTER)-SHOW THAT SECTOR OF MAP
CTRL.C-RETURN TO GAME PLAY
CTRL.V-SHOW VICTORY DISPLAY
CTRL.A-SPEED UP COMPUTER MOVE
CTRL.W-SLOW DOWN COMPUTER MOVE
CTRL.S-RESUME PAUSED COMPUTER MOVE

APPENDIX

==TERRAIN EFFECTS TABLE==

<table>
<thead>
<tr>
<th>TERRAIN</th>
<th>MOVEMENT</th>
<th>SIGHTING</th>
<th>COMBAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPEN</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>L. ROUGH</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>ROUGH</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>FOREST</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>TOWN</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>URBAN</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>OBJECT</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>LAKE</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

==MAXIMUM MOVEMENT ALLOWANCES==

<table>
<thead>
<tr>
<th>NATO</th>
<th>SOVIET</th>
</tr>
</thead>
<tbody>
<tr>
<td>TANK 18</td>
<td>TANK 18</td>
</tr>
<tr>
<td>SPG 14</td>
<td>BMP 18</td>
</tr>
<tr>
<td>APC 18</td>
<td>ARTY 12</td>
</tr>
<tr>
<td>KATSH 12</td>
<td></td>
</tr>
<tr>
<td>INFAN 12</td>
<td>INFAN 12</td>
</tr>
<tr>
<td>ENG 14</td>
<td>ENG 14</td>
</tr>
</tbody>
</table>

==SECTOR NUMBERS==

| NOTE:SECTOR # S 1-B ARE TREATED AS OPEN |
| N 1-B | 2 | 4 | 0 |

H AXES FOR ALL PURPOSES: SECTOR # C IS TREATED AS AN URBAN HEX.

==TYPE VS TYPE TABLE==

SOVIET UNITS VS NATO INFANTRY:

<table>
<thead>
<tr>
<th>TANK</th>
<th>BMP</th>
<th>ARTLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3</td>
<td>-2</td>
<td>-10</td>
</tr>
</tbody>
</table>
Apple II Computer Info

STARTING

1. INSERT BANK STREET WRITER DISK INTO DRIVE AND TURN ON COMPUTER OR TYPE "PR#S" WHERE S=SLOT OF DRIVE

2. IF YOU PRESS <ESC> WHILE BANK STREET WRITER IS LOADING, THE UTILITY PROGRAM WILL LOAD INSTEAD

MODES

WRITE MODE, EDIT MODE, AND TRANSER MODE

HITTING <ESC> FOR EDIT MODE WILL SHOW YOU:

<- OR ->, RETURN <ESC> WRITE
ERASE MOVE FIND TRANSFER I
UNERASE MV/CLK RL/C MENU J K

TO ENTER TRANSFER MODE, MOVE CURSOR WITH ARROWS UNTIL ON TOP OF TRANSFER. IN TRANSFER MODE, YOU WILL SEE:

<- OR ->, RETURN <ESC> MENU
RETRIEVE DELETE PRINT-DRAFT QUIT
SAVE INIT RENAME PRINT-FINAL CLR

TO MOVE FROM TRANSFER TO EDIT, HIT <ESC>

WRITE MODE

ENTER TEXT NORMALLY ONLY PRESS <RETURN> TO END PARAGRAPH

CAPITALIZE:
HIT <SHIFT> AND <N> AT THE SAME TIME, AND THEN THE LETTER YOU WISH TO CAPITALIZE

SHIFT LOCK:
<SHIFT><N><N>

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 116 of 1262
QUIT:
IF YOU CAN'T UNDERSTAND THIS, YOU HAVE NO BUSINESS USING AN APPLE

PRINTING

PRINT FINAL

CHARACTERS/LINE <65> 40-126
LINE SPACING <1> 1-3
CONTINUATION <N> STARTS OVER AT PAGE #1
PAGES TO BE NUMBERED <Y> SELECT FIRST PAGE TO BE NUMBERED
PAUSE BETWEEN PAGES <N>
EJECT LAST PAGE <Y>
PRINT ENTIRE FILE <Y>
SEE WHERE PAGES END <N>

CURSOR CONTROL KEYS:
I: UP
J: LEFT
K: RIGHT
M: DOWN
B: BEGINNING
E: END
U: UP 12 LINES
D: DOWN 12 LINES

ON THE //E, THE ARROWS MAY BE USED IN PLACE OF I,J,K, AND M

MOVE CURSOR TO WHERE YOU WANT TO INSERT, HIT <ESC> FOR WRITE MODE, AND INSERT TEXT

ERASE TEXT:
GET IN EDIT MODE WITH ERASE HIGHLIGHTED AT TOP OF SCREEN. POSITION CURSOR AT BEGINNING OF TEXT. HIT <RETURN>. POSITION CURSOR AT END OF TEXT. HIT <RETURN>. TYPE "Y" FOR YES OR "N" FOR NO

TRANSFER MODE
INIT:
INITS A DISK
SAVE:
SAVE TEXT
RETRIEVE:
LOADS SAVED TEXT
RENAME:
RENAME FILES
CLEAR AND DELETE:
CLEAR ERASES TEXT IN MEMORY AND DELETE ERASES A DISK FILE.
The Aardvark's Burrow

Docs for the Bard's Tale III code wheel chart creator (what a name).

Code wheel chart creator written by The Syringe.

Some notes. There are three needed files: "Creator", "Wheel.2", and "Wheel.3". I suggest you put these files on a RAM drive before you run it (do to the fact that the program constantly is accessing the two wheel files, and that makes for a LONG time with the 3.5" as well as 3.5" floppy drives (I know, I've tried it).)

The code wheel is in four parts. There are three wheels, with sixteen 'spokes' around the edge of each. There are also sixteen holes in the center of the top wheel. I am going to tell you a way to look up anything on the chart that will be printed, but it won't be exactly the way the game tells you to look it up.

If you think about it, you'll realize that no matter how you set the wheel, there will always be sixteen different positions at the same time, since each wheel has sixteen spokes. Therefore, I will give you a way to convert what the game tells you into a form that you can use with my listing.

Following is a listing of what is on the outside of each wheel, along with its numerical value. The numerical value will be explained in a bit.

<table>
<thead>
<tr>
<th>Outermost wheel (bottom)</th>
<th>Middle wheel</th>
<th>Innermost wheel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Urmec</td>
<td>1: Crystal Spring</td>
<td>1: Lucencia</td>
</tr>
<tr>
<td>2: Telotha</td>
<td>2: Old Dwarf Mine</td>
<td>2: Kinstia</td>
</tr>
<tr>
<td>3: Cyanis</td>
<td>3: Shadow Rock</td>
<td>3: Tenebrosea</td>
</tr>
<tr>
<td>4: The Old Man</td>
<td>4: Sulfur Springs</td>
<td>4: Tarmita</td>
</tr>
<tr>
<td>5: Hawklayer</td>
<td>5: Warriors Vale</td>
<td>5: Malefia</td>
</tr>
<tr>
<td>6: Scrapwood</td>
<td>6: Clera Brannia</td>
<td>6: Valarian</td>
</tr>
<tr>
<td>7: Bard's Hall</td>
<td>7: Celarla Bree</td>
<td>7: Lanatir</td>
</tr>
<tr>
<td>8: Stagger Inn</td>
<td>8: Black Scar</td>
<td>8: Alliria</td>
</tr>
<tr>
<td>9: Hic Haven</td>
<td>9: Dark Copse</td>
<td>9: Ferofist</td>
</tr>
<tr>
<td>10: Violet Mountain</td>
<td>10: Nowhere</td>
<td>10: Sceadu</td>
</tr>
<tr>
<td>11: Crystal Palace</td>
<td>11: Festerin Pit</td>
<td>11: Werra</td>
</tr>
<tr>
<td>12: Catacombs</td>
<td>12: Sacred Grove</td>
<td>12: Tarjan</td>
</tr>
<tr>
<td>13: Tunnels</td>
<td>13: Ice Keep</td>
<td>13: Skara Brea</td>
</tr>
<tr>
<td>14: Workshop</td>
<td>14: Shadow Canyon</td>
<td>14: UnterBrea</td>
</tr>
<tr>
<td>15: Wizard's Guild</td>
<td>15: Tar Quarry</td>
<td>15: Arboria</td>
</tr>
<tr>
<td>16: Brilliast</td>
<td>16: Gold Peak</td>
<td>16: Gelidia</td>
</tr>
</tbody>
</table>

Here is what you must do. Take the numerical value of word that the game gives you for the outermost wheel. (Find out which word is on the outer wheel, and take its value.) Then find the difference between it and '1'. (That is, if the word you get was Urmec, the difference is 0. If the word you get is Cyanis, the difference is 2. For Tunnels, it's 12, and so on.) Remember that number. Then, find out the numerical value of the word on the middle wheel. (If your word is Clera Brannia, your value is 6. If you got Black Scar, your value is 8, etc.) Then, subtract the difference from the value of the second word.

For example: Let's say you got Stagger Inn as your first word, and Tar Quarry as the second word. Stagger Inn is number 8. The difference is 7. Tar Quarry has a value of 15. Subtract 7 from 15, and you get 8.

If you get a value less than 1, add 16 to it (that is, let's say your number ended up as -5. Add 16 to it, and your new number is 11).

The number you get from that subtraction process is the value of your new word on the middle wheel. In our above examples: In the first one, we got 8, so the new word is Black Scar. In the second one, we got 11, so our word is Festering Pit. Simple, eh?

You do the same process for the inner wheel. Find the value, and subtract the original difference from it (the difference you get from the stuff with the outermost wheel). The result is your new word.

Your two new words are what you will be looking up on the chart. It's important that you do the math correctly, because otherwise, the code you get will be completely off.

Here's how the charts are organized. They are split up into two sections for each spoke on the middle wheel. It will print 'xxxxxx Spoke'. That's on the middle wheel. You have to find the section with your word at the top of it. In that chart, there are 16 columns of numbers. Each column represents one spoke on the inner wheel. In each column there are 16 abbreviations, with a number next to each. You have to find the correct column (using the name you got for your inner wheel), and then look up the correct abbreviation.

Abbreviations are as follows:

<table>
<thead>
<tr>
<th>Acorns: AC</th>
<th>Arefolia: AR</th>
<th>Crystal Key: CK</th>
<th>Arrows of Life: AL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smokey Lens: SL</td>
<td>Shadow Door: SD</td>
<td>Black Lens: BL</td>
<td>Shadow Lock: SH (1)</td>
</tr>
</tbody>
</table>

NOTICE! Shadow Lock is abbreviated as SH, NOT SL, as you would expect. This is because SL is Smokey Lens. DON'T GET THEM CONFUSED!

I think this will help you out. Shit, I sure as hell HOPE so.

A little note on the way this works: Figure it out for yourself. I'm just a genius. What else can I say? Heh. hp. (t0dd, I still remember you!)

This doc file typed by The Syringe on 4/13/88, 1:15 AM. (Heh.)

One more personal comment. I would really suggest that you buy this game. If we support Interplay's move of distributing Bard's Tale III unprotected, who knows? Maybe in the future, ALL wares will be unprotected. And that I would REALLY like to see. So even though this file will help you to win the damn game, I urge you to support Bill Heineman et al and BUY the thing.

My commendations go out to Bill, Michael A. Stackpole, and Todd J. Camasta for their GREAT work on this game. Let's see more, guys!

The Aardvark's Burrow (>

-------------------------------------------------------------------------------

Some notes. There are three needed files: "Creator", "Wheel.2", and "Wheel.3". I would STRONGLY suggest you put these files on a RAM drive before you run it (do to the fact that the program constantly is accessing the two wheel files, and that makes for a LONG time with the 3.5" as well as 3.5" floppy drives (I know, I've tried it).)

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This is one of those "because it could be done" projects. "Visit Applesoft BASIC" drops you into good old Applesoft under GS/OS, provided it can allocate 4K of bank 0 memory. (If it can't allocate the memory, complains politely and does not let you into Applesoft.) The "6" command takes you back to the CDA menu.

Don't try to use HGR or HGR2 while you're visiting Applesoft---that memory may already be in use by other parts of the system.

How to reach the author:

CompuServe: 72177,3233 Internet: dlyons@apple.com
GEnie: D.LYONS2 AppleLink: DAVE.LYONS
America Online: Dave Lyons P.O. Box 875, Cupertino CA 95015

The Penguin: A bird in the Hand. Commissioner Gordon calls you with the news that the Penguin is back. He's set himself up as a respectable umbrella merchant. But the commissioner is sure the Penguin's factory is just a cover for his plot to take over the world with an army of robot penguins. The only way to thwart the penguin's plot is to destroy his master computer.

To get to the Penguin's master computer, you have to make your way to the factory through streets and across rooftops crawling the Penguin's thugs. Once you've discovered how to get into the factory, you can search out the master computer and destroy it. But don't think it will be easy. The Penguin has more than one surprise waiting for you.

The Joker: A Fete Worse than Death. You don't need Commissioner Gordon to tell you about the Joker's latest feat of sleight of hand - he's kidnapped Robin! Your search leads you through the sewers of Gotham City to the Fair, where the fun house isn't so much fun and a ride on the rollercoaster could be your last.

Controls
--------

To display the status screen, hold down the fire button and move the joystick down.

To return to the current game screen from the status screen, click the Return icon.

Joystick controls without the fire button pressed:

---

Face back or climb up

Move Left <----- o ----> Move Right

Duck facing left / \ / \ Duck facing right

Face front or climb down

Joystick controls with the fire button pressed:

---

High kick left ^ High kick right
To Drop an object:
- Go to the status screen.
- Move the Bat cursor over the icon of the object you want to drop, then press the fire button.
  - The square around the icon flashes.
- Move the Bat cursor to the Drop icon, and press the fire button.
  - The icon of the object disappears from the status screen. The object reappears on the game screen.

Returning to the Game screen. To return to the game screen:
- Go to the status screen.
- Move the bat cursor over the Return icon, then press the fire button.

Turning Music On or Off. To turn the music on or off:
- Go to the status screen.
- Move the bat cursor over the music icon, then press the fire button.
  - If the music is on, it goes off, if it's off, it comes on.

Restarting the game. To start the game over at any time:
- Go to the status screen.
- Move the Bat cursor over the Restart icon, then press the fire button.
  - The message appears that asks if you want to start the game over.
  - Type y if you want to start over; or type n if you want to go back to the game where you left off.

Energy: At the bottom of the screen, the graph or Batman's face shows how much energy you have left. As you use energy, the bars on the graph get shorter or Batman's face slowly turns into a skull.

To get more energy, eat food objects you picked up.

Hints and Tips
-------------
1) Don't eat too much too soon.
2) Some objects do more damage than good.
3) You can carry only a limited number of object at a time. Drop objects you don't think you need anymore.
4) Duck to avoid bullets.
The Penguin: A Bird in the Hand

When you learn from Com. Gordon tha the Penguin is plotting to take over the world with an army of robot penguins, you rush at the Batcave. Before you leave, be sure to collect all the items you think you can use. When you reach the streets of Gotham City, keep an eye out for other useful items. Watch out for the thugs that roam the streets— they may shoot at you. Punch, kick, or hit them with your batarang for temporary defense.

The Joker: A Fete Worse than Death

To reach Robin, you first have to make your way through the sewers of Gotham City—not a pleasant prospect. Make sure you've collected the items you think you'll need before you plunge it. You'll come across many bombs in the sewers. You need to disarm them before you can leave the sewers—but it will take you a while to come across the tool you need to do the job, and you'll have to do a lot of backtracking to disarm all of them.

When you find the bat ears, use them to amplify your hearing.

---

The Battletech.docx file called BATTLETECH.DIAG? Its a BINary file correct? Watch out for the thugs that roam the streets—they may shoot at you. You packed it with DDD? I got EDS errors or something like that when I was unpacking it and I cannot get it to work. Any suggestions? Otherwise thank you very much for uploading them.

- The Firecracker

The doc is a high-res picture showing the various battletech parts that you would need to know for the exam in the game...I think DDD files are of type $DD. Packed Bin files are usually binary II files that can be unpacked with shrink-it. You do not have to unpack the Battletech.diag:

Goto Basic
Bload Battletech.Diag,A$2000
call -3100
poke 49234,0
(text and then bye when finished)

- The WiseGuy

The Battletech.diag file is a hi-res pic. Just do a "$HGR2" and then "$BLOAD BATTLETECH.DIAG,A$4000" and you'll see the pic load up...or use your favorite single hi-res paint program...like 816/paint...
There are five houses at war, you start in the third most powerful. Right Ankle --            FOOT ACTUATOR
--/-- Left Foot --              FOOT UNIT
--/-- Right Hip --              GYRO HOUSING
...continues the brutal contest. Resources are too scarce to destroy, to
valuable not to fight for. War is now a way of life.
There are five houses at war, you start in the third most powerful.
These houses are listed:

The House of Davion -- The Federated Suns
This is the most powerful house. Loosely Allied with the House of Steiner
against the other three houses, Hanse Davion, the leader, plans to marry Katrina
Steiner's daughter, strengthening the relationship between the two houses.

The House of Steiner -- The Lyran Commonwealth
This is the third most powerful house, and the house that you start in.
Constantly besieged for the valuable resources that it holds, and notoriously bad
generals have hurt this house, although it does have one thing going for it: Jeremiah Youngblood.

The House of Kurita -- The Draconis Combine
This is the second most powerful house, and is constantly taking territory
away from the House of Steiner. Takashi Kurita has formed an alliance with the
houses of Marik and Liao.

The House of Marik -- The Free Worlds League
Frequent civil war has kept this power from becoming too much of a threat to
the other houses, mainly because of rebellions within the leading family.

The House of Liao -- The Capellan Confederation
The weakest house, constant defeat and heavy territorial losses have kept
this house quiet. Maximilian Liao has been seeking assistance from the more powerful
houses.

There are your five houses. For you out there who didn't bother to read it,
you are a part of the second house, the House of Steiner. Your main
enemy will be the House of Kurita, as you will find out before your training is complete.

You are Jason Youngblood, you have begun your BattleMech Warrior training at
the age of 18. You are now an aric and attending the Citadel MechWarrior college. Your
father is named Jeremiah Youngblood, head of security, and leading the war against
the Draconis Combine. Your mission will be pointed out to you on the game,
progresses, but for now all you need to know is that you must find the 'MechWarrior
Academy, and get as high ranked as you can for your Piloting and Gunnery skills, in
order to do well in the real battlefield.

The vital importance. This protection isn't much at all. You have to
identify parts of the robot. You need these when you go to the academy for training.
You have to pass the "written quiz".

Here are the parts:

Right Shoulder -- TORSO MAINFRAME
Right Hip -- CYRO HOUSING
Left Upper Thigh -- JUMP JET INTAKE
Right Elbow -- ELBOW ACTUATOR
Right Inner Arm -- BALANCE STRUT
Right Thigh -- LEG MAINSHAFT
Left Foot -- FOOT UNIT
Right Foot -- FOOT CASTING
Right Ankle -- FOOT ACTUATOR

That's it. The Right side of the robot will be on the right side of the
screen, so when I say "Right Shoulder", from the robots point of view, it is really
the left side. You'll get that eventually.

For the Robotic Exercises, experiment a little. Who knows, it might
help your piloting and gunnery skill more. After the city gets blown up by
several 35-ton jenner robots, and when you get to the StarPort, you'll get
your own 25-ton spankin' new Commando 'Mech. Of course, you can upgrade that
to a 30 ton Commando like I got, with 10 lasers on it.

When training, don't forget the other skills. Especially the combat skills,
like 'Bows' and 'Knives'. You'll wonder how you can rack up 1000 credits, but
remember the stock account. Eventually, you'll be spending 25000 credits to upgrade
your 'Mechs. It may sound expensive, but right now I'm so fixed for cash that my
account is in the 6-digit figures right now.

Stocks: the source of 90% of all your income. the other 10% well, when
you get onto the battlefield, and demolish 2 'Mechs and 5 humans, and have an Expert
mechanic to salvage the armoring, well, that racks up some good
C-bills too. (C-bills is the currency)

Always look for companions to join you on your quest. You won't get any
until Rex joins you at the StarPort. If you're having trouble finding Rex, did the
Citadel get destroyed yet? If it did, then go in a North-Northwest
direction to get to the starport. When you see a major city with a Arena in
it, then you know you found the right place. Rex is in one of the buildings.
Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 123 of 1262

You need a good Medic and Mechanic. When you find them, increase their skill in the Mechit Lube and Hospital. BUY WEAPONS, ARMOR, AND CLOTHES! Yes, you will be in enemy territory, so you won't want to stand out in a crowd.

The 'things' get expensive, but what isn't going to be expensive in the 31st century?

Those were all hints for after the Citadel gets destroyed. Before, just talk to as many people as you can, and get as much skills as you can. When the citadel gets blown up, you should have one 'Excellent' skill for a combat weapon, and at least 'Good' for Piloting, and 'Amateur' for Gunnery. If you can, get the 'Excellent' skill in Rifles and SMG's skill, and buy an Inferno rocket launcher. They kill with one hit. Armor -- a Flak Vest will suit you.

That's all you'll need for now.

That's about it...I think. You will get stuck, I'm stuck in this game right now, but I figure I'll find a way out of it sooner or later. There's always the hint book, that's only about $12.50. N'joy!

Author: Unknown

Compiled and Edited (Made readable for all computers) by: The Crusader

Cosmetic modifications by: The WiseGuy/MWI

ght Thigh -- LEG MAINSHAFT
Left Foot -- FOOT UNIT
Right Foot -- FOOT CASTING
Right Ankle -- FOOT ACTUATOR

That's it. The Right side of the robot will be on the right
Apple II Computer Info

& BCOLOR

Syntax:
& BCOLOR

Examples:
& BCOLOR=15
& BCOLOR=2

Purpose:
Sets the background color for clearing the screen (See & CLEAR) and for Double Hi-Res text (See & PRINT).

Remarks:
Color value must be between 1-15 to specify a Doub Hi-Res color:

0-Black 1-Magenta (Red) 2-Dark Blue 3-Violet 4-Dark Green
5-Grey 1 6-Medium Blue 7-Light Blue 8-Brown 9-Orange
10-Grey 2 11-Pink 12-Green 13-Yellow 14-Aqua
15-White

Syntax:
& BOX (x length[,y length]) [AT x,y]

Purpose:
Draws a square.

Examples:
& BOX (50,25) at 80,80
& BOX (50) at 70,80
& BOX (100)

Syntax:
& CIRCLE (x radius [,y radius]) [AT x,y]

Examples:
& CIRCLE (20,10) AT 100,100
& CIRCLE (40) at 70,90
& CIRCLE (100)

Syntax:
& CLEAR

Examples:
& BCOLOR =13: & CLEAR
& BCOLOR =0 : & CLEAR

Purpose:
Clears the entire double hi-res screen to the color specified by the last & BCOLOR command.

Syntax:
& DRAW

Examples:
& DRAw 4 at 50,100
& DRAW 3

Purpose:
Same as Applesoft DRAW command

Syntax:
& FILL

Examples:
& FILL (1st color [,2nd color]) [AT x,y]

Purpose:
Fills an outlined area with the specified color or pattern.

Syntax:
& GOTO

Examples:
& GOTO x,y

Purpose:
Positions the invisible double hi-res cursor at the specified (x,y) locations. & GOTO is used for positioning text, boxes, circles, shapes, fills, lines, and so on.

Syntax:
& HCOLOR

Examples:
& HCOLOR=color value

Purpose:
Same as Applesoft HCOLOR command.

Syntax:
& HGR

Examples:
& HGR 9 (between 0 and 15)

Purpose:
Same as Applesoft HGR command, cept' for double Hi-Res.
Apple II Computer Info

Syntax: & HGR2

Purpose:
same as Applesoft HGR2 command, cept' for double Hi-Res.

Syntax: & HPLT

Purpose:
Same as Applesoft HPLT command, cept' for double Hi-Res.

Syntax: & HSCRN (x,y,variable)

Purpose:
Returns the color value of the pixel at the specified (x,y) location.

Syntax: & LOAD

Example:
& LOAD main memory file, aux mem file

Purpose:
loads a double Hi-Res Picture.

Syntax: & MODE (mode number)

Purpose:
Selects a double Hi-Res Graphics Mode.

Remarks:
Mode number must be a numeric expression (1-4):
1: 560 Mode
2: 140 Mode
3: 560 Mixed Mode
4: 140 Mixed Mode

& MODE can be used instead of & HGR or & HGR2 to display the double Hi-Res Screen without Clearing the screen to black.

Syntax: & NORM

Purpose:
Turns off Hi-Res Text, Canceling the effect of & PRINT and & XPRINT.

Syntax: & PRINT

Example:
& PRINT (Sample prog. later)

Purpose:
Allows text output on the double Hi-Res screen using subsequent PRINT statements.

Remarks:
Once & PRINT is executed, it will cause PRINT statements to print on the double Hi-Res screen.

Important:
You must use & NORMAL before printing on the text screen and/or before using a DOS command.
Not all Control characters can be printed, but the important ones can.

Text Size:
In 560 Mode [& MODE (1) or & MODE (3)], you can display narrow characters (80 columns x 24 lines). In 140 Mode [& MODE(2) or & MODE (4)], you can display wide characters (20 columns x 24 lines)

Htab/Vtab:
HTAB and VTAB won't work. Use the & GOTO command.

Color:
The double Hi-Res text color (Foreground color) is changed with & HCOLOR. The Background color is changed by & BCOLOR.

Fonts:
Before using & PRINT you must load a Hi-Res Font ("character set") into memroy.

Sample Program using: & PRINT

20 F=16384: PRINT CHR$(4);"BLOAD ASCII.FONT,A";F
30 L=PEEK (974) + PEEK (975) * 256 : REM DHGR LOCATION
40 POKE L + 3,0: POKE L + 4,64
100 & HGR2: & PRINT ;&COLOR=15: & B COLOR=0
110 & MODE (1); & GOTO 0,0; PRINT "SMALL TYPE"
120 & MODE (2); PRINT "BIG TYPE"
125 PRINT : & COLOR=1; PRINT "Color type in":PRINT
127 & COLOR=2; PRINT "DIFFERENT STYLES!"
130 PRINT CHR$(4);"BLOAD COLOSAL.FONT"
140  & HCOLOR= 12: ?"DIFFERENT STYLES!": PRINT : PRINT "PLUS...":  
150  & GOTO 0,10: H = INT(RND(1)*16) : B=INT (RND(1)*16): IF B <> H THEN  
155  IF PEEK (-16384) < 128 OR B = H THEN 150  
160  HOME: & TEXT: & NORMAL : LIST  

Purpose:  
Draws a circle or ellipse on the double Hi-Res screen. This command  
works just like & CIRCLE, except that each point of the circle is  
plotted using the complement (opposite) of the color already displayed  
at that point.  

& ROT  
Syntax:  
& ROT = rotation value  
Examples:  
& ROT =16  
Purpose:  
Sets the rotation for Double Hi-Res shapes to be drawn with  
& DRAW or & XDRAW.  

& SAVE  
Syntax:  
& SAVE main mem file, aux mem file.  
Examples:  
& SAVE a$,b$  
& SAVE FILE.1,S6,D2","FILE.2,S7,D2"  
Purpose:  
Saves a double Hi-Res pictures to disk.  
Remarks:  
Double Hi-Res pictures are saved as two separate files, one from main  
memory, and another from auxiliary memory.  

& XBOX  
Syntax:  
& XBOX (x length [,y length]) [AT x,y]  
Examples  
& XBOX (50,25) at 80,80  
& XBOX (50) at 70,80  
& XBOX (100)  
Purpose:  
Draws a square or rectangle on the double Hi-Res screen. This command  
works just like the & BOX command, except that each point of the box  
is plotted using the complement (opposite) of the color already  
displayed at that point.  

& XCIRCLE  
Syntax:  
& XCIRCLE (x radius [,y radius]) [AT x,y]  
Examples:  
& XCIRCLE (20,10) AT 100,100  
& XCIRCLE (30) AT 70,96  
& XCIRCLE (100)  
Purpose:  
Draws a circle or ellipse on the double Hi-Res screen. This command  
works just like & CIRCLE, except that each point of the circle is  
plotted using the complement (opposite) of the color already displayed  
at that point.
Apple II Computer Info

Purpose:
Sets the display color for plotting double Lo-Res graphics.
The colors for Double Low-Res are the same as in Double Hi-Res.

& GR
Syntax:
& GR
Example:
& GR
Purpose:
Exactly the same as Applesoft's GR command, except for Double Lo-Res.

& GR2
Syntax:
& GR2
Example:
& GR2
Purpose:
Converts the screen display to fullscreen Double Lo-Res graphics
(80 x 48 pixels) with no text window at the bottom of the screen.

& HLIN
Syntax:
& HLIN x1,y1 AT y
Examples:
& HLIN 0,79 at 0
& HLIN 20,25 at 25
Purpose:
Draws a horizontal double Lo-Res line.

& PLOT
Syntax:
& PLOT x,y
Examples:
& PLOT 0,0
& PLOT 79,47
Purpose:
Same as Applesoft's PLOT command, except for Double Lo-Res.

& SCRN
Syntax:
& SCRN (x,y variable)
Examples:
& SCRN (5,10,A)
& SCRN (79,0, HUE)
Purpose:
Returns the color value of the block at the designated position on the
Double Lo-Res screen.

& TEXT
Syntax:
& TEXT
Example:
& TEXT
Purpose:
Returns to text display.

& VLIN
Syntax:
& VLIN y1,y2 at x
Examples:
& VLIN 5,15 at 45
& VLIN 0,39 at 79
Purpose:
Draws a vertical line on the Double Lo-Res screen.

That is all of the 33 new commands that Beagle Graphics gives you
to take advantage of the hi-quality graphical graphics on the Apple //e-c
computers.

By the way, if you want to print-out any of these Double Hi-Res,
Double Lo-Res, or 80 column text screens, wait for our Tripple-Dump
also from Beagle Bros. We should have it released before the end of
the month!
In the galaxy, if Axaxis, a game of strategy and cunning is played which has come to be known as the Beast War. Inhabited by several strong but warring races, their constant conflicts had reduced their population to where mutual destruction would result. In 3853 QA, the tribal leaders called a temporary truce, and formed the Council to find a nonviolent means for settling disputes. It was decided that disagreements would be settled by a tournament which would be won through the use of clever strategy. To avoid Axalian bloodshed, the tournaments would be fought using semi-intelligent beasts controlled by their Axalian masters. Any disagreements between the tribes would be settled with a Beast War tournament.

Due to racial differences among its members, the Council agreed to three tournament standards. The Terran Common rules were favored by the Humanoid member of the council. These rules enabled the slower-thinking humans to devise innovative strategies. The Alaxian Universal rules were favored by most of the council members. These rules demanded rapid numerical analysis of your position, your strengths, and your opponents weaknesses. To compromise between the desires of the Humanoids and the Axalians, the Galactic Standard was agreed upon. The rules were refined over the centuries. Advancements in holographics technology allowed the destruction of innocent beasts to end.

Object: ------

To capture more sectors than your opponent(s). The game consists of a series of rounds. During each round, you control an army of six beasts. A sector is captured by moving one of your beasts into the sector. Captured sectors will contain one of your beasts, or a small satellite in your color. Each round ends when only one player's beasts remain on the galactic grid.

Options: -------

After you enter your name, the question "Would you like to play against the computer at novice level?" will appear. You can see the letter Y in a white box. This is the "default condition" and the computer will automatically accept this as your answer if you press return. If you don't want to play the computer at this level, press N for NO and hit return. There are four different sets of rules to choose from: novice challenge, terran common, galactic standard, and axalian universal. Each set changes four factors. A fifth rules set will allow you to set the factors:

- The number of rounds to complete a tournament
- The energy recharge time for creatures on the plexus (center of the board)
- Whether or not you want random starting positions

The Grid:

The galactic game grid has 41 sectors around the plexus. They are arranged in three orbits: the outer, middle, and inner orbit. Surrounding the grid are four colored fields. In the field of your color is a counter showing how many sectors your beasts have captured. When your start a round, you have controlled six sectors, the sectors your beasts are occupying. The beasts move from one sector to another by jumping through hyperspace. Jumping is done by setting up two windows. A home window is built around the beast selected for movement. and a destination window is formed at the sector you want the beast to move to. Once the windows have been built, the beast jumps through hyperspace from the home window to the destination window. Each beast has its own unique movement pattern, as explained in the Beasts section.

When it is your turn to move, the information box in the upper right corner of the screen will display:

(your name)

SELECT BEAST USING (keys or paddle)

Depending upon whose turn it is, and whether you are using paddles or the keyboard, the fourth line could be FDL 0 or PDL 1. A AND S for the A and S keys, or K AND L for the K and L keys. Keys A and K are used to select a beast or sector; keys S and L enter your choice into the computer. If you want to take back a choice press the ESC key. If you are using paddles, rotating the paddle back and forth across the middle area will move the source and destination windows. Pressing the paddle button will enter your choices.

The Graphs:

To the right of the grid are three graphs showing energy, time and power. The Energy and Power graphs show the condition of the beast the
There are six different beasts. Each has strengths and weaknesses and a unique movement pattern. In addition any beast can jump into the plexus from any sector in the inner orbit and vice versa. Movement consumes energy. Each beast moves to an adjacent sector, but some can only move to a certain color or direction. Jumping to a sector containing your own satellite (left by a previous friendly beast) consumes two energy units. Entering an empty sector uses four units. Jumping into a sector containing an enemy satellite consumes 12 units of energy. If your beast uses up all of its energy in making the jump it perishes but leaves one of your satellites in the sector. The plexus is the center of the grid. As a focus of energy, it will channel that flow into any beast occupying that sector. The rate of flow is set at the beginning of the game. For example, the recharge time is four seconds, means that if every four seconds, a beast on the plexus will receive one unit of energy until it is totally recharged.

The Aerocetus:
The aerocetus is the only winged beast chosen by the Council for Beast War. It has 44 energy units. When attacking its prey, the tentacles of the aerocetus close together to form a spear tip which can easily puncture the thin metallic skin of a mechano. However, the light bone structure and musculature of the creature does not provide it with enough power to easily damage the厚厚的 armor of an aerocetus. The aerocetus have a strength of four units. Movement pattern: the aerocetus can move only to an adjacent sector that is in a different orbit and color.

The Dracon:
The dracon is a fearsome inhabitant of Alaxis. Its awesome flame breath makes it extremely dangerous. The dracon has a strength of nine and its far reaching flame is especially effective against the light bone structure and musculature of the aerocetus. However, it has little effect on the metalic structure of the mechano. A dracon begins with 16 energy units. Movement pattern: the dracon can move to any adjacent sector.

The Arachnid
The arachnid has a highly evolved neuromotor system to control its many legs. It can have up to 38 energy units, and has a strength of 5 units. The great dexterity of this beast enables it to slip its pincers under the protective scaling of a saurus, inflicting especially grievous wounds upon the beast. Only the mighty dracon appears to be resistant to the attack of an arachnid. Movement pattern: the arachnid can move diagonally only.

The Wraithil
The unique appearance of the wraithil is responsible for its association with a mythological group of hominoid creatures called the Undead. It strikes a chord of superstitious fear in many creatures. This effect is very much noticeable in the saurus, which seems to be afraid to bite the wraithil with any degree of force. The energy field projected from a wraithils hands during combat is known to be especially effective against the highly evolved neuromotor system of the arachnid.

However, the diversified nerve net of the aerocetus is resistant to this attack. Wraithils can have up to 30 energy units and have a strength of 6 units.

Movement pattern: the wraithil can move to a different colored sector of the same color.

The Saurus
The fearsome saurus is believed to be a distant relative of the dracon. Strong constructions for the same ecological niche are suspected of being the basis for the intense hatred sauri have of dracons. In combat, a saurus becomes quite frenzied the moment he bites into a dracon. Although the saurus perishes almost immediately, this results in especially serious wounds being inflicted on the dracon. Known for their bad tempers, sauri turn green with rage when attacking each other. A saurus can have up to 24 energy units, and has a strength of 5 units.

Movement pattern: the saurus can move to any adjacent sector of the same color.

The Mechanos
The mechanos is the only silicon-based lifeform in Beast War. It is therefore the only beast capable of using a gravens propulsion system. A mechanos is not intimidated in the least by a wraithil, and is effective against one in combat. A mechanos can have up to 20 energy units, and has a strength of 8 units. The laser weapon of a mechanos is largely dispersed by the reflective scaling of the saurus and thus is less effective against the beast. Movement pattern: the mechanos can move to an adjacent sector in a different orbit.

Combat:

If you select a destination sector which contains an opponents beast, its power and energy will be shown alongside your battery settings. If the move is made, combat occurs. The top view of the grid is replaced by a side view of the sector with the two beasts facing each other. At the top are their energy and power graphs.

Controlling the Beast

If the keyboard controls are being used, the following keys are used to control the beasts:

Left group:
A: move left
S: stop
D: move right
W: flee
X: attack

Right group:
R: move left
T: stop
;: move right
O: flee
. : attack

If paddles are being used, turning the dial to the right will move the beast to the right and turning it left will cause it to move left. Centering the dial will stop movement. Pressing the paddle button while the beast is advancing against an enemy will cause the beast to attack. Pressing the button while you beast is backing up near the edge of the screen will cause it to flee. A beast can flee only to its original position, and then only if it contains one of your satelities. If it is already occupied, it cannot flee. If it doesn’t have enough energy to make the jump, then it will perish when it emerges from hyperspace.
Fleeing from your opponent will allow your enemy to move again.

Scoring: 
-------
The round ends when only one player's beasts remain on the galactic grid. At the end of the round, each player receives 300 points for each beast remaining on the field, and 150 points for each captured sector. At the end of the tournament, the player with the highest score wins. If you have been playing against the computer using one of the standard rule set, your name and score will be saved.

Special Features: 
-----------------
PAUSE
Holding down the CONTROL key and the P key will stop the game. Press return to continue.

SOUND
Pressing CTRL-S will toggle the sound.

QUIT
Pressing CTRL-Q will end the tournament.

RESET HIGH SCORES
Pressing CTRL-R and the high scores will be reset back to 0.

SELECTING A DIFFERENT BEAST
If you have selected a beast and change your mind, pressing the ESC key will allow you to choose another beast.

Strategy for Beast War
-----------------------
The objective of Beast War is to capture more sectors than your opponent(s). To do this you should consider your beasts movement patterns, energy, power, combat capabilities and strategic positioning.

The movement patterns of your beasts need to be carefully considered to enable you to capture sectors, attack your opponents, and defend your territory. For example, certain beasts will only move on one color. Moving it through the plexus can change the color of the sector it is on. Moving a beast through the plexus also enables it to regain energy. However, trading beast positions can cost valuable time, allowing your opponent to take the initiative.

Moving to a sector containing an enemy satellite uses much more energy than moving to a free sector. It is advantageous to block your opponents moves with your own satellites. If your opponent captures a sector containing your satellite, his beast will be weakened and open for attack.

This strategy calls for using your energy efficiently. Your beasts can gain energy by capturing and defending the plexus against your opponents, and by defeating them in combat. Since beasts lose energy through movement, any move that does not enhance your position is a wasted move.

If your beasts energy is less than three units it will perish on the next move. There is little you can do with it in combat unless it has a very long weapon range versus its opponent. (such as the dracon fighting the aeroctus) The kamikazee strategy is recommended: move into a sector containing an opposing satellite and (poof!) your beast is gone but leaving a friendly satellite behind.

But to be a successful Beast Warrior, you have to fight well. The amount of power a beast has is determined by its strength, moral support, and combative relationship with its opponent. The strength is determined by its nature; it cannot change. If the adjacent sectors contain friendly forces, your beast will be strengthened by their presence. Each friendly beast will increase the combatants power by one unit.

Finally, each beast is especially effective in fighting one other beast, and resistant to attacks by one other beast. These factors provide combat bonuses which can increase or reduce a beast's power by 2 units. The Beasts section provides more info on this.

The power graph reflects the sum total of these factors. In combat, the amount of damage a beast does is determined by a random number that depends upon its strength, moral support, and combat bonus. The minimum amount of damage inflicted upon your opponent is determined by your beasts moral support and combat bonus. So a beast which has a combat bonus and moral support can often be quite successful in defeating an apparently more powerful opponent by repeatedly striking with an above average amount of damage.

Your position becomes greatly improved when you defeat an opponents beast, and greatly weakened when one of your beasts are defeated. If your beast is defeated, you lose a sector and a beast, your total energy pool is reduced, and the victors pool is increased. It is often the better part of valor to retreat when threatened by a superior force. Fleeing from combat is also costly, though not as much as being defeated. Recovering from a flee will lose time and energy, but it will preserve your beast.
Welcome to the land of Green Sky! In Below the Root, you must find and return Raamo to the people, for he is their spirit leader. Looking everywhere is essential to complete the quest.

PREPARING A STORAGE DISK:

Format a disk in DOS 3.3 format. This may be used in order to save games to disk.

HOW TO BEGIN:

Create your storage disk if you wish to save games to disk. Then put the program disk into the drive and boot Below the Root. Choose "J" for Joystick or "K" for Keyboard. Be sure to insert Side 2 first. The game introduction will automatically begin. Introduction may be stopped by pressing space bar or joystick button.

KEYBOARD AND JOYSTICK COMMANDS:

JOYSTICK CONTROL: To move your character or cursor, push joystick forward or backward, left or right. To make a selection, press either joystick button. To get to the possible selections while you are playing the game, hold down the joystick button and pull the joystick down.

KEYBOARD CONTROL: Use the keys below to move in a direction. When you want to make a selection, press spacebar. Left-handed players may use alternate keys.

R          I
D-----F     J-----K
C          M

Left-handed players       Right handed players

MAIN MENU:

After the game is loaded, the main menu will appear with the following choices:

START GAME
CONTINUE
DISK STORAGE
SAMPLE QUEST
START GAME:
To Begin a New Quest

1. Choose START GAME on the main menu.

2. The message "CHOOSE YOUR QUESTER" will appear. There are five characters to choose from, each with their own abilities and personality. Push your joystick forward or press the up key to cycle through your options, then make a selection.

3. Depending on which character you choose, you may be asked to "INSERT SIDE 1". Follow the instructions on your screen.

4. You will be instantly transported to the nid-place (home) of your character, ready to begin the quest!

CONTINUE: To Return to your Quest

Use CONTINUE option after loading a previously saved game from the storage disk.

DISK STORAGE: To Save or Reload a Quest

1. Select DISK STORAGE from the MAIN MENU.

2. The following message will appear:

SAVE GAME
LOAD GAME
RETURN TO MENU

3. Move cursor to SAVE GAME and select. the following message will appear:

QUEST 1 2 3 4 5
You may save up to 5 different games on one storage disk. Saving additional games will erase an old one.

4. Move cursor to a number and select.

5. You will be instructed to insert your storage disk. Follow instructions on the screen. You will return to the Main Menu.

NOTE: After loading a saved game be sure to begin play by choosing the CONTINUE option and not the START GAME option.

SAMPLE QUEST: To get a preview of Green-Sky

To get a preview, simply choose SAMPLE QUEST. A character will demonstrate a few of the techniques on playing the game.

GREEN-SKY QUESTERS' STATS

NAME: Neric
SEX: Kindar-born young man
HOME: Star Grund
SPIRIT: 5
STAMINA: 20

NAME: Genna
SEX: Kindar
HOME: Grand Grund
SPIRIT: 0
STAMINA: 20

NAME: POMMA
SEX: Kindar child, Raamo's sister
HOME: Sky Grund
SPIRIT: 10
STAMINA: 10

NAME: Charn
SEX: Ten-year old erdling boy
HOME: Silk Grund
SPIRIT: 5
STAMINA: 15
GLIDE: Gliding is possible only if you are carrying a shuba. To glide, push the joystick button while you are falling. Once the glide begins, push the joystick sideways to move left or right.

EXIT OR ENTER A DOORWAY: Position yourself over the door and press the joystick button.

ON KEYBOARD (use the keys shown on the diagram)

WALK: Press the appropriate key for the direction you want to go. JUMP: From a standing position, press the appropriate directional key quickly two times. While walking, press the appropriate directional key once. To jump from a ladder or vine, go right or left. Jumping from ladders is not allowed underground. RUN: After a jump, you will automatically start running. STOP: Press the key opposite to the direction you are moving. CLIMB: Press the appropriate directional key while you're on a ladder or vine. CRAWL: Press the down key when you are not on a ladder or vine to stoop. Then go right or left. STAND UP: Press the up key when you're in the crawl position. FALL: Walk off the end of a ramp or tree limb. GLIDE: Press the left or right directional keys while you're falling. EXIT OR ENTER A DOORWAY: Position yourself over the door and press the up key.

WHAT YOU CAN DO IN GREEN SKY:

After you choose your character, you'll be ready to explore Green-Sky. The option menu enables you to choose all the activities you will need in Green-Sky. To display and use the option menu:

WITH JOYSTICK:
1. Hold the joystick button down while you pull the joystick backward.
2. Move around the Menu by pushing the joystick in the direction you want to go.
3. Stop on the option of your choice, press the joystick button.

WITH KEYBOARD:
1. Press the spacebar.
2. Move around the Menu using directional keys.
3. Stop on the option of your choice and press the space bar.

NOTE: Whenever the Menu is visible, the timer will stop.

PAUSE: Pause during game then return to the quest.

SPEAK: Move close to another game character. Be sure you are facing each other. The other character’s message will appear.

PENSE: Depending on your level of spirit skill, you can pense emotions or messages. To pense messages, you must be standing close to and facing the other character.

OFFER: Offer anything you are carrying to another character. Cycle through your inventory and select.

TAKE: Position yourself over any item you would like to take. If you can take the item, it will instantly disappear from the screen. You are now carrying it in your inventory.

BUY: Stand close to and face the merchant. The merchant will take your token and give you permission to take an item, provided you have room to carry it. After buying, be sure to take item.
USE: Use trencher beaks, vine ropes, honeylamps, and other tools you happen to acquire.

Trencher Beak: Face the bramble then USE the beak. One layer of bramble will disappear; repeat process until you clear bramble. If you get caught in a bramble patch without a beak or cutting tool, you must RENEW yourself.

Vine rope: Face direction you want to throw rope. Try to USE the rope. The rope will appear if there is something for the rope to connect to in the direction you throw it. CRAWL across the vine rope, or you'll fall.

Honeylamp: It will be obvious when you need to USE the lamp.

EAT: Eat any of the edibles you are carrying. Cycle through your inventory and select.

DROP: Drop an item, if you are carrying too much.

SELL: You may sell tools and food to any of the merchants.

HEAL: This spirit skill will restore your energy and food level.

REST: Rest indoors on the hanging green nids, either in your own nid-place or in the nids of others who offer you rest. Stand in front of the nid and select REST.

EXAMINE: Examine unfamiliar objects you happen to come upon.

INVENTORY: Displays what you are carrying.

GRUNSPREKE: If you have enough spirit skills, you have the power to make tree limbs grow. Stand at the edge of a limb, facing outward. With each successful grunspreking, the tree limb grows. Step out on the new growth and GRUNSPREKE again to create a living bridge.

KINIPORT: If you have enough spirit skills, you have the power to move tools or your own body using psychic power. When you select KINIPORT, a pointer will appear on the screen.

To kiniport tools: Move the pointer to the tool you want to move. Select. Then point to where you wish to move it. Select again. You must place the tool on a spot where you will be able to stand when you pick it up.

To kiniport your body: Place the pointer on your body near your feet. Select. Then point to the spot where you want to move.

STATUS: Displays your STATUS at any given point during your quest.

RENEW: If you get stuck somewhere, RENEW will return you home at the expense of losing a day of quest time.

MENU: Return to the main menu.

STATUS: How you can check on your progress:

Checking on status will give you all the information about yourself.

SAMPLE DISPLAY:

<table>
<thead>
<tr>
<th>DAY 1</th>
<th>NERIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>EARLY MORNING</td>
<td>LEVEL OF REST 10</td>
</tr>
<tr>
<td>SPIRIT LIMIT 05</td>
<td>LEVEL OF FOOD 10</td>
</tr>
<tr>
<td>STAMINA 20</td>
<td>LEVEL OF SPIRIT 05</td>
</tr>
</tbody>
</table>

DAY: Your performance as a quester will be judged on the number of days you take to complete the quest. At the end of 50 days your time will run out.

TIME OF DAY: Reports the current time of day. Game time passes whenever you are moving around the Green-Sky environment. Time stops whenever the Option Menu, Main Menu, Status Display, or text of any kind is being displayed.

SPIRIT LIMIT: Indicates your current Spirit Limit.

STAMINA: Rates your maximum strength. Questers with more stamina can store more rest and food energy, jump farther, and carry more. Your stamina can be increased in the Quest by eating Strange Exilers.

QUESTER: Displays your name. Depending on which character you have chosen, your beginning spirit and stamina will vary.

LEVEL OF REST: Your rest energy is used as your journey time passes. Jumping, climbing, and especially crashing will also use rest energy. Your level can be restored by resting in your nid or in the nid of a friendly character. Your maximum level is one-half of your stamina. If your rest drops below 0, you will be forced to return to your nid-place. You will have lost a day of game time but your energy levels will be replenished.

LEVEL OF FOOD: Food energy is depleted in the same manner as rest energy. Dropping below zero will return you to your nid-place. Keep your food level up by eating.

LEVEL OF SPIRIT: The amount of spirit energy you possess. This energy is depleted every time you use a Spirit Skill. Spirit energy is restored as game time passes.

Note: An example of the difference between SPIRIT LIMIT and LEVEL OF SPIRIT:

You may have a SPIRIT LIMIT of 20 and thus have the ability to GRUNSPREKE. Grunspreking, however, uses two units of spirit energy, so if your level of spirit is currently less than 2, you cannot Grunspreke until your energy is restored.

(*)(*)(*) BELOW THE ROOT GAME TIPS (*)(*)(*)

OBJECTS: (descriptions and where to find them)

PAN BREAD: Pan Bread is a main source of food for the people of Below the Root. Pan Bread is a good meal and provides good nutrients. You can find Pan Bread at Sky Grund, Grand Grund, and Silk Grund. You can also find Pan Bread at a shop.

ROAST LAPAN: Roast Lapan provides protein for long trips. Some roast lapsans have strange tastes and lower your spirit energy. You can find Roast Lapsans below Garden Grund at the Lapan House, and also at Broad Grund.

FRUIT AND NUTS: Fruit and nuts provide quick energy to keep going, and are a good snack. Fruit and nuts can be found at Garden Grund, Below the Root in Vatar’s Quarters, at Temple Grund, and you can purchase them at shops.

SHUBAS: Shubas are used to glide between the Grund, and slow you down so you can land on branches without hurting yourself. You are automatically given one shuba at your home. Additional shubas can be found below Garden Grund, or may be purchased at Star Grund. Beware, for some shubas tear easily, especially when you're falling from branches.

TOKENS: Tokens are the money of Below the Root. Tokens can be used to bribe others, or to purchase objects at shops. Tokens are located every-
WHERE TO GET SPIRIT ENERGY: Herd and will not give him supplies. Glide down onto the platform and retrieve the key. HERD: Herd is kind of like Neric. He has moderate strength, and moderate spirit energy. See elsewhere for places to acquire spirit energy.

D'O FALLA'S KEY: D'O Falla's key is the key to unlock the Chamber of the Forgotten. In order to get this key, first get permission from D'O Falla. Once you are kidnapped and arrive at D'O Falla's hideout, you will need the power to kiniport or you will need the Temple Key in order to get the Wand of Befal.

SPIRIT LAMP: The Spirit Lamp takes the place of the honeylamps, but does not work out. The Spirit Lamp can only be acquired in Temple Grund using D'O Falla's key. The Chamber of the Forgotten is where the Spirit Lamp is found. The Chamber is located by Vine Palace in Temple Grund. See elsewhere for the location of D'O Falla's key.

SPIRIT BELL: The Spirit Bell rings whenever there is a door that you cannot see underground. The Spirit Bell is located on top of Sky Grund. See elsewhere for more details.

TRENCHER BEAK: Trencher beaks are used to cut bramble in order to make a path. Trencher beaks are weak and could break at any time. The Wand of Befal is a better tool. Trencher Beaks found at Broad Grund Shops, and at Silk Grunds.

FANTOM OF BEFAL: The Wand of Befal takes the place of a trencher beak, but is very strong, and does not break. The Wand of Befal is hard to get. It is owned by the evil group called the NEKOM. You must get kidnapped by the NEKOM in order to acquire the wand. See elsewhere for the hideouts of the NEKOM. SPECIAL NOTE: The Wand of Befal can also be used to kill people, but completely takes away your spirit level and energy.

SPIRIT LAMP: The Spirit Lamp takes the place of the honeylamps, but does not work out. The Spirit Lamp can only be acquired in Temple Grund using D'O Falla's key. The Chamber of the Forgotten is where the Spirit Lamp is found. The Chamber is located by Vine Palace in Temple Grund. See elsewhere for the location of D'O Falla's key.

SPIRIT BELL: The Spirit Bell rings whenever there is a door that you cannot see underground. The Spirit Bell is located on top of Sky Grund. See elsewhere for more details.

STRANGE EXILERS: Strange exilers are a type of food that you can eat, and you will grow stronger. Strange exilers are really useful if you're low on energy and strength and food, the strange exiler revives this plus gives you extra. Strange exilers are located in Sky Grund, Garden Grund, and in Temple Grund. Exilers are very rare. There is also one in the hideout of the evil gang, D'O Slatt and in the trenches. See elsewhere for the location of D'O Slatt's hideout and how to get there.

TEMPLE KEY: The Temple Key has a numerous amount of uses. The Temple Key can unlock the front gates of Temple Grund. The Temple Key can also unlock the door to the Temple. The Temple Key can also unlock the doors that hold objects in D'O Slatt's and the Nekom's hideouts. The Temple Key is located in Temple Grund, near the top of the grund. Use a shuba to glide down and retrieve the key. NOTE: If you don't have the key, and can't get the key, and need to get into Temple Grund, there's a way. See elsewhere.

D'O FALLA'S KEY: D'O Falla's key is the key to unlock the Chamber of the Forgotten. In order to get this key, first get permission from D'O Falla who lives in Temple Grund in the Vine Palace. Then jump off the edge of Temple Grund and glide to the ground. Go left, climb up the ladder, and glide down onto the platform and retrieve the key.

WHERE TO GET SPIRIT ENERGY:

WASTE CHILD: The Wise Child lives up near the garden in Garden Grund, and is very easy to get to. The Wise Child gives you advice and 5 points of Spirit Energy.

RAAMO'S MOTHER: Raamo's mother lives in the Temple in Temple Grund, and gives 5 points of spirit energy. You need the Temple Key to enter.

VATAR: Vatar lives below in the caverns and gives 5 points of spirit energy, and has 2 fruits & nuts which you can get simply by talking to him. Once you enter the caverns, keep going right and you can't miss it.

HERMIT: The hermit lives atop of Grand Grund. It really isn't that hard to get there, but you need a trencher beak or the Wand of Befal to enter & exit.

D'O NESHOM: D'O Neshom lives atop Sky Grund, and it is not easy to get there. You will need at least 1 vine rope. If you are Pomma, you will need 2 vine ropes to get there. Vine ropes are all around in Sky Grund. D'O Neshom gives you 5 points of energy, plus the Spirit Bell.

ANIMALS: Pensing rabbits (lapans) and monkeys will give you 1 point of spirit energy. Spiders and snakes do not give spirit energy, and can tear your shuba quite easily. There are 3 spirit-giving animals in Sky Grund, 2 in Garden Grund, 1 in Silk Grund, 1 below Temple Grund, and 1 underground near Raamo. Simply get by the animals, and pense them for 1 point of spirit energy. If you get enough animals, that could amount up to 7 extra points, good for characters with weak spirit energy.

EVIL MEN'S HIDEOUTS AND DESCRIPTIONS

NEKOM: The Nekom is an evil organization that has the Wand of Befal, a type of trencher beak, but much stronger and it does not break. The hideout of the Nekom is below Star Grund, and almost impossible to reach by hand. Getting kidnapped is easier. There are many kidnappers for the Nekom. If someone offers you sleep, pense them and you can tell if they're working for the Nekom. If they are, you can sleep there and you'll be kidnapped. Once you are kidnapped and in the Nekom hideout, you will need the power to kiniport or you will need the Temple Key in order to get the Wand of Befal.

D'O Slatt: D'O Slatt's men are much more evil then the followers of the Nekom. These men also offer you sleep. Some can be found wandering outside, just waiting to kidnap you. Just pense them in order to find out if they're working for D'O Slatt. They usually say, "D'O Slatt's men are waiting." Sometimes, outside, men or women with an evil emotion usually work with D'O Slatt. Once you are kidnapped and arrive at D'O Slatt's hideout, you will need to use the Temple Key or the power to kiniport to get the Strange exiler there. The hideout is located in Broad Grund. A man who lives near Broad Grund is a kidnapper for D'O Slatt also.

BRIEF STATUS OF CHARACTERS:

NERIC: Neric is a good one to use if you are just beginning to play Below the Root. Neric has good strength, and some spirit energy. He's a good one to quest with.

GENAA: Genaa is a good one if you need a little challenge. Genaa is very strong, but has no spirit energy. See elsewhere for places to acquire spirit energy.

HERD: Herd is kind of like Neric. He has moderate strength, and moderate spirit energy. He is a middle person. Note that some people do not like Herd and will not give him supplies.

POMMA: Everybody ADORES Pomma. They'll give her anything she wants. Even if people hate kids, her emotions win them over. Pomma has some strength, and is greatly spirit gifted. Pomma will need strange exilers
CHARM: Let's all face it, Charm was created for a challenge, and I mean a big challenge!!! He is a weakling, and his spirit gift was created for the birds. If you want a challenge, here it is!!!

MORE TIPS AND HINTS FOR BELOW THE ROOT:

ENTERING THE TEMPLE GRUND WITHOUT A KEY: If you need to get into Temple Grund, and have no key, simply revive your spirit energy, and go to the top of Star Grund. Get to the rightmost edge of the highest branch, and grunspreke till it says you can't grunspreke anymore. Then jump off the edge, and quickly pop open your shuba. You will keep on gliding, right past the gate to Temple Grund, and you're in!!

SHOPS ARE NO GOOD: Shops really are no help. You can get the same supplies for free at houses. Each thing that is in a store is also in some house. Why buy when you can get it for free??

GUARD AT THE FRONT ENTRANCE: The guard to the front entrance to the cavern takes wissenberries before you enter. If you give him 2 batches of wissen-berrries, the guard will disappear and you won't ever have to worry about gathering wissenberries ever again.

HOW TO GET TO THE CAVERN: Getting to the cavern is really quite simple. The cavern is directly below Sky Grund, simply go to the bottom of Sky Grund and go left. You can't miss it!

HOW TO GET TO IMPOSSIBLE PLACES: Using the grunspreke power, the wand of befal, and a shuba you can get almost anywhere!

WHAT YOU NEED TO EXPLORE THE CAVERN: You need wissenberries for the front guard, you need a token for the guard inside, you need a lamp (the spirit lamp, or many honeylamps) and you need the Wand of Befal or a trencher beak in order to clear the bramble in the cave. You also need a vine rope or a shuba in order to save Raamo, and the Spirit Bell in order to find some hidden doors.

HOW TO SOLVE BELOW THE ROOT:

Solving Below the Root is not an easy task. But here's a way to go about it. Explore every grund, take any supplies, get the spirit energy if there is any, and explore the next grund. Return to your house frequently to drop off items. When you have explored every grund, go in the caverns with your special cavern supplies, and keep going right. Going left in the caverns leads no place. You can visit Vatar. Keep going right, and soon you'll hear your spirit bell ring. Enter the invisible door, go left and use your power of kiniport to save Raamo! Be sure to offer him a shuba or a vine rope, and you've won!!

END

Apple II Computer Info

==============================================================================
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==============================================================================
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| Apple II Computer Documentation Resources (a2_docs_documentation.msw)       |
| DOCUMENT bet                                                                 |
|==============================================================================

THE INTERFACE - How to get there from here.

The BET interface design is basically very straight-forward. The main window layout borrows heavily from many other desktop-based word processors. The extensions that you will notice are the two distinct regions above the ruler. The area to the left being a fully-featured menu bar. It works exactly like you would expect, with full keyboard menu equivalent support. The second area is the status region. Currently the only information you may see here is a 'live' display of the total number of characters in your document, if activated via 'Preferences...'.'
BET supports a keyboard and mouse interface that provides many options for text entry, selection, deletion, and navigation. The following list summarizes the supported keystrokes and mouse clicks:

**Left Arrow**
- This moves the insertion point before the previous character.
  - With the Command key, this causes movement by words, rather than by single characters.
  - With the Option key, this causes the insertion point to move to the beginning of the line of text.
- The Shift key extends the selection from the current insertion point to the left by one character. If modified with the Command key, this extends by words. If modified with the Option key, this extends by lines.

**Right Arrow**
- This moves the insertion point before the next character.
  - With the Command key, this causes movement by words, rather than by single characters.
  - With the Option key, this causes the insertion point to move to the end of the current line of text.
- The Shift key extends the selection from the current insertion point to the right by one character. If modified with the Command key, this extends by words. If modified with the Option key, this extends by lines.

**Up Arrow**
- This moves the insertion point up one line.
  - With the Command key, this moves the insertion point up one page.
  - With the Option key, this causes the insertion point to move to the beginning of the document.
- The Shift key extends the selection from the current insertion point up by one line. If modified with the Command key, this extends by words. If modified with the Option key, this extends by lines.

**Down Arrow**
- This moves the insertion point down one line.
  - With the Command key, this moves the insertion point down one page.
  - With the Option key, this causes the insertion point to move to the end of the document.
- The Shift key extends the selection from the current insertion point down by one line. If modified with the Command key, this extends by pages. If modified with the Option key, this is to the beginning of the document.

**Delete**
- This removes the character to the left of the insertion point. If there is currently a selection, this removes the entire selection.

**Clear**
- This clears the current selection. This does nothing if there is no selection.

**Delete**
- This removes the character to the right of the insertion point. If there is currently a selection, this removes the entire selection.

**Control-Y**
- This removes all characters from the insertion point to the end of the document. This extends by lines. If modified with the Option key, this causes the insertion point to move to the beginning of the current line.

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When initially opened, BET will present you with an empty edit window. From there you may create a new document by typing, or you may load an existing document from disk. You may also paste in text that was previously copied or cut to the clipboard.

---

**SAVING**

---

The procedure for saving a file is quite similar to opening a file. You can select either 'Save' or 'Save As...' from the 'File' menu. If you have just created a new document and you select 'Save', you will be given the opportunity to name the new file. If you choose 'Save As...', you will always be given the opportunity to name the file before saving.

If you have already saved your document, or you have loaded a pre-existing document from disk and you select 'Save', BET will automatically save your document as it is named, in its current file format.

The save dialog also has a pop-up menu from which you can choose the format in which BET saves your file. If you have never saved your document, BET automatically displays 'Text' as the default save type. You may change this type.
to whatever you wish. If you have saved your document, or you have loaded a pre-existing document, BET will display the original file type of the document in the pop-up. You may also change this.

One note about saving files with styled text is in order. Currently, BET can only save style information (font, size, attributes, color) when you save as 'Text'. If you save a file that contains a variety of styles as Text or Source, all style information will be lost. A future version will address this problem.

--------
AUTO SAVE
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BET has a powerful feature, selectable via 'Preferences...', that allows you to specify minute intervals that BET will attempt to save your document. If you have never saved the document when the auto save time occurs, BET will present you with the same dialog you use for a 'Save As...'.

BET resets the save countdown timer in four instances; 1) Whenever you manually save your document. 2) When you open a new document. 3) When you select 'Save' from the 'Preferences...' dialog. 4) When it completes a successful auto save.

When BET's main window is deactivated, BET temporarily suspends auto-save. It will be re-activated when the window again becomes selected.

---
NDW
---

'New' allows you to discontinue working on your current document. If the file has not been saved, the current text is cleared and you may begin entering your text. If the document has not been saved, BET will ask you if you wish to save it before clearing the text. You may choose 'Yes', 'No', or 'Cancel'. 'Yes' allows you to save the document before BET clears the current text. 'No' clears the current text, ignoring any changes that you may have made to the current document. 'Cancel' returns you to your current document as though you had never chosen the 'New' menu item.

PRINTING
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'Page Setup...' and 'Print...' work exactly as you would expect them. You will see the appropriate dialogs for the current printer.

----
QUIT
----

You may close BET by three means. The first is if you click in the close box in the upper-left corner of the edit window. You can also close BET through two menu items. The first is 'Close' and the other 'Quit', both in the 'File' menu. In all cases, BET will inform you if you have not recently saved your document.

------------
FIND/REPLACE
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The 'Find/Replace...' feature allows you to search for, or replace, specific text strings throughout your document. The search starts from the current cursor location or start of a selection range.

Conventional find/replace features have usually appeared in two forms. The first is the standard modal dialog that is opened on top of your document. Its placement is dictated by the programmer, so it can obscure portions of your document. The second is the use of a modeless dialog. This is the kind of search where the 'Find' window can be sent to the background, but it can be kept onscreen at all times if you wish.

Since BET is a desktop accessory, using the second search type, a modeless dialog is not possible. Desk accessories can only leave one window permanently open (under System Software v.6.0 this is no longer true). I did not opt for the first method because I do not like being forced to do something that needs multi-window interaction, from a modal position.

The dialog that you are presented with differs from normal modal dialogs in a few ways. The first is that it is called a movable modal dialog. It always remains the frontmost window, but you may position it anywhere around the screen. It will allow you to position the main text editing window wherever you like, except that the front to back window orientation cannot be changed.

The scrolling and selecting of your document's text is also permitted. With this method you can change the search start location while you are searching. All that you have to do is click or drag in the appropriate area of the edit window. Note that the window will not move to the front as it would in a normal environment. Also, the cursor usually can be seen, but it will not flash as when editing is possible.

------------
PREFERENCES
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From the preferences dialog you may set up your environment to suit your specific needs. BET saves your preferences to an external file which is maintained in such a way that BET is fully AppleShare friendly. BET may be run off of a server volume, with separately maintained preferences for each user.

The buttons at the bottom of the window provide you with three options for exit. The 'Cancel' button allows you to ignore any changes you may have made. 'Temporary' enables any changes you have made, but does not save them permanently. When you close BET, the preferences will revert to those that were previously set. 'Save' immediately writes your preferences changes to the preferences file.

The various preference options are:

Word wrap only on carriage returns - This informs BET when you wish it to wrap your text to the next line. If this item is selected, then BET will wrap text only on carriage-return. If it is unselected, then BET will wrap text to fit the current ruler width. As you resize the window, the current text will be re-wrapped to fit the current ruler width.

Use intelligent cut and paste - This helps eliminate the need for you to insert space characters to fix a paste. With this option enabled, BET allows you to select a word, and cut and paste that selected text without adding or removing any space characters.

Draw active character count - This enables the interactively updated count of your document's length. When selected, the character count in the status region is continuously updated to reflect the current number of characters in your document.

Auto save every XX minutes - This specifies the intervals in which BET is to attempt to save your current document. If you have never saved your document when the auto save occurs, you will be given the chance to give your document a name.

Use intelligent quotes - This enables the curled quotation marks that indicate the opening and closing of a quotation. If this feature is enabled, BET automatically uses the curled variation of quotation marks as you enter new text. Changing this option has no effect on previously entered quotes.

Converst 8-bit ASCII text on saves - When this feature is turned off, BET writes 8-bit ASCII text (such as files created by Merlin) just as it was read.
This means that you can use BET to edit such files without the manual conversion most text editors require. If this feature is enabled, BET will clear the high bits of all characters of such files at save time. This allows you to convert such files to normal 7-bit ASCII text, again, without a manual conversion process.

Default Font - This preference allows you to specify the font, size, style, and color settings BET uses when creating a new document. This allows you to override the normal 8 point Shastion system font. You make your selections from the same Choose Font dialog that you use during the normal operation of BET.

Source Save - This pop-up allows you to specify the language stamp to apply to Source files when using 'Save As...'. It's not always Note that this option's value is not used when you save your document with 'Save'. In that instance, your document is stamped with its current language designation.

Ruler Type - Allows you to specify the default measurement type that BET is to use in displaying the ruler. Current options are English, Metric, and pixel.

Miscellaneous:

- The file translation routines for AppleWorks documents currently only translate the entire document. This is also a Text Edit toolset limitation.
- Tabs do not belong to a specific line, rather, they currently are for the entire document. Unfortunately, the Text Edit tool set, of which BET is the first release, doesn't support multiple rulers just yet.
- Clicking upon the line spacing and justification buttons will reformat both the importing and exporting of fully-formatted AppleWorks documents, including AppleWorks GS.
- The file translation routines for AppleWorks documents currently only extract the text. No formatting information that is embedded in the document is retained. Since the principal reason for implementing this translator was to enable me to quickly read AppleWorks documents, I've left out the formatting until a later version. That version will address both the importing and exporting of fully-formatted AppleWorks documents, including AppleWorks GS.

PLANNED FUTURE FEATURES - Will we see it by version 7.0?

My current future features list (is that mutually exclusive?) is rather extensive, and growing. But for now, I will be concentrating on finishing those features that are already partially implemented. As always, your suggestions are greatly appreciated!

BUGS, ANOMALIES, AND OTHER UNDOCUMENTED FEATURES - Or, 'What just happened'

In its current incarnation, BET is a rather stable piece of code. That's not to say that everything will work completely properly, but thus far BET has not crashed for me. That's always Note that this option's value is not used when you save your document with 'Save'. In that instance, your document is stamped with its current language designation.

- Just as the above changes are global, so are the placement of tabs. Tabs do not belong to a specific line, rather, they currently are for the entire document. This is also a Text Edit toolset limitation.
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Upon: This preference allows you to specify the font, size, style, and color settings BET uses when creating a new document. This allows you to override the normal 8 point Shastion system font. You make your selections from the same Choose Font dialog that you use during the normal operation of BET.

Source Save - This pop-up allows you to specify the language stamp to apply to Source files when using 'Save As...'. Note that this option's value is not used when you save your document with 'Save'. In that instance, your document is stamped with its current language designation.

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Thanks to all.

Well, there you have it. If you have any questions, comments, suggestions, or anything else that I may be interested in, you can reach me at:

Internet:  ujmurphy@mcs.drexel.edu
Genie:  J.MURPHY7
America Online: Jim Murphy
US Mail:  Jim Murphy
Apartment A-412
3500 Powelton Avenue
Philadelphia, PA 19104-2464
(215) 387-3521
- II Infinitum -

- Created with Big Edit Thing v1.0b3

Finally, "Beyond Castle Wolfenstein." Worth the wait? Maybe...you decide.

Commands
--------

Movement (keyboard):
W -> north-west  W -> north  E -> north-east
A -> west  S -> STOP  D -> east
Z -> south-west  X -> south  C -> south-east

Gun Movement (keyboard):
I -> north-west  O -> north  P -> north-west
K -> west  L -> fire one round  + -> east
  -> south-west  .  -> south  / -> south-east

Weapons/Arsenal Command:
: -> switches between dagger* and gun
B -> drops and picks up the bomb*
R -> resets the bomb timer if you have tool kit*.
  (bomb must be dropped first)
H -> put away gun

Miscellaneous:
(RETURN)  -> displays inventory
(SPACE)  -> searches a guard (NOTE: anything found on the guard,
  if needed, will automatically be taken)
F  -> uses first aid kit* (if wounded)
M  -> bribes guard (costs 15 marks)
<ESC>  -> saves game
U  -> use object in closet

A "**" indicates that this item must be found

Game Notes
-----------

The object of "Beyond Castle Wolfenstein", is to find Hitler, drop a bomb in the room where he is, and run like hell back the room where you started. Hitler will always be on the lowest level of the
bunker.

Instead of chests, we now have closets. To open a closet, point your gun at it, and press the space bar. If it is locked, you must do the following:

1. Point gun at lock
2. Press buttons 1-0, until you here a click
3. Start back at button 1, press it, if it does not click, go back to the original button and press it till it clicks. Then try the next button until you find the other "clicker".
4. Repeat this process a third time and when you find the correct three digit combo, it will open. You can, of course, shoot the lock off, but that may attract unwanted attention, and is a wast of bullets.

You can get up to five passes. Each pass is different. You can see which passes you have by looking at the side of your screen and noticing how many inverse numbers there are. One of the five passes will randomly work on each level, but you never know which, so you have to test them out. If you show a guard a pass, and you don't produce the correct one he will draw his gun and ask again, if you still don't get it right, he will shoot, or go after you.

There are two types of guards:
1. The kind that walk around and patrol the area.
2. The kind that sit behind desks.

If a guard hears a shot, see's a dead body, or see's you with a drawn weapon he will probably head towards the nearest alarm. Alarm's look like little holes. When a guard reaches one, he will set it off, thus alerting the whole place of your presence (i.e. everyone will know who you are). There is only one way of resetting the alarm, if you find in a closet, the alarm controls, hit '1' to reset them (i.e. turn off).

The guards at desks are not to be reckoned with, it always takes more then one shot to kill them, so they will time to set off the alarm behind the desk. It is best just to bribe them or show your id.

There are two ways of getting to different levels:
1. Find a secret passage way behind a closet.
2. Enter an elevator.

An elevator is a boxed off room with one of the sides slowly opening and closing. You can see which way the elevator is going by looking at the upper right-hand portion of the room and seeing which way the arrow is pointing.

When resetting the bomb, always make sure there are no guards around, or they will go after you. The bomb timer automatically starts when picked up, and is displayed at the top of the screen.

To use the dagger, you must first select it, then sneak up behind a guard and run into him. This is the ONLY way the dagger will work, do not attempt head-on attacks. The dagger is useful when not wanting to alert other guards of your presence, but want to do-in another guard.
Finally, if you figure out how to use sound files from any place I haven't mentioned, let me know. I don't know if any other computers use the same kind of files as Apple IIgs and Macintosh, but I'd love to hear from anyone who does. My GEnie mail address is GUYRICE, and my Post Office address is given below.

Final notes:

This software is completely public domain. You are not OBLIGATED to send any money at all. However, you are NOT RESTRICTED from doing so, either. If you really liked this program, STARTPIC, STARTSOUND, SYSBEEP, or any other public domain programs I have written, and feel you need to show your appreciation to me somehow, my address is:

Guy T. Rice
P.O. Box 13036
Dinkytown Station
Minneapolis, MN 55414

How to set it up:

First of all, there's a program called BGMUSIC. This program must be copied into your DESK.ACCS directory, which is inside your SYSTEM folder. It doesn't matter what position it takes in the catalog. Personally, I always keep my desk accessories alphabetized.

Secondly, you will need a digitized sound file. Put this into your DESK.ACCS directory, and rename it MUSIC. Digitize whatever music you like best. You should probably digitize as slowly as possible, as you don't want to use up too much memory. (Memory used by BGMUSIC cannot be used by your program. However, if you run out of memory, you can click the Close box for BGMUSIC. This will release all the memory BGMUSIC was using immediately.)

Finally, there is a program called AUXSET. You can put that program anywhere you want, it doesn't matter. When you change sound files, you may have to run this program. It modifies the playback rate of the sound file by changing it's "auxtype" field. If a file is digitized at a different rate, then it must be played back at a different rate. This program can also be used to configure STARTSOUND and SYSBEEP as well as BGMUSIC.

When you run AUXSET, it will ask for the pathname of the file you wish to modify. You should type something like this:

/HARD.DISK/SYSTEM/DESK.ACCS/MUSIC

Replacing "HARD.DISK" with whatever the name of your hard drive is.

A note on digitizing for BGMUSIC:

Since loading sound files takes time, I would suggest digitizing sounds at the slowest possible rate, so that they take up the least amount of space and can be loaded quickly. The quality of the sound goes down, however, when you digitize slowly. Its a tradeoff, but I think it's best to speed up the boot process by slowing down the digitizing rate.

If you are using the MDIdeas SuperSonic Digitizer, and the new Sound Edit program, go into the "Preferences" section before digitizing. Set the Playback rate to 40, and the Digitizing rate to 34. Then click "Okay". This will result in the most compact sound files.

Oh, also, don't pack the resulting sound file when saving it. Leave it unpacked. And make sure the file's playback rate is set at 200. (Note, the playback rate used by BGMUSIC is on a different scale than that of Sound Edit. To be specific, the BGMUSIC playback rate is passed to the Sound Manager toolset as playback rate.) Run AUXSET to set this.

Macintosh and other sound files:

When playing back files digitized on a Macintosh, a playback rate of 450 has worked best for me so far. If that doesn't work, 200, 300, and 400 also are good bets.
Hail fellow warriors in the distant realm of "THE BILESTOAD!" (Thunder & lightning please)

After completing any good game, the age old question always pops up: "What the Hell do I do now?" Coming from a relatively isolated part of the world (somewhere up in Canada) I can't speak for any other Pirates but myself. I say, "Take it apart! Dismember the Mother-Fucker!" and proceed to rip out subroutines which I might find useful and try to figure out how the program does its stuff. When I completed the master level in The Bilestoad I became intrigued with the level code generating routines and looked around and discovered a method of finding level codes for any password for any level. Here's how to do it:

Boot The Bilestoad and press <RESET> until the drive stops. Do a CALL-151, then an 803G.

This gets you into the player registration screen and prompts you for your password. Type in the password you want level codes for and press <RETURN>. When it asks you for your level code, press <RESET>. Do a CALL-151 and enter the following commands:

* ==> F3:xx N A7B0G N AA61G <RTN>

where xx is the level MINUS ONE of the level code you want. 

For example, if you wanted the level code for the master level 40, you would type:

F3:27 (decimal = 39) N A7B0G....

Here is a list for all you lazy bums who don't feel like trying this out. The password is "GERBIL" (what else?)

<table>
<thead>
<tr>
<th>Level</th>
<th>Password</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>A7B0G</td>
<td>Side Block...WHITE</td>
</tr>
<tr>
<td>3</td>
<td>A7B0G</td>
<td>Low Block........WHITE</td>
</tr>
<tr>
<td>2</td>
<td>A7B0G</td>
<td>Punch.............WHITE</td>
</tr>
<tr>
<td>1</td>
<td>A7B0G</td>
<td>Side Piercing Kick...WHITE</td>
</tr>
<tr>
<td>0</td>
<td>A7B0G</td>
<td>Front Snap Kick......WHITE</td>
</tr>
<tr>
<td>98</td>
<td>A7B0G</td>
<td>Down Kick...........GREEN</td>
</tr>
<tr>
<td>99</td>
<td>A7B0G</td>
<td>Turning Kick...........BLUE</td>
</tr>
<tr>
<td>100</td>
<td>A7B0G</td>
<td>Flying Side Piercing Kick.....RED</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ALL MOVEMENT ACTIONS ARE ALSO AVAILABLE AT THE WHITE LEVEL. ALL ATTACK ACTIONS ARE AVAILABLE AT THE RED BELT LEVEL.</td>
</tr>
</tbody>
</table>

KEYBOARD CONTROLS:

W,R- UPPER KICKS
X,Y- LOWER KICKS
E- WALK TOWARD SCREEN
C- WALK AWAY FROM SCREEN
S- WALK LEFT
F- WALK RIGHT
D- SWITCH DIRECTION FACING
U- FLYING SIDE PIERCING KICK TO LEFT
O- FLYING SIDE PIERCING KICK RIGHT
J- PUNCH TO LEFT
L- PUNCH TO RIGHT
M- TURNING KICK TO LEFT
. - TURNING KICK TO RIGHT
I- DOWN KICK
K- SIDE BLOCK
O- LOW BLOCK
JOYSTICK CONTROLS:
The joystick controls are similar to the keyboard controls, with button
1 used to select which set of controls to use.

WITH BUTTON 1 UP:

<table>
<thead>
<tr>
<th>UPPER</th>
<th>WALK</th>
<th>LOWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>KICK</td>
<td>AWAY</td>
<td>KICK</td>
</tr>
<tr>
<td>TO</td>
<td>FROM</td>
<td>TO</td>
</tr>
<tr>
<td>LEFT</td>
<td>SCREEN</td>
<td>RIGHT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WALK</th>
<th>WALK</th>
</tr>
</thead>
<tbody>
<tr>
<td>KICK</td>
<td>KICK</td>
</tr>
<tr>
<td>TO</td>
<td>FROM</td>
</tr>
<tr>
<td>LEFT</td>
<td>SCREEN</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LOWER</th>
<th>WALK</th>
<th>LOWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>KICK</td>
<td>TOWARD</td>
<td>KICK</td>
</tr>
<tr>
<td>TO</td>
<td>SCREEN</td>
<td>TO</td>
</tr>
</tbody>
</table>

HIT BUTTON 0 TO SWITCH DIRECTION.

PLAYERS CAN GET POINTS DURING SPARRING IN THE FOLLOWING WAYS:
1. CONNECTING WITH AN ATTACK
2. BLOCKING AN OPPONENT’S ATTACK

THE WINNER IS DETERMINED BY THE NUMBER OF WARNING.

PRACTICE SECTION:

OPTION #2 ALLOWS YOU TO LOOK AT THE DIFFERENT ATTACKS THAT ARE
AVAILABLE.

---

BLACKSPRING operation notes:
BlackSpring has a buffer size of 96,854 bytes. However, the buffer size isn't
really measured in bytes, it's measured by lines (a line is equivalent to 79
bytes). So really, the buffer size is 1226 lines.

The use format is as follows:
use "x:blackspring",[username],[filename],[optional]

[username] = a3$      This is the variable containing the name of
                      the person who's using the editor.

[filename] = "x:filename"  This is the filename of the file that will be
                          written when the save option is issued.

[optional] = 0 or 1      This is only used when editing text files. If
                          you wish to edit a text file this must be set

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to 1. Please refer to the next section.

When you return from BlackSpring, memory location 10 will contain one of three values which will give you some miscellaneous information:

peek(10) value 0 = No errors occurred and message was saved.
1 = Message was aborted and not saved.
2 = The file that was loaded was too large [buffer overflow].

BlackSpring creates a text file which corresponds to the SPEC/NAME defined in the USE string. You should copy this file into your MSG file and then delete it.

Please refer to the program example at the end of this documentation file.

EDITING TEXT FILES WITH EDITOR

A unique feature of BlackSpring is that it allows you to edit text files on-line. These text files can only be 1226 lines long, and no longer.

The process is very simple. Simply place a one in the [optional] extension and the file will be loaded instead of created.

If the text file that you are loading is longer than 1226 lines, memory location 10 will contain a 2 and BlackSpring will not allow you to edit it.

When the Save/Write command is issued the old text file will be written over with the newly edited one. If no text file existed, it will be created.

BlackSpring will allow you to use control characters in the text files. Control characters will appear in inverse during editing.

If a line in a text file is longer than 79 characters, it will be split into two different lines. It is not recommended that you use BlackSpring to edit segments, since most segments have lines that are longer than 79 characters.

Example Program:

```plaintext
input a3$ "Filename to edit: " i$:if i$="" return
use "g:blackspring",a3$,i$,1:if peek(10)=2 print "File too long...":return
if peek(10) "[ Aborted ]":return
```

GETTING HELP FROM THE EDITOR

If you, or one of your users, is in need of a command list, then he/she only has to press Control-A (user) or Open-Apple A (sysop) to get a Help Window.

The Help Window will appear on the screen. You simply press RETURN when you are done using the Help Window and the screen will be refreshed and you can continue to write your file.

COMMANDS

<table>
<thead>
<tr>
<th>Control</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control-A</td>
<td>Display Help Window</td>
</tr>
<tr>
<td>Control-B</td>
<td>Jump to Line 1 of the editor</td>
</tr>
<tr>
<td>Control-C</td>
<td>Center the current line of text</td>
</tr>
<tr>
<td>Control-D</td>
<td>Delete current line; pull text up</td>
</tr>
<tr>
<td>Control-E</td>
<td>Toggle Insert/Replace Mode</td>
</tr>
<tr>
<td>Control-N</td>
<td>Jump to Last Line of the file you're editing</td>
</tr>
<tr>
<td>Control-P</td>
<td>Toggle Insert Control Characters ON/OFF</td>
</tr>
<tr>
<td>Control-W</td>
<td>Write: Save Message</td>
</tr>
</tbody>
</table>
BLAZING PADDLES

BLADE O' BLACKPOOLE

BLADE OF BLACKPOOLE <-> A NEW GAME FROM SIRIUS SOFTWARE DONE IN HI-RES GRAPHICS

GENERAL COMMANDS:
SAVE = SAVE A GAME
BRIEF = GIVE A SHORT DESCRIPTION OF A ROOM
SCORE = I HOPE YOU CAN FIGURE THIS ONE
RESUME = RESUMES GAME
LONG = GIVES LONG DESCRIPTION OF ROOM
WITH (I.E.- WITH ROCK, WITH SWORD, ETC)
HELP = GIVES HELP
Q = ABORT, SAVE, OR RESUME GAME

YOU MAY ALSO USE MULTIPLE WORD COMMANDS SUCH AS:
TURN THE LAMP ON
MOVE THE ROCK WITH THE LEVER
TALK TO THE BARTENDER

WHAT IS BLAZING PADDLES?

BLAZING PADDLES is a very powerful and easy to use drawing program. It allows you to use almost any input device to create drawings, diagrams, and text. It is easy enough for young children to use like a coloring book, yet sophisticated features are included for the serious computer artist.

EQUIPMENT REQUIREMENTS

1. An Apple //c, //e, //+, //, or compatible computer with 48K minimum and Applesoft.
2. One or two disk drive.
3. A color monitor or TV is preferred, but a monochrome monitor will work fine.
4. One of the following input device (properly connected):
   1) Mouse
   2) Graphics Tablet
   3) Touchpad (KoadlaPad or equivalent)
   4) Joystick, trackball, or similiar paddle port device
   5) Light Pen
5. A printer is optional. You can get a printout of your picture with most types of printers.

GETTING STARTED

Before running the program, make sure your input device is properly connected. Carefully follow the installation directions supplied with the device. Make sure the power is OFF before connecting anything to your computer. Next place the BLAZING PADDLES disk in drive 1 (label facing up), and turn the computer on. When the drive stops spinning, you will see the following display on your monitor screen. At the bottom of the screen is a menu of the various input devices. The left and right arrow keys are used to make a choice from this menu. Press the right arrow key to highlight the next selection on the menu. Press the left arrow key to move backward through the menu. When the device you are using is highlighted, press [RETURN] to run the program. The disk will run for a few moments and then the main menu will appear. Since each input device is operated differently, you will have to learn the following techniques for your device.

* How to move the "cursor" around the screen.
* How to draw and select menu items using the "ACTION BUTTON."
* How to delete actions using the "UNDO BUTTON."
III - Command Explanation

*NOTE - Light pens require special techniques. If you are using a light pen, refer to the chapter on LIGHT PENS.

Moving the Cursor

The cursor is a small flashing marker that indicates your position on the screen.

*MOUSE - Move mouse to position cursor on the screen. Cursor can be moved off the screen by moving the mouse until the cursor disappears.

*TOUCHPAD - Places styles or finger on the pad to position cursor on the screen. Lift styles off pad to take cursor off the screen.

*GRAPHICS TABLET - The "screen" area is the lower 2/3 of the tablet. Touch the pen lightly on the surface of the tablet to position the cursor on the screen. Place the pen near the top of the tablet to move cursor off the screen.

*JOYSTICK - Joystick and other paddles port devices. Move joystick to position cursor. Move to the upper left corner to move cursor off the screen.

Action Button

The ACTION BUTTON is used when you want to make a menu selection or draw something on the picture.

*MOUSE - The mouse button is the ACTION BUTTON.

*TOUCHPAD - There are two buttons on the touchpad. The left button is the ACTION BUTTON.

*GRAPHICS TABLET - The ACTION BUTTON is the point of the pen. When you press down on the pen so that the point retracts, you activate the ACTION BUTTON.

*JOYSTICK - Joystick or paddles port device - There are two buttons. The left button (or button 0) is normally the ACTION BUTTON. Some joysticks may have a different layout so you may have to experiment to find out which button to press.

Undo Button

The UNDO BUTTON is used to remove the last item placed on the picture. This allows you to try things out before they become a permanent part of the picture. The [ESC] key on the keyboard is used for the UNDO BUTTON. If you are using a device with two buttons (touchpad, joystick, etc.), the second button becomes the UNDO BUTTON.

*NOTE - The "undo" feature will work only on the very last thing drawn on the screen.

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Apple II Computer Documentation Resources (a2_docs_documentation.msw)

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Apple II Computer Info

- OA-R  Read block into buffer
- OA-S  Set current Slot #
- OA-F  Find Byte Sequence
- OA--= Increment Block # and Read
- OA-E  Edit Byte
- OA-T = Toggle tone ON/OFF
- OA-C = Copy Blocks between devices
- OA-R = Read Block to Buffer
- OA-L = List disassembly of buffer
- OA-Ctrl-W  Write buffer to disk at block #F110
- OA-> = Increment Block # and Read
- OA-L = List disassembly of buffer
- OA-Ctrl-W  Write buffer to disk at block #F110

## Copy Blocks between devices
OA-C

This command puts you into the copy mode of this program. With this command you can do anything of the following, plus other things not listed or thought of yet.

- Copy 5 1/4 to 5 1/4 inch disks. One or two drives.
- Copy 3 1/2 to 3 1/2 inch disks. One or two drives.
- Copy Ram disks to any of the above or visa versa.
- Copy Hard disks to any of the above or visa versa.
- Or any combination of the above.
- Copy ranges of blocks between any of the above.
- Search and replace byte sequences between any of the above.
- Search and replace within ranges of blocks.
- Backup hard drives, or ram drives onto 5 1/4 or 3 1/2.
- And other things that I haven't run across yet.

See Appendix B on the copy program for more information.

### Edit Byte

OA-E

Pressing this key will allow you to edit the buffer. This can be done either in Hexadecimal or Ascii. If your in the Hex mode, pressing OA-E you'll be asked for which byte you would like to edit. Enter in the byte # you want to work on. At this time the byte in the buffer will be highlighted, the byte number, the current value and a prompt will be presented to you. If you press Escape, you'll be out of this operation. If you press Return, no change will be made to the byte, and the next byte will be presented to you for the same evaluation. Pressing the arrow keys will allow you to quickly and easily move around in the buffer. You'll always be presented with the current byte value for the same evaluation as before. You may also use any of the OA-keys to go to any other operation without hitting the Escape key. If you execute an edit a new hex byte the buffer will be updated, and the next byte will be displayed. This will continue on until you press Escape.

If you're in Ascii mode, the same order of events will happen with one notable difference. Before being asked which byte number you want to edit, you'll be asked to specify if you want the High bit set, or reset. The difference being in the Hexidecimal the byte has a hexadecimal value of $41, (High bit set). This letter on the screen is displayed normally. The letter "A" can also be represented on the screen as a flashing character (40 columns), or Inverse (80 columns). The hexadecimal value for this letter "A" is $41. It is important to edit a letter in the correct mode, otherwise problems can arise later while using the edited data. An example of this problem could occur if you want to change the volume name of a PRODOS disk. PRODOS looks for the volume name in block $002, and it must be in high bit reset mode, (Flashing). If you edit it with the high bit set, the system will recognize it as a valid volume name. So to prevent problems, mark down which type of letter is being used.

### Note - Editing a byte does not alter the disk in any way. To save the edited information to a disk you must use the OA-Ctrl-W, Write command.

### Find Byte Sequence

OA-F

Pressing this key will allow you to search the disk for a specific byte sequence. You may enter up to a 20 byte sequence to be searched for. The "*" sign (or BD in hex mode), is the Wildcard, and can be inserted anytime you need to find a range of bytes. For example, if you want to find anytime softswitches are being accessed you could search for this sequence; A9 BD C0 (LDA $C0XX); Remember BD=\"*\".

This will show you the places on the disk that this instruction is being executed. Or if you want to find the occurrences of a word that might be spelled incorrectly, but you're not sure how it's spelled, you might search for this sequence; MISP=\"***\" (MISPELLED)

This will show you all the places on the disk that mispxxxxx occurs. If you want to search for a Hex sequence, you must be in the HEX display mode, (OA-H). And instead of want to search for an Ascii sequence you want to search in the Ascii mode, (OA-A). You'll find that while searching for Ascii bytes, you may enter the characters in lowercase, but the program turns them up into uppercase. This happens because the Ascii search looks for the entered sequence in uppercase, lowercase, high bit set, high bit reset, or a mixture of any.

Once you hit OA-F, assuming you in hex mode, you'll be presented with a prompt that asks you to enter your search sequence in hex. If you have already entered a sequence it will be displayed as the default. Pressing Return here will reset the default and start it's search. Pressing Escape here will back out of this operation. You may also use any of the OA-keys to jump to another operation. Any other hex bytes can then be entered. After the proper sequence is entered, press Return to accept, and the search will begin. Pressing Escape while searching the disk will stop the search and return you to the beginning. Or if your in Ascii mode, the sequence of events is the same, only you'll have to enter Ascii Information.

Remember, when you hit OA-A or OA-H you'll set the default search string to null, no default string will be displayed.

### Hex display Mode

OA-H

Pressing this key will set the program in the Hex display mode. All work on the buffer data will be done in Hex.

### List disassembly of buffer

OA-L

Pressing this key lists a disassembly of the code read to the buffer. This command also shows the Ascii equivalent along side of the disassembled code. You may disassemble one instruction at a time by pressing the space-bar. Holding down the space-bar will give you a slow non stop scroll of the code. Holding down the Return key will give you a quick non stop scroll of the code. Pressing Escape at anytime will back out of the operation.

### Print screen to Slot #

OA-P

Pressing this key will print the contents of the screen to your printer connected at slot #1. This command can be invoked at anytime the program is waiting for input by pressing the return key. Sometimes the printer may not work as cleanly. Eventually the user will be able to designate his own initialization string. Sorry for now though. If you really need to change the initialization string, follow these steps:

- Scan the disk that the Block Work program is on.
- Look for this sequence - 89 90 00 EA EA EA EA EA
- Replace this with your init string.
- You only have 8 bytes to work with and an ending 00.
- You must append the 00 to the end of your string.
- Write it back to the same block number and try it.

### Read Block to Buffer

OA-R

Pressing this key will read a block of information to the buffer, and display the information on the screen. This command uses the information on the top of the screen to find the correct block. You will need to set the correct Slot #, Drive #, and Block # to read first. (See Appendix C for what device is located in which slot and drive #).

### Set current Slot #

OA-S

After pressing this key, you'll be prompted for the slot number of the device you're working with. Pressing Escape will restore the old slot number and end this operation. Never use this key by itself. If the program first starts up, it uses the slot it started up from as the current slot #. Also, when ending the program, set the Slot and Drive that you want your selector quit code to access first. This will greatly speed up your selection of the next system program.

### Toggle tone ON/OFF

OA-T

Pressing this key will toggle the tone on or off. So if you like it silent, press this key once. If you decide you want it back, press it again. The program will save your settings.

### Write buffer to Block #

OA-Ctrl-W

Pressing these keys will write the contents of the buffer to the block number designated on the top information line. The control key was added for safety.
Pressing this key will allow you to increment the block number and read it’s contents to the buffer and display it on the screen. This is particularly useful to scan the disk for text while in the Ascii mode.

OA-< = Decrement Block # and Read
Pressing this key will do the same as the above only decrementing the block #.

OA-? = Help Screen
Pressing this key will give you an online summary of all the commands available to the user. Pressing any key will return you back to the main screen.

ESC = Escape key
Pressing the Escape key will always allow you to back out of a particular operation. If no operation is underway, pressing the Escape key will end the program.

I hope that this program is of value to you in your library. I intend to update this program periodically and release it. You are welcome to pick-up updates and keep them without charge if you have sent in the initial purchase price. They will be available on BBS's or Public Domain libraries.

Thank-you for your interest.

Mark Harris

Appendix A – The Hexidecimal numbering system
The hexidecimal numbering system is a convenient system for programmers to use. An example of a hexidecimal number would be $10. (The dollar sign "$" is the standard representation of a hexidecimal number.) The number $10 does not equal the number 10. The former equals 16 in our normal decimal numbering system. While the latter does equal 10 in the decimal numbering system. The Hex numbering system utilizes 16 unique digits, they are 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F. While the decimal numbering system just uses 0-9. There are a couple of reasons why hexidecimal is so important to the computer programmer but unfortunately I don't have the space to thoroughly discuss it. But I would like to give you a couple of sources to look at.
- Assembly Lines, Softtalk Publishing, Roger Wagner. $3.50 from Polarware software company.
- Prodos inside and out, Appendix B, Tab Books inc.
- Dennis Doms and Tom Weishaar. $16.95 Walden books etc
- And any other good Apple publication on Assembly.

Appendix B – Copying Blocks between devices
The Copy option of this program is one of the nicest features of this program. It’s extremely flexible, and has features not found on any other program that I’ve seen. These features are:
- Normal Disk copy
- Copy a range of blocks from one device to another.
- Copy disk while searching and replacing a string.

You are not limited to device types. For example I can copy a 5 1/4 disk to a RAM disk. Or Back-up a Hard Disk. (There are other programs that will do this job more efficiently.) Or any other combination of devices. Now this could cause problems, but if your careful you'll have no problem.

When copying disk to disk, you must have a formatted disk for your target disk. Otherwise a write error will occur. The upper information line will display the slot, Drive, Block and operation that is being worked on at any given time.

The normal disk copy option will keep reading from one disk and write to another disk until either the source disk runs out of blocks, or the target disk runs out of blocks. This allows you to use any combination of devices while copying.

The Copy range of blocks option allows a much more controlled copying process. If you want to copy the first 80 blocks of a 5 1/4 disk to your Ram disk, you could specify this. You can even set the starting block of the target disk to a different starting block.

The Search for byte sequence option allows you to specify either a hex string, or an Ascii string to search for. If the string is found it is replaced with another string that you specify. The number of times a replacement is made is displayed down at the bottom of the screen. You can use this option on the whole disk or use the Range option to be more controlled in your search.

All these options allow for alot of combinations, so try them out and see what works the best.

Appendix C – Device mapping in PRODOS
PRODOS upon booting checks to see what machine is it's running on, and what devices are connected to it. It now stores all the information about these devices in a special location inside PRODOS. Storage devices such as Disk II's, Duo Drives, Ram disks, Hard disks, etc, are mapped to go into a specific slot and drive number. The problem is, depending on your configuration, the slot and drive number given to a device may not be the exact slot and drive that it is setting in. So, for those of you who need it here a list of where PRODOS will map the following devices.
(Assuming that these devices are connected at once.)

<table>
<thead>
<tr>
<th>Slot #</th>
<th>Drive #</th>
<th>Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>1</td>
<td>Hard Drive #1 (Prodos)</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>Hard Drive #2 (Prodos)</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>5 1/4 Floppy drive #1</td>
</tr>
<tr>
<td>6</td>
<td>2</td>
<td>5 1/4 Floppy drive #2</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>3 1/2 Floppy drive #1</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>3 1/2 Floppy drive #2</td>
</tr>
<tr>
<td>or</td>
<td></td>
<td>IIGs RAM5, if setup</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>RAM disk 64K</td>
</tr>
</tbody>
</table>
| 2      | 2       | 3 1/2 Floppy drive #2 if RAMS is installed on IIGs.

Thank-you for your interest.
BLK0SAVE, by Guy T. Rice

Bob Garth recently pointed out that one of the most likely places to hide a virus, or at least to patch one in, is block 0, the bootup code, on your ProDOS disks. I don't know if such a virus has been made yet, but this program will protect you from one if it has been or will be developed.

Put this into your SYSTEM/SYSTEM.SETUP directory. Now, everytime you boot up, it will check the boot code to see if it's been modified. If it has, it will tell you so, fix block 0, and then reboot. (It lets you know, so you might possibly be able to figure out which program did it. If you just downloaded and tried out a new program, and then this message pops up, LET US ALL KNOW IMMEDIATELY!!!)

It would probably be wisest to rename this program to something unique. That way, a virus install program can't delete or modify this file. (For example, you could rename BLK0SAVE to something like ZSDFSLKJHERSUR.)

Comments? My GENie mail address is GUY.T.RICE

---------------------------------------------------------------------------------------------------------------------

DOCUMENT blu

---------------------------------------------------------------------------------------------------------------------

DOCUMENTATION for BLU - Binary II Library Utility
Copyright (c) 1987 by Floyd Zink, Jr.
All Rights Reserved.
Updated - 10/09/87
---------------------------------------------------------------------------------------------------------------------

REQUIRES EITHER AN ENHANCED //E, //C OR IIGS.

About BLU
--------

This program is FREEWARE. You can distribute BLU freely, just don't sell it. I do ask that you make sure that this doc file is made available with the program. You are under no obligation to pay anything for BLU.

However, if you like this program and want to show your appreciation I do accept gratuities. If you send me $10.00 I will send you the latest versions of both BLU and TEX - Text File Utility and any other FREEWARE programs I might write. The $10.00 will also entitle you to 1 additional free update that will be AUTOMATICALLY mailed to you when I update the programs again. This way I make a little money and you do not have to spend the money downloading the updates. After the first mailing and the free update I will continue to mail out updates, but I will include a bill for $5.00 to cover disk and shipping costs. This way you will always have the most current versions. I will do all mail outs before I upload them to any source. You will find that in the long run this method will be cheaper for you than the connect charges would be for downloading this program. My address is:

Floyd Zink, Jr.
P.O. Box 060069
Palm Bay, FL 32906

I repeat YOU ARE UNDER NO OBLIGATION TO PAY ANYTHING FOR BLU.

Features
--------

1) Catalogs disks
2) Makes Binary II files
3) Squeezes files
4) Unsqueezes files
5) Extracts individual files from a Binary II file
6) Lists the contents of a Binary II file
7) Deletes files

The Menu
--------

You can select a menu item by either the first letter in the item or by using the arrow keys to move the inverse bar to your selection and then pressing return. You will be returned to the menu after all processing is done.
By pressing OA-7 or OA-/ from the main menu one can view a help screen listing the commands.

Selecting Files To Be Processed
-----------------------------------------------

After making your menu selection you will be prompted for a source directory name and where necessary a destination path name or target directory name. You can use the TAB key to skip to the next ‘/’ in the path name shown or OA-TAB to back up to the previous ‘/’. The DELETE key will delete characters and the ← → keys will back space and move the cursor forward. When prompted for a destination path name you must be sure and enter a path name for a file not a directory.

After the directory(s) are selected a catalog of the source directory will be displayed. Using the up, down, left and right arrows will move the inverse bar accordingly. Pressing the space bar will toggle a file for normal selection and will display a check mark next to the name. The ‘S’ key will toggle a file to be squeezed when added to the Binary II file and will display a ‘S’ next to the name. OA-space or control-a will toggle all the normal items and OA-S will toggle all the squeezed items. Pressing return will start the processing using the selected filenames.

Pressing OA-D when selecting the files will cause ALL the files and sub-dirs to be squeezed and all subsequent files and sub-dirs contained within them. You could use this to sqz a WHOLE disk if you wanted.

Using The Mouse
----------------------

If you have a mouse BLU will find it and allow you to use it instead of using the arrow keys and you can use the mouse button to select files though you still have to press return to start the process after the files are selected.

Holding down the OA (open apple) key when pressing the mouse button will toggle the file for squeezing. Holding down the CA (closed apple, option on the gs) when pressing the mouse button will act just like pressing return does - it will start the processing.

The sensitivity of the mouse is at location $204B when the program is in memory. This is the $4B byte after the beginning of the program. It is currently set at $08. This means the mouse must move 8 increments to move the inverse bar. If you want to change this use a block editor or from the basic prompt enter:

CALL-151 ;enter monitor
BLOAD BLU,TSYS,A$2000 ;load file
204B:XX ;XX being the new value. Higher value = lesser sensitivity.
BSAVE BLU,TSYS,A$2000 ;save file
'C ;back to basic

Making Binary II Files
------------------------

You can use the Destination path name to pick which directory or disk the Binary II file is placed.

BLU will display all the sub-directories that are selected and allow you to select files from them unless of course you use OA-D which will select them all automatically.

Squeezing Files
-----------------

BLU will NOT squeeze an existing Binary II file. Squeezing an already formed Binary II file defeats the whole purpose behind using this format. The correct method is to use BLU's ability to squeeze files while making the Binary II file.

BLU adds an extension of '.QQ' to the original filename to form the squeezed filename.

All file types, except for DIRS, are able to be squeezed.

BLU uses the Huffman algorithm to squeeze files. It first encodes repeated characters by doing a byte for byte pass through the file except that DLE is encoded as DLE, zero and repeated byte values are encoded as value, DLE, count for counts that are greater or equal to 3. On the second translation it develops a binary tree representing the decoding information for a variable length bit string code for each input byte. Each string's length is in inverse proportion to its frequency of appearance in the incoming data stream. Decoding information is included in the squeezed file, so squeezing short files or files with uniformly distributed byte values will actually increase the size.

Special thanks to Don Elton for the donation of his SQ/USQ source code to the Public Domain. I adapted these routines to speed up the processing of squeezing and un-squeezing files and to fix a bug that sometimes caused large files to squeeze incorrectly. There also had to be some changes to integrate the routines into BLU. The core of the algorithms though are basically unchanged from Don's source.

Un-squeezing Files
------------------------

The squeezed file is un-squeezed to the original file's name. If this name already exists then BLU overwrites it.

Extracting from Binary II Files
-------------------------------

BLU will NOT overwrite any files, except the above. If there is a duplicate file then BLU will add an extension of '.n' to the filename. You can then rename the file when you are done with BLU.

BLU checks available disk space to make sure there is enough room for all the files. If there is insufficient space then the program will issue an error message and exit back to the main menu. It will not extract any files unless there is enough space.

Squeezed files within the Binary II file will be AUTOMATICALLY unsqueezed when extracted. You do NOT have to use the USQ function from the main menu to unsqueeze any files. If the files were squeezed separately first and then made into a Binary II file BLU will still unsqueeze them automatically as long as the files have a suffix of '.QQ'.

Deleting Files
-----------------

BLU will not delete locked files.

Final Words
-----------

If you encounter any bugs or come up with a suggestion on improving the program please let me know.

Floyd Zink, Jr.
CompuServe - 73147,2717
Genie - F.ZINK
+++ "BODYFAT CALCULATOR" @
By Jerry Robison

"BODYFAT CALCULATOR" is based on work published in a book titled NUTRITION, WEIGHT CONTROL, AND EXERCISE by F Katch and W McArdle (c) 1977.

The percent bodyfat calculated by this method is within 2.5 and 4% of values obtained by hydrostatic weighing. Variations may exist for some people, but usually this method is accurate and reliable.

On the screens to follow, you will be asked enter to information on your age, sex, bodyweight, and 3 circumference dimensions (using a tape measure) for 3 places on your body. Males and females will have different places to measure. Also, each sex will have different places to measure depending on age.

Enter all your dimensions in INCHES. This program will not accept FRACTIONS. You must enter DECIMALS for FRACTIONAL parts of an INCH. What follows is a conversion table to aid you.

FRACTION TO DECIMAL CONVERSION TABLE

<table>
<thead>
<tr>
<th>FRACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
</tr>
<tr>
<td>1/4</td>
</tr>
<tr>
<td>3/8</td>
</tr>
<tr>
<td>1/2</td>
</tr>
<tr>
<td>5/8</td>
</tr>
<tr>
<td>3/4</td>
</tr>
<tr>
<td>7/8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DECIMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>.125</td>
</tr>
<tr>
<td>.250</td>
</tr>
<tr>
<td>.375</td>
</tr>
<tr>
<td>.500</td>
</tr>
<tr>
<td>.625</td>
</tr>
<tr>
<td>.750</td>
</tr>
<tr>
<td>.875</td>
</tr>
</tbody>
</table>

The following information will help you determine where and how to measure yourself properly to get more accurate results from "BODYFAT CALCULATOR". Remember, you will need to measure only three places on your body. The program will instruct you on which places. However, we will list instructions for all six places.

HIPS--Measure at largest part where hips are broadest side-to-side and deepest front-to-back.

FOR WAIST--Measure the smallest part usually above the navel. Keep abdominal muscles relaxed. Stand erect.

FOR FOREARM--Measure at largest part, usually below the elbow.

FOR ARM--Measure the upper arm with muscles relaxed. Keep arm straight at elbow.

FOR CALF--Measure at largest part of calf, usually about 3 inches below the knee.

FOR THIGH--Measure at largest part, usually at the crease below the buttock. Keep your weight evenly distributed on both feet.

FOR WEIGHT--To measure body-weight, you should have no clothing on. Use beam scale if possible.

"BODYFAT CALCULATOR" IS VALID ONLY FOR WEIGHTS of 75-300 and AGES of 15-50.

All measurements should be taken with a good quality cloth or plastic tape. Use same tape each time for consistency. Do not pull tape too tight and compress the flesh. Tape should make gentle contact with skin. Also, measure and enter your muscle girth dimensions when the muscle is relaxed, unless otherwise instructed.

Files Needed:
BODYFAT CALCULATOR  - The main program
---ape each time for consist-*ency.  Do not pull tape too tight and",*compress the
flesh.  Tape should make","gentle contact with skin."
9085  DATA   "Also, measure and enter your muscle","girth dimensions when the
muscle is","relaxed, unless otherwise instructed."

==============================================================================
DOCUMENT bordercat
==============================================================================

+++ 
":@ BorderCat ":@
":@ BorderCat ":@

This program allows you to make catalogs of all your Print Shop borders.  These
catalogs are saved as HiRes screens, and can be printed using THE PRINT SHOP'S Screen
Magic option.

When the program runs, the first question it will ask you is how many drives you have.
If you have two, place the disk containing the borders you wish to catalog (several
are included with this issue) into drive #1, and a disk for saving these catalogs in
drive #2.  If you only have one drive, place the borders disk in the drive; the
program will prompt you to insert the data disk and the borders disk as needed.

The borders disk is then read, and your pictures are placed on a clean HiRes screen.
Up to 12 borders can fit on one screen.  After each screen is filled it is saved to
disk, and the process is repeated until all borders have been processed.

*Note 1:* You will supply a name for your screen images (catalogs).  The program
saves the files in the following manner:  VOL yourname#  where 'yourname' is the name
you supplied, and '# is the sequential number of the screen.  For example, let's say
you have 20 borders, and have said you want the catalogs to be named "PHRED".  You
will have the following screens saved:

VOL PHRED1
VOL PHRED2

*Note 2:* Once you commit yourself to doing a catalog of your borders the [ESC]
function will no longer work.  The only way out other then pressing [CONTROL]-[RESET]
is to let the program run its course.

* Needed files *

The following files are used for this program:

BORDERCAT - The main program.
FP - EXEC file used to exit
UPTIME.ML - HiRes character sets
GETFILE - Support file used to read catalog
PS.BORDER - Support file used to put borders on screen
BORD.xxx - Several BORD. (border) files for your use...
Apple II Computer Info

-----<>:CROWN- YOU MUST MOVE A LOT OF BOULDERS AROUND IN SOME TIGHT SPACES.

-----<>:WALLS- BLAST THROUGH WALLS TO GET AT SOME OF THE JEWELS. DROP A BOULDER ON A FIREFLY AT THE RIGHT TIME AND PLACE.

-----<>:ENCHANTED BOXES: THE TOP OF EACH SQUARE ROOM IS AN ENCHANTED WALL, BUT YOU'LL HAVE TO BLAST YOUR WAY INSIDE.

-----<>:FUNNEL: THERE IS AN ENCHANTED WALL AT THE BOTTOM OF THE ROCK FUNNEL.

THAT IS BOLDERDASH DOCS..... TOPPLED BY MR. WIRES.....

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
Introduction
---------
BRAM Checker is an Apple IIgs Temporary Initialization file (TIF) that checks the contents of the battery RAM present in an Apple IIgs for changes from an image that is saved to the disk. You will be notified at boot time of any changes to the battery ram since the last time you booted the computer. The program will inform you of the battery RAM locations that were changed, and give you the opportunity to restore the old values or continue booting with the new values.

Installation
---------
Just copy the file "BRAM.Checker" to the "*:System:System.Setup" folder on your boot disk.

That is all.

Using the Program
-----------------
If you make a change (or someone else does) to your battery RAM, for example, change the monitor border color, BRAM.Checker will inform you of the change during the next boot. You will have the option of accepting the changes and continuing with the boot, or you may restore the old values.

If the battery RAM has changed, the IIgs boot process will be interrupted by a dialog on the text screen informing you that there was a change. Press ESC to see which values were actually changed; press return to simply accept the changes and continue. After viewing which items were changed, another dialog allows you to either restore the old values (press ESC), or continue with the new (changed) values (press RETURN).

BRAM.Checker saves a copy of your battery RAM to a file called "BRAM.Image" in your System.Setup folder. This saved image is compared to the battery RAM image at boot time, and you are informed of differences.

That's it. Have fun with it.

New for Version 1.1
------------------
+ Added text for BRAM locations $5E and $5F.
+ Added a resource fork with rVersion & rComment resources.
+ Shows boot info under System 6 (Icon).

New for Version 1.2
------------------
+ Added a few more BRAM location text.
Borg turns regally in its atmospheric envelope. High off graphical orbit over scars on the surface left by a large ore-endless figure-eight, a band of shallow space. It flickers intermittently in fixed geo-two stars and the golden planet lopping around them in dark tumbling through darkness, the last meteors veer toward the planet, the last meteors veer toward the rock, in gravitational fields along the way. After eons of traveling through the universe like blazing pinballs to flame out, rock by rock, in gravitational fields along the way. After eons of traveling through darkness, the last meteors veer toward two stars and the golden planet standing around them in an endless figure-eight.

Borg turns regally in its atmospheric envelope. High off the surface the air thins out, refraction stops, the light fades into a dome of ever-deepening cobalt, streaked with sudden fire as stellar debris arcs through.

Turquoise leaves twitched a mile below the surface in a deep, mist-bound rift. Seven pairs of golden eyes checked a clearing for danger before one of the group stepped into the rift. The creature was slight, unclothed, with a large hairless head, a small round mouth and wide eyes that gave it an expression of solemn astonishment. Its skin had the same luminous golden sheen as its eyes. It carried a document in one hand.

After a moment the six others emerged from the jungle, and the seven golden beings stood looking straight up through a gap in the mist at the narrow band of dark Borgian sky.

"Something is wrong", said one of the golden creatures. "A dark cloud hides the Creator's face - the evil mask of prophecy!" Indeed, the constellation seemed dim, and even the brightest stars were slightly obscured by the shadow, darker than space, creeping over them.

"When the Creator shall be masked", intoned one of the seven, and the others chanted, "then the world will die..." "When the mask shall fall away", chanted the first, and the others responded, "then the world will live again..." The first one said, "The darkness quickens - it is the time of renewal. When the blood star vanishes, the dark storm will scour the planet clean. All our people must be returned to Borg. And then we must perform the ritual of the elements, to recreate the Creator so that the Lau may live".

Another murmured, "All our training has brought us to this day".

In reverence and awe, the seven gazed upward at the stricken constellation. Suddenly they heard rough voices drifting up the path, then creaking leather, rattling chains and thudding boots.

"Breakers!" Terrified, the golden creatures fled into the jungle. Darts broke out behind them, followed by blades flashing in the dim violet light. At the edge of the jungle, one of the golden creatures fell - two bone-handled knives in its back - and lay twitching as the Breakers, cursing and joking, surrounded it. Their leader had a face like a peeled carrot, scarred down one side. With a raspy chuckle, he yanked his knives out of the corpse and growled, "Like Mulcahy says -"

"They're no good dead, but it's better than letting 'em get away!" He wiped the blades on his filthy leather pants amid guttural laughter.

Nobody saw the luminous golden mantle that rose from the turquoise jungle and wafted up out of the rift, billowing into the sky until the bright spots in its midst, like pale eyes, winked out one by one.

Far above the planet, a shiny fleck hangs in the blue-black band of shallow space. It flickers intermittently in fixed geographical orbit over scars on the surface left by a large ore-
mg operation. The industrial space colony’s age is
evident by the obsolete spherical design, with antiquated
classic power panels, reflector and shields spread over its
core translucent dome: picture a round blown-glass sculpture
hanging in a dark void – a dirty yellow glow inside – its outer
surfaces, points and spires dusted with fairy light from
distant fireballs.

A vagrant meteor smashes through one of the solar panels,
bows a dish antenna to junk and bounces off the colony’s
hull. Then it wobbles on into eternity, leaving the hull plates
ruptured and gapping behind.

The luminous golden mantle rolls up from the planet and
drifts toward the colony, surrounding it and seeming to stare
in through the dome with shining eyes as the colony shud-
ders in the meteor’s wake. The lights inside dim and flicker
for several moments. Hovering outside the dome, the vapor-
ous eyes peer into the colony’s heart. A universal intelli-
gence feels along the maze of corridors, through the
residence modules, the shopes and bays, across the rotting
hydroponic vegetable beds and rusting transport pods to
the administration module, and out again, sensing every-
thing. Except for a skeleton mining crew, a handful of drift-
ers and a large force of security mutants, the colony seems
abandoned.

"Har haw! The look on that thing’s face when eight thou-
sand of us whipped its face! The Cirdonian broad
smacked the bartop, spilling drinks and shaking the floor.
Since he was a Cirdonian, nobody complained. Buying a new
drink was easier than buying a new head.

"Sounds pretty funny", said a huge boxlike entity next to
the Cirdonian. He sounded dubious, or maybe just depressed.

"Har haw! Face turned to jelly, lookin’ surprised as livin’
karg – har haw haw!* The Cirdonian, gasping with mirth,
clacked his beak and glared up and down the bar. Everyone
laughed along obediently.

Panface nodded to Betty the Bartender and gave up his
place to another Breaker. Even the Cirdonian pulled back
slightly as he left. Panface was known for his sweet, melan-
choly disposition, but he had also been know to drink too
much of Betty’s lava and convulsively tear three-inch meta-
plast plates into confetti while in the throes of some
unknown grief.

The big solemn guy rolled across the clamorous room,
tilting his occipital bulge this way and that while his dark, sad
eyes searched for a familiar face among the walking flotsam
of a galaxy. A diabolically lousy musician began belaboring
an electric lute. Somebody threw a cup of lava toward the
future, drank lava and watched the mystic sage named
Delbert Riggs sayd."

"Hmm. Her immense companion thought it over. "I’d like
pg.18 to meet Jones, just to see what kind of guy could do the
things they say he’s done."

"Meet him? You want to do more than that. Panface, listen
Jones is our ticket. He can get us to Borg! Then we can find
the subterranean violet sea with all the jewels – we can buy
our own planet and retire!* She watched the bars face, saw
something like a supernova behind the occipital bulge.

"Not for long". Bobo slid an object to Panface. "Hide this.
pg.20

"What did he say?" rumbled Panface. "What about Jones?"

"He’s here!"

Panface looked quickly around the bar, scrutinizing the
motley crowd losers and thieves from every dim hole in
the Slug Nebula. "Where?"

He’s working out of the shuttle bay, dealing with Mulchay
and his Breakers on Borg. Mulcay sells him slaves and hijacked
goods, and Jones runs’em out from here. he’s even using
UML shuttles. The geek heard it from a buddy on the Essex
when it stopped here, and it goes along with what that guy
Karg - haw haw haw!"

"What about Jones?"

"Not long*. Bobo said an object to Panface. "Hides this.
It’s an extra VBX I got off that drunk ensign from the Essex.
All we have to do is sell it off, then we can go to
Borg."

"But who can we sell it to? All these derelicts in here are
broked."

"Don’t worry", laughed the blond adventurer. "Some sucker
will come our way with a few coins. But we have to work fast –
word is out that Mulchay and Jones are trying to knock each
other off for control of Borg and the booty.* Panface nodded
dubiously and the two adventurers, scheming over their
futures, drank lava and watched the mystic sage named
Beekanavskemich do tricks with green rubber balls.
ing maintenance tasks, but the colony appears to be disintegrating. Probing the administration module, the intelligence watches a tall young Terran stroll along a corridor, read a doorplate and jauntily enter an office. A far-world receptionist of indeterminate gender interrupts filing its nasal flanges to buzz another office, then directs the young Terran through a door.

An older, slightly-built Terran with shifty eyes stands to greet the youth with a nod and the ritual hand clasp. Then the two sit down on opposite sides of a desk and begin talking. The glowing spots outside the hull seem to blink; the intelligence focuses on the office. Ubiquitous Terrans, infesting the galaxy! Such messy little minds on the surface, but capable of such devious complexity. Reading one from the outside is like crossing a room full of Breakers in the dark, but the intelligence grimly reaches out, touches one of the minds and then the other...

Nate Grey had a funny feeling the moment he saw the guy. "Welcome to Nimbus Colony", he said cordially.

"Thank you", said the guy. He didn't seem like a bad guy, really. Nate Grey could have liked him in another situation, on a free planet maybe, or a mission to the swamps of some nacreous moon where they'd be on the same team perhaps, a colonization or something.

"I don't mention it." What was the guy's game? What was he after? Look at those duds - gold fake noogahide, thumbs hooked in his asteroid belt, smiling. What's he up to?

"Nice office." They both looked around the office. It was a lousy office, the kind they give you when they don't care about you when they want you to quit. The UMC logo was everywhere. Except for that, Grey didn't mind it.

"Thanks," he said. "Miss yours?"

"Oh, I don't have an office," said the guy, flexing his asteroid belt. "I'm a little too mobile for that.

"Out there counting stars," nodded Grey, counting stars. That's what they called it when you were young and on the move, out there in deep space, acing through atmospheres too strange to breathe, maybe landing on some paradise where everything was perfect for life but no life existed, or landing in parasitic slop and barely escaping, rusting from colony to colony, adventure to adventure. And during the voyages you'd sit in the observation bay for years, counting stars.

"See any new ones you could name after yourself?"

The guy smiled, an honest smile. "Riggs? What kind of name is that for a star?"

I'm a little too mobile for that." posed from sandstone. The actual Borgian surface was pyrite and mica, flecks of the stuff in a layer several miles deep. The artist must have read about the carnivorous vines. Grey had experienced it, once...

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Minutes had to put metaplast tubes through it just to reach the ore-bearing strata, which accounted for most of the expense of the UMC's Borgian operation. Walking on that surface was like walking through dry soup, Grey remembered. The artist depicted deep, rocky canyons, barren except for a few thick vines. In fact, the canyons were volcanic rifts, miles deep, choked with jungle and debris. The debris showed disintegrated, almost. There were more security mutants on board that miners. The ore had stopped coming up from the planet quite a while ago, but the United Mining Corporation still reporting major yields. He knew that from the SpaceWave intercepts that Drusella scanned for him. Grey had to be lying to everybody, including the press.

The mines would be close to shut down, Riggs calculated. All that expensive machinery would be just sitting down there on the golden sand, rusting, slowly turning turquoise in the thick Borgian atmosphere. Soon the scavengers would be orbiting like sharks: vast junker ships with green three-armed giants at the controls - Kargons, junkers to the galaxy. The salvage yards of Karg were famous throughout the Slug Nebula. There was hardly a working ship that didn't have at least one part obtained from the Kargons. They had every kind of ship ever built anywhere, piles of them, a parts farm. Riggs had been there, but not just to see that. Karg was also the site of the Gak Academy. Riggs shifted uncomfortably in his seat.

"I guess Riggs is as good a name for a star as Kangor." Kangor was Karg's main star. "By the way, who did that painting?"

Grey glanced at the painting. It was a lousy painting. Osten-sibly a landscape of Borg - but the artist had obviously never seen Borg, only read about it. The planet in this painting was covered with silica, decomposed from sandstone. The actual Borgian surface was pyrite and mica, flecks of the stuff in a layer several miles deep. The intelligence cringes; its luminosity writhes away from the colony hull. The elder Terran is thinking thoughts he
I think a machine did that painting, to tell the truth", said Nathan Grey.

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The other guy laughed, rubbing a ring on his left hand. Grey noticed the inlaid insignia, which could have held a printed circuit, or maybe a chip. What device did it operate? Abruptly, he asked, "When are you leaving us?"

The guy stopped laughing and shrugged. "I haven't made any plans", he said, meeting Grey's eyes. "I take it you've been reading my columns?"

"No I haven't had time", said Grey blandly. "Have you written about Nimbus Colony already? I thought you roving correspondents filed on SpaceWave twice a day. I haven't noticed any transmissions to Spiral Arm Today on our log."

"I've been skipping them in", said the guy a bit too quickly. "Those little columns only take a half-second burst."

But Grey was suspicious now. He glanced at the ring. A shielded transmitter?

"Anyway", the guy continued, "Mr. Gibbons wants me to stay, see what UMC might be up to out here. As a matter of fact, I might want to get down to Borg. Would you mind arranging that?"

Grey almost snorted. "Impossible, of course. as we are aware, Borg is a Class IV planet."

"Why?"

"I'd have to be a Federation agent to know that," said Grey with a soft laugh that sounded like a loose rock sliding downhill.

"Or a smuggler", said the guy, and Grey's mind registered a thought that sent the eavesdropping entity reeling...

The gaseous eyes drift outside the hull. the intelligence watches a the young Terran woman stroll jauntily out of the office, rather hard to believe anybody owns this colony...

The cloud hovers outside the colony dome as the awareness watches Grey punch a button on his desk.

pg.31

"Grgla! Hey - stop filling your face and get in here!"

Nate Grey had to avoid looking at his receptionist when it appeared in the doorway. Why couldn't he have had a Terran female for a secretary? Unfortunately, the UMC was an Equal Entitity Employer...

"Have you been saving those SpaceWave tabloids? I want to see the current issues of Spiral Arm Today."

"Certainly Mr. Grey", honked Grgla, flouncing out. The floor shook. In a few moments Grey had a stack of the cheesy publications on his desk. He flipped through the top one, started reading a groaned. The latest edition of the beam-published newspaper carried stories in many languages. One of several in Terran was a popular column called Be Here Today. Now, by award-winning reporter-at-large J.Delbert Riggs.

BE HERE NOW
By J.Delbert Riggs

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No Silver Lining on Nimbus
(part one)

NO SILVER LINING ON NIMBUS
(Part Two)

DATELINE: UMC NIMBUS COLONY,
SLUG NEBULA

In the last column, I sketched the particulars of a bizarre drama now playing on the UMC colony, Nimbus. I'm here now.

There is a species of spacefarer known as a Breaker. That's a loose synonym for adventurer, shuttlebum, pirate, outlaw, loser, and any other kind of misfit one might care to avoid mentioning - or associating with.

For reasons or reasons unknown, virtually all the Breakers in the Slug Nebula are now on Borg. Most of them have been trapped on Nimbus Colony, but a fair number seem to be making it down to the planet, where they join up with a band of smugglers headquartered in Borg's deep volcanic rifts.

The Breakers on Borg are lead by a former Federation agent, professional ballet dancer and convicted murder named Vulkos Mulcahy. Little is known about Mulcahy except that he's fast, smart and treacherous. His sidekick is a wicked punk who currently goes by the name Don. Mulcahy's mistress is Minnie Markarova, the onetime pride of Sector X's Paris Colony and Mulcahy's ballet instructor until she fell under his spell. Minnie dropped out of sight after helping him extort virtually every cent in the Paris Colony Ballet's operating fund. (See my column, Minnie Makarova, Bad Girl or Pawn? in SAT # 4449677-B.)

This unsavory trio, and a bunch of their closer friends, are now working out of Borgian Rifts. They reportedly deal in some especially unsavory contraband: slaves and narcotics. It seems that some of the Lau - a particularly gentle folk said to possess unique telekinetic powers - have been turning up in chains on other worlds. Pets of the rich? I'm told by my close personal friend Drueila Comstock, the glamorous shuttle-set ingenue, that having your own Lau is the height of the current top-drawer chic.

Immoral? Certainly. Illegal? Of course. In fact, it stinks - but that's the rich for you (close personal friends excepted). Drueila, and I mean that.

Mulcahy's contact on Nimbus Colony is a veteran bootlegger whose name is known to school-kids in every system from here to Andromeda: the legendary, nearly mythical Casey Jones himself, another former Federation agent turned smuggler, killer, and thief. But before we start inguiring into the basic nature of Federation agents, let's get to the crux of the matter.

Jones and Mulcahy are duking it out. It seems that the two master criminals - one controlling the source of contraband, the other its distribution - are now going for each other's throats in an all-out war over the proceeds of their nefarious trade.

At any rate, the deal seems to be about to go down here on Nimbus Colony or, more probably, on Borg itself. Any yours truly, intrepid correspondent that I am, has every intention of witnessing it.

Meanwhile, mysterious ore freighters continue to stop here, regularly. But it sure isn't ore. So far nobody here cares to recall (for a reporter's benefit, anyway) what the last one looked like or who was aboard.

Grey has agreed to give SAT an interview at some point, but never seems to be in his Administration Module office, or anywhere else, when this reporter shows up to talk.

That's grey for now. I have other leads to pursue. Sources in the Breaker bar have told me that Casey Jones works out of a concealed room near the shuttle bay on the lower level of this colony. As soon as I make a final attempt to see Grey, I'm going down to find Jones and interview him on the situation. I trust he'll keep his famous Colt .45 holstered out of respect for the press.

That's it, I'm on my way.

APPLE II COMPUTER INFO

DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 159 of 1262

APPLE II COMPUTER INFO

DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 159 of 1262
The vast intelligence probes the receptionist’s mind, but "Garbo" has a powerful mental scrambler in place. Turning into the maze of corridors and pod chutes to locate Nathan Grey, the intelligence comes across Riggs in his residential module. Riggs is talking with someone called Druella. The intelligence is mystified - it can’t locate another functioning mind in the module. Nonetheless, it tunes in:

"Druella", said Riggs, "I’d like to go over that material on Borg again."

"Okay, Delbert", responded a perky voice. "Coming right up." There was a melodious beep.

Touching the young Terran’s mind, the intelligence read along with him in a book called All About Borg, by famed explorer Captain Brumus Dart, Ph.D. The table of contents listed the chapter headings typical of a scholarly work. Riggs turned to the one titled, Garbo: Alter-Orb or Legend? He began to read:

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GARBO

Alter-Orb or Legend?

According to Lau belief, Borg is a shadowy, insubstantial twin that orbits on the same path (see Appendix Q: Source Mythology, Borg and Garbo). Our instruments have not been able to detect such an entity, but the Lau believe in it absolutely. They call this alter-orb Garbo, and have invested it with a persona which is manifested collectively by a body of seven Lau shamans. (Note: I was never able to meet a Garbo shaman, and wonder whether they, too, may not be a figment of the Lau mythology.)

Moreover, they believe that the mysterious alter-orb is the wellspring of Lau energy, and the source of all life on Borg. They say that a kind of balanced polarity exists between the unique forces emanated by each of Borg’s two suns, the blue and the gold. These forces are held in dynamic stasis by energy from the Garbo alter-orb. (Note: This is my interpretation of the various indistinct, incomprehensive versions of the Garbo myth obtained from individual Lau. It should be treated as hearsay.)

Perhaps the most familiar facet of the Garbo myth is its apocalyptic emphasis. Like so many other deities, this Garbo bears a beard blowing in the solar wind, with arms outstretched in the sky where the constellation resides for most of the year. It seems that during the latter part of 4999, the Creator’s face had begun to be occluded by a sort of celestial shadow.

Indeed, the constellation looked rather dim to me, and the forehead stone seemed to shine bloodier each morning, but I was unable to distinguish any kind of shadow. Of course, I wasn’t given to the use of Magic, either.

My garrulous friend also informed me that his people were worried because the various diruptions and pressureds brought on by the gold rush had made it difficult for them to maintain control over the elements. Some of them confessed to deep fear that the elements would not be assembled in time to avert the end of the Lau race and of the planet Borg.

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When the Federation mandate of 4999 forced me to leave Borg, the Lau were in a state of deep trepidation, almost
of shock.

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Riggs said, "Thank you, Druella." Then the young Terran sat thoughtfully for a while listening to the broken hum of worn-out machinery in the colony's gut and pondering what he had read. Abruptly, he said, "Druella, would you open that panel for me?"

"Certainly Delbert," the perky voice replied. Then Riggs stood and put on a heavy plastacot shirt, slipped his pass-card into the pocket, and left the little room in D Module.

pg.47

Another meteor whacks the hull; a hollow boom shudders through the overgrown hydroponic beds, the domed administration module, the empty residential modules, and slowly fades. In its wake, structural stresses clang and groan in the pipes dripping rusted water and machine fluids.

One maintenance bay attracts the roving intelligence with sighs of activity. The mind peers in at a lone, greany Terran in overalls, working on a broken-down pump. He looks miserable. One of his fingers is bleeding, and there's blood on the rungs leading up to the hydroponic carrot beds on the agricultural level. The Terran stands at the gear assembly, trying to remember how he got it out of the pump. He keeps trying to tap it into place that's not quite its size. A pale insect scuttles along a puddle of dirty oil and disappears under a locker.

Puzzled, the mind probes deeper into the colony. Where are the ones it seeks? Abruptly, it finds them - in the shuttle bay.

A bug-eyed shuttle had just come in from Borg. Amid guffaws and wise cracks from lounging Gaks, six small golden beings clambered down the ladder. One of them carried a nothing, the others - more golden objects, floating in the air. The intelligence ran the RESUME NOVEL command. See the Special Features section of the computer reference card packaged with you novel diskette for details.

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Nearby, the golden planet, a solar system unto itself, majestically orbits its two suns in seeming tranquility. But the shining eyes, knowing where to look, spot the sinister shadow dogging Borg. The golden planet's curse! It seems closer than before, and has almost totally accluded the benign constellation known as Garbo - the Creator. The malevolent shadow has come on again to engulf and ravage the golden planet. Only a holy Lau, one of the seven Garbo shamans, can perform the ritual ceremony that will save Borg. Within hours, it will be too late!

HOW TO TALK TO BREAKERS

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You enter a would of BREAKERS by typing on your computer keyboard. You can type whenever text appears on the screen and you are ready to respond. Your decisions and your dialogue with characters will determine how the novel unfolds.

BREAKERS responds to a wide variety of commands. Some common ones are explained below, but you'll discover others as you begin play. In fact Electronic Novels recognize a vocabulary of over 1200 words. Many synonyms of commands are possible. For example, "get" works as well as "take", and "rub" is a synonym for "touch". For ease of typing, some commands can be abbreviated. You can also type commands in either upper or lower case. When you are finished typing a command, press the RETURN key.

You can also take a greater part in the action by talking to characters and evaluating their responses. A note on how to use dialogue follows the discussion of commands.

The universe of BREAKERS is constantly transforming itself. Even if you do nothing, characters will patrol Nimbus Colony, monsters will prowl the Borgan seas, the cosmic weather will continue to change.

Occasionally, the text being displayed will be longer than your screen. Instead of "scrolling" information out of sight faster that you can read it, BREAKERS will pause and instruct you to Press any key to continue. When you press a key, the rest of the text will display on your screen.

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COMMANDS

AGAIN: Repeats you last command, just as though you had typed it again. After this command, you must still press RETURN.

BOOKMARK: Retains your progress in the novel by making a copy of your current position on a formatted diskette. Later you can resume the novel from that point with the RESUME NOVEL command. See the Special Features section of the computer reference card packaged with your novel diskette for details.

CLOSE (object): Tries to close the object you specify.

DROP (object): Frees you of an object you are carrying.

EXAMINE or EX (object): Checks the characteristics of an object - works like LOOK
FOLLOW or FOL (person): Allows you to follow a character who is going his own way. But be careful; some characters don’t like to be followed.

GET (object): Tries to pick up the object you specify. Produces the same effect as TAKE.

GIVE (object) TO (person): Giving objects to characters can be risky, innocuous, or crucial. You can also use this form: GIVE (person) (object).

HEALTH: Checks your physical condition. Are you injured? Just stunned?

HIT (object or person) WITH (object): This and commands like it exercise your aggressive tendencies.

INVENTORY or INV: Tells you which objects you’ve collected and are currently carrying.

LOOK (direction): Describes what lies in a particular direction from your position.

LOOK AT (object): Describes the features of an object – works like EXAMINE.

NORTH and others allows you to move in the direction you specify. You can also abbreviate directions (N,S,E,W, etc.). GO TO (object) and WALK (direction) produce the same result.

OPEN (object): Tries to open the object you specify.

FAUSE NOVEL: Halts the changing world of the novel as long as you wish. You can resume the action by pressing any key. To stop the novel in a faster way, see the Using Special Keys section of the computer reference card packaged with your diskette.

PLAY: Lets you indulge yourself with songs and musical instruments.

PRINTER ON: Creates a printed record of your progress though BREAKERS. See the reference card packaged with your diskette for details.

PROGRESS or PR: Reports on achievements of importance in your electronic mission.

PUT (object) IN (object): Tries to merge objects. The results may be important or pointless.

QUIT NOVEL: Ends your session of BREAKERS without saving your current position.

READ (object): Obtains written information, such as priceless clues, from the object you specify.

RESTART NOVEL: Begins BREAKERS again from the start.

RESUME NOVEL: Reopens the novel from the point at which you typed the BOOKMARK command. For specific instructions, see the reference card packaged with your diskette.

SHOW (object) TO (person): Displays an object to a character. You may receive an interesting reaction.

SING: Ventilates your vocal chords.

TAKE or T (object): Allows you to collect objects which seem interesting or useful. You can take on thing or several at a time.

THROW (object) (direction): Lets you toss precious things accurately at a crucial moment in BREAKERS.

TIME FASTER: Speeds up the changing world of the Electronic Novel. This command does not change the speed at which your commands are responded to by the novel. It increases the rate at which characters and elements of the novel’s physical world enter the scene, pop up, or fly by. Typing this command repeatedly will speed up the universe a little each time. To slow down the changing world type TIME SLOWER.

TIME SLOWER: The opposite of TIME FASTER. Typing TIME SLOWER repeatedly will slow down the changing universe of the Electronic Novel by degrees.

BREAKERS will respond to many other commands; feel free to experiment. Some interesting examples might be:

- get and examine the red ball
- get the wire knife and the lava and drink it
- look at everyone but the cirdonian
- offer the medallion to nate grey
- spary the bolt with the spray can
- look at myself
- give 15 pieces of gold casey

When you use numbers in commands or dialogue, use the numeral form; don’t spell the numbers out (25 not twenty-five)

DIALOGUE

Electronic Novels allow you to talk to characters and creatures, real and imagined. You can ask them questions, order them to do your bidding, or tell them to do things with objects or to other characters. They will respond in their own unique ways. The FORM you use for this kind of dialogue is important. Here are two examples:

- betty, "who's mulcahy?"
- druella, "thanks for the information"

Notice that it is not necessary to capitalize or to use periods at the ends of sentences. When your are finished typing a line of dialogue, be sure to press RETURN. To relieve you of some typing, dialogue also has a shorter form. You may omit the comma following the name of the character you’re addressing. The second quotation mark may be omitted also. Example:
Instead of
bobo, "give me the vbx"
you may type
bobo "give me the vbx"

Some other examples of BREAKERS dialogue might be:
panface "where's delbert riggs?"
betty "please give me a drink
beek "what does it all mean?"
cirdonian "you're a punk
jones "what is west from here?"
corpse "you don't look so hot

TIME AND SPACE

Many of the characters in BREAKERS move around of their own volition. When you talk to a character in your area, he will answer you in his own special way. If he happens to move to the next room, he won't brush you off; he will still answer. However, if the character moves far away from your position, he'll no longer be able to hear you. Examples:

(betty in your area)
betty "who are the gaks?"
"Not so loud - you're talking about the toughest cops in the galaxy", Betty cautions.

(betty in the next room)
betty "who are you?"
"Don't try to get personal with me", the bartender snaps.

(betty far away)
betty "let me take you away from all this
Your words don't reach that far.

Engaging characters in conversation allows you to enter the world of BREAKERS completely. But remember, when you talk to an Electronic Novel, anything can happen.

PERIOD

By typing several periods (...) and pressing RETURN, you can watch the universe unfold over several time intervals. This is an advanced strategic tactic you may find useful.

RETURN KEY

Press RETURN whenever you are finished typing a command. If you press RETURN without typing any command, the world of the novel will still continue to change all around you. When you press only RETURN, time will pass and the universe will turn together with whatever else may be happening at the time: characters entering the vicinity, conversations beginning, etc. As in life, the universe of the
You've just entered another world. A world with fabulous riches, unbridled sorcery, and no end. Your adventuring parties may work together or break up and fight one another. Over 200 different monsters are waiting for a chance to kill your characters in dozens of exotic ways. Even if the monsters don't get you, the traps lurking around every corner certainly will.

Ahem. You say you're a veteran of many types of role playing games? You've always emerged victorious? We shall see. Computers show no mercy. If you're new to adventure games, you'll find that Bronze Dragon is an easy game to play, yet it creates an infinite variety of situations.

Bronze Dragon is a fantasy role-playing game that can accomodate up to 5 players at once. There are many objectives in Bronze Dragon. In fact, there are no less than 12 castles and 1 full-blown module contained in the basic game. The ultimate goal is survival, and more importantly, enjoyment!

The Disks:

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Bronze Dragon consists of two disks that we provide and one that you must supply. Whenever you're prompted to insert a new disk, do so and press return. If the program doesn't tell you to change disks, you don't need to. To abort a procedure at a disk prompt, press the space bar.

Disk one ->

S1 <Bronze Side>: The Main Menu and Dragon Village Menu are on this disk side. You will always boot the Bronze Side to begin play.

S2 <Dragon Side>: The disk side contains the monsters, the plots, and generates the castles.

Disk two ->

S1 <Character Disk>: Up to 40 of your characters can be saved on this disk side. If characters aren't saved, they don't exist.

S2 <Module Disk>: Our first module, Seekers of the Storm, is contained in its magnificently on this disk side. The monsters and the dearly plot are already there, waiting for you. You must copy the module onto a blank disk and name it Castle Disk before you can explore in it. See "Copying Modules."

Disk three ->

S1 <Castle Disk>: Use one of YOUR blank disks for this, name it Castle Disk. You'll copy the module and castles onto it. Instructions on how to copy castles and modules are under "Copy Modules" and "Constructing Castles."

Write Protect all sides except the character disk and your castle disk!!!!!!!

For Those With Two Disk Drives:

Bronze Dragon can be configured for two disk drives quite easily. Instead of switching disks and pressing return when the program prompts you, just put the required disk in drive two and enter "2." From then on, the program will know to access drive two for that disk. The character disk should be put in drive two when you're copying a module or creating a castle.

Beginning Play:

Boot the Bronze side of disk one to start playing Bronze Dragon. The first screen you'll see after the Bronze Dragon logo clears is the Main Menu. The choices on that menu are summarized below, then explained in detail later.

1> Create a Character: You can actually make a flesh and blood being! Well not really, but you can determine the name, race, class, and alignment for each character.

2> Enter Dragon Village: Dragon Village is a mystical town where almost anything can be bought or sold.

3> Copy a Module: Seekers of the Storm, out first module, must be copied on a blank disk that you provide - you can't play on the original. The disk you've copied in on will henceforth be called the "Castle Disk," so remember that when you're asjed to insert it. See "Copying Modules."

4> Construct a Castle: A "castle" is the setting for one of the 12 plots which the computer can't tell you while not as complex as a module, they're fine adventures in their own right. The blank disk upon which the castle is constructed is called the "Castle Disk." See "Constructing a Castle."

5> Gather a Party: One to five character MUST be "gathered" before they can start and adventure. It's kind of like assigning a group of characters to a certain adventure temporarily. Be sure the characters have finished their business in Dragon Village before gathering them into a party.

6> Go On An Adventure: After you've equipped and gathered your party, it's time to go on an adventure.

7> Go To The Crossroads: After the adventure is over, a group of characters must travel to the Kingdom of King Leopold or the Pit of Lord Uul to gain skill points and skill levels.

How To Create A Character:

---

Bronze Dragon begins when you start to create a party of characters. Every Bronze Dragon "persona" is unique and will help the party with individual powers.

You create characters by choosing among the options in each category, such as name, race, etc. After everything is chosen, the status of the character is shown, including ability scores and bronze peices. The meaning of the ability scores is given in the glossary under "ability scores." Each character starts with 75 bronze peices.

Name: Any name up to 16 characters in length is acceptable. By entering
Race: You have 3 to choose from: humans, elves, and dwarves. Each is detailed below.

Humans-> Humans are a very odd race, one that isn't very well liked by more advanced creatures. They are usually around six feet in height and seem to regard this mutation as an advantage somehow. Special Commands: Humans can approximate the value of any object.

Elders-> Elders are slightly more restricted in armor disciplines to confuse you. Check appendix 5 and special commands for details.

Assassins-> Assassins are shifty, underhanded, and extremely dangerous. They're blue collar adventurers; they can take damage and cute by asking outrageous prices, because these guys are extremely popular in characters or monsters.

Wizards-> Wizards are powerful magic-users who can create massive amounts of damage with their powerful spells. They can own very little in the way of armor or weapons. Sorcery and cast energy are their special commands. Wizards have the fewest hit points and can carry up to 8 objects.

Alignment: This is a character's basic nature, whether it's virtuous, lawful, chaotic, or vile. Virtuous and lawful characters are "good," while chaotic and vile characters are "evil."

During an adventure a character's alignment will change according to the player's actions. The most common method is by striking a monster or character. If you constantly attack good monsters, your characters will become vile if titution didn't start out that way. If you adopt a "wait and see" attitude toward creatures you're not sure about (like lions), and only attack the evil creatures you're characters will become virtuous. It's much easier to become vile than virtuous. One or two swats on a unicorn will make anyone vile, but a vile character will have to kill many hobgoblins to become virtuous.

I can't resist mentioning that character can change their alignments by attacking themselves! If a virtuous character attacks himself, he'll become evil. By the same token, a vile character will become a little less vile by attacking himself. Sure, it's a radical way of doing things, but Bronze Dragon inspires such lunacy....

Class: You have 5 classes to choose from: humans, elves, and dwarves. Each is explained in their own section.

Knights-> Knights are fightin' strong, blood 'n guts, here's mud in yer eye type characters. They're blue collar adventurers; they can take damage and dish it right back out. Knights can wear any type of armor and use any type of weapon. Their special commands include swordplay and rage. They have the most hit points and can carry up to 15 objects.

Assassins are shiftly, underhanded, and extremely dangerous. They're somewhat restricted in armor, but they can use almost as many weapons as a knight. Their special commands include assassination and sneaking. Assassins have average hit points and can carry up to 13 objects.

Ninjas-> Ninjas are mysterious masters of the orient fighting arts. They can only wear little more armor than wizards, but they have many weapons to choose from. Their special commands are martial arts, imitate dead, and leap. Ninjas have average hit points, and can carry up to 10 items.

Elders are experts on living systems; their spells make them adept at both healing and killing. Elders are slightly more restricted in armor than assassins, and have very few weapons to choose from. Sorcery, destroy, and innate healing are their special commands. Elders have a few more hit points than wizards and can carry up to 8 objects.
5> Mingle in the Pub: You'll probably need help to solve the plots, and who better to ask than the drunkards of Dragon Village? After you tell them which plot you're working on, many of our blottoed barflies will spill their guts for free. Some pub people want money for their cooperation, and still others lie through their teeth. We never said an adventurer's life was easy!

6> Visit Healers: When your characters get battered around a bit, the Healers will fix them up completely for a price. If you pay anything less than the asked-for fee, we'll make no guarantees.....

7> Consult Wizard: The Tower Wizard loves to check out rare and wonderful goodies. If you bring him an object, he'll try to detect a magical aura about it. If the object is indeed magical, he'll try to guess its nature. The Wizard also uncurses items, but charges a fee for this service.

8> Resurrect a Character: Aw...Did one of yer characters fall down and snuff it?? You're in luck. In addition to his other abilities, the Tower Wizard brings the dead back to life. All you have to do is inform the Wizard of the dead character's name and he'll attempt to resurrect the character from a distance. He's not very good at it, however, and giving him the asked-for amount of bronze pieces will only give you a 50-50 chance. If you offer more or less, your chances will adjust accordingly. The resurrected character will lose 3 points of constitution if the process is successful.

9> Look at Status: This will show everything about the character you currently have in Dragon Village.

10> Bring in Somebody Else: When your character is through messing around in Dragon Village, this command will bring a new character. Make sure the "old" character has been saved (by pressing "S") before using this option.

Hit "S" when you want to save your character. To go back to the Main Menu, just hit Retrn.

Copying Modules:

Warning: Copying a module destroys all data on the disk you provide, so we recommend using a blank disk.

You can copy the module on the castle disk by pressing 3 on the Main Menu and following the prompts. The entire procedure should take less than 5 minutes. After you've copied the module, you can gather your party and go on an adventure.

Our first module, Seekers of the Storm, is an extremely entertaining and complex adventure of tremendous scope. If you find it too difficult, you might try exploring a castle (such as Dungeon of the Undead) to familiarize yourself with the world of Bronze Dragon.
If you try to gather a party for an adventure that already has five characters assigned to it, the computer will say the party is full. Next, it will ask you if you wish to destroy the party by killing all of the characters. If you decide to destroy the old party, you'll be able to gather a new party for the adventure.

Going On An Adventure:

After you've fathered your party, it's time to have some fun and actually play the game (option 6 on the Main Menu).

The Screen:

During play, there is a "menu window" at the top of the screen. These four lines contain a lot of information. The top line shows the character's name and which menu is up. The numbers of the left represent the commands; the command you choose is highlighted to the right. For your convenience, the bottom line shows the character's hit points, armor rank, and endurance.

Don't be put off by the complicated looks of the window. Before long, you'll only need to glance at it for a moment to get the information you need.

The Controls:

The number, arrow, and letter keys all preform the same function, highlighting commands. Choose the method of input which suits you best.

- 0-9: Pressing any number will highlight a command.
- Arrow keys: These highlight commands left and right. The arrow keys must be used to highlight a number higher than 9 when characters have more than 9 objects in their inventory.
- Letter keys: The first letter of each regular command also highlights it. The two exceptions to this are "V" for look and "Z" for retreat.

Return: Implements the highlighted command.

Space bar: The space bar has two functions depending on when it's hit.

- If you haven't chosen a command (pressed return), the space bar will toggle between the regular commands and special commands.
- If you've chosen a command that affects another monster or character, the space bar will toggle between the name groups.

Escape key: This key will abort almost any action in case you change your mind. The slash key works the same way.

Ctrl-Q: Toggles "group move" on and off. Group move is on when you need.

Ctrl-D: Toggles the area description on and off. It is on when you start. When off, it allows for faster movement through known areas.

The Regular Commands:

The following is a list of the command options available when playing Bronze Dragon. The numbers in brackets correspond to those in the menu window.

1) Rest: The pause that refreshes. Resting regains some endurance for weary characters.

2) Fight: Fighting is attempting to strike a monster or character with a weapon. Your weapon must work in the rand you're in for your attack to have a chance at success. See "How To Fight" and "Range."

3) Search: There are 4 different ways to search.

- 1) Search for objects: Let's talk treasure. If you want something that's in a room, this is the commands to pick it up. It'll also allow you to read a scroll or even push a button.
- 2) Search Creature: You can plunder dead monsters and characters.
- 3) Search for Secret Doors: Hidden exits can sometimes be detected using this command. High intelligence increases the chances of detection, and repeated searches increases it even more.
- 4) Search for Traps: The truly paranoid can check a room out if they suspect a trap. High intelligence and repeated attempts also improve the chances for detecting traps.

4) Look: This will give you a description of your immediate surroundings if there is sufficient light. Hitting space bar after the description will let you see the exit locations and the monsters (if any). Since "look" is automatically executed when you enter a room, mapping is usually done at the very start. An important note: Any objects you happen to see with "look" aren't necessarily the total contents of the area.

5) Diversion: This gives every character in the area except the diverter a "+1" to hit on their next turn and allows assassins to assassinate. A drawback, the diverter draws the monster's attention.

6) Advance: This is moving within a room toward a certain monster or character, generally used to get in proper range for fighting. See Range.

7) Retreat: The opposite of advance. It can also be used to get in proper range, especially when using weapons that won't function in short range, such as a flail or javelin. See Range.

8) Use Object: There are 5 different ways to use an object.

- 1) Unlock Item: An attempt to unlock some sort of container, such as a chest or coffer with whatever is in hand. It is not used to unlock anything else (such as doors). Thieve's tools are the best at doing this, but you can use anything.
- 2) Use On Creature: This is using the item in hand on a monster or character. Food, elixer, and magic items work under this command. While food and elixer are beneficial when used this way, magic items could be harmful. Your fellow characters probably wouldn't appreciate a "dancing sword" being used on them.
- 3) Examine Object: Finding out how unusual objects work is one of the biggest sources of puzzlement for Bronze Dragon players. When you look at an object closely, you might discover something interesting or important.

Apple II Computer Documentation Resources (a2_docs_documentation.msw) DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 167 of 1262
4) Use On Your Possessions: This is using the object in hand on another object. If you wanted to connect two rods together or put poison on a dagger, this is the command to use. See "Solving Plots."

5) Use In Room: This is sort of the "default" command when you don't know what else to do. It could be unlocking a door with a key; using a want to levitate a rock, etc. See "Solving Plots."

9> Inventory: There are 5 sub-commands under inventory.

   1) New In Hand: It is often necessary to put the proper object in hand before fighting, using an object, etc. This doesn't take up a character's turn. Once something is in hand, it will stay there until you say otherwise.

   2) Status: This will tell you absolutely everything about your character's health and standing.

   3) Get Rid Of: This command will erase the object of your choice, never to be seen again. It does not affect the object in hand, unless you happen to choose it for disposal. This command does not take up a character's turn.

   4) Give Object: This command transfers one of your possessions to a monster or character of your choosing. Gifts often convince non-vile creatures to leave in peace.

   5) Give Money: This works exactly like give object, except the medium of exchange is bronze pieces.

0> Leave: Yep, the thrill of adventure is right here: there's always that last kill to climb or secret chamber you haven't seen yet. Characters travel in a pack unless you toggle group move off with Ctrl-G. Exits will appear on the numbers 1-4. If you're outside the castle, "Go back to Dragon Village" will be at number 5.

Special Commands:

The regular commands on the preceding pages are available to any character. Hitting the space bar will toggle on a second menu, which has the "special commands." Each character gets one command due to race, as explained under race in "How To Create A Character." The character's class affords several additional commands which are detailed below.

Knights:

1> Swordplay: This adds a "+1" on the to hit roll for every two skill levels of a knight. It also maximizes a sword's damage. This command can't be used unless a sword of some type is in hand.

2> Rage: Knights can attack at twice their normal rate with this command, although it reduces endurance to zero.

Assassins:

1> Assassinate: Successfully using this command will instantaneously kill any monster or character. To even have a chance at assassinating, however two conditions must be met....

   A) The assassin must have a dagger in hand.

   B) Someone else must divert or area must be dark

Once an assassin reaches the 10th skill level, condition B no longer applies.

Ninjas:

1> Martial Arts: Martial arts are a special method of defense and fighting. There are 10 different levels of martial arts, called disciplines, which range from Yeti to Dragon style. Each discipline has 3 modes: an attack, a strike, and a defense. Ninjas can master a maximum of 5 modes, if they wish to learn more, they must replace one that they have previously learned. The different modes are explained below, and appendix 5 should further enlighten you. The best way to figure all this out, of course, is to create a ninja and experiment.

   Attack modes: This is a short range attack that causes damage if successfully rolled, much like an ordinary weapon attack. A martial arts attack does double damage if the creature attacked is covered under the attack's discipline. A Yeti attack, for instance, does 1-10 damage against everything except for monsters with a "freeze" attack. A hit against such a creature would automatically do 20 points of damage.

   Strike modes: Strikes are short range attacks that will not affect characters or monsters nor under the strike's discipline. If a strike is used against a monster under the correct discipline, however, it will automatically hit and cripple the monster. If a tiger strike, which affects anything that claws or bites, were used against a ghost, it would have no effect. If it were used against a bear, however, the bear couldn't use it's claw or bite.

   Defense modes: Defense modes improve your armor rank (subtract from it) in addition to making you invulnerable under the defense's discipline. Their effects are cumulative, meaning that having both bear defense (-1) and eagle defense (-2) would lower armor rank by three, in addition to making one invulnerable to encircle and drain attacks.

   3> Imitate Dead: If successfully done, a ninja us unable to do anything for 4-6 turns after using this command. During the trance-like state, neither monsters nor characters will strike the Ninja. Upon awakening, the ninja will no longer be poisoned, illusioned, beserk, frozen, etc. If you fail to imitate your chances at imitating dead.

Elders:

1> Sorcery: This is the act of casting a spell. Spells work at any range, each for having a certain number of charges, or times it can be used. If the charges are used up, the spell is gone and the caster will regain the spell points used to learn the spell. Check appendix 7 for details.

2> Destroy: Any "undead" creature less powerful than the elder casting this will be burned to ashes. Undead creatures are those who have lived and died, yet still walk the earth. Typical undead monsters are ghosts, devils, lethal deadlies, etc. Characters get no skill points for destroying monsters.

3> Innate Heal: This will heal characters whose hit points now have fallen below 50% of hit points max. The side effect is that hit points max will be lowered a little: Example: A knight named joey started an adventure with 100 "hit points now" and 100 "hit points max." Hit points now was reduced to 40 by an ill-tempered fire beetle. An elder used innate healing on joey, which put both "hit points now" and "hit points max" at 90.

Joey's hit points max isn't permanently crippled - both the healers and...
king Leopold can fix him up. The healers do it for a price and Leopold
doesn't if Joey brings him an artifact.

Wizards:

1> Sorcery: See sorcery under the elder's special commands.

2> Cast Energy: This is a damaging attack that will function at any
range. Damage is 10 times the Wizard's skill level, but if reduces a
Wizard's endurance to zero.

Range:

Characters must be in proper range to fight. The proper range depends on
what weapon is being used (see appendix 3). The three ranges, short
range, medium range, and long range, are listed on the character and
monster screens. There're abbreviated SR, MR, and LR, respectively. You
can move into the proper range by advancing or retreating.

EXAMPLE: Arch Mage George wants to hit a giant rat with his lucern
hammer. He tries, but the rat is in medium range and hit hammer can only
hit monsters in short range. George has a choice - he can either advance
toward the rat and hit it next turn, or he could put a sling & stones in
hand and hit it this turn (A sling and stones works in medium or long
range).

How To Fight:

Before you fight, you should put the proper object in hand. This is done
by hitting inventory and new in hand.

The next step is pressing fight and choosing a victim, either a
character or a monster. You can toggle between the monster and character
names by hitting the space bar. Hitting escape aborts the fight
command.

You can hit any number corresponding to a monster to see the creature's
name and range. When you find the monster you wish to strike, hit return
and the "attempt" will take place.

Smack any key to freeze the randomizer. Afterwards, any plusses
or minuses will be added to the number and if it's enough, you'll hit.

Good luck!

Solving Plots:

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Read this carefully, for enjoying Bronze Dragon to its fullest depends
on your understanding of how to solve its many puzzles, which are called
plots. The module, Seekers of the Storm, has an extremely intricate plot
that may take months to solve.

A plot consists mainly of a legend concerning an object or series of
objects that you must recover. For a complete listing of these, check
appendix 1.

IMPORTANT: The King and Overlord often want objects other than the final object, so bring back as many goodies as you can. In
plots where you need the final object to start another adventure,
they'll let you keep the final object.

The four steps to solving a plot and gaining skill levels are listed
below.

1> Study the Legends: Don't start on an adventure without any
information! After you've picked your adventure, mingle in the pub. The
people there will give you all sorts of information, although some of it
might be false. Write down anything that seems important because it
probably is. Later, when you're starting to explore the castle or
module, a story about it will be shown that could prove helpful.

2> Finding the Pieces: In most plots, you must recover some minor object
before you can get the "final" object, which is the one either Leopold
or Usul will reward you for. How do you know when an object is needed to
solve the plot and not just ordinary rubbish? The Wizard in Dragon
Village may be able to help. Look for objects that the pub people or
ledgends mention, also look for objects that are extremely unusual or
inaccessible. If something is inaccessible, find out why and think about
what you might need to get the object.

3> Using the Objects: This is the act of putting the puzzle together.
The two commands which are most often used for this are "use in room"
and "use on your possessions." EXAMPLE: You find a glowing iron crown in
a room, and you want to take it, but it's too hot to touch. Suddenly,
you remember the bucket of ice water you passed over 12 rooms ago! If
you get the ice water and use it (in room), it'll free the iron crown.

Sometimes you might have to fit two plot objects together to form a new
object. EXAMPLE: You want to take a dancing sword, but it's flying
about the room just out of reach. You have two wands, a red and a blue
one, but neither seems to stop the sword. By using (on possessions) the
blue wand on the red wand, you form a bronze wand. When you use the
bronze wand "in room," it stops the sword from spinning.

4> Taking it Back: When you've recovered the "final" objects it's time
to go back to the King or Overlord for your reward. Either of them will
greatly reward you if you give them the final object, unless the final
object is used for some future plot. In this case, they will take
something else that you've picked up during the adventure and
(hopefully) saved. EXAMPLE: The talisman in plot 3 must be kept in order
to solve plot 4.

Saving a game:

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Since it takes hours to complete an adventure, you probably wish to save
the game in progress several times. All you have to do is press CTRL-Q
during the first character's turn. If you wish to continue play at that
point, answer "Y" to the prompt. Answering "N" will take you back to
Dragon Village, but not your characters.
endurance, but the two shouldn't be confused. Constitution is permanent score which determines how much is regained when a character rests.

5) Endurance: Endurance, the measure of fatigue, is the only ability score that fluctuates. Activities such as fighting and spell casting causes endurance to go down. If it reaches zero, you'd better rest or you'll lose hit points.

Armor: Equipment which affects armor rank is called armor. If you possess armor, you're automatically wearing it. There are two obstacles that could prevent a character from wearing a certain piece of armor:

1) The character's class is incompatible or

2) The character is already wearing that "type" of armor. EXAMPLE: A wizard tries to pick up some chain mail. EXAMPLE 2: A character tries to take elven boots when she already has high boots. See appendix 3.

Armor Rank: Armor rank, or AR, is a measure of how vulnerable a character is to physical attack. Low numbers are better than high ones in this case. A character with no armor has the armor rank of 10, which means an unlucky dart-throwing blind man could hit him from 500+ meters!

Berserk: A character in this state is slightly insane, but in a bloodthirsty kind of way. Berserk characters often behave normally one moment, and then try to hack their friends to pieces in the next moment. Luckily, it's a temporary condition.

Beter: A unit of measurement. It's the length between the tip of King Leopold's nose and his outstretched hand. Really.

Bilo: The weight of one bronze piece. See weight.

Bronze Piece: Otherwise known as BP's or bronpies, bronze pieces are the basic unit of money in Bronze Dragon

Castles: "Castle" is a generic term for a place where you adventure. Monsters, treasures, and all sorts of strange and wonderful objects are found in castles.

Characters: A character is a persona that you, the player, assume. Up to 5 characters can go on an adventure at once.

Charges: The amount of uses a spell or magic item has is referred to as charges. Each time a spell or magic item is used, one more charge will be spent until none are left and the magic is gone.

Class: This is the profession of a character. There are 5 classes: Knight, Assassin, Ninja, and Wizard. Each class has at least two special commands unique unto that class.

Cursed Objects: Cursed objects are objects you can't "get rid of." They usually perform poorly. EXAMPLE: A cursed weapon might be a broad sword that has a -5 penalty "to hit." The only way to get rid of a cursed item is by consulting the Wizard in Dragon Village or casting a true curse spell. Cursed stuff doesn't reveal its true nature until it is put in hand. Of course by then, it's tooooo late!

Damage: Anything hit points are taken from a character or monster, damage has occurred. Objects such as lanterns and dishes can be "damaged" when they're used as weapons. Characters can actually destroy objects by using them this way in a fight.

Difficulty: How tough a castle is survival-wise is difficulty. This is determined by race:

1) King Leopold: King Leopold is a benevolent ruler, a champion of truth and justice everywhere. He is an extremely pleasant man to deal with, although the som can't be said for his wife, Queen Putrid. He'll look over your possessions in hopes of finding valuable objects, which he'll want to have for himself. He desires the final object most of all, naturally. In return, Leopold will grant each character in the party skill points and (if anyone has enough skill points) skill levels. If he's in a good mood, the good King may even grant some extra ability points to favored characters. Incidentally, Leopold also heals characters who give objects to him.

2) Lord Usul: Lord Usul is the evil counterpart of King Leopold. To say he's unpleasant is an incredible understatement - I hyst hope he doesn't see me writing about him like this! If you bring anything to Lord Usul that interests him, say goodbye to it! He'll probably give you skill points and skill levels, but he's been known to take them away if he's in a foul mood. The same goes for servants' (that's you) ability scores, they go up and down according to Usul's whim. Lord Usul does NOT heal characters, although he's been known to do the opposite. Unsubstantiated rumors have it that Lord Usul becomes very friendly to high level servants, giving them many extra ability points.

After you've increased your characters' might and prestige, it's time to go back to Dragon Village. If you've picked up anything you wish to sell, start haggling with the merchants. What next? The Provisioner's?

After you've finished an adventure, your characters should go to The Crossroads (Option 7 on the Main Menu). From them good characters go to King Leopold and evil characters go to Lord Usul to gain skill points and skill levels. Afterwards, you can sell any trinkats the rulers don't want to the merchants. The personalities (and quirks) of the two rulers are explained below.

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Double Damage: If the number you get on the rolling randomizer is twice as much as the number you need to hit, you'll do twice as much damage.

Eating: You gotta eat to live! Eating is done by putting food in hand, then hitting <use> and <use on creature>. Then it's simply a matter of picking who you wish to feed (it could be yourself). Going without food for a long period of time leads to unconsciousness.

Food: Eating good food will keep you from starving, but beware of the stuff you pick up off castle floors, because it may be poisonous. If you go without food for 200 turns, you'll drop unconscious.

Healing: Raising hit points now or hit points max is healing.

Hit Points: This is a measure of how much "life" a character has. When a character is damaged, hit points are lost. When all hit points are lost, the character dies.

Hit Points Max: His points max is the highest number of hit points a character can have. This maximum number is lowered when an elder uses innate healing.

Hit Points Now: Hit points now is a character's current number of hit points.

Level: The term level, not to be confused with skill level, means the floor or story of a castle. Negative levels are below ground level.

Light: The contents of a room can only be seen if there is a good source of light. Incidentally, monster tend to fight better in dark rooms.

Magic Items: Magical objects often have special powers. Consulting the Wizard in Dragon Village about such items might reveal a clue to their use.

Maze: An area where characters become confused about directions. Going left might make them go north, etc.

Menu Window: The four-line information box at the top of the screen during actual play is called the menu window.

Module: The most complex and interesting adventures are called modules, although the castles your apple creates are pretty good too.

Monster Levels: There are 10 different levels of monsters, level 1 contains the weakest and level 10 the hardest.
move the flashing square to the location you want the piece to move to and press the joystick button. (You will notice that legal moves are flashing black squares and illegal ones are flashing red.)

**BATTLE CHESS MENUS**

**Using Keyboard:**

Press the <ESC> key or move the flashing square off the top or bottom of the board so that the menu bar appears and press the <Return> key to pull down the menu. Use the keyboard or the arrow keys to switch between the menus and highlight an option. Press the <Return> key to select it. Select the "Return" option at the bottom of any menu to exit without selecting.

**Using Joystick:**

Move the flashing square off the top or bottom of the board so that the menu bar appears and press the joystick button. Move the joystick left or right to change menus, and then up or down until the desired menu option is highlighted. Press the joystick button to the select it. Select "Return" at the bottom of any menu to exit without selecting.

The four menus contain the following options:

- **DISK:** Load Game, Save Game, New Game, Setup Board, Quit
- **MOVE:** Force Move, Take Back, Replay, Suggest Move
- **SETTINGS:** Sound On/Off, Walk On/Off, Combat On/Off, 3-D Board, 2-D Board, Human Plays Red, Apple Plays Red, Modem Plays Red, Human Plays Blue, Apple Plays Blue, Modem Plays Blue.
- **LEVEL:** Novice, Level 1-6

An asterisk (*) to the left of an option denotes that option as currently unselectable. A plus (+) to the left of an option denotes that option as currently selected.

**MENU OPTIONS EXPLAINED**

**LOAD GAME:** If you've saved a game before, this option recalls the game and picks up where you left off. After selecting Load Game, the Load window will appear, displaying a list of your saved games numbered 1 through 7. Select the game you wish to load by pressing the joystick button when the highlighted bar is over the game you wish to load or using the keyboard or arrow keys and pressing the <Return> key if you don't have a joystick. Select the "Return" option at the bottom of the menu to exit without loading.

**SAVE GAME:** You can save games to your backup disk only. Pick this option if you want to save a game to disk while the game is in progress. Choose the game number (1 through 7) you wish to save to (erasing the old game at that number) with your joystick or the keyboard or arrow keys and press the button or <Return>. Select the "Return" option at the bottom of the menu to exit without saving.

**NEW GAME:** This option lets you start a new game at any time.

**SET UP BOARD:** This option lets you set up games for testing strategies or for playing classic chess problems. Set Up is performed on a 2-dimensional chess board with the additional chess pieces arranged vertically on each side of the board. Any of the pieces can be selected and moved into any position by selecting them with the joystick or keyboard. To select a piece on the side of the chess board, use the joystick or keyboard or arrow keys to move off the board and choose a specific piece, and press the button or <Return> key. This will pick up your chosen piece for you to place. From Set Up, you have three additional menu options.

**CLEAR BOARD:** Removes all pieces from the board.

**RESTORE BOARD:** While remaining in Set Up, this aborts any changes you've made.

**DONE:** Returns to normal playing mode so you can play the game you've set-up.

**QUIT:** You've had enough. Reboot the disk.

**FORCE MOVE:** If you get impatient while waiting for Battle Chess to make its move, you can force it to move with this option. This interrupts the computer's thinking process and makes it take the best move that it has thought of so far.

**TAKE BACK:** This option will take back the last move made by either side. You can take back about five moves from both sides.

**REPLAY:** If you've just taken back a move, then decided it wasn't such a bad move after all, you can select Replay to put the piece back where it was before the Take Back.

**SUGGEST MOVE:** Want a hint for your next possible move? The Suggest Move option will give you that hint. Flashing highlights will appear on a square occupied by one of your pieces and the suggested destination square. This command is not instantaneous.

**WALK OFF:** Turning this off will move the pieces in 3-D without animating them.

**COMBAT OFF:** Turning this off will skip the combat animation. (The above two options are useful for those who want a quicker game on the 3-D board.)

**STYLES:** Levels Novice through 6 are available. Novice is the easiest, and 6 is the hardest. Under the Novice level, Battle Chess does only one simplistic board evaluation and occasionally makes poor moves. At each higher level, Battle Chess will look ahead further in the game, thus playing a better game of chess. Remember, if it's taking too long, you can always override the thinking time by using the FORCE MOVE option.

**SHORTCUT KEYS**

Certain shortcut keys are available during a game as follows:

- **F** = Force Move
- **T** = Take Back
- **R** = Replay
- **B** = Suggest Move
- **V** = Toggle Sound On/Off
- **W** = Toggle Walk On/Off
- **C** = Toggle Combat On/Off

**CHECK**

When your King is in check, a "check" cursor will appear in the upper left corner of the screen to warn you. It will go away when your kind escapes check.

**PAWN PROMOTION**

When a pawn reaches the eighth rank, a window will appear in the center of the screen. This window contains four pieces; you can change the pawn into any of them. Choose the promotion by pressing the joystick button when the piece you want to promote to is underscored or by using the keyboard or arrow keys and <Return>.

**CASTLING**

If it's legal to do so (as discussed in the manual), you may castle by moving your King two spaces to his destination square. The Rook will know what to do on its own.

**PLAYING BATTLE CHESS BY MODEM**

You can play BATTLE CHESS against a far away opponent if each of you has a Hayes-compatible modem hooked up to your computer with BATTLE CHESS. Your
modem must be hooked up to an Apple Super Serial Card with interrupts turned on, or an Apple IIc. If your modem is properly connected, as shown in your modem manual, there are 3 steps to start playing over the modem with B.CHESS.

1. Arrange with your opponent who will play Blue. After you've agreed, both of you should load BATTLE CHESS and set your opponent's color with the Modem Plays Blue or Modem Plays Red menu option. Hang up the phone on both ends before continuing. (But say "Bye, Bye!"

2. One player must set his modem to auto-answer mode. You can do this by bringing up the text window with the <TAB> key and typing ATS0=1. And press the <Return> key.

3. The other player must call the player whose modem is set to auto-answer. To dial a number, bring up the text window with the <TAB> key and type ATD 555-1212, substituting the correct phone number, and press the <Return> key. You can use any phone number with the ATD command, including area codes.

Your modem will pick up the phone and dial the number, and if all goes well, it'll then connect with the modem on the receiving end. If you get this far, you're set; you can start your chess game. When you move a piece, that move will happen on your opponent's end as well as yours. Note that after the two players are connected, the menu options New Game, Set Up Board, and Load Game will send an entirely new chess board to both sides, discarding the current game.

When you set one player to modem, you can send a text message to your modem or opponent by pressing the <TAB> key and typing your message or command and hitting <Return>. After hitting <Return> at the end of your message, the window will disappear and the line of text will be sent. (This is also the way you control your modem in BATTLE CHESS). A window will pop up on your opponent's screen with your message. After he or she dismisses the window, the game can continue. You can receive these messages at any time except when a window is open on your screen. If you send commands to your modem in this way, your modem will act on them. See your modem manual for details on AT commands.

There are two set ups to break the connection and hang up the phone. First, type +++ (three plus signs), press <Return>, and wait a moment. This will get your modem's attention. Then type ATH to tell your modem to hang up. This will close the connection between the two players.

BATTLE CHESS communicates at 300 baud with 8 bits and no parity.

PLAYING BATTLE CHESS WITH SERIAL CABLES
If you and an opponent have two computers, you may play with one person at each computer. Hook up a null modem cable between the computers' serial ports. Then one person show pick Modem Plays Red and the other, Modem Plays Blue. You can proceed to play as if you were connected by modem. The only difference is that you never need to type any dialing commands.

Official Listing of [Factus] Boards
The LookOut ........ (403) 457 - 0114 Private Storage ..... (215) 745 - 0495
Apple Tree Midwest II [816] 826 - 4158 Brave New World ..... [707] 938 - 2997

And Some Other [Great] Boards!
Castle GS ........... (514) 276 - 4047 Lexicon of the Cabal. (714) 879 - 6857
Distor's Swap Shop .. (816) 524 - 3044 University of Piracy. (415) 991 - 4832

End of File.
6. Bug Buyer Command Line

--- Typical Screen ---

C R B PC A X Y S P NV-BDIZC
0014 00 0 030D FF 20 01 FF 30 00110000

1FC:FB 0300: LDX #$20 F: (2)
1FC:FD =0302: STX $01 F: (3)
1FE:FB 0304: LDY #$00 F: (2)
1FF:B3 0308: LDA #$FF F: (2)
1FA:42 030A: STA($00),Y F:2000 6
1FC:FB 030C: INC F: (2)
1FB:17 030E: LDX #$20 E: (2)
1FD:FD =0306: STY $00 E:511: DEX
1FE:FB 0308: LDA #$FF E: (2)
1FF:B3 030A: STA($00),Y E:2000 6

0000:2000 BP POINT COUNT TRIG BROKE
2000:FF 1 030F 0000 0001 0000
0000:00 @ 2 0000 0000 0000 0000
0000:00 @ 3 0000 0000 0000 0000
0000:00 @ 4 0000 0000 0000 0000

Note: =...= means highlighting

Display #1

In the example above, Bug Byte IS displaying the 6 6502 registers at
the top of the screen.

Example

---------

PC Program Counter 030D
A A-Register FF
X X-Register 20
Y Y-Register 01
S Stack Pointer FF
P Processor Status 30

In the upper right of the screen, the processor status (F) is divided
into individual bits: NV-BDIZC

Example

---------

N Negative Bit 0
V Overflow Bit 0
- Unused 1
B Break Bit 1
D Decimal Bit 0
I Interrupt Bit 0
Z Zero Bit 0
C Carry Bit 0

Display #2

---------

The highlighted row (=...= in the example here) is the current one.
Notice the FF in the stack register in display #1.

Setting the stack points:

S=E0 <CR>

This causes 2 changes:

1. The command line will display "S=E0" and then clear
   after <CR> is pressed.

2. The stack pointer in display #1 would change to E0. (Under "S")

3. The stack window will show new position.

The stack pointer in display 1 would show E0, while the window would
show $1E0. The 6502 stack is in page 1 therefore, setting stack to
$1E0 is the same as $E0.

Display #3

To the right of the stack window, Bug Byte displays the program code
in this form:

Address:Opcode Operand Option

Type: FCABL <CR>

The display #3 will now show a list from FCA8 up.

Example: FCAC: BNE $FCAAA D0 FC

Address: $FCAA: Operand

D0 FC: Actual bytes in memory

Display #4

Contains user-selected bytes or byte pairs

Displays #5 and #6

#5: User Defined Breakpoints

#6: Bug Byte command line

Set

Displays #1 and #6 are fixed. The "set" command allow you to alter
the space allocated to the other displays.

Type: SET <CR>

1. Use <- and -> to increase/decrease number of breakpoints.
   Hit <CR> when done.

2. Use arrows to mode the next-instruction-to-be-executed inverse bar.
   Press <CR> when done.

3. Use arrows to adjust the lines available for the stack.

4. Use the arrows to position the stack pointer. <CR> exits

Set command does not affect memory locations.

Commands
ON: TURNS ON WHEN OFF TURNED OFF

BASE CONVERSION

- HEX->DEC
  \$C3= <CR> OR
  78D= <CR>
- DEC->HEX
  +43= <CR> OR
  -15119= <CR>

QUITTING

Q <CR> WILL QUIT TO BASIC+DOS

MEMORY REFERENCE

1. USE MEM DISPLAY TO DISPLAY 184 BYTES
2. USE MEM COMMAND TO EDIT DISPLAY #4

COMMAND: ASM

TYPE: ASM <CR>

BUG BYTE WILL CLEAR DISASSEMBLY LINE AND OUT YOU IN ASM MODE.

TYPE: 300:LDA C000 <CR> <SPACE> BPL <CR>

COMMAND: L (DISASSEMBLY)

L WILL JUST LIST FROM A LOCATION UP.

TYPE: FAC8L

COMMAND: M (MONITOR)

ENTER A PERIOD FIRST.

TYPE: .CATALOG <ESC> QUITS

MEMORY DISPLAY PAGE

TO DISPLAY A SCREEN WORTH OF HEX/ASCII

TYPE: AA60; <CR>

THIS CAUSES BUG BYTE TO SWITCH TO A MEMORY DISPLAY WITH AA60 AS ADDRESS IN UPPER LEFT CORNER.

APPLE ASCII:

00-3F INVERSE
40-7F FLASHING
80-FF NORMAL

<ESC> QUITS

TRACE/SINGLE STEP MODE

DURING THE SINGLE STEP/TRACE MODE, ONE MAY SELECT ONE OF THE FOLLOWING TO BE DISPLAYED ON THE RIGHT HAND SIDE OF THE SCREEN:

COMMAND: SCREEN DISPLAY

TO ASSIGN A REGISTER, JUST

TYPE: A=X <CR>

COMMAND: REGISTER REFERENCE

OFF: TURN OFF DISPLAY #1-#5

BYTES

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 175 of 1262
Apple II Computer Info

**O=E**

**EFFECTIVE**
- ADRES, BRANCHES, CYCLES

**O=E** IS THE MOST POWERFUL OF THE ABOVE COMMANDS. USING THE FOUR METHODS OF ADDRESSING, Indexed, Indirect, Indexed Indirect, and Indirect Indexed, the display will show the bytes actually referenced.

**HERE ARE SOME ADDITIONAL COMMANDS USABLE IN THIS MODE:**

**COMMAND**

<table>
<thead>
<tr>
<th>COMMAND</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;SPACE&gt;</td>
<td>STEP ONE OPCODE</td>
</tr>
<tr>
<td>&lt;CR&gt;</td>
<td>CONTINUOUS TRACE</td>
</tr>
<tr>
<td>&lt;ESC&gt;</td>
<td>RETURN TO NORMAL BB</td>
</tr>
</tbody>
</table>

**R**

- TRACE UNTIL RTS

**-**

- SKIP NEXT INSTRUCTION

**C**

- CLEAR CYCLE COUNTER

**P**

- USE PADDLE (0) TO ADJUST THE TRACE RATE

**K**

- USE KEYBOARD TO ADJUST

**Q**

- SOUND OFF

**S**

- SOUND ON

**1**

- DISPLAY PAGE 1

**2**

- DISPLAY PAGE 2

**T**

- DISPLAY TEXT

**L**

- DISPLAY LO-RES

**H**

- DISPLAY HI-RES

**F**

- FULL SCREEN GRAPHICS

**M**

- MIXED GRAPHICS

**RATE ADJUSTMENT:**

1. USE "R=#" FOR RATE
2. PRESS "P" OR "K" TO ADJUST MODE
3. TO SPEED UP TRACING, TYPE "OFF" TO TURN OFF MASTER DISPLAY

**BREAKPOINTS**

**POINT**- USER DEFINED BREAK POINT

**COUNT**- # OF TIMES POINT HAS BEEN FOUND

**TRIG**- USER DEFINED COUNT BEFORE BREAKING

**BROKE**- # OF TIMES "TRIGGERED"

**TO ENTER BREAKPOINT:**

**TYPE "BP" FOLLOWED BY BREAKPOINT ROW ADDRESS

**BP1 <CR>**

BUG BYTER WILL MOVE CURSOR TO FIRST 0 IN POINT FIELD. ENTER A HEX NUMBER FOR ADDRESS OF BREAK POINT. USE THE ARROWS TO MOVE FROM FIELD TO FIELD. IF TRIG=0, THE BREAKPOINT IS IGNORED. WHEN COUNT=TRIG, BUG BYTER WILL STOP. TYPING "T" OR "S" WILL RETURN TO TRACE. TYPING "CLR" WILL CLEAR BREAKPOINT.

**TRANSPARENT BREAKPOINTS**

**THE USUAL BUG BYTER METHOD OF BREAKPOINTING IS TRANSPARENT,**

**INTERPRETIVE. TYPING "OUT" WILL FORCE BUG BYTER TO THE TRANSPARENT MODE. THIS WILL MEAN THAT 6502 BREAKS (00) WILL HAVE NO EFFECT.**

**REAL BREAKPOINTS**

<table>
<thead>
<tr>
<th>COMMAND</th>
<th>RESULT</th>
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<tbody>
<tr>
<td>&lt;CR&gt;</td>
<td>CONTINUOUS TRACE</td>
</tr>
<tr>
<td>&lt;ESC&gt;</td>
<td>RETURN TO NORMAL BB</td>
</tr>
</tbody>
</table>

**LOC**

- ABSOLUTE LOC FUNCTION

<table>
<thead>
<tr>
<th>COMMAND</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;SPACE&gt;</td>
<td>DISPLAY NEXT ADDRESS</td>
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<tr>
<td>&lt;CR&gt;</td>
<td>ENTER LINE</td>
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BYE.80 is a selector program called from memory whenever a ProDOS QUIT or BASIC BYE is given. This program is based on Alan Birds' Better Bye but works ONLY in 80 columns and gives the user the added ability to choose from 32 System programs and/or Directories. I wrote this version for Hard Disk users, however, all users of large storage devices will appreciate the added control.

To use Better Bye, simply move the Light Bar to the desired program or directory name, and press return. If a directory is chosen, a new set of programs and/or directories will be presented. Pressing escape will allow you to change Volumes.

This program is donated to the Public Domain, however, you must contact the author for the right to include this program in any commercial software.

INTRODUCTION

Charlie Brown and The Peanuts Gang help children make words! Packed full of giggles and hours of play, Charlie Brown's ABC's uses delightful animation, music, and Charlie Brown's actual voice to introduce pre-schoolers and early elementery school children to letter names and letter sounds. Four different games entertain and challenge children to learn the alphabet. Watch and listen as Charlie Brown gives the directions and teaches the alphabet!

USING THE PROGRAM

Equipment Needed:
> An Apple //gs with 1 megabyte of Random Access Memory (RAM)
> one 3.5 inch disk drive
> monitor (color recommended)
> printer (strongly recommended)
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To Begin Playing Charlie Brown's ABC's:
> Make sure the computer is off and the monitor is on.
> Turn on the computer and the program will load.
> Insert the disk with the label side up.
> Turn on the computer and the program will load.
Note: The first time you run this program, you'll be asked to type in your name on the Owners Frame. Afterwards, you can change the owners name through the Change Owner option on the Options menu.

Special Keys:
The following keys are used throughout the program:
CAUTION: USE A BACKUP FILE!
BLOAD BYE.80,A$2000,TSYS
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UNLOCK PRODOS (if nessassary)
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BLOAD PRODOS,AR5X00
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This program is part of a series of programs that explore the QUIT code in ProDOS and is distributed with the permission of Alan L. Bird, the originator of the Better Bye selector program. For more information (or source code) write to the address given at the beginning of this file.

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From the Options Menu you can select a different game, review game directions, change the owner screen, print Charlie Brown's ABC's Certificates, and turn the speech or sound "on" or "off". To go to the Options Menu, press (Open Apple-O). The status of each option is displayed in parentheses. Use SPACE BAR to move and RETURN to select option. When an Option is selected, a "pop-up" menu will appear. Use SPACE BAR to move within this menu and RETURN to select. The "pop-up" menu will close and your change will appear in parentheses on the Options Menu.

1. Game Level (First ABC's) Press RETURN for game "pop-up" menu.
   (Game A) Press RETURN for program directions.
   (Game B) Press RETURN to change owner screen.
   (Game C) Press RETURN for ribbon "pop-up" menu.
2. Program Directions Press RETURN for program directions.
3. Change Owner Press RETURN to change owner screen.
4. Printer Setup ( Black Ribbon) Press RETURN for ribbon "pop-up" menu.

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Charlie Brown's ABC's contains four games that help children learn the alphabet.

First ABC's: This game is designed to help children associate a letter with its name and a word that begins with that letter.

Directions:
1. Listen as Charlie Brown says the name of a letter and a word that begins with that letter.
2. Type the letter again and the Peanuts gang will animate and play a tune.
3. After 10 matches you'll be offered a chance to print out Charlie Brown's ABC's Certificate.
4. At anytime, press (Open Apple-P) to print a copy of the screen.
5. Press ESC to leave the game and return to the title screen to change game level or other options.

Game A: This game is designed to help children visually match letters.

Directions:
1. You'll see a letter and word on the screen followed by "Type [the letter]."
2. Type the letter and the Peanuts gang will put on a show.
3. If you type the correct letter Snoopy and his friends will celebrate with you.
4. After 10 matches you'll be offered a chance to print out a Charlie Brown's ABC's Certificate.
5. At anytime, press (Open Apple-P) to print a copy of the screen.
6. Press ESC to leave the game and return to the title screen to change game level or other options.

Game B: This game is designed to help children recalling letter names.

Directions:
1. Listen as Charlie Brown says the name of a letter and a word that begins with that letter.
2. Type the letter you hear. If you type the correct letter Snoopy and his friends will animate and play a tune.
3. After 6 letters, you will be offered a chance to print out a Charlie Brown's ABC's Certificate.
4. At anytime, press (Open Apple-P) to print a copy of the screen.
5. Press ESC to leave the game and return to the title screen to change game level or other options.

Game C: This game is designed to help children listen for beginning sounds.

Directions:
1. Listen as Charlie Brown says a word.
2. Type the first letter of the word you hear. If you type correctly the Peanuts gang will cheer you on.
3. After 10 matches you'll be offered a chance to print out a Charlie Brown's ABC's Certificate.
4. At anytime, press (Open Apple-P) to print a copy of the screen.
5. Press ESC to leave the game and return to the title screen to change game level or other options.

Apple Tree  February 11, 1990
THE GAMES

HALF-PIPE SKATEBOARDING

It’s time to get air on the half pipe. Skateboarding is definitely an awesome event, combining strength and coordination—often with amazing results. You’ll be riding a skateboard in a specially built half-pipe. 

You’ll have a 1:15 minute time period, or three falls, to build up speed and successfully complete stunts. Points are awarded for each stunt, and the highest score wins the event.

OBJECT: The object of the half-pipe event is to ride the board back and forth on the ramp, performing stunts with proper timing and execution.

- Press the FIRE BUTTON to launch your board and start the event.
- To gain speed, move the joystick UP when the skater is going up the side of the ramp, then move the joystick DOWN when the skater is going down.
- To perform a stunt, move the joystick as shown in the diagram. Pay attention to timing, because you’ll fail if you move the stick too soon, too late, or if you hold it too long. After three falls, the event is over.

STUNT      MINIMUM       MAXIMUM
Kick Turns  100           300
Hand Plants 400           700
Aerial Turns 400           999

STRATEGY: It’s important to build up the right amount of speed before trying a stunt. You can gain speed by doing a “fakie.” To fake, hold the joystick up or down for the full duration of the ramp (from top to bottom). Remember that you’ll wipe out if you go too fast. Above all, be sure to get plenty of practice on the half pipe. This event takes experience to get the timing down just right.

FOOT BAG

This is probably the most laid back event, but don’t lose your cool, it isn’t easy. The Foot Bag event is like juggling with your feet. In this event, you have to keep a juggling bag in the air for 1:15 minutes, without using your hand. Success is all in the timing. If you time your kicks...
correctly, you'll keep the bag bouncing high in the air. Score extra points by performing stunts. The highest score wins the event.

OBJECT: Hacking at the sack with your feet, knees and head, you must try to make as many kicks as you can before time runs out. And remember, you get extra points for every stunt you perform.
- Press the FIRE BUTTON to kick the bag into the air and start the event.
- As the bag falls back toward the ground, press the FIRE BUTTON just before the bag reaches your foot.
- To perform a head butt, press the FIRE BUTTON just before the bag drops below the level of your head.
- Move the joystick as indicated in the diagram to control other movements.

Jump
| Move Left <--- ---> Move Right
v Turn Around
(About face)
- Several types of kicks are possible, including inside kicks, outside kicks, jumping reverse kicks, knee kicks and back kicks.
- To perform different types of kicks, move to new positions underneath the bag while it's in the air. For example, move to the right so the bag will drop next to you (but not too far). Now press the FIRE BUTTON when the bag approaches and you'll perform an outside kick.
- Other kicks are performed by positioning yourself in different ways. Discover the ways to perform all the kicks by trying various movements during practice.

SCORING: You earn points for each stunt or kick performed successfully. More difficult stunts, like turning around while the bag is in the air, earn higher scores. You lose time if you drop the bag or kick it off the screen. You also earn points for consecutive kicks completed without allowing the bag to touch the ground. Earn bonus for catching the sack when thrown from offscreen. Here are some stunts to try by combining different kicks and moves:
- Any Kick: (10 pts.)
- Half Axle: (250 pts.) Any two kicks with a half spin in between.
- Full Axle: (500 pts.) Any two kicks with a full spin in between.
- Horsehoe: (500 pts.) Left back kick + Right back kick.
- Jester: (2000 pts.) Left jumping kick or right jumping kick.
- Double arch: (2500 pts.) Left outside kick + Right outside kick + left outside kick.
- Doda: (5000 pts.) Left outside kick + head butt + Right outside kick.
- Off Screen Catch: (1500 pts.)

STRATEGY: The more complicated kicks and stunts you can complete before time runs out, the higher your score will be. Special bonus points are awarded for variety, so use as many different stunts as you can.

SURFING
Surfing began as the sport of Hawaiian kings; now it rules the California coastline. From Santa Cruz to Rincon Point, surfers and their colorful boards dot the miles of sun-splashed beaches. And you're about to join them. You'll shoot the curl, shred the tube and probably even eat a little sand (when you wipe out). It's going to be hot. You'll be there. And you'll be awesome.

OBJECT: Competition surfing is a game of staying near the curl of the wave and maneuvering your board smoothly at high speeds. Ride the face of the wave, moving back and forth, in and out of the tube. "Use" as much of the wave as you can before your ride comes to an end.
- Press the FIRE BUTTON to catch a wave and start the event.
- Hold the joystick LEFT to avoid wiping out at the beginning of your ride.
- To steer the board to the surfer's left, move the joystick LEFT.
- To steer the board to the surfer's right, move the joystick RIGHT.
- Hold the FIRE BUTTON down to make sharper turns. Note that sharp turns slow you down.
- If you go too close to the bottom of the wave, you'll either wipe out or end your ride by leaving the wave.
- To end your ride cleanly, go over the top of the wave.
- If you go over the top of the wave and turn your board around in the air, you can catch the wave again (but you'll wipe out if you come back down at a bad angle).
- You get 1:30 minutes for the event or 4 wipeouts. You earn more points for longer rides, so try to ride each wave as long as you possibly can.

SCORING: You're scored for the length of your ride, the number of turns you make and your speed each time you turn. You also earn high points from the judges for riding in the tube (underneath the curl of the wave), and riding near the break. "Catching air" scores extra points: ride up to the top of the wave until the end of your board clears the crest, then turn and continue your ride.

STRATEGY: Your final score is based on how well you "use" the wave. Riding along straight, far out in front of the break counts for very little. Take risks. The more risks you take to do your stunts, the more points you will earn. Making cutbacks (180-degree turns), moving up and down the wave and doing 360's (complete circles) all earn high scores. Earn maximum points for high speed turns, especially if you complete them near the top of the wave or near the break.

ROLLER SKATING
Roller Skating is hot. Anyone can skate and almost everyone does, with a feeling of freedom unlike any other sport. And CALIFORNIA GAMES skating is as radical as you can get. The trick is to skate down a beach boardwalk without falling. You'll have to avoid cracks in the sidewalk, grass, sand, puddles of water, shoes lying in your path and more. You'll have to squat to miss flying beach balls. You'll even have to jump over missing pieces of the sidewalk!

OBJECT: The object in roller skating is to avoid the obstacles and cover the course in the best possible time, with as many stunts as you can perform during the event.
- Press the FIRE BUTTON to start the event.
- To begin skating, roll the joystick to the UP position. Then roll the joystick to the DOWN position. Continue rolling between these two positions to gain speed.
- Move the joystick as shown in the diagram to perform other skating moves.

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**SCORING:** Score points for each obstacle you avoid. Earn double points for jumping over obstacles. Earn the highest scores for 360’s while jumping obstacles.

Avoiding Obstacles: 10 - 30 points.
Jumping Over Obstacles: 20 - 60 points.

**STRATEGY:** You'll score points for each object you successfully avoid or jump over.
- Move the joystick RIGHT to start the event.
- Move the joystick UP to steer left.
- Move the joystick DOWN to steer right.
- Move the joystick LEFT to do a wheelie.
- To begin a jump, move the joystick LEFT as you ride onto a hill or ramp.
- When you're in the air, use the joystick to perform stunts:
  - Move the stick UP to do a tabletop. Hold the stick as long as possible then release the joystick to put the bike down.
  - Move the stick DOWN to do a 360-degree turn.
  - Move the stick LEFT to do a backward flip.
  - Move the stick RIGHT to do a forward flip.
- Timing is important to perform stunts and jumps. You must time the start and finish of each move to complete it successfully. If you're not back in a "centered" position by the time you land or complete your stunt, you will crash.
- You're allowed one "serious" fall or three "easy" falls before you're out of the race. If you flip and fall on your head, it's a serious fall.
- At the end of the course, press the FIRE BUTTON to stop. You earn bonus points for stopping on the finishing pad.

**STUNT** | **MINIMUM** | **MAXIMUM**
--- | --- | ---
Wheelie | 100 | 200
Jump | 200 | 400
Table Top | 500 | 1000
360 Turn | 1000 | 2000
Backward Flip | 1500 | 3000
Forward Flip | 3000 | 6000

**STRATEGY:** When you complete the course, you get 60 points for each second left in the time limit. So finishing the course in the fastest possible time is important, but the highest scores go to the riders who perform the most daring stunts. Make a 6000-point forward flip, and you've probably got a lock on the first place trophy.

**FLYING DISK**

To serious competitors, the plastic saucer invented by two Californians in 1947 is called a "flying disk." Of course, you may know it by another name. Originally spelled Frisbie, the disk's most popular name originated at Yale University, where students first started tossing empty pie plates made by the Frisbie Pie Company one hundred years ago. Now molded from lightweight plastic, the flying disk is a common sight whirring through the air at beaches and parks everywhere in California, and it's the perfect challenge of skill and timing to wind up the competition in **CALIFORNIA GAMES**.

**OBJECT:** The object of the Flying Disk is to throw accurately to the catcher at the other end of the field. Score extra points for difficult catches.
- Press the FIRE BUTTON to start the event.
- You get three attempts to throw and catch the disk.
- Try to throw the disk far enough to reach the catcher standing at the other end of the field.
- Use the bar at the bottom of the screen to make your throw. The bar has three colors: red, yellow and green. Use the green area for the most powerful throw.
- Tap the joystick LEFT to start swinging your arm back. When the needle reaches the green section of the bar, tap the stick RIGHT. When the needle reaches the green section on the right side of the bar, tap the stick LEFT again to release the disk.
- The display on the top left the screen helps you move the catcher to intercept the disk after it has been thrown.
- As the disk flies across the field, move the joystick LEFT or RIGHT to run toward the point where you think the disk will land.
- To catch the disk, you must meet it with your hands. Note that your hands are extended only when you're running or diving.
- To attempt an overhead standing catch, hold the joystick UP to reach up for the disk.
- To dive after the disk, press the FIRE BUTTON.

**SCORING:** Points are awarded for the throw and the catch. For the throw, scores points for accuracy and height. Points are awarded for the throw. Points are scored for catching the disk as follows:
- 150 pts. for a catch while running right.
- 250 pts. for a catch while running left.
- 250 pts. for a catch while diving right.
- 350 pts. for a catch while diving left.
- 350 pts. for a catch over your head.

**STRATEGY:** Throwing accuracy is the key to winning the Flying Disk (of course, it also helps to make a good catch!). To get the best possible score, throw the disk so the catcher doesn't have to move far to reach it, then make a diving catch or an overhead catch.

**CALIFORNIA GAMES SCORING**

**AWARDS CEREMONY**

After every event, trophies are awarded with the names and sponsors of the top finishers in the order they placed.

**CHAMPION CEREMONY**

If the players compete in all six **CALIFORNIA GAMES** events, a final trophy is awarded to the Champion of the games based on the total number of points.
awarded.

First Place = 5 points
Second Place = 3 points
Third Place = 1 point

The points are totaled after all events have been completed, and the player with the most points is the California Champion.

EVENT RECORDS

If an event record is broken or tied in any event, CALIFORNIA GAMES saves the name of the record-breaking player. The records are displayed on the Event Records screen. If a new record is set for an event, the previous record is erased and the new information appears in its place.

CALIFORNIA SPOKEN HERE

AGGRO (a-gro) adj. if you're a dare-devily dude you'll go "way aggro", executing aggressive moves on the ramps and waves of California.

AWESOME (ah-sum) adj. awe-inspiring. ie. That's one awesome dude.

BIO (bi-o) adj. short for bionic. You've got to be superhuman with aggro moves to be known as bio.

DUDE (dyud) noun. BUDDY: can be used to express disbelief as in "DUDE!", or surprise, as in "DUDE!" or as a friendly greeting, as in "Hey DUDE!" Say while laughing for an attention-getting effect, ie. Duhuhuhude!

GNARLY (narly) adj. mind and body bendingly difficult. Waves, ramps and aggro moves can be gnarly. Then there are gnarly tests, gnarly prom dates, gnarly curfews, etc...

LIKE (lik) prep. insert anywhere you like, like, in any sentence, in, like, any context. Used most effectively when upset: "it's, like, geez..." Or the coolest way to use "like" is with "all" (for more description) "It's, like- I'm all - Duuude you've got sand in your jams."

RADICAL (raa-di-cul) adj. 1) outrageous: "Radical moves, dude!" 2) cool: "It'd be radical if you could cruise to the ramp around 5 o'clock."

TOTALLY (toh-tul-ly) adv. completely, entirely: something or someone is totally awesome, radical, or aggro. In California everything is totally something. (companion word: see Tubular)

TUBULAR (tyu-byu-lar) adj. an adjective that came from the sea and has evolved into an everyday term. Parties, concerts, etc. can be totally tubular. Its use is endangered by the word "awesome". (companion word: see Totally)

dates, gnarly curfews, etc...

LIKE (lik) prep. insert anywhere you like, like, in any sentence, in, like, any context. Used most effectively when upset: "it's, like, geez..." Or the coolest way to use "like" is with "all" (for more description) "It's, like- I'm all - Duuude you've got sand in your jams."

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Call these apple boards!
The Story

Trapped in a universe of your own creation — a world populated by strange creatures in unlikely scenarios, extensions of your own over-active imagination — but it's only a game, right? Wrong. It's every hacker's worst nightmare...and you're living it!

As the erstwhile programmer who calls himself Captain Blood, you're in one heck of a predicament. The Hyper-space warp that sucked you into the game also fragmented your genetic structure, creating five exact duplicates of yourself that are now hiding somewhere in the galaxy of Hydra. You must find your clones and assimilate them to replenish the vital fluids you so desperately need.

Playing The Game

When the game begins you will see the interior of your spaceship, followed immediately by a view of the nearest planet. The arm you see on the screen is your own — use the joystick to move the arm around the screen. Because you lack necessary vital fluids, you start to shake, making it difficult to select options from the control panel.

An on-board clock keeps track of elapsed time in minutes and seconds. You have approximately 2.5 real-time hours to find a clone and get back some vital fluid before your arm becomes completely uncontrollable. If you find a clone, you gain another 2.5 hours of playing time.

The first planet that comes into view each time you begin a new game will ALWAYS be inhabited. After that, you're on your own.

NOTE: The program recreates the galaxy each time you begin a game so the coordinates of inhabited planets are not valid from one game to the next.

PLANET VISION SCREEN

The Planet Vision Screen is the first screen that appears when you begin a new game. The planet that you see is the one nearest to your present location. Several options are available to you on the Planet Vision Screen: GeoPhoto Vision, Planet Destruction, and OORXX Landing Mission. These options are described below.

The Control Panel

The control panel in front of you contains various buttons, only a few of which are active at any one time. Six control buttons are positioned diagonally on either side of a large central button. These buttons will be referred to (from left to right) as Buttons 1-6. Unless otherwise instructed, select an option by pointing your hand's index finger to it and pressing the fire button.

GeoPhoto Vision

To get a close-up view of the planet surface, activate the GeoPhoto Vision mode by selecting Button 6. Flashing points of light indicate enemy missiles on the planet surface. Select this button again to get an even closer view. Select Button 2 to return to the Planet Vision Screen.

Planet Destruction

To destroy the planet on the Vision Screen, select Button 5 (the one marked with an 'X'). NOTE: You may exit the Planet Destruction sequence at any point by simply pressing the INST/DEL key.

OORXX Landing Mission

To activate an OORXX landing mission select Button 4 (the one marked with a down arrow) from the Planet Vision Screen. An OORXX will be transported immediately to the planet surface and a vector image of the landscape will appear on your viewing screen.

FLYING THE OORXX

Because your ship is too large to land on a planet, you must view the planet's surface through the eyes of an OORXX — creatures designed for just such missions. You guide the OORXX as it flies across the planet surface.

The two markers on either side of the screen indicate your altitude above the planet surface. The horizontal dotted line along the bottom of the screen indicates your speed — the longer the line, the greater your speed. To decrease speed, hold down the fire button and pull back. To increase speed, hold down the fire button and push forward.

Landing Sites

Each planet has a designated landing site, located at the end of a long narrow valley. As you fly, an onscreen sight indicates your current position. If you are headed in the right direction, the sight will appear as a flashing diamond shape. If you are off target, an arrow on the left or right side of the sight will point you in the direction you should turn. When you reach the landing site, the OORXX will land automatically and the resident alien (if there is one) will appear.

Avoiding Missiles

If enemy missiles are present on the planet surface, they will begin homing in on the OORXX immediately; a continuous beeping noise lets you know you've been sighted. To avoid the missiles, you must fly as low as possible without crashing.

When a missile locks in on your position, arrows appear on either side of the screen and begin moving toward each other. The closer the arrows get to one another, the closer the missile is to the OORXX. If the arrows meet in the center of the screen, the OORXX will be destroyed and you will be returned to the ship's interior.

THE UPCOM

To communicate with aliens, you must use the UPCOM (Universal Protocol of Communication) icon system. Once you land, the UPCOM Module appears automatically on the screen if an alien is present.

Receiving A Message

As the alien speaks, icons will appear on the left side of the UPCOM Module. To receive a translation of a certain icon, point to the icon in question; the translation will appear on the right side of the screen. If the central mouth is still moving, it means the alien has more to say. Point to the 'mouth' and press the fire button to read the rest of the message.

Sending A Message

You may respond to the alien using any of the highlighted icons shown in the UPCOM window. The window shows only a small portion of the available icons. To select an icon, point to one of the scroll selectors located on either side of the icon window. To scroll more quickly, point to the scroll bar located at the bottom of the window and hold the fire button.

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button; then move the joystick left or right to move the icons in that direction.

To select an icon, simply point to it and press the fire button. That icon will then appear on the right side of the UPCOM Module. You may select up to eight icons for each sentence. When your message is complete, point to the 'mouth' and press the fire button to transmit your message to the alien. The left-arrow shaped button on the right side of the UPCOM Module lets you delete an icon, and you may also insert an icon into an existing sentence.

Teleporting

If an alien agrees to be teleported the Teleport icon will appear on the bottom left of the screen. Select this button to teleport the alien onto your ship. To teleport an alien from your ship onto a planet's surface, select the Teleport icon button once you land.

Returning To The Ship

Select the triangular-shaped button on the right side of the Module to return to the ship.

THE SHIP'S INTERIOR

To return to the ship's interior from a planet surface, select the triangular-shaped button located on the right side of the screen. From the Galaxy Map or Planet Vision Screen, select any INACTIVE button to return to the ship's interior. The main control panel is shown at the bottom of the screen.

Interior Controls

Button 1 is used to save your game to disk. Complete instructions are given below. To activate the Planet Vision Screen for a view of the nearest planet, select Button 2; select any inactive button to return to the ship's interior. To view the Galaxy Map, select Button 3 (the one marked with a 'nebula' shape); select any inactive button to return to the ship's interior.

The Fridgitorium

If you have teleported an alien (or clone) onto the ship, it will appear in the Fridgitorium on the left side of the screen. While in the Fridgitorium, the alien will not be able to communicate. To disintegrate creatures in the Fridgitorium, select the button in directly below the one for the nearest planet, a question mark will appear on the right side of the screen. Select the question mark to reactivates the OORXX on that planet's surface.

THE GALAXY MAP

To view the Galaxy Map, select Button 3 from the ship's interior. The horizontal and vertical lines superimposed on the Galaxy Map allow you to select a specific planet from among 32,768 possible choices.

Coordinates

The location of each planet in the galaxy is expressed by a set of coordinate numbers, X/Y. The vertical line is the 'Y' coordinate and the horizontal line is the 'X' coordinate line. The nearest planet is the one located at the intersection of the two lines. The coordinates of this planet are displayed at the top of the screen.

Selecting A Planet

As you move your hand around the MAP, the coordinates of the planet you are pointing to at any given moment are shown in the box at the top left side of the screen.

To select a destination planet, point to the vertical ('X') coordinate line and press and hold the fire button; then move the joystick left or right to move the coordinate line. As the coordinate line moves, the for 'X' coordinate will change accordingly in the box on the upper right side of the screen. When the desired 'X' coordinate appears in this box, release the fire button to lock in that coordinate number.

To select a new 'Y' coordinate, point to the horizontal ('Y') coordinate line and press and hold the fire button; then move up or down to move the coordinate line. As the coordinate line moves, the value for the 'Y' coordinate will change accordingly in the box on the upper right side of the screen. When the desired 'Y' coordinate appears in this box, release the fire button to lock in that coordinate number.

Hyperspace

To travel to the new planet you have selected on the Galaxy Map, activate the Hyperspace option by selecting the central control panel button (the one marked with an up-arrow). When the Hyperspace sequence is over, the new planet will appear on the viewing screen. NOTE: You may exit the Hyperspace sequence at any point by simply pressing the INST/DEL key.

SAVING A GAME

You may save your game to disk any time AFTER five minutes of play. To save game, return to the ship's interior and select Button 1 (the disk icon). The saved file will be called BLOOD CPT. If the game was not successfully saved, the disk icon will flash for several seconds; in this case, check your disk and try again. Each time you save to disk, the new saved game will replace the old saved game. Although you cannot pause the game during play, you may save your progress at any point and return to your game at a later time.

Loading A Saved Game

You may load a saved game ONLY DURING THE FIRST FIVE MINUTES OF GAME PLAY. To load a saved game, point to any inactive button to return to the ship's interior. The Planet Vision Screen appears, select any inactive button to proceed to the ship's interior. Then select Button 1 (the disk icon). If the game did not load successfully, the disk icon will flash for several seconds; in this case, check your disk and try again. Should you wish to load a saved game after five minutes have expired, you will have to reboot the program.

THE END

To survive, you must find all five clones and disintegrate them in your ship's Fridgitorium. The last clone should give you the coordinates of the planet where Yorka - the beautiful alien Ondoyante - is waiting. Once you go there and teleport her onto your ship (note that she does NOT stay in the Fridgitorium!), you've won. Now all you have to do is figure out how to get yourself out of the game.
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--- Captain Goodnight Info ---

RIPOV RIP-14 (COOT) HELICOPTER.
MAX. SPEED: 125 MPH (205 KM/H)
CRUISE SPEED: 85 MPH (140 KM/H)

KLEM K1-9 (WOMBAT) MEDIUM TRUCK.
MAX. SPEED: 65 MPH (107 KM/H)
CRUISE: SAME
RANGE: 250 MILES (413 KM)

KLEM K1-67c (SLOTH) SCOUT CAR.
MAX. SPEED: 65 MPH
CRUISE: SAME
RANGE: SAME AS WOMBAT

Joystick Controls:
Right/Left: To run right or left and also to select firing direction for
Other Controls:
Esc: Freezes all action until another key is pressed.
Ctrl-E: Toggles the sound on/off.
Ctrl-R: Re-starts game.

Survival Skills:
The rule of thumb: when dealing with most insects you may find on the
Araan Desert is to bite them before they bite you.
Crimson Lunglurker: Identified by it's bright red scales. Catching a
glimpse of one of these little beauties scuttling across the sands is
even to tempt any palate. Stir with just a pinch a garlic.
Stomach Slug: Pleasing grey in color and no bigger than your thumb. Can be
found under medium sized rocks. Takes just a bit more effort to collect, but is well worth it in the flavor department. Served poached or hardback and you'll have your companions begging for more.
Bug Verde: Brings a touch of spice to what may be considered a rather bland diet. Delicious when toasted. Caution, only the female is edible. She has one less band on her abdomen.
Brain Borerer: If lightly coated with batter before frying it can be quite pleasant.
Lip Leaper: High in protein and fiber. While barbecuing avoid its fumes identical to P-7X nerve gas.
Navel Leech: The crunchy granola of the insect world. High in polyunsaturated riboflavin, and low in fat. Toxic coating removed by boiling
Mega Rodent: Also known as Torch. Excretes a smegma like odor. Highly toxic, can be found under any wet moldy rock. Or sometimes hanging in a tree.

F.O.E. MILITARY EQUIP. I.D.

-- Playing the game --

Joystick Controls:
Note: You will need a 2 button joystick.
Note: On an APPLE IIc, the keyboard switch must be up for the game to function.
Joystick Button 0: To speed briefing. Also to fire all weapons
Joystick Button 1: To enter all of the vehicles while over a door or an entry. Also to start elevators when the joystick is pushed up or down.
Down: To kneel down
Up: To stand up
Right/Left: To run right or left and also to select firing direction for weapons.

Other Controls:
Esc: Freezes all action until another key is pressed.
Ctrl-S: Toggles the sound on/off.
Survival HINTS:
Your jet can withstand some, but not much, damage from anti-aircraft weapons. Avoid this fire.
Watch out for radar dishes. If not destroyed, they can trigger heat-seeking cruise missiles!
Keep moving! The more slowly you move, the more demonic the enemies DR.
Use strategy. It may take several shots and some elaborate footwork to defeat your more devious enemies.

And GOOD LUCK, Goodnight. The entire Free World is counting on you!!

CODE DE-SCRAMBLER

Mega Rodent: Also known as Torch. Excretes a smegma like odor. Highly toxic, can be found under any wet moldy rock. Or sometimes hanging in a tree.
Good Luck Captain......

ADDITION FROM TC------HOW TA CHEAT!
TRACK 9 SEC 2 BYTE DA--- FROM 04 TO 09
BYTE DF--- FROM 02 TO ?? (MISSING TEXT)

Quick Start
After loading up WECS, press any key to start the game.

- Sign in as prompted by the security scanner. When the Chief contacts you, make sure to note the thief's sex and your deadline for solving the case.
- Use up/down arrow, cursor keys, Spacebar or Joystick to highlight menu items.
- Use left/right arrow, cursor keys or joystick to cycle through options within menu items.

- [INVESTIGATE]
- Select Investigate to uncover clues that let you track the suspect to his or her next destination.
- To decipher the clues, use the Rand McNally Concise atlas of Europe, the Crime Lab Database, the detective guide, and the on-screen descriptions of each city and country.

- [GO TO AIRPORT]
Select Go To Airport to check the available connections to other cities and to catch a flight to the suspect's possible destination.

- [USE NOTEBOOK]
Select Enter Notebook to record information from the Chief's periodic messages regarding the suspect's sex, hair and eye color, favorite type of movie and favorite type of book. This information will later be needed by the Crime Lab computer in order to get an arrest warrant.

- [VISIT CRIME LAB]
- Select Enter Crime Notes when you want to enter information contained in the Notebook into the Crime Lab computer in order to get a warrant.
- Select Use Database to access a Database containing information about each country's flag colors, currency, and main languages. This information will help you decipher clues which involve these elements.
- Select Return to Scene when you're finished at the Crime Lab. Select Save Case if you want to take a break in your investigation and resume it at another time.

- [TO WIN GAME]
You need to track the thief to his or her final destination AND have the correct arrest warrant issued by the crime lab computer. You must accomplish both tasks within your given deadline.

Special Keys
- Ctrl-L Displays the names and ranks on the Detective Roster
- Ctrl-D Lets you delete a name from the Detective Roster
Playing the Game

[SIGNING IN]

You begin the game outside the office of the Acme Detective Agency. An electronic security device will detect your presence and ask you to sign in. Type your name when the flashing cursor appears and then press RETURN.

[YOUR ASSIGNMENT]

Once you've signed-in, expect a call from the chief about your assignment. You'll be told:

- what treasure has been stolen
- where the crime occurred
- whether the criminal is male or female
- what your deadline is for arresting the criminal

[OBJECT OF THE GAME]

The thief is heading for a hideout in one of 34 European countries. There are 16 possible suspects for the crime. To win the game and advance your career, you must accomplish two tasks before your deadline:

1. Track the criminal's movements across Europe to his or her final destination.
   You'll have to use the clues you find in each city to determine where the criminal is going next.

2. Identify the criminal and get a warrant for his or her arrest. You'll get clues to the criminal's identity in messages from the Chief that appear periodically on the screen.

Warrants are issued by the Crime Lab computer based on the information contained in the Notebook. Therefore, as you receive clues to the criminal's identity, be sure to log them in the Notebook.

* You must obtain a warrant for the guilty criminal before you catch up with him or her. Otherwise, the criminal will escape and you may want to reconsider your career as a detective.

Tools of the Trade

[THE MAIN MENU]

The main menu provides the following options to aid you in apprehending the criminal:

- Investigate
- Use Notebook
- Visit Crime Lab
- Go to Airport

Each of these menu options is outlined below:

--Investigate--

Investigate lets you uncover clues in the city you're currently visiting. You may find two kinds of clues: Destination Clues and Character Clues.

The Investigation Menu lists ways to get clues leading to the villain's next destination. You can choose to:

- Search Scene
- Call Tipster

The clues you uncover will give you information about the country where the criminal is headed next. If you need more information, you can make a different selection from the Investigate Menu.

--How to Decipher Clues--

You have several resources that can help you unravel the clues you find:

- On-screen "Snapshot" illustrating a highlight of each city or country.
- Rand McNally Concise Atlas of Europe with its maps, gazetteer, index, etc. included with the program (*Check your glove compartment for this one, folks.. If not, any atlas should work.*)
- Crime Lab's Database which contains information about the flag colors, currency and main language of all the European countries.

--Use Notebook--

Messages from your chief will occasionally appear on the screen telling you some thing personal about the criminal you are seeking. These messages are referred to as Character Clues.

Use Notebook lets you keep a record of the character clues you have found. Your notebook lets you keep track of the suspect's sex, hair color, eye color, and favorite type of movie and book.

To record information in the Notebook, do the following:

1. Use the up and down arrow keys to highlight a characteristic.
2. Use the left and right arrow keys to cycle through all the possible choices for each characteristic until you reach the one you want.
3. If you don't know a characteristic, leave the space blank.

* The information contained in the notebook will be needed by the crime lab computer in order to issue a warrant, so keep your Notebook up-to-date.

Selecting Use Notebook will not cost you any playing time so use the Notebook as often as you like.

When you have finished entering all the information you know about a suspect, press RETURN or a Joystick button to Close Notebook. If you wish to close notebook without saving your changes, press ESCape.

--Go To Airport--
Go to Airport lets you get out of town when you think you know the criminals' next destination. You can also go to the airport to check your connections and help narrow down your search.

After selecting Go to Airport, you're given two menu options:

- Depart by Plane
- Return to Town

A window will also appear listing all the city destinations that are currently available from your location. If you are just checking your connections, you'll want to select Return to Town to continue your investigation.

If you select depart by Plane, a map of Europe will appear with a small square marking your current location of the city whose name is highlighted in the destinations window.

By using up/down arrow keys, you may now highlight any of the available destinations and then select it by pressing RETURN or the lower numbered joystick button.

- Visit Crime Lab-

When you want to obtain an arrest warrant for your suspect, you must visit the Crime Lab and enter your crime notes. The Crime Lab also has a special database of information that can help you unravel the location of clues you encounter as you chase the criminal. Lastly, the Crime Lab has a special feature for saving your case to disk.

After selecting Visit Crime Lab from the main menu, you will be given four options as outlined below:

Enter Crime Notes

Selecting Enter Crime Notes will automatically feed the crime lab computer all the information contained in the notebook. If the Notebook contains sufficient information about a suspect's identity, an arrest warrant will be issued for that suspect. Otherwise, the computer may give you a list of possible culprits without being able to narrow the suspects down to one individual. You will then have to go back to chasing the suspect and supplying more information to your notebook.

Note: If you modify or add to your crime notes and then re-enter them into the crime lab computer, any existing warrant may be voided even if no new warrant is issued.

Use Database

Selecting use database allows you to access a special database of information regarding the countries of Europe, the colors of their flags, their currency and the primary language spoken there. In conjunction with your Rand McNally Concise Atlas of Europe (*Or whatever the hell you are using*), this database is a great resource for unravelling the Destinations Clues you've discovered in your investigations.

For example, if you know the criminal is heading for a country where French is spoken and francs are spent, select Use Database to see if the Crime Lab Computer can identify the country you seek.

The database contains three search categories which are: Flag colors, Currencies, and Languages. Use the up/down arrow keys to highlight the desired category.

Use the left and right arrow keys to cycle through the choices contained in each category until you find the one you want.

Fill in as many categories as you can based on the clues you've discovered.

When you are finished, press RETURN or a joystick button. The Crime Lab computer will then search through its database and try to identify the country that matches the search criteria.

The information you provided may not be sufficient to identify the destination country, but the computer may still be of help by narrowing down your choices. You may then use other resources to find the criminal's next stop.

Return to Scene

Selecting Return to Scene lets you leave the Crime Lab and go back to the city you left so that you can get on with the case.

Save Case

Selecting Save Case allows you to save the case-in-progress onto disk. After selecting Save Case, simply follow the on-screen prompts. You can have only one case saved under any particular name.

To continue a saved case, start WECS as usual. After you sign in, the computer will recognize that you have saved a case under your sign-in name and will ask you if you want to continue working on that case. Type Y and press RETURN.

If you do not want to continue your saved case, type N and press RETURN. Your saved case will then be ERASED from the disk.

Tips from the Chief

Work quickly. Keep track of the time and date on your screen. Remember you have a deadline to meet. Don't waste time using the Crime Lab's computer too often, investigating for too long at any location or flying to a city unless you're sure it's the one to which the suspect has fled. Each wrong or unnecessary move will cost you precious hours.

You know you're on the right track when you see a suspicious person or occurrence on your screen.

Beware of deadly missiles - they mean you're closing in on your suspect's hideout. If you know you are ready to nab the criminal and you still don't have a warrant, you may want to skip town fast. Go back to the previous city and try to find some Character clues, get your warrant and then trail the villain again.

A clever detective sometimes goes to the airport to check the plane connections available. It takes an hour of your time, but you'll leave the villain's possible destination and perhaps narrow down your search.

[DECIPHERING CLUES]

The key to your success in tracking Carmen and her gang is to decipher the clues you find accurately and efficiently. Remember that you may be able to decipher clues with information from any one of four sources:

1. On-Screen descriptions of each city and country
2. Crime Lab Database
3. Detective Guide

[INVESTIGATION HINTS]

Here are some hints you may want to follow as you investigate:
Apple II Computer Info

The following information has been gleaned from Interpol's files and our field agents. While brief, these descriptions may contain valuable clues to be used in tracking down and identifying members of the V.I.L.E. organization.

[Name: Carmen Sandiego]
Occupation: A former spy for the Intelligence Service of Monaco.
Miscellaneous: Carmen Sandiego (known to the inner circle as "Buffy") is reported to be an agent, double agent, triple agent, and quadruple agent for so many countries that even she has forgotten which one she is working for. The auburn-haired founder of the Villains' International Legion of Evil (V.I.L.E.) has recruited the most cunning and resourceful band of thieves in history. During her years as a Monacan secret agent, she generally posed as a tennis pro and always traveled to and from matches in here 1939 Packard convertible. Carmen has a fondness for tacos and never appears in public without her famous ruby necklace "The Moon of Moldavia."

[Name: Merey LaRoc]
Occupation: Ms. LaRoc is a freelance aerobic dancer
Miscellaneous: For the past five years, this brunette beauty has been traveling around the world with a mobile health spa to conduct exercise classes for the extremely wealthy. Rumor has it that this is merely a cover for her criminal activities. When she isn't pilfering the treasures of the World, Merey can usually be found participating in the good life. A world class mountain climber, she has a mania for fance jewelry and spicy foods. Her favorite mode of travel is in the back of a fancy limousine where she can relax and plot her next job.

[Name: Dazzle Annie Nonker]
Occupation: Proprietress of the toughest yogurt bar east of Suez.
Miscellaneous: Born sole heir to the fortune of the shoelace king, Baron Franz von Nonker, Annie was quickly disinherited when she ran off with a Croation tennis pro. Cast adrift when she failed to make the cut for the Davis Cup mixed doubles, she was forced to live only by her wits and the paltry $3,000,000 she had been able to save out of her allowance. With this modest windfall and her innate grit, the blond bombshell was able to open Chez Acidophilus. Frequentd by the dregs of humanity, Chez Acidophilus has become the headquarters for V.I.L.E. Annie is rumored to have a tattoo and craving for shellfish. She is known to drive a Bugatti limousine.

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 189 of 1262
[Name: Lady Agatha Wayland]

Occupation: A colorful character with a prediction for sensible shoes. Lady Agatha is a reader of mystery stories set in upper-class English drawing rooms.

Miscellaneous: Lady Agatha has no ability at solving murder cases but is very interested in amassing great wealth. A compulsive lawbreaker, she loves to exceed the speed limit in her Dengby super-chauvinist speedster. Red tresses streaming in the open air, she drives through the countryside looking for great Mexican restaurants. An avid sportswoman, Lady Agatha has been known to pick up a few extra dollars on weekends pronouncing unsuspecting locals at the local tennis courts. She is reported to have a diamond ring the size of a small grapefruit stolen from the Royal Treasury of Graustark.

[Name: Len "Red" Bulk]

Occupation: Ex-professional hockey player and compulsive gambler, Len was barred for life from playing when he was caught trying to bribe himself.

Miscellaneous: Bitter and unemployed, Bulk was forced to turn to crime in order to support his gambling habit. He swears he will quit just as soon as he "wins the big one." Because of an unfortunate habit of blocking too many shots with his head, Len will occasionally think he is a Big Horn sheep and begin climbing the nearest peak. Cannot fit into any car that has a top, loves sporting a strange Ukranian tattoo, he has been known to eat the contents of an entire lobster tank by himself. Ihorovitch has a lucky hand for the mob's nefarious activities. Blond and large marsupials. A likeable brute, Ihorovitch provides an open air, she drives through the countryside looking for great Mexican restaurants. An avid sportswoman, Lady Agatha has been known to pick up a few extra dollars on weekends pronouncing unsuspecting locals at the local tennis courts. She is reported to have a diamond ring the size of a small grapefruit stolen from the Royal Treasury of Graustark.

[Name: Scar Graynolt]

Occupation: Scar plays the role of a mild-mannered folk guitarist, while in reality, he is a complete plug-ugly.

Miscellaneous: Graynolt made a fortune selling reflective headbands to scandinavian basketball teams to allow them to play outdoor games for the first time during the winter months. A super athlete, Scar plays killer croquet for money. One of his prize possessions is a five-carat pinky ring he won from Thor Ihorovitch in a marathon match that lasted three days. Rarely seen in public, he rides around in a limousine with shaded windows with his trusted man-servant, a 6'8" sherpa, as his only companion. He is said to have red hair.

[Name: Katherine "Boom-Boom" Drib]

Occupation: Three-time winner of the Trans-Siberian Motorcycle race, Drib is the official hostess for V.I.L.E.

Miscellaneous: The brunette beauty - a one-time centerfold for PEOPLE Magazine's top 10 playgrounds for the rich. Fast Eddie mixes easily with the jet set and can usually be found at one of PEOPLE Magazine's top 10 playgrounds for the rich. Impeccably groomed at all times, he once fought a duel with a waiter in his favorite Mexican restaurant who spilled a drop of hot sauce on his white linen suit. His most famous crime was the theft of a damask tablecloth. Posing as a waiter, Fast Eddie removed it from the table during a state dinner for the Ambassador without spilling a drop or breaking a plate. In fact, the theft wasn't even noticed until dessert was served. This raven-haired criminal mastermind always leaves a diamond stickpin at the scene of the crime as his trademark.

[Name: Nick Brunch]

Occupation: Hard-boiled ex-private eye, ear, nose and throat.

Miscellaneous: The only things that interest Nick are fast cars and faster women. He'll never turn down a caper that permits him to live in the fast lane. An avid mountain climber, Brunch was last seen roaring through an Alpine village on his Kamikaze-1250 motorcycle. He generally wears a soiled trenchcoat, snap-brimmed fedora and sports a Dick Tracy Crimefighter's ring on his left hand. A close friend of Scar Graynolt, they share a common interest in Mexican food. Brunch has black hair, brown eyes and a seedy mustache.
WHERE IN THE USA IS CARMEN SANDIEGO?

By: Ken Bull, Gene Portwood and Laureen Elliot

MAIN DOCUMENTATION FILE

Case number: AD14-2236
Subject: Carmen Sandiego
Compiled by: Acme Detective Agency

Where in the U.S.A. is Carmen Sandiego?

And you were dreaming of palm trees and sunshine...

8 a.m., a miserable, stormy morning. After an hour-long commute in the pouring rain, you sashay into the Acme Detective Agency, grunt hello to your secretary, pour yourself a cup of scalding coffee and slump down at your desk. It's been a tough year. The only good thing about it is that you've earned a vacation and you're scheduled to leave at 5 p.m. today. You take a swig of coffee and grab a travel brochure from your desk. Visions of sandy beaches, swaying palms, and cool blue waters fill your head.

Suddenly, you're snapped back to reality by a newspaper slammed down on your head. "Read it and weep," a voice growls. Matt Brannigan, a beefy-faced lunk and one of the agency's top men, is looking down at you with a twisted grin.

You scan the headlines and your heart skips a beat. You can't believe your eyes: Carmen Sandiego has escaped from the toughest prison in Europe! "The Chief has cancelled all vacations and put everyone on 24-hour-a-day alert," your colleague says. "We've got it on good authority that Carmen's headed for the USA with the worst gang of thugs and criminals ever assembled. No one rests until she's behind bars again!"

As you slam dunk your now worthless travel brochure into the metal trash can, you can't help but wonder at Carmen's timing in re-establishing her Villain's International League of Evil (V.I.L.E.) in the United States. Why couldn't she have waited? Just a few hours more and it wouldn't have been your problem. Grimly, you gather your trench coat around you and head for the door.

"Maybe you'll get to see a bit of the country during this caper," your fellow detective offers as you head for the door. "Yeah," he chuckles, "just think of the whole thing as one big vacation - it'll make it easier."

** Ready for Duty **

- Getting Started

Insert the WHERE IN THE USA IS CARMEN SANDIEGO? disk, label side up (Side A), into the disk drive and close the drive door. Turn on your computer and monitor. The program will load into memory and begin an animated introduction. After you've watched the introduction (or any time after the disk drive light goes off), and you're ready to start the game, press any key or joystick button. During the game you will be prompted to flip the disk when necessary. (Always make sure you wait until the red disk drive light is off.)
state so you’ll know where you are and where you’re going.

The upper-left portion of the screen always gives your present location, day of the week, and the time.

Be sure to read the descriptions of the city and state that appear on the screen. These contain valuable information that may be useful in solving later cases. Hint: Take the time to jot some of this information down. You’ll be glad that you did!

Use the items on the Main Menu to help you track the villain down.

See Connections lists all possible destinations reached by connecting flights from your present location. Check these first to see where the villain might have gone — they change from game to game, so be sure to take a look even if you’ve been to the city in a previous game. When you’ve seen the connections, you can clear them from the screen by selecting Hide Connections or leave them on the screen if you prefer.

Depart by Plane lets you depart for the location of your choice once you’ve investigated and think you know where the villain has gone. An on-screen map of the United States shows your current location (black square) and the location of the connecting city that is currently highlighted (hollow circle). Once you select your destination, your travel route will be displayed.

Investigate lets you unearth clues so you can track the villain to his or her next destination. Clues are found in three locations, which change from city to city. Visit as many clue locations as you want, but remember that the more investigating you do, the more time you use. Use Fodor’s USA travel guide to help unravel the clues you turn up.

Crime Computer helps you narrow down your list of suspects and get an arrest warrant for a specific villain. To use the Crime Computer:

Select Crime Computer from the Main Menu. Then select Use Computer from the new menu that appears. In the upper-right-hand corner of the screen, you’ll see a list of characteristics. As you gather clues about the suspect, enter information in the Crime Computer in the following way:

Highlight a characteristic — hobby, for example. Then press RETURN or joystick button #0 to cycle through the possible choices until you reach the one you want. If you don’t know a characteristic, leave that space blank. When you’ve finished entering all the information you know about a suspect, select Compute. A list of all suspects who have the characteristics you’ve specified will be printed out.

When you’ve narrowed down the list to one suspect, the Crime Computer will issue an arrest warrant. Now you’re ready to make an arrest, as soon as you catch up with the villain. (If you need to change the warrant because new clues point to a different suspect, simply enter the correct characteristics in the Crime Computer and a new warrant will be issued.)

- Time Out
Even super sleuths need a break. If you want time out, you can Save a case in progress, and then Continue the same case at a later time.

To save your case, select Crime Computer from the Main Menu, then select Save Case. Follow the on-screen prompts to save your case. (Note that once you have saved your case, you cannot continue to play until you restart the game and tell the computer that you want to continue your case.)

To Continue a saved case, simply start the game as usual. After you sign in, the computer will recognize that you have saved a case and will ask you if you want to continue the case at that time. Type Y (for yes) to continue and press RETURN. You will then be whisked to the city where you left off. If you don’t want to continue your saved case, type N (for no) and press RETURN. Your saved case will be erased from the disk. Your rank and the total number of cases solved will remain unchanged. (Note: You can have only one saved case on the disk at a time.)

- Investigative Pointers
  o You know you’re on the right track when you see a suspicious person or occurrence on the screen. That’s because the real villain stays in hiding and has a crony check you out.
  o The closer you get to the villain the more dangerous your situation becomes. Beware of deadly missiles — they mean you’re closing in on your suspect and things are getting hot!
  o Don’t waste time using the Crime Computer too often or investigating for too long at each location. Use Carmen’s secret Scrapbook to pin down the villain’s identity and your Fodor’s USA travel guide to reveal the villain’s route — if you use your head you’ll advance faster than fellow detectives who do nothing but play their hunches.
  o Be sure you have an arrest warrant by the time you catch up with the villain. If you don’t have a warrant, you can’t make an arrest and the thief will slip through your fingers. And make sure your warrant is for the correct suspect — otherwise you could be in hot water with the Chief for risking a charge of false arrest!
  o Every case you’re assigned is different. When you begin a new assignment, you’ll start a new city, look for a new stolen treasure, and follow a new suspect over a new route with new clues.
  o As you advance through the ranks, you’ll get assigned to tougher cases, with more difficult clues to unravel and a longer trail to follow.
  o If you reach the top of the ranks and have earned all the Special Commendations you can before mandatory retirement, you can always get back in action by using an assumed name when you sign in. This is a smart move. After all, your real name may be on Carmen’s hit list!
- Carmen’s Scrapbook — Your Own Stolen Treasure
  Lucky for you, the Acme Detective Agency has managed to purloin Carmen’s own secret Scrapbook. In it, Carmen has collected mementos and information about every member of her gang. You can use this information to identify the V.I.L.E. villain you’re looking for in your current case. For example, if Carmen notes that one of her henchman’s (or henchwoman’s) favorite snacks is tacos, you’ll know that the villain’s food preference is Tex/Mex (a category in the Crime Computer). Clues about Carmen are found in the Scrapbook, too. But like Carmen herself, these clues are elusive. You’ll have to use all your detecting skills as you sift through the Scrapbook trying to identify this arch-villain’s interests, hobbies, etc.

- A Final Hint
Don’t hesitate to use other reference books you may have on hand. The biographical and geographical sections of a dictionary may be helpful, as well as an encyclopedia, a map, or an Almanac. Use whatever you can to help unravel the clues, save time, catch the crooks, and earn those promotions!

Remember
We’re counting on you!
- The Chief!

Written by: Ring Lord 10/27/86

== TOP GUN ==
WHERE IN THE USA IS CARMEN SANDIEGO?

By: Ken Bull, Gene Portwood and Laureen Elliot

SCRAPBOOK

Transferrable : Ring Lord and
Version by : The Talisman
Special Thanx : The Hitman
Supplied by : Professor Prom
The Dark Hold
The Shrink
Mind Mechanic
Documentation : Ring Lord
A == TOP GUN == release 10-27-86

NOTE: Getting this cost us two of our best operatives! (Carmen hired both of them!!).

Watch your step!

The Chief

Sven Galli: What a find! It's hard to believe we met when Sven was leaving a Stones concert and tried to steal MY purse. Now he's one of the vilest of the V.I.L.E.

Vital Statistics:
Height - 5'10"
Weight - 150 lbs
Hair - Red
Sign - Taurus
Hobby - Hockey

Pancho's Villa
Nouvelle Tex-Mex cousin
Souvenir of our first tete-a-tete
(He read my fortune in the refried beans)

Gypsy Rose Lasagna: Here's Gypsy too busy reading palms to eat her favorite food, tacos, so I'm doing it for her. Yum!!

Met Gypsy at her combination tea room/used hub cap shop in East Plainsville. Walls were covered with her priceless collection of stolen rock and roll posters.

Taboo subject: Never mention that blondes have more fun

Favorite gem: Onyx (to match her hair)

Gypsy sold hubcaps to everyone on her favorite team.

B.B.D. O'Brien: What a gal! Always willing to share her advertising knowledge with a co-worker. When I recruited her she was selling hot copies of Choplifter on a street corner in San Rafael.

Special talents:
Plays accordion. Moonlight Sonata, her favorite piece. Great sandlot pitcher. Her dream is to explore Sinbad's cave.

FISHERMANS GROTTO #6 7/8*
Restaurant
We had lunch here after B.B.D.'s first job for us. She confessed she hated her brown hair and was thinking of dyeing it peacock blue.

Sheriff Paul Drive: Here's Paul entertaining his fellow workers down at the big supply depot. They're sure thrilled.

Met the big Blond hunk on his way to a Crayfish Feed.

PHILLIES
A memento from Paul's Collection. His big dream is to see himself on one of these!

Good at truck driving. Can do wheelies with his forklift!

Name: "Sheriff" Paul Drive
Occupation: Drug-store cowboy (unemployed)
Favorite movie: Godzilla at the OK Corral
Last book read: The Joy of Changing Your Oil Filter

Ken Hartley Reed: Ken dining in style on fish sticks on the patio of his favorite restaurant, L'Olister Verde. I've been trying to convince him to put a streak in that moussy brown hair of his, but no luck so far.

Achievements:
1) Stole trophy from star forward after losing in a game of one-on-one.
2) Won fifth-grade spelling bee. Winning word: spelunking.

Talents:
1) Can play Beethoven's Fifth backward on his harmonica!

Titus Canby: We planned the Statue of Liberty heist between the first and second movements. Made Titus promise to wear a wig to hide his red hair.

Name: Titus Canby
Occupation: Lobsterman, safe cracker, thug
Favorite Movie: Plan 9 from Outer Space
Last book read: The Carlsbad Caverns Diet
Favorite drink: Clam Juice
Favorite team: San Francisco 49'ers

Mylar Naugahyde: This was taken at the Street Merchant's Institute for Advanced Studies where Myler is on the faculty.

Real name: Mylar Naugahyde
Alias: Kard Shark
Alias: Phantom of the Opera
Favorite sayings:
Blonds have more fun.
Pass the grits.
Wanna bet?

Brenda and Cobina Vanderbelt: Double trouble! Off to the big game and a day of fun, fun, fun for the dynamic duo.

How to tell them apart:
1. Brenda has an extra tooth.
2. Cobina stirs her coffee with a teaspoon; Brenda uses a tablespoon.
3. Brenda’s hair color is Bleeding Heart #5; Cobina’s is Fire Engine.

Gloss:

Bio:

Special Talents:
- Lip reading
- Karate
- Cave crawling
- Dancing the tango
- Cooking terrific gumbo

Karl La Fong: Mud peddler extraordinaire! Karl’s 1,000th sale at Fragrant Pines Marina and Ski Lodge Estates. What a guy. (He looks much better since he dyed his hair black.)

Page from Kar’s datebook. Picked this up from the floor of the Tacoteria. Need to warn Karl. Stuff like this could be used for blackmail.

8:00 Meet Carmen for breakfast at Casa Blana for huevos rancheros
10:00 Palm reading at Madam Lasagna’s
12:45 Get V.H. Pencil to change oil in car
7:00 Tape the Chicago Bears game!!
8:30 Wendy Pauper concert

Brenda’s hair color is Bleeding Heart #5; Cobina’s is Fire Engine. Best used to distract a crowd. Also good playing goalie.

Bio:

Former word processor.
Sang lead in “Barber of Seville”
Co-authored “The Scarlett O’Hara Cookbook”
Wrote article on why blondes have more fun

| Expenses from the Pencil’s last caper. Have to talk to her about these! |
|-----------------------------|---------------------------|
| Lost to M. Naugahyde (Poker) | $500.00                   |
| Bookstore Purchase          | $15.95                    |
| “Repairing your Borgward”   | $35.00                    |
| Tires Chic Beauty Salon     |                           |

Wendy Pauper: Half-time madness! Wendy and the lead guitarist from Reeking Sewage tear things up at the stadium.

Great addition to the team! Recruited her 8/15 from a club on the outskirts of Cleveland. Cooks great chicken creole.

She never misses a Miami Dolphins game! (The team even gave her own helmet.) Tood bad it’ll cover her gorgeous red hair . . .

Lost again in the lottery! Next time we pull a job in Vegas, I’m going to show her the ropes.

Alexander Graham Edison: Alexander engaged in his (and my) favorite sport (basketball).

From the Kitchen of Heidi Gosikh

Southern Fried Chicken Mysterioso
1) Steal one medium size chicken for each four guests...
2) Pluck
(over)

Hobbies:
- Needlepointing scene of famous disasters
- Playing old Caruso records
- Designing tarot cards

Heidi Gosikh: My favorite blonde. This was taken the day she went to the Waylon Jennings show. She was so excited.

Benjamin Hana: The chef picks his menu for tomorrow with a little help from a “friend”. (Just horsing around, of course.)

Jet black hair (just like mine!), impish grin, cute little ears, and cooks a terrific shrimp creole. So glad we met when we did.

Strengths: Genius with an oil can and wrench. No troubles with your getaway car when tuned by this lady.
Weaknesses: Don’t plan a job when a hockey game’s on the tube. Better yet, don’t even call.

Venus H. Pencil: Taken on her last day on the job. Oh well, word processing’s loss is crime’s gain. She’ll have to take out her aggressions on the sink now. (She’s one terrific goalie).

Written 10/27/86 by Ring Lord
CATSEND 202
WRITTEN BY THE WOMBAT & THE GONIF
-- -- -- -- --
-DOCUMENTATION BY THE GONIF-
DISTRIBUTED
BY:
THE SAFEHOUSE
[612]724-7066

CATSEND 202 IS A FILE TRANSFER PROGRAM WRITTEN FOR THE APPLE CAT MODEM. WHAT DISTINGUISHES IT FROM OTHER, SIMILAR PROGRAMS IS THAT IT OPERATES AT 1200 BAUD HALF-DUPLEX, COMMONLY KNOWN AS '202'. ALTHOUGH CATSEND WAS DESIGNED WITH EASE-OF-USE IN MIND, SOME DOCUMENTATION IS NECESSARY TO UNDERSTAND FULLY HOW TO USE IT.

WHEN YOU FIRST RUN CATSEND, YOU WILL BE PRESENTED WITH A MENU SIMILAR TO THE ONE BELOW:

----------------------------------------
CATSEND 202
WRITTEN BY THE WOMBAT & THE GONIF
----------------------------------------

-MAIN MENU-

[S]END FILES
[R]ECEIVE FILES
[C]ATALOG DISK
[F]ORMAT DISK
[T]OGGLE DRIVE      ->1
[P]ICKUP HANDSET
[H]ANGUP HANDSET
[A]DD A FILE
[N]EW SLOT FOR CAT ->2
[Z]ERO ALL FILES
[V]IEW SELECTED FILES

-- -- -- -- --

I WILL NOW GO THROUGH EACH OPTION, EXPLAINING WHAT EACH DOES AND HOW TO USE IT PROPERLY.

[S]END FILES: WHEN SELECTED, THIS WILL PROMPT YOU TO 'PRESS A KEY TO CONTINUE...'. IF YOU PRESS <ESC>, YOU WILL BE RETURNED TO THE MAIN MENU WITH ALL SELECTED FILES INTACT. OTHERWISE, THE SENDING PROCESS WILL BEGIN. IF NO FILES HAVE BEEN SELECTED, HOWEVER, YOU WILL BE NOTIFIED OF THIS AND WILL BE RETURNED TO THE MAIN MENU. AFTER THE FILE TRANSFER IS COMPLETE, CATSEND WILL SOUND A PAGER 3 TIMES ON BOTH THE SENDING AND RECEIVING SIDE TO ALERT BOTH PARTIES THAT IT IS DONE. THE CARRIER WILL TURN OFF AND THE HANDSET WILL GO OFF-HOOK TO PRESERVE THE LINE, AND YOU WILL BE RETURNED TO THE MAIN MENU.

[R]ECEIVE FILES: WHEN 'R' IS TYPED FROM THE MAIN MENU, YOU WILL BE PROMPTED TO 'PRESS A KEY TO CONTINUE...'. ONCE AGAIN, YOU MAY PRESS <ESC> TO ABORT AND RETURN TO THE MAIN MENU. OTHERWISE, CATSEND WILL GO INTO RECEIVE MODE, AND WILL WAIT UNTIL A HANDSHAKE IS RECEIVED. NEXT, CATSEND WILL RECEIVE THE FILE NAME, NUMBER OF BLOCKS, AND FINALLY THE PROGRAM ITSELF. AFTER ALL THE FILES HAVE BEEN RECEIVED, THE PAGER WILL SOUND, THE CARRIER WILL TURN OFF, THE HANDSET WILL PICK UP, AND YOU WILL BE RETURNED TO THE MAIN MENU JUST AS IN [S]END MODE.

[C]ATALOG DISK: THIS WILL CATALOG WHATEVER DRIVE IS CURRENTLY 'ON'. THE FIRST FEW FILES WILL BE DISPLAYED, THEN IT WILL WAIT FOR A KEYPRESS. PRESSING <RETURN> HERE WILL TERMINATE THE CATALOG, WHILE ANY
OTHER KEY WILL CONTINUE IT.

[F]ORMAT DISK: THIS WILL FORMAT THE DISK IN WHATEVER DRIVE IS CURRENTLY 'ON'. IT WILL FREE UP TRACKS 1-2, AND WILL INSTALL A 'THIS DISK HAS NO DOS' MESSAGE ON TRACK 0, SECTOR 0.

[T]OOGLE DRIVE: THIS DECIDES WHICH DRIVE IS 'ON', AND TOGGLES BETWEEN DRIVES ONE AND TWO. BE CERTAIN THAT YOU DO NOT TRY TO SELECT FILES FROM ONE DISK, AND THEN [T]OOGLE DRIVE AND CHOOSE FILES FROM THE OTHER DISK!!!


[H]ANGUP HANDSET: HANGS UP THE LINE AND TURNS OFF THE HANDSET HOLDING THE CTRL KEY AND HITTING A DIR. ATTACKS IN THAT COMPLETELY.


[V]IEW SELECTED FILES: THIS DISPLAYS THE FILES YOU HAVE CHOSEN ALREADY.

-- -- -- -- --

DOS ERRORS: IF AN ERROR OCCURS WHILE A DOS COMMAND IS BEING EXECUTED, AN ALERT WILL SOUND AND THE DOS ERROR NUMBER WILL BE DISPLAYED. LOOK AT ANY DOS MANUAL TO FIND OUT WHAT ERROR THE NUMBER REPRESENTS.

-- -- -- -- --

DURING THE TRANSFER: WHILE SENDING OR RECEIVING FILES, YOU MAY LOOK AT EITHER THE [T]EXT OR [G]RAPHICS SCREEN. SIMPLY TYPE 'T' FOR TEXT OR 'G' FOR GRAPHICS, AND AFTER CATSEND HAS FINISHED SENDING/RECEIVING THE CURRENT BLOCK, IT WILL FLIP THE DISPLAY TO THE PROPER SCREEN. AFTER CATSEND READS/WRITES ONE PASS, AND GOES ON TO THE NEXT, IT WILL FLIP TO THE TEXT SCREEN TO LET YOU SEE HOW IT'S DOING.

-- -- -- -- --

AND THAT'S IT! WE HOPE YOU ENJOY USING CATSEND 202, AND THAT YOU FIND IT USEFUL. IF YOU HAVE ANY IDEAS CONCERNING LATER REVISIONS OF CATSEND, PLEASE CONTACT EITHER THE WOMBAT OR THE GONIF VIA THE ADVENTURER'S TAVERN: (714) 538-3103. HAVE FUN!!
Congratulations! You are now about to become a Computer Bulletin Board System (CBBS) Operator. As System Operator (SYSOP), you will be responsible for maintaining a useful and informative service for your club, organization, your friends, or the general public.

This program is called an Apple Bulletin Board System (ABBS), since it is a CBBS that runs on an Apple II. As to hardware, you will need:

An Apple II+ computer (or an Apple II with AppleSoft on a ROMCARD or on a 16K Card).

Two standard Apple (or compatible) 5 1/4" disk drives running under DOS 3.3.

A D.C. Hayes Micromodem II in slot 3 (you may move it to slot 2 after making certain changes in the program).

The two disks containing this file, the WAPABBS program and sample files ready for your own adaptation;

A viewing device such as a monitor, CRT, or TV set that will allow you to see what the ABBS is doing.

A text editor for the addition, deletion and maintenance of the text files that the ABBS uses. The DOS Tool Kit, sold by Apple Computer, is adequate for your needs; a word processing program that uses text files will probably also work. Many Apple users' groups have excellent text editors in their program libraries;

A Mountain Hardware CPS Multifunction Card in slot 4 (this is optional -- the ABBS will work without the clock card, but you must change the date manually);

A printer to print out listings and preserve a record of messages (this is optional also. In order to run an ABBS effectively, you will need to know BASIC reasonably well. It would not hurt to know some assembly language. You should either know or acquire the knowledge of some other kind of modem. You should have the Apple and Micromodem II manuals; try also to obtain a copy of manuals for the Novation Apple Cat II and the D.C. Hayes Smartmodem because people with these popular modems will probably ask you how to use the ABBS with them."

This program is copyright (1982) by Thomas S. Warrick. Sale of these programs for any price more than a nominal amount in excess of the value of the media is prohibited. The program is protected by copyright law and international treaties. All rights reserved.

The files on these disks:

THE FILES ON THESE DISKS:

The files on these disks are designed to run in specific disk drives. In drive 1 should be the disk with these files:

ABBS -- This is the ABBS program. Disk 1 will run this program on boot-up if your system suffers a temporary power outage the system will restart itself. A viewing device such as a monitor, CRT, or TV set that will allow you to see what the ABBS is doing.

A Mountain Hardware CPS Multifunction Card in slot 4 (this is optional -- the ABBS will work without the clock card, but you must change the date manually);

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This program is copyright (1982) by Thomas S. Warrick. Sale of these programs for any price more than a nominal amount in excess of the value of the media is prohibited. The program is protected by copyright law and international treaties. All rights reserved.
INSTRUCTIONS  --  This sequential text file gives instructions in the use of the
ABBS to your new users.  You should read these carefully.  This file also ends with a
null line.  Insert your name in the file where appropriate.

This Applesoft program should be run every time you add or delete an entry to or from the USERS file.  It looks at each record in the file and builds the USERS.OBJ file according to whether a particular userid is listed in the USERS file.  BUILD USERS.OBJ then runs WAPABBS to reinitiate the system.

TO SYSOP  --  This sequential text file stores messages left to you by up to 9
people who do not have passwords.  The first entry in the file is a one-digit number
of the number of messages in the file.  The text of the messages follows.  This file
may be retrieved only by you.

UPLOAD1  --  This sequential text file gives the instructions for uploading and
downloading from the ABBS.  "UPLOAD" means sending files from the ABBS to
another computer.

UPLOAD2  --  This sequential text file contains a list of files available for uploading.
A null line terminates the listing; this is necessary so that uploads will
wait properly.

OPINION  --  This sequential text file has as its first record a question to which
everyone can respond.  Answers are stored right after the question.  Only you can see
the answers, however.  No check is made to see whether someone has answered more than
once.

REMEMBER II  --  This text file is available for downloading.  You should EXEC it
with MEM II, effect, and SAVE it as it says.  This is may say, an excellent
terminal program for the Micromodem II.  Non-commercial distribution is permitted,
and this program may not be sold without express permission of Washington Apple Pi.

REM II INSTRUCTIONS  --  This text file contains the instructions for REMEMBER II.
You should EXEC it in the same manner to create a file called REM II.OBJ1, which
REMEMBER II will access when you request instructions in its use.

ABBS1.OBJ0 handles I/O for WAPABBS.  The I/O routines are activated by a "CALL
37888" in line 32 of WAPABBS.  This routine changes the CSW/KSW vectors ($36-$39)
to the ABBS's I/O routines, sets the "+" vector ($3F-$3F), and jumps to the DOS
routine that reconnects DOS's I/O hooks.

The Output routine, which begins at $9420, first does a test to see if the
character being output is lowercase.  If so, the character is EOR'd against LOCS.
If lowercase-to-uppercase conversion is on, LOCSE is set to $20; if off, it is
unset. Following this, the accumulator (hereafter referred to as "A") and the X and Y
registers are restored, and the character is loaded into the accumulator, printed
on the ABBS's computer's monitor in uppercase form.

If the character is lowercase and lowercase is not allowed by the ABBS, it is
converted to uppercase.  The most significant bit of a lowercase character must
be erased characters.

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be erased characters.

If the character is lowercase and lowercase is not allowed by the ABBS, it is
converted to uppercase.  The most significant bit of a lowercase character must
be erased characters.
The ABBS next checks to see if a ctrl-C or a ctrl-K is permitted. If so, and if the character is a ctrl-C or a ctrl-K, it is treated in the same manner as ctrl-C or ctrl-K were by the output routine. LINEFEED (ctrl-J) turns on LF1 (see the Micromodem manual) which will send linefeeds after each carriage return. This affects modem output, not screen output. A ctrl-X acts exactly as ctrl-X does on regular Apple input; it cancels the input line and asks for another one. X and CLL are returned to the left margin, i.e., zero. Ctrl-L toggles LCCS8, which allows lowercase input. Ctrl-L has the function of a shift-lock key.

The short routines that follow handle the ignore-this-character routine and the cursor.

The next group of routines handle the ampersand ("&"). These routines manipulate the message summary strings, which begin at $5800. These strings would require more than 1K of overhead if handled as traditional Applesoft strings.

1. Assign a string to the message summary array:
   & A J,K
   where A means "assign", J is the message number, K is which part of the message summary the string is to be stored (0=the user the message is from, 1=the user the message is to, 2=the date, and 3=the summary of the text of the message), and A is the string to move into the message summary array.

2. Print a string:
   P J,K
   where P means "print", and J and K have the same meaning as above.

3. Assign one of the elements of the array to B$:
   B J,K
   where B means "LET B$ = ", and J and K have the same meaning as in string assignment. Note that only the variable B$ can be used in this manner. Furthermore, B$ must already have been set equal to something by an earlier program line or direct command such as: B$ = "HELLO"

4. Test an element of the message summary array:
   T J,K,A$ L
   where T means "test", and J and K have their usual meaning, A$ refers to the string being tested against the message summary item, and L is the variable used to store the result. The result will be:
   1 if message summary item > A$
   0 if message summary item = A$
   -1 if message summary item < A$

II. THE PAGE 3 ROUTINES

ABBS3.OBJ0 has three routines. The first, called INLIN, is a revision of the well-known "Input Anything" routine. This modification, however, uses this syntax:

CALL INLIN [,X]

where INLIN=768 and X is the maximum allowable line length (LINEMAX). If X is not specified, the previous maximum line length is used. X must be between 0 and 255; note that if X>249, both you and the user will hear beeps after the entry of the 249th through 255th character. In order for INLIN to work, the first variable in the main Applesoft program must be a character string; ABBS uses A$. The routine accepts commas, colons, and quotation marks; only a return will terminate input. The routine ends by setting A$ equal to what was just entered, but A$ is still in the input buffer and will be written over by the next input request or by the next DOS command. To save the string, you must use the command: A$ = NMB2D (A$,L)

Note that a simple assignment statement such as B$ = A$ will not work.

The next routine does an index function:

CALL 804,A$ B,J

This looks for the first character of A$ in the string B$, and returns with J equal to the relative position of the first occurrence of the character. So if A$=0"HELLO" and B$=\"ABCDEF\"GHHH\", J would become 8. If "H" did not occur in B$, J would be set to 0.

The third routine looks up the userid number and calculates the record number in the USERS sequential text file. Its syntax is:

CALL 892,J

where J is the userid number. J is returned as the record number. For example, if user WAP538 calls in, J would be set by a WAPABBS routine to 538. This routine would go through the USERS.OBJ file in memory and would calculate how many userid numbers between 1 and 538 were "active." The result would be the record number of user 538's password entry in the USERS file. If user 538 were not on the system, J would become 0. Note that this routine is used in the signon process and in the W and Y commands.

III. VARIABLES USED IN WAPABBS

A$ must be the first variable used in the program in order for the machine language routine at $300 to work. A$ is the workhorse string variable; all string input passes through A$. Note that if A$ has been set by the routine at $300, for so long as A$ is not assigned to another variable, A$ will not take up regular memory space and will not create "garbage."

ACTIVE is a flag used to tell the I/O routines whether the SYSOP, a user, or no one is currently using the ABBS. See above for a further description of the values ACTIVE can have.

AC$ [Allowable Commands] is a list of the letters of allowable commands. CALL 804 uses this to compute the index value of the response to the "COMMAND?" prompt for use by the ON J GOTO in line 1101. The CALL 804 routine requires that AC$ be a variable.

AL$ is "ALL ", and is used by the message handling routines to prevent errors that would occur if a user entered "ALL", which is only 3 characters long, instead of the 6-character response that the ABBS expected.

B$ is the secondary variable string. It is used by the "*" message summary routines and for other general purposes.

BDS [Bulletin Date] is a 4-character string that tells users when the bulletin was most recently updated.

B(6) is an array used by the sorting routine that organizes the messages into date order.

CRDLY is the delay (in 0.1 seconds) sent after each carriage return if the user has specified linefeed insertion. This is the standard Micromodem delay. Note that setting this to 0 is equivalent to specifying a delay of 2.56 seconds.

D$ is ctrl-D.

D15 [Datel] is "> " and is used to create a date value higher than any valid date. In this way, WAPABBS will sort the messages in proper date order.

DA$ [Date] is the current date as specified in the STARTUP file or by the clock.

DA(1) is the number of the second oldest, etc.

DR [Drive] is a location within DOS 3.3 that, when poked with 1 or 2, will tell whether what should have been a file name has a comma. CRDLY is the delay (in 0.1 seconds) sent after each carriage return if the user has specified linefeed insertion. This is the standard Micromodem delay. Note that setting this to 0 is equivalent to specifying a delay of 2.56 seconds.

D$ is ctrl-D.

D15 [Datel] is "> " and is used to create a date value higher than any valid date. In this way, WAPABBS will sort the messages in proper date order.

DA$ [Date] is the current date as specified in the STARTUP file or by the clock.

DA(1) is the number of the second oldest, etc.

DR [Drive] is a location within DOS 3.3 that, when poked with 1 or 2, will access that disk drive for the next DOS command without requiring ",D1" or ",D2".

E$ contains "E" and is used by CALL 804 to check that a number entered was not in exponential notation.

EMS [Empty] contains "EMPTY ", and is used to erase the "From" value in message summaries and on disk.
Apple II Computer Info

M$(13) is used to enter and edit messages. M$(0) has the userid of the sender of the message, M$(1) has the userid of the recipient, M$(2) has the date the message was entered, M$(3) has the message summary, and M$(4)-M$(13) store the lines of the text of the message.

NMS is ctrl-D + "NOMON C,I,O". See M1$ for an explanation of why this is necessary.

R [Record number] is used by the random-access file routines to select the message number to be read or written.

S1$ [Sysop] has the SYSOP's userid in 4-digit numeric form. If the SYSOP's number were WAP001, for example, S1$ should be set to "0001". This is necessary to keep the "Y" routine from printing the SYSOP's password.

SL [Slot] contains the Micromodem's slot number.

SO [SignOns] contains the number of users who have successfully signed on. If someone signs on more than once, they are counted more than once.

SYS [SYSOP] contains the userid of the SYSOP. Observe when going through the program listing that the SYSOP can do many things forbidden to others.

T1$ [T user 1] is the userid of a person who is able to change the date if you are unable to do so.

T2$ [T user 2] is the userid of the person who can change the date and print the password file. If you have no one to whom you want to allow access to the date or password file, set these to your own userid to prevent anyone from having this much access.

U$ [Userid] is the userid of the user currently on the ABBS. In case you have not guessed, a userid is a 6-character string with a 2 or 3 letter prefix and a numeric suffix in the range 1-4095.

Z is a general-purpose numeric variable.
The Code Crusher is very similar to the Prefix Prowler in operation. If you haven't read the doc file on the Prowler, press [ESC] and do it now.

The wad of boring configuration questions is basically the same as in the Prowler, with the addition of "NUMBER OF DIGITS IN CODE", "STARTING CODE", "ENDING CODE", and "ENTER A NUMBER KNOWN TO EMIT A CARRIER". The first 3 are just...just...just so incredibly obvious that they should be on street signs. The final question requests a test number to call to check a code's validity. Enter a number (including area code) of a BBS or other computer system which is seldom busy.

Notice that there is no Random Dialing option on the Code Crusher. It was omitted for various dull reasons.

The runtime commands are the same as those in the Prowler, but here they are again anyway, since I happen to have them in the word processor.

**RUNTIME COMMANDS:**

Anywhere during dialing at the ? prompt you can enter one of the following commands, followed by [RETURN]. Notice that they must be entered ALONE after the ? input prompt.

**N:** Skip to the next code.

**R:** Redial current code (useful if your modem lacks automatic busy signal redialing)

**Q:** Quit and save datafile (if one is used)

**G:** Pop up Graphics Page 2. Useful if mommy walks in to see if you are learning anything on your expensive toy.

**T:** Text screen (use to get back to the text display after the 'G' command)

**I:** Signal the Crusher that the current code has worked and flag it as a successful connect.

Keep your nose peeled for phigs.

Phreak out, phreak out and touch someone. automatically

--------------------

INTRODUCTION

Certificate Maker provides more than 200 professionally designed, partially-completed certificates, called templates for you to use in making certificates for any occasion. Some templates are intended for specific occasions such as academic achievement, sporting triumphs and so on; these include a title and appropriate artwork. Other templates are multi-purpose; they haven't artwork and only a partial title like: CERTIFICATE OF....

To make a certificate, all you have to do is select the template you want, (a complete list of the template numbers and what they contain will be found later on in these docs) choose a border and type style, and fill in the blanks with the recipient's name and achievement.

For these occasions when you want to present personalized certificates to several people, Certificate Maker has a feature called the "NAME" WILDCARD that lets you insert names into otherwise identical certificates.

The information you enter is added to a template when you print the certificate. The templates themselves remain intact and can be used over and over.

THE ELEMENTS OF A CERTIFICATE

Basically there are 4 parts to a certificate:

> **TITLE:** Some templates include a complete title such as MATHEMATICS AWARD or MOST VALUABLE MEMBER, while other templates provide a partial title like CERTIFICATE OF....., or a completely blank title area.

> **GRAPHICS:** Many templates include an illustration to spice up the certificate, the professional, or humorous, touch.

> **BORDER:** There are 24 designs to choose from. Samples of each border appear on a special Border menu in the program.

> **TEXT:** Every template provides space where you can type in specific information about an award. Most templates also include a line for the...
Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 202 of 1262

**Date** and your signature. Certificate Maker has five font styles and two font sizes from which you may choose. Entering the special code *NAME* in your text instructs CM to print the same certificate several times, with a different name on each copy.

A separate procedure allows you to create "name" files containing the names of the people in your office, classroom, or organization. Just before you print a certificate that has the *NAME* wildcard in it, the program asks you to choose the names you want to use.

**HOW TO MAKE A CERTIFICATE:**

Listed below are the 12 steps necessary for making a certificate. Each step is described in detail after this list.

1. Select MAKE CERTIFICATE from the Main Menu.
2. Enter the template number.
3. Select the border of your choice.
4. If the certificate is blank, then select the Title Font Style. (If the certificate is not blank, but is partial, then it will skip this step).
5. If the certificate is partial, then enter the Title Text.
6. Select the Body Font Style.
7. Enter the Body Text.
8. Enter the Date Line.
9. Enter the Signature Line.
10. Select *NAME* file to use. (This step is taken only if you used a wild- card *NAME* in step #7)
11. Select names to print from the *NAME* file you selected in step #10.
12. PRINT MENU - Print the certificate.

----------

**USING THE KEYBOARD**

The following table shows the keys used in Certificate Maker.

<table>
<thead>
<tr>
<th>Function</th>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[return]</td>
<td>Use [return] to select an item from a menu or a list of options.</td>
<td></td>
</tr>
<tr>
<td>[esc]</td>
<td>Use [esc] to cancel your work on one screen and return to the previous screen. When entering text, use [esc] to delete the text on the current line and move the cursor back to the previous line.</td>
<td></td>
</tr>
<tr>
<td>[control-R]</td>
<td>Use [control-R] (hold down [control] and press R simultaneously) at any time to cancel your work and return to the Main Menu. From there, you can start over or exit from Certificate Maker.</td>
<td></td>
</tr>
<tr>
<td>---&lt;--- / \ / ---&lt;---</td>
<td>Apple IIe/c: Use the up and down arrow keys to move from one item to another in a menu or a list of options. Apple II+: Use for up and for down.</td>
<td></td>
</tr>
<tr>
<td>[backarrow]</td>
<td>Use the backarrow or delete key to erase characters to the left of the cursor.</td>
<td></td>
</tr>
<tr>
<td>[delete]</td>
<td>Use [delete] to delete the text on the current line.</td>
<td></td>
</tr>
</tbody>
</table>

**SETTING UP AND RUNNING C.M.**

**BEFORE YOU START:**

If you plan to use the *NAME* wildcard feature, initialize a floppy disk for *NAME* file storage. Use ProDOS to initialize your disk.

*NAME* files must be stored on a separate floppy disk. They cannot be kept on the Certificate Maker Master Program disk or the Certificate Catalog disks. A single floppy disk can hold all your *NAME* files.

**TO START CERTIFICATE MAKER:**

Insert the Master Program disk in drive 1 and turn on your computer. If you have two disk drives, insert the Certificate Catalog disk in drive 2.

**TO EXIT FROM CERTIFICATE MAKER:**

1. Return to the Main Menu by pressing [Ctrl-R].
2. Select the Exit Program option (if you want to run another software application), or turn off your computer.

**HOW TO MAKE A CERTIFICATE:**

Listed below are the 12 steps necessary for making a certificate. Each step is described in detail after this list.

1. Select MAKE CERTIFICATE from the Main Menu.
2. Enter the template number.
3. Select the border of your choice.
4. If the certificate is blank, then select the Title Font Style. (If the certificate is not blank, but is partial, then it will skip this step).
5. If the certificate is partial, then enter the Title Text.
6. Select the Body Font Style.
7. Enter the Body Text.
8. Enter the Date Line.
9. Enter the Signature Line.
10. Select *NAME* file to use. (This step is taken only if you used a wild-card *NAME* in step #7).
11. Select names to print from the *NAME* file you selected in step #10.
12. PRINT MENU - Print the certificate.

**MAIN MENU**

Select MAKE CERTIFICATE if you want to create a certificate.

Select *NAME* FILE if you want to create or edit a list of names. A *NAME* file list can be merged into a certificate to produce several personalized copies of the same certificate. The program goes to Screen A, Select *NAME* file option (described in more detail later).

NOTE: This option is used to add or delete names from a *NAME* file, not to select the names to be printed on any given certificate. Actual name selection is done in the Make Certificate procedure.

Select EXIT PROGRAM to leave CM and return to ProDOS.

No matter where you are in CM, you can press [Ctrl-R] to Return to this menu.

**ENTER TEMPLATE NUMBER**

Enter the number of the certificate template you want to create.

Templates 1 - 39 are on Disk 1, Side B.

Templates 40 - 127 are on Disk 2, Side A.

Templates 128 - 220 are on Disk 2, Side B.

Illustrations of the certificates appear in the back of the original manual. There is no way to see the certificates before you print them.
unless you have the original docs that come with the program when you buy it. So I would hope that some bright, young, *hacker* out there in the pirate community would make a small program that could read in and display the different certificate graphics contained on these disks to the apple hi-res screen.

SELECT THE BORDER

---------------------
You should be able to figure this out for yourself! Just move the cursor to the border of your choice. The NEW DISK option is reserved for future additions to CM.

SELECT THE FONT STYLE

---------------------
Select the font style you want for the certificate title. This screen only appears if the certificate has space for you to enter a title AND if that area is completely blank. (Examples: Certificate 218 and 219)

If there is space for you to enter a title, but the title area already has some text, such as CERTIFICATE OF... or THE WORLDS BEST..., then the title font style is chosen by the program to match the text already in place.

As you scroll through the list of five font names, you can see a sample of each font at the bottom of the screen. The fonts are:

- SERIF
- SAN SERIF
- SCRIPT
- GOTHIC
- ART DECO

The font style appears only on the printed certificate, not on the screen while you are entering the title.

The NEW DISK option is reserved for future CM additions.

ENTER THE TITLE TEXT

---------------------
Enter a title for your certificate. This screen only appears for those certificates that have space set aside for you to enter a title.

You may press [Ctrl-S] to toggle the FONT SIZE between small and medium. The cursor will change size to show the selected size. If you enter some text on a line and then press [Ctrl-S], the size of the text on that line will change. All the text on any given line must be the same size, but you can change the size from one line to the next.

The NUMBER OF LINES ON THE SCREEN indicates how many lines of text you may enter for the title. The number may change depending on the font size you select. These lines do not appear on the printed certificate.

As you type, the TITLE IS CENTERED on each line.

Note for MULTIPLE-LINE TITLES: While word wrap does work, you may also press [return] to move the cursor from one line to the next.

Pressing [return] on the last line ENDS THE TITLE ENTRY.

SELECT THE BODY FONT STYLE

---------------------
Select the font style you want for the body of the certificate. You can see the samples of the different styles at the bottom of the screen. The fonts are:

- SERIF
- SAN SERIF
- SCRIPT
- GOTHIC
- ART DECO

The font you choose for the body of the text will also be used for the date text.

You may choose any of the 5 fonts, regardless of the font used for the certificate title. Usually, a certificate looks best when you use the same font for both the title and the body text.

Once again, the NEW DISK option is for future CM additions.

ENTER THE BODY TEXT

---------------------
This is basically the same as entering the text for the title except that you are entering it for the body of the certificate.

The text is centered on each line.

To make typing corrections, use the [backarrow] and [delete] keys. To delete an entire line of text, press [esc].

Pressing [return] on the last line ends the text entry.

TO PERSONALIZE SEVERAL COPIES OF THE CERTIFICATE:

Type *NAME* all by itself on the line where you want each name to appear. Don't put any other text on the line that has the "NAME" wildcard. Just before you print the certificate, the program will ask you what *NAME* file and which names from that file that you want to use. (Creating name files will be explained later in these docs)

ENTER THE DATE LINE

---------------------
Enter the date text you want to appear on the certificate.

Entering a date is optional. You may decide to leave the date area blank, or you may enter some text other than a date. The line and the word "date" that you see on the template, do not appear on the printed certificate.

Because of the amount of space available, not all certificates have enough room to spell out an entire date such as "September 23, 1987." The amount of space allowed for the date is indicated by the length of the line on the screen.

The font style for the date text is the same as what you chose for the certificate text. The font size is small and cannot be changed.
The format of each certificate (horizontal, vertical, or small) cannot be changed.

If your text has a "NAME" wildcard, the program will print one cert. for each name you specified in the SELECT NAMES section. If the "NAME" cert. are horizontal or vertical, the program will advance the printer to the top-of-form after each cert. is printed. If the "NAME" certificates are the small format, the program will print them two to a page.

NOTE: The program will print about one-third of the certificate at a time, then pause for a few moments before continuing. DON'T worry when your printer stops before printing the entire certificate!

When the printing is done, the program returns to the Print Menu. This gives you a chance to print the certificate again. If you want to print the cert. again but accidentally select Main Menu, you can get back to the Print Menu by pressing [esc] from the Main Menu.

Select PRINT TEST if you want to find out where on the paper the certificate will print. The program will print a four-corner test pattern of the certificate; this saves you from printing the entire certificate when you are not sure if the paper is aligned properly. This option is particularly recom-mended the very first time you use CM and on all occasions where you are printing several "NAME" certificates.

Print Test is also helpful when you want to make sure that you have selected the right printer in the Change Setup procedure.

Select MAIN MENU if you want to start over or quit CM. From there, you can press [esc] to return to the Print Menu if you decide to print the certificate after all. If you make any other selection from the Main Menu, the information you have entered in Steps 2-11 will be lost.

Select CHANGE SETUP if the printer setup displayed does not describe your printer. The program will display an alphabetical list of all the printers that can be used with CM.

Scroll through the list until you find your printer, then select it. The program may have you respond to one or more questions regarding the specific configuration of your printer.

You will have to do the Change Setup procedure only the first time you print a certificate (and again if you ever use CM with a different printer). Once you have specified your type of printer, the program remembers it.

PRINTER TIPS
-----------
Colored ribbons and colored paper, available from your favorite computer store, can add flair to your certificates.

The graphics resolution of your printer will have an effect on the appearance of your certificates. A graphics resolution of 120 by 72 dots per inch provides the best quality.

If the printer skips lines while printing a cert., turn off the automatic linefeed setting on your printer. See your printer manual for instructions. (Note: Some of the Change Setup procedures allow you to turn off linefeeds without physically adjusting your printer.)

If the printer doesn't work, turn it off and back on again, then go through the Change Setup procedure. If that doesn't help, compare your DIP switch settings to those recommended in your printer manual.

"NAME" FILE
----------

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
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This section explains how to create a new *NAME* file and how to edit an existing *NAME* file. At the top of each page, the entry screen is lettered in the order in which you will use it. Follow these steps for quick reference.

1. Select NAME FILE from the Main Menu.
2. Select CREATE NEW *NAME* FILE from the Select Option... screen.
3. Then ENTER NAME # 1 and keep entering as many names as you want in the file. Then when you have entered the number of names you want, just hit [return] on a blank line.
4. Then enter the name that you want to SAVE the *NAME* LIST AS.

To edit an existing *NAME* file, just select NAME FILE from the Main Menu again and then select EDIT EXISTING *NAME* FILE from the Select Option..., menu. Then select the name file you want to use and then you should be able to walk through the menu's from there and figure it out.

I will now describe in more detail how these steps are performed:

**SELECT *NAME* FILE OPTION**

This is the first screen you see when you select the *NAME* File option from the Main Menu.

Select CREATE NEW *NAME* FILE if you want to make a new list of names. The program then goes to the ENTER NAMES screen.

Select EDIT EXISTING *NAME* FILE if you want to make additions, corrections, or deletions to an existing file. The program goes to the SELECT *NAME* FILE screen.

Select the *name* file you want to edit.

If you have not done so already, the program will ask you to insert a *name* file disk into the appropriate disk drive.

The program then goes to the EDIT *NAME* FILE screen.

Change the disk in the disk drive, then select NEW DISK if the *name* file you want is on a different disk.

**ENTER NAMES**

Enter each name that you want to appear in the file. Each file may contain up to 75 names. As you enter names, the number at the top of the screen indicates how many names are in the file.

Each name in the list can be up to 25 characters long. Within that limit, each name may contain as many words as you like. Enter each name as you want it to appear on the certificate (example, MARY SMITH not SMITH, MARY).

Make sure the name is correct before you press [return]! Once you press [return], the only way to correct a name is through the EDIT EXISTING *NAME* FILE procedure. To make corrections use the [backarrow] or [delete] key as described in the Introduction.

The order in which you enter names is not important. When you save a *NAME* file, the program automatically alphabetizes the list by the last word you enter.

When you are done entering names, press [return] when the entry line is blank.

**SAVE *NAME* FILE**

Enter a name for the *name* file. Choose a name that will help you remember the contents of the file.

*NAME* FILES HAVE FILENAME PREFIXES, BUT THE PREFIXES ARE ASSIGNED BY THE PROGRAM AUTOMATICALLY. YOU CANNOT INCLUDE A FILENAME PREFIX WHEN NAMING A *NAME* FILE. The prefix assigned by the program is CMN (CMN.FILENAME). The only time you will need to use the filename prefix is when you are copying or deleting a file in ProDOS.

*NAME* files must be saved on a data disk. Never save a *name* file on the Certificate Maker Master Program (Disk 1 - Side A) or Certificate disk. If you have more than one disk drive, the program displays a message reminding you which drive to use.

If you are saving an edited file, you can keep both the original and edited versions of the file by assigning a new name to the file, or you can get rid of the original version by assigning its name to the edited version.

For more info on disks, filenames, and filename prefixes, see your ProDOS manual.

When the file has been saved, the program returns to the MAIN MENU.

**EDIT *NAME* FILE**

Select ADD NEW NAME if you want to add one or more names to the file. The program goes to the screen that says, ENTER NAME TO BE ADDED.

Select A PREVIOUSLY ENTERED NAME if you want to delete that name from the list. As you scroll through the list of names, each name is highlighted, and the word DELETE appears next to it. When the name you want to delete is highlighted, press [return].

You cannot edit a previously entered name. Thus, in order to change MARY SMITH to MARY SMITH, you must first delete the incorrect name, then select Add new name and enter the correct name.

Select SAVE EDITED FILE when you are done editing the file. The program goes to the screen called, SAVE *NAME* FILE.

**ENTER NAME TO BE ADDED**

Enter each name you want to add to the file. Remember, each name can be up to 25 characters long, and there is a maximum of 75 names per file.

To make corrections, press [backarrow] or [delete] before pressing [return]. Once you have entered a name, you can correct it only from the EDIT *NAME* FILE screen.

When you are done entering names, press [return] when the entry line is blank. The program will then go to the EDIT *NAME* FILE screen. From there, you can save the file.

On the EDIT *NAME* FILE screen, the names you added will appear at the end of the list. Then, when you save the file, the names will be arranged in alphabetical order.

The End!

See CERT.MAKER DOX2 for a full listing of the templates!
Below is a list of all the template numbers and what they contain. These templates are also grouped into categories which I have also listed below.

**SPECIAL KEYS**

* A template number with one asterisk before the number means that the certificate has no title on it at all. In other words it probably just has a picture in the upper right hand corner with blank lines on it for you to fill in with whatever info you want to. Template # 92 is an example of this.

! A template number with an exclamation point in front of it means it is in the SMALL FORMAT.

$ A template with a dollar sign in front of it means the template is in the HORIZONTAL FORMAT.

All other templates are in the VERTICAL FORMAT!

Do not use these special keys in the program itself when it asks you to ENTER THE TEMPLATE NUMBER! Just use the number itself. The special keys are just for your own reference.

**UNIQUE TEMPLATES** - These are humorous awards with humorous graphics.

1. Most Valuable Member
2. Bad Haircut Award
3. Award for Quitting Smoking
4. Rude Awakening Award
5. Couch Potato Award
6. Back Seat Driver Award
7. Can of Worms Award
8. Award for Painting Yourself Into a Corner
9. Computer Operator’s License
10. Computer Whiz-Kid Award
11. Procrastinator’s Award
12. Troubleshoter’s Certificate
13. Coolness Under Pressure Award
14. Sticking To Your Guns Award
15. Lemon Award
16. Wanted - this is a picture of man behind bars that has a blank spot over his face where you can paste a photo of your favorite person.
17. Team Work Award
18......Worst Joke Award
19......Globetrotter's Certificate
20......Ms Know-It-All Award
21......Mr Know-It-All Award
22......Best Kisses Award
23......Sweet Tooth Certificate
24......Beer Connoisseur's License
25......Wine Taster's Certificate
26......Wine Connoisseur's Certificate
27......Pigsty Award
28......Out On A Limb Award
29......Best Vacation Pictures Award
30......Photographer's Award
31......Cheerfulness Award
32......What Will I Be When I Grow Up? Award
33......Driver's License
34......Inflicting Co-Workers Award
35......Quack License
36......Outstanding in Your Field Award
37......Most Valuable Player
38......Least Valuable Player
39......Horrible Mention Award
40......Thanks for Nothing Award
41......Certified Idiot Certificate
42......Foot In Mouth Award
43......Big Mouth Award
44......Murphy's Law Degree
45......Community Service Award
46......Outstanding Attitude Award
47......The Widest, Thinnest, Tallest, Smallest, Award
48......Nicest Smile Award
49......Dead Carp Award
50......Hardest Worker Award
51......Clock Watching Award
52......Happy Birthday Certificate
53......Party Animal
54......Master Certificate Maker
55......Company Clown
56......Best Boss Award (Female Boss)
57......Best Boss Award (Male Boss)
58......Best Secretary Award (Female)
59......Best Secretary Award (Male)
60......Most Coffee Breaks Award

OFFICE TEMPLATES - These are serious awards

$61......Certificate of Promotion
$62......Employee of the Week Award
$63......Employee of the Month Award
$64......Employee of the Year Award

ACADEMIC TEMPLATES - These are serious awards

$65......Reading Award
$66......Certificate of Reading Proficiency
$67......Writing Award
$68......Certificate of Writing Proficiency
$69......Mathematics Award
$70......Certificate of Mathematics Skills
$71......Certificate of Art Proficiency
$72......Certificate of Music Proficiency
$73......Certificate of Geography Skills
$74......Certificate of Science Proficiency
$75......Certificate of Spelling Profishunsy (HA-HA)
$76......Certificate of History Proficiency
$77......Certificate of Social Studies Proficiency
$78......Certificate of Physical Education Proficiency
$79......Class Clown
$80......Certificate of Scholastic Achievement
$81......Certificate of Graduation
$82......DIPLOMA 1
Apple II Computer Info

116......Soccer Award (both sexes)
$*117......Soccer Cert. (female)
$*118......Soccer Cert. (male)
119......Bowling Award (both sexes)
$*120......Bowling Cert. (female)
$*121......Bowling Cert. (male)
122......Racquetball Award (both sexes)
$*123......Racquetball Cert. (female)
$*124......Racquetball Cert. (male)
125......Swimming Award (both sexes)
$*126......Swimming Cert. (female)
$*127......Swimming Cert. (male)

FAMILY TEMPLATES

128......Greatest Backyard Chef Award
129......Clean Room Award
130......Award for Eating All Of Your Yucky Vegetables
131......Certificate of Wedded Bliss
$132......Anniversary Award
133......Newborn Baby Award
134......Clean Teeth Award
135......Gourmet Chef Award
136......Certificate of Love
137......Sweetheart Award
$138......Adoption Certificate
139......In The Doghouse Award
$140......Dog Owners License
$141......Cat Owners License
$142......Bird Owners License
$143......Best Friends Certificate (Two females)
$144......Best Friends Certificate (Two males)
$145......Best Friends Certificate (Male/Female)
$146......Best Friends Certificate (Black female/White female)
$147......Best Friends Certificate (Oriental female/White female)
$148......Best Friends Certificate (Black male/White male)
$149......Flying Bees Certificate
$150......Teddy Bear Certificate
$151......Rhinoceros Certificate
$152......Mama Kangaroo w/Baby Certificate
$153......Camel Certificate (No...not the cigarettes dummy!)
$154......Butterfly Certificate
$155......Good Girl Award
$156......Good Boy Award
$157......Bad Girl Award
$158......Bad Boy Award
$159......Best Mom Award
$160......Best Dad Award
$161......??? (picture of a dog chopping wood....Strange!)
$162......Night Owl Certificate
$163......Rabbit Cert.
$164......Honey Bee Cert.
$165......Seal Cert. (picture of a seal on it...Official Seal, get it!)
$166......Catholic Cross Cert.
$167......Three Crosses on Mount Calvary Cert.
$168......Holy Spirit Dove Cert.
$169......Symbol of the Trinity Cert.
$170......Fish symbol Cert.
$171......Double Cross Cert.
$172......Chanuka Cert. (has a picture of the Menorah on it)
$173......Jewish Scrolls of the Talmud Cert.
$174......Jewish Star of David Cert.
$175......Crescent & Star Cert. (this is a Muslim symbol, I think?)
$176......Chinese Shrine Cert.
$177......Japanese symbol Cert. (I'm not sure what it is)
$178......Yin & Yang symbol Cert.

!179......??? (I'm not sure what this symbol is, it looks oriental)
!180......Flowering Lilypad Cert.

$182......Certificate of Merit
$183......Certificate of Achievement
$184......Certificate of Excellence
$185......Certificate of Appreciation
$186......Certificate of Recognition
$187......Certificate of Attendance
$188......Certificate of Membership
$189......Certificate of Participation
$190......Certificate of Completion
$191......Certificate of Improvement
$192......Certificate of Proficiency
$193......Certificate of Performance
$194......Certificate of .... (large letters)
$195......Certificate of .... (small letters)
$196......Certificate of .... (small letters/different layout)
$197......Award for First Place
$198......Award for Second Place
$199......Award for Third Place
$200......Honorable Mention
$201......Award for Best Idea
$202......Efficiency Award
$203......Citizenship Award
$204......Award I
$205......Award II
$206......Award III
$207......Award for...I
$208......Award for...II
$209......Job Well Done Award
$210......License I
$211......License II
Apple II Computer Info

DOCUMENT certmaker

CERTIFICATE MAKER

Operation of the Certificate Maker is basically obvious from within the program. Choices of borders are shown on screen, type styles are easy to select...the only value of dox is in choice of the over 200 certificate templates. While these are graphically printed in the original documentation, this listing should at least make the program usable.

Disk 2
1   most valuable member
2   bad haircut award
3   quitting smoking
4   rude awakening
5   couch potato
6   back seat driver
7   can of worms
8   painting yourself into a corner
9   computer operator's license
10  computer whiz kid
11  procrastinator's award
12  trouble shooter's certificate
13  coolness under pressure
14  sticking to your guns
15  lemon award
16  wanted
17  team work
18  worst joke
19  globetrotter's certificate
20  Ms. know-it-all
21  Mr. know-it-all
22  best kisser
23  sweet tooth
24  beer connoisseur's license
25  wine taster's certificate
26  wine connoisseur's certificate
27  pigsty
28  out on a limb
29  best vacation pictures
30  photographer
31  cheerfulness
32  what will I be when I grow up?
33  driver's license
34  infecting co-workers
35  quack license
36  outstanding in your field
37  most valuable player
38  least valuable player
39  horrible mention
40  thanks for nothing

Disk 3
41  certified idiot
42  foot in mouth
43  big mouth
44  murphy's law degree
45  community service
46  outstanding attitude
47  widest, thinnest, tallest, smallest
48  nicest smile
The Chaos Mailbox System

The Chaos Mailbox System has existed now since May, 1988. The name is derived from the Chaos Duo (Waldi and Terra), who got it at a Relay Party in Nijmegen.

This Help file refers to Version 4.0 of the Chamas, which was fully re-programmed in November to avoid ever-increasing chaos in the Chamas 3.2.

In general:

The German Press Law applies (as for all german Mailbox systems) to the Chamas, and, as managers, we're responsible for the contents of the message boards, as long as we're unable to say who the sender is. Therefore it's necessary to register with the Chamas using NICK <nickname>. Also, any racist, terrorist, war-promoting or personal attacks mistaken for news in the mailbox will be erased and the sender will be banned from the Chamas.

You can log into the Chamas with help from CHECKIN, whereas CHECKIN N prevents the issue picture from coming. After the log-in, it is announced which boards contain new messages since your last log-in.

Shell of Chamas

Version 4.0 of the Chamas uses a so-called Geoshell. This was introduced for the first time by the Geo1 Mailbox X.25 and is today a widespread standard for Mailboxes. After certain technical problems were able to be ironed out, we decided to install this in the Chamas as well. You can receive the Chamas's command set with ?.

The Chamas Daemon

Within the Chamas, there's a daemon, which oversees the Chamas; it is also responsible for timeouts. If the user says nothing for a period of 5 minutes while on the Chamas Relay If the user sends nothing to the Chamas for a period of 15 minutes

Commands for the Chamas:

HELP
You can check out online help for the various commands using this command. e.g. HELP WRITE, HELP BOARD, etc.

BOARD
This command is pretty important. With BOARD * (or, B *) you can be shown the boards available. Behind the board names stand the symbols:
# for writing-protected. Only users in Level 2 or lower can write to such boards. (e.g. CCC, CCO, etc.)

* for reading-protected. Only users registered on a privileged user-list can retrieve from such boards. Direct inquiries to Terra (151133@DOLUNI1).

* means, you are subscribed to this board. This is to say, you are immediately sent new messages in this board.

- not subscribed.

Also with this command, you can 'enter' a board. This is necessary in order to see the contents of a board, etc.

You'll receive a listing of those boards which contain the available new messages. You'll receive a listing of those boards containing new news at hand.

**INVENTORY**

With this command it's possible to ascertain the contents of the boards. To do that, it's necessary, through BOARD <boardname>, to be put yourself in a board.

**INVENTORY (I)** will list all new messages in a board.

**READ/SEND**

You can, using these commands, read messages, or otherwise have them sent to you.

e.g.: RE 1403 or SE 1411 1412.

Should a file be longer than 50 lines, it can only be sent to you.

**WRITE**

This command enables you to receive short instructions regarding how to write into the Chamas Boards or else the News Net.

**SUBSCRIBE**

This command lets you register with the Netnews and the Chamas Boards. The domain is always required. So, for example, SUB chamas.general oder SUB sub.market.

**UNSUBSCRIBE**

Exactly.....just for unsubscribing.

**NET**

With this command it's possible to check out what network groups are available and whether you're subscribed.

NET shows which network groups there are. At present these are SUB and DNET. These are also the domains for the SUBSCRIBE, WRITE, etc. commands.

Using NET <net group>, you can determine with which groups you are registered. e.g.: NET SUB.

**ADDRESS**

ADDRESS gives you personal data about yourself. With ADDRESS <nickname>, you can determine the UserId and NodeId of another user.

**CALL**

Should problems arise, you can use this command to get in touch with one of the operators.

**ACTIVE**

With this command you can determine who is still logged into the Chamas.
Apple II Computer Info

ChemLab: Main Menu

At this menu:
Use the SPACE BAR to page thru the all the experiments.
Press RETURN to enter the name of the one you want.

Chemlab: Controls in the Lab

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>[O]</td>
<td>Switches which arm is in use</td>
</tr>
<tr>
<td>[E]</td>
<td>Moves in the direction indicated</td>
</tr>
<tr>
<td>[S]</td>
<td>Gives you a list of solids available</td>
</tr>
<tr>
<td>[L]</td>
<td>Gives you a list of liquids available</td>
</tr>
<tr>
<td>[G]</td>
<td>Gives you a list of gases available</td>
</tr>
<tr>
<td>[H]</td>
<td>Superheat the lab (hit S again to restore)</td>
</tr>
<tr>
<td>[P]</td>
<td>Pressurize the lab (hit P again to restore)</td>
</tr>
<tr>
<td>[K]</td>
<td>Review text (CLEAR Lab)</td>
</tr>
<tr>
<td>[C]</td>
<td>Clear the lab; start over</td>
</tr>
<tr>
<td>[Space bar]</td>
<td>Switch hand on left arm</td>
</tr>
<tr>
<td>[Escape]</td>
<td>Returns to main selection menu</td>
</tr>
<tr>
<td>[Return]</td>
<td>Action key</td>
</tr>
<tr>
<td>[V]</td>
<td>Controls gas valves</td>
</tr>
<tr>
<td>[B]</td>
<td>Controls burners</td>
</tr>
<tr>
<td>[M]</td>
<td>Read message (if indicated on screen)</td>
</tr>
</tbody>
</table>

Chemlab: How to obtain chemicals (using the left arm)

To get solids:
Use the left arm, with the spoon as a hand. Move under the dispenser, and press RETURN. Now input the name of the solid you want. To drop the solid from the spoon, hit RETURN again.

To get liquids:
Use the left arm, with the nozzle as a hand. Move over whatever you want the liquid in, and hit RETURN. Now type in the name of the liquid you want.

To get gases:
Use the left arm with the gas cap as a hand. Move under one of the connectors under the gas tanks. Press RETURN. It should connect with the cap. Now, move the cap over a flask, and press RETURN to connect them. Now you control the valves to get the correct gas. Open the valve of the tank, and the valve of the connector you connected to, to get that gas. You can mix and match gases by controlling the valves.

ChemLab: Moving equipment (using the right arm)

To get equipment, move the right arm down until it is just above the platform at the lower right of the screen. Now hit RETURN, and enter the name of the piece of equipment you want. It will pop up... now, move the hand beside the equipment, and hit RETURN. It should latch on to it. How move it as you would the arm (Suggestion: always place your first equipment to the far right to make room for other equipment.), and hit RETURN to drop it there. You CANNOT move equipment once you have connected or placed something in it If it didn't work, you'll probably have to clear the lab and start from scratch.
Chipwits is a game very much like Robot War. You program your robot to collect the good stuff like pies, cups, oil cans, and disks; and you also program the robot to destroy the bad stuff like those bugs that shock your robot, the weird looking face. And the bomb which can not be destroyed has to be avoided.

1. First you drag down the warehouse menu and you select an unused slot, or if you want to write over a previous robot select an already occupied slot.

2. Goto the workshop menu and select "ENTER". From here is where you will be programming your robot.

Programming your robot:
The program always starts out at the stoplight. The little pointer attached to the lower right hand box of the stoplight is the direction flow of the program. Goto to the box to the right of the stoplight and press the button (This is how you move the cursor around). You then have to select an operator, which is a command to the robot. But some commands require an argument, like the eye for example.

OPERATORS:
Starting from upper right working down as how you would read a book.

Eye:
Allows the robot to see in front of himself. The robot can cover all the spaces in front of him. (requires an argument)

Hand:
Allows the robot to touch the floor in front of him. This command covers only the space directly in front of him. (requires an argument)

Nose:
Allows the robot to "sniff" out what is in the room. This covers the entire room. (requires an argument)

????:
I have no idea what this waffle-like shape does.

Linker:
This looks like a railroad track. This is like a connector it performs no specific command. It just connects from one box to another in case you run out of space. (requires an argument)

Train?:
I don't know what this icon looks like but I know what it does. It is the movement command for the robot. (requires an argument)

Musical note:
This makes a noise, but I don't see the useful purpose in this command (Requires an argument)

"+":
I don't know what this does. (Requires no argument)

"-":
Me don't know this one either. (Requires no argument)

An arrow pointing to a train:
This assigns a variable to the movement memory of the train. This command is used if you want the robot to do something over that it previously done. The robot only has enough room to store 3 variables. If you assign new ones, the last one is cleared and everything is shifted down one. (Requires an argument)

An arrow pointing to a question mark:
This is like the earlier one except it does not deal with direction of movement. It deals with the objects in the game. i.e. pies, disks, etc (Requires an argument)

An arrow pointing to a cup:
This assigns a variable to the memory of the robot also. But it is a value in a sense. For example, in Applesoft you may use the command "X=4" then later say "If X=4 then ... so on..." You can do that in Chipwits. This command is the assinging function in this process. The "If. then.." part of the function will be mentioned later. (Requires an argument)

An arrow pointing away from "X":
This is a command to throw out the most recent entered variable, entered by the top three command. When the upper-most variable is throwed the variables are all shifted up one. (Requires an argument)

Electric Generator:
This is the defense mechanism in the robot. When this command is called upon, a bolt of electricity is fired. The electricity goes the way the robot is facing. This command is used to kill the dangerous objects in the game. i.e. those bugs and the funny faces. (Requires no argument)

The train with an "=" sign under it: This is used in conjunction with the command that has an arrow pointing to a train. When an variable is assigned with that command, this command acts like the "If..=..then" part of the function. (Requires an argument)

The "?" with a "=" under it: This command is like the previous one. This command checks to see if the most recent variable equals the one you asked for. If it does the value is (T)rue and if it does not the value is (F)alse. (Requires an argument)

The cup with a "=" under it: Same as above, except it works with a value. (Or in this case an amount) (Requires an argument)

The cup with a "<" under it: Same as above, except it is not equal that is being asked, it is less than. (Requires an amount) A grabber:
This is the hand of the robot. This is how the robot picks things up to be eaten. The robot gets points for things eaten. (Requires no argument)

A boomer-rang shaped object:
This serves as the command "RETURN" It performs the same function as in Applesoft. It returns the program from a sub-routine. (Requires no argument) A looped arrow:
This command restarts the program. In a sense it means "start over from the stoplight" (Requires no argument)

An interface card:
This command allows you to expand the length of the program. It branches the main program into sub-routines. For example, you can have a different subroutine handle one task, like moving, grabbing things, and so on. And to return from the sub-routine you use the boomer-rang shaped thing. The program continues with the box that follows the departure point of the subroutine. (Requires no argument)

A "F" connected to a "F": This is a randomizer. For example, if you don't want your robot following one set of commands all the time (one set of commands often leads to a loop) you can use this command at the beginning of your program. There is a 50% chance for (T)rue and 50% for
(False).

Arguments for EYE, HAND, NOSE, ARROW ABOVE "?", ARROW UNDER "?":

Pie:
a prize that is worth a certain amount of points.

Cup:
A prize, to my knowledge has no point value.

Disk:
A prize worth points.

Oil can:
Worth points

Floor:
The ground

"?":
The most recent variable assigned to the "?" memory.

Bomb:
a destructive object that can not be electrified. It must be avoided.

Funny face:
This destructive object can be electrified with the electric generator.

Bug:
This bug shocks your robot, and this is not good for your robot. This bug can also be destroyed by electricity.

Wall:
This is the wall.

Door:
This is a door.

Arguments for Train, Arrow above train, arrow under train:
The arrows indicate which direction of movement.

Up arrow:
Move forward

Down arrow:
moving backward

Left:
Turn left

Right:
Turn right

Arguments for Interface Card: The letters A, B, C, D, E, F. These are the amount of room you have to work with on your program. You have 6 pages of programming room not counting the main page.

Arguments for Arrow above "X":
The three variable stacks: Train, "?", and cup. This removes the most recent variable.

Arguments for the commands to do with the "cup":
There are cups filled to a different amount. This is used for the numbers. The least filled cup means 1 and as it gets filled more the numbers increases. Or the numbering can go the opposite way. It is just a matter of interpretation.

After you have made a robot, save it if you like. Then to enter your robot to his mission, goto the Missions menu and select "start mission", and watch your robot work.

If you need to de-bug your robot. Select "step" from the OPTION menu. This will make your robot perform step by step. The number in the bottom right corner is the box the program is on.
CHRONO WARRIOR IS AN ARCADE GAME WHERE YOU PLAY THE ROLE OF A TIME TRAVELER. YOU MUST PASS 5 LEVELS IN TIME AND REACH THE PRESENT.

WHEN THE GAME BOOTS, YOU SHOULD SEE THE TITLE PAGE. PRESS THE KEY A FEW TIMES UNTIL YOU SEE THE OPTION TO PLAY A GAME OR PRACTICE A LEVEL. CHOOSE ACCORDINGLY.

DECIDE YOUR DIFFICULTY LEVEL AND YOU'RE OFF!

THE CONTROLS:

JOYSTICK : MOVES CHRONO WARRIOR IN DIRECTION.

Level

BUTTON 0 : [1] FIRES STONE
[2] DOES NOTHING
[3] FIRES ARROWS
[4] DROPS BOMBS
[5] DROPS JUNK MAIL

KEYBOARD : A
<- -> Z

SPACEBAR : SAME AS BUTTON0 ON JOYSTICK

SYNOPSIS OF LEVELS:

STONE AGE (1):
GATHER ALL THE PIECES OF YOUR TIME PORTAL AND ENTER IT. NOT TOO HARD, BUT BEWARE OF THE DINOSAURS. YOU CAN TEMPORARILY STUN THEM WITH THE STONE, BUT THEY RECOVER QUICKLY, AND CAN CLIMB LADDERS AFTER YOU!

ROMAN EMPIRE (2):
YOU PLAY A CHARIOTEER IN THE CIRCUS BILLIUS AND MUST GATHER 5 GOLD COINS FROM THE ARENA. AVOID WATER SLICKS AND WHEN OTHER CHARIOTS GET IN YOUR WAY, YOU CAN MAKE THEM WIPE OUT BY BUMPING THEM IN THE BACK. WHEN 5 COINS ARE GATHERED A RED CARPET WILL ROLL OUT. STEP INTO IT AND WARP TO THE NEXT LVL.

MEDIEVAL TIME (3):
YOU ARE ROBIN HOOD, AND MUST ROB FROM THE RICH AND GIVE TO THE POOR. ONCE YOU HAVE DONE THIS THREE TIMES, YOU ADVANCE TO THE NEXT LVL. BEWARE OF SOLDIERS! TO FINISH THE LEVEL MOVE IN THE CDRAWBRIDGE OF THE CASTLE.

CIVIL WAR (4):
GET ALL THE ENERGY PACKS AND AVOID THE CANNONS. THIS IS VERY TRICKY MANEUVER! YOUR BALLOON.
TRICKY DICK is a disk editor that can be used on both normal and most protected disks. It will read in a sector directly from disk and list the sector's contents to screen or printer in Integer, Applesoft, assembler, hex and ASCII. Tricky Dick can patch and customize your disk, protect your software, and read and alter normal and most protected disks.

THE LINGUIST dumps a track of raw nibbles directly from any disk - protected or not. It also decodes address data on the disk and translates raw disk nibbles into hex. The translated nibbles then can be listed by TRICKY DICK in BASIC, assembler and ASCII. This makes it possible to list the programs and textfiles from any disk, normal, damaged or locked. It can be used to look closer at a program, examine disk formatting and recover lost programs no matter how badly the disk is damaged.

THE TRACER automatically searches normal and most protected disks sector by sector for any 1-6 strings you specify in ASCII or hex. It will also find the VTOC, catalog sectors, and track/sector lists on normal and protected disks. You can choose any or all of its 9 search options, and they will be carried out simultaneously, scanning an entire disk in 19-135 seconds. When it finds something that you're looking for it jumps back into TRICKY DICK and places a cursor on the item it's found.

THE CODE BREAKER makes use of a special table in DOS 3.3 and 3.2 to decrypt the most popular "secret code" used to hide commercial programs from prying eyes.

THE TRACKER shadows the disk arm, reporting its every move as DOS LOADS, SAVES, RENAMES, or does anything else to a disk. It leaves a list of every track and sector visited, and every read or write operation carried out during any disk access. THE TRACKER can be used to find out exactly where a disk is crashing, make a permanent record of your files, and learn more about how DOS works.

THE CIA MODULES

TRICKY DICK controls the operations of the other CIA utilities. First, BRUN TRICKY DICK. Then when you need to call upon one of the other utilities, you BLOAD it. A single keystroke transfers control to the utility you BLOAD and enables it to carry out its work. During certain operations, the module will pass data to TRICKY DICK for special processing. For example, when the TRACER finds a string it's looking for, it jumps back to TRICKY DICK, displays the string, and places TRICKY DICK'S cursor on the first character. TRICKY DICK is in charge and you can edit the string and/or other data in the sector where it resides.

The only exception to this system is THE TRACKER which works alone.
other words, the Linguist will transform all 3 of the encoding formats used on Apple disks (6&2, 5&3, and 4&4) into a recognizable and executable form.

The immediate importance of all this is that after this is, that after dumping a track of raw nibbles and translating them into ordinary hex, you can immediately jump back to Tricky Dick and display this code as an Applesoft, Integer, or assembly listing. Of course, Tricky Dick is also no slouch at translating. But where a disk has too badly clobbered, too heavily protected, made sectorless, encoded in 4&4 - or simply requires a raw nibble examination to establish the formatting - old Tricky is just not up to the job. That's when the Linguist springs into action at the touch of a CTRL E to help out.

Once Tricky Dick is in memory, hit CTRL C to BLOAD The Linguist. It loads in at $8000 in memory and can be accessed at any time from Tricky Dick.

Getting From One to the Other

When the Linguist is in memory, you can jump to it at any time from Tricky Dick by pressing CTRL E. When you first enter The Linguist, the disk arm recalibrates and emits that grating machine-gun rattle we have all come to know and hate. The sound effects notwithstanding, you can always get back to Tricky Dick by typing CTRL C.
The REPT key simultaneously. An hold down one of the two keys and number forward or backward rapidly, diskettes. To clock the track allow the use of The Linguist with drives capable of reading 80-track wraparound takes place. This brings up a list of instructions, together with their accompanying keystrokes. A '^' before a letter indicates a CTRL key must be pressed at the same time as the letter. You can call up the help screens at any time.

The Linguist’s Data Display

Hitting the space bar gets you from The Linguist’s introductory or help screen to the to the data display; several of the Linguist’s commands also automatically do the same. This screen shows you one memory page (256 bytes) of code in the data buffer, which starts at $4000 and ends at $7FFF in RAM. The 4-digit hex addresses on the far left of the screen correspond exactly to memory locations in the buffer. This allows you to calculate the buffer locations of any block of code by simply counting up. For example, the positions of th tenth byte in row $4000 would be $400A.

Entering Commands

The "ALL COMMANDS" message at the bottom of the screen prompts you enter the instructions you want the Linguist to carry out. Each command is echoed on the right of the '?'. An incorrect entry is signalled by a brief "ping".

Track Selector

You can decrement or increment the track number (which appears after 'T=') a half track at a time by hitting the '<' and '>' keys respectively. The track numbers progress up to $7F, at which point wraparound takes place. This is to allow the use of The Linguist with drives capable of reading 80-track diskettes. To clock the track number forward or backward rapidly, hold down one of the two keys and the REPT key simultaneously. An often quicker way to input a track number is to type 'T', followed by the number of number. This only works for whole tracks, but the next adjacent half track can always be specified by hitting the '<' or '>' keys.

Setting the Disk Arm to Track $00

Hitting CTRL S recalibrates the disk arm, pulling it back to track $00. It comes in handy for clocking back the track number rapidly, and also to give your drive a reference point to find the selected track (during a rew nibble read your machine makes no check of the track numbers on the disk to find the current track).

Reading a Track

Hit CTRL B to read the desired track into The Linguist’s buffer. Be sure to locate the correct drive while still in Tricky Dick before jumping to the Linguist. One buffer page of data will appear in the data display area immediately after a read. If the introductory or help screens were up at the time of this command, a switch to the data display will automatically take place.

Paging through the Buffer

Pressing the right arrow changes the data display to the next page in the buffer. So if the data from, say, location $4000 to $40F0 are displayed, hitting the right arrow once flips to the data located from $4100 to $41F0. This can be continued until a page is reached at the end of the buffer at $7FFF. In the same manner, the left arrow pages backward a page at a time until you get to the beginning of the buffer. Extremely fast scrolling can be accomplished by holding down one of the arrows and REPT at the same time. The controls are "locked" so that you never accidentally stay lower than the beginning or higher than the end of the buffer.
Jumping to the Beginning or the End of the Buffer
["B","N"]

You can instantly get back to the beginning of the buffer at $4000 by hitting CTRL B; CTRL N takes you right to the end. (page 57F)

Cursors Movements
[I, J, K, M AND "I", "J", "K", "M"]

I, J, K, and M move the cursor around the data display just like they do when used for Applesoft editing. When these commands take the cursor beyond the edge of the screen, scrolling or wrapping occurs. For example, pressing 'K' when the cursor is at the end of a row causes it to jump to the beginning of the next row; pressing 'M' when the cursor is on the bottom line of the display causes the screen to scroll up one line. Holding down CTRL and hitting any of the 4 keys increases the distance covered, causing the cursor to jump to the edge of the screen.

A continuous scroll can be obtained by moving the cursor to the top or bottom of the screen and pressing REPT together with 'I' and 'M' keys respectively. This can be continued until the first or last of the buffer data appears on the screen.

Decoding the Address Field
[Cursor controls]

At the bottom left of your screen you will find a separate line of data consisting of a 4-digit address followed by 4 2-digit numbers. It displays a translation from 444 into normal hex of 8 consecutive disk nibbles starting with the byte under the cursor. This enables you to decode the address field information by placing the cursor on the first byte to the right of 'D5 AA 96' address field header of any sector. The data line will display the results in the following order: the buffer address of the byte under the cursor, the disk's volume number, the current track number, the number of the sector whose address field you are examining, and the address field checksum. The buffer address is always a 4-digit number and the other items are each 2-digits long. All are in hexadecimal and the sector number represents the physical sector on he disk. The meaning and interpretation of this data will be explained in the tutorial which follows the instruction section.

Since most disks use 444 nibbles in the address field only, the 444 translation will usually be meaningless if the cursor is placed elsewhere among the sector data. One important exception, however, occurs when entire files have been deliberately encoded in the 444 mode (as can be found in many current games). If you are working with such a disk, you can decode a string of 8 444 nibbles by positioning the cursor over the first byte of any 444 byte-pair.

Changing the Decoding Mode
["D"]

To switch between the 642, 543, and 444 decoding modes, hit CTRL D, followed by the number after the 'D'. For example, if you are presently in 642 mode and you will see a '1<62>' just under the '<=>' at the upper right of the screen. To change to, say 543, type in a CTRL D, causing the cursor to leap up and cover the '6'. This is your cue to press the '5' key which automatically changes the display mode to '543'. If you previously changed Tricky Dick's D.O.S. version to 3.2, the display will already show '543'.

Translating a Sector
["T"]

After having selected the encoding mode, place the cursor over the first byte after the 'D5 AA AD' (on a normal disk) data field header of the sector you want to translate. Then press CTRL T (which evokes a high pitched squeek), and jumps back into Tricky Dick's buffer and can be displayed on the screen in the usual manner by...
If you are jumping back and forth between Trick Dick and The Linguist to translate a series of sectors in the above manner, you may be hampered somewhat by the recalibrating each time you press CTRL E. A patch to the Linguist which eliminates this is 8026: 2C from the monitor. However, if you change track number you must let The Linguist recalibrate to get its bearings. Do this with CTRL S as described previously. To patch back the CTRL E recalibration, type 8026: 20 from the monitor.

Remember that if you are translating 4&4, the disk is likely to be sectorless. What you get when using this encoding mode is a translation of 512 consecutive disk nibbles into 256 bytes of normal hex.

Although no printer dump subroutine has been included in The Linguist, it's easy to get hard copy of a given section of the buffer. First make a note of the beginning and ending addresses on The Linguist's hex display of the block of data you want to print. Then get into BASIC by hitting RESET once or CTRL C twice and turn on your printer card. Finally enter the monitor with CALL-151, type <first address>.<second address> (e.g., 4000.4010), and your printer start churning out the copy.

This a Wareforce docfile...
Look for the next chapter in the C.I.A. series...

The Linguist (Part B)

Well that is it I hope you enjoy it...
The Camel Jockey

(! Wareforce !)

Call these BBS's:

- Gremlin's Lair [201] 536-7794
- Pirates of P.S. [206] 783-9798
- I.C.'s Socket [213] 541-5607
- Golden Key [214] 263-9017
- The South Pole [312] 677-7140
- The Outpost [312] 441-6957
- Tamerlane's Keep [408] 688-9629
- Relm of the Rogues [415] 941-1990
- Dragon Quest [503] 292-6560
- Dune [503] 297-7413
- Rome [503] 636-6718
- Thieves Den [512] 441-9429
- The Curse [612] 920-3576
- The Safehouse [612] 724-7066
- Abdul's Oasis [619] 341-2984
- The Cove [619] 920-3576
- Apple Manor [716] 654-7663
- Temple of Doom [805] 682-5148

Getting Hard Copy from The Linguist

Although no printer dump subroutine has been included in The Linguist, it's easy to get hard copy of a given section of the buffer. First make a note of the beginning and ending addresses on The Linguist's hex display of the block of data you want to print. Then get into BASIC by hitting RESET once or CTRL C twice and turn on your printer card. Finally enter the monitor with CALL-151, type <first address>.<second address>
The CIA Files
Intermediate Level Tricks with
Tricky Dick
Typed by The Camel Jockey
Revised by Bets C.
Apple Manor (716) 654-POOF!

Avoiding D.O.S. Lang. Card Clobber

D.O.S. 3.3 has particularly pesky subroutine which stores a $00 in the first byte of the language card whenever we do a PR#6. This in turn makes D.O.S. think that the language card is empty. So if you happen to have INTERGER BASIC (or some other program) there, and then boot up from the keyboard, you always have to reboot your System Master and hang around while it reloads INTERGER. Most of the time, however, a perfectly good image of INTERGER is still in the language card in spite of the LANGUAGE NOT AVAILABLE message you get when you try to call it.

Fixing this is a piece of cake. Just read in track $00, sector $09, and write 'EA' over the '8D 00 E0' in line $D0, leaving it looking like this.

Then write it back to the disk. Any disk with this patch in its D.O.S. will leave INTERGER in peace when booting.

I know it seems obvious, but don't forget to reboot the D.O.S. you've just altered with the following patches if you want to see them in action.

Switching the HELLO file

To make this simple alteration, read in track $01, sector $09. Starting with byte $75 in line $70, you will see the name of the HELLO program. If you want another file on the disk to run automatically on boot-up, put the cursor over the first byte of the HELLO file's name (a 'C8' for 'H' on most disks), and hey in SHIFT 2 (the ' character). Now type in the new file's name and press down the CTRL, SHIFT and 0 keys together, returning to normal operation. If the name of the new file is shorter than that of the old one, there will be some unwanted characters tacked on at the end. Be sure to type 'A0's' (ASCII for spaces) over these before writing the sector back to the disk.

Using a Binary or EXEC HELLO file

Normally, when D.O.S. finishes booting into RAM, it issues a RUN command to start the HELLO program. However, if you used the foregoing method to switch HELLO to a machine language or EXEC file, you will obviously want D.O.S. to issue the correct BRUN or EXEC command on boot up. To do this, read in track $00, sector $0D and change byte $42 from a '06' to:

(1) a '34' to BRUN a binary hello program;
(2) a '14' to EXEC and EXEC file.

Now write the sector back to the disk. You may wish to make this and the foregoing patch on a COPY of your CIA disk so that it's D.O.S.'s Tricky Dick immediately on boot-up. If you do, you should leave line $40 looking like the example below.

40: 03 A9 34 05 AD 62 2A
\  
\ Binary HELLO flag

Loading a Program between D.O.S. and its Buffers

Having carried out the preceding two operations, you might decide that it would also be useful to place your program in some secure spot in memory where subsequent loading and running of other files cannot overwrite it. The best was of doing this is to move D.O.S. buffers down and load your program on top of them. A simple D.O.S. patch will insure their complete safety even if D.O.S. is coldstarted.

To set things up, read track $00, sector $0C
00: D3 1C 81 1E BD 1E 75 2A

The next step is to subtract the length of your program in bytes from $0CD3, the number shown in reverse at the beginning of line $00. So if your file was, say, $200 (decimal 512) bytes long, you'd have to work out that $0CD3 - $200 = $1AD3. You should now reverse the high and low bytes of this result in the classical 6502 manner, type them over the 'D3 1C', and write the whole works to the disk.

00: D3 1C 81 1E BD 1E 75 2A

What happens is, the '1A D3' gets changed to '9A D3' on boot up, moving the buffers down the required amount. This allows you to fix your program to run $9D00 - $200 = $800 in RAM.

Eliminating the Pause during a CATALOG

If you manage to accumulate a large number of files on a single disk, you may find it useful to have continuous scrolling during a CATALOG. If so, read in track $01, sector $00 of the disk whose D.O.S. you wish to provide this service. Then simply change byte $34 from a 'CE' to a '60' as shown below.

30: 8D 20 ED FD 60 9D 33 D0

Changed byte

Write this block to the disk and you will find, after rebooting, that the patched version of D.O.S. will not stop after each screenful of file names during a CATALOG, but will scroll rapidly through to the end of the list. If you have an autostart monitor, you can use CTRL S to stop/start the listing.

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Changing the "DISK VOLUME"
Catalog Message

In order to personalize your disk, you might like to have some message other than "DISK VOLUME 254" appear when a CATALOG is executed. If so, read track 02, sector 02 and change the "DISK VOLUME" message (written backwards!) that begins at byte $B0. If you write over the space ($A0) at byte $AF, you can squeeze in up to 12 characters by hitting SHIFT 2 (the * sign) and typing them in backwards. So if your new heading is to say "Sammy's Disk", lines $A8 - $B8 would look like the illustration below.

First byte of entry
A8:C9 C1 C2 D3 D2 C1 CB:AB:BRAB
B0:D3 C9 C4 A0 D3 A7 D9 CD:SID S'YM:
B8:CD C1 D3 04 0F 04 00:MAUS:CODE:

Last byte of entry
If you carried out the preceding instructions, and rebooted, you should get the following heading on each CATALOG.

SAWMY'S DISK254

This looks a bit messy, so to get rid of the '254', read in track $01, sector $0C and type 3 'EA's' over bytes $C0-$C2, ending up with:
C0: EE EA EE 20 2F AE 20 2F

After writing this back to the disk and rebooting, your catalog message will blaze forth in its most pristine form.

Putting Headings on the Catalog Track

There are few more frustrating experiences than searching through dozens of disks for a program you urgently need, realizing that you have overlooked it, and then having to start the whole tedious business from scratch once again. Some order can be brought to disk chaos by inserting heading on the catalog track and making sure the type of files that they apply to are placed underneath. For example, it might be useful to get the following display upon CATALOG a disk.

T 000 GAMES
T 000 -----
*B 062 PIRATE'S SWAG
*B 071 ROBIN HOOD'S LOOT

With a newly initialized disk in the drive, type in the following sequence: SAVE XXXXX SAVE YYYY DELETE XXXXX DELETE YYYY. Then examine track 02, sector 02 and you will see the 'X' and 'Y' strings just beneath the HELLO entry. The 'X's will most likely be in line $30. So start by placing the cursor on the 'FF' in the line above (byte $2E) and type in:

'24 00 00' (ASCII for 'X') in line $29's. After CTRL @, move straight down to the '14 02' and replace this with an 'A0 00'. Finally check everything and write the sector back to the disk.

Reboot and do a CATALOG to make sure the heading got set up OK.

If you want a flashing instead of a normal heading, press SHIFT ? (the * character) before typing in the heading's letters. Inverse characters can be obtained by changing the normalscreen ASCII numbers as follows:

Numbers beginning with a 'C'....
change the 'C' to a 'O'

Numbers beginning with a 'D'....
change the 'D' to a '1'

*A0* (a space)....
change the 'A' to a '2'

If you change the ASCII for *GAMES* in this manner, you would end up with:
30: 07 01 05 13 A0 A0 :GAMES :

You can now transfer your favorite games to the disk and they will automatically appear beneath this heading. If after doing this you still have some space left over, you can easily use the same procedure to shove another heading underneath the games on the catalog. Further files can be added below this, and so on.

By the way, when you SAVED the 'X' and 'Y' files, 4 sectors were set aside by D.O.S. to store their nonexistent data. Subsequently DELETing them readjusted the bit maps to reclaim this wasted space.

Another point to take note of was the '24' we put in the dummy files' track pointer byte. This was done to prevent the catalog heading from being accidentally DELETed. If you now try to access "GAMES" with any D.O.S. command you will get an I/O ERROR, since track 02 cannot be reached on te Apple drives (the '-'s are safe in any case because they are illegal catalog characters).

Hiding the HELLO File on the Catalog

If you used the foregoing method to create headings and want to get the word "HELLO" out of the way-or you simply want to conceal the existence of your HELLO program during a CATALOG - you can make it do a disappearing act as follows. First, read in track 02, sector 0F and put the cursor over the first 'A0' after the HELLO file's name. Then type in '19 88's' and check your work by counting up the inverse 'H's which will have appeared in the ASCII value for CTRL N.

Having done this, you now need to let D.O.S. in on your little secret so that it can recognize HELLO on boot-up. So what you now have to do is change the D.O.S. record of the HELLO file's as described a couple of sections back under "Switching the HELLO file". Follow those instructions to
read in track $01, sector $09 and add 19 '88's after the HELLO program's name. The program will run automatically when you boot the disk, but of course, D.O.S. will ignore any direct commands referring to HELLO, since HELLO now contains 19 extra control characters.

A couple of points are worth noting here. First of all, it seems that 19 '88's' is always the correct formula, regardless of the file name's length (but you can't hide files whose names are longer than 11 letters due to the 30 character maximum permitted by D.O.S.). Secondly, the reason this method works is that CTRL H's output backspaces to the monitor. So what happens is that the HELLO file's name gets printed for a tiny fraction of a second, too quick for anyone to spot it. Then along comes the next filename to complete y rewrite it.

Changing D.O.S. Error Messages

If you feel capable of a more elegant turn of phrase then the author of Apple D.O.S., you might like to change the wording of some of the D.O.S. error messages. These begin on track $01, sector $08, byte $75, and end on the next sector ($09), byte $3D. So let's assume, for example, that you want to change I/O ERROR message to CRASH OUT (clearly a far more descriptive choice). Start by reading in track $01, sector $98. The message starts in line C8:41 54 43 C8 49 2F 4F 20:ATCHI/O: --

Position the cursor over the '49', press SHIFT 7 (the ' sign) to go into normal ASCII mode, and type "CRASH O". Now press CTRL 8, followed by SHIFT 2 (the * sign) to switch to high ASCII (the last character is in high ASCII to flag the end of the message). Type in the final 'T' and write the sector back. Boot the disk, leave the drive door open, and type "LOAD HELLO". Your altered message should quickly appear.

This can be done with any of the error messages. Just remember to end up with high ASCII character, and make sure your own message's does not exceed the one you are replacing.

Some Ideas for Advanced Programmers

Here are a few Tricky Dick tidbits that you assembly language programmers may find useful. And even if you don't know your way around an assembler too well yet, some of these may prove helpful.

When you have one of the C.I.A. modules in memory, hitting CTRL E causes Tricky Dick to jump to it and begin execution. This feature makes it possible for you to install your own programs and access it with the same instructions. Furthermore, you can easily interface your code with Tricky Dick to call Tricky's internal routines.

The first thing Tricky Dick does on CTRL E is attempt to distinguish a C.I.A. module from left-over garbage in RAM. In order to do this, it EOR's the byte at $8000 with the one at $8001, then CMP's this with the byte at $8002. If a match is found, it JSR's to $8003 where the modules' code begins. If a match does not occur, a tone is sounded and normal operation is resumed. To use the CTRL E hook, you need to assemble your programs to run at this address and set up the first 3 bytes accordingly.

Tricky Dick contains both a 3.3 and a 3.2 RWTS. The 3.3 version begins at $3800, and the 3.2 at $3000. They both use the same ICB which starts at $815, and share the device characteristics table which starts at $826. The information on these two lists is in exactly the same order you would normally expect. A JSR to $121f invokes a subroutine which looks at $82A to determine which D.O.S. version has been selected, then calls the appropriate RWTS. Reading or writing with the RWTS will be done using the D.O.S. marks shown in Tricky Dick's display. Tricky Dick stores its sector data into a buffer starting at $2E00.

If you want to BSAVE Tricky Dick any patches or changes to it, use A$803, L$3800.

You can call each of the 3 versions of RWTS in the machine independently. Thus, you could, for example, use the D.O.S. RWTS at $8800 to read a disk, and one of the Tricky Dick RWTS's to write it out again or vice versa. With Tricky Dick and a module in memory, there is still free core from $4000 to $7FFF for use as a buffer or anything else. After your program has done its thing, it can return control to Tricky Dick at any time with an RTS.

Moving Closer to the Disk

Well, that just about loses this file on Tricky Dick for now, though I'll be returning to some of this utility's more sophisticated capabilities when I show you how to work on copy protected disks. However, without a little help from the other members of the C.I.A., there are just some jobs that Tricky can't do. You'll find that for some of the work you'll be wanting to carry out, you're going to need to delve into the most inaccessible parts both of normal and abnormal disks - and make complete sense of all the information they contain. That's why you need to meet The Linguist.
The sector data will be displayed in the data viewing area. DISASSEMBLING SECTOR DATA (L):

Hitting L disassembles the sector code beginning with the byte under the cursor and continuing until the screen is filled. The middle column of the display gives the ASCII translation of the hex data to its left. Repeatedly pressing the L carries on the disassembly until the end of the sector is reached. After disassembling a screenful of hex, you can return to the previous byte by hitting the SPACEBAR or extend the cursor right by pressing the corresponding high ASCII code. The cursor will be positioned next to the last byte that was disassembled.

LISTING APPLESOFT AND INTEGER CODE (CTRL L) (L):

If the sector data contains Applesoft or Integer BASIC code, a listing can also be displayed. Select the language that you want to list by pressing the corresponding ASCII codes. For example, typing 'A' in either of the above two displays, CTRL X replaces the sector data with the ASCII translation of the hexadecimal data. The cursor will remain over the same byte during the flip. The leftmost column of numbers indicates the buffer offsets, but with the trailing zero omitted to retain clear screen formatting. Press CTRL F again to get back to the partial screen with ASCII and the next 128 bytes of data, starting with the row in the full display where you left your cursor.

SELECT DOS VERSION (CTRL D):

To view the second half of the sector, hit either CTRL M or RETURN, bringing the sector to the bottom of the screen. To scroll through the remaining data, hold down the M and REPT keys. You can scroll back to the beginning by hitting CTRL T, followed by REPT. To fill the sector, hold down the CTRL key and press F, M, and F, in that order. The column of hex #s on the far left which are followed by a ': ' tell you what portion of the sector data you're viewing. They are offsets in TRICKY DICK'S data buffer and range from 000 to 0FF in 8 byte increments.

FLIPPING DATA DISPLAYS (CTRL F):

When in the viewing mode CTRL F will erase the alphanumeric symbols on the right of the screen and display all the data in the last sector read. The cursor will remain over the same byte during the flip. The leftmost column of numbers indicates the buffer offsets, but with the trailing zero omitted to retain clear screen formatting. Pressing CTRL F again will bring up the data viewing area, but will leave intact the three 128 byte sectors which are followed by a ':'. The leftmost column of numbers indicates the buffer offsets, but with the trailing zero omitted to retain clear screen formatting. Pressing CTRL F again will bring up the data viewing area, but will leave intact the three 128 byte sectors which are followed by a ':'. The leftmost column of numbers indicates the buffer offsets, but with the trailing zero omitted to retain clear screen formatting.

THE DISPLAY:

Selecting the sector data by pressing the corresponding ASCII codes. For example, typing 'A' in either of the above two displays, CTRL X replaces the sector data with the ASCII translation of the hexadecimal data. The cursor will remain over the same byte during the flip. The leftmost column of numbers indicates the buffer offsets, but with the trailing zero omitted to retain clear screen formatting. Pressing CTRL F again will bring up the data viewing area, but will leave intact the three 128 byte sectors which are followed by a ':'. The leftmost column of numbers indicates the buffer offsets, but with the trailing zero omitted to retain clear screen formatting.

THE HELP SCREEN:

The help screen lists each command. A ^ before a letter means that the command must be pressed at the same time as the letter. Hit any key to go back to the data display.

DATA ENTRY MODES (CTRL @) (") ('):

Just after loading TRICKY DICK, the words "NORMAL HEX" will appear at the lower left of the screen next to the word "DATA". That means that you can enter hex digits and these digits will appear in the data display under the cursor. This allows you to edit the screen display before writing it to disk. Typing " (SHIFT 2) puts you in "high ASCII" mode and causes an inverse "high ASCII" message to appear in the lower left corner of the screen. In this mode, each time you press any key, its corresponding ASCII code will be displayed. Before you can issue any other command, you'll need to hit the CTRL SHIFT F (CTRL @). This puts you back into the "NORMAL HEX" mode and allows TRICKY DICK to accept your keyboard commands again. Typing ' (SHIFT 7) places the cursor in standard, or "low" ASCII mode. Each keystroke will leave its normal ASCII under the cursor.

To return to normal TRICKY DICK functions, hit CTRL SHIFT F (CTRL @).

The sector data will be displayed in the data viewing area. DISASSEMBLING SECTOR DATA (L):

Hitting L disassembles the sector code beginning with the byte under the cursor and continuing until the screen is filled. The middle column of the display gives the ASCII translation of the hex data to its left. Repeatedly pressing the L carries on the disassembly until the end of the sector is reached. After disassembling a screenful of hex, you can return to the previous byte by hitting the SPACEBAR or extend the cursor right by pressing the corresponding high ASCII code. The cursor will be positioned next to the last byte that was disassembled.

LISTING APPLESOFT AND INTEGER CODE (CTRL L) (L):

If the sector data contains Applesoft or Integer BASIC code, a listing can also be displayed. Select the language that you want to list by pressing the corresponding ASCII codes. For example, typing 'A' in either of the above two displays, CTRL X replaces the sector data with the ASCII translation of the hexadecimal data. The cursor will remain over the same byte during the flip. The leftmost column of numbers indicates the buffer offsets, but with the trailing zero omitted to retain clear screen formatting. Pressing CTRL F again will bring up the data viewing area, but will leave intact the three 128 byte sectors which are followed by a ':'. The leftmost column of numbers indicates the buffer offsets, but with the trailing zero omitted to retain clear screen formatting.

EDITING SINGLE BYTES IN THE DISPLAY:

Place the cursor over the byte you want to change, and type in the new hex value. Single-digit hex numbers must be entered with a leading 0 i.e. enter 5 as 05. If you type the first digit and change your mind, hit 'J' or 'K' to move the cursor away and cancel the entry. If you want to change the digit, hit the SPACEBAR and start again.

DATA ENTRY MODES (CTRL @) (") ('):

Just after loading TRICKY DICK, the words "NORMAL HEX" will appear at the lower left of the screen next to the word "DATA". That means that you can enter hex digits and these digits will appear in the data display under the cursor. This allows you to edit the screen display before writing it to disk. Typing " (SHIFT 2) puts you in "high ASCII" mode and causes an inverse "HIGH ASCII" message to appear in the lower left corner of the screen. In this mode, each time you press any key, its corresponding ASCII code will be displayed. Before you can issue any other command, you'll need to hit the CTRL SHIFT F (CTRL @). This puts you back into the "NORMAL HEX" mode and allows TRICKY DICK to accept your keyboard commands again. Typing ' (SHIFT 7) places the cursor in standard, or "low" ASCII mode. Each keystroke will leave its normal ASCII under the cursor.

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Hitting L disassembles the sector code beginning with the byte under the cursor and continuing until the screen is filled. The middle column of the display gives the ASCII translation of the hex data to its left. Repeatedly pressing the L carries on the disassembly until the end of the sector is reached. After disassembling a screenful of hex, you can return to the previous byte by hitting the SPACEBAR or extend the cursor right by pressing the corresponding high ASCII code. The cursor will be positioned next to the last byte that was disassembled.

LISTING APPLESOFT AND INTEGER CODE (CTRL L) (L):

If the sector data contains Applesoft or Integer BASIC code, a listing can also be displayed. Select the language that you want to list by pressing the corresponding ASCII codes. For example, typing 'A' in either of the above two displays, CTRL X replaces the sector data with the ASCII translation of the hexadecimal data. The cursor will remain over the same byte during the flip. The leftmost column of numbers indicates the buffer offsets, but with the trailing zero omitted to retain clear screen formatting. Pressing CTRL F again will bring up the data viewing area, but will leave intact the three 128 byte sectors which are followed by a ':'. The leftmost column of numbers indicates the buffer offsets, but with the trailing zero omitted to retain clear screen formatting.

EDITING SINGLE BYTES IN THE DISPLAY:

Place the cursor over the byte you want to change, and type in the new hex value. Single-digit hex numbers must be entered with a leading 0 i.e. enter 5 as 05. If you type the first digit and change your mind, hit 'J' or 'K' to move the cursor away and cancel the entry. If you want to change the digit, hit the SPACEBAR and start again.

DATA ENTRY MODES (CTRL @) (") ('):

Just after loading TRICKY DICK, the words "NORMAL HEX" will appear at the lower left of the screen next to the word "DATA". That means that you can enter hex digits and these digits will appear in the data display under the cursor. This allows you to edit the screen display before writing it to disk. Typing " (SHIFT 2) puts you in "high ASCII" mode and causes an inverse "HIGH ASCII" message to appear in the lower left corner of the screen. In this mode, each time you press any key, its corresponding ASCII code will be displayed. Before you can issue any other command, you'll need to hit the CTRL SHIFT F (CTRL @). This puts you back into the "NORMAL HEX" mode and allows TRICKY DICK to accept your keyboard commands again. Typing ' (SHIFT 7) places the cursor in standard, or "low" ASCII mode. Each keystroke will leave its normal ASCII under the cursor.

To return to normal TRICKY DICK functions, hit CTRL SHIFT F (CTRL @).
The next step is to type CTRL O, followed by 2 RETURNS. This brings the
'\*' for a disassembly
'I' for an Integer listing
'A' for an Applesoft listing of the sector code
'H' for a hex dump with ASCII translations
print select parameter, prompting you to type in one of the following
data in TRICKY DICK'S display to be printed. The cursor will jump to the
Typing CTRL P allows you to select the form in which you wish the sector
PRINTING HARD COPY FROM TRICKY DICK (CTRL P) (P):
Type of Error               '<-->' designation          DOS code
Drive Error (Read or Write) <00>                             40

DEALING WITH NON-STANDARD SECTOR MARKS (CTRL S):
These are the features that let you read and write to disks whose formatting
has been altered. To do this with the least amount of work, use THE LINGUIST
to determine the nature and extent of the alterations.
Hit CTRL S and the cursor will jump to first byte of the sector marks,
You can move the cursor along this data with the left and right arrows. To
replace any digit, position the cursor over it and type in the new digit. always the one whose name is in inverse.
The change will appear and the cursor will move to the next symbol. A RETURN
gets the cursor back to the data display.

In the top line, "D5AA96" is the standard DOS 3.3 address field header and
"DBAA" is the address field trailer. If you've changed the DOS version to
3.2 the top line will read "DS5AAB5" which is the 3.2 header. The next line
"DBAAAD" refers to the data field header and "DEAA" is that field's trailer.
IMPORTANT: By replacing one or more of the header or trailer bytes with a
"D5AA96" shows the type of error, its flashing designator, and its DOS code.
"DEA0" in the first line causes the second byte of all address
field trailers to be ignored during reading or writing.

The third line shows the data field header and trailer (the latter with an
added 'EB') once again. This line is used only for writing and allows you to alter the values in the data field
header and trailer of any sector you write to the disk.
Finally, by changing the 'Y's' in the DOS mark section to 'N's', you can tell TRICKY DICK to ignore the address field checksum (the first Y) and/or the
data field checksum (the second Y). The 'O' just below the 2 'Y's' indicates
that TRICKY DICK will always write a sector of data to the disk with a data
field checksum of 000.

PRINTING HARD COPY FROM TRICKY DICK (CTRL P) (P):
Typing CTRL P allows you to select the form in which you wish the sector
data in TRICKY DICK'S display to be printed. The cursor will jump to the
print select parameter, prompting you to type in one of the following
instructions:
'\*' for a hex dump with ASCII translations
'A' for an Applesoft listing of the sector code
'I' for an Integer listing
'T' for a disassembly
The next step is to type CTRL O, followed by 2 RETURNS. This brings the
Most of the commands are self explanatory, but others need further explanation.

B = Begin Dialing: You will be asked one question before the modem starts.

S = Speaker (on/off): Allows you to turn the modem's speaker on or off.

M = Modem delay: The amount of time the modem should wait to detect a carrier.

P = Preferences for modem: A sub menu that allows you to change certain modem

L = Load setup: Loads the setup from disk. Loads the filename specified on

C = Catalog prefix: Catalogs the current prefix. Use Ctrl-S to stop/start the

V = View Instructions: Simply tells you to read this file. Some time I may

U = Update default dialing string: Used to change the dialing string which

D = Direct command to modem: This allows you to enter one command that will be

E = Enter phone numbers: Allows you to enter as many LD ports and targets as

I = Display codes: Uses the filename on the second line to the right and displays this

A = Area code: Lets you change the default area code (See the E command).

F = File names: Used to change the filenames for the codes and setup. Has

D = Direct command to modem: This allows you to enter one command that will be

The dialing string uses 4 symbols to represent different things. They are:

The + is replaced by a port from the list you entered with the E command. The # is replaced by a target randomly chosen from another list. All (.)'s are replaced with (,). and a random number (0 to 9) is chosen for each x.

A = Area code: Lets you change the default area code (See the E command).

This program allows you to get codes for Long distance services like MCI and Sprint. I tried to keep the working of the program the free and loose to allow compatibility with almost any service. The program can also be used as a War Dialer which searches the local area for modems. Simply leave the +, # and . out of the dialing string. Example: ATDT 775-xxxx. With slight modifications the program can be used for any other applications along the same lines.

First I'll give a basic rundown of the options from the main and modem menus, then I'll go into detail about the structure of the code and modifying it.

Dialing String:
The dialing string uses 4 symbols to represent different things. They are:

+ - This is the long distance port (or extender).
# - This is the target (or number to be called).
. - This is used for a delay and automatically converted to a (,). I did this because of Applesoft's inability to accept (, ) in input statements.
x - (Or X) This is replaced by a random number from 0 to 9 when dialing.

Sample dialing string: ATDT+..1xxx.# In the actual dialing string, this might produce something like:

ATDT7430631,13825,20379075

LD port Code Target

The + is replaced by a port from the list you entered with the E command. The # is replaced by a target randomly chosen from another list. All (.)'s are replaced with (,.) and a random number (0 to 9) is chosen for each x.

[Defaults]
Most of the defaults for the program are located around lines 100 to 200. The only thing everyone should change is the default for the filename of the setup file. The original program has it set to CC.SETUP. I would suggest using CC,<LD company name>. Find the line that contains: <line number> FSSETUP$ = "$filename" and change the name in quotes (""") to the name you wish to use. If you do not do this you will have to enter it every time you use the program or leave it as the current default. All other defaults can be changed in the same way, but it should not be necessary because you can load in your own setup with the L command.

[Status & Ctrl-C]
The status indicator located on the fourth or fifth line to the right changes when you enter a command from the main menu. If you are not sure where you are look at the status line. To return to the main menu from anywhere you can enter Ctrl-C (sometimes it may be necessary to enter a return after Ctrl-C), but I would not suggest using this command if you don't have to. The only place it is really necessary is from the B command to stop dialing.

[Main Menu Options]
Most of the commands are self explanatory, but others need further explanation.

So I have included a complete list of commands in the order they appear in the main menu except for the B and P commands which are last.

U = Update default dialing string: Used to change the dialing string which appears in the top line on the left. See dialing string above for more information.

W = Write current setup to disk: This saves the current setup under the the name specified on the second line to the left. All information will be saved including: prefix, area code, phone numbers, etc.

E = Enter phone numbers: Allows you to enter as many LD ports and targets as you want. Be sure to use the K command to write the setup to disk and avoid having to retype the numbers with each run. When entering the targets if you enter a number that is exactly 7 digits long, the default area code will be added to the beginning of it. If you do not want the area code added on you have several options: alter the program, use a Word processor to alter the setup file, or add a 0 onto the end of the number (It shouldn't effect anything). I think the second choice is by far the easiest.

V = View Instructions: Simply tells you to read this file. Some time I may add some quick instructions, which is why I put it in, in the first place.

L = Load setup: Loads the setup from disk. Loads the filename specified on the second line to the left.

C = Catalog prefix: Catalogs the current prefix. Use Ctrl-S to stop/start the scrolling.

F = File names: Used to change the filenames for the codes and setup. Has minimal error checking: The first letter must be an alphabetic capital letter (therefore returns and spaces will not be excepted), allowing ASCII values 65 (A) through 90 (Z).

I = Display codes: Uses the filename on the second line to the right. And displays this files contents. Normally this file would contain codes, but it can contain anything. Use Ctrl-S to stop/start the scrolling and be able to see the information.

A = Area code: Lets you change the default area code (See the E command).

This routine will only except a 3 digit numerical entry whose first digit is not a 0 (all part of the error checking).

S = Set prefix: This will be the prodos pathname used to save or load anything. The current prefix will be displayed on the first line to the right.

D = Dos command: Allows you to enter any dos command and executes it. You can use it to delete code files once you have copied down the information to paper. If you don't delete the file each time the program finds another code it will append it on to the end of the file. Type: D Delete "<Code file-name>".

Q = Quit: This exits the program, clears the screen, and returns the borders to normal. You will be in ProDOS Applesoft basic with this program in memory.

P = Preferences for modem: A sub menu that allows you to change certain modem parameters.

M = Modem delay: The amount of time the modem should wait to detect a carrier before hanging up.

S = Speaker (on/off): Allows you to turn the modems speaker on or off.

D = Direct command to modem: This allows you to enter one command that will be issued to the modem when you begin dialing.

B = Begin Dialing: You will be asked one question before the modem starts
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dialing - How many codes to try? Enter a number and press return. Press return all by itself to cancel. After this command the screen will display several stats: Codes Tried, Codes to try, Codes Found, Dialing status, and dialing string.

Dialing status can be one of four things: Organizing (appears once when commands are sent to modem before each dialing session), Dialing (Sending the dialing string to the modem), Waiting (waiting for a connect), or Saving (The program has found a code and is saving it). Dialing string is the actual string sent to the modem.

Ok, with those explanations you should have no problem using the program. Happy code hunting.

[Modifying the program]

I started using lots of REMs to make it easier to modify, but got tired of that quickly.

After credits and basic screen setup in lines 5 to 100, there is a section for variable declarations lines 106 to 189. Add any new variables here, and alter any defaults that appear. Don't mess with the variables that you're not familiar with like the flags.

Then we have some introductory notes at 200 to 280. If you make any changes to the program you can note them here to supplement these docs. Next comes the main menu (300-355) and statements to get your input. Line 360 sends the input to a subroutine that uppercases it. So if you add something that gets a single letter command assign it to I$ and gosub 5500 to uppercase it.

Lines 380 to 899 are for a list of If statements that gosub some where for each command entered. Look here to see where a particular command from the main menu will take you.

Lines 1000 to 5000 are used to update the top of screen stats. There is a gosub 1000 at the end of any subroutine that might change these stats.

At 10000 to 29900 is the core of the program. This does the dialing and will be the biggest cause of compatibility problems between modems. The original program was written on an Apple //c with 2400 baud Mercury modem. Theoretically it should be compatible with any modem that uses the Hayes command set, but all modems have their slight differences, incompatibilities, and bugs. I'll get back to this later.

The preferences menu and routines are at 48000 through 49980.

At 50000 we have the hit a key routine that simply prints "Hit a key" on the bottom line and waits for you to comply, then erases the message and homes the screen.

55000 is branched to from the onerr in line 5, also note that line 7's poke cancels the onerr and was used for debugging. When I was finished with it I placed a rem in front of the poke. In line 55100 A = peek (222) returns a code for the error that occurred, the lines after that check this code and act accordingly. The last statement of this routine returns you to the main menu (goto 300).

The program ends at line 60000.

Unless I missed any, all the peeks and pokes are followed by a Rem statement explaining its purpose. Peeks 78 and 79 are used in generating a random number.

There are many variables used in the program, and I'm going to list all the ones I can remember that are important and not obvious.

CT = Codes tried
CF = Code Found

DI$ = Dialing string
DT$ = Program status
DE = Modem delay
SP$ = Speaker status (on/off)
DC$ = Direct command? (Yes or no)

If yes, DC$=2 = the command

DI$ = Dialing string (the one displayed on the top line)
NP = Number of LD ports
NT = Number of targets

DI$(2) = Backup dialing string (DI$), used in the update dialing string routine
SCS = Backup Prefix (PX$), used in the Set prefix routine

Array [ NP$(1..NP) ] = The phone number for each port
Array [ NT$(1..NT) ] = The phone number for each target

NC = Number of codes to try
RT = Random number used to randomly select a target

PO$ = The port that will be used in the next dialing

TA$ = The target that will be used in the next dialing

DI$(3) = The dialing string that will be sent to the modem

V = Used to produce about a 1 second delay allowing the phone line enough time to hang up. You may want to increase or decrease the number used in this loop depending on your system. Lines 10267, and 29175-29189.

CN = Connect (1=yes,0=no)
Z = Also used to produce a 1 second delay. Lines 12010 and 12015

DI = Length of DI$

Array [ A$(1 to DI) ] = Each character in the dialing string (DI$)

CN$ = Input from the modem

A = The error code used in the Onerr routine

That's most of them. Next a breakdown of the different steps of the dialing procedure.

The dialing procedure lives at lines 10000 - 29900. There are several flags in the procedure that control when certain things are done (some sections of the program are only executed once and the flags make sure this happens). The flags are numbered 1 through 10 [Flag(1) to Flag(10)], but not all the flags exist (for example there is no Flag(7) but there is a Flag(4)). I'm not going to list the different flag functions because I don't remember what they're all used for and some are not be used at all (Yes, I know, very sloppy programming).

You are given one prompt, "Enter the number of codes to try: ". The number you enter is assigned to NC. Then we gosub to 29000 which sets up the screen and sends a few commands to the modem.
In this procedure we print some information to the screen, and send the following to the modem:

ATE0  Tells the modem not to echo commands. This is needed by my modem, other modems may dial without it. This command can sometimes mess up the first dialing of that session.

ATM0  Turns the modem's speaker off if SP$ = "OFF". If you want to change the speakers status after you have begun dialing once, you will have to quit (the Q command), turn off the modem and restart the program (RUN).

ATS?DE  DE is a variable that holds the modems delay. This command sets that delay.

DC5(2)  This is the direct command if there is one.

Next we return from the subroutine and begin a loop (this controls everything else in this routine). The loop increments CT (See the variable list), finds POS and TAs, and resets DI$(3) to "". Next we have a delay to allow the program to hang up from the last dialing, then we gosub 21000 which does the dialing using POS and TAs. This routine gets CNS (usually CONNECT or NO CARRIER) and sets CN to 1 if CNS = CONNECT, then it returns CN to the loop. After that the program checks two things: is CT > = NC (meaning the routine has reached the Number of codes to try and should stop), and is CN = 1 (a CONNECT). If CN does = 1 the program gosubs to 12000.

At 12000, the save code routine we start off by hanging up. The program enters a PR#2, then waits about 1 second and sends +++ another 1 second delay and ATH is sent. That should hang up the phone and a PR#0 is executed switching back to 80 columns. Now the program writes the dialing string (DI$(3)) to a text file (with the for in line 10210) is used to select a LD port from the list you supplied with the E command. When the loop is completed it goes to line 10325 which restarts the loop with a goto 10210. This continues until CT > = NC. After CT reaches NC we return to the main menu, but so far no key press before returning... allowing you to examine the final stats on screen.

The next lines are subprocedures that were called from within the main dialing procedure above, and they were all explained up there also. However The Update Code stats routine might need further explanation.

Lines 29100 - 29170 are executed every time the B command is used. They set up the screen with the starting stats and information. Lines 29175 - 29190 are executed only the first time the B command is executed for that session with the program. If you stop and rerun the program these lines will be executed again. If you turn off the modem, these commands will have to be sent again... so use your manual to try and decide which switches might have an effect on it.

The Update would clear the screen. The next lines are subprocedures that were called from within the main dialing commands which restart the loop with a goto 10210. This continues until CT > = NC.

If CT reaches NC we return to the main menu, but ask for a key press before returning... allowing you to examine the final stats on screen.

1. Check all of the commands that appear in the program that are sent to the modem. Just to make sure your modem uses them for the same purpose. The commands are:

+++ Line 12010 - Escape characters, gets the modem ready receive a command.
ATH Line 12015 - Hang up
ATE0, AT57, ATM0 - Explained above

2. Check the two delays in the program, and adjust them if necessary. When in doubt make them longer... especially if you have a speed card, zip chip, or GS.

Look in the variable list (V and Z) for more information. Both delay's are approximately 1 second long. You can use the following program to figure out the delay, and use a watch or clock to time to the first set of beeps to the second:

10 HOME:7?:??:
20 ? "Begin Timing now.";chr$(7);chr$(7)
30 FOR V = 1 to 24000 : NEXT V
40 ? chr$(7);chr$(7);"Stop Timing now."
50 Input "Enter the time: ";A
60 A = 24000/A
70 ? "Your system makes approximately ";A;" loops in one second."
80 END

3. While running the program without ATE0 (in line 29180). Also try other commands: If you use ProTERM, write down the Init string it uses and replace the ATE0 with that. If it works then... you can get rid of one part of that Init string at a time until you narrow it down to the ones that are really needed.

4. If you have only 40 columns, you're going to have many a problem. And I'm not going to try and anticipate the effects... so you're on your own.

5. Check the slot of your modem if it's not slot 2, change all PR#2's to PR#3 whatever slot it is). Speaking of PR# commands... I use a PR#0,ASC307, which changes PR#0 to the address for PR#3 but skips over some initializing commands which would clear the screen.

6. Finally, the most important one: Dip Switches. Get into ProDOS applesoft. Enter PR#2 (or whatever slot your modem's in). Then enter CTRL-A I (this lets you see what you are typing). Now press Return and watch the lights on the modem , when you hit return the RD (Read data) and SD (Send Data) lights should flash. If they do not flash you can be pretty sure it has something to do with Dip Switches. Turn the modem off and play with the switches, turn it on again and hit return again... watching the lights. You'll have to countinue to play with these switches like this until you find a combination that works. I know this can be difficult if you have a lot of switches, so use your manual to try and decide which switches might have an effect on it.

OK, that's about it. If you make any substantial changes, I'd like to see what other people did with my program, you can reach me at USHA or TPH among other boards you might see me on.

-END-
I. System Requirements:
For playing on an Apple IIe, IIC or 100% compatible, Commando requires:
- 128k RAM
- Disk Drive
- Color Graphics adapter
- Monitor (or TV with RF modulator)
- Joystick (optional)

II. Getting Started
If you are using an Apple IIe, or IIC or 100% compatible:
- Turn on your monitor or TV.
- Insert the Commando disk in drive A and boot machine.
- The title screen will appear, followed by a computer controlled demonstration game.
- Press "Fire" button on joystick or keyboard to begin.

III. Objective
As the crack shot Commando, your mission is to move forward into enemy territory. You must destroy the enemy and their base by passing through the Iron Walls.

IV. Game Play
- Use the joystick or keyboard to maneuver your soldier.
- Press the "Fire" button to shoot or the "Grenade" button to throw grenades.
- Dodge all bullets and grenades.
- Trees and other obstacles can be used for cover.
- Do not fall into rivers or ponds. Beware of trucks and jeeps.
- Pick up enemy grenades in boxes and use them against the enemy.
- Each box contains 1 grenade.
- Win bonus points by rescuing prisoners, destroying enemy leaders, and destroying the enemy headquarters.

Keyboard assignments are as follows:
I = UP  J = Left  K = Down  L = Right
Z = Shoots Gun
Z = Shoots Grenade

Joystick assignments are as follows:
- Joystick controls movement
- Primary button shoots gun ("button 0", usually at lower left).
- Secondary button throws grenade ("button 1", usually at upper left).

Game control keys are:
- S = Toggles Sound
- ESC = Pauses Game
**COMPETITION KARATE**

**COMPRESSOR**

COMPRESSOR is a machine language program which reads an ASCII text or AppleWorks AWP source file, and converts it into a new file which is about 30% smaller than the original. This compressed file can then be displayed or printed by Dogpaw, and will appear the same as the source file. This will be useful for situations where Dogpaw is being used to display large amounts of text, and disk space is getting short. Compressor can also decompress its compressed files, converting them back to ASCII text files.

**ACTION**

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<th>TARGET AREA</th>
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<td>BACKFIST</td>
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<td>LUNGE</td>
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<td>4</td>
<td>DEFENSE-ARM STRIKES</td>
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<td>DEFEND REST</td>
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</tr>
<tr>
<td>SPIN KICK</td>
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<td>MOSTLY HEAD</td>
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**FIGHTER STAMINA STATUS**

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<tr>
<td>TIRING</td>
<td>SHAKY</td>
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</tbody>
</table>
| FAADING      | ------>
| DAZED        | ------>

**COMPETITION KARATE SEQUEL**

Once your student achieve the rank of red belt, one of two rates immediately await them: either they become instructors, or are permanently retired, and can no longer participate in the game. Even students who are instructors eventually retire when a (MISSING TEXT)

To provide further action and adventure for these retired martial arts experts, a sequel program to Competition Karate is in the works at Motivated Software. Retired* red belts* are the only characters eligible to participate in the sequel, which will p (MISSING TEXT)

Your characters will traverse treacherous country in search of a personal quest.

Along the way they will encounter temples of learning, where they can gain more martial arts knowledge as well as mystical, and even magical, training.

**IMPORTANT**

DO NOT AFFIX A WRITE PROTECT TAB TO THE GAME DISK OR ANY COMPETITION KARATE DATA DISK.

NEVER PRESS [CTRL-C] OR THE [RESET] KEY WHILE THE GAME IS IN PROGRESS - CERTAIN GAME FUNCTIONS MAY BE PERMANENTLY DAMAGED.
After booting the disk, you will have the opportunity to review the summary rules or go on to select one of 3 game play options. Once you choose a game play option, you will be asked to input information about the players. The game will then start with year (turn) 1 and each player will be able to enter a combination of transactions. At decision central you will be on-line to five corporate data banks for ready access to:

(1) World financial status (2) Corporate status (5) Performance charts

Any transactions desired may be entered through (3) Rockroy financial center or (4) Acquire a company. Only when you are ready to end your turn should you press key # (6). When the last player completes his turn for that year, the rockroy color line graphs will overlay the progress of all players for the last 6 turns. If a player’s personal equity exceeds $1 billion the score will go “off the charts” in a straight line but all quantities will be calculated and displayed in other data banks. When the game ends (see game options) an awards ceremony will declare the winner.

Game rules

This is a game of corporate conquest in the world of conglomerates. Each player creates his own company (by name), selects its international headquarters and starts with $20 million in assets. Initially, each company has $10 million in cash and $10 million in controlled capital stock. The capital stock value of $10 million represents 1 million shares at $10 par value. The company also has base earnings of $2 million per year (turn) which remain constant for the entire game. Given these resources, you must increase the earning power of your multi-national corporation by acquiring other companies known as subsidiaries. When buying a subsidiary, loans to a maximum of 50% of the price are available to finance the purchase. Once a subsidiary is acquired, the amount of fixed earnings from that company are added each turn to the base earnings of your conglomerate. Any subsidiary that is acquired may not be resold-forcing players to live with their decisions. Each year (turn) the prime rate which ranges from 7 to 30% changes randomly and causes the bank run by the computer to collect the amount of interest due from each player’s company. The bank will also pay interest on deposits at a variable rate less than the prime rate which provides extra income.
First byte:07:  Change prolog byte.  Byte 2:xx: New prolog.  This allows you to read in other 18-sector Broderbund wares. The prolog byte for WOF is $96.  For Airheart, it was $A4. Use a nibble editor to discover what it should be for other games. Changing this value in the COPY18 program along with copying a range of tracks makes all 18-sector programs easily copyable (though not in 16-sector format).

18-sector disk accesses are FAST! Broderbund has written a great little RWTS and with these docs, other people doing future cracks should have a much easier time.

Also, I cleaned up the first few stages of WOF's boot, which makes it much easier for someone else to do a complete crack. All of these utilities is enough for me—but I've done all of the hard work. Someone only needs to grind out the 16 sector version! Space in the first boot stage was so tight that I didn't even have room to shut off the drive while the title page was up!

If these docs make more sense (it's late...sorry), or if you have more questions, I'm easy to reach. The whole world knows my phone #.

Mr. Slick

---

Do you keep putting those coupons in the drawer for shopping day, but keep forgetting them? Here is a program to help you out. You enter each coupon, along with its category (there are 9 to choose from), company, product type, its value, and the expiration date. Then, when you are set to go, just select those coupons to use, and the program will print them out for you.

The program is menu driven, and self explanatory. One item you MUST take note of is that when you enter a new coupon, the program will assign it a "Coupon Number", and tell you to write it down. We suggest that you write this coupon number in the upper right hand corner of the coupon itself, so that you never have to worry about the coupon's identity.

In order to select coupons to be used select the View/Select coupon option. Decide which category the coupons are in (this may take a few selections, since the coupons may not all be in the same category). The program will then show each coupon to you and ask you if you want to select it. Pressing "Y" will do so, "N" will leave the coupon unselected. You will then be shown the next coupon, and the cycle will repeat until all coupons have been processed. You can then print this list out for reference if you have a printer.

After you have used a coupon (or decided you're not going to) you can tell the program about it by using the Delete option. Here you select your coupons, and at each one tell the computer if it was unredeemed, redeemed, or redeemed for double value. This lets the computer know how much money you have saved. The total amount saved is available using the Amount Saved option.

Once in a while (once a month) you may want to delete those coupons that have expired, and are no longer any good. When entering the cut-off date, remember that most @ stores will accept coupons up to 30 days after the expiration date!

^ Files Needed @

The following files are needed to run the program:

- COUPON HANDLER  - Main program.
- COUPONS         - Data file.  Must be present to run the program!
- ----gram!        ----gram!
- --- program!     --- program!
- ---
This program is ShareWare. Go ahead and try it out, but if you want to continue using it, you need to pay me for it. For complete details, see the Standard Plea and Legal Absurdities sections near the end of this document.

**Synopsis & Description**

This program tells you approximately how fast your computer is running, in terms of megahertz. It gives you a "CPU" speed, which will be close to the rated speed of your computer, and an average "system" speed, which is a general indication of how fast the computer will seem to be to a program. See the "Problems & TechStuff" section for why these two numbers are different.

**Usage**

Just run this program from any program launcher. If you have the Orca shell or some other shell that can run "EXE" files, you can change the filetype of the CPUSpeed program to EXE so it will work better with the shell. Using Orca/APW, the command would be "filetype CPUspeed s16". If, for some bizarre reason, you want to install this program as a utility under Orca/APW, it is restartable.

**Problems & TechStuff**

The routine which generates the CPU speed works by essentially turning off everything taking place in the background while it's checking the speed. While programs are only off for about 1/60th of a second at a time, very time-critical things such as AppleTalk may have problems. For this reason, the CPU speed routine is only called when the system speed varies by more than 1 MHz. This will _usually_ only happen when the CPU speed has actually changed.

The CPU and system speed are different because several things take place in the background while programs are running. There are too many possible things to go into, but they include AppleTalk, screen blankers such as UltraBlank (shameless plug), and anything else that needs to be handled on a regular basis.

The average system speed is computed by taking the average of the last 60 "instantaneous" system speed values, which are kept in a circular buffer. Every time the speed changes by more than 1 MHz, this buffer is cleared so that the new system speed will appear immediately. Smaller changes will take some time to show up in the average, though, since it takes time for the new numbers to replace the old (at one MHz, several seconds).

The actual numbers that this program reports are, as far as I can tell, correct. I have no means of determining the exact speed that my computer is running, so I've 'tweaked' the numbers to arrive at what should be close, if not exactly right. This program has been tested at 1.024 and 2.8 MHz, and a "7" (actually 6.25 MHz) TransWarp GS. Let me know if the numbers are way off at other speeds. Remember though, that the reported CPU speed may be somewhat slower than the actual speed of the chip.

This program should fairly accurately report the speed of the computer up to slightly more than 19.6 MHz, after which the program will cease giving meaningful numbers.

**Standard Plea**

This program is ShareWare, so if you find yourself using it, please help me out by paying something for it, so I can justify spending the time to update this and write other nifty pieces of software. People who send me at least $2 (US) per computer, along with their vital information (Name, Address, # of computers, America Online screen name [if applicable], any other Internet-accessible names, etc.), and refer to "CPUSpeed Version 1.20" will be assigned a registration number and will be entitled to receive future ShareWare versions of this program. Unless you include money to cover shipping, I will only send updates by e-mail.
1. THE KEY IS IN THE TREE (CLimb)
2. "LOOK ROOF" FROM THE TREE
3. TO GET THE KNIFE YOU NEED TO KNOW WHAT IS IN THE MAILBOX FIRST (SAY THE WORD IN THE SHED).
4. LOOK AT EVERY OBJECT YOU GET.
5. ANYTHING YOU DROP BY THE ELF WILL BE THROWN OVER THE WALL.
6. THE OOLZLYBUB IS SCARED BY THE WORD ON THE KNIFE.
7. THE PICTURE IN THE MAIN HALLWAY SHOWS WHERE THE MAGIC LAMP IS BURIED.
8. LOOK AT THINGS AFTER FINDING THE GLASSES ON THE TABLE.
9. "BEEZ" + "LEBUB" (ON THE KEY) IS THE WRONG SPELLING FOR "HEELZEBUB".
10. IT TAKES FOUR MOVES TO GET THRU THE MAZE: THE FIRST MOVE IS WEST NEVER THE SAME MOVE TWICE IN A ROW UP AND DOWN ARE NOT USED HERE GO OUT THE WAY YOU CAME IN
11. THE MIRROR IS THE MIRROR THAT ALICE WENT THRU IN THE "LOOKING GLASS" (GO MIRROR)
12. THE FLASHLIGHT IS ON THE STAIRS
13. THE GENIE WILL HANDLE THE MIMIC.
14. THE MIMIC HAS THE SOLUTION TO THE CAVE-IN.
15. THE PILLAR MESSAGE (LOOK PILLAR) IS "INDIAN PARTNER"
16. SAYING "Tonto" OPENS THE SEALED DOOR.
17. THE WATER IN THE BOTTLE MAKES THE TREE GROW.
18. USE THE BOTTLE TO CATCH THE FIRE-FLYs.
19. RUB LAMP TO KILL THE KYBOR.
20. RUB STUMP TO GET TO LUCMFER (DROP FLASHLIGHT FIRST)
21. THE BAT WILL KILL THE SNAKE.
22. DROP LAMP TO KILL LUCIFER.
23. THE CUP AND TACK ARE USELESS.
24. SAY SHAZAM TO CROSS THE GORGE TO THE WEST.
25. TO GET THE PICK YOU MUST FIRST CUT THE TREE AND GET THE BLOB OF RUBBER
26. DROP RUBBER (BLOB) TO STOP THE WATER FROM DROWNING YOU.
27. GET THE CAKE ON YOUR WAY OUT ONLY.
28. THROW KNIFE TO OPEN THE DOOR TO THE EAST.
29. EAT CAKE TO ESCAPE THE CAGE.
30. DIG WITH THE PICK TO GO BEYOND THE DEAD END.
31. YOU CAN FLY WITH THE MAGIC CARPET BUT GET THE PENCIL FIRST.
32. KISS THE MEDUSA AND THEN GO DOWN AND WEST TO A DEAD END.
33. DRAW WITH THE PENCIL THERE.
34. RUB RING TO GET BY THE SNAKE.
35. UNLOCK DOOR WITH THE KEY YOU FOUND AFTER DRAWING THE DOOR.
36. "GOOSUM" WILL GET YOU BY THE SQUID.
THE OBJECT OF THE GAME IS TO PROTECT YOUR POWER CRYSTALS FROM THE ATTACKING MANGANS. A CRYSTAL CAN TAKE 4 HITS BEFORE GOING CRITICAL AND THIS IS A FANTASTIC NEW GAME BY DAVID SCHROEDER. YOU ARE A MAN (CALL HIM MARIO) WHO IS DESPERATELY TRYING TO SAVE THE MOUNTAIN FROM DESTRUCTION BY DISARMING THE NUCLEAR BOMBS FOUND BURIED IN THE MOUNTAIN. THE BOMBS ONLY NEED TO BE DUG UP TO BE DISARMED AS THE TERRORISTS WHO PLANTED THEM DID NOT EXPECT MARIO TO FIND THEM. ONCE ALL THE BOMBS HAVE BEEN MADE 'SAFE', MARIO CAN START HIS BONUS RUN. HERE'S HOW TO PLAY:

ACTIVITY CONTROL
---------- -------
MOVEMENT JOYSTICK
WALK/CRAWL TOGGLE BUTTON 1
JUMP/DIG BUTTON 0

(DEPENDING ON WHETHER MARIO IS WALKING OR CRAWLING DETERMINES IF HE'LL DIG OR JUMP.)

MARIO CAN FALL SAFELY FROM ANY HEIGHT. HE MAY NOT FALL INTO THE LAVA (RED STUFF). THE MOVING BALLS OF LAVA CAUSE HIM TO LOSE STRENGTH. IF HE IS HIT BY THEM, THE STRENGTH IS INDICATED BY AN 2=WALKING SLOWLY, 1=CRAWLING, 0=DEAD THE OTHER OBJECTS ARE WORTH BONUS POINTS. POSSESSING THE SHOVEL LETS MARIO DIG FOUR TIMES AS FAST. THE BONUS RUN BEGINS WHEN ALL BOMBS HAVE BEEN DUG UP. ANY TIME WHEN MARIO IS HIT BY A ROCK OR JUMPS INTO THE LAVA AND THEREFORE DIES, THE BONUS RUN ENDS. THE LENGTH OF THE BONUS RUN IS THE AMOUNT OF TIME LEFT ON THE TIMERS WHEN MARIO DEFUSED THE BOMBS HIGHER LEVELS ARE FASTER AND HAVE MORE BOMBS TO DEFUSE. THERE ARE A TOTAL OF TWO SCREENS.
COMPACT

DECOR's COMPACT program allows you to reduce the amount of memory occupied by an Applesoft program, by optionally removing Rem statements, packing as many statements as possible into single lines, and shortening variable names.

How to Use Compact:

1. Lock the program you want compacted on disk so you don't accidentally lose it.
2. LOAD the program you want to compact.
3. BRUN COMPACT. If this has recently been done you can just type "/" and BRUN D.BUG first. Otherwise COMPACT will disappear.

Now you will see COMPACT's menu:

(1) REMOVE REMS .......... YES
(2) CONCATENATE LINES ....... YES
(3) SHORTEN VARIABLE NAMES .... YES
(4) RENAME VARIABLES ........ YES
(5) COMPACT PART OF PROGRAM .... NO
(6) VARIABLE TABLE TO PRINTER .. NO
(C) COMPACT
(Q) QUIT

COMPACT Menu Options

1. REMOVE REMS

YES means when you compact your program, every Remark statement will be deleted. If you use a lot of Rems, this will save more program space than any other, because every character and space in a Remark takes up an entire byte of memory.

2. CONCATENATE LINES

YES means that when you compact your program, as many statements as possible will be packed into single program lines, thus eliminating old line numbers.

3. SHORTEN VARIABLE NAMES

With option 2 set at YES, COMPACT will often create a program line that works perfectly, but is too long to edit. Applesoft allows program lines of about 250 bytes - like "PRINT" takes up one byte. Editing, however, has to consider each character in the listing (now "PRINT" takes five characters, plus two more for spaces on each end). Even GPLE's "Pack" feature won't always let you edit an ultra-long line.

The disadvantage is that they take up a lot of room – one byte perNote: OPTION 3 simply chops off the end of long variable names. OPTION 4 actually renames variables without regard to their former name.

4. RENAME VARIABLES

When this option is selected, COMPACT will change as many two-or-more character variable names into one-letter names as possible. The multiple character variables that are used most often will be converted to single letter names until all 26 letters have been used (for each variable type. Remember, A$, A% and A may all be in the same proc: A (4) YES sets (3) to YES and (5) to NO, A (4) NO sets (6) to NO.

5. COMPACT PART OF PROGRAM

Use this option if you only want a portion of a program compacted. After typing "C" to start compacting, you will be asked for the start and end line numbers for compacting. You may default to the beginning or the end of the program by simply hitting RETURN as an answer to either question.

Note: A (5) YES sets (4) to NO.

6. VARIABLE TABLE TO PRINTER

When set to YES, this option will variables on your slot 1 printer (if option 4 set to YES).

"4" TO RE-RUN COMPACT

After COMPACT has been used and exited, you will usually be able to bring it up again by typing "4" (return). If this doesn't work, just type "BRUN COMPACT" again.

COMPACT assumes that any extra bytes that it finds imbedded beyond the end of a program is relocatable code that the program uses. If extra bytes are found, you will be asked if you wish to keep them. Answering "Y" will move the code to the new program extra bytes.

If you don't think you have anything beyond the end of the program, and COMPACT asks you about it anyway, just answer "N" and that will be the end of that.

UNUSED STATEMENTS

When programs have undergone heavy revision, statements often remain that can't possibly be executed - your program just won't encounter them. COMPACT will report the line numbers that contain these potentially useless statements. It's up to you to delete them after COMPACT is finished.

THE VARIABLE CONVERENAME VARIABLES (option 4) is set to YES, a variables conversion table will be displayed on the screen during compaction. This chart lists the name of every variable in the program, its new name (if it was changed), and the number of times it appears in the program. (Note: Only the first two characters of the variable will appear under the OLD column heading, even though that variable may have had a longer name.)

One-character variables are listed first, unchanged, in the order of their appearance in the program. COMPACT will shorten as many of those as possible to one character, with the ones that appear most often in the program changed first.

If no name appears in the NEW column, it's because there are no more single character left for that particular variable type. This will only occur in very large and/or complex programs. Usually real of string variables will be the first to run out of the 26 available single-character names.

LOOK FOR "LONE" VARIABLES

Watch these for variables that appear only once or twice in a program. This could indicate that the variable name was misspelled or was once part of a program segment that was removed. You might be able to save additional space (or uncover a potential bug) if you look at the lone variable.

Apple II Computer Documentation Resources (a2_docs_documentation.msw) DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 238 of 1262
<table>
<thead>
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<th>OLD</th>
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**SAMPLE VARIABLE CONVERSION TABLE**

This table prints on the screen when COMPACT extends above $4000, it will be partially wiped out by COMPACT and you'll be told to re-load.

**LINE.SPLITTER**

LINE.SPLITTER simply chops a program line into two parts, in case it is too long to edit. With your program loaded simply type *BRUN L1* when asked, type the number of the line you want to split. LINE.SPLITTER will split the line as near the middle as possible, taking into consideration any IF statements.

The second section of the split line will be numbered one line number higher than the first section.

**LINE.SPLITTER ERROR MESSAGES**

**LINE DOES NOT EXIST**

Oops, try again.

**RENUMBER FOLLOWING LINE**

If the higher number is already taken, the split will be cancelled and you will have to renumber that part of your program to make it not be split.

The line has only one statement, or its first statement contains an IF.

**COMPARE**

D CODE'S COMPARE program will take two Applesoft programs and tell you exactly what lines are unique, different, or the same. You can also use COMPARE to check binary and text files to see if they are identical.

**JUST BRUN COMPARE AND TYPE TWO FILE NAMES**

Select COMPARE from the D CODE startup menu, or simply type: BRUN COMPAT. COMPARE and COMPACT cannot live in the same Apple at the same time — irreconcilable differences. COMPARE and D.BUG get along quite well, however. So do COMPACT and D.BUG.

When the COMPARE screen appears, enter the names of the two files you want to COMPARE. RETURN (with no name) signifies the Applesoft program currently in memory. Under DOS 3.3, type the file name and any DOS parameters that go with it (for example - MYPROGRAM,S6,D2). Under ProDOS, COMPARE will assume the current prefix, unless none is specified (for example /MYDISK/MY.SUNDIR/MYPROGRAM).

**COMPARING APPLESOFT FILES**

When you're comparing two Applesoft programs, COMPARE will ask you if you want occurences of identical lines printed. You will usually want to answer "N", since "Y" will often print a ton of meaningless line numbers.

**COMPACT**

This sometimes happens when you have other machine language program(s) in memory in addition to COMPACT. You may need to re-boot or take other measures to clear memory.

**RELOAD YOUR BASIC PROGRAM**

This message will occasionally come up when you're going to compact a very long Applesoft program. Just re-load the program as instructed, and type COMPACT.

In case you care: When you first BRUN COMPACT, it's code loads at $4000 (16384 decimal), and then relocates itself just under HIMEM. If your loaded program
During comparison, a 1, 2, D or S will appear next to the line numbers as they are shown on the screen:

1 means that this line is unique to Program #1 (the first one you selected) and doesn't exist;
2 means this line exists in Program #2 and not in #1;
D means both programs have duplicate line numbers, but the contents of the lines are different.
S means the lines are the same (This will appear only if you answered "Y" to the DISPLAY SAME LINES? option.)

COMPARING BINARY AND TEXT FILES

Since there are no line numbers in binary and text files, COMPARE will just tell you if the files are identical or not.

Binary file note: If you're using DOS 3.3, COMPARE will also display the starting add both files (if you're in ProDOS, just type "CATALOG" and take a look there.)

"S" TO RE-COMPARE

Once it's loaded, you may usually re-enter COMPARE and use it again by typing "S" (return).

D.BUG

LOADING D.BUG

To load and activate D.BUG's commands, just type: BRUN D.BUG. Or select D.BUG from the STARTUP program's menu.

If you want D.BUG to co-exist in memory with either COMPACT or COMPARE, D.BUG must be loaded first before COMPACT or COMPARE.

D.BUG may be loaded from a program in the usual way:

10 PRINT: PRINT CHR$(4);"BRUN D.BUG"

REMOVING D.BUG

To disable D.BUG and free up approximately 5.5K of memory it occupies, type "FP" (DOS 3.3) or "-FP" (ProDOS - FP is a memory clearing file in the ProDOS D.CODE catalog.).

SINGLE CHARACTER ABBREVIATIONS

Each D.BUG command may be abbreviated by typing only its first character (or characters). For example, these can be abbreviated as C, CH, CHE, or CHEC. To function properly, some of the new commands may or must be followed by other characters or words.

D.BUG FUNCTIONS AND COMMANDS

Fast Finder

Function: Quickly searches through an Applesoft program for occurrences of a specified character or word.

New command: FIND (F)

Program Checker

Function: Quickly proofreads Applesoft programs for syntax errors and undefined statement errors. In addition, everything you type from troofread automatically

New command: CHECK (C)

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punctuated Applesoft statements (like "INPUT A/B") and type-mismatch errors (like A="CAT" and A$=CAT).

UNDEFINED STATEMENT ERRORS: For example, a "GOTO 100" statement when there is no line 100 in your program. Sorry: misspelled words inside quote marks (including DOS commands) and in REM and DATA will be ignored. CHECK will also not find ?Illegal Quantity errors and the like. The COMPACT program will find program statements or lines that can't possibly be executed (not really an error)

D.BUG does not cancel improper statements, it just tells you about them. Maybe your "error" was intentional - like a GOTO 100 when you hadn't typed in line 100 yet. After entering a program line that is improper, you should immediately edit, re-enter or delete the line. And speaking of editing, D.BUG is totally cool if you want to type a statement that contains an error, and you don't want to see and hear D.BUG's warning, precede the statement (and line number, if any) with a slash ("/"). The slash turns off D.BUG's proofread function for that line only.

ERROR MESSAGES
No Errors: This means that the program in memory when you typed "C" is free of syntax and undefined statement errors.

<? An inverse "?" in a listed program line or statement means a syntax error exists nearby.

<? An inverse "#" in a listed statement means an undefined statement error exists nearby.

"LIVE" SYNTAX CHECKING
With D.BUG loaded, every time you type anything, it will automatically be checked for syntax and undefined statement errors. Improper statements will be listed and flagged with an inverse "?" or "#".

EASY LISTER
New command: L
With D.BUG loaded you may simply type "L" (return) to LIST a program in memory. All Applesoft syntax is in effect; therefore you can use commands like L10-100, L1-100, and L100-.

WINDOWS: TRACE (T), NOTRACE (N), VARIABLES (V), WINDOW (W)
Typing "T" before you run a program activates an adjustable-size "trace window" at the bottom of the screen. that displays the current line numbers and statements currently being executed. You can slow down the program execution or even execute one program line at a time.
Note: Most 80-col cards for the []+ do not scroll properly because they don't support the required windows for "Window Tracer"

NOTRACE (N)
Typing "N" disables TRACE and rels
VARIABLES (V)
With TRACE active you can specify particular variables to display in the trace window. (Only the first 12 characters of strings will appear) All variable expressions are also displayed. Type "V:" to cancel variable tracing.

Errors: When an expression which are impossible to interpret, like CHR$(-65) or 123/0, will produce an error message during a trace.

WINDOW (W)

This command changes the size of the trace window. The controls are: (Up arrow or Ctrl-K): Moves the top of the trwn arrow or Ctrl-J): Moves the top of the trace window down. (the trace window can occupy all but the top 3 lines on the screen (> or >): Moves the division between the variable area and the statement area 20 spaces right. (< or <): Moves the division between the variable area and the statement area 20 spaces left. ( **) shows the division between the two areas in the trace window)

While the program is running you can use these keys:
Space bar: Will execute one statement. If the trace window statement will appear in the window BEFORE it is executed so you can press Ctrl-C before it goes.
Return: Will restore normal execution after using the above function.
Left arrow: Will slow down execution to one lower of eight speeds.
Right arrow: Will speed up execution to the next higher of the eight speeds.
Button 1: Will turn off the TRACE function making your program run faster.
Button 0: Will restore the TRACE function.
Ctrl-C: Does it's normal thing.

DUMP TRACER
New comma    SIZE (S)
ZAP (Z)
DUMP (D)
After a program stops for any reason "D" will list, in order used, the last line numbers and statements that were executed. If D is followed by a number only that many lines will be displayed. (You can only dump up to the amount of space set aside by the "S" option)
PR#1 will work normally with DUMP.
If you change your program in any way the dump buffer will be cleared, thus if you are going to DUMP then you should do it immediately after exdon't want the buffer cleared when you run a program type "RUN 10" (or whatever the first line in the program is)

While you are DUMPing you may use the following:
Left & Right arrows: Will control the direction of the dump, however it is pretty hard to understand while going backwards.
Ctrl-S: Does the same thing it has always done.
Space bar: Will single step through a DUMP.
Ctrl-C: Halts a DUMP.
SIZE (S)
Type "S" followed by a number to specify how many lines you want to be stored. Each line in the buffer eats 2 bytes of memory. You cannot specify a SIZE smaller than 5. If you want only 5 lines in the buffer you need only type "5".
Anytime you use SIZE all of your variables are cleared, and you will also need to run your program again before DUMP will work.
Note: The buffer is above HIMEM, when you use SIZE, HIMEM is changed.
ZAP (Z)
This will clear the dump buffer. If you do not ZAP before typing "RUN FILENAME", you will get meaningless garbage next time you DUMP.
commands: BREAK IF... 
BREAK ON...
BREAK AT...
BREAK LIST
BREAK +
BREAK -

Typing "BREAK: or "B:" followed by a number 1-8 will set up a breakpoint.

Sample program:

5 TEXT:HOME
10 X=INT(RND(1)*20)
20 PRINT X
30 IF X=2 THEN PRINT CHR$(7): GOTO 10
40 IF NOT INT(RND(1)*200) THEN 10
50 PRINT "END":END

Sample breakpoints:
B1: IF X=10
B2: ON GOTO
B8: AT 20,10

BREAK IF...
The first breakpoinogram to stop anytime X=10. When X does equal ten then the following will appear:

BREAKPOINT 1: IF X=10
BREAK IN 20

The first line tells you what made the program stop, the second is the next statement executed after the break occured.

BREAK ON...
The second breakpoint will stop the program the first time a statement beginning with GOTO. This breakpoint will stop the program at line 30.

BREAK AT...
The third breakpoint will halt the program the 10th time a statement in line e were two statements, seperated by a colon, in line 20, then the 5th time the program reached line 20 the program would stop. If the breakpoint was set up as "B8: AT 20" then the first time line 20 was encountered the program would break.

BREAK LIST (BLIST)
This will list all breakpoints that are currently in memory. A "+" will indicate an active breakpoint, and a "-" will denote an inactive one. To list one breakpoint, 2 for example, type "BLIST".

BREAK - (B-)
To deactivate all breakpoints, say 4, type "B4-".

BREAK+ (B+)
"B4" will activate all breakpoints. You can use the same method to activate only one as you do deactivate one breakpoint.

After a breakpoint does it's job you can continue the program with "CONT". If the program stopped with a BREAK IF... or BREAK ON... then you will need to deactivate that breakpoint or change the condition, or the program will stop immediately after you restart it. Do not, however, change the program.

Breakpoints slow the program down considerably. However, BREAK ON and BREAK AT won't slow down a program much at all.

that breakpoint or change the condition, or the program will stop immediately after you restart it. Do not, however, change the program.

END- MISSING TEXT AT END

To use D.T.Painter:

Launch any application that supports standard Apple IIgs NDA's and select "D.T.Painter" from the Apple menu. If the host application you are running is in 320 SHR mode, then D.T.Painter will sense this and adjust itself to run in that mode. The same goes for host applications that run in 640 mode.
You will be prompted to insert your boot disk if it is not in a drive when selecting D.T.Painter.

This software is freeware and may be used and distributed at no charge, but do not sell it!!!

D.T.Painter is copyright (c) 1989 by Earl Gehr and copyright 1986 TML Systems, Inc. Certain portions of this software are copyrighted by TML Systems, Inc.

Apple, Apple IIgs, AppleColor, ProDOS, GS/OS and Imagewriter are registered trademarks of Apple Computer, Inc.

************************************************** Disclaimer of Warranty **************************************************

Even though Earl Gehr has tested the software and reviewed the documentation, Earl Gehr makes no warranty or representation, either express or implied, with respect to this software, its quality, performance, merchantability, or fitness for a particular purpose. As a result, this software is sold "AS IS," and you the purchaser, are assuming the entire risk as to its quality and performance. In no event shall Earl Gehr be held liable for direct, indirect, special, incidental, or consequential damages resulting from any defect in this software or its documentation.

************************************************** Minimum system requirements are : **************************************************

1. Apple IIgs computer.
2. System memory requirements are as follows:
   a) 768K of RAM when used with System disk 4.0.
   b) 1 megabyte of RAM when used with System disk 5.0.
3. One 3.5" disk drive (a hard disk is recommended).
4. Apple Imagewriter II or compatible printer (not required, optional).
5. AppleColor RGB Monitor (not required, optional).
6. Apple IIgs System Disk version 4.0, 5.0 or later.
7. A host application to run within (such as the Finder).

To install D.T.Painter:

Copy the file named "D.T.Painter" to the DESK.ACCS folder (located within the SYSTEM folder of an Apple IIgs GS/OS boot disk).

This program will fit on a Apple IIgs System disk v4.0 with plenty of space left over for other DA's and fonts.

Users electing to use System disk 5.0 will find that they need to delete some fonts and/or unused drivers in order to fit the program on the disk.

To use D.T.Painter:

Launch any application that supports standard Apple IIgs NDA's and select "D.T.Painter" from the Apple menu. If the host application you are running is in 320 SHR mode, then D.T.Painter will sense this and adjust itself to run in that mode. The same goes for host applications that run in 640 mode.

You will be prompted to insert your boot disk if it is not in a drive when selecting D.T.Painter.
New Features added to version 0.7

The following is a list of improvements and new features incorporated into this version of D.T.Painter that were not available in the previous release (version 0.6):

1) The editing tool and all edit menu functions are now operational (cut, copy, paste, clear, invert, horiz flip, vert flip and show clipboard).

2) You have the option of using a pictures color palette instead of the host applications colors.

   The only limitation here is that the picture must have been created in the same SHR mode (either 320 or 640) that the host application is running in, in order to enable use of the pictures colors.

   Pictures are saved to disk and printed using whichever color palette you have selected.

3) Full Screen now displays pictures using the color palette and SHR mode that they were originally created in.

   You can also now toggle Full Screen on and off by pressing the space bar.

4) Choose Font can now be selected by holding the Open Apple key and clicking the Text tool icon.

5) Pen Size can now be selected by holding the Open Apple key and clicking on any of the shape tools or line tools icons.

6) The program can now be used with either System disk 4.0 or 5.0. The advantage to using System disk 4.0 is that users with 768k memory can now use D.T.Painter. There is also much more space available on System disk v4.0, so it is easier to fit the program on it.

Bugs found and fixed

The following is a list of the bugs I have found in v0.6 and have since corrected in 0.7:

1) Solid polygon dimensions off screen did not match those on screen. The first time the screen was updated after a solid polygon had been drawn, the size changed by approx 1 pixel on all sides.

2) The bug that was causing the ProDOS error #64 message dialog to appear and the source for many mysterious crashes has now finally been nailed down and eliminated! The majority of the trouble came during the initial selection of the program from the Apple menu when the program looked to find the boot up disk.

3) The program no longer checks a $C1 picture files aux type. This caused quite a few pictures to be unloadable.

4) The program now tests to make sure the boot disk is in a drive when selecting Choose Font. When the boot disk was not available to v0.6 it would cause the system to lock up.

5) The program now tests to make sure you have at least 10k of memory available before it will print a picture. This eliminates the system locking up during printing operations in the event that insufficient memory is available to the print manager.

6) This version of D.T.Painter no longer asks if you want to save a picture that has been changed before quitting the program. This may seem like a step backward, but for some unknown reason the program would crash when asking to save the picture when you elected to launch another program from the Finder. At any rate I thought it better to leave this "feature" out.

There were MANY other minor bugs fixes. I think you will find this version of D.T.Painter to be very solid and reliable to use. I have been unable to crash it and hope none of you are able to either. At any rate if YOU are able to crash it please let me know!

General Notes

D.T.Painter (DeskTop Painter) is an Apple IIgs NDA (New Desk Accessory).

With it you can load, edit, save or print super hi-res (SHR) pictures. It works from within host applications running on a desktop of either 320 or 640 super hi-res graphics (SHR) mode.

This program is still under development and I am always open to suggestions to improve upon it, so if you see something that doesn't look or feel right let me know.

My current plans for this program are to make it shareware when it is complete. As it stands the only features not operational that have been planned from the start are Zoom and Coordinates. I have quite a few other ideas that I have come up with since the initial idea for this program came to me and may implement them in version 1.0.

There is a great deal of memory testing that goes on behind the scenes and if you find that you are getting locked out of a feature or two because of lack of memory, try closing some windows or NDAs. They all require overhead and closing out something may free up enough RAM to let you do what you want to do.

Many thanks to Jeff Krich (JeffK01), Joe Schober (JSchober), Marian Petrides (Gus GrafIx) and Scott Gentry (AFL Scott) on ALPE for their suggestions, help and encouragement.

If you have any questions or discover any bugs you can reach me on AppleLink PE (screen name "Bud Gehr"), on U2ane (account name "E.Gehr1") or you can get me via US mail at the following address:

Earl Gehr
1824 A Manning Circle
Charleston, SC 29404
Oh, and... get some tea to drink. This piece is LONG. It took up nearly 60 blocks in the Soundsmith document.

Times on my own computer for these pieces are:

Rokudan: 7:35
Haya-Rokudan: 5:00 (same piece as above, but different tempo changes)
Godan: 4:30

Thanks to Huibert for adding the pitch-sliding effects, which are NECESSARY to simulate the "ato-oshi" (after-push) which raises the pitch of a string after it is sounded, and the "tsuki-iro", which occurs in the first dan of this piece, in which a string is played, then the tuning part of the string is "stabbed", making a quick "lilting" rise and fall in the pitch. Thanks also for the tempo change effect, which makes simulation of the accelerating nature of Asian songs a lot easier.

Godan has the "hanging ending", which sets up for playing the cadence but never actually does so.

Enjoy!
WHAT IS DARK DESIGNS III?

Dark Designs III is a role-playing fantasy game. Your goal is to adventure through all eight terrifying levels and bring back Agamon's head. If you haven't played Dark Designs I or Dark Designs II, and don't plan to get them (you should, they're great!), then you can create new characters. You will move them around using the arrow keys or mouse. Occasionally you will encounter a group of hostile monsters. You'd best attack them, as their sole purpose is to kill anything living that they see. They are not nice beings. You can use your weapons and spells to defeat these evil forces and forge on to defeat the evil warlord.

PLAYING DARK DESIGNS III

After you press a key at the title screen, you will see a menu of choices. If you have played Dark Designs I or Dark Designs II, this will be fairly familiar. For the uninitiated, let's take a look at each option.

1-4: Examine character

This allows you to look at each of the four members of your party. You can examine the items or the spells they have. You can Transfer, Drop, Ready (for fighting), or Use Items. You can cast spells.

C: Create character

If you do not own Dark Designs I or Dark Designs II and you want your own characters, you will have to use this option. Characters have five attributes: Strength, Intelligence, Dexterity, Constitution, and Piety. Fighters need Strength, Dexterity, and Constitution. Priests need Piety and Intelligence first, then the fighting attributes. Wizards need Intelligence foremost. You can distribute the numbers using the arrows and spacebar. Once you place the last, press RETURN and choose the appropriate spell shop. Each has eight spells to offer.

W: Enter the Castle

This quits the game and saves the state of your party.

H: Heal a character

If you have the money, you can heal characters at the local temple. Sometimes the characters will be so bad off that the only people that can help them are at the temple.

E: Equip a character

You can go to the equipment shop to buy or sell equipment.

NOTE:

You must buy equipment for your character before you begin the adventure. If you don't, your party will go naked and weaponless into battle—not the smartest plan of attack.

After equipping them, press each character's number (1-4), go into the Items menu and Ready their equipment. Fighters need a weapon, shield (unless the weapon requires two hands to wield), and armor. Priests need the same, but can't use pointed weapons. Wizards can only wear leather armor (they need to gesture a lot), and usually use a staff.

T: Transfer a party

If you finished Dark Designs II, you can transfer your characters from that scenario to this one. You can transfer from Softdisk #109, Softdisk G-S #12, or wherever you have copied the game. You will need to know the exact pathname if your Dark Designs II is not on your Softdisk disk.

L: Learn spells

You can learn (read "buy") spells. Your priest or wizard will be taken to the local temple.

If you have the money, you can heal characters at the local temple. Sometimes the characters will be so bad off that the only people that can help them are at the temple.

Cure Light: heals a character of some damage

Cure Serious: heals a character of serious damage

Cureall: heals a character completely (unless they are dead)

Word of Recall: moves the party from big danger back to town

Mark: (found on a scroll in the adventure) this spell marks a spot to which you can teleport to later

Teleport: (found in the adventure) instantly transports you to the 'mark' you made with the mark spell.

D: Delete a character

If your character roster starts getting full, you can delete a character with this option.

R: Remove a character

This removes a character from the current party.

A: Add a character

This allows you to add a character to the current party.

NOTE:

Try to have two fighters, a priest, and a wizard. This seems to be the best balance. Once you create them, you can add them to the party.

Bless: protects the player from attacks

Mark: (found on a scroll in the adventure) this spell marks a spot to which you can teleport to later

Cure Spell: heals a character of some damage

Death Ray: convinces most monsters to shuffle off this mortal coil

Dispel Undead: commands magically animated dead creatures to begone in God's will

Death's Door: heals a knocked-out character to consciousness

Banishment: tells evil beings to go take a hike

Word of Recall: moves the party from big danger back to town

Cureall: heals a character completely (unless they are dead)

It is wise to accrue all of these spells.

Q: Quit and Save position

This quits the game and saves the state of your party.

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INSIDE THE CASTLE

When wandering around the Castle, you will have four windows full of information.

The upper left window presents a 3-D view of the hallway you are in (spiffy graphics
courtesy of Laura Malone). You can use the mouse to move around by clicking at the
top, left, right and bottom of that window. The top and bottom are forward and turn
around respectively, and left and right are rather nicely equivalent to left and
right.

When you look at a character (by pressing 1 through 4), the character info will
appear in this window. When you are attacked by monsters, an overhead view of the
melee will appear in this window.

The upper right window contains the automatic map. Wherever you have explored will
be automatically mapped for you. When you are attacked by monsters, their numbers
will be displayed here.

Across the center of the screen is the information window. A text description of the
area you are in will be here, as well as information and prompts during an encounter.

At the bottom of the screen is the character status window, showing each character's
name, body points, spell points, and class.

COMMANDS IN THE CASTLE

You can use the arrows keys to move around, or IJKL, or click on the 3-D window.

Press S to search the wall in front of you for a secret door.

Press Q to quit and save the game where you are.

ENCOUNTERS

When a group of monsters attacks, you can Fight or Run away. If you run away, you
will move back to the square you were in.

If you fight, each character can choose to Attack, cast a Spell, Use an Item, move
forward to the front line, or drop to the back of the party. If the character
doesn't want to do any of these, press the SPACEBAR to pass the turn.

Once all characters have chosen you have one last chance to change your course of
action.

The fight continues until a) the monsters are defeated, b) you are defeated, c) you
cast a Word of Recall, or d) you run away.

If you are victorious you will get either a) gold, b) an item, or c) nothing.
Regardless of which you receive, you'll get experience points, which go toward you
character improving his or her body and spell points.

SOME TIPS ON PLAYING DARK DESIGNS III

¥ Never let your cleric get too low in hit or spell points. If you need to get out
quickly, they are your only hope. (Unless you have wisely purchased a Recall
Scroll.....)
¥ Cure Light is a pretty good spell, as the higher level the caster, the better it
heals, and it only takes one spell point. Save the other healing spells for heavy
combat.
¥A speed ring on a Wizard is a joy to behold. (He almost always casts first.) A
Cleric with a speed ring is helpful, also. He can heal characters before the monsters
get to attack him or cast Word of Recall before the party can be mauled.

RESTOCKING

You can restock the game so someone else can start from scratch by pressing Control-R
when the colorful title screen appears. All characters that have not brought back
Agamon's head will be deleted. You have been warned!

COPYING DARK DESIGNS III

Select "File Copier" from the File menu (or just press Open-Apple-F) to run the
copying program. Click on "Dark Designs III" and select the disk you'd like to copy
it to.
"DateWorks" can be used as an information that you wish to keep a chronological record of. You have just purchased a valuable and convenient tool that you will use day in and day out for as long as you have to remember an appointment, birthday, holiday, or any date for any reason. You will also have a complete record of all appointments, expense records, family medical records, or any type of information that you wish to keep a chronological record of. "DateWorks" can be used as an:

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<th>OCCASION</th>
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</table>
New Years Day

The "DATE" and "DAY" fields contain data for the years 1986 thru 1997. The "HOLIDAY" field contains all "legal" Holidays in effect at the time of the latest version of "DateWorks" plus the more widely recognized holidays. You may add any local, union, school or any holiday that affects you or your geographical area. The "OCCASION" field is for entering birthdays, anniversaries or any other occasion that you would not want to forget.

You may change the category names or any other part of the "DateWorks" screen that you want to change. Use the "OPEN APPLE - F" to enter the "CHANGE NAME/CATEGORY" screen and follow the instructions on the screen. If you need further help, press "OPEN APPLE 7" from the "REVIEW/ADD/ENTER" screen.

Here are some sample screens that you may use for different purposes:

**DAILY EXPENSE RECORD:**

<table>
<thead>
<tr>
<th>DATE</th>
<th>OCCASION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN 1 86</td>
<td></td>
</tr>
</tbody>
</table>

**APPOINTMENT BOOK**

<table>
<thead>
<tr>
<th>DATE</th>
<th>OCCASION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN 1 86</td>
<td></td>
</tr>
</tbody>
</table>

**FAMILY MEDICAL RECORD**

<table>
<thead>
<tr>
<th>DATE</th>
<th>OCCASION</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAN 1 86</td>
<td></td>
</tr>
</tbody>
</table>

I have researched holidays through a number sources and checked and double checked my work until I was sure that the information was accurate. I STRONGLY SUGGEST THAT YOU TAKE A MOMENT OR TWO AT THE BEGINNING OF EACH YEAR TO COMPARE THE HOLIDAY SCHEDULE IN "DateWorks" WITH A CURRENT HOLIDAY CALENDAR.

Everybody does not celebrate the same holidays. Depending on your religion, geographical location, union membership, and various other factors, you may choose to either observe or ignore the listed holidays. You may enter any holiday in the "HOLIDAY" field and you can just as easily delete any holiday that appears. Technically there are no national holidays in the United States. Each of the states has jurisdiction over its holidays which are designated by legislative enactment or executive proclamation. In practice however, most states observe the Federal Public Holidays even though the President and Congress can legally designate holidays only for the District of Columbia and for Federal employees. When a holiday falls on a Sunday or a Saturday, it is usually observed on the following Monday or preceding Friday. For some holidays, government and business closing practices vary. In most states, the office of the Secretary of State can provide details of holiday closings.

In most states the following will be legal public holidays as of 1986:

- New Years Day
- Presidents Day (Washington's Birthday)
- Memorial Day
- Independence Day
- Labor Day
- Columbus Day
- Veterans Day
- Thanksgiving Day
- Christmas

I have also included holidays that are generally observed by most geographical areas and religious faiths, they are:
LINCOLNS BIRTHDAY       ST VALENTINES DAY
ST PATRICK'S DAY        MARTIN LUTHER KING JR DAY
MOTHERS DAY             ARMED FORCES DAY
MEMORIAL DAY            FATHERS DAY
FLAG DAY                VICTORIA DAY (CANADA)
CANADA DAY              HALLOWEEN
ELECTION DAY            ASH WEDNESDAY
PALM SUNDAY             EASTER SUNDAY
GOOD FRIDAY             UNITED NATIONS DAY
1ST DAY OF PASSOVER     1ST DAY OF ROSH HASHANA
YOM KIPPUR              1ST DAY OF HANUKKAH

The word "OBSERVED" is used next to holidays that do not occur on the anniversary of the event or the anniversary of the persons birthday. Instead they occur on a day that is designated by a pre-determined formula. For example, Washingtons Birthday which is actually February 22 is always celebrated on the 3rd Monday in February (PRESIDENTS DAY).

IF YOU HAVE ANY QUESTIONS ABOUT DATEWORKS OR THE APPLEWORKS DATABASE, PLEASE DO NOT HESITATE TO CALL.

Very Truly Yours

David Sachs Associates

2274 56TH DRIVE
BROOKLYN, N.Y. 11234
718 209-0559

"AppleWorks" is a registered trademark of Apple Computer, Inc.

-END-

Welcome to Dazzle Draw - your entry into a world where everyone can be an artist. Using the newest in Apple color technology, Dazzle Draw lets you turn your monitor into an artist's canvas. You work your magic with a mouse, graphics tablet, drawing pad...or even a joystick.

Using the full 16 colors of this new "double high-resolution" technology, Dazzle Draw offers you a full selection of electronic paint brushes. You can fill in areas, cut and paste or copy portions of your drawing and create rectangles, ovals and straight lines in seconds. For fine detailed work, you can zoom in on any area of the screen. When you're done, you can save your creation onto a disk so you can work on it another time, show it to your friends, audience or customers in a "slide show." or use it as part of your own software programs.

If you have Apple's Scribe color printer (or another color printer listed on the Dazzle Draw package) you can even make full-color printouts of your artistry.

Dazzle Draw offers Apple //e and //c owners a level of graphics sophistication previously available only on far more expensive computers. Whether you're a professional artist, software developer or a part-time doodler, you'll be drawing in no time. And, as you are about to discover, every feature of Dazzle Draw is easy to use.

So put on your creative cap and let your imagination run free.

This manual is divided into several parts to show you how to get started and how to use all the features of the program.

The first section, Getting Started, tells you what you'll need to use the program and how to load it into your computer.

Input Devices explains how to use the mouse and other "tools of the trade."

Dazzling Basics introduces the menus and general features of the program. If you're already familiar with graphics software, this section may be all you need to get started.

Beginners should try out Your First Drawing and then read through...
Apple II Computer Info

Dazzling Details, which takes you through all the menus step-by-step. This section is also useful as a quick reference if you want to learn how to use particular features of the program.

Four Appendices provide technical information on hardware tips, printer setup, color, and ProDOS, the disk operating system used in Dazzle Draw.

The Glossary includes brief definitions of all the menus and functions of the program and terms in the manual that may be unfamiliar.

At the very end, you'll find a list of Shortcuts and a display of all menus for quick reference.

Follow the easy, step-by-step prompts that appear on your screen. Make certain the disk you use does not have the square, write-protect notch along the edge covered over with a tab or label.

For an introduction to the program, insert your Dazzle Draw disk into the disk drive with the label side down. Then turn on your computer. Follow the on-screen prompts for a brief slide show of drawings displaying what Dazzle Draw can do.

Later, you'll learn to make automatic slide shows of your own pictures, with you deciding the sequence and timing of the whole show.

The best tools for using Dazzle Draw are either a mouse or an Apple Graphics Tablet. Although you can use a drawing pad or joystick, you'll have less control over the cursor.

With your "artist's tool" you can move the cursor (a white pointer or other shape) around the screen to select features from the program and to create your drawings.

This manual was written assuming you will be using a mouse. Depending on which input device you use, you'll want to keep in mind the instructions below that apply.

Make a backup Copy

It's a good idea to make a backup copy of Dazzle Draw. The program lets you make one backup copy of the front side of the disk. To make a backup copy, you will need a separate blank disk. Press the ESC key while the program is loading, before the title screen appears. Then
Move the joystick up, down, left and right to move the cursor. Use button 0 in place of the mouse button.

Note - The buttons on various drawing tablets and joysticks may vary.

Before you begin, take a minute to study the screen. Your "canvas" covers the entire screen, including the area behind the menus at the top of the screen. The small white arrow is the cursor. It will take on different shapes, depending on the feature you pick.

The vertical band at the bottom of he screen is the scroll bar. It lets you move the canvas up and down the screen so you can use the entire drawing area without obstructions. You select features in Dazzle Draw through the menus. These contain special operations for drawing, choosing shapes, patterns, and colors, for cutting, pasting, and copying, and saving and retrieving your work.

Before you begin, practice moving the cursor with the mouse. You don't have to hold down the button.

Dazzle Draw feature are listed in "pull-down menus." This means that you "pull down" each menu before selecting a feature in the program. To take a look at the available features, move the cursor to each menu, one at a time, and press the mouse button. Like magic, a list of features appears underneath each menu. Remember to hold down the button, or the menu will disappear!

To choose one of Dazzle Draw's features, simply pull down the appropriate menu. Keep the mouse button held down and move the cursor over the feature you want to highlight, and then release the button. When a feature is gray, it can't be highlighted, and selecting it will have no effect.

The Crown menu includes fundamental features of the program. As an exercise, select the first feature, About Dazzle Draw. Here's how you do it:

1. Move the cursor to the Crown menu.
2. When you reach it, hold down the mouse button.

3. Now move the cursor over About Dazzle Draw...and then release the button.
4. A window with a message appears on the screen.
5. To exit the feature and return to the main menus, move the cursor to the small box to the left of the window name and click the mouse.

Here are descriptions of the feature you'll find in the Crown menu:

About Dazzle Draw

This feature is like a title screen. It tells you how created and published the program and the publication date.

Help About

This is a built-in assistance tool that lets you call up some helpful information about all the menu feature and Undo. For a little help from Dazzle Draw, just click the mouse over Help About...and then move the cursor, now shaped like a question mark, to the appropriate feature. A window with a brief description of the feature appears on the screen. You may use Help About at any point to get information about a Dazzle Draw feature in use. Make sure your Dazzle Draw disk is in the drive.

Adjust Color

The Adjust Color feature puts color bars on the screen to help you adjust your monitor. To exit, just click the mouse anywhere on the screen.

Printer Setup

This feature only applies if you're using a printer with Dazzle Draw. Dazzle Draw works on a variety of popular printers. Check the label on the back of the box for particulars. You must let the program know what kind of printer you'll be using. Here's how:

1. Pull down the Crown menu and select Printer Setup.
2. The "dialogue box" shown above will appear on the screen.
3. The dialogue box indicates three things: the name of the printer, the name of the interface card, and the slot number your interface card is in. If your printer, interface card, or slot number do not match these, you must change the settings. (If you have a /c, you can only change the printer settings.)
4. To change a setting, click the mouse on that item. The name will be highlighted and the bottom section of the dialogue box will display your choices. Click the mouse over the up-and-down arrows to scroll through your choices. When you see the name you want, just click over it.
5. To change another item, click the mouse over the item you want to change and follow the same steps.
6. If you change your mind at any time during this procedure, just click the mouse over Cancel and Dazzle Draw will restore the original names.
7. If you don't want to make any changes, simply click the mouse over Okay. The dialogue box will disappear.

Note - To test your printer, make sure your printer is turn on and "selected," then click Test in the dialogue box. The message "Welcome to Dazzle Draw" should print out on your printer.
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Quit Dazzle Draw

When you're ready to stop using Dazzle Draw, this feature lets you remove the program from your computer's memory without turning off the system. You can then start up another program.

You've probably noticed that the Undo box has no features. This is because the Undo box has a unique function. It gives you the option of "undoing" the last step you took - for example, the last stroke you drew or section you cut or pasted. This option works only if you use it immediately following the action you want to take back, when the Undo box is red. To undo an action, move the cursor to Undo and click the mouse, or type "z" which is the keyboard shortcut for this function.

Windows in Dazzle Draw are the boxes that appear in the middle of the screen containing either information about the program or "tools" for using the various features.

Moving Windows

You can use a window from one feature (like Help About...) at the same time you're working with another feature without erasing what's on the screen. You can also move the windows around the screen so you can work more easily. For example, if you want to keep the Help About... window on the screen as you work here's what you do:

1. Move the cursor into the white title band at the top of the window.
2. Press the mouse button.
3. "Drag" the window to a more convenient location and release the button.

Note - Several windows on the screen at one time will look like a stack of cards. To bring one up from the pile, just click the mouse over an exposed area of the window you want it will jump to the top of the pile.

Using Tool Windows

When you choose certain functions of the program, tool windows appear at the bottom of the screen. A tool window is really like a tool box. It contains the tool you'll need to use the feature you've picked. For now, take a look at the tool window for Paint Brush. It contains the following features:

Name - Identifies the tool window.

Sizes - Lets you pick one of the four sizes for your paint brush.

Shapes - Gives you a selection of six paint brush shapes.

Solid Color or Pattern - Lets you decide whether you want to paint with a solid color or pattern.

Palette - Lets you pick one of 16 colors or 30 patterns from a palette.

Active Box - Tells you what color or pattern is active.

Scroll Bar - Lets you expose the entire canvas by moving the drawing area up and down.

Exit Box - Lets you exit Paint Brush and return to the main menus.

Watch the Colors! - Each of these colors has a specific meaning.

Blue - It's okay to use this option.

Yellow - You've just highlighted this option and it will be selected when you release the button.

Gray - This option is off bounds. You can't use it right now.

Red - Applies to Undo only. Lets you know when the Undo function is available.
Here's how to use Spray Paint:

1. Pull down the Tools menu and select Spray Paint.

2a. Using solid colors: If you're filling with a solid color with another solid color, the "Fill" and "With" boxes both are pre-set to the solid option, so all you have to do is select a color, then click the mouse over the area that you want to fill that color with.

2b. Using patterns: If you're filling with a pattern or over a pattern, you must tell the computer. To do so, first click the mouse over the selected area to set the solid or pattern option next to the "Fill" box to indicate what type of area you want to fill. Then click over the solid or pattern option next to the "With" box. Now select the pattern or color from the palette that you ant to fill with. If you are filling over a pattern, the cursor will change to a dotted-line box. Click the mouse over the area that you want to fill.

Note - The dotted-line box shows what Dazzle Draw "sees" as the pattern it will cover.

Here's how to magnify a section of your drawing:

1. Pull down the Tools menu and select the Zoom feature.

2. A dotted-line box will appear on the screen.

3. Move the box to the area you want to magnify by pressing the mouse button and dragging the box to the section you want to magnify. Then click the mouse.

4. The selected area will be placed in the Active box. It also will be enlarged to fill up the entire drawing area, so you can modify the drawing pixel by pixel.

5. While you're working, you can redefine the section you're working on by using the "zoom scroller," a device that appears in the Zoom tool window. The zoom scroller is like a joystick that directs the positioning of the magnified working area. Simply point the cursor at the dot in the center of the zoom scroller and press the mouse button. Then move the cursor in the desired direction.

Working in your magnified section, here's how to add the delete colors:

1. Pick a color.

2. Move the cursor to the pixel you want to color and click the mouse.

Hints:

1. To draw straight vertical or horizontal lines, press the "Open Apple" key ("Closed Apple" if you're using a drawing pad or joystick) while you move the brush. This feature is called "constrain." You can also use this feature int he Spray Paint mode and, as you'll soon see, when drawing Shapes.

2. Your brush tip is displayed in a contrasting color so that you won't lose it on a background of the same color. Occasionally, you may want your brush displayed in the current color, rather than the contrasting color. press the spacer bar- to switch between these two options.
To color more than one pixel, simply hold down the button while moving the mouse until you’ve filled in all the pixels.

3. If you change your mind and want to erase this color, click the mouse over the pixel or pixels you have that color. The pixels will turn black.

Using the Text feature, you can add words to your drawing. You have your choice of two type fonts (Modern or Serif) and three styles (Plain, Bold, or Italic). In addition, you can choose two sizes for each font: 18 or 36 Point for Modern and 24 or 48 Point for Serif.

If you want to add text to your drawing:

1. Pull down the Tools menu and select Text.

2. The Text Tool window will appear, displaying the current font, size, and style. You can change any of these settings by clicking the mouse over the current choice. The available options will appear one at a time.

3. Move your cursor to the position where you want your text to begin, and click the mouse. This position the text cursor at the place where the character type will begin.

Shapes lets you add squares, circles, ovals, and rectangles to your drawing. You can choose solid shapes, outlined shapes with four different border thicknesses, plus 16 colors and 30 patterns.

Here’s how to use the Shapes feature:

1. Pull down the Tools menu and select Shapes.

2. Select the outline or filled oval or rectangle.

3. Pick a border thickness if you’ve chosen an outlined shape.

4. Move the cursor to the drawing area.

5. Press the mouse button and drag cursor to create the size shape you want, and then release the button.

Note – To draw a perfect circle or a square, press the “Open Apple” key (“Closed Apple” when using a drawing pad or joystick) while defining an oval or rectangle.

With the Lines feature, you can draw solid lines with patterns or colors. You can use single lines, connecting lines, or rays emanating from a single point.

It’s easy to use the Lines operation. Here’s how:

Single Lines

1. Pull down the Tools menu and select the Lines feature.

2. Pick a color or pattern.

3. Pick the straight line option.

4. Choose a line width.

5. Move the cursor into the drawing area and press the mouse button where you want your line to begin. Then move the cursor to where you want your line to end and release the button.

Connecting Lines

1. Follow the instructions for straight lines until you get to Step 3. Then pick the connecting lines option.

2. Choose a line width.

3. Move the cursor to the area where you want your first line to begin and press the mouse button. Drag the cursor to the place where you want that line to end, and then release the button.

4. To draw a second line, press the button again. The second line will begin where the last line ended. Then drag the cursor until you get to the place where you want this line to end, and release the button. You can draw as many lines as you want.

5. To begin a new series of lines, click the mouse anywhere outside the drawing area to end the old series.

Rays

1. Follow the instruction for single lines until you get to Step 3.

2. Pick the rays option.

3. Move your cursor to the drawing area and press down the button at the point from which you want the rays to emanate.

4. Press the mouse button and drag the cursor to the point at which you want the line to end. To draw a second line, press the mouse button again and drag the cursor again.

5. To begin a new set of rays, click outside the drawing area.

Dazzle Draw’s Edit menu gives you the option of “editing” your drawing. Using the Capture feature, you can “capture” specific sections of your drawing and then erase, move, or duplicate them. You can even “invert” colors in a captured section or flip the section vertically or horizontally. With Capture and the Exchange Colors feature, you can replace one color with another within any section.
Flip, Invert Colors, Cut, Paste, Copy, Exchange Colors, or Clear

**Section features.**

Here's how to capture a section:

1. Pull down the Edit menu and select Capture.
2. Move the cursor to any corner of the section you want to capture, and then press the mouse button. Drag the cursor a little and a small, dotted-lined box appears on the screen.
3. While continuing to hold down the mouse button, move the mouse so that the dotted line surrounds the area you want to edit.
4. Release the mouse button.

With this feature, you can flip a section of your drawing vertically or horizontally.

1. Capture the section you want to change.
2. Select Flip Horizontally or Flip Vertically from the Capture tool window.

The **Invert Colors** feature lets you change colors in a section of your drawing to their "opposite" colors (such as white to black).

1. Capture the section where you want to invert colors.
2. Select the Invert Colors option from the Capture tool window.

Using the **Cut and Paste** features together, you can remove the section you captured and reposition it in another area of your drawing. Here's how to do it:

1. Capture the section you want to reposition.
2. Select Cut from the Edit menu or type "x" on your keyboard. The captured section will be lifted off your screen and placed onto the clipboard. In its place will be a black space.
3. Select Paste or type "v".
4. Press the mouse button and drag the cursor (which now look like a right angle to indicate the lower right corner of the section you cut) to where you want the section to be relocated. Then release the mouse button.

With the **Copy** feature, you can reproduce a section of your drawing without removing it and, by using Paste, place the duplicate onto another part of your screen. Here's how:
DOCUMENT dd.deluxe.1

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Apple II Computer Info

Louis Roy, the author of this program, has completely redesigned his packing algorithm. It packs more and faster! He also included a super fast and reliable checksum mechanism to validate the integrity of the compressed data. And Louis has designed this package thinking of the various types of users out there, from the faithful [] users, all the way to the PC transporter //GS users of today, without forgetting Sysops, Hard disk and Ram disk users, etc...

Another significant built-in feature of the program is the capability offered to the packing user to compose, and permanently store in the packed file, an 11 line personal message, and this, plus the built-in checksum and all the new features that you will soon discover, has resulted in a faster packer! As we said before, the world of modem telecommunication will never be the same again!

D.D.DELUXE AT A GLANCE:

- Can pack 5.25, 3.5 800K and 3.5 1600K disks.
- Compatible with all PRODOS devices in existence today, including Ram disks, hard disks, etc.
- A new feature that permit you to communicate with hundreds of people
- You have a copy command that allow you to copy file from a directory to another.
- You have an optimize option to pack even more (only prodos disk)
- You have a clock on the main menu
- Support up to 14 storage units connect to your Apple.
- Will execute on Apple //, //e, //c and //GS.
- Recognize, and utilizes your 80 columns cards (except on a //+)
- Packs more than ever.
- Packs and unpacks faster.
- PRODOS Hard disk compatible.
- Built-in checksum.
- Window driven.
- Keeps the name of the packer and the date of packing.
- User friendly, less typing involved thru intelligent user interface.
- Built-in clock system.
- Supports all PRODOS commands directly from the program.
- Will execute on Apple //, //e, //c and //GS.
- Recognize, and utilizes the power of the new features, you will never accept again to use other DDD imitations, and you will only swear by D.D.DeLUXE, guaranteed!

Finally! No, you are not dreaming, here is the latest packer that Louis Roy wrote especially for you:

DISK DISINTEGRATOR DelUXE V4.0

The original !! (nothing less...)
that day onwards, packers would never be the same again, thanks to DDD V1.0.

1984: He writes a new version, DDD V2.0. This version supported new utilities, but still was using the DDD V1.0 packing algorithm. The program became visually more attractive, and user friendly routines as well as a more intelligent user interface appeared, things such as a track status bar, built in size appearing in the packed title, etc...

1985: DDD V2.1 correcting a bug in V2.0.

1986: DDD V3.0. Louis wrote this new version of his now legendary packer, but decides not to release it. This version supported many of the features that you will now find in DDD V4.0. The personal message, hard disk support, all appeared in that version. It was still using DDS 3.3. Why wasn’t it released? Because Louis decided to stop programming for the Apple all together. Even with the new packer nearing completion, he decided to take a sabatical to put his life in perspective. The life of a hacker is an arduous one, sooner or later you must let go...

This seemed to be the signal other hackers, with little imagination of their own, were looking for! From this moment on, we saw the appearance of new packers while keeping compatibility with DDD V2.1. Even now, most packers in use have blatantly copied his algorithm. Sometimes one wonders if programming ability is not equivalent to copying abilities!

1988: After his sabatical, Louis takes charge again by introducing Disk Disintegrater Deluxe V4.0. The packing algorythm has been totally revamped into a faster, more powerful packer. Mark my words, this packer marks the dawn of a new era, and believe me, the shock waves will be felt all over the modern world, and probably, the same unimaginative people will copy it again. Make yourself a favor, use the original! As in other domains, the original has usually the upper hand on the copy!

---------
COMPATIBILITY
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A) D.D.Deluxe is not compatible with the older algorythm of DDD V2.1 (and other compatible packers). Why? Keep reading, the reasons will become obvious... In any case, this packer will render all other obsolete!

B) D.D.Deluxe will execute bug free under the following computers:
- Apple ][+ or compatible, with 64k
- Apple //e, enhanced or not, with or without extended 80 column cards
- Apple //c, all models
- Apple //GS

C) Screen mode:
- Apple ][+: The display will be in 40 columns mode and in upper case characters only, even if you have a compatible ][+ which supports lower case characters. The main reason being that even those compatible cannot display inverted lower case characters that DDD uses.
  - If you have an 80 column card, D.D.Deluxe will not use it, this is caused by the lack of standard in the ][+ 80 columns. Remember that you will have to boot DDD in 40 columns, any attempt to boot in 80 columns will result in garbage characters on your screen.
- Apple //e without 80 column card: You will see lower case characters, but obviously you will only get 40 columns of display.
- Apple //e with 80 columns, Apple //c and Apple //GS: You will see both 80 columns and lower case characters.

D) Disk format that D.D.Deluxe can pack:
- 5.25" floppy diskettes
- 3.5" floppy diskettes with 800k capacity
- 3.5" floppy diskettes with 1600k capacity (yes, we know, they don’t exist...yet... but we can compact them!)

E) Disk drives compatible with D.D.Deluxe:
- 5.25" disk drives
- 3.5" 800k drives (this include Apple 3.5, Unidisk 3.5, Universal clock controller and all other 3.5 drives that are Apple compatible.)
- 3.5" 1600k drives (not yet available, but Apple is rumoured to announce one for 1988).
- All hard disks working under PRODOS (CMS, Siders, Profile, etc.)
- All RAM cards that support a PRODOS RAM disk driver.
- All Mac disks (such as the //GS Memory Saver).
- PC transporter RAM disk.
- PC transporter 5.25" PRODOS disk.

F) PRODOS version:
- D.D.Deluxe is compatible with PRODOS version 1.3 or higher. Do not use with older PRODOS revisions (it will not run). It’s preferable to use V1.4 because V1.3 have minor bugs in it.

G) Clock cards:
- D.D.Deluxe will read your clock card as long as you have loaded its driver in the PRODOS boot (clock patch). D.D.Deluxe is compatible with all standard PRODOS clock cards, with or without patch. D.D.Delux will also work without a clock card, in which case you will be prompted for date/time input whenever required.

WHAT YOU HAVE ON D.D.Deluxe DISK

The D.D.Deluxe original disk have 2 sides. Following is a description of the various files on the disk:

D.D.Deluxe.V4.0
SYS file. To be used if you wish to start D.D.Deluxe.V4.0 directly from Applesoft Basic.

D.D.Deluxe_LOAD
This is the main program of D.D.Deluxe (application file). This file should never be renamed, if you use D.D.Deluxe_LOAD or if you use the Finder on a //gs.

D.D.Deluxe.CONF
This is the file where your personal configuration of D.D.Deluxe (type BIN) will be stored. This file should never be renamed!!

ICONs directory: FINDER.ICONs, FINDER.DATA and DDDDELUXE.ICONs
These files will only be useful for Apple //gs users. On the disk itself, these files are useless. Copy these files to the directory called ICONs of the Finder you are using. Your finder will then be able to load these files and will display the appropriate ICONs relative to D.D.Deluxe files. A small surprise is waiting for you! (Note: you probably have FINDER.ICONs and FINDER.DATA on your disk, replace them by these new files).

READ.README, FIRST
First text file to read when booting for the first time the D.D.Deluxe disk (side 1).

D.D.Deluxe.DOX1
TXT file. First part of the D.D.Deluxe documentation.
D.D.DELUXE.DOK2
TXT file. Last part of the D.D.DELUXE documentation.

DDDELUXE.BENCH
TXT file. D.D.DELUXE comparative benchmark, as done by Roger Richard (HA! HA!).

DDDELUXE.ERRORS
TXT file. List of error codes, and their significance, that you may encounter during the use of D.D.DELUXE.

BONUS.FILES

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WHY D.D.DELUXE DOES NOT USE 128k

D.D.DELUXE works on any system with at least 64k (except on the original Apple II). Maybe you are disappointed that the program does not make use of the full 128k, or more, memory of the //e, //c or //GS? There is a simple reason to this: it's faster that way! Even if the DDD's buffer is smaller by only using 64k of the available memory, resulting in increased disk access, it's still faster! This is caused by the peculiar architecture of the Apple bus. The Apple can only access 64k of memory at the same time, all subsequent 64k of memory are used as a switched memory bank. Basically, this demands a substantial amount of memory moves. In his beta version, Louis was using bank switched memory, but after a few bench marks, he noticed that the increased memory handling capability resulted in decreased performance. So he removed it.

Statistically speaking, 98% of the Apple systems in use have more than one disk drive, so this will not cause a problem to the majority of the users. Those that only have a disk drive are left with the alternative of using a ram disk, acquiring a secondary disk drive, or swap disks! (check the copy command for further instructions on how to use ram disks when packing and unpacking).

NOTE ON RAMDISK

If you have a configured ram disk with 800k, D.D.DELUXE will treat it as a 3.5" 800k drive. The same rule applies with ram disks of 1600k. It will be possible to you to unpack DDD files of 800k and 1600k onto ramdisks instead of the usual 3.5" disks.

CLOCKS

If your Apple has a clock card, D.D.DELUXE will display the current date and time in a little window at the bottom left of your screen of the main menu.

RESET KEY

In other Apple programs, never press the RESET button while D.D.DELUXE accesses your disk. This may prove to be hazardous to the life of your disk! However, as long as D.D.DELUXE is not accessing the drives, it will be safe to press reset, you will then be transported back to the main menu.

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DISK ACCESS ERROR TRAPPING

Everytime you get an error while D.D.DELUXE is accessing the disk. In the eventuality of such an error occuring, D.D.DELUXE will tell you the appropriate PRODOS error code, in hexadecimal, in a little window at the top of your screen. Just refer to the standard PRODOS error codes (or the PRODOS error charts in a file on your D.D.DELUXE disk) to find out the cause of the error and select an appropriate course of action.

If an error situation, the program will suggest that you press a key if you wish to retry the same operation again. It may give you the same error again, but if you corrected the problem in the meantime, it will work. This feature will prove useful whenever you leave your disk drive open for example...

WHAT'S THE PERSONNAL MESSAGE?

The personal message is a very powerful and useful feature, maybe the impact of this feature escapes you right now, but as you will soon find out, you will not want to pack without this option!

Everytime you will pack a disk, D.D.DELUXE will compress and insert in the resulting DDD file your personal message along with your name and the date you packed the file. When another person will de-compress your DDD file, D.D.DELUXE will display automatically on the screen your personal message, your name and the date packed. Can't you already sense the obvious advantages of such a feature?

What could you write in that message? In reality, just about anything that you feel you would want other people to see, things such as documentation, special hints, even a classified ad! Let's say you have a modem to sell, etc. You may even be able to reach somebody that you ignore his telephone number, even his address, the possibilities are endless!

WHAT'S THE MENU LINE

The menu line is edited at the same time as your personal message. As the user unpacks the DDD file, at the very start of the unpack, your personal message will be displayed. But the menu line will only be displayed at the end of the unpack, providing that no errors were detected.

This menu line will appear in the user's main menu as long as he will work with D.D.DELUXE, or until the next unpack. What you will do with this menu line is only bound to your imagination, for example, you could use it as publicity for your favorite BBS, as this line will remain in permanence on the screen of the unpacking user as long as he uses D.D.DELUXE (or until the next unpack), or why not use it to pass on proverbs, I'm sure that already ideas are popping in your head.

Take note that the menu line stay on the main menu screen even if the
user use the option "View DDD file informations" (in PRODOS COMMANDS).

D.D.DeLUXE PRODOS FILE TYPE and DISK IDENTIFICATION

When you are packing, D.D.DeLUXE uses the PRODOS type $DD (short for Disintegrater DeLuxe) to store your DDD file, no matter if you used 5.25, 3.5, 800k or 1600k. As of now, this file type has not been used by any other Apple software programs.

When you will catalog such a directory with D.D.DeLUXE, these file types will appear as "$DD", but if you use other software programs to catalog such disks, they will appear as "$ODD". This will facilitate the identification of DDD files.

How will you know what type of medium is to be used during the unpacking operation? This is made quite simple, just look at the file name! D.D.DeLUXE utilizes suffixes to differentiate the various mediums:

- `<filename>.A` --> 5.25 floppy
- `<filename>.B` --> 3.5 800k disk
- `<filename>.C` --> 3.5 1600k disk

HORIZONTAL MENU

At certain occasions, D.D.DeLUXE will ask you to choose certain options with the horizontal menu. In this case, just use the left and right arrows (`>` and `<`) to choose the option you desire, then press Return to accept it.

NOTE ON DIRECTORY SIZE

D.D.DeLUXE can catalog any PRODOS directory that contains a maximum of 600 files. That the limit applies to each directory, you may have thousands of files on your disk, but in any given directory (or sub-directory), D.D.DeLUXE cannot catalog more than 600 files. In the rare eventuality of this happening, you will get the message "DIRECTORY TOO LARGE", in which case you should consider splitting that directory into smaller sub-directories. But in reality, we all know that nobody would have this problem since we all know what problem having such huge directories will bring.

One final note, if you use a RAM disk driver, this limit will perhaps be lower, but then again, nobody should be affected.

EDITOR CONTROL KEY

Every time that D.D.DeLUXE will ask you to type anything, you will automatically have access to the following editing keys:

- `->`: move cursor right in sentence
- `<`: move cursor left in sentence
- `DEL`: delete character at left of cursor
- `CTRL-D`: delete character at cursor
- `TAB` or `CTRL-I`: toggle insert mode on/off
- `CTRL-F`: put cursor at first character of the line
- `CTRL-L`: put cursor at last character of the line
- `CLEAR` or `CTRL-X`: Clear line
- `RETURN`: Accept line

D.D.DeLUXE STANDARD DIRECTORY COMMAND

Every time that you use the following options: PACK, UNPACK, PRODOS COMMANDS, OPTIMIZE, VIEW DDD FILE INFORMATIONS, SAVE MESSAGE and COPY COMMAND you will always have access to the following commands:

The first window that D.D.DeLUXE will display will be a list of the on line PRODOS volumes as well as a list of all devices without a valid PRODOS volume in it. At this time, you can use the arrow keys to browse through that list and choose your preference by pressing the Return key. Just remember that you will only be allowed to choose a device that contains a valid PRODOS volume.

Then D.D.DeLUXE will show you a second window containing the directory of the volume you chose previously. You will also indicate to you wether the catalog you are viewing is a FULL or PARTIAL catalog. You will see such information on the top line of the window. At the bottom of the window, you will see the volume name, total free blocks of the disk as well as the total block capacity of that disk. You then have, at least, the following options:

a) Arrows:
- Right and down arrows: move down 1 line in directory
- Left and up arrows: move up 1 line in directory
- Open apple + down arrow: move down 7 lines in directory
- Open apple + up arrow: move up 7 lines in directory

b) RETURN key:
- If you wish to catalog a subdirectory, position your scroll bar to the subdirectory and press Return, D.D.DeLUXE will give you a new catalog of that subdirectory.

- Back 1 directory. If you are not at the volume directory and you are in a subdirectory, you can backtrack to the previous directory by pressing the number 1 key.

c) Key "1":
- Volume window. By pressing this key, D.D.DeLUXE will give you back the volume window of all on-line volumes on your Apple. Of course, if you inserted or removed volumes since the last time, D.D.DeLUXE will present you with an up to date picture of these volumes.

- Key "2":
- Full and Partial catalog toggle switch. By pressing the number 2 key, you will activate a toggle between the full and partial catalog mode. In a full catalog, D.D.DeLUXE will display all files present in the working directory, in a partial directory, D.D.DeLUXE will only display the sub-directories and the files of type $DD (or DDD). This option will allow you to quickly zero in on such type of files.

d) Key "3":
- If you are in mode "full" and D.D.DeLUXE will display that message, then you have no files in your directory, however, if you were in "partial" mode, then this message will indicate that you have no sub-directory or DDD files in the working volume. You may still have other files of type in this directory, to verify, just go in "full" mode by pressing "2" key.

HOW TO START D.D.DeLUXE

Before starting D.D.DeLUXE, if you have a clock card, you should evidently load its driver to patch PRODOS, if it hasn't been done already. Furthermore, if you also want to utilize your Ram card, you should also load its driver.

Note that no driver are necessary for /RAMS on the //GS or the standard //RAM on the //c or //e. And don't forget either that you must use PRODOS 1.3 or higher.
Do not rename the following files, as they are used by D.D. DeLUXE and you may create unnecessary problems:

"D.D.DELUXE.V4.0"
"D.D.DELUXE.LOAD"
"D.D.DELUXE.CONF"

You must have the configuration file "D.D.DELUXE.CONF" residing in the same directory as "D.D.DELUXE.V4.0", so that D.D. DeLUXE can load this configuration. If the configuration file is not found, then D.D. DeLUXE will configure itself with default parameters.

If you are using a /GS, you can start D.D. DeLUXE directly from the Finder by executing the main module: D.D.DELUXE.V4.0. You will not need to execute the D.D.DELUXE.LOAD if you use the Finder or the PRODOS dispatcher (PRODOS BYE or QUIT commands).

If you start D.D. DeLUXE from Applesoft basic, then you must start D.D.DELUXE.LOAD first, this binary file will load the main program D.D.DELUXE.V4.0 in resident memory. This procedure is necessary due to the size of the routine and this could cause a conflict with the BASIC.SYSTEM in memory if you wished to start directly from basic.

If you have an Apple ][+, you must start D.D. DeLUXE from 40 columns, if you have an 80 column card, you must refrain from using it.

Once loaded, D.D. DeLUXE will show you a banner page, at this stage, you may elect to press the letter A to read the "About D.D. DeLUXE" for the program, pressing any other key will go directly to the main menu. Voila! You are now ready to utilize D.D. DeLUXE.

If this is the first time ever you used D.D. DeLUXE, you will probably want to configure your personal version of D.D. DeLUXE, if you need help with this option, read the documentation on the CONFIGURE option.

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MAIN MENU
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First, let's review the list of commands that will be documented in the following paragraphs and are available from the main menu:

[1] Pack disk
[2] Unpack disk
[3] Prodos commands
[4] Edit my message
[5] View last DDD info
[6] Optimize Prodos disk
[7] Format Prodos disk
[8] Checksum disk
[9] Configure
[10] Quit

You can choose one of the options directly by pressing its appropriate number or browse through the choices with one of the "browse" keys:

Space bar, right and down arrow: down one line
left and up arrow: one line
Return: accept option selected

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PACK DISK
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This option will allow you to compress a whole disk (5.25, 3.5 800k or 3.5 1600k) into a single file. Here is how to proceed:

1) D.D. DeLUXE will ask you to select the location of the disk you wish to pack. D.D. DeLUXE will show you the inventory window of all the disk 5.25, 3.5 800k and 3.5 1600k allowable on your system. Using the arrow keys, choose the location of your original medium and press return. It is not necessary that you insert your original disk at this time. You could do but you could also wait until D.D. DeLUXE asks you for it. If you are using an Apple //gs and you wished to pack a 3.5" disk, it would be preferable to insert the source disk prior to press RETURN in step #2.

2) The next step will be to type the name of the file you wish to assign to your PACKED DDD file (you are allowed a maximum of 13 characters, either in upper or lower case). Note that D.D. DeLUXE will always append a suffix to your selected name, this suffix will identify the medium to be used to unpack:

.A --> 5.25" floppy
.B --> 3.5" 800k disk
.C --> 3.5" 1600k disk

Apple //gs user: Please note that if you chose to pack a 3.5 disk and that you have inserted the disk to be packed prior to start step #2, D.D. DeLUXE will default the file name to be used to the volume of the disk to be packed, if it is a PRODOS disk of course. You will then have the option of accepting it as is, to modify it, or to enter a different name, by pressing first the CTRL-X or CLEAR (clear line).

Note: it's now time to insert your destination prodos disk where you want to save the DDD file.

3) If you are using an installed clock in your PRODOS, D.D. DeLUXE will not ask you for the date, it will read it directly from the clock. If no clock was recognized, then D.D. DeLUXE will ask you to register the date, that date will be defaulted to the date you stored in the configure option, but you can always override it with today's date, or another, with the help of the following keys:

right or up arrow: add 1 to current field (day, month or year)
left or down arrow: subtract 1 from current field
space bar: switch between fields (day, month or year)
Return: accept the date

4) Now D.D. DeLUXE will show you the volume window. You can use the "STANDARD DIRECTORY COMMANDS" as mentioned previously to select the volume and directory where you wish to store your packed file. By default, D.D. DeLUXE will suggest you the first directory (the volume directory) in "partial mode".

Note that if you haven't already inserted your target disk (the one where you want to store the DDD file) and that you aren't ready at the volume window, you can still insert it right away and choose, with the scrollbar, the device where the disk resides (i.e. the slot and drive number), then press RETURN.

Also note that if your target disk is not a PRODOS disk, or that it has never been formatted, D.D. DeLUXE will ask you whether or not you wish to format it (PRODOS format). If you decline, then D.D. DeLUXE will go back to the volume window (as you must absolutely choose a PRODOS directory to store your packed file).

You must also make sure that there is sufficient space on the directory where you wish to store your packed file, otherwise you will end up having to redo the entire packing process. With experience, you should be able to estimate roughly the number of PRODOS blocks required to pack a disk.

5) Finally, D.D. DeLUXE can start packing! Check this:
a) I drive operation:
   If the device you chose to pack your disk is the same as the device where your packed file will be stored, then D.D. DeLUXE will only use 1 drive to pack your disk. Get ready to do a lot of disk swapping!
D.D.DeLUXE will ask you to alternatively insert your original disk and your destination disk. Don’t make a mistake, because D.D.DeLUXE will not verify that this is indeed the original disk or the target disk (it would slow down the packing process). It would be a prudent decision to put a "write protect tab" on your original disk, just in case... The consequences could be that you damage your original disk.

b) 2 devices operation:
If your source and destination disks do not reside on the same device, then D.D.DeLUXE will assume that you are packing using 2 different devices, will ask you to insert both the disks to be used at their respective selected locations and start packing by pressing a key!

c) Information displayed:
D.D.DeLUXE will display the following five parameters:

- "DDD status": Will tell you what DDD is doing
- "Block ": The block number that DDD is currently loading in memory to compress it.
- "Total block": The total number of blocks to be compressed
- "Checkum": Since DDD loads 8 blocks of data at the same time to compress them, the checksum is the cumulative checksum of these 8 loaded blocks.
- "Total file block": This is the cumulative size, in block, of the packed file.

d) When D.D.DeLUXE has finished, just press any key to return to the main menu.

Voila! You have successfully packed your disk!

NOTES:
- D.D.DeLUXE will use PRODOS file type $DD for all files packed
- D.D.DeLUXE will save in your packed file, your name, the date packed, your personal message and your menu line and all checksums of the disk.
- If you packed a 3.5" disk on a Apple //gs and if you use an APPLE 3.5 drive, and you do a 2 devices operations, D.D.DeLUXE will automatically eject your original disk from the drive.

C) Now, D.D.DeLUXE will ask you whether or not you wish to format your target disk (that's the disk where you will unpack your disk onto, not the other way around!). By default, the response will be "YES", if you already know that your target disk has already been formatted in a standard way, (PRODOS, DOS 3.3, PASCAL, CP/M or other standard format), then you do not need to reformat your disk, you can then answer "NO". Just remember that your target disk must have been formatted at least once and that, in a normal method (i.e. not a protected disk). In any other cases, you will have to format your target disk.

D) D.D.DeLUXE now proceeds in unpacking your DDD file:

a) 1 drive operation:
Once again, if your source and target devices are the same, D.D.DeLUXE will assume that only one drive will be used to unpack, you will be then asked to alternatively insert the target and source disks.

b) 2 devices operation:
If your source and destination disks do not reside on the same device, then D.D.DeLUXE will assume that you are unpacking using 2 different devices, will ask you to insert both the disks to be used at their respective selected locations and start unpacking!

c) Information displayed:
As it unpacks, D.D.DeLUXE will display the following information:

- "DDD status": Will tell you what DDD is doing
- "Block ": The block number that DDD is currently writing on the target disk.
- "Total block": The total number of blocks to be unpacked
- "Checkum": Since DDD loads 8 blocks of data at the same time.
time to decompress them, the checksum8 is the cumulative checksum of these 8 blocks written to disk.

- "message window": The personal message of whoever packed the disk.
- "Packed by": The name of whoever packed the disk.
- "Date of packing": The date the disk was packed.

d) When D.D.DeLUXE has finished, it will display the "menu line" (last line of the personal message). This line will also be displayed on your main menu.

If your DDD file has been altered or destroyed (it only takes a lone bad bite!), while unpacking D.D.DeLUXE always verifies the checksum of the file being unpacked against the checksum stored on the DDD file. This way, you will always know the unpacked file matches the original.

If an error was detected in the checksum, D.D.DeLUXE will stop unpacking immediately and indicate to you the last checksum of the DDD file.

(e) (the checksum8 parameter of the status window indicates the checksum of the 8 blocks stored on the disk). In this case, there is nothing you can do with that packed DDD file.

Voila! You have just unpacked your DDD file!

PRODOS COMMANDS

This option will allow you to catalog a directory, delete files, create sub-directories, rename files, convert DDD files to type DDD, view a text file, view DDD file informations and finally, copy files from a directory to another.

Once again, as you select this option, D.D.DeLUXE will display the volume window (the "STANDARD DIRECTORY COMMANDS" described above will apply). Furthermore, D.D.DeLUXE will always default the first catalog to FULL mode.

On top of the usual commands, the following additional commands are available (to activate these commands, use the arrow keys to position your scroll bar on the file requested):

A) CTRL-C: CREATE A DIRECTORY

This option will allow you to create a sub-directory in the working directory. As you press CTRL-C, D.D.DeLUXE will ask you to enter the name of the directory to be created, you are allowed 15 characters maximum, then press Return and it's done! Your subdirectory has been created.

B) CTRL-P: COPY FILE

This command will allow you to convert a directory, rename files, convert DDD files to type DDD, so you have no fear that D.D.DeLUXE will ever convert a file that is not a DDD file.

C) CTRL-V: VIEW TEXT FILE

This command will allow you to view a text file on the screen. As you choose this option, D.D.DeLUXE will start displaying that file on the screen. D.D.DeLUXE will automatically display that file in page mode, when the display window is full, D.D.DeLUXE will stop further displaying until a key has been pressed on the keyboard (any one except ESC). Once the entire text file has been viewed, D.D.DeLUXE will go back to the directory where you were prior to pressing CTRL-V. Note that you could always exit from that command before having viewed the entire file, by pressing CTRL-Q (quit).

Officially, you are only allowed to view any file of type TXT, but un-officially, you could also view Appleworks file type AMP, but right now the text will not be formatted exactly like Appleworks would. The reason is that Appleworks support is not officially implemented in this revision, but will be in a subsequent release of D.D.DeLUXE.

D) CTRL-V: VIEW DDD FILE INFORMATIONS

You may use this option on any DDD file. Take note that it's the same control key as "VIEW TEXT FILE". D.D.DeLUXE identify automatically which command to use by checking the file type of the file (TXT or DDD). This command is identical to the "VIEW LAST DDD INFO" command. Once D.D.DeLUXE has supplied you with the informations concerning the DDD file, it will go back to the directory where you were. Note that you can also save these informations in a TXT file, just like "VIEW LAST DDD INFO" by pressing CTRL-S.

E) CTRL-D: DELETE FILE

This option will allow you to delete any file in the working directory. As you press CTRL-D, the file is deleted! Note that to delete a file type DIR, indicating a sub directory, this sub-directory must be empty of any files. In the eventuality that the directory contained files, you would have first to position into that sub directory, then delete each file contained, one by one. In situations like that, the use of a commercial program such as Copy+ might be more appropriate.

F) CTRL-R: RENAME FILE

This option will allow you to rename any PRODOS file. As you press CTRL-R, D.D.DeLUXE will prompt you for the new name of the file, as usual you are restricted to 15 characters maximum. As you press Return, the file will be renamed and D.D.DeLUXE would have refreshed the volume window accordingly.

G) CTRL-P: COPY FILE

This option will allow you to copy a file from the working directory to another directory. As you press CTRL-P, D.D.DeLUXE will display the volume window, as usual, the "STANDARD DIRECTORY COMMANDS" are available. Just choose the file you want to copy, press Return and D.D.DeLUXE will copy the file to its intended destination. When the copy has finished, press any key and D.D.DeLUXE will prompt you at the target directory where you stored the copy file.

Note that you can copy a file to another directory on the same device as long that it is not in the same directory as the working directory. Also note that you cannot copy a directory, copy an entire disk to another, or copy a file from one disk to another using only one drive, for operations like that, the use of a disk utility program such as COPY+ would be more adequate.

You can use this command to do your "housecleaning" in your file, but for users having only one drive and a ram card, this would become a very useful utility. For example, you could pack into the ram disk and then transfer the packed file from the ram disk to another disk. The opposite is also true, transfer the DDD file to the ram disk, then unpack onto another disk. No more disk swapping! (and you don't have to quit D.D.DeLUXE to run a copy program).
the built-in D.D.DeLUXE MINI EDITOR to compose your message, here is a rundown of the various commands of this editor:

CTRL-J : (or down arrow), move cursor 1 line down
CTRL-X : (or up arrow), move cursor 1 line up
-> : move cursor right 1 character
<- : move cursor left 1 character
RETURN : move cursor 1 line down and position the cursor at the start of the first character
DEL : delete character at left of cursor
CTRL-D : delete character at cursor
TAB or CTRL-I : toggle insert mode on/off
CTRL-N : toggle normal or inverse mode
CTRL-Z : center the line
CTRL-F : put cursor at first character of the line
CTRL-L : put cursor at last character of the line
CLEAR or CTRL-X : Clear line
CTRL-E : Erase the entire message

For |[* users, the following keys have been added:

CTRL-R : Prints the underscore character "_."
CTRL-T : Prints the backslash character "\"
CTRL-Y : Prints the square bracket character "[".

These three special characters have been added since the standard Apple |[* cannot generate these characters directly from the keyboard, while being able to display them.

Note that you can type the characters in normal mode or in inverse mode. This should allow you to be creative in your message. Note also that the insert mode can be turned off by using the CTRL-I command again or by pressing one of the arrow keys or Return.

On your status line, D.D.DeLUXE will display the current insert mode (on or off) as well as the character mode (normal or inverse). Furthermore, if you are currently using 80 columns, D.D.DeLUXE will display an index of the various commands available to you at the left of the window. Of course, if you are using 40 columns display, this index will not be seen on the left of the window, but underneath it.

Once you have finished typing your personal message (your creation), press ESC to return to the main menu. You can save this message for future use by going to the configuration option, D.D.DeLUXE will save it along with all other configuration parameters. This is the message that will appear as part of your packed file the next time you pack a file. Note that it is not necessary to go to the configuration option if you only wish to add the files you wish to be packed in the current session; this is only if you wish to have this message appear as the default message every time you start D.D.DeLUXE.

- **VIEW LAST DDD INFO**

This option will allow you to read the message from the last disk you have unpacked or the message from the last packed DDD file where you used the "VIEW DDD FILE INFORMATION" from PRODOS COMMANDS, whichever came last.

D.D.DeLUXE will display the following informations:

- the name of the DDD file
- the personal message of that file
- the menu line
- the name of whoever packed that file
- the date of packing
- the version of D.D.DeLUXE used in packing (>= 4.0)

D.D.DeLUXE will then show you the volume window. You will then only have to use one of the standard D.D.DeLUXE directory commands, as mentioned previously, to choose the directory where the text file should be saved. When you are at the directory you wish to save the file, press the space bar. All the informations appearing on the screen will be saved in that text file. The filename will start by the prefix "I.<filename>" (I for info file).

- **OPTIMIZE PRODOS DISK**

This option will allow you to erase all the free blocks from a PRODOS disk. What use could that serve? Simple, it will just speed up the packing by making the packed file smaller. An unused block still represents data, an erased block represents the absence of data. While it is not necessary to back up your disk prior to optimizing it, you may elect to take this wise precaution, just in case! Remember that the optimization option will only be available to PRODOS disks. DOS 3.3, PASCAL and CP/M disks will not be optimized.

As you choose this option, D.D.DeLUXE will show you the volume display window, but this time, you will not see the directory window. Using the arrow keys, select the volume you wish to optimize and press Return. Note that if you attempt to optimize a non-PRODOS disk, D.D.DeLUXE will refuse to do so. You can optimize all types of disks (ram disks, harddisks, 3.5, etc..) as long as it is PRODOS.

D.D.DeLUXE is now ready to optimize your disk. To start it, just press any key. D.D.DeLUXE will display an information window with the following parameters:

- "Total blocks" : Number of blocks to be scanned to optimize the whole volume.
- "Scanning block #" : The block number D.D.DeLUXE is presently analyzing.
- "Blocks optimized" : The cumulative number of blocks that D.D.DeLUXE has already optimized.

Note that the "blocks optimized" are only the free blocks that had not already been optimized (i.e. contains all zeros), they would not be considered. When the optimization routine has completed, your disk has been optimized and is now ready to be packed.

- **FORMAT PRODOS DISK**

This option will allow you to format any one of your devices connected to your Apple, these include Randisk, harddisk, floppy 5.25", 3.5" 800k and 1600k drives, PC transporter 5.25" disk, etc..

When you choose this option, D.D.DeLUXE will give you a display window listing all devices connected to your Apple, using the arrow keys, just choose the devices to be formatted and press Return. D.D.DeLUXE then verifies that the selected devices have a disk inside them and will ask you to confirm that you indeed wish to format them. By default, the answer to the question is "NO", so choose "YES" and press Return. As the formatting is completed, press any key to return to the main menu.
NOTES:

a) If you wish to format a ram disk, depending on the type of ram disk, you must evidently have loaded its PRODOS driver before starting D.D.DeLUXE. You must also make sure that your ram disk controller is not conflict with the standard hard disk controller. For example, if you have a ram disk controller that boots up before the hard disk controller, D.D.DeLUXE cannot format the ram disk. Also, if your ram disk controller does not have its own PRODOS boot code, D.D.DeLUXE will not be able to format the ram disk.

b) If you wish to format a hardisk, it is possible that the hard disk could not be formatted, just as it could work. This is due to the peculiar nature of some hard disks that requires that a special code be sent to its controller. This is a protection built in by the hard disk manufacturer to ensure against accidental formatting of such devices.

c) If you wish to format a 5.25" floppy disk, D.D.DeLUXE will immediately verify, after formatting, that it has been formatted correctly. This is due to the fact that D.D.DeLUXE utilizes the Hyper-Format routine, a routine that does not check for errors, so we are playing it safe!

d) Note that, in the event where you wanted to format a disk while unpacking, D.D.DeLUXE would not verify the formatting as it would pick up your favorite errors as it unpacks to it.

e) D.D.DeLUXE does not store the standard PRODOS boot on the formatted disk. This implies that disks formatted with D.D.DeLUXE are unbootable. All D.D.DeLUXE uses as a boot code, is a very small message in block #0 and the rest is full of zeroes. Consequently, a disk formatted with D.D.DeLUXE can only be used to store data files (such as DDD files). D.D.DeLUXE will eject it immediately upon detection of the error.

f) If you are using an Apple //gs and that you are formatting a 3.5 disk on a 3.5 Apple Drive, and if your diskette has bad blocks on it, then D.D.DeLUXE will eject it immediately upon detection of the error.

g) If your disk to be formatted is brand new, D.D.DeLUXE will not ask you if you want really format it, as it will format it directly.

............

CHECKSUM DISK

............

This option will allow you to do a checksum of a 5.25" floppy or 800k or 1600k 3.5" disks. When you select this option, D.D.DeLUXE will display the checksum window including the following informations:

-> Block number : This is the first of the 8 blocks of the checksum, as you already know, DDD computes the checksum every 8 blocks. D.D.DeLUXE, for example, if the display shows "Block8: 32", then the checksum corresponds to block number 32 to 39 inclusive.

-> Checksum : Checksum of these 8 blocks.

-> Last block : This is the last block # to be reached

-> Total checksum : Checksum of all blocks on disk.

When D.D.DeLUXE has finished to compute the entire disk's checksum, you will have the total checksum, in hexadecimal, at the bottom of the screen. Note that if you wish, at any time, to stop the scrolling window (maybe to write down each checksum), you can do so by pressing the space bar once, you would start it by pressing it again. Also note that you can checksum any type of Apple disk, it may be PRODOS, DOS 3.3, PASCAL, CP/M or any other valid format, even if we mention the term "block" to compute the checksum.

This option is not necessary to pack or unpack disks, D.D.DeLUXE automatically do so for you. It's just one more utility at your disposal, if you should ever decide to check the checksums yourself.

............

CONFIGURE

............

This option will allow you to customize D.D.DeLUXE according to your personal tastes and hardware. Following is a list of the various parameters available to you:

A) DISABLE 5.25":

D.D.DeLUXE will only ask you this question if you are using a //GS. A lot of //GS users no longer utilize their 5.25", in which case you may elect to disable them from DDD. This will mean that D.D.DeLUXE will just ignore all 5.25" controllers it finds. Note that if you had disconnected your slot 6 (the usual 5.25" controller slot), then you would have no use for this option, unless you also had other 5.25" controllers in other slots (see configuration #8). The changes are made immediately after pressing return. It's not necessary to save all the configuration if you want only change this option.

B) KEYCLICK:

This option will toggle the "noise" made every time you press a key. Use it according to your taste.

C) YOUR NAME:

This is where you register your name, up to 19 characters are allowed. Your name will become your default for all further packing.

D) PACK DEFAULT DATE:

This option should only be used if your Apple does not contain a clock card. Basically, this date will become the default date every time you pack a disk. To adjust this date, follow the same procedure as outlined in the PACK function.

E) QUIT PATHNAME:

This option will allow you to specify the default pathname to be used upon exiting from D.D.DeLUXE. For more information on this option, check the section "QUIT" later on in the documentation. Just remember that all pathnames must start by "/" and that the name of the called application program must correspond to a file type SYS.

F) SYSTEM SPEED:

This option allows you to adjust the speed of D.D.DeLUXE according to the speed of your CPU, for example, if you have a ZIPCHIP, chose 4Mhz, for a //GS, chose 2.8Mhz, etc. Why this parameter? D.D.DeLUXE will adjust the scrolling speed according to the speed of your CPU. For example, if the display shows "Block5: 10", then the speed, the keyclick and bell consequently.

G) SAVE YOUR MESSAGE:

Actually, you do not have any choice! Whether you want it or not, your personal message will be saved! This is just a reminder.

After you have finished configuring D.D.DeLUXE, you will be asked a final time whether you still wish to save it on disk, if you decline, you will just be returned to the main menu. If you elected to save it, then you should insert the disk where you have saved D.D.DeLUXE V4.0, press any key and your configuration will be saved as D.D.DE.LUXE.CNF. That's it! You have configured your D.D.DeLUXE.

....
QUIT
....

You have three methods of leaving D.D.DeLUXE, actually four if you consider turning off the computer! When you choose this option, you will see the default pathname as specified in your configuration along with the following menu:

PRODOS.QUIT   DEFAULT   OTHER

A) PRODOS.QUIT:
When you select this option, D.D.DeLUXE will utilize the standard QUIT function of PRODOS (like BYE in Applesoft). On a //gs, if you called D.D.DeLUXE via the finder and after using D.D.DeLUXE you wish to return to the finder, you should use this quit option.

B) DEFAULT:

If you elect to quit to the default pathname, then D.D.DeLUXE will utilize the pathname that you have configured, of course you will have to make sure that the appropriate volume be online. This option will be practical if you always use the same application after leaving D.D.DeLUXE, such as a communication program.

C) OTHER:

This option is similar to the PROCOS QUIT command but is much faster. D.D.DeLUXE will ask you to enter the pathname of the application that you wish to execute upon leaving, just type the full pathname, the name of the system file to be executed (type SYS) and press Return, D.D.DeLUXE will then load it and execute it.

HOW TO GET MORE SPEED

There are many ways to increase the execution speed of D.D.DeLUXE while packing or unpacking, here are some suggestions:

a) If you use a //GS, D.D.DeLUXE switch automatically to 2.8Mhz, compressing mechanism will then go roughly twice as fast as on 1Mhz. You could also use a Ramdisk (such as the Memory Saver) to store your DDD file. You could also use a memory cache program. The speed difference is really interesting, wether you are packing, unpacking, be it on a 5.25", 3.5", ramdisk or hard disk. The best memory cache program is probably "DIVERSE CACHE". Loading such a memory cache program will prove worthwhile, especially if you have many DDD files to pack or unpack.

b) If you use a ][+, //e or //c, you basically have three methods of speeding up D.D.DeLUXE:

1) The first method is to use an accelerator card, such as Applied Engineering's Transwarp which speeds your Apple to 3.0Mhz. The best accelerator is probably the ZIPCHIP from Zip Technology which increases speed to 4Mhz, in which case D.D.D. would pack/unpack 3 times as fast (since disk accesses would remain at 1Mhz).

2) The second method would be thru software, once again using a ramdisk. Note that D.D.DeLUXE is compatible with all PRODOS memory cards that fits in the ][+, //e or //c. You only have to load the Prodos driver before booting DDD. D.D.DeLUXE will then recognize your ram card, if you forgot to load the driver, then DDD will not recognize the extra memory. In certain rare cases, it is possible that there will be a conflict between the driver and DDD, in which case you will not be able to use your ramcard. Certain cards have Ram based drivers, and in such instances, no drivers require to be loaded.

3) You can use also a cache program if your ramdisk allows one (check on the diskette that the manufacturer supplied with your RAM card)

CONCLUSION

I hope that D.D.DeLUXE will please you. Louis Roy has spent countless hours perfecting it, so be creative when you use it while composing your personal message on each DDD file, this idea will revolutionize the world of packed files!
Jerry Hewett of LIVING LEGENDS SOFTWARE
For his Hyper Format routine which is used to format 5.25" disks in
D.D.DeLUXE.

Lord Zeus / Olympians
Him and the Olympians group have distributed this software.
Call: Mount Olympus, 9600 bauds, (215) 797-5116

If you have questions, problems, suggestions, comments or even
congratulations, you can reach me, c/o LOGIX INNOVATIONS or leave me electronic
mail (E-mail) at THE CASTLE GS bbs (514) 276-4047 where I am available to
answer you (user $2).
Have fun with D.D.DeLUXE!!

Louis Roy, author of D.D.DeLUXE.

INTRO:

DISK DISINTEGRATER DeLUXE
is a copyrighted product and a trade mark of LOGIX INNOVATIONS
COPY |[*]
is a trade mark of CENTRAL POINT SOFTWARE, Inc.
MEMORY SAVER
is a trade mark of CHECKMATE TECHNOLOGY, Inc.
TRANSWARP and PC TRANSPORTER
are trade mark of APPLIED ENGINEERING
ZIPCHIP
is a trade mark of ZIP TECHNOLOGY
DIVERSI CACHE
is a trade mark of DISK, Inc.
APPLE [], [], [], [], //c, //e //GS and PRODOS
are trade marks of Apple Computers

COPYRIGHTS

COPY |[*]
is a copyrighted product and a trade mark of LOGIX INNOVATIONS
COPY |[*]
is a trade mark of CENTRAL POINT SOFTWARE, Inc.
COPY |[*]
is a trade mark of CHECKMATE TECHNOLOGY, Inc.
COPY |[*]
is a trade mark of ZIP TECHNOLOGY
COPY |[*]
is a trade mark of DISK, Inc.
COPY |[*]
is a trade mark of Apple Computers

Copyrights (Canadian Piracy On Stage...)
When you UNPACK, the SOURCE is the disk with the compressed files and the TARGET is the disk you want to merge onto.

To re-assemble (UNPACK) a disk, BRUN D.D.D. 1.0 and enter the number of drives you have. Now choose option 2 (UNPACK) and enter the name of the program you want to UNPACK. Before pressing 'RETURN', insert the SOURCE disk drive 1 and the TARGET disk (a blank disk, initialized or NOT) into drive 2 if you have 2 drives. Now press 'RETURN'. Voila!

When the program has finished, just press 3 to quit, 1 to PACK or 2 to UNPACK another disk.

TECHNICAL NOTES:
-----------------
- Any time you can press 'ESC' and the program will restart.
- The program is completely error proof.
- Filenames can be up to 20 characters long.
- When you choose the option 3:QUIT, you will be in Applesoft. If you wish to execute the program once again, you must **BRUN** DALTON DISK DISINTEGRATER (don't make a 'CALL XXX' because of the program's structure...).
- It is not necessary for all the compressed files to be present on a single disk when you unpack a program.

ADVANTAGES FOR SYSOP:
-----------------------
1. Because of the algorithms used in D.D.D. 1.0, the compression is at its maximum, so you can put more programs on your AE LINE or BBS'S disk(s).
2. The downloading takes less time and it is more convenient for users to capture program(s).

ADVANTAGES FOR USERS:
------------------------
1. Less time to wait while downloading a disk.
2. Less interventions to the AE LINE when you download a disk (because there's is a maximum of 4 files).
3. For those of you who have one drive, when you will pack or unpack a disk, you will open and close the drive's door (for exchange SOURCE and TARGET disk) only a few times: 2 to 8 times maximum (DISK SLICER: 18 times...).

COMPARAISON:
--------------
Here are some examples of the program's efficiency with regard to DISK SPLITTER, DISK RIGGER and DISK SLICER.

The RATING is the percent % the program has compressed. For example: If the RATING is 25%, the program has compressed 1/4 of the disk. It is impossible to obtain 100%, although obtaining 0% RATING is likely (in this case, no compression has been done).

Higher the rating, better the compression...

(note: DISK RIGGER1 = DISK RIGGER 1.1 and DISK RIGGER2 = DISK RIGGER 2.0)

<table>
<thead>
<tr>
<th>Program</th>
<th>DISINTEGRATER:</th>
<th>DISK RIGGER1:</th>
<th>DISK RIGGER2:</th>
<th>DISK SLICER:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 to 4 files</td>
<td>2 to 5 files</td>
<td>4 to 8 files</td>
<td>9 files</td>
</tr>
</tbody>
</table>

Program: BUCK ROGERS
---------------------
DISINTEGRATER: 203 sect. Rating:63.8%  
DISK RIGGER1: 233 sect. Rating:58.4%  
DISK RIGGER2: 268 sect. Rating:52.1%  
DISK SLICER: 276 sect. Rating:50.7%  
DISK SPLITTER: 416 sect. Rating:25.7%

***WINNER: DALTON DISK DISINTEGRATER***

Program: ARCADE BOOT CAMP
---------------------------
DISINTEGRATER: 358 sect. Rating:36.1%  
DISK RIGGER1: 412 sect. Rating:26.4%  
DISK SLICER: 431 sect. Rating:23.0%  
DISK RIGGER2: 432 sect. Rating:22.9%  
DISK SPLITTER: 458 sect. Rating:18.2%

***WINNER: DALTON DISK DISINTEGRATER***

Program: PIRATE SIGNATURE
---------------------------
DISINTEGRATER: 121 sect. Rating:78.4%  
DISK RIGGER1: 139 sect. Rating:75.2%  
DISK RIGGER2: 140 sect. Rating:75.0%  
DISK SLICER: 149 sect. Rating:73.4%  
DISK SPLITTER: 186 sect. Rating:66.8%

***WINNER: DISINTEGRATER (only 1 file)***

Program: ZAXXON
-----------------
DISINTEGRATER: 126 sect. Rating:59.6%  
DISK RIGGER1: 270 sect. Rating:51.8%  
DISK RIGGER2: 289 sect. Rating:48.4%  
DISK SLICER: 293 sect. Rating:47.7%  
DISK SPLITTER: 330 sect. Rating:41.1%

***WINNER: DALTON DISK DISINTEGRATER***

Program: SUMMER GAMES (side 2)
--------------------------------
DISINTEGRATER: 362 sect. Rating:35.4%  
DISK RIGGER1: 416 sect. Rating:25.7%  
DISK RIGGER2: 487 sect. Rating:13.0%  
DISK SLICER: 535 sect. Rating:4.5%  
DISK SPLITTER: WON'T WORK Rating:0.0%

***WINNER: DALTON DISK DISINTEGRATER***
As you can see, D.D.D. compresses a disk extremely efficiently, considering its size and number of files saved. I have programmed it for all lines to reduce transfer time. I hope you like it and don’t hesitate to use it!

Program & documentation written by: Dalton

Special thanks to: The Necromancer

HAVE PHUN!

Distributed by: The Disketteer

Introduction

First, I would like to point out that the sole purpose of this version is to enable Catsend 3.0 to function properly with DDD 1.0, which it did not to start with! Therefore DDD 1.2 should only be used with Catsend!!

DDD 1.2 works with all transfer programs, but please use DDD's (new version!) with all other transfering programs.

All DDD 1.2 supported commands are identical to those of DDD 1.0, therefore please refer to DDD 1.0 documentation for a complete tutorial on the supported commands.

Why D.D.D. Version 1.2??

The sole purpose of this version is the same as the earlier version, and it performs flawlessly with all Catsend versions. Therefore I suggest all Catsend users to upgrade to DDD 1.2 because DDD's packing algorithm is much more efficient than Disk Rigger's or any other present disk compressor, except for DDD's. Packing disks with DDD 1.2 will only be more beneficial to you.

Why D.D.D. Version 1.2??

The sole purpose of this version is to enable Catsend 3.0 to function properly with DDD 1.0, which it didn't to start off with! Therefore DDD 1.2 should only be used with Catsend!!

DDD 1.2 works with all transfer programs, but please use DDD's (new version!) with all other transfering programs.

All DDD 1.2 supported commands are identical to those of DDD 1.0, therefore please refer to DDD 1.0 documentation for a complete tutorial on the supported commands.

Compatibility

DDD 1.0 and DDD 1.2 are not compatible with DDD 1.0, therefore please refer to DDD 1.0 documentation for a complete tutorial on the supported commands.
Apple II Computer Info

all compatible with eachother!!
DDD 1.2 compressed files contain
2 less than signs <<, a single digit
and 2 greater that signs >> at end
of their filenames so that you can
differ both versions apart.

[DDD 1.2] - Catsend compatible version.
Example: *B 123 SUPER PINBALL<<0>>
*B 040 SUPER PINBALL<<1>>

[DDD 1.0] - Not Catsend compatible.
Example: *B 123 SUPER PINBALL<0>
*B 040 SUPER PINBALL<1>

ROACHES IN CATSEND!

Why didn't DDD 1.0 work properly
with Catsend to start off with???
Your guess was as good as mine.
I recently located a bug in good old
Catsend! (Believe it or not..)

Following many experiments on this
matter, I noticed a glitch (bug!!) in
Catsend that wouldn't transmit every
byte of a binary file! This error only
occured randomly throughout the tests.
Which in turn explains why some DDD 1.0
packed files successfully unpacked after
they were transmitted using Catsend.

Here are the following bugs I
located in Castend. This section is
a little technical; therefore if you
are curious, keep reading...
Roach Number 1
=-=-=-=-=-=-=-=

This bug concerns regular BINARY
FILES as well as DDD 1.0 packed files
when transmitted over by Catsend.
(Only Binary files; not Applesoft,
Integer or Text files...). DDD 1.0
failed to unpack the packed files
because of this following error:

With certain binary files Catsend
will not transmit the last bytes.
For example, with DDD 1.0 packed files
(123 Sectors) Catsend will not transmit
the last 3 bytes. These last bytes are
vital to the UNPACK command in DDD 1.0!

At the same token, I tried various
binary files other than DDD 1.0 files
and sometimes Catsend refuses to
transmit the last bytes. I am unsure
where the error is in Catsend, although
I am sure it exists! One certain fact
I was able to determine is that this
error revolves around the length of the
binary file being transmitted.
Roach Number 2
=-=-=-=-=-=-=-=

Catsend is unable to transmit any
file exceeding 255 sectors! In effect
if you attempt transmitting a file that
towers over 255 sectors, Catsend will
only transmit the difference.
Example: *B 300 SUPER PINBALL

Catsend in this case would only
transmit 44 blocks: 300 minus 256 =
44 sectors. Here is where the error
arises! The file (or compressed file)
Catsend saves on your disk will not
be the complete version.

This error will cause a huge
delima with DDD || (new version!)
because DDD || usually compresses
a whole disk into one file exceeding
the length of 256 sectors.

Note: This bug is not in any way
responsible for the original
malfuction of DDD version 1.0
with Catsend!

NOTE TO: THE WOMBAT & THE GONIF

Your Catsend has revolutionized
distribution of software! Please be
aware that it contains unpleasant
ROACHES. Unless you correct these
errors I believe Catsend will remain
absolute in comparison to the awesome
Catfur ||!! Perhaps you dudes should
consider a catsend version IV!?

CONCLUSION

I corrected the original DDD 1.0
to cooperate with Catsend by simply
reducing the compressed files by 3
lovely bytes! And another miracle was
casted. Therefore I decided to name
this new version, DDD 1.2!!

One word to all Catsend sysops:
Why in the hell don't you switch your
system to a Catfur || line? It will
save you a lot of bloody trouble
because all DDD versions function
perfectly with Catfur! Especially
DDD ||!! Besides Catfur is the new
mode nowadays. You don't see computer
geeks wearing Catsend anymore!!
Introduction

In this intro, I will simply but briefly emphasize on D.D.D's primary features. Dalton's Disk Disintegrator 1.0 malfunctions with Catsend 3.0 for known reasons. Following several tests on this matter, Dalton spotted a huge error in Catsend (every version) that would not enable DDD 1.0 compressed files to be successfully transmitted over the phone line. Therefore Dalton recently modified DDD 1.0 to function with Catsend, despite the ugly and nasty bug that contaminates it! DDD 1.2 is identical to the original 1.0 version, although version 1.2 is now fully compatible with Catsend. Refer to -> Dalton Disk Disintegrater 1.2 documentation for more information concerning this topic.

Obviously this new DDD version has been modified to perform properly with Catsend. So please do not hold any grudges against it. Version ] has been beta-tested over and over, resulting to our expectations (pretty awesome!)

Primary Features

Here are the primary features Dalton's Disk Disintegrator will have to offer you:

- This second version was designed with 64k of memory in mind. DDD and your extra 16k go hand in hand to offer you some pretty awesome advantages.

- DDD packs & unpacks programs very fast. Unlike Disk Rigger 2.0, which consumes too much time.

- 85 percent of all programs will entirely compress in 2 drive passes only! [For 64k systems!!]
Apple II Computer Info

- Squeezes Every Bit Out Of Your Extra 4k Of Ram, To Enable Maximum Speed And Minimum Disk Access. 
  [For 64k Systems!!]
- Autochecks For 64k Of Memory On Boot. If Not Present, Will Configure Itself To A Standard 48k System.
- DDD [] Contains A Perfected, Powerful And Flawless Crunching Algorithm Which Utilizes Every Packing Technique In Order To Achieve Maximum Data Compression.
- Amazingly Compares Any Program Into Only 1 Super File!!
  Example: *B 248 SUPER ZAXXON<248>
  Instead Of: *B 135 SUPER ZAXXON.00
  *B 135 SUPER ZAXXON.01
  *B 060 SUPER ZAXXON.02
- Arrow Driven Commands. This Allows Swift Access To All The Options.
- Dos Commands. This Permits You To Access Important Dos Commands From Within The Program Without Having To Exit Then Reenter Once Again.

Menu Options

[1]Pack
[2]Unpack
[3]Source:1 Target:2
[4]Catalog drive 1
[5]Catalog drive 2
[6]Dos commands
[7]Boot drive 1

[PACKING A DISK] - OPTION 1
- Enter Any Filename You Wish The Superfile To Occupy.
- Make Sure Your Target Disk Has Sufficient Disk Space For The Packed Version.
- When Packing, Make Sure The Filename You Use Is Not One Identical To A Filename On Your Target Disk. And If So Delete Or Rename That File Before Attempting The Pack.
- If A Disk Full Error Does Occur While Packing, DDD Will Obliterate Whatever Packing It Has Achieved And Leave The Exact Diskspace Your Original Target Disk Occupied Before The Pack Was Executed.
- If You Have Formatted A 40 Track Disk And Wish To Use It As A Target For The Pack, Go Ahead. DDD Supports 40 Track Capabilities, Which Means It Will Write On A 40 Track Preformatted Disk (There Is No Need To Use A 40 Track DDS). If DDD Detects A 40 Track Disk, It Will Write On The Extra Tracks Only If Necessary.

[UNPACKING A DISK] - OPTION 2
- When Unpacking A Disk, The Source Is The Disk With The Compressed File And The Target Is The Disk You Wish To Merge Onto.
- Your Target Disk (Merge Onto) Doesn’t Necessarily Need A Preformatted Disk. It Will Automatically Initialize Your Target Disk Before Commencing Decompression.
- When Entering The Filename You Wish To Unpack, Do Not Include The < Less Than Sign, XXX (Where XXX Is The Sectors) And > Greater Than Sign Following The Filename. Only Enter The Bare Filename And DDD Will Do The Rest.
  Example Enter:SUPER ZAXXON
  Do Not Enter:SUPER ZAXXON<248>

[SOURCE:1 TARGET:2] - OPTION 3
- This Option Will Permit You To Configure Your Drive Setup In The Manner You Wish! To Change The SOURCE Disk, Press ”1” For Drive #1 Or Press ”2” For Drive #2 (Or You Can Hit RETURN). Same Process To Configure The Target Disk. DDD [] Predefines To Support 2 Drives (SOURCE:1 TARGET:2).
- Obviously Few Cycles Of Changing Disks Must Occur If You Only Have A One Drive System. Therefore DDD Will Adjust Itself To Tell You When To Insert SOURCE And When To Insert TARGET Disks.

[CATALOG DRIVE 1] - OPTION 4
[CATALOG DRIVE 2] - OPTION 5

- These Options Were Added To DDD Because They Are So Oftenly Used. Catalog Your Disks When You Are Unsure Of Filenames.

- Following The Directory, The Free Sectors Remaining On The Disk Will Be Illustrated For Your Convenience.

- If You Only Have One Drive, Option 5 May Be Quite Useless To You.

[DOS COMMANDS] - OPTION 6

- This Option Was Added As Well Because Of Great Demand. Many Irrelevant DOS Commands Were Omitted.

  Here Is A List Of Accessible DOS Cmds:
  
  (XXX Symbolizes The Chosen Filename)
  
  => INIT XXX
  => DELETE XXX
  => LOCK XXX
  => UNLOCK XXX
  => RENAME XXX, YYYY
  => CATALOG, DX
  => PRAX
  => I

[BOOT DRIVE 1] - OPTION 7

- This Option Is Quite Useful Once You Have Terminated To Unpack A Program. You Simply Insert The Unpacked Version Into Drive 1 (Slot 6 Only!) And Watch Her Boot Up...

The Track Indicator

- Instead Of Useless Twirling Cosmetics Appearing On The Screen While DDD Is Active, Dalton Chose To Add A Rather Complete Track Status Indicator Oftenly Found In Bit Copiers.

- Here Is A Complete Legend Of The Abbreviated Significations Used On The Status Line:

  => MEMORY : 48k Or 64k
  Determines The Amount Of Random Access Memory Your Apple Can Provide.

  => DRIVE : 1 Or 2
  Highlights The Drive Presently Active.

  => LEN : XXX Sectors
  Displays Amount Of Sectors The File Actually Contains. The LEN Gradually Accumulates As The Packing Or Unpacking Goes On, Until It Has Reached Its Final Limit Or Maximum.

LEN Abbreviates LENGTH (Sector Wise).

  => TK Abbreviates Track
  => ST Abbreviates Status
  => R Reading A Track
  => W Writing A Track
  => C Compressing A Track
  => D Decompressing A Track
  => I Initializing All Tracks
  The 'I' Is Illustrated Simultaneously As DDD [I]
  Formats Each Track.
  => . Displays A Decimal Point On Each Individual Track
  Once It Has Successfully Been Read/Compressed Or Decompressed/Written.

------------

Various Details

------------

- Ctrl-A Toggles UPPER/Lower Case.
  (Press Ctrl-A From Main Menu)

- Ctrl-X Prints Open Bracket: [
  Ctrl-L Prints Backslash: \

- XXX Equals Sectors. The <XXX> Printed At The End Of The Packed Filename Was Added Because Some DOS'S CATALOG Wrap Around The Sector Counter To 0 When A File Exceeds The Limit Of 256 Sect. Therefore Many Files Will Seem Too Small. So Just In Case, A Backup Counter Was Added At The End Of Each Compressed Filename In Order To Identify The Correct File Length.

- Hitting ESC From Anywhere Within DDD Will Return You Directly To The Main Menu Prompt.
  DDD | Will Fully Operate In Slot X. Therefore, BRUN DDD | [From Any Valid Slot Number, Appending Drive 1 Or 2. All The Options From The Main Menu Will Work Properly Once DDD Has Been BRUN'ed From A Different Location Other Than Slot 6, Drive 1 (Note: You Must Press CTRL-RESET Once, From The Main Menu).

  Example: BRUN D.D.D. |, SX, D1
  Or : BRUN D.D.D. |, SX, D2
  X Equals The Prechosen Slot Number.

- In Order To Tell DDD | Apart From DDD 1.0 And From DDD 1.2, Verify The Last Characters Of The Compressed Filename.
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<table>
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<th>Old Version</th>
<th>New Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREMLINS(ATARI)</td>
<td>153 [1fi]</td>
<td>199 [2fi]</td>
</tr>
<tr>
<td>MR. PIXEL'S KIT</td>
<td>311 [1fi]</td>
<td>402 [2fi]</td>
</tr>
<tr>
<td>WILLY BYTE SIDE1</td>
<td>302 [1fi]</td>
<td>352 [2fi]</td>
</tr>
<tr>
<td>WILLY BYTE SIDE2</td>
<td>457 [1fi]</td>
<td>528 [4fi]</td>
</tr>
</tbody>
</table>

---

### Notice How DDD 2.0 (New Version)

Compresses The Program Into Only 1 File! Also Note That There Are Always 3 Digits In The <XXX>.

### Notice How DDD 1.0 (Old Version) Very Rarely

Compresses A Whole Program Into 1 File. Notice There Is Only 1 Digit In The <X>.

### DDD Has Gone Through Several Beta Tests

Here Is A List Of Tests DDD Has Successfully Passed:

- DDD Operates Fine With Any DOS. Such As Diversi Dos, Pronto Dos, Hyper Dos, Original Dos, Etc.
- I Suggest That You Don’t Use David's Monitor ROM Differs From The Original Apple's ROM.
- DDD Now Operates Perfectly With 1 or 2 Drives On The Apple IIe.

---

### Comparing Results

- Dalton And I Have Done Several Comparisons Between DDD And Disk Rigger 2.0. In Every Case, DDD Defeated Rigger In Both Speed And Packing Tests. Therefore We Are Quite Convinced That No Other Present Disk Compressor Can Surpass DDD’s Overall Qualifications.
- As For Other Disk Crunchers Like, Compact It 1.0 And Disk Slicer, We Didn't Bother Comparing Statistics Because Next To DDD, Disk Rigger Performed The Best.
- I've Included A Sector/Speed Test Chart That Compares DDD And Rigger Back To Back. The Main Objectives Of These Tests Are To Simply Point Out That DDD Is More Versatile And Convenient To Use Especially For Ae/Catsend/Catfur Sysops.

<table>
<thead>
<tr>
<th>SECTOR TEST (PACKING DISKS)</th>
<th>D.D.D.</th>
<th>RIGGER II</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUPER ZAXXON</td>
<td>248 [1fi]</td>
<td>330 [3fi]</td>
</tr>
<tr>
<td>SQUADRON 617</td>
<td>306 [1fi]</td>
<td>445 [4fi]</td>
</tr>
<tr>
<td>MEGATERM 3.0</td>
<td>388 [1fi]</td>
<td>472 [4fi]</td>
</tr>
</tbody>
</table>

---

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The Following Transfer Programs Check Out Perfectly With DDD ]:
/ 
/ ASCII EXPRESS (AE)
[V3.0 - V4.0 - V4.2]
/ 
/ DOS FILE EXCHANGE (DFX)
[V2.0 - NEW V2.0]
/ 
/ CATSEND (Applecot X-fer Program)
[ALL VERSIONS ON CONDITIONS]
/ 
/ DISKFER (Applecot X-fer Program)
[V1.0 - V2.0]
/ 
/ CAT-FUR (Applecot X-fer Program)
[V1.1 - V2.0]

Conclusion

I Hope This Tutorial Has Helped You Make The Change From Disk Rigger 2.0(Absolete!) To DDD ].

Special Thanks To The Micron For His Radical Catfur ]. Catfur Is A Major Breakthrough In Transfer Programs And Surely Enriches Pirates All Over North America.

We Urge All Catsend Sysops To Make The Switch To Catfur []. It's A More Reliable, Faster, And Very User Friendly Transfer Program! (It Works Very Well With DDD ) [...]

Transfer Programs Such As: Ascii Express And D.F.X. ]

H00 = $00
WNDLFT = $20
WNDTOP = $22
WNDBTM = $23
CH = $24
CV = $25
BAS = $28
BS = $88
CTRLJ = $8A
CTRLK = $8B
CR = $8D
FA = $95
ESC = $9B
SPC = $A0
IOB = $F3
IN = $0200
H0100 = $0300
RESET = $03F2
H8000 = $8000
H9000 = $9000
H0C00 = $0C00
H4C00 = $4C00
FMSTSLSEC = $B5C9 File Mgr T/S List Buffer Addr
HB500 = $B500
HB521 = $B521
HB527 = $B527
HB530 = $B530
HB534 = $B534
HB535 = $B535
HB57C = $B57C
RTMS = $BD00
KEY = $C000
STROBE = $C010
VTAB = $C022
HOME = $FC58
CLRCK = $FD8B CLREC0L, CR
PRETRY = $FDAA
PREX = $FE3E
COUT = $FE8D
SETNORM = $FE84
SETKBD = $FE99
SETVID = $FE93

---

JSR SETKBD
JSR SETVID
JSR $03E3 Get IOB Addr in A, Y
STY IOB
STA IOB+1
LDX #2
LDY #$0E
LDA (IOB),Y ;Get volume # of last access
STA H468A,X
INY
LDA (IOB),Y
LSR
LSR
LSR
LSR
STA H468A,X ;store last used slot*16 in 4684
INY
LDA (IOB),Y ;store last used drive #
STA H4687,X
LDA FMTSEC ;set up t/s list for when we
LDY #$03
DEY
LDA (IOB),Y  ;Get volume # of last access  BPL H2FDC
STA H468A,X  LDA $03DA Get Addr for JMP to RWTS
INY  STA H3824+1
LDA (IOB),Y  LDA #03DB
LSR  STA H3824+2
LSR  JMP START
LSR
LSR
ASC "48k 64k 128k"
STA H4684,X ;store last used slot*16 in 4684
INY
LDA (IOB),Y
LSR
LSR
LSR
LSR
sta H468E ;track of sector #10 of DDD file
INY
LDA (IOB),Y
STA H468F ;sector of sector #10 of DDD file
JSR H38F4 ;make sure we're in main memory
BIT $C083 ;switch in 16k ramcard, read and
LDX #0 ;check and see if we have at
H2F8D STX $E000 ;least 64k of memory...
CPX $E000 ;this routine COULD be a
BNE H2FCA+1 ;little shorter...
DEX
BNE H2F8D
BIT $C082 ;back to main memory
LDA $FF ;make it show 64k
STA H2FDC+1
JSR H38F9 ;clc = no
JSR H2FD2 ;if no 128k, set some flags, leave
LDA #0 ;reset the stack
STA H2FDC+1  ;128k
STA $C005 ;write to aux 48k memory
LDY #0 ;store a whole page of 0's from
H2F8F LDA $B600,Y ;$B600 to $BF00.  $0A pages.
H2F8E STA $B600,Y
INY
BNE H2F8F
INC H2F8F+2
INC H2F8F+2
CMP #50 ;have we reached the end yet?
BLT H2F8F ;no, go do the other pages.
STA $C004 ;switch in main 48k
BGE H2FDC
H2FCA LDA $FF ;flags indicate no 64k
STA H390F ;if it has not 64k, it certainly
STA H3912 ;doesn't have 128k...
H2FD2 LDA $FF ;flags indicate no 128k
STA H3915
STA H3918
H2FDA LDY #3

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DORTOUT JMP (PNTWHERE) ;go to adr pointed to by the table

PNTWHERE HEX 0000 ;pointer to wherever we’re going...

CHTABLE DA PACK
DA UNPACK
DA CATALOG
DA FORMAT
DA NEXKIOS
DA RECONFIG
DA QUIT

FIXRESET LDA #0 ;make the reset routine point
STA RESET ;to $3000
LDA #30
STA RESET+1
KOR #5A5
STA 503F4 ;Fix power-up byte
RTS

SHOWBTM JSR DISPLAY

HEX B11000
HEX B2
DCI '('
ASC "SOURCE:"
BRK
LDX #0
JSR H31EE ;display slot and drives used...
JSR DISPLAY
DCI ""
ASC "AVAILABLE RAM:"
H3161 ASC "48k"
ASC ""
ASC "TARGET:"
BRK
LDX #1
JSR H31EE ;put slot drive and volume
;assignment on screen
JSR DISPLAY ;display the following...
DCI ""
ASC "SECTOR COUNT:" HEX B11227 ;vtab 18,htab 39
HEX B2
ASC 'x'
ASC "TRK"
ASC "111111111111111222"
ASC "'
ASC "0123456789ABCDEF"
ASC "0123456789ABCDEF012"
ASC '
ASC "ST:"
HEX B2
DCI "#
HEX B2
ASC '"'
BRK
LDA #200 ;put an inverse space somewhere
STA 507F7
RTS

H31EE JSR DISPLAY ;put an 'S' up there...
ASC "S"
BRK
LDA H4684,X ;get the current slot (src, trg)
ORA #$80
JSR H44CD ;go print it; checking for lcase
JSR DISPLAY ;put a 'D' up there...
ASC "D"
BRK
LDA H4687,X ;get the current drive (scs,trg)
ORA #$80
JSR H44CD ;go print it using lcase filter
JSR DISPLAY ;put a 'V' up there...
ASC "V"
BRK
LDA #0 ;high byte to br printed = 000
STA H4620
LDA H468A,X ;lo byte is the volume number
STA H461F
JSR H45OA ;convert hex # to decimal
JSR H4621 ;print decimals as hex (PRHEX)
RTS

H3221 LDA H32C1,X
STA WNDLFT ;set left edge of window
LDA #0
STA CH ;set htab=0
LDA #118
STA WNDDBTM ;vtab 24 = screen bottom
H322E JSR H3295 ;set cursor vertical
JLOOP JSR H44D7 ;wait for key, update s scroll
CMP #BS ;is it a backspace?
BEQ UP ;yes! move the highlight up
CMP #CTRLK ;is it the up arrow?
BEQ UP ;yes, move the highlight up
CMP #CTRLJ ;is it a down arrow?
BEQ DOWN ;yes, move the highlight down
CMP #FA ;is it a forward arrow?
BEQ DOWN ;yes, move the highlight down
CMP #ESC ;is it <Escape>?
BEQ ESCAPE ;yes, return to main menu
;if not already there)
CMP #CR ;is it at carriage return?
CLC
BEQ RETURN ;yes, go service that routine
BNE JLOOP ;no, loop back...

UP DEC H32C7,X
LDA H32C7,X
CMP H32CA,X
BPL H322E
LDA H32CD,X
STA H32C7,X
DEC H32C7,X
JMP H322E

DOWN INC H32C7,X
LDA H32C7,X
CMP H32CD,X
BMI H322E
LDA H32CA,X
STA H32C7,X
JMP H322E

ESCAPE LDA #0
STA WNDLFT
LDA #110
STA WNDDBTM ;reset the current window
JMP H30E0 ;return whence we came...

RETURN SEC
LDA H32C7,X
SBC H32CA,X
LDX #0
STX WNDLFT

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LDX #810
STX WNDBEGIN
RTS

H3295 LDA H32C4,X ;get index to vertical curs pos
STA H32CA
JSR VTAB ;set it to the vtab value
LDA H32CA,X
STA H32C0
H32A3 CMP H32C7,X ;is it the one to be inverted?
BNE H32A8 ;no, don't invert it
JSR SETINV ;yes, invert it
H32A9 JSR H44B4 ;go get the index then print
JSR SETNORM ;normal text
JSR SPCE ;do linefeed
INC H32C0
LDA H32C0
STA H32CA
CMP H32CD,X ;is it the last line?
BNE H32A3 ;no, go do some others
RTS

H32C0 BRK

H32C1 HEX 0C
HEX 02 ;indexes for left edge of window
HEX 06
HEX 07 ;indexes for vertical cursor pos
HEX 09

H32C7 HEX 00
HEX 07
HEX 09
H32CA HEX 00
HEX 07
HEX 09
H32CD HEX 07
HEX 09
HEX 00
HEX 60

H32D1 DA T:PACK
DA T:UNPACK
DA T:CAT
DA T:FORMAT
DA T:NEW
DA T:RECON
DA T:QUIT
DA T:SOURCE
DA T:TARGET
DA T:LCA
DA T:LANG
DA T:ADDMEM
DA T:SAVE

T:PACK ASC "PACK A DISK"
BRK

T:UNPACK ASC "UNPACK A DISK"
BRK

T:CAT ASC "CATALOG A DRIVE"
BRK

T:FORMAT ASC "FORMAT A DISK"
BRK

T:NEW ASC "NEW SLOT, DRIVE, VOL"
BRK

T:RECON ASC "RECONFIGURE"
BRK

T:QUIT ASC "QUIT & REBOOT"
BRK

T:SOURCE ASC "SOURCE"
BRK

T:TARGET ASC "TARGET"
BRK

T:LCA ASC "LOWERCASE"
BRK

T:LANG ASC "LANGUAGE CARD"
BRK

T:SAVE ASC "SAVE CONFIGURATION"
BRK

* Here begins the famous Dalton's packing routine. *

PACK JSR HOME
JSR DISPLAY ;go stick all this stuff all
HEX 810612 ;over the screen at various
ASC "Pack" ;locations
HEX 810712
ASC "-----*
HEX 811604
ASC "000"
HEX 810900
ASC "Filename: *"
HEX 811223
ASC "#"
HEX 810900
ASC "Filename: *"
HEX 810518
JSR H4518 ;go get the filename
CFX 00 ;is the length returned = 0?
BNE H33D3 ;no, go pack the blasted thing
RTS ;yes, go back to the menu...

H33D3 LDA #0
JSR H4630 ;put inverse "SOURCE:" on screen
JSR H46E4 ;print "insert" and proper designation

LDA #0
STA H3C90
STA H3C91
STA H3C92
STA H3C93
STA H386E
STA $F9 ;current track starts at 50
STA H37FC

JSR H388D ;$F8,$F7 point to 5804 now
LDA #1
STA H373C
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H33F9 LDA $0 ;zero out 2 pages of memory from
TAY $200 - $3FF
LDA STA $200,Y
STA $300,Y
INY
BNE LOOP

LDA #1 ;next operation by RWTS is read
STA H3805

LDA #$D2 ;go stick an 'R' on screen
JSR H3CD2 ;and switch mem banks around

JSR H3C94 ;read a WHOLE track into $2000

LDA #$C3 ;go stick a 'C' on screen for
JSR H3CD2 ;compacting; switch mem banks

JSR H3485 ;Collect # of bytes in $200-$300

LDA $F9 ;is this the first track? - SO?
BNE H342D ;no, skip over this stuff:

LDA #0 ;do this ONLY if this is the
LDY #;first track...
JSR H35E6
LDA H3807
LDY #$80
JSR H35E6

H342D JSR H34DA
JSR H3527

LDA #$AE ;print a period (.) on screen
JSR H3CD2 ;indicating done w/track

INC $F9 ;increment the current track

LDA $F9 ;have we done $22 tracks yet?
CMP #$23
BNE H33F9 ;no, go do the rest...

LDA #0 ;yes, now fiddle around a little...
LDY #$80
JSR H35E6
JSR H38A6
JSR H38F4 ;set up main memory, no aux
JSR H39FC

LDA #1 ;put "TARGET:" in inverse
JSR H4630

LDA H36A
STA H37FD
LDA H36A+1
STA H37FE

LDA #$6 ;file buffer is at $6000
STA H3902

LDA H3820 ;go write it
JSR H3C66

STA H3BD0 ;update file descriptive entry?

LDA $01 ;track $11
STA H37FD

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<th>Description</th>
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</thead>
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<td>H34F6 LDA IN,X</td>
<td></td>
</tr>
<tr>
<td>STA $FFB</td>
<td></td>
</tr>
<tr>
<td>LDA H030,X</td>
<td></td>
</tr>
<tr>
<td>STA $FFC</td>
<td></td>
</tr>
<tr>
<td>TXA</td>
<td></td>
</tr>
<tr>
<td>STA H00,Y</td>
<td></td>
</tr>
<tr>
<td>H3504 INX</td>
<td></td>
</tr>
<tr>
<td>BNE H34E6</td>
<td></td>
</tr>
<tr>
<td>LDA H00,Y</td>
<td></td>
</tr>
<tr>
<td>PHA</td>
<td></td>
</tr>
<tr>
<td>STY H3526</td>
<td></td>
</tr>
<tr>
<td>LDY #$80</td>
<td></td>
</tr>
<tr>
<td>JSR H35E6</td>
<td></td>
</tr>
<tr>
<td>LDY H3526</td>
<td></td>
</tr>
<tr>
<td>PLA</td>
<td></td>
</tr>
<tr>
<td>TAX</td>
<td></td>
</tr>
<tr>
<td>LDA #0</td>
<td></td>
</tr>
<tr>
<td>STA IN,X</td>
<td></td>
</tr>
<tr>
<td>STA H0300,X</td>
<td></td>
</tr>
<tr>
<td>INY</td>
<td></td>
</tr>
<tr>
<td>CPY #$14</td>
<td></td>
</tr>
<tr>
<td>BNE H34DC</td>
<td></td>
</tr>
<tr>
<td>RTS</td>
<td></td>
</tr>
<tr>
<td>H3526 BRK</td>
<td></td>
</tr>
<tr>
<td>H3527 JSR H3884</td>
<td></td>
</tr>
<tr>
<td>LDY #0</td>
<td></td>
</tr>
<tr>
<td>H352C STY $FB</td>
<td></td>
</tr>
<tr>
<td>H352E LDY $FB</td>
<td></td>
</tr>
<tr>
<td>LDA $FF</td>
<td></td>
</tr>
<tr>
<td>STA $FFC</td>
<td></td>
</tr>
<tr>
<td>LDA ($FF),Y</td>
<td></td>
</tr>
<tr>
<td>LDY #$3</td>
<td></td>
</tr>
<tr>
<td>H3538 CMP ($FB),Y</td>
<td></td>
</tr>
<tr>
<td>BNE H358D</td>
<td></td>
</tr>
<tr>
<td>DEY</td>
<td></td>
</tr>
<tr>
<td>BNE H3538</td>
<td></td>
</tr>
<tr>
<td>LDY $FF</td>
<td></td>
</tr>
<tr>
<td>LDX $FF</td>
<td></td>
</tr>
<tr>
<td>CPX #$2F</td>
<td></td>
</tr>
<tr>
<td>BNE H354B</td>
<td></td>
</tr>
<tr>
<td>CPY $FFD</td>
<td></td>
</tr>
<tr>
<td>BCS H358D</td>
<td></td>
</tr>
<tr>
<td>H354B LDX #4</td>
<td></td>
</tr>
<tr>
<td>STX $FF</td>
<td></td>
</tr>
<tr>
<td>JSR H34D0</td>
<td></td>
</tr>
<tr>
<td>JSR H34D0</td>
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<tr>
<td>JSR H34D0</td>
<td></td>
</tr>
<tr>
<td>JSR H34D0</td>
<td></td>
</tr>
<tr>
<td>BEQ H356F</td>
<td></td>
</tr>
<tr>
<td>H355D CMP ($F5),Y</td>
<td></td>
</tr>
<tr>
<td>BNE H356F</td>
<td></td>
</tr>
<tr>
<td>INC $FF</td>
<td></td>
</tr>
<tr>
<td>BEQ H356C</td>
<td></td>
</tr>
<tr>
<td>JSR H34D0</td>
<td></td>
</tr>
<tr>
<td>BNE H355D</td>
<td></td>
</tr>
<tr>
<td>BEQ H356F</td>
<td></td>
</tr>
<tr>
<td>H356C JSR H34D0</td>
<td></td>
</tr>
<tr>
<td>H356F STY $FB</td>
<td></td>
</tr>
<tr>
<td>PHA</td>
<td></td>
</tr>
<tr>
<td>LDA #$97</td>
<td></td>
</tr>
<tr>
<td>LDY #$80</td>
<td></td>
</tr>
<tr>
<td>JSR H35E6</td>
<td></td>
</tr>
<tr>
<td>PLA</td>
<td></td>
</tr>
<tr>
<td>LDY #$80</td>
<td></td>
</tr>
<tr>
<td>JSR H35E6</td>
<td></td>
</tr>
<tr>
<td>LDA $FF</td>
<td></td>
</tr>
</tbody>
</table>

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HEX 40
H35E STA H373E
STY H373D
LDY #0
LDA ($F7),Y
H35F0 LDR H373E ;divide by 10 (decimal)
ROL
ASL H373C ;multiply it by 10 (decimal)
BCC H360B ;was 0-bit set? no, branch...
STA ($F7),Y
ROL H373C
JSR H38A2 ;check for memory full?
BNE H3609 ;evidently not full, skip over
JSR H399C ;jack! we must be full, go write
JSR H4690 ;prompt to re-insert source
H3609 LDA ($F7),Y
H360B LSR H373D ;was high bit set?
BCC H35F0 ;no, branch...
STA ($F7),Y ;yes, store shifted value, why?
RTS

*-------------------------------
* Here begins the equally famous
* Dalton's unpacking routine.
*-------------------------------

UNPACK JSR H3891 ;set up a pointer?
JSR H46E4 ;check for # of drives, prompt
;for source or target, etc...
JSR H40CD ;put a LOT of stuff on screen
;then handle file selection
PHA ;push the current file #
JSR H3754
JSR H4680 ;clear the screen
JSR H3948 ;get the T/S list for this file
LDY #0
STA $F9 ;current track is 0
JSR H4690 ;prompt to re-insert source

LDY #4
JSR H370C
CMP #0
BEQ H36C3

HEX 810100 ;vtab 10, htab 0
LDY #0
JSR H3CD2 ;switch in main memory

JSR H399C ;jack! we must be full, go write
JSR H4690 ;prompt to re-insert source
H36C3 JSR H36C3
LDY #80
JSR H370C
JSR H3754
STA $FA
JSR H3760
LDA H0900,X
CMP #$23
BNE H36E3 ;no, go the next one
LDA H0900+1,X
JSR H3CF2 ;turn off the drive
RTS ;holy nuts, we're done!
LDY #9 ;skip over the boring stuff in
;the file description,
;what we want is the filename
H3661 LDA (IOB),Y ;is this the $00 eof marker?

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ROL H373E
ASL H373C
BCC H3731
ROL H373C
JSR H373A
BNE H372F
JSR H3731
LDY #0
H3732F LDA ($F7),Y
H37331 LSR H373D
BCC H3716
STA ($F7),Y
LDA H373E
RTS
H373C BKK
H373D BKK
H373E BKK
H373F DEX #013
STX $19
H3743 LDY $80
STY $19
H3758 ROR H373E
ROL
DEX
BNE H3758
RTS
H3760 JSR H3884
LDY 40
H3765 STY $FB
LDY #1
JSR H370C
BNE H3780
LDY #$E0
JSR H370C
H3776 LDY $FB
STA ($F5),Y
JSR H34D0
BNE H3765
RTS
H3780 LDY #2
JSR H370C
STA $1D
LDA #3
STA $1C
H3788B LDY #1
JSR H370C
LDR
ROL $1D
LDA $1D
LDX $1C
LDY H371F,X
STY $18
LDY H375F,X
H3789 CMP H370D,Y

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H3802 HEX 00 ;address of sector buffer hi
H3803 HEX 00 ;not used
H3804 HEX 00 ;byte count for partial sector
H3805 HEX 00 ;type of operation,$01=read
       $02=write,$03=seek,$04=format
H3806 BRK ;return code [error #]
H3807 HEX FE6001 ;last used volume, slot, drive
BRK
H3808 HEX 00 ;device char table
H3809 LDA #01 ;operation done to track $11
STA H37FD
LDA 00 ;sector $0
STA H37FE
LDA #00
STA H3802 ;buffer is at $B500
JMP H3820 ;go do it.
H3820 LDY #H37F9 ;pointers to start of RWTS table
LDA H390A,X
LDA #>H37F9
STA $F8
H3824 JSR RWTS ;go do it with RWTS
STX H3908
LDA #0
STA $48
BCC H3883 ;was there an error? no, return
JSR H38F4 ;switch in main memory
JSR DISPLAY
H382B LDX $1000
ASC " "
INV 'RWTS ERROR'
ASC " 
HEX 07
BRK
LDA H3806 ;kind of error (return code)
JSR PHBYTE ;go print it
JSR DISPLAY
ASC "on Track 
BRK
LDA H37FD ;occurring on track $XX
JSR PHBYTE
JSR DISPLAY
ASC "Sector 
BRK
LDA H37FE
JSR PHBYTE ;sector $YY
JSR CLRCR
JSR CLRCR
JSR H45BE ;ask them to press a key...
LDA #0 ;reset lo byte of sector buffer
STA H3801
JMP START ;go restart
H3883 RTS
H3884 LDA #0 ;set up pointer to $2000
STA $F5 ;otherwise known as the
LDA #520 ;track buffer...
STA $F6
RTS
H388B LDA #4 ;entry here-$F7 points to $804
BNE H3893
H3891 LDA #0 ;entry here-$F7 points to $800
H3892 STA $F7
LDA #5
LDA #4
STA H3907 ;reset memory mode to 0
STA H3908
RTS
H38A2 INC $F7
BNE H38DB
H38A4 INC $F8
LDA $F8
LDX H3908
CMP H3909,X
BNE H38DB
STA H3907
LDA H390A,X
STA $F8
STX H3908
H38C9 JSR H38F4 ;set proper memory
LDA H3907 ;get "mode"?
BEQ H38DB ;jin it a 07 yes...
CMP #1 ;jin it a 1?
BNE H38DE ;no, go check for 2
BIT SC088 ;read and write ram $D000
BIT SC08B ;bank 1
H38DE LDA #1 ;set mode to 1?
H38DD RTS
H38DF CMP #2 ; is it a 27
BNE H38EB ;no, go set aux
BIT SC083 if = 2 then read ram, $D000
BIT SC083 ;bank 2
LDA #1
RTS
H38EB STA SC003 ;read and write aux mem if
STA SC005 ;<> 2 and <> 1 and <> 0
LDA #1
RTS
H38F4 STA SC001 ;$0DStore is on
BIT SC054 ;turn off page 2
BIT SC057 ;Turn on Hires
STA SC002 ;read main 48k
STA SC004 ;write main 48k
BIT SC082 ;read ROM
RTS
H3907 BRK
H3908 BRK
H3909 BRK
H390A HEX 08
H390B HEX 20
H390C HEX 00
H390D HEX 48 ;$4800 to $B4FF-packed stuff
H390E HEX 85
H390F HEX 01
H45BE JSR H38F4 ;ask them to press a key...
H45BF JSR CLRCR
H45C0 JSR CLRCR
H45C1 JSR CLRCR
H45C2 JSR CLRCR
H45C3 JSR CLRCR
H45C4 JSR CLRCR
H45C5 JSR CLRCR
H45C6 JSR CLRCR
H45C7 JSR CLRCR
H45C8 JSR CLRCR
H45C9 JSR CLRCR
H45CA JSR CLRCR
H45CB JSR CLRCR
H45CC JSR CLRCR
H45CD JSR CLRCR
H45CE JSR CLRCR
H45CF JSR CLRCR
H45D0 JSR CLRCR
H45D1 JSR CLRCR
H45D2 JSR CLRCR
H45D3 JSR CLRCR
H45D4 JSR CLRCR
H45D5 JSR CLRCR
H45D6 JSR CLRCR
H45D7 JSR CLRCR
H45D8 JSR CLRCR
H45D9 JSR CLRCR
H45DA JSR CLRCR
H45DB JSR CLRCR
H45DC JSR CLRCR
H45DD JSR CLRCR
H45DE JSR CLRCR
H45DF JSR CLRCR
H45E0 JSR CLRCR
H45E1 JSR CLRCR
H45E2 JSR CLRCR
H45E3 JSR CLRCR
H45E4 JSR CLRCR
H45E5 JSR CLRCR
H45E6 JSR CLRCR
H45E7 JSR CLRCR
H45E8 JSR CLRCR
H45E9 JSR CLRCR
H45EA JSR CLRCR
H45EB JSR CLRCR
H45EC JSR CLRCR
H45ED JSR CLRCR
H45EE JSR CLRCR
H45EF JSR CLRCR
H45F0 JSR CLRCR
H45F1 JSR CLRCR
H45F2 JSR CLRCR
H45F3 JSR CLRCR
H45F4 JSR CLRCR
H45F5 JSR CLRCR
H45F6 JSR CLRCR
H45F7 JSR CLRCR
H45F8 JSR CLRCR
H45F9 JSR CLRCR
H45FA JSR CLRCR
H45FB JSR CLRCR
H45FC JSR CLRCR
H45FD JSR CLRCR
H45FE JSR CLRCR
H45FF JSR CLRCR

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ROR H3B76
ROR H3B77
INX
CPX H5535
BLT H3B88
RTS
H3B9B JSR H38F4
JSR DISPLAY
HEX 810F00
INV 'ERROR!'
ASC " Disk Full."
H3B9B JSR H38F4 BNE H3C3C
JSR DISPLAY H3C47 LDA H3C90
HEX 810F00
STA $B600,X
INX
INY
H3BC0 LDA HB500+1
STA H37FD
LDA H5500+2
STA H37FE
LDA #$B6
STA H3802
LDA #1
STA H3805
H3BD6 JSR H3820
LDX #$0B
H3BDB LDA $B600,X
BMI H3BFD
BEQ H3BFD
TXA
STA $0575
CLC
LDA HB500+2
ADC #$B0
STA H37Fe
STA $B600,X
LDA #$B6
INY
LDA #1
RTS
H3BF1 STA H37FD
LDA $B600+2
STA H37FE
JMP H3BD6
H3BD6 LDA H3805
INX
LDA $0574
STA H37FD
BNE H3C8F
LDA $B600+2
INC H3C91
STA H3B6D
STA $B600,X
INX
LDA $0573
INC H37FD
STA H3B6B
LDA #$0F
LDA H470D+2,Y
BEQ H3C1E
INY
LDA $H7D0+2,Y
BEQ H3C1E
ESC A9 LDA $H7FE
CLC
ADC #$20 ;add $20 to current sector
STA $H802 ;becoming hi byte for file buff
JMP H3C1F
STA $H35D ;current track in RWTS table
STA $H35E ;current sector in RWTS table
BEQ H3C1E
ADC #$20 ;add $20 to current sector
STA $H35D ;current track in RWTS table
STA $H35E ;current sector in RWTS table
INC $0575
INX
LDA $F9
INY
LDA H470D+2,Y
BEQ H3C1E
INY
LDA $H7D0+2,Y
BEQ H3C1E
ESC A9 LDA $H7FE
CLC
ADC #$20 ;add $20 to current sector
STA $H35D ;current track in RWTS table
LDA $H35E ;current sector in RWTS table
DEC $H3FE ;decrease sector
BCC H3C94 ;if lo byte is 0, go to next sector
JSR H3BE ;yes, keep the drive running
JSR H3BC9 ;return us to the proper memory
J"*mode"
RTS
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H3CC1 CMP #ESC ;was the key <ESC>?
BNE H3CD1 ;no, go back, whew
JSR H3CF2 ;yes, nuts, shut off the drive
LDX #5FF  ;reset the stack
TXX ;reset the stack
JSR FIXRESET ;reset the reset vector
JMP H30E0 ;start almost from scratch

H3CD1 RTS

H3CD2 JSR H38F4 ;put us in main memory
STA H3CE6 ;put the character to be printed
LDA #9F  ;initialize
PLA
LDA H3805
STA H3CE5
JSR H3CF2 ;yes, nuts, shut off the drive

H3CE5 BSTX $FF  ;reset the stack
LDA #$FE ;volume 254
STA H37FC
JSR H38F4 ;put us in main memory
JSR H3820 ;format it
STA H3CE6 ;sector to first catalog sector
STA H3500+1  ;(building vtoc)
LDY #$0F ;sector of first catalog sector
LDA $F9  LDA #$11 ;track of first catalog sector
CLC  STA HB500+1 ;(building vtoc)
ADC #4  LDA #$0F ;sector of first catalog sector
STA H3CE5 ;current track+4 = htab of print
STA HB500+2
JSR DISPLAY  LDA #3 ;version of dos used (3.3)
HEX 8116  STA HB500+3
H3CE5 BRK  ;htab to be modified
LDA #$FE ;volume #
HEX AE00 ;single character to be printed
STA HB500+6
JMP H38C9 ;go exit through mem bnk switches
LDA #$7A ;122 T/S pairs in a T/S list
STA HB527
LDA #17 ;sector to be used on next disk
STA HB530
LDA #1 ;next track to be allocated = +1
STA HB530+1
LDA #23 ;tack this disk = 35
STA HB534
LDA #10 ;sectors per track = 16
STA HB535
LDA #$FF ;now build the free space
LDY #$3C ;bit map...
H3DD1 STA HB500,Y
STA HB500+1,Y
INA ;switch in aux
INX
H3D0C STX HB000  ;if they don't match, have 128k
LDA #121 ;next track to allocated is $12
STA HB500+2
LDA HB530+1
STA HB530
STA HB530+1
STA HB534
LDA #$10 ;sectors per track = 16
STA HB535
LDA #$FF ;new build the free space
LDA #$3C  ;bit map...
H3DD1 STA HB500,Y
STA HB500+1,Y
INA ;switch in aux
INX
CPY #$C4
BLT H3DD1
LDA #0 ;mark $11 as being used
STA HB57C
STA HB57C+1
LDA #2 ;next operation is write (RMTS)
STA H3805
LDA #11 ;done to track $11
STA H37FD
LDA #12 ;sector to $0
STA H37FF
LDA #$85  ;using the buffer at $b500
STA H3802
LDA H3820 ;go do it
JMP H3821
JSR H3630 ;check for keypress & scroll >'s
JMP H30E0 ;start almost from scratch
JSR FIXRESET ;reset the reset vector
JMP H30E0 ;start almost from scratch

H3CEF JSR H44D7 ;check for keypress & scroll >'s
JMP H3CC1 ;check for <esc>, if so, leave...
CMP #ESC ;is it a space?
BNE H3DF8 ;no, go check for one again...
H3E1C LDY #0 ; fill $8500 -$85FF with zeros...
TYA
H3E1F STA HB500,Y
INY
BNE H3E1F
RTS

*-------------------------------
NEWSLOT LDX #0 ; routine to get new slot-driv-vol
H3E28 LDA H3EA5,X
STA CV
JSR VTAB
LDA @10
STA CH
LDA H4684,X
JSR H3EB4
STA H4684,X
LDA #13
STA CH
LDA H4687,X
JSR H3EB4
STA H4687,X
LDA #16
STA CH
LDA H468A,X
JSR H3EA7
STA H468A,X
INY
CPX #2
BLT H3E28
H3E5C LDY #0
LDA H4684
CMP H4685
BNE H3E78
LDA H4687
CMP #CR
BEQ H3E84
STA H4687
LDA H468A
CMP H468B
STA H3F4B,Y
INY
CPY #3
BLT H3E5C
H3E78 STX H468D
RTS
H3E7C JSR H3E5C
PLA
JMP H30E0
H3E84 STA H3EA4
H3E87 JSR H440D
CMP #ESC
BEQ H3E87
CMP #BS
BNE H3E87
LDA H440D
CMP #CR
BNE H3F0F
LDA H3EA0
CPX #2
BLT H3E84
H3F05 CPY #0
BEQ H3F2F
CPY #0
LDA H3E5C
LDA H3EA4
STA H3EA4
RTS
H3EA4 BRK
LDA 40
STA H4620
JSR H45DA
JSR H4621
PLA
LDX H4384
RTS

H3F4B BRK
BRK
H3F4E HX 01 ;1
HEX DA ;10
HEX 64 ;100 --used to hex to dec convert
H3F51 BRK
H3F52 BRK

*-----------------------------
RECONFIG JSR HOME ;start of reconfigure routine
H3F56 JSR H403B ;put the stuff on the screen
LDX #2
JSR H5221 ;go manage the screen & keypress
CMP #0 ;change lowercase?
BNE H3F75 ;no go check the other stuff
LDA H391B
CMP #0PF ;is it off?
BEQ H3F6D ;yes, change it to "on"
LDA H3F6F ;no, keep it as "off"
BNE H3F6F ;go store it
H3F6D LDA #0DF ;flag to be and'ed to output
H3F6F STA H391B ;go store the flag then return
JMP H3F56

H3F75 CMP #1 ;is it a call to change lang card
BNE H3F97 ;no, go check the next option
LDA H390F
CMP #0PF ;is it already disabled?
BEQ H3F9B ;yes, then enable it
LDA H391F ;no, disable it by replacing
STA H390F ;these two flags...
STA H3912
JMP H3F56 ;return

H3F88 LDX #1 ;store a 1 at first flag position
STX H390F ;enable $D000-$FFFF alt bank 1
INX
STX H3912 ;enable $D000-$FFFF alt bank 2
JMP H3F56 ;return

H3F97 CMP #2 ;is it a call to aux mem?
BNE H3F88 ;no, go on to next...
LDA H3915
CMP #0PF ;is it already disabled?
BEQ H3F9D ;yes, go enable it
LDA H390F ;no, disable it
STA H3915 ;reset flag ($900-$1FFF) *
STA H3918 ;reset flag ($400-$6FFF)
JMP H3F56 ;return

H3F9D LDX #3 ;enable it
STX H3915 ;set flag ($900-$1FFF) *
STX H3918 ;set flag ($900-$1FFF)
JMP H3F56 ;return

H3F88 JSR HOME ;it HAS to be this option!
JSR DISPLAY ;go stick this on screen
HEX 810A00

ASC "Insert DDD 2.1 enhanced into "
BRK

LDX #2 ;stick slot, drive, vol on scrn
JSR H31EE
JSR H40D7 ;go check for keypress...
CMP NESC ;jis it <esc>?
BEQ H4035 ;yes, just exit...
LDA #2 ;go get right slot and volume...
JSR H4630
LDA #1 ;next operation to RMTS is read
STA H3805
LDA H4688 ;get the proper track and sector
STA H37FD ;to read (this was stored when
LDA H468F ;the program initially started)
STA H37FE
LDA #8$51 ;buffer is at $8500
STA H3802
JSR H3820 ;go do it!

LDA H5500 ;look for the pattern:
CMP $38 ;$38 $20 SDA at the front of
BNE H3F88 ;the buffer. These values change
LDA H5501+1 ;as the program is reassembled
CMP $20 ;it is also a pain if one wants
BNE H3F88 ;to convert this to ProDOS or
LDA H5500+2 ;add functions of one's own.
CMP $6A ;These bytes are in the front
BNE H3F88 ;of the 10th sector
LDA #2 ;next operation is write
STA H3805
LDA #41 ;point the RMTS buffer to $3841
STA H3801
LDA #38
STA H3802
JSR H3820 ;go write it out
LDA #0 ;zero the lo byte of the buffer
STA H3801
H4035 JSR HOME ;clear the screen, redo screen
JMP H3F56

H403B JSR DISPLAY
HEX 81091C ;display message #9 in mess table
BRK
LDA H391B ;is it off or on?
CMP #0PF
BNE H3F5B ;no, go show it as "off"
LDA H390F ;yes, show it as "on"
JSR H4069 ;go print its status
JMP H3F56

H405B JSR DISPLAY
HEX 810A1C ;display #10 - "Language Card"
BRK
LDA H390F ;is it off or on?
JSR H4069 ;go print its status
JMP H3F56

H4069 JSR H4069 ;go display either "on" or "off"
JSR DISPLAY
HEX 81081C ;display #11 - "/e Aux Mem"
BRK
LDA H3915
JSR H4069 ;show either "off" or "on"
RTS

H4069 JNI H4076 ;jis it $80-$FFFF? yes, show "off"
JSR DISPLAY ;no, $00-$7F, show "on"
INV 'ON'
ASC "OFF"
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;decimals in $6F,X  STA H4443
LDX #2  H432D  LDA $6F,X  ORA $B0
STA (10B),Y ;put broken up file length into
INY ;$A00 buffer as decimal file
DEX ;length
BPL H432D
LDX H4383 ;get multiple of file we're on
INY
INX
INX
STX H4384
TXA
CLC
ADC #$1D
TXA
LDA #0
STA (IOB),Y ;store a $00 as a marker...
JSR H44A7 ;print the file description!
LDA #0 ;zero this out
STA H4443
SBC #4 ;no subtract 4 to find #'s of the
STA H4436 ;current highlighted file here
LDA #0 ;zero this out
STA H4443
LDA $F2 ;how many files do we have?
CMP #9
BLT H43B2 ;less than 9! don't bother with
;scrolling...
LDA H4444 ;is the highlighted item < 5?
CMP #5
BLT H43B2 ;yes, go print 'em
SEC
SBC #4 ;no subtract 4 to find #'s of the
STA H4443 ;filenames to be on screen
CLC ;is the next filename at the bottom?
ADC #9
CMP $F2
BLT H43B2 ;yes, print 'em
BREQ H43B2 ;yes, print 'em
LDA $F2 ;no, print the last 9 files.
SEC
SBC #9
STA H4443
H43B2 LDA H4444 ;# of file to be highlighted * 2
ASL
STA H4444 ;store it
LDA #9 ;file count starts at 9 works down
STA H4445
LDA H4443 ;are there any files above display?
BNE H43D0 ;yes, print *[more]"
JSR DISPLAY ;no, dash out the [more] if there
HEX 810C11
HEX 82AD06 ;print 6 dashes
BRK
JMP H43DD
H43D0 JSR DISPLAY ;stick it onscreen...
HEX 810C11
ASC "[more]"
BRK
H43DD LDA #13
STA CV
JSR VTAB
LDA #0
STA CH
H43E8 LDA H4443 ;get the # above the screen
ASL ;multiply by 2
LDA H0900,X
STA H0900+1,X
STA #0B+1
CPX H4444 ;is this the one? (highlighted?)
BNE H43FF ;no, set inverse
JSR SETINV ;yes, invert it
H43FF JSR H44A7 ;print the file description!
JSR SETNORM ;normal printing
JSR CLRCR
DEC H4445 ;the number to print becomes -1
BEQ H4422 ;down to 0 yes, go check [more]
INC H4443
LDA H4443 ;have we done the last filename?
CMP $F2
BLT H43B2 ;no, go print another
LDX H4445 ;have we printed last 9 filenames?
BEQ H4422 ;yes, write [more] if needed
H441C JSR CLRCR
DEX
BNE H441C
H4422 LDX H4444 ;how many filenames above display
JSR DISPLAY
HEX 811611 ;vtab 22, htab 17
HEX 82AD06 ;print 6 dashes over [more]
BRK
RTS
H4435 JSR DISPLAY
HEX 811611 ;vtab 22, htab 17 print *[more]"
ASC "[more]"
BRK
RTS
H4443 BRK
H4444 BRK ;current highlighted file #
H4445 BRK ;9 downto 0 # of filenames so far
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DISPLAY PLA ; get where we came from
STA IGB ; put it in there
PLA ; hi byte of where we were
STA IGB+1
TYA
PHA ; save the y-reg as well
H444E LDY #1
H4450 LDA (IOB),Y ; get next character in sequence
CMP #0; is it a $0?
BEQ H4449 ; yyes, leave print routine
CMP #$81; is it a $81?
BEQ H4467 ; yyes, continue normally
CMP #$82; is it an $82?
BEQ H447B ; yyes, print a lot o them
JSR H44CD
H4461 JSR H44A0 ; increment the return pointer
JMP H4450 ; go get the same char, print it

H4467 JSR H44A0 ; increment the return pointer
LDA (IOB),Y ; next char is vert cursor pos
STA CV
STA CH
JSR VTAB ; go set the vtab
JMP H4461 ; check the next sequence of chars

H447B JSR H44A0 ; inc pointer to next character
LDA (IOB),Y ; grab next char-save it on stack
PHA
JSR H44A0 ; increment the pointer
LDA (IOB),Y ; get the next char
TAY ; # of these chars to print
PLA ; get the char to print
H4488 JSR H44CD ; mask it, then print it
DEY ; clear from right to abs left
BNE H4488 ; are we done? no, do another...
JSR H44A0 ; increment the pointer again
JMP H444E ; reset the y-reg, keep moving...

H4494 JSR H44A0 ; set it to go past the zero...
PLA ; get the y-reg off the stack
TAY
LDA IGB+1 ; get high byte of where we must
PHA ; return to, push it
LDA IGB ; get lo byte of return address,
PHA ; push it (becomes return address)
RTS ; go to the address we just pushed
JMP H444E ; mask it, then print it

H44A0 INC IGB ; increment the next character
BNE H44A6 ; so we get the right
INC IGB+1 ; chars and return properly to
H44A6 RTS ; right after the hex 00.

H44A7 LDY #0
H44A9 LDA (IOB),Y ; get another character to print
BEQ H44B1 ; have we reached the 000 yet?
JMP H44B3 ; if so, print it...
JSR H44CD ; mask it, then print it
INY ; get next character to print
BNE H44A9 ; go print it
H44B3 RTS ; leave

H44B4 ASL
TAY
LDA H32D1,Y
LDA #$DB  
BNE H4540  
H4534 CMP #$8C  
BNE H453C  
LDA #$DC  
BNE H4540  
H453C CMP #$5FC  
BLT H451A  
H4540 STA H4710,X  
JSR H44CD  
INX  
BNE H451A  
H4549 LDA #0  
STA H4710,X  
RTS  
H454F CPX #0  
BEQ H451A  
JSR H44CD  
LDA #$8B  
BNE H44D7  
JSR H4597  
INC $6F,X  
H459E STA H461F ;get lo byte  
JSR H44CD  
LDA H4620 ;get hi byte  
STA H461E  
H45F5 SEC ;what this routine does is this:  
STA H461F ;it to a 5 digit decimal #  
H451A  
BNE H45E7  
STA H461E  
H4613 HEX 01 ;table for hex to dec conversion  
HEX 0A ;10  
HEX 64 ;100  
HEX E8 ;1000  
HEX 10  
STA H461D  
STA #$6F  
RTS  
H4618 BRK  
STA H461D  
STA #$6F  
RTS  
H4621 LDX #2  
BNE H4627  
H4625 LDX #3  
H4627 LDA #$6F,X  
JSR PRHREX  
LDA H4687,X ;get drive  
STA H45BD  
BNE H45BD  
BPL H4589  
LDA #$3  
STA H458D  
H4589 PLA  
STA H37FA ;store in RWTS table for slot  
LDA H4687,X ;get drive  
STA H37FA ;store in RWTS table for slot  
DEC H45BD  
BPL H4589  
LDA #$3  
STA H458D  
H4589 PLA  
TAX  
PLA  
RTS  

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STA H37FB ;store in RWTS table for drive
LDA H468A,X ;get volume
STA H37FC ;store in RWTS table for volume
JSR H466D ;display source over target
TXA ;is it 60 (source) we want?
BNE H465B ;no! (rats) go see if it's for
JSR DISPLAY ;the target, else display source
HEX 811102 ;inverted
INV 'SOURCE'
BRK

H465B CPX #1 ;is it for the target drive?
BNE H466C ;nope, just return
JSR DISPLAY ;yes, invert it.
HEX 811202
INV 'TARGET'
BRK

H466D JSR DISPLAY ;display "SOURCE:" over "TARGET"
HEX 811102
ASC "SOURCE"
HEX 811202
ASC "TARGET"
BRK

H4684 HEX 06 ;source slot
H4685 HEX 06 ;target slot
HEX 00
H4687 HEX 01 ;source drive
H4688 HEX 02 ;target drive
BRK

H468A HEX 00 ;source volume
H468B HEX 00 ;target volume
BRK
H468D BRK ;1=one drive - 0=more than one
H468E BRK
H468F BRK

H4690 LDA H468D ;do we have more than 1 drive?
BEQ H46B1 ;yes, return
JSR DISPLAY ;no, display this...
HEX 810CA ;htab 12, vtab 10
ASC "Insert" 
INV 'SOURCE'
ASC * "disk"
BRK
JMP H46D0 ;go get a keypress, then return

H46B1 RTS

H46B2 LDA H468D ;do we have more than 1 drive?
BEQ H46B1 ;yes, just return
JSR DISPLAY ;nope, display this on screen
HEX 810CA
ASC "Insert" 
INV 'TARGET';next, get a keypress,
ASC * "disk";continue on, then return

H46D0 JSR H3CF2 ;go turn off the drive
JSR H44D7 ;check for keypress, move stuff
JSR H3CC1 ;check for escape, if so, menu
JSR DISPLAY
HEX 810C05 ;vtab 12, htab 5, print
In the beginning, most Apple programs were single files. In those days, all pirates had to do to upload and download programs was to call up an AE line and send the program across. But as software became more sophisticated, programs began to require full disks. To send an entire disk just could not be done with AE! So pirating software had to get more sophisticated to keep up with the new programs. At that point, the Stack (of Corrupt Computing) wrote his first Disk Splitter, which was a program that split a full disk into a sector map and 1-6 binary files. This made it possible to upload a full disk with AE by first splitting it, then unsplitting it back to its original state after downloading. Although this program ignored unused sectors, it did no data compression. Thus began the succession of programs that ultimately led to Disk Disintegrator []].1 Enhanced.

Disk Disintegrater [sic] []].1 Enhanced Docs

Disk Disintegrater []].1 Enhanced By Ziopoth

Docs written by Data Latch & Edited by M. Hata

The History of Packing:

In the beginning, most Apple programs were single files. In those days, all pirates had to do to upload and download programs was to call up an AE line and send the program across. But as software became more sophisticated, programs began to require full disks. To send an entire disk just could not be done with AE! So pirating software had to get more sophisticated to keep up with the new programs. At that point, the Stack (of Corrupt Computing) wrote his first Disk Splitter, which was a program that split a full disk into a sector map and 1-6 binary files. This made it possible to upload a full disk with AE by first splitting it, then unsplitting it back to its original state after downloading. Although this program ignored unused sectors, it did no data compression. Thus began the succession of programs that ultimately led to Disk Disintegrator []].1 Enhanced.

Error Codes:

Since DOS is not active, if a DOS error occurs, instead of receiving a DOS error message, you will receive an RWTS error. Here is a summary of the error codes and what they mean:

- $08 Error during initialization
- $10 Write protect error
- $20 Variable mismatch error
- $40 I/O error

Notes to hard drive owners:

- After re-configuring DDD 2.1E, if you save it to disk, it MUST be saved to the same disk it was loaded from.
- Remember: if you wish to use DDD 2.1E and a Sider, you MUST disable auxiliary memory.

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This program will probably benefit you more than anyone else. All possible efforts were made to accommodate you. The light-bar file selection and volume support make it a breeze to use with your hard disk. Slider owners: make sure to read the above note, and do not rant and rave about a bug in DDD 2.1E that does not exist. You were informed here! Also notice also that this program does work correctly with large volumes, unlike DDD 2.0+.

Things not to do with your hard disk:
1) Do not use the Format option on a volume.
2) Do not unpack a disk to a volume.
3) Do not pack a large volume (you CAN pack a small volume).

Credits:
-------

Davison, for the original programs, and the packing routine in DDD 2.1E.
Snowman Inc., for the disassembly of DDD 2.1.
Wozniak and Jobs, for you-know-what.
The Assembly Line, for giving us something else to give credit to.
The authors, for giving credit where credit is due.

If you wish to contact the Assembly Line, call:
The Third Dimension : 10 meg AE/Cat-Pur/BBS [214] 296-3668

Another ware from: The Assembly Line:
---------------------------- Defender of the Crown, but it is packed using DDD 2.5. Well as I stated above,

Members of the Assembly Line:
-------------------------------

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programs to support this are all written in ProDOS and none for DOS are planned in the future. This means that even though the IIGS has a built in Serial port for modems, IIGS user's would have to purchase a Super Serial Card and use this instead simply because AE (DOS version) only works with the Super Serial Card and not the built in port. Not only is this dumb it's also costly. An approximate cost for a Super Serial Card is $120.00 and plus a cable for around $20.00. Well if they used the built in port it would only require a $35.00 cable instead of $140.00 for a card and cable. Now, on the other hand, if people started to use DDD 2.5R then IIGS user's who are using a ProDOS XMODEM program and the built in port (remember the only XMODEM transfer programs who recognize the built in port are all in ProDOS) can still be able to download and upload all packed files because they can be converted perfectly.

Now let's make up two examples to further illustrate what I am trying to point out.

Ex.#1:
Jim owns a IIGS, and a USRobotics 2400 Courier modem connected to his IIGS via the built in port. Well Jim calls up Wares Palace, the nation's #1 wares board, and decides to download BUREAUCRACY, the hottest new ware out in the country. Jim goes to the transfer section, finds BUREAUCRACY on a volu me and then decides to start downloading. Well unfortunately since Wares Palace is using AE (DOS) and Jim is currently in AE:MOUSETALK he cannot download it because it was packed with DDD 2.5 (not 8). If he had downloaded it not only would he have his copy not have worked, but he also would have wasted his last remaining xfer credits. What can Jim do? Not much of anything unless someone sends it to him packed with DDD 2.5R or with a "R" filetype (more later).

Ex.#2:
Jake (Jim's brother) is now using the IIGS and calls up Wares Palace East Elite because Jim is not cool enough to get on. So then Jake decides to take a shot at downloading BUREAUCRACY, I mean it's already been out for 4 hours and he doesn't even have it. So he enters the transfer section and as before the board is in AE (DOS) whereas he is in AE:MOUSETALK, but this time he sees that some nice fellow has packed it into an "R" filetype so quickly without wasting anymore time to think Jake starts to download it to his unidrive. After 800 blocks he is relieved to have the ware, so he hangs up and now has to unpack it. Well, the packed file is in ProDOS how can it be unpacked? The Answer: Boot up Copy |t + 6.x and convert the file to DOS by copying it from the unidrive to any DOS disk. Now Jake has the packed file in DOS so he boots up DDD 2.x (any version of DDD 2.x even DDD 2.1 can unpack DDD 2.5R files as well as DDD 2.5R itself). After unpacking Jake is thoroughly enthralled with his Gnu ware and decides to upload it to Wares Palace Southeast but he has deleted his packed file of it, so he boots up his only DDD, version 2.1E. (Jake never needed 2.5R because he only downloads, he doesn't ever pack wares) Well Jake has packed the ware and he now uses Digi-Check // to tack the Digi-Check onto the end of the filename. Now Jake has a packed file which looks exactly as if it were unpacked but he needs it to be an "R" filetype so he uses DDD CONVERT UTILITY to change the filetype from "B" to "R". Jake now has gone through a long ordeal which noone should have to, because Jake could have used DDD 2.5R to accomplish all of the above. Now Jake can upload the ware.

The end result is this: From now on pack all files using DDD 2.5R and if you are a sysop and someone uploads a packed file that is a "B" filetype the sysop then uses DDD CONVERT UTILITY to change it's filetype to "R". The following are docs to DDD CONVERT UTILITY.

DDD CONVERT UTILITY is a program which was written in order to help DDD 2.5R become more popular and the current standard. The program is very straightforward and when run it prompts you for the appropriate Slot, Drive, and Volume to use. After this it will ask you for the entire filename, if you are not sure press [RETURN] and the current catalog will be displayed. When you know the name type it in exactly and DDD CONVERT UTILITY will find the file, change it's filetype to "R" and exit you to DOS. Very simply, this program changes a files filetype from "B" to "R", but since I did not know of any simple programs that do this I decided to write one, besides it only took around 2 hours. After the file has been converted to "R" filetype it can be converted back and forth between DOS and ProDOS without fear of messing it up as it remains intact throughout all of the conversions. To exit the program press [ESCAPE] at any time and to re-enter press "S". The program works great with hard drives as well as normal drives, simply press [RETURN] when prompted for the appropriate volume if you are using a floppy.

Closing Comments:
The filetype does not matter at all to DDD 2.1R, DDD 2.5, or DDD 2.5R - they can unpack any filetype, which means that they all can unpack each others packed files. With DDD 2.5R and the DDD CONVERT UTILITY there is no reason why there should ever be a "B" type packed file on any board, as they can easily be changed. From now on I hope that everyone understands and decides to use DDD 2.5R to pack files and in the future I plan on writing a universal converter for any filetype, like Text and Applesoft, which will also convert back as well.

If you do not understand this then please contact me on any board I am on or specifically:

Apple Tree //.........................305/556-6858
Rock'n Roll Harbour..................305/821-2322
Capital Connection |..................716/473-8051

The Screamer.

Also if it matters, Apple Tree // will begin to support DDD 2.5R and the "R" packed files shortly so I hope all other boards contend as well. And this file did not mention DDD 2.6 or DDD ProDOS because I do not have either one of them, but the point stands that from now on all packed wares should be in the "R" filetype.
Disk Disintegrator Version 2.7 Release Notes

New Features:

- **FORMAT**: A new format option now supports 35, 36, and 40 track disks. The 40 track option frees up 608 sectors, but will only work correctly on Non-Apple drives. Most Apple drives do, however, support the 36 track option which formats 544 sectors. If those two fail (I/O Errors) then you can use either of the 35 track formats. The first of these formats a disk with the standard 528 sectors, while the second formats a 528 sector disk, but uses 14 sectors usually allocated to the catalog, giving you 542 sectors. The second format only allows you 7 filenames on the disk.

- **DELETE**: This option is selected from the main menu, and simply lets you delete files. You will be prompted for source or target, and then can select the files to delete with the lightbar. Press <ESC> when you are done.

- **FASTLOADER**: DDD 2.7 is now equipped with a fastloader and reads itself in much faster than the old version. This loader will work in Diversi-DOS, Standard DOS 3.3, Sider DOS, and probably all other versions of DOS 3.3 available.

- **FILETYPE**: To make ProDOS conversions of packed files easier, DDD 2.7 now writes its object file to disk as an "R" filetype (Relocatable). This originally appeared in The Screamer’s DDD 2.5R, and was done in good taste, and for a good reason.

Apology:

We would like to apologize for the little bit of protection added to the code for DDD. The reason for adding this protection is all the people with sector editors who think releasing a new version of a program means changing the version number and names on the title page.

If you want to make any modifications to DDD, contact Radioactive Snail or Data Latch on the Last Dimension and we will see about getting you the source code so you can do it right.

The Last Dimension AE
10 meg, 1200/2400 baud, 24 hours
214/827-5249

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In this update, there is no additional feature than V4.2. For more features, wait for version 4.3.

D.D.DeLUXE V4.2a correct a little bug of version 4.2 when you unpack a DDD file and format the target disk. Now, the bug is fixed in V4.2a. This bug was NOT present in earlier versions (lower than 4.2). All DDD files packed with compatible packers or D.D.DeLUXE (any versions) are all good. The bug was present only in certain rare conditions and when you unpack a file while formatting the target disk with D.D.DeLUXE V4.2. So all your D.D.DeLUXE packed files are good.

Also in V4.2a, a little modification has been made to distinguish between the two partial catalog modes in PACK and UNPACK options:

a) In PACK option: when you ask for a partial catalog, D.D.DeLUXE print PARTIAL2 and show only sub-directories, $DD type files and REL or TXT files if you have configured your D.D.DeLUXE to show them.

b) In UNPACK option: when you ask for a partial catalog, D.D.DeLUXE print PARTIAL1 and show sub-directories, $DD type files and REL or TXT files if you have configured your D.D.DeLUXE to show them.

Please DISTRIBUTE this version on many Apple BBS boards as you can, it’s very important to use V4.2a rather than V4.2 (when you unpack a DDD file). Thank you.

Louis Roy,
The author of D.D.DeLUXE.
b) If you use the loading file "D.D.DELUXE.LOAD", you must replace it by the
   new one.

c) All DDD files packed with V4.0, V4.1, V4.2, V4.2a are compatible with
   D.D.DeLUXE V5.0.

d) To unpack old DDD 2.1 files (disk packed with PBH, DDD Pro, and other
   DDD 2.1 compatible program), you proceed the same way you do with
   D.D.DeLUXE DDD files.

e) When you unpack an old DDD 2.1 file, there is no guarantee the unpacked
   disk is exactly the same as the original disk because there is no checksum
   message in the file, if D.D.DeLUXE unpack without checksum error, you can
   be sure your unpacked disk is exactly the same as the original disk.

f) The documentation has been updated for V5.0 now.

g) If you have an Apple //gs, please replace your old icon file by the new
   one (DDDELUXE.ICONS) in the ICON folder.

Please DISTRIBUTE this version on many Apple BBS boards as you can
(distribute both sides !). Thank you and have fun with this new version of
Disk Disintegrater Deluxe !!!

For your pleasure only,
Louis Roy,
The author of D.D.DeLUXE.

--The Watcher of The Assembly Line

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
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And, then, after the "Enhanced" version of DDD 2.1 came out, it was successfully followed by version 2.5, which was written by Tom E. Hawk. It got some new features to DDD, most notable of which was the "#XXX" we all saw mysteriously appended onto DOS 3.3 filenames. The mysterious lettering, was, of course, a checksum that had been calculated on the disk as it was being packed. This helped with transfers with AE, because AE Pro uses a checksum variety of xmodem to transfer files. Checksum xmodem is inherently unreliable because it does not check the ORDER of the bytes in a file, it just checks the values. So, DDD 2.5 filled a necessary gap.

Even though ProDOS had been around since 1984, no one hardy ever used the OS for bulletin boards and file transfers because there was not a decent packing program for packing disks or files. Then came ProPacker. ProPacker ended with version 5.3c written by Randall Banning, who now makes his residence in Canada. (as does Dalton). ProPacker ushered in the era of ProDOS boards, because now files could be packed into an efficient format for use in transferring.

However, the number of pirate boards that used ProPacker could be counted on the fingers of one hand. The reason: DDD was king, and so was DOS 3.3. Everyone was happy until Apple Computer, Inc. unveiled a little monster called "The Apple IIgs." You see, the IIGs could use these 3.5 inch drives that held 800k of data. Could DDD handle a 3.5 drive? No. The reason: DOS 3.3 could only handle up to 400k volumes, and even then, it had to be "forced." ProDos was the answer. Apple's ProDOS operating system for our II's meant that we had a fast OS, and a lot more power because now we could use devices that could hold as much as 32 meabytes. So, ProDOS was the answer. But, the problem had not yet arrived... when the IIGs came out, we had a problem, and a BIG one.

The initial question that everyone asked was "what types of disks will we be transferring if we own IIGs's"? Apple made that abundantly clear when we were told that the new operating system, the native mode version of ProDos, ProTerm 1.2, could pack on a 3.5 inch disk. And, when the IIgs came out, the size of the executable file itself almost exceeded the capacity of a 5.25 inch disk. So, we had our problem, and we had the solution at hand: ProPacker.

ProPacker was (and still is) a nice nifty little program written to pack BOTH 3.5" and 5.25" disks. As a bonus, it could tell if you had packed a 3.5 drive, and then what you were unpacking was a 3.5 disk. ProPacker was NICE. ProPacker was reasonably fast, and it worked well as long as you hadn't gotten a bad transfer, in which case, it would crash while unpacking. But, on the whole, a decent packing program.

Then, after a bunch of DOS 3.3 based pirate boards decided that they would convert to the ProDOS format because of the increased demands for space, there quietly came a ProDOS compatible type of DDD. It was called PBH Pack. (PBH for "Pretty Boy Hackers") Essentially, if you made a DDD file and sent it to someone, and then converted it to ProDos, his packer could then unpack the disk. This made the conversion to ProDos a little easier; however, ProPacker 5.3c was still king in ProDos land. It.still held that way for good reason: the earlier versions of PBH Pack were awful. They were bug-ridden, and for the most part, just DID NOT WORK. We were finally given a decent version of PBH in PBH version 2.0e, which was written by Major Disaster. PBH 2.0e made life a little easier because of one other MAJOR improvement on the terminal program front.

ProTerm 1.2 became THE standard for Apple II telecommunications among pirates during the summer of 1987. ProTerm 1.2 had the capability to send disk files using many different protocols, among which was a "different" style protocol whereby it would pack a whole disk "on-the-fly" and send it... the packing algorithm that Greg Scheafer uses in Proterm is compatible with DDD and PBH pack. Great, we finally have some sort of standard emerging.

Now comes the advent of DDD Pro. For the first time, someone has taken a great deal of time to re-write DDD for ProDOS the way it SHOULD have been done in the first place. DDD Pro features high-lighter bar option selection, optional CRC generation for files, an "optimization" utility for ProDos disks, Disk and File packing built-in, and many other "nice" features that make this packer stand out as an exceptional program. Read...
If you selected "FILE" in the pack-type selection, you will first be prompted for the file that you want to pack. You will then be prompted for the pathname of the file that you wish to pack to. Once provided, the program will pack the file, attaching a 100 byte header onto the front of the packed file which includes some vital information. The format of the info in the header packet is as follows:

<table>
<thead>
<tr>
<th>Offset</th>
<th>Length</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>$0A / ID byte #1</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>$44 / ID byte #2</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>$42 / ID byte #3</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>Access code</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>File type code</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>Auxiliary type code</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>Storage type code</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>Number of 512 byte blocks used by the file</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>Date of modification</td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>Time of modification</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>Date of creation</td>
</tr>
<tr>
<td>14</td>
<td>2</td>
<td>Time of creation</td>
</tr>
<tr>
<td>16</td>
<td>2</td>
<td>EOF position</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>CRC-16 of file</td>
</tr>
<tr>
<td>20</td>
<td>2</td>
<td>Read count (# of 16 page reads to make)</td>
</tr>
<tr>
<td>22</td>
<td>1</td>
<td>Length of filename</td>
</tr>
<tr>
<td>23</td>
<td>1</td>
<td>Number of 512 byte blocks used by the file</td>
</tr>
<tr>
<td>25</td>
<td>2</td>
<td>CRC-16 of file</td>
</tr>
<tr>
<td>26</td>
<td>64</td>
<td>filename, or pathname of file, possibly including up to 64 characters.</td>
</tr>
<tr>
<td>91</td>
<td>9</td>
<td>Reserved for future expansion (Should be 0)</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
<td>Packed data</td>
</tr>
</tbody>
</table>

As noted in the header info, DDD Pro runs a CRC-16 (not CRC- CCITT, for those interested) on the source file while it is compacting its data. The CRC checks the ORDER AND CONTENT of the data to make sure that the file's integrity is not damaged during a transfer.

UNPACK DISK/FILE: The selection does the exact opposite of pack a disk/file. It will prompt you as to whether you want to unpack a disk or a file. Once answered, DDD Pro will prompt you for the disk or file to unpack. If you select disk, DDD Pro will check to see if the target disk has already been formatted. If not, DDD Pro will format the disk and start unpacking. If the disk has already been formatted, you will be asked if you want to overwrite it. If you answer yes, DDD Pro will start unpacking immediately instead of unnecessarily reformattting the disk.

Since the filename is already stored in the header of a DDD packed file, there is no need to provide an output filename for a packed file.

If you have a DDD packed file, and try to unpack it to a disk, you will be told that it is not a DDD format file. Simply choose the "File" option in the select box, and the file will unpack correctly.

CATALOG: This selection acts as advertised in that it allows you to get a catalog of the currently prefixed volume, or subdirectory.

OPTIMIZE A DISK: This selection will allow you to "zero-out" the contents of the unused blocks on a ProDOS disk. You will be prompted for the device whose unused blocks you wish to clear.

You will want to "zero-out" the blocks on a disk that you are about to pack if and only if it is a ProDOS disk. This option can save a lot of space in packing because when ProDOS deletes a file, it does not place all zeros (0's) in the blocks that the file was using. Whenever a file wants more space on the disk, it will simply place itself over top of the old data. (after all, why spend more zeroing out something if more data is going to be placed there anyway?) But, since the DDD packing algorithm works on the principle of repeated bytes packing more efficiently, you will want to remove all the data from these blocks. So, that's why you would want to "optimize" them. The procedure just makes a disk have less data to pack because you removed the unused data.

GENERATE A CRC: This selection will allow you to generate a CRC-16 on a whole disk, or on a file. Why would you want to do this? If you need a quick way to tell if 2 files are different, then the CRC's of the files will be different. If two disks are different, even by so much as 1 bit, the CRC's will be different. So, you could have a friend run a CRC on a disk before he sends it to you, and after it is unpacked, you could run a CRC on the disk to find out if the transfer was successful without line noise.

Note, however, that a CRC-16 for files is built-in to the DDD packed file format. If the file somehow got scrambled, DDD Pro will tell you so by a subtle warning message.

DELETE A FILE: The selection will allow you to delete a file from the currently prefixed volume/path.

ABOUT DDD PRO: This will show you current information about the version of DDD Pro you are using. It will also give credit where credit is due.

MISC: -----
Before formatting any device, if the disk in that device has been formatted before, you will be prompted as to whether or not you actually want that disk formatted. This is provided for your protection if you have any valuable disk you don't want accidentally formatted.

If you press ? at any filename prompt, you will be given a list of the currently on line volumes, and if you press p you will be given a catalog of the current prefix.

CREDITS: -------
Dalton, without whose packing algorithm, apple pirating would be going nowhere.
Ziojoth, for writing the first "enhanced" version of DDD.
Tom E Hawk, for writing the second "enhanced" version of DDD.
The Nybble, for writing that wonderful/awful DDD compacter, PBH Pack 1.0-2.1.
Major Disaster, for writing PBH Pack 2.0e, and providing the source to PBH.
Mountain Man, for his INCREDIBLE disassembly and translation of the DDD packing algorithm.
Dr. DX, for writing the first credible translation of DDD for ProDOS.
Me, for writing the docs for this thing.
All the sysops who run a ProDOS board, without whose pushing, this program would not exist.
And everyone else who has had anything to do with making any of the many versions of DDD and PBH Pack.

POSTLUDE: -------
Because he has a penchant for this type of thing, Dr. DX will be making better and improved versions of DDD Pro. The next MAJOR revision should support the 65C02 and have 80-columns, mouse-text, and ProTERM-style file selection. The packing algorithm will be enhanced ever so slightly by the additional support of the 65C02's extra opcodes.
If I ever get time, I will be writing a ProDOS/16 version of DDD Pro... It will use pull-downs and SuperHires for file selection, etc. The algorithm will be tweaked some more by the use of the 65816's 16-bit opcodes.
And, while on the subject of algorithms, we will probably be "enhancing" the DDD algorithm in the not-so-near future to include additional packing algorithms.
We will try to remain completely compatible with the existing DDD standard for...
Apple II Computer Info

packed files, and just increase the effective compaction.

--Sound Wave

-END-

Physical Evidence:
Tag reads "A" in-circled Words
Tablets found Near the Body Initials- GRA. 7/8/82
Plastic Bag Contains - 3 white pills (no writing on pills)
Picture - Blk&Wht-- Chalk Outline of body
Pill Bottle with 3 pills lying on carpet
Two Chairs - Buttoned-Leather puffy chair with arms Leather with wooden arms
Tea/Coffee cup with saucer lying on carpet near wooden/armed chain
Flower type section rug
Desk with Drawers, Lamp on top, & some kind of paper
Large round white table or pill or something like that,lying near left knee of victim
Something in the upper right of picture near victims head (pointy wooden? picture?)
Two official short memo's:
Yellow - LAB REPORT
Lakeville, CT Police Department
Case: Robner, Marshall
File#: H657/SJ43.1
Officer of Record: Detective G.K. Anderson
Mat'l(s) analyzed: Porcelain teacup
Analyzed for: Fingerprints, foreign substances
Date: 7/8/82
Laboratory findings:
The teacup was analyzed. The cup contained tea only. No trace of Ebullion or other substance was found. Fingerprints on the cup belonged to the deceased and Ms. Dunbar.

Signed -?? Btmorose

White - OFFICIAL MEMO
Chief Examiner
Lakeville, CT Police Laboratory
Lakeville, CT Police Department
File # H657/SJ43.1
G.K. Anderson, Detective 1st Class
July 8, 1982
RE: Robner Case

Although it appears that at least one member of the Robner household
had a reason for wishing Mr. Robner dead, the findings of the Medical Examiner and evidence gained from interviews with the family and family associates are only consistent with the conclusion that Mr. Robner died of a self-administered overdose of Ebullion.

G.K. Anderson

------------------

G.K. Anderson

CORPUS DELICTI- Union Memorial Hospital, Lakeville, CT

Summary of findings from Coroner's Examination:

Name - Robner, Marshall File No - H657/S43.1 Date - 7/8/82 Sex - Male /Race - Caucasian /Color of Eyes - Brown /Color of Hair - Gray /Ht- 5' 11'' /Wt - 192 lbs. /Distinguishing Marks - None Apparent Cause of Death - Drug overdose (Ebullion)

Front and Back outline of body Small "x" written on left side of head in Front View of Body

Explanation: There were no injuries or marks of a suspicious nature, except a small bruise on the left temple (consistent with falling to the floor from a chair).

Analysis of the blood of the deceased revealed a blood level of 27mg% for Ebullion. The therapeutic range of this drug is normally 4 to 6 mg%. A fatal dose, while not specified by the manufacturer, has been found to be in the 10-20mg% range. A routine analysis for other common drugs was unproductive.

Findings were unremarkable except for massive liver damage consistent with overdose of Ebullion, and 10mg of Ebullion recovered from the stomach. Death occurred at 1 AM, plus or minus one hour.

The blood level of Ebullion and the massive liver damage consistent with Ebullion toxicity lead to the inevitable conclusion that the deceased died of an overdose of that drug.

Xaviera Hockmuller md.

Medical examiner

July 9, 1982

Chief of Detectives
Edindale Police Department
Edindale, CT 06103

Dear Chief:

I must once again ask for your assistance on a case involving one of my clients.

As you are no doubt aware, Mr. Marshall Robner, the industrialist and philanthropist, was found dead yesterday morning in his home. As far as I can determine, he was found dead on the floor of his library, the victim of an overdose of Ebullion, a medicine which he had been taking lately for severe bouts of depression. He had been alone during the night, and the door to his library had been bolted from the inside. Police had to break the door down with axes, I'm told, to get inside.

While I am completely convinced that there was no foul play involved in Mr. Robner's death, it is disturbing that Mr. Robner had called me only three days earlier for the purpose of informing me that his will was to be altered. In fact, I was expecting to hear him this week so that he could deliver the papers to me. Given the size of the Robner estate, I feel that a more complete investigation should be undertaken, if for no other reason that to quash the suspicions which are inevitable in these circumstances.

I have sifted through the evidence gathered by the local police authorities and am passing it along for your inspection. I phoned Mrs. Robner this morning and informed her of my intention of having you take on the case. She was reluctant to be of assistance, but I convinced her to allow you to come around at eight o'clock tomorrow morning and spend the day.

I will be at the house at noon tomorrow for the reading of the current will, which Mr. Robner wrote a few years ago. I hope to see you then.

Sincerely yours,

Signed- Warren Coates

Coates, Shavely & Coates * Attorney at Law * Suite 1327 * Excelsior Tower * Hartford, CT 06101

Interviews - Excerpts--

Mrs. Robner

Detective Anderson: How did you come to find Mr. Robner?

Mrs. Robner: When I woke up this morning, I noticed that Marshall was not in bed. I wasn't alarmed, really, as it was not unusual for him to work late at night in the library and fall asleep there. I went downstairs to the library and knocked on the door. Hadn't answer, so I knocked even harder. When that didn't work, I started calling his name loudly. So loud, actually, that I woke up Ms. Dunbar and George. We all gathered there, knocking and yelling, and finally Mrs. Rourke, our housekeeper, was alarmed enough to come upstairs. She suggested calling the police, which we did. They arrived about twenty minutes later, and started breaking down the door with axes. When we entered the room, we found Marshall lying on the floor, face down.

Anderson: Did he usually keep his door locked when he worked?

Robner: Almost always. He was pretty secretive about his work and he liked to be alone when he worked.

Anderson: Do you know of any reason why your husband might have wanted to take his own life?

Robner: He's been very depressed lately, you know. His business, Robner Corporation, is not doing well, and there is talk of selling out to a larger firm. Marshall founded the company, what, about twenty six years ago, and he has been desperately trying to find some way of saving it.

Anderson: The pills we found by his body, do you know what they are?

Robner: Yes. They were Ebullion tablets. It's an anti-depressant his doctor prescribed for him just last week.

Anderson: Had he been acting less depressed since then?

Robner: I really don't know. I haven't noticed much change.

Anderson: Did your husband ever talk of suicide?

Robner: He did, actually, though I never took it seriously. He would talk about how everything would be easier if he were dead, but then he would start again talking about how he was going to have to keep the
business going. I'm... I'm stunned, really.

Anderson: Mrs. Robner, do you know of anyone who might have wanted to kill your husband?

Robner: Why, no. Of course not. He wasn't a very friendly man, he was very quiet. But he was a great philanthropist, you know, and everyone that knew him respected him. I can't imagine anyone wanting to hurt Marshall. Do you really suspect he didn't commit suicide?

Anderson: I don't suspect anything. I just want to understand what's happened.

FINGERPRINTS ON BOTTOM OF PAGE -- L & R THUMB/L & R INDEX/L & R MIDDLE/L & R RING / L & R LITTLE

Interview-- Ms. Dunbar

Detective Anderson: You were Mr. Robner's personal secretary, is that right?

Ms. Dunbar: Yes, sir.

Anderson: I understand that you were the last person to see Mr. Robner alive. Could you tell me about that?

Dunbar: Why, yes. I brought him some tea at about 11 PM that night. On nights when he expected to work late, he would always expect tea at that hour. I brought him the tea and he asked me to leave. That's all.

Anderson: Did Mr. Robner seem at all upset?

Dunbar: He did appear quite nervous, but he had been upset for some time, as you know.

Anderson: Do you know what he was working on that evening? Dunbar: No. I wasn't with him, except for that one time.

Anderson: Do you recall whether the pills, the Ebullion pills, were on the desk when you came in?

Dunbar: No, I don't remember that.

Anderson: Ms. Dunbar, were you with Mrs. Robner when the door was opened by the police?

Dunbar: Yes

Anderson: Do you remember her reaction? Anything she might have said?

Dunbar: She didn't really react much. I don't think she said anything except "He's dead." or something of that sort. She just stood there with the rest of us until you people arrived.

Anderson: How were the Robners getting along? I mean, were they happily married?

Dunbar: I don't think so, really. He was so quiet and, well dreamy. She was always scolding him for paying too much attention to the business and to his "good works". They rarely went out lately, which seemed to upset Mrs. Robner quite a bit. She had friends of her own that she used to visit. I think she would have gone insane, otherwise.

Anderson: Thank you, Ms. Dunbar. Oh, one last thing. You prepared the tea for Mr. Robner?
Anderson: Were you at the concert alone?

Baxter: Quite alone.

Anderson: Do you know of anyone who might have wanted to harm Mr. Robner?

Baxter: No. Except for George, of course. During some of their shouting matches I've heard George threaten Marshall, but I don't really think he ever would have followed through.

Anderson: Shouting matches?

Baxter: George and Marshall were always at odds. You see, George has been living like a spoiled child all of his life. He's twenty-five now and has never held a job. Just spends money, or gamble it away. Being the Robners' only child, he gets away with murder. Marshall would lecture him and threaten to cut him off, without a cent, and then the yelling would start. Eventually Marshall would give in.

Anderson: When was the last time you heard this?

Baxter: Actually, I heard it again just last week. Strange, now that I think of it, they went at it just last week. I hear that Marshall told George that he had decided to disinherit him. He even mentioned it to me at the office the next day. He seemed pretty serious. I suppose that the financial troubles at the company may have been responsible for his attitude.

Anderson: Are you at the house often? You say you have heard some of these "shouting matches".

Baxter: Well, I'm not here often. Only on occasion. I have heard it once or twice and have been told of other times.

Anderson: Thank you, Mr. Baxter.

FINGERPRINTS - L. THUMB/L. INDEX/L. MIDDLE/L. RING part of R. LITTLE part of R.

Interview--George Robner

Detective Anderson: Mr. Robner, I have been told by Mr. Baxter that you and your father had some serious arguments lately. Could you tell me what they were about?

George Robner: I don't think that's your business.

Anderson: I'm told they had to do with you habit of wasting or gambling away your father's money.

Robner: So?

Anderson: I've even been told that he threatened to disinherit you.

Robner: Yeah. He said he was going to. I'll bet he didn't though. He never has.

Anderson: Mr. Robner, let me be frank. I'm, told that you threatened violence against your father as recently as a week ago, and now he's dead.

Robner: Look, I don't get what you're driving at. You find the poor guy dead in his room. The room is locked. His bottle of medicine is nearly empty. What sort of detective are you, anyway?

Anderson: I'm doing th asking, if you don't mind.

Robner: The ask someone else.

Note: G.R. left abruptly at this point.

FINGERPRINTS ON BOTTOM OF PAGE -- L&R THUMB/L&R INDEX/L&R MIDDLE/L&R RING/L&R LITTLE

Interview--Mrs. Rourke

Anderson: Mrs. Rourke, how long have you been working as housekeeper for the Robners?

Rourke: Ever since the house was built, six years ago.

Anderson: Tell me all you remember from the night of the murder.

Rourke: I remember that by about 10:30 or so.

Anderson: You mean 10:30 PM.

Rourke: Yes. By 10:30 when I went to my room to do some reading, everyone was upstairs excepting Ms. Dunbar, who had just returned home. She went upstairs about 11, bringing Mr. Robner his tea. He almost always takes his tea at 11. I remember saying good night to here on her way up, and that's the last I heard until this morning, with all the shouting and banging going on upstairs. No, that isn't right. George was downstairs also fr a while, only about 10 minutes or so.

Anderson: Could someone have gone upstairs during the night?

Rourke: I don't rightly think so, as least not before 3 or 4. You see, I like to do some reading late at night, and I was reading this really exciting mystery story, and, lord, I was up until nearly 4 o'clock before I finished. And who do you think the murderer was?

Anderson: Really, Mrs. Rourke, let's stick to the matter at hand. Do you keep your door closed at night when you are reading?

Rourke: Yes, sir.

Anderson: So then it's possible that someone might have entered the house and gone upstairs without your knowledge.

Rourke: No, sir. I don't believe so. Why don't you try the stairs yourself? For a new house, these stairs are the noisiest I've ever heard. My door's right beside it, too. When the Robners owned a little cat, I can remember hearing every footstep creaking up the stairs. Don't know why they don't ever fix it up. I guess it don't bother them any.

Anderson: But it is possible that someone might have entered after you went off to sleep.

Rourke: Well, I suppose it might be, but not before.

Anderson: How long has Ms. Dunbar been living here?

Rourke: Ever since the place was built. She does an awful lot of work for Mr. Robner, you know. I don't think he could have gotten along without her, although that's not my business to say. He was always so nervous, fretting about everything, and forgetting to this and that. It seemed that she was always covering his tracks, if you get my meaning.

Anderson: Do you have any reason to suspect anyone of wanting to harm Mr. Robner?
Apple II Computer Info

CHAPTER I

Investigative Techniques for Cases of Suspected Homicide——

The detective investigating a possible homicide is much like a person piecing together a puzzle. In both endeavors, the participant must weigh each inconsistency, and ultimately determine how all the parts fit together as a logical whole. Here, then, are some considerations to bear in mind as you attempt to solve this puzzle.

The Time Element:

It is usually necessary to conduct your investigation as expeditiously as possible. You have a deadline of 12 hours, make proper use of your time, its important. Most actions you perform will take about one minute of investigative time, some actions, such as examinations done carefully, may take longer. If you wish time to pass without actually doing anything, you can say WAIT FOR some number of MINUTES....OR....WAIT FOR some person.....OR...WAIT UNTIL a specified time. In any case, you will see events occurring while you are waiting and always have the opportunity to change your mind about sitting idly should an interesting event take place.

Evidence:

During your investigations, you will uncover pieces of physical evidence found in your vicinity. While this evidence may be vital in itself to reach a proper conclusion to the case, it may also be of great interest to one of the principals in the case. Therefore, showing pieces of evidence to others (even suspects) may have a useful effect. Other people may make discoveries of their own which they may relate to you. It is altogether proper to ask to be shown such findings.

Suspects:

It is possible to ask people for information. However, be aware that their answers, while often helpful, may be self-serving, false, or contradictory. Remember at all times that you are dealing with people—-some of whom are under great pressure or emotional strain. The most extreme care must be exercised when your ACCUSE people.

The Police Laboratory:

The facilities of the nearby police laboratory are always available to you. Fingerprints found on objects can be compared with those of the principals, which are on file at the lab, simply by instructing the lab to FINGERPRINT the object in question. You can ANALYZE an object in a routine manner or FOR a specific substance. Sergeant Duffy, as diligent an assistant as can be found the annals of criminology, will take objects to the lab for you and return with the results, usually within half an hour.

Procedure for Making Arrests:

When you feel that you have established a convincing case against one or more people, you may decide to ARREST them. (A single individual must be in your presence to be arrested; two or more accomplices need
not be.) After some soul-searching, you may realize that you haven't nearly enough evidence to substantiate the charge, and may hold off at the last moment. Otherwise, Sergeant Duffy will realize with the handcuffs and take the accused into custody. Your role in the case will then be concluded, and you will receive a letter from your superiors indicating the outcome of the grand jury investigation, and if all goes well at that level, the trial itself. Should the grand jury fail to indict or the trial jury fail to convict, your superiors will try to indicate the reasons for the failure of the state's case. (Since guilt must be established beyond a reasonable doubt, it is important to demonstrate the three crucial elements: means, motives and opportunities.) But take heart from any failures you may have—the slightest who learn from his mistakes will seldom all the more effectively his next time on the trail. There are many possible endings to your case, each determined by your handling of the case and the conclusions you draw from the evidence you gather. But just as there exists the perfect crime, there is also the perfect solution to a crime.

Strategies for Novices:

Many detectives start an investigation by "casing" the scene of the crime. This facilitates movement as the case proceeds. In this regard, it is useful to draw a map or blueprint indicating the directions of travel between the various places in the area. It is especially important to examine potentially important pieces of evidence. Be liberal in the use of the police laboratory in FINGERPRINTING or ANALYZING laboratory's findings.

Ask people questions about the crime itself, other people involved in the case, or unusual words which may turn up on evidence or in conversation. Often, this will uncover contradictions or lead to new evidence.

Pay attention when people's behavior changes. It may be that they have learned something which will affect their actions. FOLLOWing them may be helpful, but often it is better to observe at a safe distance. Show relevant evidence to interested persons. The person may learn something which could cause them to react in a helpful manner. If another person has found something, ask to see it. Although care should be taken in making accusations, especially without sufficient evidence, a timely accusation can lead the presumed criminal to make careless mistakes.

CHAPTER II

How to Use Computers in Detective Work-

It is possible to conduct an entire investigation without leaving one's computer, here are some useful pointers on dealing with our new environment.

Doing the Legwork:

To walk from place to place, say WALK and the direction in which you wish to proceed. There are ten possible directions: NORTH, SOUTH, EAST, WEST, NORTHWEST, NORTH, SOUTHWEST, SOUTH, UP & DOWN. Each of these directions can be abbreviated to one or two letters (e.g.-N, SE, D) When you enter a particular place for the first time, survey it in detail. Note its name (e.g.-the living room), its layout, and all objects located there which might be of interest. Whenever you return, you will instantly recall the name of the place and your eye will catch any significant object. In order to travel between the various places in the area, it is useful to draw a map or blueprint indicating the directions of travel between the various places in the area. It is especially important to examine potentially important pieces of evidence. Be liberal in the use of the police laboratory in FINGERPRINTING or ANALYZING laboratory's findings.

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understood because it is either too complex or improperly stated, you will be told of the problem.

Flatfoot Computer Lingo:
The police have only limited resources and it computers often use words which they cannot understand. Such words are used only to enhance your imagery and focus you deductive powers.

Ending an Investigation:
If you wish to terminate your investigation and not come back to it at a later time, you can type QUIT. Since a decision of this kind is irreversible, you will have to confirm your decision.

If you want to terminate your investigation by starting over from scratch, you can type RESTART. You will again be asked to confirm your decision.

Continuing an Investigation at a Later Time:
If you wish to suspend your investigation midway and continue it from that point at a later time, type SAVE and answer the question as described on your Reference Card. To return to your investigation at another time, type RESTORE and answer the question as described in the Reference Card. You may want to use this feature when you are about to try something dangerous or irrevocable.

Utilizing Stenographic Services:
Depending on you hardware, you may be able to obtain a typed transcript of your activities using the SCRIPT command. The transcript may be stopped with the UNSCRIPT command. Consult reference card for availability of this service on your system.

CHAPTER III
Commonly Encountered Terms in Criminal Investigations----

INVENTORY -- Lists your possessions. This can be abbreviated to I.

LOOK AROUND -- Provides a complete description of your surroundings. This can be abbreviated to either LOOK or L.

QUIT -- If confirmed, terminates the investigation. If you wish to continue the investigation at a later time, use the SAVE command first.

RESTART -- If confirmed, terminates the investigation and starts it over from the beginning.

RESTORE -- Restores a previously suspended investigation. Consult Reference Card for the procedure on your system.

SAVE -- Suspends your investigation for completion at a later time. Consult Reference Card.

SCRIPT -- Starts a transcript (if you have a printer). Consult Reference Card.

SEARCH (something or someone) -- Does the obvious.

SEARCH NEAR (something) -- Looks closely at the area immediate to something, possibly providing more information than simply examining it.

SHOW ME (something) -- A request to another person to show you or lead you to something.

SHOW (something) TO (someone) -- Does the obvious, possibly eliciting an interesting reaction.

TIME -- Displays the current time. This can be abbreviated to T.

UNSCRIPT -- Stops the transcript that started using the SCRIPT command.

VERBOSE -- Causes a complete description of a place to be displayed every time you enter that place. Compare with BRIEF.

VERSION -- Displays the version and serial number of you copy of your software.

ANALYZE (something) -- Asks the police laboratory to perform a routine analysis (including fingerprints comparisons) of something.

ANALYZE (something) FOR (something specific)--Asks police laboratory to analyze something specifically for something in particular.

ARREST (someone or someones)--If there is considerable amount of evidence against an individual or individual, this command ends the case and describes the result of the prosecution.

ASK (someone) ABOUT (something or someone)--An impersonal form of the expression "(someone), TELL ME ABOUT (something or someone)," it can be used as an abbreviated form of questioning.

BRIEF -- Causes a place to be described completely only on your first visit there. On subsequent visits, only the name of the place and the important objects present there will be described. (This is the normal situation.)

EXAMINE (something) -- Looks at something with an eye toward detail.

FOLLOW (someone) -- Does the obvious.

REFERENCES:

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 309 of 1262
Talking to the Game--
When ever you see the prompt ( > ), the game is waiting for you to
type up to two full lines of text at a time. If you make a mistake,
use the left-arrow key to erase the error. When you have finished
typing in your instructions, press the RETURN key. The game will
respond and then the prompt ( > ) will reappear.

If a description will not fit on the screen all at once (MORE) will
appear in the bottom left portion of the screen. After reading the
part on the screen, you will need to press the space bar to see the
rest of the description.

The Status Line at, the top of the screen, you will see a status
line. The line is updated after every move to show you current where
about in the game. Depending upon the type of game. it may also show
other information.
Score --
In game that keep score, (e.g.-ZORK) the right side of the status line
will show something like this:

SCORE: 245/920

The first number is you score and the second is the total number of
moves you have made. In the example, you have 245 points in 920
moves.

Time--
In games that keep track of the time (e.g.- the mystery thriller
DEADLINE), the right side of the status line will look something like this:

TIME: 9:22 AM

This show the current time of day in the game.

SCRIPTing--
The SCRIPT function is an optional feature which is not necessary to
play the game, and may not be available with certain hardware. If the
SCRIPT command works with your hardware configuration, you may make a
transcript of the game as you play it.

1. Turn on Printer
2. Load Game
3. Use SCRIPT command to start transcript
4. To stop transcript use UNSCRIPT command

SCRIPT & UNSCRIPT may be used as often as desired as long as the
printer is left on-line.

Saving a Game Position--
WARNING** The diskette used for SAVE and RESTORE is maintained in a
special format and should not be used for any other purpose.Files of
any other kind stored on the diskette will be destroyed by the SAVE
command.

To SAVE current position use SAVE command.
You can SAVE eight different positions on each disk and RESTORE them
in any order.
To keep track of these different positions, each is assigned a number
(from 0 -7). Each time you SAVE a game position, it will overwrite any
position that is already on your storage disk with the number you
specified. If you want to SAVE more than one position, you must use a
different position number for each one.

Prompt-- PLEASE INSERT SAVE DISKETTE
This program will allow you to extract archived files that were compressed by a program known as 'ARC'. There are versions of 'ARC' that run on the IBM PC, the AMIGA, the ATARI ST, the 8-bit //ATARI's (800x1k, etc), and many other personal computers. 'ARC' has been widely accepted by those 'other' users as a standard for compressing files that will be uploaded and downloaded. These compressed files therefore contain a wealth of source code for programmers, a multitude of computer art, etc.

Prior to the release of this program, the only way an APPLE II user could utilize the contents of an ARC'd file was to get someone with another brand of computer to de-ARC it for them. While many of us probably did that (that's how I got some of the source code used to write this program), it was slow and inconvenient.

Now, thanks to yours truly (me), APPLE //GS users can de-ARC those files themselves. This program will only run on either a //GS or a //E that has had its mother board upgraded to that of a //GS. I will attempt to create a version of this program that will work on the 8-bit //E's, //C's, II+'s, etc in the future.

To use this program, simply copy it to the directory that contains the ARC'd file and double click on its icon. You will be presented with a menu that contains four options. The menu is presented here to make this discussion easier for both of us:

- [L]ist contents of an archive
- [E]xtract contents of archive
- [S]et name of archive to work with
- [Q]uit this program

The choice is yours =>

It will be easier to start from the bottom ([Q]uit) of the list. To select any of these options, simply type the letter that is within the square brackets and press Return. However, if you want to quit, you want to type 'Q' (upper or lower case, it doesn't matter) and press Return. The [Q]uit option allows you to leave this program and return to the Finder (or wherever else you launched this program).

"[S]et name of archive to work with" allows you to change the archive you will be listing or extracting from. This allows you to extract files from several different archives without having to re-start this program for each archive. To select this option, simply type 'S' (upper or lower case, it doesn't matter) and press Return. You will be prompted to enter a file name. Make sure you spell the file name correctly. After having set a file name, you will see it listed on the line under the "[S]et name of archive to work with" option. If you want to list or extract from another archive or you want to correct the file's spelling, simply re-select this option.

You are allowed up to fifty characters when you type in the file's name. Obviously this is in excess of PRODOS' limit of fifteen. However, you can use the remaining thirty-five characters for a partial or full pathname for the target file. This is handy if you want to place the extracted files into a directory OTHER than the one your ARC'd file is in. To do this, simply copy this program into the directory that you want the EXTRACTED files to be in, launch the program, and type the full pathname of the target file.

"[E]xtract contents of archive" option will allow you to extract either some or all of the files that are contained in the archive you are currently working with. If you have not yet set a file name to work with, you will automatically be prompted for one.

Next, you will be asked if you want to extract some or all of the files. If you only want some of them, simply type an 'S' (upper or lower case, it doesn't matter) and press RETURN. You will then be prompted BEFORE each file is extracted. If you want to skip a file, then simply type 'N' or just press RETURN (the default is 'NO'). If you want to extract a file, then type 'Y' and press RETURN.

If you want to extract all of the files in an archive, then either answer 'A' or just press RETURN (the default is 'ALL') when asked whether you want to extract all or some of the files.

"[L]ist contents of an archive" option allows you to see the names of the files that are contained in the archive, how much room they will take up when extracted, the compression method used to pack them, and some other information as well. Please note that the names presented to you when '[L]isted may contain characters that PRODOS considers illegal for file names (things like ' &' and '.'). Do not let this concern you. The program is smart enough to detect garbage like this and, when extracting those files, will change all illegal characters to periods.

Also, some files may start with a number. If this is detected, then the number will be changed to a 'Z'. This substitution will ONLY take place if the FIRST character in the file name is a number.

After each option is completed, you will be asked to press RETURN to continue. This was added so that any error messages you may have received will still be visible before the screen is cleared. Simply press the RETURN key and the program will continue.

This program is intended to be used from the GS's FINDER or the older Mousedex v1.1. However, for those of you who would prefer to use it from a shell (such as APW, ORCA/M GS, or ECPI6), all you have to do is change the file type from $B3 to $B5. Then just treat it the same as you would any other shell command.

If you are using APW or ORCA/M GS, then you should note that you can no longer pass the file's name from the command line. This was done to make way for the menu. Future items intended for inclusion in this program include true directory "walking", the ability to catalog the current prefix, and, one of these days, a desktop (super hi-res) mouse-based user interface.

You can find ARC'd files to download in the ATARI ST, IBM, and AMIGA Round Tables of Genie, or from local BBS's that cater to those computers. To use de-ARC'd ATARI pictures, you will need a special program that can handle them. I recommend Jason Harper's program known as: SHRconvert. It can be found in the Genie downloads as file #1766.

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

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If you have any problems using this program then contact me at:

Tim Swihart
GENie address: TSWIHART
or
P. O. Box 26303
Fort Worth, TX 76121

This program is considered FREeware, however, if you feel like sending me money for it, I will gladly accept it. I intend to make some revisions to this program in the future so that it will be easier to use, have more features, and keep me busy. If you would like to receive those updates directly, then send $15 to me at the address listed above.

Thank you very much.

Tim Swihart

Here is the last update of Disk Disintegrater DeLuxe. What it have more than V4.0? You can now unpack old DDD files. A few changes have been made in "Pack" option, in "Unpack" option and also in "Prodos commands" option.

Notes:
------

a) You can keep your configuration file of D.D.DeLUXE V4.0 without any problem.

b) If you use the loading file "D.D.DE.LUXE.LOAD", you must replace it by the new one.

c) All DDD files packed with V4.0 are compatible with D.D.DeLUXE V4.1 (in both ways).

d) To unpack old DDD files, you must proceed the same way you do with D.D.DeLUXE DDD files.

e) When you unpack an old DDD file, there is no guarantee the unpacked disk is exactly the same as the original disk because there is no checksum in the old DDD file. But if you unpack a new DDD file (type $DD, with message in the file), if D.D.DeLUXE unpack without checksum error, you can be sure your unpacked disk is exactly the same as the original disk.

f) Last note: For the moment, the documentation has not been updated to V4.1. The present documentation is for D.D.DeLUXE V4.0.

For your pleasure only,
Louis Roy,
The author of D.D.DeLUXE.
Here is the last update of Disk Disintegrater DeLuxe. Version 4.2 is much easier to use and much faster. Many improvements have been made to D.D.DeLUXE:

1) Now, D.D.DeLUXE can pack the track volume # of 5.25" disks. Note: the volume # is not the prodos volume, it's the track volume (the track volume is an old technique used by DOS 3.3 to format tracks of 5.25" disks, but not used by prodos).
2) In partial catalog mode, you may configure D.D.DeLUXE to show not only DIR and DDD files, but also REL and TXT files.
3) You can configure your D.D.DeLUXE to scan or not, your 5.25" drives (scan = search for a prodos disk volume).
4) You can also configure it to scan or not, all your devices connected to your Apple //.
5) When you unpack a DDD file and format the target disk, D.D.DeLUXE unpacks it much faster than V4.1 or V4.0. Take note when you unpack a DDD file type "A" (5.25" disk), D.D.DeLUXE will format your target disk automatically (it's necessary because of the track volume #).
6) You can now use all the prodos commands in pack and unpack option.
7) In the main menu, you can quit D.D.DeLUXE quickly by pressing CTRL-Q.
8) Like version V4.1, V4.2 can unpack old DDD 2.1 files.
9) There are also many other modifications you will discover using this program.

Notes:
a) When will run D.D.DeLUXE V4.2, you will have to re-configure it because V4.2 do not use the same configuration file as V4.1 or V4.0.
b) If you use the loading file "D.D.DE.LUXE.LOAD", you must replace it by the new one.
c) All DDD files packed with V4.0 and V4.1 are compatible with D.D.DeLUXE V4.2 (V4.2 can unpack V4.0 and V4.1 DDD files).
d) To unpack old DDD 2.1 files, you proceed the same way you do with D.D.DeLUXE DDD files.
e) When you unpack an old DDD 2.1 file, there is no guarantee the unpacked disk is exactly the same as the original disk because there is no checksum in the old DDD file. But if you unpack a new DDD file (type $DD, with message in the file), if D.D.DeLUXE unpack without checksum error, you can be sure your unpacked disk is exactly the same as the original disk.
f) Last note: For the moment, the documentation has not been updated to V4.2. The present documentation is for D.D.DeLUXE V4.0.

For your pleasure only,
Louis Roy,
The author of D.D.DeLUXE.
On the following pages are some additional details regarding these new features and how to use them.

**ARTIFACTS**

The new types of artifacts that have been added are listed below:

<table>
<thead>
<tr>
<th>Old</th>
<th>New</th>
<th>Format Ptr</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Gold</td>
<td>0 Gold</td>
<td>0</td>
</tr>
<tr>
<td>1 Treasure</td>
<td>1 Treasure</td>
<td>0</td>
</tr>
<tr>
<td>2 Weapon</td>
<td>2 Weapon</td>
<td>1</td>
</tr>
<tr>
<td>3 Odd Weapon</td>
<td>3 Magic Weapon</td>
<td>1</td>
</tr>
<tr>
<td>4 Container</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>5 Light</td>
<td>5 Light</td>
<td>3</td>
</tr>
<tr>
<td>6 Healing</td>
<td>6 Healing</td>
<td>4</td>
</tr>
<tr>
<td>7Readable</td>
<td>7 Readable</td>
<td>5</td>
</tr>
<tr>
<td>8 Door/Gate</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>9 Key</td>
<td>9 Key</td>
<td>7</td>
</tr>
<tr>
<td>10 Bound Monster</td>
<td>10 Bound Monster</td>
<td>8</td>
</tr>
</tbody>
</table>

Because these new artifact types must supply the base program with additional information, the designer will have to code this additional information when setting up the adventure. To assist the designer in this task, there have been groups of labels and default data set up for each general purpose. These are called formats. There are eight different formats available as the standard ones. In addition, the designer may set up his own formats using functions in the dungeon edit program. Each artifact type has a format pointer that tells the program which format will be used for fields 5 thru 8. The format pointers for a particular artifact type may also be changed by the designer, although this is probably not ever necessary. The formats available are:

<table>
<thead>
<tr>
<th>Format 1</th>
<th>Format 2</th>
<th>Format 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fld 5 = Weap. Type</td>
<td>Fld 5 = Key #</td>
<td>Fld 5 = Counter</td>
</tr>
<tr>
<td>Fld 6 = Compl.</td>
<td>Fld 6 = Strength</td>
<td></td>
</tr>
<tr>
<td>Fld 7 = Dice</td>
<td>Fld 8 = Sides</td>
<td></td>
</tr>
<tr>
<td>Fld 4 = Format 5</td>
<td>Fld 6 = Format 6</td>
<td></td>
</tr>
<tr>
<td>Fld 5 = Chances</td>
<td>Fld 5 = 1st Eff.</td>
<td>Fld 5 = Room#</td>
</tr>
<tr>
<td>Fld 6 = Heal Ant</td>
<td>Fld 6 = Eff.</td>
<td>Fld 6 = Key#</td>
</tr>
<tr>
<td>Fld 7 = Nbr Uses</td>
<td>Fld 7 = Read Flag</td>
<td>Fld 7 = Strength</td>
</tr>
</tbody>
</table>

**Location of Artifacts**

Version 6.0 also allows artifacts to be in special places. Artifacts are normally coded with room numbers ranging from 1 to the number of rooms in a dungeon. There are now additional codes recognized by the program.

+100 .... Inside a container artifact
+200 .... Embedded in a room description
+300 .... Hidden in a room

For example, if you want to place an artifact inside artifact #9, code it's room code as 109. If you want an artifact to be in room number 17, but not be listed as a separate artifact, code it's room code as 217. If you want an artifact to be hidden in room number 25 (so you have to look to find it), code it's room code as 325.

The new artifacts are explained in some detail below:

**Magic Weapons** - These weapons are locally magical. That is, they are magic weapons within the scope of the current adventure. If they are taken out of the adventure, they will revert to standard weapons. While they are magic, they cannot break except by magical means. This is the extent of their natural magic power. If you want other magic effects, you will have to program them.

**Container** - This type of artifact can contain other artifacts. The artifact may be opened at which time, the program searches the artifact table looking for any artifact having a room number of 100 plus the number of the artifact being opened. Any artifact meeting this criteria is moved into the room by the program and the message YOU FOUND SOMETHING. is printed.

**Light** - When rooms are coded in version 6.0, a code for light is included. If the room is too dark to see in without artificial light, you code a 0. If there is a normal amount of light, a 1 is coded. A light artifact is lit using the LIGHT command. This will activate the light so that all rooms entered are lit up. A light will expire after awhile. There is a field coded to indicate how long a light will last. When this number is exceeded, the light will go out never to work again. (There is currently no way to reactivate a light without special programming.)

**Healing** - This type of artifact will heal the user by the amount specified at the time the artifact was set up. It may be used only a limited number of times before being exhausted.

**Readable** - This type of artifact will allow the user to read it. The program will automatically read the effects from the effects portion of the EAMON.DESC file. These effects must be added by the designer and the pointers established according to the prompts given by the readable artifact format.

**Door** - A door has a 'room into' and a strength factor. The 'room into' code is very important, since it takes the place of a room connect code where the door is located. The strength factor is how strong the door is. Doors may be broken down by beating on them.

**Key** - A key artifact is used for opening containers, doors or freeing bound monsters. The artifacts they are used on will indicate which key works on it, keys point to format 7 which contains no useful prompts. This may be changed if you wish, however.

**Bound Monster** - This type of artifact is used to simulate a bound monster. The key number needed to free the bound person, the monster guarding the bound monster and a pointer to the monster being bound makes up the data fields of this artifact type.
The dungeon edit program will also allow you to build your own artifact types, or modify existing artifact types, formats, or even monster or room data. This was done to prevent the need for a custom edit program when special fields are needed by an adventure.

**ROOMS**

The Eamon.Rooms file contains the rooms that you can move into. This file now has the ability to contain new codes that permit the ability to have automatic secret passages, and locked doors. Before this was installed, you had to program these manually for every adventure you wrote.

Room numbers from 1 to 99 are normal.

Room number -99 means exit to the Main Hall.

Room numbers less than 0 and greater than -99 are secret passages. The absolute value of the number is used for the pointer to the room when the passage is discovered. Passages are discovered by using the LOOK command. If you want them discovered by other means, you will still have to program it.

Room numbers greater than 100 are locked doors. The difference between 100 and the room code is used to point to an artifact. This artifact must then be a door or gate. The artifact will specify the room to be moved into, the key number, the strength of the door necessary to enter the room.

**MONSTERS**

Monsters have not changed from previous versions of Eamon, but the ability to add fields or modify field labels has been added. This allows you to more easily put special programming into your base program when this programming may require additional data to be on the Monsters file.

**ADDITIONAL ARTIFACT TYPES**

Additional artifact types may be added, using the functions in the dungeon edit, but these additional artifacts will have to be supported via changes you must make to the base program.

Customized fields added or changed from the standard may be difficult to remember and duplicate when you go back to edit a dungeon a second or third time. For this reason, the ability to be able to save and restore these parameters to disk has been installed. The data that is saved off for parameters is listed below.

You should decide before starting your adventure what changes will be made (if any) to the standard layouts, since these changes must be made before any fields are defined. If this is not done, you will end up with monsters or artifacts with the incorrect layout. If you are not adding any fields, it will not make any difference, but if you are the program could bomb while trying to read data from the disk that does not exist.

The file that stores the parameters is sequential and contains the following data.

AF - # fields in an artifact (not counting last 4 variable fields)

Field Name 1
Field Name 2
...
af

Default 1
Default 2
...
af

NF - # of Formats

Format Label $ (F,1)
Format Label $ (F,2)
Format Label $ (F,3)
Format Label $ (F,4)
Default (F,1)
Default (F,2)
...

MF - #monster fields

Monster Label 1
...
mf

Default Monster 1
...
mf

---End of Parameters File---
A MANUAL FOR EAMON ADVENTURE DESIGNERS

By Donald Brown

EAMON is the computerized fantasy role-playing game developed by Donald Brown. This manual has been written for those stalwart people who are tired of having their characters killed in the many adventures written for the system, and want revenge by creating their own death traps. It is assumed that you are already familiar with the gaming system and the information included in the Player’s manual.

Most of the adventures that are written for the Eamon system have been similar to the "Adventure" game that was created by Don Woods and Willie Crowther at MIT, such as the Beginner’s Cave included on the master diskette. This manual will both help you design your own scenarios in that type of game but will also permit you to meld any other type of game with the system that you wish.

HOOKING UP WITH EAMON

SENDING ADVENTURERS TO THEIR DEATH FOR FUN AND PROFIT

Under the Eamon rules, it takes only a few numbers to completely describe a character. Between adventures, all of the player characters, (or adventurers) that the Master system knows about are stored in a file on the Master that is called "CHARACTERS". It is a random-access file with a length of 150. Record 0 holds the number of records used in the file, and all subsequent records may hold one character. If the first string in the record is null (""), then the character in that record has been deleted and the record may be reused to store a new character. The data is stored on each record as:

A string that has the name. The next numbers stored are (in order)
player Hardiness, Agility, Charisma, the four spell abilities (Blast, Heal, Speed, and Power), the five weapon abilities (Axe, Bow, Club, Spear, and Sword), the player’s Armour Expertise, the player’s sex as a string ("M" or "F"), gold pieces carried, gold pieces in the bank, the player’s armour class (Leather=2, Chain=4, Plate=6, with one added for a shield), then for each of a player’s four weapons the name of the weapon, the weapon type, the weapon complexity, the weapon dice, and the weapon’s sides per die. If a player does not have four weapons, his weapons will be first, and all other weapon names will be "NONE". Except for name, sex, and weapon names all of the information is stored as an integer number, with all probability numbers stored as percentages (perfect=100).

When a player leaves the Main Hall to go on an Adventure, first his character is deleted from the CHARACTERS file, and then the player is prompted to change diskettes. The program then tries to read a program name from the file EAMON.NAME on the adventure disk. If this name is found, a file called FRESH MEAT is opened on the disk and the data that was in the record of the CHARACTERS file is written into that file, preceded by the record number that the character previously resided in. Finally, the program given in the EAMON.NAME file is run.

Once the adventure is over, control must be returned to the main Eamon programs. If the adventure ended in the character’s death, all that must be done is deleting a file called "THE ADVENTURER" from the master diskette and running MAIN HALL. (You may instead directly run THE WONDERFUL WORLD OF EAMON and then do not need to delete the file. If you do want to go the MAIN HALL route, it might be advisable to open THE ADVENTURER before deleting it, to make sure it will really be there.)

If the character survives your adventures, you will have to recreate him into the CHARACTERS file. The Main Program logic is already writing the character his own character record now, but you may want to change this if you have a special reason for it. Normally this is simply writing in the new information of the character into the old record records in FRESH MEAT. However if your program has the ability to quit for a while and come back later, it is possible for a new character to be stored in the old record. In this case you should make sure the CHARACTERS file has a free record to store the character, and write it in there (for an example of how this is done, list the NEW CHARACTERS program on your master diskette).

Once you have stored the character into the CHARACTERS file, you must re-create a file called THE ADVENTURE which has two pieces of data in it—the name of the character, and the record he resides in of the CHARACTERS file. This too, is already done by the logic of the Main program, but it may
be necessary for you to know what is being done, in case you want to change it. Once this is done, run MAIN HALL to finish. (Also currently done.)

USE OF THE DUNGEON DESIGN DISKETTE

The Dungeon Design Diskette is designed to make the job of entering new Adventure-like scenarios much easier. It includes a base to work from for your program, as well as a simple means of entering the data into the text files needed by that base program.

Version 5.0 of the Dungeon Designer Diskette will contain two versions of the Main Adventure program. One is called MAIN PGM (or BASE PROGRAM 2.0) and the other is MAIN PGM 10 (or BASE PROGRAM 10).

Version 6.0 will only contain MAIN PGM, but will contain an extra file called CONVERT MAIN MAIN 10. This is a text file that can be executed (using the DOS EXEC command) to convert MAIN PGM to a ten direction version. To do this simply load in MAIN PGM and type EXEC CONVERT MAIN MAIN 10. You will see some Applesoft prompts. When it stops, you will have a ten direction version of the MAIN PGM. You may then save this on your adventure diskette.

The first step in creating your adventure is initializing the diskette. The program on the DDD (Dungeon Design Diskette) will do several things for you---it will INIT the diskette, put your program's name into EAMON.NME, and put in the starting data needed for the dungeon editing program to work. It also creates a boot program that identifies this diskette as an Eamon adventure by you! You will be asked for an adventure number, this must be an integer from 1 to 254, since it is used as the disk volume. It is not important what number you assign, it will be be reassigned to the next valid number - once you have submitted it to the library.

When you have initialized your diskette, you should delete the text file SAVE LEADIN PROGRAM HERE. Then re-insert the DDD and load LEADIN PROGRAM. The diskettes should be switched again and you will type in SAVE (your adventure name). You must spell the name to be saved ---in () above exactly as you did when you typed in the name of the adventure during the initializing process. Then re-insert the DDD and type LOAD MAIN PGM or LOAD MAIN PGM 10 (depending on whether you answered 6 or 10 directions during the initialize process). The MAIN PGM 10 should be used if you answered 10 to the number of directions. Otherwise, use MAIN PGM. Now re-insert your new adventure diskette and type SAVE MAIN PGM. Note --- here you use 'MAIN PGM' regardless of which program you loaded. You are now ready to begin entering data for the adventure. It is much the DDD and run the program 'DUNGEON EDIT'. This program is the one that puts your basic Dungeon Design into the text files.

A few general remarks are in order now---first of all, you should always have your dungeon designed before entering it. Decide what rooms you have, how they connect, what monsters inhabit those rooms (and what their attributes are), and what treasures are sprinkled about.

For each of the four things you can enter (ROOM, ARTIFACT, EFFECT, and MONSTER), you can either add a new one onto the end of the list, or edit one already there. You cannot delete a thing already there (though you can replace it through editing). You also must not go beyond 100 of any of the things (though you can go over 100). Actually you will run out of disk space long before you hit the limit of 100 on these items. The more practical limits of the system are: (-in general-) Rooms: 50-85; Artifacts: 35-50; Effects: 0-25; Monsters: 12-35. If you do go over the 100 limit on anything you will not be warned of your error, but you will not get the results you wanted.

Adding and Editing will be almost identical for all four data types, except that in 'editing' your old entry will be placed after the cursor at the start of entries. Every time you are to do more entry than just hitting one key, the entry will be done with a special input routine. It appears to be the standard Apple input on first glance, but it has many significant differences. First of all, the old Escape-key editing features do not work. Instead, the following control keys do things---

ESC---this returns, accepting both what is before and after the flashing cursor. It is very useful while editing since if you simply hit ESC no change will be made.

RETURN---this also does a return, except only accepting what is before the cursor.
CTRL-B—this moves the cursor to the first character of your input.

CTRL-E—this moves the cursor to the last character of your input.

CTRL-D—this deletes the character that the cursor is sitting on, bringing the characters after the cursor forward one space.

CTRL-I—this inserts a space where the cursor is, moving all characters after the cursor back one space. This is good if you are entering a line that you want to look good as it wraps around your 40-column screen.

<,-> (FORWARD & BACKWARD ARROWS) -- these move the cursor back or forward by one character.

Your entries cannot go over 250 characters, and you should not use quotation marks ("). You may use commas and colons in descriptions only. Do not have any trailing spaces on the names of items. (Applesoft regards "LION" as being different from "LION ", though your player may not recognize the difference. Additionally, if you are entering a number, enter only a number, do not include any leading or trailing spaces or other extraneous characters. The program won't like them and will simply spit them back at you.

Another thing to watch out for is names on artifacts that begin with a number. The program will accept them and you can use them, but when you try to give the item to a monster the program will not understand. For example assume you want to put an 8 inch knife in your adventure. When adventurer picks it up and tries to give it to his friend the Doctor, the Doctor will think he is being given 8 gold pieces. That is because the program looks at the artifact name and because it begins with a number, it mis-understands.

For every room, you will need to give eight pieces of data. First is the room name, which cannot go over 39 characters. In the program it will be printed as: "YOU ARE (room name)". So you should use names like, "AT THE CAVE ENTRANCE". Secondly you will need to give a room description. It is not preceeded by anything, so it must be a full and complete description. If your description is longer than 40

characters, you must pad it with spaces so that when the description wraps around the Apple's 40-column screen, the breaks are between words. Finally, you will have to give the room numbers that you can get to from that room in each direction. A special code has been developed—if you give a room of 0, you can never move that direction. If you give positive direction, there's an open connection. Negative numbers are special and usually indicate a secret passage. Another special code is -99 which indicates the exit to home. Negative numbers can be easily made to have special results by altering the base program (see below).

Artifacts are somewhat similar. An artifact is any non-living thing that is in the dungeon. In addition to what you might normally think of as the artifacts you want to include: (gold, silver, statues), you must also have as an artifact all weapons used by your monsters, as well as a dead body for every monster.

For each artifact, you will again need a name (this time just the normal name, such as "GOLD COINS") and a full description. You will also have to give the item's room that it starts in, its value in gold pieces, its type and its weight. The room is usually a positive number, however if the item isn't in the dungeon yet (such as a dead body) you should assign a room of zero, and if the item starts by being carried by the player, its room is -1.

There are four types of artifacts. Type 0 is a treasure with a value that will not change with the player's charisma, such as a pile of gold coins. Type 1 is a treasure whose value will vary with the player's charisma, such as a Persian rug. Types 2 and 3 are weapons, with 2 being a weapon that can be bought at the Main Hall, and 3 a special weapon.

If your artifact is a weapon (type 2 or 3), you will also have to enter some more information on it. First is the weapon complexity, then is the weapon type (1=axe, 2=bow, 3=mace, 4=spear, 5=sword), then the weapon's damage with first the number of 'dice' thrown, for that damage, then the sides per die.

The other major type of data to be put in your files is monsters, which are any living (or animate) things in the dungeon. Artifacts are similar to characters, however they are assumed to have their full armour expertise and
know all weapons equally well. For each monster you will need the name, the description, then hardness (as with a player), agility, friendliness (the percentage chance of making friends with a character of a charisma of 10), courage (will flee from a fight after he has received that percentage of his hardiness in hits, on the average), room starts in (may be zero if in a chest or other special thing activates him), his body weight, his special defensive odds (normally 0, but magic or size/speed may make some monsters harder to hit), defensive odds are a % Armour (hits absorbed or stopped per blow. This may be things such as a furry skin or magical effects), and the weapon number (a pointer to some artifact. If the weapon number is 0 it is assumed natural weapons; claws or teeth. If the weapon number is -1 then the monster isn't carrying a weapon). You will then have to give for that weapon the monster's complete chance to strike a blow with it, and its sides and dice of damage. These numbers do not have to be consistant with the numbers given in the artifact list; a monster may know how to use his weapon better than someone who doesn't know some secret, and the chance of hitting is of course affected by the monster's weapon expertise and other information not stored.

There is a fourth thing that can be entered called an "EFFECT". It is there for your own special use--it permits you to store some strings on disk so that it can be called in quickly. The code to read effects is not in place in the base program (Main Pgm). To read an effect (number E, for example) use a routine such as:

PRINT DK$;"READ EAMON.DESC,B","E+200"

: INPUT A$ : PRINT A$ : PRINT DK$.  

NOTE: This routine also prints the effect (A$) that it reads. For further examples of its use you might want to check out The Beginners Cave. It is also included as room for expansion of the DDD.

Once you have put all of your data into your files, you will probably want to see what you entered, to catch errors and get a good overview. There is a program included on the DDD that will list all of your data in a simple, organized fashion. It will list all of your rooms, artifacts, and monsters in order, also pointing out what sort of "links" have been set up (what is the room name you are moving into, what is the name of the artifact that the monster uses as a weapon, etc.) If one of these links goes to the wrong thing, there's an error! If you want to put this monster into the computer you must modify lines 9000-9999 of the program DUNGEON LIST to start your printer and set the value of PL to the line length of your printer, less one (39 for the Apple's screen).

There is also a program included called DUNGEON LIST (OLD) which was written to work with the older system of files where EAMON.MONSTERS and EAMON.ARTIFACTS were sequential files. Although it might be very useful to examine other people's dungeons after you have played in them to learn how to design your own, it goes without saying that only a turd and a scoundrel would list someone's dungeon before playing to avoid dangers!

ADAPTING THE BASE DUNGEON PROGRAM

All of the work above was to put your dungeon into a format that the computer can use. It couples with a program called the BASE DUNGEON PROGRAM (or on later versions called MAIN PGM or MAIN PGM 10). If no sliding doors, things hidden inside of other things, etc. are needed, and you are using the standard add magic save the base program on your diskette and have a program that prints the explanation or mission run this program.

If you have a newer version of the DDD and have already saved the MAIN PGM and your (name of adventure) program, you are all ready to go.

However, if you want special effects such as a sword that teleports the user to another room at random times (gee, I may use that) these explanations should help you.

Lines 100-999 are the main loop. Every time a command is gotten, those lines are run through. If you want to have something done for checked for) every turn, it should be put in lines 500-990.

Lines 100-1999 reads in monsters and artifacts from disk, as well as doing other initializing. If you want to add a new command you will have to change line 1910 (increase the number in the DATA statement), 1920 (add the new verbs--no spaces are permitted), and line 290 (add the line numbers to go to). If you want special things to happen at a certain place, you can get a fee from the player's gold for some item, do it in lines 1150-1890

Lines 2000-2999 are the closing routines. When this is entered, if
the variable DIE has a non-zero value the player didn’t survive. Lines 2100 thru 2290 are for your additions.

Lines 3000-3999 are the movement commands. If you want to magically move the player, set K2 to the number of the room to enter and go to 3500. If something happens so as to make the monsters reconsider their reactions to the player, a GO TO 3600 will check the reactions of all monsters who are unaligned (see below). If you have special results and/or conditions for movement and have thus given negative room numbers in the editor, the place to check is in lines 3050-3490.

Lines 4000-4999 are to get things. Lines 4200-4899 are the place to add special results when getting some artifact. You may place synonyms in lines 4300-4700 (such as, 4430 IF S$= "BAT" THEN S$= "VAMPIRE BAT"). Finally, if a command MUST have a subject, GO TO 3600 will ensure one is gotten. Lines 7000-7999 are the attack commands and subroutines. Lines 7700-7999 are to kill monster M. If things happen when a monster dies (such as dropping something from the body), it should be put in this section.

Lines 13000-13999 are the Power Spell. As told in the Players manual, this spell can do anything at all feel free to throw out this section and add your own.

Lines 16000-16999 are the say command, which is very useful for 'words of power' or some other strange effects. Most of the variables are self-explanatory and also can be changed locally if desired, but a description of some of the others are:

AC = Armour class of player
ADN(‘*) = Artifact data
The first subscript is the number of the artifact, and the key for the second is:
1=Value
2=Type
3=Weight
4=Room
5=Complexity
6=Weapon Type
7=Dice
8=Sides
9=Flag if seen
AE = Armour expertise
ANO(‘*) = Name of artifacts
BANK = Gold player has in bank
C = Holds number of command given
C2(‘*) = Verbs program responds to
CH = Player charisma

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
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people's adventures, it would definitely be a good idea to tear it apart to see how other people have adapted this program to their own use. Also, if I might give a few suggestions to new Eamon dungeon designers-

1. Be fair to the adventurer. Don't try to stack the odds totally against him. A good rule of thumb is that an adventurer can lick about five times his own Hardiness in opponents, with allies subtracting their Hardiness from the opposition. If you continually design pure death traps (and don't reward the successful outrageously), people aren't going to want to send their carefully-built up characters through your dungeons. On the other hand, if your dungeons are just big give-aways, they will quickly become boring.

2. You can place one or two traps of the zap-you're dead type (such as the book in the Beginner's Cave) so long as they are not overdone and are not required to survive them to get out. Thus, if your only way out of the tunnels is drinking a potion that half of the time teleports you away, the other half poisons you, it isn't fair.

3. Particularly to those who have designed dungeons for non-computerized role-playing games, remember that there is only one adventurer going in, not an army! No matter how great a character is, he cannot by himself handle a dozen thugs.

4. Last but not least, don't be afraid to break any of these rules. If you truly believe that your dungeon will be better, do anything you please. The worst that will happen is that people will not play in it and you'll have to change a few things.

The process of creating your own adventure in Eamon will require that you have a basic knowledge of programming in Applesoft and in operating your system as far as being able to load and save programs as well as copying files and diskettes. If you are unfamiliar with these operations, you should review them until you are comfortable doing these functions.

The following is a summary of the steps to follow to create an adventure of your own. This summary is provided to allow you an easier step-by-step method of creating your scenario.

1. Be sure you have everything you need

The things you will need are:

   a. A theme for the adventure. This is usually the hardest part.
   b. A map of the setting for the adventure.
   c. A list of all the monsters that will appear.
   d. A list of all the artifacts you will need.
   e. The DDD (Dungeon Designer's Diskette)

2. The next step is to initialize your adventure diskette. This is done by booting on the DDD and selecting the initialize function. You will be requested to replace the DDD with a blank diskette. Then you will be asked for the name of the adventure, the adventure number and the author's name.

THE DISKETTE THAT IS SITTING IN THE DISK DRIVE AFTER THESE QUESTIONS ARE ANSWERED WILL BE INITIALIZED. FOR THIS REASON, YOU SHOULD ALWAYS KEEP YOUR DDD WRITE PROTECTED.

3. When the diskette has been initialized, you'll need to copy two programs from the DDD to your adventure diskette. The first one that should be copied is LEADIN PROGRAM. Copy this one by:

   a. Insert the DDD and type in: LOAD LEADIN PROGRAM
   b. Insert the adventure & type DELETE SAVE LEADIN PROGRAM HERE
   c. Now type: SAVE (whatever you called your adventure)

The name that you use in the save command must be the exact name that you used when you initialized the diskette.

The second program that you will have to copy from the DDD to the adventure diskette is the main adventure program.

The name that this program goes by on the DDD may be one of the following:

   BASE DUNGEON PROGRAM
   BASE PROGRAM 2.0
   MAIN PGM

This will depend on which version of the DDD that you have answered the question "six or ten directions" as 10, then you will have to use the ten direction version of the main program.

Some versions of the DDD do not have
this capability. However, if you did get a question on how many directions you wanted, your designer does have this capability. If you are using version 6.0, and you want to use ten directions, you have to create a ten direction version of the main program. This is a very simple process. Simply load the MAIN PGM program into memory, and type: EXEC CONVERT MAIN>MAIN 10.

When the process is complete, you will have a ten direction version in memory. You may then save this on the adventure diskette. When you have the appropriate program in memory, insert the adventure diskette and save it under the name MAIN PGM.

4. The next step is to add the data or information about your adventure. All items are added using the DUNGEON EDIT program. Boot on the DDD and select modify an adventure. The edit program is run and then requests you to insert your adventure diskette. You will then add all of your rooms, artifacts, effects and monsters. This may take several days, so whenever you get tired of entering, select quit option. All of your items will be saved and you can pick up where you left off.

5. After all your rooms, artifacts, etc have been entered, you may make your program changes to MAIN PGM. These will be all of the things that you want to be special about your adventure.

6. The next phase will be to test your adventure. The best way to do this is to be sure the PRINT DK$“DELETE FRESH MEAT” statement has been deleted from the MAIN PGM, (..try line 1055 or 1050) and that your main program has been saved to the adventure diskette after making your changes. Then boot the Eamon Master diskette. Select the character to be used to test with and take him into the Main Hall and select adventure. Insert adventure diskette and you should now begin your test. From that time on, to repeat a test you should be able to simply run MAIN PGM. (Or if MAIN PGM is already in memory, simply type RUN)

Another helpful hint: to restart an adventure if it bombs off you should be able to type GOTO 210.

7. When you are sure your adventure is ready you could have a friend test it. When the adventure is completely ready, send a copy of it to:

John Nelson
1226 E. University

Des Moines, Ia 50316

It will then be an “official” Eamon Adventure and may be distributed.

If you have any questions or problems designing an adventure, write to the above address. We will do our best to help you get back on the right track.

THE END
**+ DeskColor Control Panel History +**

**v3.1 Update Pattern selector, auto-update to new desktop when closing**
- Changed pattern selection from a dialog to the active Control Panel to allow for a more logical interface. Includes Delete and Insert pattern.
- Automatically updates desktop to current pattern/graphic when closing.

**v3.0 Complete TuneUp to prepare for System 6.0**
- Fixed some quirks, more user friendly and smaller.
- Changed interface to popup menus.
- Added save as a Binary PTRN file.
- Changed Pattern Editor to allow "Painting".
- Added a "None" desktop type command which updates the Finder.Def file.
- Available as a Temporary Init file that can be updated with the CDev to save much space on your boot disk (2.5K vs 15.5K)

**v2.5 Bug Fix**
- Changed the handle size so that the resource and message will always be the correct size. This used to work automatically. Apparently something with the DMA SCSI card System Software and System 5.03 changed that.

**v2.4E Bug Fix**
- Changed some code in Desk Color and LoadPic to more effectively handle errors. This should eliminate all problems that have been experienced, especially with desktop pictures.
- Compiled with the release version of ORCA/C v1.1 instead of a beta.

**v2.2E Bug Fix**
- Changed one line of code to correct a bug "I" introduced that prevented reloading of a picture during a boot.

**v2.1M Pattern and Picture loader without Editor**
- "M" version saves space and time, but must use patterns already created.

**v2.1E Bug Fix and improvement**
- "E" version includes built-in pattern editor
- Modified Interface (buttons) slightly to handle routine for saving pictures to save disk space
- Fixed a few minor bugs and improved efficiency.
- Added more error trapping.
- Added ability to load any pattern from a multiple pattern file.
- Added ability to save multiple pattern filled files.

**v2.0 Major Revision**
- Changed interface drastically.
- Added compression routine for saving pictures to save disk space.

**v1.1 First major release**
- Added Standard File Dialog to find the picture to load to the desktop.
- Cleaned up some more "ORCA/C" bugs.
- Polished 520 mode button sizes.

**v0.32b**
- Still a beta test version, but I haven't heard any complaints.
- Cleaned up buttons display in 320 mode.
- Cleaned up save file routines so no errors will occur.
- Cleaned update desktop routine to recognize last color used.
- Added ability to load a picture to desktop.

**v0.24b**
- This is a beta version and the first release, it can't be absolutely guaranteed to work in ALL circumstances.

**v2.2E Bug Fix**
- Fixed some minor bugs and improved efficiency.

**v2.1E Bug Fix**
- Changed one line of code to correct a bug "I" introduced that prevented reloading of a picture during a boot.

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- Cleaned update desktop routine to recognize last color used.
- Added ability to load a picture to desktop.

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- This is a beta version and the first release, it can't be absolutely guaranteed to work in ALL circumstances.

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**+ Documentation for DeskColor Control Panel v3.1 +**

Here is a Control Panel that allows you to change the color of the IIGS desktop from the old periwinkle blue to any pattern or to a picture. Whatever pattern or picture you choose or create becomes the new desktop the next time you power up the computer, close the Control Panel, or launch another application.

I want to thank Vince Cooper for reinspiring me to complete this project. His article in Call A.P.P.L.E. got me back on the ball. Look for the source code for this utility.

Catch me as:

America Online: DAVE L32
Genie: D.LEFFLER
Snail Mail: Dave Leffler
14 I Cape Drive
Fort Walton Beach, FL 32548

**+ Distribution: +**

This product is classified "Jesus-A-ware". It is the equivalent of FreeWare. It is distributed the same as God's Love. That means it's free to anyone who'll accept it. It will be given to anyone, regardless of who or what you are or have been. It's not where you've been, but where you're going!

Everyone is free to use the "JesusAware" name. Spreading the Gospel message through Software. This product is free. Give it to everyone, even if they don't have a computer! This work is a labor of love for my Lord and Savior Jesus Christ! Just as knowing Christ gives you a colorful background, this Control Panel gives your IIGS desktop a colorful background.

**+ How to Install: +**

Copy the file "Color.CDev" to the "CDEVS" folder in the "SYSTEM" folder of your boot disk. You MUST do this with the Finder or another GS/OS compatible utility program or it will not copy correctly. It is an extended file. The NEXT "CDEV" you open the Control Panel NDA, you'll see the "DeskColor" icon.

You do not have to reboot your computer! If you experience problems with the Control Panel NDA, you might want to delete the "CDEV.DATA" file found in the "CDEVS" folder, since the NDA sometimes has problems when a new Control Panel is installed.

To keep the same pattern/picture you are using now, (i.e., you're updating to this new version) just open this Control Panel after you've installed it (select the DeskColor icon), then select another Control Panel or close the Control Panel NDA. Your pattern/picture is saved painlessly. Again, if you experience problems with the Control Panel NDA, you might want to delete the "CDEV.DATA" file found in the "CDEVS" folder, since the NDA sometimes has problems when a new Control Panel is installed.

**+ How to Use it: +**

Fairly Simple! The type of background can be found in the right hand menu, just select the type you'd like to use for the desktop. You'll notice the current desktop type is displayed as the menu choice. The three types of backgrounds are Pattern, Graphic, and None. "None" is fairly self-explanatory. It removes any desktop messages from the system, and also updates the "FINDER.DEV" file on your boot disk to clean up the Finder's desktop.

Selecting the "Pattern" menu will display a pattern editor, if it was not already active. The pattern editor is divided into the following areas:

1. Pattern Editor
2. Color Selection
3. Pattern Preview
4. Load/Save Pattern
5. Pattern Properties

**Snail Mail:**

Dave Leffler
14 I Cape Drive
Fort Walton Beach, FL 32548

**Web Site:**

www.textfiles.com/apple/
The scroll bar and two buttons below the current pattern display allow you to move between multiple loaded patterns, insert a new pattern, or delete the displayed pattern. Please try not to confuse loaded patterns and the file from which they came from, and the system pattern. There is only one system pattern and it is saved (attached) to the Control Panel file whenever you close the Control Panel. Pattern files are only saved/updated when you select the "Save As .." commands.

To change the current color, click in the color selection area in the color you'd like, you'll see the current color change. To fill in the pattern grid with the current color, click in the current color area. You'll notice the grid fill with that color and the pattern area will also update to reflect this.

If more than one pattern is currently loaded, the scroll bar can be used to move between and select the different patterns. If you would like to insert a new pattern, click in the "Ins" button or press the "clear" key. A periwinkle blue pattern is inserted before the currently displayed pattern (you now have one more pattern contained in the loaded patterns). The pattern file is not updated until you use a "Save As .." command. If you would like to delete a pattern, use the scroll bar to select it, then click in the "Del" button or press the "delete" key. The currently displayed pattern will be deleted to a file. Again a reminder, the pattern files are ONLY updated/saved when you use a "Save As .." command.

When you get a pattern you like, you can do several things with it. You could see it temporarily on the screen (try it out) by clicking the current pattern display. This will not actually send the new pattern into the system, but just change this desktop. If you don't do anything, your pattern will be sent to the system becoming the system pattern and saved when you close the Control Panel NDA or DeskColor Control Panel. You should see the new pattern on your desktop immediately. If you were just editing a pattern, you could save it to a pattern file. Again a reminder, the pattern files are ONLY updated/saved when you use a "Save As .." command. The system pattern is updated when you close the Control Panel.

To load a picture, select the "Graphic" menu item. You'll be presented with a Standard Get File Dialog. The file may be of any SHR type; i.e., Screen (PIC, 5CO), PackBytes (PNT, $1C, aux $0000), PaintWorks 640 mode (PNT, $1C, aux $0000), Apple Preferred (PNT, $C1, aux $0002), or PaintWorks 640 mode (PNT, $C1, aux $8000). You must keep in mind that the picture will be used for both 320 AND 640 mode, so it should be one that looks okay, even when the colors change. I would suggest using my ShowPic NDA to see the pictures and/or modifying them first if you don't know what they'll look like. A pattern or some sort of desktop work is so very well, but a portrait wouldn't do. The new picture will be drawn to the screen after you close the Control Panel. The left hand menu is the command menu and it may not be needed. The first command will open a pattern or a graphic desktop type. This command is automatically selected when you select 'Graphic' from the type menu. When you load in the saved patterns, the file you choose will be the first file you'll then see a dialog asking whether you want to cancel loading the pattern file, replace the loaded patterns with the patterns from the pattern file, or add the new patterns to the end of the currently loaded patterns.

The "New" command erases all patterns from memory except the one that is displayed. When you next save, it will be a file with only one pattern. This command will not change the pattern currently displayed. You would use this command if you load a pattern file of 60 patterns just to get the pattern and then you want to save only that one pattern to a new file. This command also reverses the effect of the 'Revert' command (works for graphics also). You'll notice this displayed with there is only one pattern loaded.

The "Save AFP" and "Save PTRN" commands work similarly. They each save the currently loaded pattern(s) to a file. You will get a Standard Dialog for saving a file. If you loaded your patterns from a PaintWorks Graphic or other file, please don't replace it. The preferred method of saving is in Apple Preferred Format (AFP), however the PTRN option saves it as a binary file with the "PTRN" and number of patterns header (like Pattern // and DeskTop Lord use).

Use the "Revert" command to prevent your new pattern/graphic from being sent to the system. Normally every time you close the Control Panel NDA or DeskColor Control Panel, the selected desktop is sent to the system and saved on disk. The Revert command can be used for backing out of an experimental editing session or any time you change your mind. HOWEVER, if you go back and continue editing the pattern or select a new background type, you'll notice the *newly updated* desktop was sent to the system. To reverse the effect of "Revert", you could select the "New" command.

The "Update Init" command is used to save the currently select desktoptype to the DeskColor Temporary Init file. The init file is much smaller to use, but will have to be edited in the Finder. The "Update Init" command will not automatically update your boot disk. If you don't have enough space on your boot disk, get the Control Panel up running first (even if you have to leave off all your favorite NDA's and Control Panels), select DeskColor Control Panel, choose a desktop, then Update the Init. You may then remove the Control Panel from your boot disk and use the Init file. The "Color.Init" file should be placed in the "SYSTEM.SETUP" folder in the Finder of elder in the "SYSTEM.SETUP" folder in the Finder of elder in the "SYSTEM.SETUP" folder in the Finder of elder.

To fill in the pattern grid with the current color, click in the current color area. You'll notice the grid fill with that color and the pattern area will also update to reflect this. To temporarily change the current desktop to the current color, click in the current pattern display. I wouldn't suggest doing this in the Finder, because it will cover up ALL the icons. No big loss, just close all the windows, press "Open Apple A" to select all icons and it will pull them back to the top. This will not actually send the new pattern into the system, but just change this desktop. Unless you select "Revert" before you close the Control Panel, this temporary desktop will be replaced by the currently selected desktop.

The menus should be fairly accurate. The type menu ALWAYS displays the current background type or the one you've requested. The command menu will display "Revert" until you select "New" or "Open" or draw in the pattern. If you close the Control Panel with either "New" or "Open" displayed, the new desktop is sent to the system. If "Revert" is displayed, the desktop is not changed. If you have selected "Pattern", "Open" means more than one pattern is loaded, and "New" means a single pattern is loaded.

Keep in mind that a picture message takes up 32K of memory and will also take up almost as much disk space when saved. This makes the Control Panel file grow up to 50K when you have selected a picture. A pattern/color is 1000 times smaller to store. To be honest a graphic desktop takes up over 64K of memory, so if you have memory shortage problems, use a pattern instead.

+ Known Quirks:
There is a big difference between the way 320 and 640 mode work. You'll notice that the colors change on pictures, but the shapes stay the same. There are 16 colors in 320 mode and 4 colors and some mixes in 640 mode. Patterns are also different. In 320 mode a pattern is 8 points by 8 points with 16 colors. In 640 mode a pattern is 8 points by 8 points with 4 colors, but to get 16 mixed colors it goes to 4 points by 8 points. You'll notice the different displays when you bring up the editor in 320 mode and 640 mode. The 640 mode pattern is always the top half of the 320 mode pattern when switching. Meaning, a box pattern drawn in one mode will be a uniquely odd pattern in the other mode with different colors. When editing a pattern in 640 mode a copy is placed in the bottom half of the pattern for 320 mode to create a symmetrical pattern. You may modify the bottom four lines of the 320 mode pattern WITHOUT affecting the 640 mode pattern.

To obtain a consistent pattern in both 320 AND 640 mode (like Graffiti), use your favorite paint program. Select your pattern and fill the full screen, then save that file. You can then load that graphic file into DeskColor. That's basically how Graffiti does it, not with patterns, but with graphics.

Earlier versions of ProSel 16 (pre-8.54?) wipe out the desktop message when launching a ProDOS 8 program. Glen mistakedly used the same message number as the desktop uses. I would suggest updating to the most current version of ProSel 16 anyway, especially if you are experiencing any problems.

The Finder draws it's own desktop. To get it updated, you may have to select, then close DeskColor up to three times. This should work with graphics, but it is pretty picky when it comes to updating to a new pattern. The easiest way is to click in the current pattern area, which covers all the icons, then Close All windows, then Select All to bring the icons to the front.

AppleWorks GS seems to have problems sometimes if you are using a picture. I don't know if this only affects ROM 03 machines or other also. I have never had a problem with this myself.

+ Look for the source code somewhere nearby. It's in ORCA/C v1.3 with APW v1.1 Rez files and ORCA/M for the picture loading routines.

This program contains material from the ORCA/C Run-Time Libraries, copyright 1987-1989 by Byte Works, Inc. Used with permission

+ Future Additions:
- Ask! You've got my addresses.

After about two weeks of work, we have what is dubbed DreamGrafix v.5. We call it v.5.0, but our version numbers are always up to date with the status of our program. First, you may notice we have a new look. A couple of items have been added to the bar, and some deleted. DG now supports 4 levels of magnification in fatbits, and two grid modes. The SBC 3200 (full color) has been redone, and now works perfectly with TWGS and ZIP GS. SBC 3200 fatbits are in full color and this mode currently works, the other 3200 color fatbits is almost completed. The palettes now follow in 256 and 3200 color modes, and hopefully, the current palette selected will stay on the screen more often. We are very pleased with the progress made on the project, and have pushed back the final release date about a month. We estimate the program will be done by the end of February or the beginning of March.

Tech Support and updates
You can call either Jason Andersen or I (Steve Chiang), if you need help. Jason's number is 319/354-7959 and mine is 212-853-5235. You can also reach us on America On_Line. DWS Jason and DWS Steve. Or on the internet, jandersen@icean.uiowa.edu or stc7@cunixb.cc.columbia.edu. If you want the current update, give us a call or leave us mail.

DreamGrafix
We will be adding several options to DreamGrafix. This includes a 640 mode, and support for larger than the screen images. There are a few other commands we will be adding, resize, grid, etc.
NOTE:

THE DIFFERENCE BETWEEN THE TWO TWO-PLAYER MODES IS THAT IN THE
COOPERATIVE VERSION, THE BULLETS FIRED BY ONE PLAYER WILL NOT AFFECT
THE OTHER.

GAME PLAY:

MOVE YOUR VEHICLE ON THE ELEVATOR TO THE DESIRED MINE SHAFT. ENTER THE
CAVE. AS YOU MOVE, YOU DIG THROUGH THE DIRT. YOU MOVE FASTER IN
PATHWAYS THAT ARE ALREADY CLEARED. YOU MAY SHOOT THE MONSTERS, WHO
ATTEMPT TO HAMPER YOUR PROGRESS. HOWEVER, THEY WILL REAPPEAR IN A FEW
SECONDS. THERE ARE EIGHT DIAMONDS IN EACH LEVEL. YOU MUST TAKE EACH
DIAMOND, PROCESS IT AND BRING IT OUT OF THE MINE. AS YOU TAKE A
DIAMOND, IT WILL FOLLOW BEHIND YOU -- KINDA LIKE SERPENTINE. THE
MONSTERS CAN EAT YOUR DIAMONDS ONLY WHEN YOU ARE CARRYING THEM. BUT
YOU CAN'T TAKE DIAMONDS IMMEDIATELY OUT OF THE MINE! YOU MUST PROCESS
THEM FIRST. THE PROCESSING BOX LOOKS LIKE THIS:

```
!-------------!
| BRING DIAMONDS |
| |        |!-----! |
| |        | | TAKE DIAMONDS |
| |        |!----! |
|!-------------!
```

REQUIREMENTS: 48-K APPLE ![1 APPLE ] ![ DRIVE

OPTIONAL EQUIPMENT: JOYSTICK

OBJECT:

TO COMPLETE ALL LEVELS WITH HIGHEST POSSIBLE SCORE

GAME CONTROLS:

CTRL-B = RESTART WITH NEW OPTIONS
CTRL-R = RESTART
CTRL-C = ALTER KEYBOARD CONTROL
CTRL-J = JOYSTICK
CTRL-K = KEYBOARD
CTRL-S = SOUND TOGGLE
CTRL-I = 'ESC' = PAUSE

- DEFAULT CONTROL KEYS -

PLAYER 1    PLAYER 2
-------------    -------------
I            W
J            L
K            A
(SPACE)=FIRE  (1)=FIRE

PLAYING MODES: 1 PLAYER
2 PLAYER COOPERATIVE
2 PLAYER COMPETITIVE

**************
* GAME NOTES *
**************

OBJECT:

TO TAKE THE DIAMONDS OUT OF THE MINE FOR THE MOST POINTS, YOU SHOULD
QUEUE THEM UP; THAT IS, MOVE ALL EIGHT TO THE STORAGE AREA AND THEN
MOVE THEM OUT. THE UPPER RIGHT IS AN ENTRY/EXIT AREA. DIAMONDS CAN BE
BROUGHT IN OR REMOVED FROM THIS AREA. THE BOTTOM IS AN EXIT TO LEAVE
THE DIAMONDS IN THE PROCESSING AREA.

YOU WILL FIND TWO "U" SHAPED, HEAVY BORDERED SQUARES. THESE ARE
TELEPORTERS. MOVING INTO ONE WILL TRANSPORT YOU TO THE OTHER.

IF YOU COMPLETE FIVE DUNGEONS WITH LESS THAN FIVE DIAMONDS LOST AND
STILL ARE ALIVE, THE GAME WILL GIVE YOU A PASSWORD. USE THE PASSWORD
LATER TO SKIP BEGINNING LEVELS. THERE ARE SEVEN LEVELS IN ALL.

>>> SPECIAL NOTES <<<<

* A KEY IN THE LATTER DUNGEONS IS TO BE PROCESSED LIKE A REGULAR
DIAMOND.

* MONSTERS ARE SHY WHEN YOU HAVE A KEY

* THERE ARE SPECIAL TRANSPORTERS THAT REQUIRE A KEY -- THEY WILL
TRANSPORT YOU TO ANOTHER AREA OF THE SHAFT.

**************
* SCORING *
**************

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*********

AT LEVEL ONE (SCORE INCREASES LATER):
PICKING UP DIAMOND.............25 PTS
PROCESSING DIAMOND.............25 PTS
KILLING MONSTER................75 PTS
GETTING DIAMOND OUT............100 PTS

-- BONUS POINTS --
LEAVING W/4 DIAMONDS...........300 PTS
LEAVING W/5 DIAMONDS...........500 PTS
LEAVING W/6 DIAMONDS...........600 PTS
LEAVING W/7 DIAMONDS...........800 PTS
LEAVING W/8 DIAMONDS...........1000 PTS
LEAVING W/8 DIAMONDS & KEY.....1200 PTS

EXTRA VEHICLE AT 20,000 POINTS
HAVE FUN!

THE INTERN
THE CHIEF SURGEON

-- DOCUMENT diced.rev --

DOCUMENT diced.rev

Changes in DICEd v1.2:
- Edit Attributes now knows about all the new filetypes and auxtypes defined in the January 1989 Filetype Notes.
- The menus are prettier. (Separate dimmed-out dividing lines appear between groups of items.)
- When you save an icon file window and there are Edit Icon windows belonging to it that have not been saved back to the main window, a dialog appears and asks if it's okay to save the icons back to the main window before saving the file.
- When you save an icon file window and there are Edit Icon windows belonging to it that have not been saved back to the main window, a dialog appears and asks if it's okay to save the icons back to the main window before saving the file.
- If there is no FONTS folder in your SYSTEM folder, DICEd asks for permission to create one. The FONTS folder is required for the Font Manager. (DICEd uses the Font Manager even though it doesn't use any fonts other than the system font (Shastan 8). But DICEd's clipboard can display pictures, stored in PICT format, and this requires the Font Manager to be active.)
- No changes have been made to Save As Source yet. Sorry.

Bug fixes in DICEd v1.1.1:
- Using New (or Apple-N) to create an empty icon file from scratch in previous versions seemed to work okay, but it resulting in a file that was ignored by the Finder. (DICEd was not storing a $0001 at offset 4 in the file.)
- The correct parts of an Edit Icon window are now redrawn if color replacement (option-click) or icon repositioning (shift-drag) were done while the window was not scrolled to the top-left position.
- DICEd no longer reports fatal errors if a toolset returns an error when it is shut down. This is not the ideal solution, but it should clear up the Fatal Error 50002 problem many users have been having when using the Show Text NDA, v1.2.

New features in DICEd v1.1:
- The Edit Attributes filetype window knows about some new special filetypes used under Finder 1.2 on System Disk 4.0.
Apple II Computer Info

DOCUMENT dig.em

Bug fixes in DiEd v1.1:

- Clicking in the icon area of an icon file window while the Edit button was disabled (when positioned at icon #0, before all the icons in the file) would let you edit this nonexistent icon, possibly leading to a crash.

- Some users have had DiEd 1.0 crash while quitting. I believe this was because of some buggy code in the TML Pascal 1.50A library, and I now bypass that code. If you still get crashes, I want to hear about it.

- The rectangle around the sample icons will always be redrawn properly now.

- Bogus redrawing of the fat-pixel images used to happen after drawing pixels and releasing the mouse if the window was scrolled vertically by a sufficient amount.

- The hot spot of the Pencil cursor has been moved down and right by one pixel.

- The Watch cursor is displayed while printing a text file to the printer.

DIFFERENCES: WHEN MONSTERS PASS THROUGH WALLS THEY GO AT AN INCREDIBLY FAST RATE ON A BEELINE STRAIGHT FOR YOU. WHEN DOING THIS, YOU MUST DIRECTLY HIT THEM. IF YOU JUST LEAVE YOUR NOZZLE HANGING OUT, THEY WILL BE ABLE TO PASS THROUGH THE NOZZLE AND GET YOU. ALSO, WHEN HIT THE MONSTERS BLOW UP IMMEDIATELY.

THE MONSTERS BECOME PROGRESSIVELY HARDER TO DEAL WITH. BY THE TIME THE 10TH ROUND OCCURS, THREE MONSTERS WILL IMMEDIATELY SPRING FROM THEIR STATIONS AT ONCE. CONSIDERING THE RATE AT WHICH THEY TRAVEL THROUGH THE ROCK, THIS SITUATION IS ALMOST IMPOSSIBLE TO DEAL WITH.

HINT: BY DROPPING 2 ROCKS (THEY DON'T HAVE TO HIT ANYTHING), A PRIZE WILL APPEAR IN THE MIDDLE OF THE SCREEN. THE PRIZES BECOME PROGRESSIVELY WORTH MORE AND MORE.

YOU GET A FREE MAN AT 10,000 AND ONLY AT 10,000 YOU START OUT WITH 4 MEN.
There are 9 levels to DINO Eggs. Once you get to level 9, it just loops back there again.

How to complete a level:

The first thing you must do is build a fire. This is done by picking up one piece of wood and putting it on top of another piece. To pick up an object stand above it and press the top button. To drop an object stand above nothing and press top button. Once the fire is started Dino Mom will not come. (till the fire is out again) Now you have to run around and pick up eggs. You can only carry 3 eggs at a time unless you pick up a power. (it looks like a purple-green sun). When you have eggs and want to teleport them to the 21st century, walk into your time machine and press the top button. This gives you points for your eggs. There are eggs hidden underneath the rocks. First drop the rock by trying to pick it up, then see what damage the course of the game, you may notice these sexy creatures peeping at you. Don't get excited, they are only dinosaurs! To get points for dinos, you must jump over them, (bottom button), and while above their heads, press the top button. This drops a cage on them. You get more points for caged Dino's than eggs when you warp. Once you have cleared all the eggs and Dinos, then leave to the next level!

Scoring and other stuff:

When warping- 6, 8, 12 pts for Dinos caged. 1st, 2nd, 3rd 2pts for each egg carried.

When warping to next level-

-1 for each egg left.
-10 for each Dino left. (ouch!)
+10 bonus for perfect level!
+50 bonus for perfect level 9!

To kill spiders, walk or jump over their threads. To kill fast and slow bugs drop rocks on their heads. To warp to next level, try to drop nothing into your time machine two times in a row! Note*: On level 9 you need 2 fires to keep Dino ma off yer tail!

Mini Appler-=-

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the disk’s directory structure is being read into memory. When the map is
displayed, there will be a box across the top which represents the disk’s
volume directory and all the files on the disk. Underneath it will be a row
of boxes representing the directories contained in the disk’s volume
directory; underneath each of them will be the directories they contain, and
so on. The width of each directory's box is proportional to its size: a box
that is 1/4th of the width of the screen represents a directory that contains
files that total to 1/4th of the total space used on the disk (NOT 1/4th of
the total space available for use on the disk). Any white space under a
directory box, not filled by boxes representing subdirectories, represents
the space taken by individual, non-directory files in that directory. If you map
a disk containing no subdirectories at all, the entire screen will be filled
with a single box representing its volume directory.

Each directory box contains the name of the directory it represents, if it will
fit. If not, just point the mouse cursor at the box and its full name
and exact size in disk blocks will appear at the bottom of the screen.
Clicking the mouse or pressing any key will return you to the list of online
disks, from which you can choose another disk to map or quit back to your
program selector. If you click in a directory box and then immediately quit,
the prefix will be set to the directory you clicked in: this has no effect
with most program selectors, but with those that do make use of the prefix
(such as the APW or Orca/GS command shell) this feature can be used to quickly
examine directories that seem to be taking up more disk space than they
should. If you're using such a program selector, and don't want to change the
prefix from what it was on entry to DirMap, make sure you always exit the map
view mode by pressing a key or clicking the mouse outside of any directory.

USAGE FROM THE APW OR ORCA/GS COMMAND SHELL:
If you use APW or Orca, you can still use DirMap as described above, but it
will be more convenient to use if you install it as a shell command. Just
follow these steps:

1. Copy DIRMAP into your Utilities (prefix 6) directory:
   COPY DIRMAP /HARD1 .APPLEDISK3.5A */ 6
2. Change its filetype to EXE so the shell doesn't have to reload after use:
   CMP TYPE 6/DIRMAP .EXE
3. Add an entry for it in your commands table:
   EDIT 4/SYSCMND
   insert the line (in alphabetical order):
   DIRMAP  U ;disk directory mapper
Save the file back to disk, then exit and reenter the shell.

You can now call up DirMap by typing DIRMAP, no matter what the current prefix
is. You can also tell DirMap to immediately map one or more disks by typing
their names (or the name of the device containing the disk, or the name of a
file or directory on the disk) after the DIRMAP command. Each requested disk
will be mapped in turn: press the mouse button or any key to go on to the
next. When all have been mapped, you'll be at DirMap's disk listing screen
and can click on Quit to return to the shell. An example:

   DIRMAP /HARD1 .APPLEDISK3.5A */ 6
   will map the following four disks:
   1. the one named /HARD1,
   2. whatever disk is in the device named .APPLEDISK3.5A,
   3. the boot disk, and
   4. whatever disk contains prefix 6 (the APW/Orca utilities directory).

THE MAIN POINT OF THIS SOFTWARE IS TO MAKE THE WORLD OF PIRACY A WHOLE
LOT EASIER AND MORE EFFICIENT OF THE COMPUTERS TIME OF DISK-SPACE AND
OF YOUR TIME. YOU NEED NOT BE PRESENT DURING THE X-FER WHICH CAO AND
HAS LASTED UP TO 1 HOUR AND 10 MINUTES. YOU DON'T NEED TWO EXTRA DISKS
FOR ANY PARTS OR ANYTHING OF THE SORT. INSTEAD YOU NEED DISK-FER AND
A BLANK DISK.

OPERATION OF DISK-FER IS AS FOLLOWS. WHEN YOU BOOTUP THE PROGRAM
MIGHT BE FORWARDED WITH ONE OF MANY THINGS.

1)- IT COULD BE IN LOWERCASE (IF YOU CAN'T READ LOWERCASE) IN WHICH
CAS YOU HITE 'V' TO CONFIGURE THE SYSTEM.

2)- THE SLOT COULD BE CONFIGURED WRONG IN WHICH CASE YOU NEED TO HIT
'C' TO CHANGE THE SLOT. IF IT HANGS THE SYSTEM AS A RESULT OF A BAD
SLOT # YOU NEED TO MOD THE PROGRAM BEFORE YOU RUN IT.

TO MAKE THIS MOD FROM THE MONITOR TYPE:

*905:N0 (WHERE 'N' IS THE SLOT #)

IF YOUR SLOT # IS 2 THEN THERE SHOULD BE A $20 THERE.

3)- IT COMES UP DISK-FER WITH THE RIGHT SLOT AND ALL!!!!!!!!!

AFTER YOU GET IT CONFIGURED FOR YOUR SYSTEM YOU SHOULD SEE A BUNCH OF
COMMANDS STARING BACK AT YOU!

P)- TOGGLES BETWEEN ON HOOK AND OFF HOOK. AN INVERSE PIN ON THE STATUS BAR
WILL BE LIT WHEN THE CAT IS ONLINE.

V)- TOGGLES BETWEEN MODEM AND VOICE MODE. MODEM MODE WILL BE FORCED AT
THE BEGINNING OF A X-FER. AND VOICE MODE WILL BE FORCED AT THE MENU.

C)- CHANGES THE APPLE-CAT SLOT. AN INTERESTING LITTLE THING THAT HAPPENS ON
MY COMPUTER IS THAT WHEN I CHANGE THE SLOT TO MY PRINTER CARD AND
THE PRINTER IS OFF, THE CARRIER LIGHT FLASHES ON AND OFF AT THE SAME
RATE AS THE VIDEO CIRCUITRY UPDATES THE SCREEN. LEAVING BROKEN
CHARACTERS ON THE SCREEN.

M)- TOGGLES BETWEEN ORIGINATE AND ANSWER MODE OF THE MODEM. DURING A BOTH
TRADE THE COMPUTER TO SEND FIRST IS THE ONE THAT IS IN ORIGINATE AT THE
START OF THE X-FER.

F)- RECONFIGURE DISK-FER. THIS COMMAND IS PROMPTED BY A MESSAGE READING
LOWERCASE (Y/N).... QUITE OBVIOUSLY YOU ANSWER THIS QUESTION YES OR NO
THEN IT ASKS YOU IF YOU WANT A CONFIGURED COPY SAVED ON DISK. THE
CONFIGURED COPY CONTAINS THE CURRENT PASSWORD OF THE SYSTEM AND THE
CURRENT SLOT OF THE APPLE-CAT, YOUR LOWERCASE STATUS IS ALSO SAVED ON
DISK. THE FILE SAVED ON DISK IS CALLED 'DISK-FER' AND CAN BE BRUN AS
YOUR RUNNING COPY OF THE PROGRAM

D)- DOS COMMAND. THIS OPTION ALLOW YOU TO ENTER A DOS COMMAND TO BE
Edit password. This option edits the current password of the system. You may enter lowercase/CTRL/normal chars to be used as your password. The password is used to keep unwanted people (software underground members) out of your system.

You can either page the owner of the computer with the BEEP option or hang up the other computer so that you can call back this edit password. This option edits the current password of the system. Menu is nice if your friend wants to go to bed while you download the programs in his drives. You can hang up his computer so it won't tie up the lines all night.

At any time during this little menu you can hit escape to enter the main menu.

(Note: If your computer is in unattended mode it will not jump to this menu. But it will go to wait for another ring.)

These five options are the transfer/receive options. I will explain how use them in general then in detail. When you select one of these options the computer comes up with 'Enter password:' at this point you can either type: <ESC> to abort,... <RET> to transfer when both apples are in 'local mode' (see below).... Hitting return will just jump to the transfer routine that you chose at the menu.

A two character password entered at this prompt puts the apple into a remote computer. This option is used to call up a 'disk-fer BBS' which will be waiting for calls to send disks, if of course the two passwords match. These two passwords are:

- THE COMPUTER THAT IS THE 'BBS' THE PASSWORD THAT YOU TYPE AFTER THE COMMAND.

Sending and receiving files.

S) - Send the diskette in drive one. This command must be executed along with the 'R' command.

R) - Receive a disk from the lines to drive 1.

B) - Receive a disk and put it on drive two. And send the diskette in drive two. The order of operations is decided by the ORG/ANS mode. The in ORG sends first.

L) - Lop-sided send. Send both the disks in both drives. (Note, to many of these x-fers will cause the computer to self-destruct to prevent you from being leached upon! """

K) - Lop-sided receive. Receive disks in both drives. These are the best x-fers that the program does!!!!!!!!!!!!!!!!!!!!!.

(Note: If the computer is not in unattended mode these x-fers will 'never' abort by themselves. They will just keep hacking away unless a sync error occurs and the receive skips a block. These errors are possible but not likely. If the transfer ends on its own then you can be 98% sure that the disks have been sent correctly.

When the x-fer ends both sides will wait for you to hit a key. The first person to hit a key will be in control of both computers he/she (no man's lib) will be sent a small menu at 300 baud.

B)ell or H)ang up??
DISK MUNCHER 1.1
THE ULTIMATE IN FAST COPIERS

WRITTEN BY:
THE STACK

DOCUMENTATION BY:
THE INSPECTOR

ANOTHER GREAT PROGRAM BROUGHT TO YOU BY
CORRUPT COMPUTING

DISK MUNCHER IS PROBABLY THE FASTEST COPIER AVAILABLE FOR THE APPLE COMPUTER. (THERE MIGHT BE COPIERS THAT SACRIFICE RELIABILITY FOR SPEED, AND ARE OR NOT FASTER.) DISK MUNCHER CAN COPY A DISK IN LESS THEN 30 SECONDS WITH INIT! (ON A 48K SYSTEM). IF YOUR SYSTEM HAS MORE MEMORY ADDED THRU ADDITIONAL RAM CARDS, DISK MUNCHER WILL BE ABLE TO COPY A DISK IN EVEN LESS TIME! WHILE DISK MUNCHER IS EXTREMELY FAST AND RELIABLE, IT IS DESIGNED WITH THE USER IN MIND. DISK MUNCHER HAS SUCH USER FRIENDLY OPTIONS AS A CATALOG FUNCTION WITH DISK MAP, WRITE VERIFY, SAVE-ABLE CONFIGURATION, STATUS INDICATORS AMONG OTHERS.

BEFORE YOU CAN EVEN BEGIN TO USE DISK MUNCHER, YOU WILL NEED TO KNOW A FEW BASIC THINGS ABOUT HOW DISK MUNCHER REFERS TO YOUR DISK DRIVES. THE SOURCE DISK IS THE DISK YOU ARE COPYING FROM (USUALLY SLOT 6, DRIVE 1) AND THE TARGET DISK IS THE DISK YOU ARE COPYING TO (USUALLY SLOT 6, DRIVE 2). THE VALUES FOR SOURCE AND TARGET CAN BE CHANGED, BUT WE WILL DISCUSS THAT LATER. NOW ON TO USING DISK MUNCHER.

TO START DISK MUNCHER ALL YOU NEED TO DO IS TYPE "BRUN DISK MUNCHER" FROM DOS. ONCE DISK MUNCHER IS LOADED IN, IT WILL DISPLAY THIS MENU:

[1] CATALOG SOURCE DISK
[2] CATALOG TARGET DISK
[3] COPY DISK
[4] BOOT DISK

SINCE THE FIRST AND SECOND OPTIONS ARE ALMOST IDENTICAL WE WILL BE DISCUSSING THEM FIRST. WHEN YOU PRESS EITHER THE '1' OR '2' KEYS, DISK MUNCHER WILL COPY WHAT EVER DISK IS IN THE DRIVE DESIGNATED AS SOURCE OR TARGET. AFTER THE SCREEN IS FULL, DISK MUNCHER WILL ASK YOU "PRESS ANY KEY TO CONTINUE". AFTER YOU PRESS A KEY, DISK MUNCHER WILL CLEAR THE SCREEN, AND DISPLAY DISK MAP INFORMATION. THIS PROCESS WILL CONTINUE UNTIL ALL THE FILES ARE DISPLAYED. AFTER ALL THE FILES ARE DISPLAYED, DISK MUNCHER WILL ASK YOU "PRESS ANY KEY TO SEE MAP". IT WILL THEN CLEAR THE SCREEN, AND DISPLAY A MAP OF WHICH SECTORS ARE FREE AND WHAT SECTORS ARE USED ON YOUR DISK. FREE SECTORS ARE DESIGNATED BY A SPACE, AND USED SECTORS ARE DESIGNATED BY A PLUS SIGN. THE CATALOG WITH DISK MUNCHER IS THE ONE FUNCTION OF DISK MUNCHER THAT SETS IT APART FROM ALL OTHER "FAST" COPIERS. IT ALLOWS YOU TO DETERMINE WHAT DISK YOU ARE COPYING FROM AND WHAT DISK YOU ARE COPYING TO, IF THERE IS NO LABEL ON THE DISK, AND YOU CAN DO IT WITHOUT EVER LEAVING DISK MUNCHER! NOTE: SOME DISKS DO NOT HAVE A CATALOG OR DISK MAP, OR THE DISK MAP MAY APPEAR GARBELD. IF YOU ARE UNABLE TO TELL WHAT IS ON THE DISK FROM THE LABEL, OR BECAUSE OF ONE OF THESE CONDITIONS, YOU ARE ADVISED TO "BOOT" THE DISK TO TRY TO DETERMINE WHAT IT CONTAINS.

NOW THAT YOU KNOW HOW TO CATALOG A DISK, WHY DON'T WE LEARN HOW TO USE THE ACTUAL COPIER!

WHEN YOU PRESS "3" TO COPY A DISK, THE SCREEN WILL CLEAR AND WILL BE DIVIDED INTO TWO SEPARATE SECTIONS. THE LEFT SECTION CONTAINS ALL MESSAGES, WHAT SLOT AND DRIVE THE SOURCE AND TARGET DISKS ARE IN, AND ALL INFORMATION ABOUT RAM CARDS. THE RIGHT SIDE OF THE SCREEN IS A STATUS AREA. IT SHOWS WHAT MODE THE COPIER IS IN, AND WHAT TRACK DISK MUNCHER IS CURRENTLY COPYING. WHENEVER DISK MUNCHER IS ACCESSING THE DISK IN COPY MODE, IT WILL DISPLAY A "STATUS MARKER" NEXT TO THE TRACK IT IS ON. THIS IS A LIST OF WHAT THE DIFFERENT STATUS MARKERS REPRESENT:

- NORMAL R - WRITE ERROR
- INVERSE W - READING FROM CURRENT TRACK
- INVERSE W - WRITING TO CURRENT TRACK
- INVERSE V - VERIFY WRITE TO CURRENT TRACK
- NORMAL W - READ ERROR


AFTER DISK MUNCHER DISPLAYS THIS INFORMATION, IT WILL TELL YOU: "PRESS VERIFY COPY, SPACE BAR CHANGES OPTIONS". AT THIS PROMPT, YOU CAN PRESS RETURN, SPACE BAR , OR CTRL-V. CTRL-V Toggles the WRITE VERIFY ON OR OFF. IF YOU PRESS RETURN, DISK MUNCHER WILL BEGIN COPYING THE DISK YOU ARE COPYING FROM. IF YOU ARE USING A ONE DRIVE SYSTEM IT WILL PROMPT YOU TO INSERT THE SOURCE DISK AND PRESS RETURN. You WILL HAVE TO SWAP BETWEEN THE SOURCE AND TARGET DISK. DISK MUNCHER WILL PROMPT YOU WHEN TO CHANGE DISKS. (NOTE: IF YOU ARE USING A ONE DRIVE SYSTEM IT IS VERY EASY TO PUT THE WRONG DISK IN THE DRIVE, YOU ARE ADVISED TO PUT A WRITE-PROTECT TAB ON THE SOURCE DISK TO PREVENT ACCIDENTAL ERASURE.

IF YOU PRESS SPACE BAR TO CHANGE OPTIONS, DISK MUNCHER WILL MOVE THE CURSOR TO THE SLOT OF THE SOURCE DRIVE. YOU CAN ENTER A NUMBER HERE BETWEEN 1 AND 7. AFTER ENTERING THE SLOT NUMBER, DISK MUNCHER WILL MOVE THE CURSOR TO THE DRIVE NUMBER. HERE YOU MAY ENTER EITHER A 1 OR 2. AFTER ENTERING THE INFORMATION FOR THE SOURCE DISK, DISK MUNCHER WILL MOVE THE CURSOR TO THE TARGET DISK INFORMATION SECTION. THE ENTERING CRITERIA FOR THE TARGET DISK IS THE SAME AS THE SOURCE DISK. NOTE: IF YOU ARE ONE OF THE UNFORTUNATE FEW PEOPLE THAT ONLY HAVE ONE DRIVE, YOU SHOULD ENTER THE SAME SLOT AND DRIVE (USUALLY SLOT 6, DRIVE 1) FOR SOURCE AND TARGET DISKs. AFTER ENTERING THE INFORMATION ABOUT YOUR DISK DRIVES, DISK MUNCHER WILL MOVE THE CURSOR TO THE RAM CARD SECTION. THE PROGRAM CAN USE UP TO 4 RAM CARDS IN DIFFERENT SLOTS. DISK MUNCHER WILL ONLY RECOGNIZE STANDARD 16K CARDS, MOST 32K CARDS, AND RAM CARDS THAT BANK SELECT IN THE SAME FORMAT AS LEGEND AND SATURN CARDS DO. (IF YOU DO NOT KNOW HOW YOUR RAM CARD BANK SELECTS, TRY ENTERING IT'S SLOT NUMBER ANYWAY. DISK MUNCHER WILL IGNORE YOU IF THE RAM CARD IS NOT A LEGEND OR SATURN TYPE CARD.) NOTE: DISK MUNCHER WILL NOT RECOGNIZE OR USE ANY RAM CARDS DESIGNED SPECIFICALLY FOR THE APPLE II+, BECAUSE OF THE SPECIAL COPYER COPIES IT WILL DO. IF YOU WILL NEED AT LEAST 224K IN ADDITIONAL RAM CARDS TO COPY A DISK, DISK MUNCHER WILL ALLOW YOU TO COPY A DISK ONLY USING THE RAM CARD, THEN COPY THE SAME DISK AGAIN AND AGAIN, USING THE RAM CARD AS A BUFFER, WHEN YOU ENTER THE SLOT OF YOUR RAM CARDS.
Card, Disk Muncher will scan that slot to determine how big the card is, and whether it is a legend, Saturn, 16k, or 32k card. Because of this, if you enter the slot of a card that is not a RAM card, unexpected things might happen to disk cards with drive cards. This could have been time changed, etc...). Note: Disk Muncher will automatically search slot 0 for a RAM Card. You should enter the slots for all your RAM cards. When you are done entering, press space bar. Disk Muncher will then return to "insert disk" prompt. Note: To learn how to save this configuration, so that you don't have to type all the Information in each time you wish to use Disk Muncher, see Appendix C.

You have now learned how to copy a disk, and change the options. The only thing left to tell you about how to exit from Disk Muncher is how to copy a disk to your computer. When you are done, enter "exit" and press the enter key. Disk Muncher will ask you to "verify boot" you should then put the disk in the drive you wish to boot and press F for yes. If you want to exit, or N for "no it was a mistake! I want to go back!"

Appendix A - Saving the Configuration

There are two types of configurations for Disk Muncher, the User Configuration, and the Reset Configuration. In order to save a configuration, you will need to know how to enter the monitor, change bytes, and re-save a binary program out to disk. If you have any doubts about this procedure, don't do it! You could destroy your copy of disk Muncher.

To begin with you will need to "bload" disk muncher from disk. This can be accomplished with the "bload disk muncher 1.1" command from dos. After using the Muncher is loaded in, enter the monitor with the "call-151!" command from basic. This is a list of the addresses in disk Muncher that correspond to the different default values for the user configuration:

<table>
<thead>
<tr>
<th>Address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1000</td>
<td>Source slot times 16 + source drive i.e. $1000=$61</td>
</tr>
<tr>
<td>$1001</td>
<td>Target slot times 16 + target drive i.e. $1001=$62</td>
</tr>
<tr>
<td>$1002</td>
<td>Slot of RAM card 1 times 16.</td>
</tr>
<tr>
<td>$1003</td>
<td>Slot of RAM card 2 times 16.</td>
</tr>
<tr>
<td>$1004</td>
<td>Slot of RAM card 3 times 16.</td>
</tr>
<tr>
<td>$1005</td>
<td>Slot of RAM card 4 times 16.</td>
</tr>
<tr>
<td>$1006</td>
<td>Verify on/off (0=OFF, 1=ON)</td>
</tr>
<tr>
<td>$1007</td>
<td>Future expansion.</td>
</tr>
</tbody>
</table>

After you have entered your RAM card slots in the bytes, you have to fill the remaining RAM card locations with $a0's (spaces). Locations $1008-$100f are the reset configuration section. The format for reset configuration is the same as the user configuration.

After you have entered all the information you can return to dos by typing "3dg". All you have left to do is "bsave" disk muncher back out to disk. This can be accomplished with the "bsave disk muncher 1.1" command. Then every time you want to use disk muncher you will just run it as usual, and the user configuration will be active. If you wish to use the reset configuration you can press ctrl-c. You can then switch back to the user configuration by pressing ctrl-c.

If you have two different computers that you use disk muncher on, you could change both the user and reset configurations. This would allow you to use the user configuration for one computer and the reset configuration for the other.

Appendix B - Story and Principle Behind Disk Muncher

When we (the stack and myself) first saw the "fast" copiers we thought they were great, but they lacked one major feature: you couldn't make a disk from within their program. So we decided to write our own "fast" copier. When we were in the planning stages, the stack in one of his brain storms (the same ones that gave you the rotating shades and the zoom screen are done entering, press space bar. Disk Muncher will then return to "insert disk" prompt. Note: To learn how to save this configuration, so that you don't have to type all the Information in each time you wish to use Disk Muncher, see Appendix C.

The principle behind this is a little complicated, and this explanation is just the background and basics behind it. On a disk information is stored in nibbles. Each nibble is only six bits long. Normally DOS reads the nibbles in and converts them to eight bit format. Well this is just fine and dandy, but it takes a while to convert the nibbles, so the stack decided he would just read the nibbles and write them back out with out converting them. This can save a lot of time when you are copying a whole disk and makes it so that the disk does not have to be initiated. Because the 6 bit nibbles take up more room in memory than a 8 bit byte, it takes more memory to read a track, thus the required 224k+ for reading in the whole disk.

Appendix C - Technical Stuff

This section contains information useful to the experienced programmer.

If by some unforeseen circumstance your drive has the head violently moved (like dropping it out the window or something like that) you can recalibrate it with the \ and commands. These commands will recalibrate the source and target drives respectively.

One other interesting thing you might want to know. The track move delay table is stored at $1200. If you have a drive that can seek the head faster than normal, this might be useful.

Appendix D - Differences Between Version 1.0 and Version 1.1

The major difference between version 1.0 and version 1.1 is the read and write verify. There are other minor differences, like the fact that Disk Muncher doesn't recalibrate the head after the first time. Another access to the source drive is easy access to the target drive. Over all there is not much difference between version 1.0 and 1.1 well that is just about all there is to Disk Muncher.

Upcoming Projects and Programs:

The newest member of Corrupt Computing, the Technicolor Pirate, is almost done with a very interesting and unique program: Shape Hunter. This is a program that will allow you to use an nmi to interrupt a game, and save it for later play, or even edit the shapes and pictures in the game. This is one of the most impressive projects Corrupt Computing has ever undertaken.

Still in the planning stages is a program Packer/Unpacker, a modular dos, a ram disk program that will allow you to use any ram card by any company as a ram disk, and a shape hunter utilities disk. Also in the planning stages is a Corrupt Computing newsletter. It will include a major article on how the disk drive works, and a complete interpretation of the P6 and P6A Proms.

Well that is just about it for now.

A Word to the Wise.
CORRUPT COMPUTING HAS MAINTAINED A REPUTATION FOR WRITING GOOD PROGRAMS AND DISTRIBUTING THEM TO THE USER AT NO OR VERY LITTLE COST. BUT IF PEOPLE BEGIN TO ABUSE THIS SERVICE BY TRYING TO SELL OUR PROGRMS, OR REQUESTING A ACCESS FEE (WITHOUT OUR KNOWLEDGE) FOR THE PRIVILEGE OF DOWNLOADING OUR PROGRAMS, THIS SERVICE WILL BE DISCONTINUED. YOU HAVE BEEN WARNED!

THANK YOU VERY MUCH FOR YOUR COOPERATION.

IF YOU HAVE ANY QUESTIONS, COMMENTS, OR CONCERNS, PLEASE DIRECT THEM TO EITHER THE INSPECTOR OR THE STACK ON "THE CORRUPT COMMUNICATIONS BULLETIN BOARD". 313-453-9183 - 24HRS.

I have a large collection of Graphics, I call them Pics, which I have downloaded, scanned, digitized, or on rare occasion created. They are stored on disks by category such as cartoons, space, etc. The disks are named by category and I wrote slide show to view them.

I thought it would be fun to take one Pic from each disk and make a large Icon from it that would pop up on the desktop when the disk was inserted and run slide show when it was double clicked.

This would be a kind of album cover like my cd's have, to help better remind me of the contents of the disk.

Alas when I ran T.I.M. to make my first one it died. The code overwrote itself and the variables when ever it got over 80 lines high. This can't be (I sec to me) I wrote this piece of slop to handle 100 lines, a 50 line icon plus a 50 line mask, but such was not the case.

So back to pounding the keys, hacking away at my own already sloppy code, T.I.M. Version 1.1 came into being. And my disk collection is starting to get some covers.

First: How I use them.

1. Make a folder named ICONS on each disk.
2. Name the Disk Cover Icon the same name as the disk and put it in the icons folder.
3. I already have the icon attached to the name of the disk, for a basic program ($FC) and launching */BASIC.LAUNCHER.
4. Write and save a basic program by that name which will run the program of your choice, Slide.Show, Windows, Etc. (See the Example)
5. Drag the disk to the trash and then pop it back in, you should now be able to see your Icon Picture.
6. Turn on (an X in the block) Save Finder Info To Disk. This should be off unless you are rearranging your desktop as it will speed up all window closes and launches.
7. Drag the Icon Picture onto the desktop and close the disk's window.
8. Now Drag the Disk into the Trash, I also write-protect it then.
9. Turn off (no X in the block) Save Finder Info To Disk.

An alternate to step 7 is to move the icon pic and size the window so that the window border surrounds the pic, this way you can close the window but it will still pop up when you double-click the disk.

Next: How to make them.

1. The easiest way I have found is to use SHR Convert to load a Pic, then reduce 50% by height and width and save as a $C1 (Screen) file.
2. Next load it into PaintWorks Gold or DeluxePaint II - Make a mask or template to protect all but one color, then wash that color with the color from the finder's pallette that most approximates the original.
3. To repeat, make sure you are using the finders colors to view the pic as you work. I use DeluxePaint II and go from Restore Pallette on the spare page to Use Brush Pallette on the Page I am converting.
4. When I have finished converting I save it to my T.I.M. disk as ESP GIRLS as an example then run T.I.M. to make the icon.
5. Be sure to save or convert it into a $C1 file with the image in the absolute upper left hand corner of the screen.

You could also grab or load a Pic as a Brush and reduce or resize it to a
size you would like but then you have to go thru the boring process of counting pixels. Bah, Humbug. A single 50 x 50 percent reduction is 180 wide bu 100 high, do it twice and its 90 wide by 50 high, nice and easy.

Now for a few thousand words about T.I.M. Version 1.1

1. It will now let you define the program it launches.
2. Handles Icons up to 50 lines high with a custom mask.
3. Over 50 lines high it makes it's own mask.
4. Writes and reads back parts of the file to disk and then assembles them into an Icon named TEST.ICON - You have NO CHOICE and any existing TEST.ICON will be deleted.
5. Maximum height - 180 lines
6. Maximum width - Don't know, largest I have done is 160 pixels.
7. Minimum size - Again don't know, must be over $F squared (16 x 16).

That's All Folks - Have Fun

Fred

T.I.M. and DiskCovers copyright 1988 by E.S.P.Graphics
GrassHopper Software (TM)

The program, T.I.M., the DiskCovers included herewith, any Icons or DiskCovers made by T.I.M. are FreeWare but remain the commercial property of the creator.

E.S.P. Graphics will not bear or share any liability thru the use of copyrighted material being reproduced without proper permission.

P.S. That means watch what you scan, convert, or digitize folks if you then distribute it, be it in printed or electronically readable form.
EDIT USE M, < , > TO EDIT MAP (BE SURE TO WRITE OUT)

R - READ
W - WRITE

>> READ NEXT SECTOR
<< READ PREVIOUS SECTOR

RETURN
ENTER EDIT MODE OF TRACK IN BUFFER. ENTER DATA ASCII OR HEX, DEPENDING ON WHAT MODE YOU ARE IN

: ENTER ONE CHARACTER OF DATA INTO BUFFER

Y FILTER, FILTER OUT INVERSE AND CONTROL CHARACTERS FROM DISPLAY

T TYPE, INVERSE, NORMAL, FLASHING, LOOK AT THE POUND SIGN AT THE BOTTOM OF THE SCREEN FOR CURRENT TYPE. USED FOR ENTERING DATA TO BUFFER

0-7 BUFFER NUMBER

ON HEX DUMPS, CHARACTER IN INVERSE ARE THOSE THAT HAVE BEEN CHANGED, IN OTHER WORDS IF "AO" IS IN INVERSE IT IS DIFFERENT FROM WHAT IT STARTED

X CHANGES BACK TO ORIGINAL BUFFER (STUFF IN INVERSE (MEANING THINGS THAT HAVE BEEN CHANGED)) ARE BACK TO NORMAL

Z & Q ARE SHIFTING EACH BYTE IN BUFFER RIGHT OR LEFT, I.E: BYTE ONE BECOMES BYTE ZERO WITH SHIFT LEFT

? DISPLAYS ASCII SET FOR REFERENCE

N ALTERS MARKINGS ON SIDE BETWEEN HEX AND DECIMAL

DOCUMENT disktimer

DISKTIMER GS
A Hard Disk Benchmarking Program

(C) 1988 Joe Jaworski
18405 Tamarind Street
Fountain Valley, CA 92708

Genie: JVJAWORSKI
CompuServe: [73307,310]

This program is FREeware. It is copyright material but you may use it and/or distribute it free of charge to anyone for personal, non-commercial use. Licensing is required for including DiskTimerGS with any commercial hardware or software product. Contact me at the above address for licensing information.

What is DiskTimerGS?

DiskTimerGS is a *Benchmark* or performance rating program designed to measure how efficiently a hard disk drive will perform on an Apple IIIGS. It is designed to give you, the consumer, a rating system by which to measure the performance of hard disk drives and their manufacturers claims.

Like all benchmarks, test results cannot be strictly correlated to a drive's performance in an actual application. However, the key to a benchmark is the comparison of results between different products.

DiskTimerGS has been designed to eliminate as many system variables as possible to insure accurate results in a wide variety of system configurations. DiskTimerGS is immune to disk cache settings, controller cache memory, partitioning, system interrupts (including mouse movement), and buffered drive seeks.

APPLETALK USERS: DiskTimerGS disables interrupts during the actual test periods. This will "hang" the network. Disconnect AppleTalk before running DiskTimerGS.

Using DiskTimerGS

DiskTimerGS is very easy to use. Simple transfer a copy of the program to the disk drive you want to test and launch it from there. It doesn't matter if the program is put in a folder or in the root directory. However, it must be launched from the drive you want to test. The tests will take anywhere from 2 to 5 minutes to run.

DiskTimerGS does not perform any WRITE operations and will not alter any data on any disk under test. In fact, the disk must be formatted and contain a ProDOS directory in order to run the tests. If the disk is partitioned, any single partition can be tested (the results are independent of partitioning) but the partition selected must be at least 9.9 Megabytes in size in order for the tests to run. DO NOT try to run DiskTimer from a floppy. It won't work.

About the Results

DiskTimerGS reports its results in seconds for each
Apple II Computer Info

 OPERATION. The three tests performed are:

 READ Timing: This test performs a sequential READ of a number of 512 byte blocks to determine how fast the Hard Disk can transfer consecutive data. The factors that most affect this number are the Disk Interleave and Data Transfer rate of the drive.

 SEEK Timing: This test measures the time it takes to seek the R/W heads of the drive across 10 Megabytes of data. The results of this test are mainly governed by the Track-to-Track, Average Access, and Head Settling time of the drive.

 ADAPTER Timing: This test performs a repeated READ of a single block on the disk, measuring the overhead to receive data from the low-level disk interface through the ProDOS 16 high-level interface. Factors that affect this rating are the delays through the Host Adapter Card originating at the disk drive interface hardware and the Disk/Host interface firmware. In other words, it measures the efficiency of the SCSI Card or other controller Card used to operate the disk drive.

 Interpreting Results

 Compare your drive to the others listed in the DiskTimerGS comparison list (included in this download) to see how well your drive has performed.

 Submitting To the Comparison List

 The DiskTimerGS Comparison List included with this download will be frequently updated. To make DiskTimerGS an effective tool, I need your help in keeping this list as up to date as possible. If you have a hard disk drive that is not on the list, run DiskTimerGS and submit your test results so I can include it in the next update. Even if your drive is "Homebrew", it would be interesting to compare results to commercially available products.

 Run DiskTimerGS at least three times (The results may vary slightly depending upon the drive/controller tested). Submit all three test results (or an average of the three) along with your name, BBS ID, and any additional comments to support the test setup. Submit your data to one of my BBS ID's listed above.

 Thanks for your support. I hope you find DiskTimerGS an Independent and valuable aid in selecting one of the growing number of hard disk drives now available for the IIGS.

 -Joe Jaworski

 DiskTimerGS operates through the ProDOS 16 interface under GS/OS. It is not compatible with System Disks before version 4.0 and is not compatible with other models of the Apple II

 Document for Disk Inventory Utility v1.0B
 By The Saint
 (c) 870727 Aristos Unlimited

 This program is Public Domain.

 DIU is a ProDOS utility that will allow you to take an inventory of your ProDOS disks and create a TXT file which could be used by AppleWorks.

 DIU will first ask for the Slot & Drive of the diskette to be inventoried. This is selected using the light-bar selector. Next DIU will ask where the information should be displayed (Printer, Screen, or Text file). With this version 1.0B of DIU, output to text file is the only valid option. Selecting Text file will prompt for the FULL pathname of the text file to be created.

 Full pathname means that you must specify the Volume name as well as the filename (ex. /MYDISK/NEWFILE). DIU will then read the directory from the selected slot and drive and create a TXT file on the specified pathname.

 The same TXT file may be used again for different disk. Each disk inventory will be appended to the previous one if the same name is used.

 To create an AppleWorks Data Base file from the TXT file, follow the following instructions.

 1. From the Main Menu select option 1, "Add files to Desktop."
 2. Next, select option 4, "Make a new file for the Data Base."
 3. Select option 2, "Make a new file from a text (ASCII) file."
 4. Enter 9 to the question "How many categories per record?"
 5. Enter the complete pathname of the file created with DIU.

 After Appleworks has read the file, it will ask for the name of the newfile. This is the name of the Data Base file.

 There it is! Appleworks now has a Data Base file with an inventory of your ProDOS disk(s).

 Now to fix-up the file.

 Press OA-N for "Rename categories." The categories should be changed to the following:

 CATEGORY01 = Pathname CATEGORY06 = Modified Time
 CATEGORY02 = Filename CATEGORY07 = Create Date
 CATEGORY03 = Type (filetype) CATEGORY08 = Create Time
 CATEGORY04 = Blks (Blocks) CATEGORY09 = Endfile (Bytes)
 CATEGORY05 = Modified Date

 Press OA-L to "Change record layout." Delete "Modified Time" & "Create Time." "Filename" should be set at 15 spaces, since this is the maximum number of characters allowed in a ProDOS filename. "Type" should be set to 3 spaces. "Modified Date" & "Create Date" should both be set at 9 spaces.
The Diversi-Cache program comes on a 5.25 ProDOS floppy disk. We recommend you boot this disk when you power on, to install Diversi-Cache. You can then boot from the 3.5 drive with "PR#5".

You can also use the Apple //gs system utility program to transfer all of the Diversi-Cache files to a newly formatted 3.5 inch disk.

*** Adding Diversi-Cache to PRODOS *** (Not available on demo disk)

You can append Diversi-Cache to any disk with a file named PRODOS, for automatic installation when you boot that disk.

Choose this option from the menu, and insert the disk you want to update. Then, enter the slot and drive where the disk is located. You may enter the slot and drive of a hard disk, if desired.

If the PRODOS file you select already has Diversi-Cache appended, you will be given the option to add the new Diversi-Cache, or to remove Diversi-Cache and restore PRODOS to normal.

*** Installation Errors ***

You will receive a user support number, and a new disk with the latest version of Diversi-Cache. Your honesty will help us distribute future programs in this same, low-cost way.

*** Introduction ***

Diversi-Cache requires an Apple //gs with at least 512K, and an Apple 3.5 disk drive. The Apple //gs comes with 256K, so you must buy a memory card with at least 256K, which plugs into the //gs memory expansion slot. We recommend buying a 1-megabyte (1000K) expansion card, since Diversi-Cache will use up to 800K.

Diversi-Cache dramatically increases the I/O speed of the Apple Disk 3.5, under any operating system (ProDOS, Pascal, DOS 3.3). Diversi-Cache only speeds up the Apple Disk 3.5 designed for the Apple //gs, and will not affect the speed of the older Apple //c compatible UniDisk 3.5.

Diversi-Cache speeds up the Disk 3.5 in two ways. First of all, whenever the system reads a block, Diversi-Cache actually reads an entire track. This triples the speed of disk reads, and doubles the speed of ProDOS writes.

Secondly, Diversi-Cache allows you to allocate a cache memory buffer from 0 to 800K in size. An 800K cache works for the entire disk, while a 400K cache would cache the first 1/2 of the disk, for example. Whenever the system reads a block in the cache range, Diversi-Cache saves it in the cache buffer. If the system asks for this block again, it comes out of memory at "Ramdisk" speed.

*** Installing Diversi-Cache ***

The Diversi-Cache program is a binary file named "CACHE". Diversi-Cache may be installed under ProDOS or DOS 3.3 with:

BRUN CACHE

Diversi-Cache installs itself in the first 64K of the memory expansion card (bank 0), and stays there permanently until a power off re-boot. That is, Diversi-Cache stays installed even if you reboot with open-apple-ctrl-reset. Note: after a reboot, Diversi-Cache is reconnected with the next toolset call (INPUT or entering the control panel does a toolset call).
Hold down the left or right arrow keys to adjust the buffer size. Press <RETURN> when you see the desired buffer size. Note that a buffer size of 0K disables the cache buffer entirely. Even with the cache buffer disabled, Diversi-Cache will still approximately triple the read speed for long files.

*** Changing the Cache Drive ***

If you have more than one Apple Disk 3.5, Diversi-Cache normally will only cache drive #1. To select a different drive to cache, hit the down arrow key after selecting the buffer size as described above. You may cache drive 1, drive 2, or both drives.

When you cache both drives, the cache buffer is cleared every time you switch from one drive to the other.

When you BRUN CACHE, you start with an 800K cache for drive #1. To change these starting values, RUN SETCACHE on the Diversi-Cache disk. This modifies and BSAVE's the CACHE file, so be sure your disk is not write protected.

*** Disabling Diversi-Cache ***

Hit the down arrow again, and then the left arrow to disable Diversi-Cache entirely. This may allow you to use Diversi-Cache with protected disks, by temporarily disabling it when the program checks for a protected block.

*** Compatibility Problems ***

Diversi-Cache works with any program which uses the //gs expanded memory correctly, as well as most copy protected programs. However, some of Apple's initial system software has memory management bugs. In particular, if you set up a Ramdisk with the control panel, be sure the maximum and minimum size are the same.

WARNING!!!!!!!!

THE MAXIMUM AND MINIMUM SIZE OF YOUR //GS RAMDISK MUST BE THE SAME!

Diversi-Cache tends to trigger bugs in software which occur when the //gs memory fills, since the cache buffer fills all available memory. In particular, the //gs Ramdisk may return write errors if memory is full and the minimum size is set to less than the maximum. Many programs, such as Appleworks, don't check for write errors on a ramdisk, and may do strange things (like destroy your disks, even).

Other problems occur with ProDOS16 version 1.0, which de-allocates all memory. This will eventually destroy your Ramdisk space and Diversi-Cache as other programs overwrite their memory. If you have to boot Version 1.0, be sure to do an *open-apple_shift_ctlr_reset* reboot afterwards.

Some ProDOS16 programs "hang" when they run out of memory. These programs will work if you reduce the cache size, or increase the amount of memory in your //gs.

Hopefully, ProDOS16 version 1.2 corrects these problems. It is contained on the //gs system disk with the version number 2.0.

An occasional program, such as "Bard's Tale", ignores the //gs memory manager and destroys all memory, overwriting Diversi-Cache, Ramdisk, and anything else. You will have to run these programs from a power off reboot.

In summary, if a program doesn't work with Diversi-Cache, try reducing your cache size. If possible, set your Ramdisk size to 0 to leave more memory for Diversi-Cache.

*** Converting to a System File ***

You can convert Diversi-Cache to a system file, so you can run it directly from a menu selection program. To do this, first run BASIC.SYSTEM. Then CATALOG the Diversi-Cache disk and note the length of the CACHE file. Then, enter the following:

CREATE SCACHE,TSYS
BLOAD CACHE
BSAVE SCACHE,TSYS,A$2000,$xxxxx (where $xxxxx is length of CACHE file)

*** Converting to DOS 3.3 ***

First, boot DOS 3.3 and format a disk with:

INIT HELLO

Then, boot ProDOS again and enter:

BLOAD CACHE
Put in your new DOS 3.3 formatted disk
B$46
BSAVE CACHE,A$2000,$xxxxx (where $xxxxx is length of CACHE file).

Note that to run DOS 3.3 on a Disk 3.5, you need a DOS 3.3 adapter program. We recommend AmDOS(tm) from Gary Little, 131 Water St. #210, Vancouver, B.C., CANADA V6B 4M3, 604-681-3371 for $20.

AmDOS works with our Diversi-DOS(tm). For maximum DOS 3.3 performance on the Apple Disk 3.5, combine Diversi-Cache, Diversi-DOS, and AmDOS together.

*** Licensing Information ***

Although Diversi-Cache is copyrighted, DSR allows copying and distribution of the program subject to the following restrictions:

1. Anyone receiving a copy of Diversi-Cache must send a $35 license fee directly to DSR, Inc. within 2 weeks.
2. Any company, club, or individual may charge up to $5.00 for distributing copies of Diversi-Cache, provided it is clear that an additional $35 fee must be sent directly to DSR.

Publishers:

Publishers may license Diversi-Cache for a $250, one-time fee for all their programs. To do this, the following message must appear in the written documentation:
This disk contains a high-speed operating system called Diversi-Cache, which is licensed for use with this program only. To legally use Diversi-Cache with other programs, you may send $35 directly to: DSR, Inc., 34880 Bunker Hill, Farmington, MI 48018. You will receive the latest Diversi-Cache program disk with documentation.

Multiple Computers:

Each additional computer license fee is $35, up to a maximum of $250 for all the computers owned by a company (or school district).

*** User Support ***

Your user support number entitles you to talk directly to the programmer, Bill Basham. Please write if possible, or call: 313 553-9460 between 3 and 5 PM Eastern time.

*** Diversi-Copy ***

Diversi-Copy is the fastest and easiest way to make back-up copies of your 3.5 disks. Diversi-Cache triples the disk read speed when used with Diversi-Copy. Note, however, that Diversi-Copy exits with a power-off type reboot, so you'll need to re-install Diversi-Cache.

Diversi-Copy was chosen as incider magazine's "Editors' Choice". It is the best copy program available, for both 5.25 and 3.25 drive copying.

*** Diversi-Key ***

Diversi-Key is a keyboard macro program for the Apple //GS that will work with any program that allows interrupts. This includes programs that run under Pascal, ProDOS, or DOS 3.3. Diversi-Key works with Appleworks 2.0, as well as most other programs.

Diversi-Key sends macro keystrokes as if you had typed them at the keyboard, so you don't need to modify your programs to work with Diversi-Key. Diversi-Key allows you to add an almost unlimited number of custom functions to any program.

Diversi-Key includes a flexible way to program the mouse to work with any program, as well as date and time macros, nested macro calls, nested repeat, IF, and WHILE conditional loops, and much much more.

*** How to Order ***

To order, please send your check to:

DSR, Inc.
34880 Bunker Hill
Farmington, MI 48018-2728

The cost of our programs is as follows:

- Diversi-DOS: $30
- Diversi-Copy: $30
- Diversi-Cache: $35

Diversi-Key: $45

We only sell our programs by mail-order, and will notify you of future program updates which you may purchase for $5 each.
Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 341 of 1262

DOCUMENT diversi.copy

**** Diversi-Copy(tm) Demonstration Disk ****

FOR 2-WEEK DEMONSTRATION ONLY
Copyright 1984,1986 DSR, Inc.
By Bill Basham

This disk contains a demonstration version of Diversi-Copy. To legally use Diversi-Copy, please send in your payment within 2 weeks. You will receive a new Diversi-Copy disk and user support number. Please send $30 to:

DSR, Inc.
34880 Bunker Hill
Farmington, MI 48018

*** Diversi-Copy for 5.25 Disks ***

There was not enough room on this demo disk for the full Diversi-Copy program and documentation. The 5.25 copy program on this demo disk is a short version. When you send your $30 for Diversi-Copy, we will send you a new Diversi-Copy disk with the full documentation and program, which can also format ProDOS, Pascal, DOS 3.3, and CP/M 5.25 disks. To use the short version, follow the screen prompts.

To get this version to copy 5.25 disks in a specific slot, get into BASIC and enter:

BLOAD DCOPY
POKE 2054,S (where S=4..7 slot number)
BSAVE DCOPY

*** Instructions - Diversi-Copy for 3.5 Disks ***

*** Making Copies ***

Diversi-Copy for the Unidisk 3.5 is a separate program included on the Diversi-Copy disk. This program is called "UCOPY". You can use the Unidisk 3.3 System Utilities disk to transfer "UCOPY" to any ProDOS disk, and execute it with a "BRUN UCOPY" command.

When you run the UCOPY program, it automatically finds the slot where your Unidisk 3.5 is located. The copying process works very much like Diversi-Copy for floppy disks. You may make 1-drive copies, or 2-drive copies (if you have 2 Unidisks).

*** 1-Drive Copies ***

To make a 1-drive copy, insert your original disk in Unidisk drive #1 and hit <space>. The program will prompt you with screen messages and beeps. You may hit 'S' to turn the beeps off and on.

To avoid writing onto your original by mistake, you may want to write protect it by sliding the tab on the disk so the write protect hole is open. The write protect hole on your duplicate must be closed, of course.

*** 2-Drive Copies ***

Put your original in drive #1, and your duplicate in drive #2. Press <return> to begin copying. Both disks are ejected when copying is complete.

*** Copy Features ***

When copying ProDOS or Pascal disks, Diversi-Copy skips all unused blocks, as shown by the disk directory. This greatly speeds up the copying process, unless your disk is nearly full.

If you want to copy these unused blocks for some reason, press "=", from the main menu (the one that says *Insert Original Disk in Drive #1*).

Before writing to a Unidisk 3.5, Diversi-Copy automatically formats the disk. This takes about 45 seconds per disk, in addition to the write time. When copying onto a "virgin" disk, i.e. right out of the box, this step is necessary.

However, if you are re-writing over a disk that already has data on it, you can skip this format step by pressing "F" from the main menu. Press "F" again to restore formatting.

*** Halting ***

Hit <DELETE> to cancel a disk read or write in progress. You can also hit the disk eject button to force an I/O error.

*** Apple //GS ***

Diversi-Copy uses the Apple //GS built-in 256K memory, and any memory plugged into the //GS memory expansion slot. Diversi-Copy works with the new Apple Disk 3.5, as well as the Unidisk 3.5 connected to the //GS.

We recommend the Apple //GS with a single Apple Disk 3.5. Then buy a 1-megabyte Apple RAM card, or the GS-RAM (or GS-RAM plus) from Applied Engineering. This memory will allow 1-pass copying of any disk, and will be very useful for future //GS programs.

Diversi-Copy will NOT use or destroy the memory on peripheral slot RAM cards in the Apple //GS.

*** Screen Display ***

The bottom line on the screen shows the progress of your copy. The number at the left is the read block, which goes from 0000 to 1600 as the program reads in your original. To the right of this is the write block, which also goes from 0000 to 1600 when writing the duplicate.

The number of successful copies written is shown at the right. Press "M" from any menu to restore it to 0000.

*** Mass Production ***

Put your original disk in drive #1 and hit "M". Diversi-COPY will read this original disk into memory and hold it. You can then write multiple copies from memory without re-reading the original. If the original disk does not fit into the available memory, the program displays an error message. Otherwise, you will hear 2 beeps and see a new menu.
On a 1-drive system, put a blank disk in drive #1 and hit <space> to write each copy. On a 2-drive system, put blank disks in drives #1 and #2 and hit ‘A’. Diversi-COPY will write to drive #1 and #2 alternately until you hit <ESC> or get a write error. You never have to touch the keyboard. While Diversi-COPY is writing to drive #2, put a new disk in drive #1, and vice-versa.

*** Errors ***

When something goes wrong in the copy process, Diversi-COPY will print an error number and explanation. If you forget to insert a disk, you will see the "Offline - No Disk in Drive" error. Just insert the disk and try again.

If you try to write to a disk with the write-protect hole open, you will see the "NoWrite - Disk Write Protected" error. Slide the write-protect tab over the hole and try again (if you really wanted to write on this disk).

The other error you are likely to see is the "I/O Error". Frequently, this is caused when the disk did not insert properly. Try pushing the eject button, and re-inserting the disk.

The I/O error will also occur if you try to read a "virgin" disk as an original, or if you try to write onto a "virgin" disk without formatting. If the disk is copy-protected, it will also give an I/O read error.

Finally, some I/O errors are caused by defective, damaged, scratched, or just worn-out disks. Hopefully, you will have used Diversi-COPY to back-up these disks before this happens.

When you get an I/O error during reading, Diversi-COPY will stop and ask you to press "T" if you want to try to read the block again. Hit <SPACE> to cancel the copy, or "I" to ignore the bad block. If you hit "T", then a block of all "0" will be substituted for the bad block. The file which contains this block will be partially lost.

*** User Support ***

Your user support number is on the disk which you get from DSR, Inc. when you send $30. Licensed users may call 313 553-9460 on weekdays between 3 and 5 P.M. (Eastern) for support, or write to:

DSR, Inc.
34880 Bunker Hill
Farmington, MI 48018-2728

We will notify licensed users of any future updates to Diversi-COPY. Updates may be purchased for $5. We will also notify users of any future programs we release.

*** Multiple Computers ***

Diversi-COPY may be copied and used on all computers owned by a single individual, company, school district, or government agency, without additional fee, subject to the following restrictions:

1. All computers must be located within a 25 mile radius, or local
phone calling area. I.E. corporations with branches in different
cities should buy 1 copy for each city.

2. Each user support number entitles only ONE individual to call or write to DSR for support.
Note: Don't transfer the file named "PRODOS" on the //gs system disk to any other disk. Use the "PRODOS" on the Diversi-Key disk.

Diversi-Key comes with built-in macros for use with Appleworks 2.0. To get started, boot the Diversi-Key disk and choose the menu option to install Diversi-Key. This also installs the Appleworks macros.

To verify that Diversi-Key is active, press the option key. An inverse "K" should appear in the upper right corner of the screen.

Now boot your Appleworks disk, and choose the options to start a new word processing file from scratch. Name the file "KEYMAC".

While holding the option key down (inverse "K" appears), press the minus key, "-", on the keypad, twice. Diversi-Key will now display all the built-in Appleworks macro definitions, typing them into a word processing file.

If you aren't in the right Appleworks mode to be able to type input, you may hear a lot of beeps, and the screen will go "crazy" as Diversi-Key continues typing. Don't panic! Hit the panic button.

Press: OPEN-APPLE_CONTROL_DELETE (halts Diversi-Key any time)

********
INTRODUCTION
********

Your "KEYMAC" file should begin like this:

[0001=<A>]
Diversi-Key is a keyboard macro utility for the Apple //gs, which can be used to automate the keyboard input for most programs which run on the //gs.

You install Diversi-Key permanently into the //gs expansion memory, where it stays available while you run other programs (such as Appleworks). Your other programs run normally, until you activate Diversi-Key by holding down the "option" key on the //gs keyboard.

While holding down the option key, the next keys you press are interpreted as a "Macro" call. When you call a macro, Diversi-Key takes over your keyboard, and rapidly types a pre-defined sequence of keystrokes for you. You’ll find that Diversi-Key greatly increases the power and utility of your other programs.

When you hold down the option key, your program will pause temporarily, and resume when you let the option key up. You can press the option key to stop the program any time, i.e. to read a screen message which is scrolling by. Whenever the option key is down, you will see an inverse "K" in the upper right corner of the text screen (when in text mode only).

Diversi-Key requires an Apple //gs with at least 512K. The Apple //gs comes with 256K, so you must buy a memory card with at least 256K, which plugs into the //gs memory expansion slot.

********
START WITH APPLEWORKS
********

When you boot your Appleworks disk, if it says "ProDOS 1.1.1", then you should update the "PRODOS" file with a //gs version (ProDOS 1.2 or later). Use the //gs system utility program to transfer the file named "PRODOS" from the Diversi-Key disk to your Appleworks disk, replacing the old "PRCOSO". This gives the correct time and date stamping of your files, and allows Diversi-Key to function.

Note: Don't transfer the file named "PRODOS" on the //gs system disk to any other disk. Use the "PRODOS" on the Diversi-Key disk.

Diversi-Key comes with built-in macros for use with Appleworks 2.0. To get started, boot the Diversi-Key disk and choose the menu option to install Diversi-Key. This also installs the Appleworks macros.

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While holding the option key down (inverse "K" appears), press the minus key, "-", on the KEYPAD, twice. Diversi-Key will now display all the built-in Appleworks macro definitions, typing them into a word processing file.

If you aren't in the right Appleworks mode to be able to type input, you may hear a lot of beeps, and the screen will go "crazy" as Diversi-Key continues typing. Don't panic! Hit the panic button.

Press: OPEN-APPLE_CONTROL_DELETE (halts Diversi-Key any time)

********
INTRODUCTION
********

Your "KEYMAC" file should begin like this:

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Diversi-Key is a keyboard macro utility for the Apple //gs, which can be used to automate the keyboard input for most programs which run on the //gs.

You install Diversi-Key permanently into the //gs expansion memory, where it stays available while you run other programs (such as Appleworks). Your other programs run normally, until you activate Diversi-Key by holding down the "option" key on the //gs keyboard.

While holding down the option key, the next keys you press are interpreted as a "Macro" call. When you call a macro, Diversi-Key takes over your keyboard, and rapidly types a pre-defined sequence of keystrokes for you. You’ll find that Diversi-Key greatly increases the power and utility of your other programs.

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Diversi-Key requires an Apple //gs with at least 512K. The Apple //gs comes with 256K, so you must buy a memory card with at least 256K, which plugs into the //gs memory expansion slot.

********
START WITH APPLEWORKS
********

When you boot your Appleworks disk, if it says "ProDOS 1.1.1", then you should update the "PRODOS" file with a //gs version (ProDOS 1.2 or later). Use the //gs system utility program to transfer the file named "PRODOS" from the Diversi-Key disk to your Appleworks disk, replacing the old "PRCOSO". This gives the correct time and date stamping of your files, and allows Diversi-Key to function.
Keep your "KEYMAC" printout handy as a reference. You may find the pre-defined macros are enough, in which case you can stop reading right here! Later, if you want to use the full power of Diversi-Key, you can study the rest of these instructions.

USING PINPOINT:

Many Appleworks add-ons, such as Pinpoint, use the option key as a trigger. To use Diversi-Key with these programs, change the Diversi-Key "trigger" key before booting Appleworks, as follows:

1. Boot the Diversi-Key disk and install Diversi-Key with the Appleworks macros.
2. Holding the option key down, enter the number "42." on the keypad. That is, enter: "4", then "2", then ".", all on the KEYPAD.
3. Now boot Appleworks, and use the option key to trigger Pinpoint as usual.
4. You now trigger Diversi-Key by pressing the OPEN-APPLE key AND the OPTION key together.

Note: Be sure you change the trigger key BEFORE booting Appleworks. Then, install Pinpoint before using Diversi-Key. If Pinpoint won't install, try re-booting Appleworks and don't use Diversi-Key until it Pinpoint is installed.

********
DEFINING SIMPLE KEYBOARD MACROS
********

To define a macro, hold the option key down and press the "=" on the numeric KEYPAD. Then, press the key on the KEYBOARD which you want to define. Now, type the macro definition on the KEYBOARD. When you're through with your definition, press the KEYPAD <enter> key.

For example, to define the option-D key as a macro which types "Hello", enter the following keystrokes:

```
[option-keypad-=]D
Hello<enter>
```

More details on defining macros are described later.

********
SAVING AND LOADING MACROS
********

After you define a macro, it is held in memory until you turn the machine off. To save it to disk, you must first enter BASIC. You can do this by booting the Diversi-Key disk, and choosing the "Exit to BASIC" option. Or, from the system disk, choose "BASIC.SYSTEM" from the launcher or desktop.

When you enter BASIC, you will see the Applesoft prompt, ]]. To save your macro file, hold the option key down and enter the following on the KEYPAD:

```
1.2.
```

You should see the word "BSAVE", and a prompt to enter a filename. Pick a name for your file, and enter it. Then, press return. The file will be saved to disk.

To install the new macros later, get to BASIC and enter:

```
BRUN filename (where filename is the name you entered when saving)
```

Note: To get back to the launcher after entering BASIC, enter:

```
BYE
```

********
APPLE //E UPGRADE
********

If you upgrade your Apple //e with the new //gs motherboard, you won't have the full //gs numeric keypad. To simulate keypad keys on the //e upgrade, hold the open-apple and option(solid-apple) keys down together, and press one of the following:

```
Digits 0..9
<-->
<delete> (same as keypad <clear>)
```

********
INTERRUPTS
********

Diversi-Key activates 60-cycle interrupts on the //gs. This may cause problems with some programs which read or write to a 5.25 drive without disabling the interrupt. In particular, Copy II+ versions before 7.4 will destroy 5.25 disks if you write on them with interrupts active (there is no problem with 3.5 drives). If you plan to use Copy II+ with 5.25 drives, be sure you get version 7.4 or greater.

This problem also shows up if you try to boot ProDOS from a 5.25 drive using PR#6. To avoid the problem, boot with open-apple-ctrl-reset, or use special macro [10.] (described later).

The Diversi-Key disk contains a file named BOOTFIX which will update the boot tracks on a 5.25 ProDOS disk to correct this problem. Exit to BASIC and enter:

```
BRUN BOOTFIX
```

Then, put in your 5.25 disk and press <space> to fix it.

********
INSTALLATION
********

Diversi-Key may be installed automatically from the menu when you boot the Diversi-Key disk. You only boot this disk once, at power on. The Diversi-Key program is actually a binary file named "DIVKEY". Diversi-Key may be installed under ProDOS or DOS 3.3 with:

```
BRUN DIVKEY
```

Once Diversi-Key is installed, it stays in memory permanently until a power off re-boot. That is, Diversi-Key stays installed even if you
reboot with open-apple-ctrl-reset.

ERRORS: When you BRUN DIVKEY, you will hear a "beep" if the installation was unsuccessful. The usual reason for this is that you tried to install Diversi-Key again, when it was already installed. You also get this error if you don't have a //gs memory expansion card, or if there is no memory available to install Diversi-Key. If this occurs, try installing Diversi-Key from a power-off boot.

Note: To avoid the beep, POKE 0,0. 2. Press and release RESET key. 3. Release OPEN-APPLE_SHIFT_CONTROL keys.

NO RESPONSE? If Diversi-Key ever stops working, particularly after booting a new program, try pressing the "flush" key sequence: open-apple_control_delete (Flush key sequence)

The Diversi-Key disk contains a pre-defined set of macros in a file names "DIVMAC", which are installed when you boot the Diversi-Key disk. You can also install them from BASIC with:

BRUN DIVMAC

The Diversi-Key program comes on a 5.25 ProDOS floppy disk. We recommend you boot this disk when you power on, to install Diversi-Key. You can then boot from the 3.5 drive with "PR#5".

You can also use the Apple //gs system utility program to transfer all of the Diversi-Key files to a newly formatted 3.5 inch disk.

********
AUTOMATIC STARTUP
********

You can add Diversi-Key to any ProDOS disk, and have it install automatically when you boot that disk. Use menu option #2 on the Diversi-Key disk to do this (not available on the demo).

This option adds the DIVKEY and DIVMAC files to your disk. It then changes the name of the PRODOS file on your disk to OLDPRO, and changes the DIVKEY file to PRODOS. When your disk boots, it should execute these files:

PRODOS (installs Diversi-Key)
DIVMAC (installs macros)
OLDPRO (starts up ProDOS 8 or 16)

To remove Diversi-Key from your disk, enter BASIC and type the following:

DELETE DIVMAC
DELETE PRODOS
RENAME OLDPRO, PRODOS

To put Diversi-Key back on the disk, use menu option #2. With the demo disk, you can transfer the files, DIVKEY, and DIVMAC, to your disk, and enter:

RENAME PRODOS, OLDPRO
RENAME DIVKEY, PRODOS

You can remove Diversi-Key by turning the power switch off for 10 seconds or so, but this will eventually wear out the switch. You can simulate a power-off re-boot as follows:

1. Hold OPEN-APPLE_SHIFT_CONTROL keys down (3 keys).
2. Press and release RESET key.
3. Wait for 2 beeps.

This will remove Diversi-Key, and clear your Ramdisk (if any).

********
CALLING MACROS
********

Macros in Diversi-Key are numbered from 1 to 9999. There are two different ways to call the same macro. You can call a macro by number by holding down the option key, and entering the macro number on the numeric KEYPAD. This is called a "Numeric Macro". You can also call a macro by holding the option key down, and pressing any keyboard key. This is called a "Keyboard Macro".

********
NUMERIC MACROS
********

To call a numeric macro, hold the option key down and type the macro number on the numeric keypad. The macro is triggered when you press the keypad <enter> key, or let up the option key. Press the keypad <clear> key if you make an error. Diversi-Key displays a Numeric macro as [nnnn], where nnnn is a number from 1 to 9999. Some Numeric macros are: [0124], [0001], [9047].

********
KEYBOARD MACROS
********

Triggering a Numeric macro requires more than one keystroke, and numbers are hard to remember. To get around these problems, you may also trigger macros with single-keystrokes on the KEYBOARD. You do this by holding down the option key, and pressing any keyboard key, that is, any key not on the numeric keypad. The macro is triggered immediately when you hit the keyboard key. Be sure to let up the option key, to allow the program to continue after the macro is completed.

Diversi-Key displays a keyboard macro as: [k], where "k" is any keyboard key. Here are some keyboard macro examples: [N], [S], [1]. Note that [1] is a keyboard macro triggered by pressing "1" on the keyboard. [0001] is a Numeric macro, triggered by pressing "1<enter>" on the numeric keypad.

There are 96 possible keyboard macros, which correspond to Numeric macros numbered from 0 to 95. Each keyboard macro corresponds to its ASCII equivalent Numeric macro. For example, the "A" key is an ASCII 65. Therefore [A] is the same as [0065].
Note that lowercase keyboard macros are converted to uppercase. That is, [a] is the same as [A]. For keyboard keys with ASCII values from 96 through 127, subtract ASCII 32 to find the Numeric equivalent (converts to lowercase).

Numeric macros [0096] to [0099] have no keyboard macro equivalent.

******
REDEFINING THE KEYBOARD ******

You can re-define the entire keyboard by entering:

[xx/] where xx=0..99

That is, hold the option key down, enter a number from 0 to 99 on the numeric keypad, and press the numeric keypad */ key.

When you do this, the keyboard macros will now correspond to Numeric macros [xx00] to [xx99] instead of [0000] to [0099].

For example, when you enter [02/], then [A] triggers macro [0265] instead of macro [0065].

You can use this feature when you switch programs, since your macro definitions will be very specific to each program. For example, you might enter [00/] for running Appleworks, and [01/] for programming in BASIC. Thus, you can keep up to 100 sets of keyboard macro definitions in memory at one time, in each 32K macro file.

******
SPECIAL MACROS ******

Diversi-Key contains 100 pre-defined "special" macros, which are always available, and cannot be modified. You call a special macro by holding the option key down, and entering a number from 1 to 99 on the numeric keypad. Then, hit the keypad */ to trigger the special macro (instead of <enter>). Special macros are displayed as follows:

[nn.] where nn=0 to 99

Special macro [00.] calls the "control panel". If you hold the option key down, and hit the keypad */ (without entering a number), the effect is the same as pressing OPEN-APPLE_CONTROL_ESCAPE.

Other special macros functions are described throughout these instructions. For a list of all special macros, see the reference section.

******
DEFINING A MACRO ******

You can define a new macro, or edit an existing macro definition at any time. To define a Numeric macro, enter the macro number on the keypad, followed by the keypad =:

[nnnn=] where nnnn=0..9999

To define a keyboard macro, hold the option key down, press the keypad "=", followed by the keyboard key you want to define.

[=k] where k is any keyboard key

When you enter macro define mode, the current definition for this macro, if any, will appear on the top line of the screen. The macro definition begins with:

[nnnn=k] where nnnn is Numeric macro number you are defining, and k is its keyboard macro key equivalent (if any). For example:

[0065=A]

You define the macro by typing it on the keyboard. When finished, press the keypad <enter> key to accept, or the keypad <clear> key to cancel. Note that the first time you press <clear> it clears any definition you have typed, if any. Press <clear> again to exit macro define mode without changing anything.

While defining a macro, you can call another keyboard macro by holding the option key down when you press the keyboard key. The status of the open-apple key (up or down), is saved in the macro definition, which is especially useful with Appleworks.

During the macro definition, the following keypad keys have special functions:

Keypad Key     Function
*             Delete last character entered
-             Move cursor back 1
+             Move cursor forward 1
<clear>        Cancel definition
<enter>        Accept definition
/<xx.<return>  where xx is special macro number 00..99

The keypad */ key is used to enter Numeric macro calls, special macro calls, and all the other special macro functions described later. To call Numeric macros enter:

/nnnn<return> where nnnn is Numeric macro number 1..9999

To enter a special macro call:

/xx.<return> where xx is special macro number 00..99

******
SCREEN DISPLAY DURING MACRO DEFINITIONS ******

As you type your macro definition, each character is displayed on the top line of the screen. If you hold the open apple key down while typing a character, the character appears as (k) where "k" is the character. Open-Apple A is shown as [A], for example. Other display features are as follows:

[k] keyboard macro call
Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 347 of 1262

If you trigger the wrong macro, or hit keypad -- by mistake, Diversi-Key may go merrily along typiing bad keystrokes for some time. Fortunately, you can stop Diversi-Key at any time by typing the FLUSH key sequence. To do this, hold down the control and open-apple keys, and then press the delete key. Try this whenever Diversi-Key seems to be acting "stangely", i.e. not working.

********
MACRO FILES
********
Diversi-Key macro files are saved on disk as binary files. You then BRUN the file to load it into memory for use. The Diversi-Key disk contains a standard file named "DIVMAC" which contains the pre-defined macro definitions for Appleworks (and other programs). To load this file, enter:

BRUN DIVMAC

When you do this, the macro definitions on disk in the DIVMAC file will replace the current macros in memory. However, you may keep up to 10 different macro files in memory at once, each with up to 9999 macros in 32K memory.

Macro files in memory are numbered from 0 to 9. Normally, you will only use file #0. To switch to a new macro file number, hold the option key down, and press the keypad keys "+n", where n is a KEYPAD digit from 0 to 9.

For example, to load a second macro file named "MAC2" and still preserve the existing macros, enter

+=1    (keypad keys with option key down)
BRUN MAC2

In the following display options, the "-" key is the one on the keypad:

--       Displays all macro definitions
-nnnn-    Displays all definitions starting with Numeric macro nnnn
-nnnn-k   Displays Numeric macro "k"
-nnnn-<@> Displays all current keyboard macros

Note: Diversi-Key may pause for up to 12 seconds when displaying macros, as it searches for undefined macro numbers.

Comments: You can put comments at the end of your macro definitions by pressing the keypad "+", followed by the comment. When displaying comments, i.e. with keypad -, Diversi-Key sends these comments as actual keystrokes. That is, a <ret> in a macro definition is sent as the 5 characters, <ret><ret><ret><ret><ret>, during display. A <ret> in a comment, is sent as a real single keystroke carriage return, during display only. This allows you to send formatting commands in comments, to make them easier to read. For example, the built-in comments all start with <ret> space, to indent them on the next line.

*******
SAVING MACRO FILES
*******
You can save your current macros in a file, either under ProDOS or DOS 3.3. To do this, you must first enter BASIC, and get to the Applesoft prompt, which is:

        BASIC.SYSTEM

One way to do this is to choose "BASIC.SYSTEM" from the //GS program launcher or desktop.

When you see this prompt, enter special macro [1.] [2.]. That is, hold the option key down, and press the 4 keypad keys "1.2." without
letting the option key up.

Diversi-Key will type the word "BSAVE" for you, and wait for you to enter a file name. Type the name of the macro file you want to save, and hit <return>. Diversi-Key will finish the BSAVE command for you. You may now reboot. Under ProDOS, you can return to the launcher by typing "BYE<return>".

WARNING!!!!

Never enter [1.][2.] while executing a program. Doing this will crash the program (and possibly the whole system). Be sure you see the Applesoft prompt "]" before entering [1.][2.].

********

STARTUP MACRO
********

After your new macros are installed with BRUN macro, Diversi-Key will automatically execute Numeric macro [9999], if you have defined one. Use this macro to initialize Diversi-Key set-up values, if you wish.

You can specify a different macro as the startup macro. To do so, save the macro file as follows:

[nnnn+] (where nnnn is start-up macro number)

[1.][3.]

********

FORCING FILE NUMBER
********

When you install a macro file, it normally loads into the current active file number, which you set with [=+n] before BRUN DIVMAC. To create a macro file which loads to a specific file number, enter:

[=+n][1.][2.] (when saving the macro file)

You can use this feature to set up a turn-key system which loads several macro files, using the startup macro of the first file to load the second file to a different file number.

********

CONVERTING TO SYSTEM FILES
********

You can convert your macro files to system files, in order to load them from a menu manager program, as follows:

First CATALOG your disk and note the length of the DIVMAC file.

LOAD DIVMAC,AS1000
CREATE DIVMAC,TSYS
BSAVE DIVMAC,TSYS,AS1000,xxxxx where xxxx is the length from the CATALOG ABOVE

You can do this with any macro file, not just "DIVMAC".

+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Advanced Features
Apple II Computer Info

LDA $C010  (NOT NEEDED, CHANGE TO NOP/NOP/NOP)
GETKEY  LDA $C000
BPL GETKEY
STA $C010 (NEEDED)

You can use the //GS monitor to find references to $C010 as follows:

BLOAD program
CALL -151
10 CO<800.9600P
++++++
USING THE MOUSE
++++++

Diversi-Key allows you to program your mouse to send macro keystrokes. You activate the mouse with the special macro: [51.]

With the mouse activated, you can send a total of 10 different macros from the mouse. When the program starts, the mouse movements will send the following macros:

With mouse button up:
[<P>]: left mouse motion
[<Q>]: right mouse motion
[<R>]: down mouse motion
[<T>]: sent when mouse button goes from down to up

With mouse button down:
[<V>]: left mouse motion
[<W>]: right mouse motion
[<X>]: down mouse motion
[<Z>]: sent when mouse button goes from up to down

You can re-assign these mouse macros with the /B (BMOUSE) and /M (MOUSE) special functions. For example:

/B/<A> will assign the mouse button down macros to be [<A>]; through
/<E>. /M/<A> does the same for the mouse button up.

/B1000 will assign the mouse button down macros to be Numeric macro numbers 1000 to 1004, and similarly for /M1000.

To use the mouse, first enter [51.] to enable it. Then, hold down the option key, and move the mouse, or press the mouse button. The mouse is only active when the option key is down.

While holding the option key down, you can press the control key to enable the one way mouse function. With the control key down, mouse left-right motion is ignored. With the control key up, mouse up-down motion is ignored. If you prefer, you can use the control key to convert mouse left/right motion into up/down motion. Enter [54.] to enable this feature.

You can lower the mouse sensitivity with [55.] for horizontal, or [56.] for vertical. You can enter these macros up to 255 times for minimum sensitivity (use repeat function).

Macro [57.] increases the ability of the mouse to type ahead. Each time you call [57.], can typeahead one more macro call. You can increase typeahead 255 times.

If you define mouse motion to do cursor movement keystrokes, then the typeahead behaves as follows:

With no typeahead, the cursor moves in the same direction the mouse moves. When you stop mouse movement, cursor movement stops. If you move the mouse faster than the cursor can follow, nothing changes.

With full typeahead, the mouse can get ahead of the cursor. If you move the mouse rapidly, the cursor will eventually catch up to the mouse. The cursor keeps moving after you stop moving the mouse.

After you start moving the mouse, you can no longer trigger macros from the keyboard. You'll notice that the inverse "K" in the upper right corner disappears during mouse movements. Let up the option key for an instant to get the "K" to re-appear, and allow macro triggering from the keyboard again. This feature is included to avoid pausing the program during mouse movements.

When using the mouse for a long time, you can enter [45.] to change the "trigger" key to <caps lock>, to avoid of having to hold down the <option> key all the time. To cancel, enter [40.].

With Diversi-Key, the mouse becomes an extremely flexible tool which can be used in any program, if desired.

++++++
TRIGGER HOLD MODE
++++++

Trigger hold mode allows you to use the mouse without having to hold down the option key. Enter special macro [05.] to enable trigger hold mode. To turn it off, enter [04.].

With trigger hold mode active, the option key (or other trigger key), behaves much like the caps lock key. That is, when you press and release the option key once, it stays "pressed" until you press and release it again.

This mode may also be used to trigger macros with one hand.

OTHER INFORMATION

*** Licensing Information ***

Although Diversi-Key is copyrighted, DSR allows copying and distribution of the program subject to the following restrictions:

1. Anyone receiving a copy of Diversi-Key must send a $45 license fee directly to DSR, Inc. within 2 weeks.
2. Any company, club, or individual may charge up to $5.00 for distributing copies of Diversi-Key, provided it is clear that an additional $45 fee must be sent directly to DSR.

Publishers:

Unlike Diversi-DOS and Diversi-Cache, we do not license Diversi-Key to be included with other programs. However, we do encourage you to include a custom Diversi-Key macro file on your disks, specific for your program. We hope you will recommend that your customers order Diversi-Key directly from us, in order to use this file.

Multiple Computers:

Each additional computer license fee is $45, up to a maximum of $250 for all the computers owned by a company (or school district).

*** User Support ***

Your user support number entitles you to talk directly to the programmer, Bill Basham. Please write if possible, or call: 313 553-9460 between 3 and 5 PM Eastern time.

*** Diversi-Cache ***

Diversi-Cache dramatically increases the I/O speed of the Apple Disk 3.5, under any operating system (ProDOS, Pascal, DOS 3.3).

Diversi-Cache speeds up the Disk 3.5 in two ways. First of all, whenever the system reads a block, Diversi-Cache actually reads an entire track. This triples the speed of disk reads, and doubles the speed of ProDOS writes.

Secondly, Diversi-Cache allows you to allocate a cache memory buffer from 0 to 800K in size. Whenever the system reads a block, Diversi-Cache saves it in the cache buffer. If the system asks for this block again, it comes out of memory at "Ramdisk" speed.

Diversi-Cache only speeds up the Apple Disk 3.5 designed for the Apple //gs, and will not affect the speed of the older Apple //c compatible UniDisk 3.5.

*** Diversi-Copy ***

Diversi-Copy(tm) is the fastest and easiest way to make back-up copies of your 3.5 and 5.25 disks. Diversi-Copy will use all available memory in an Apple //gs, //e, //c, or II+ compatible to allow 1-pass copying with a single drive.

Diversi-Copy was chosen as incider magazine's "Editors' Choice". It is the best copy program available, for both 5.25 and 3.25 drive copying.

*** How to Order ***

To order, please send your check to:

DSR, Inc.
34880 Bunker Hill
Farmington, MI 48018-2728

The cost of our programs is as follows:

- Diversi-DOS $30
- Diversi-Copy $30
- Diversi-Cache $35
- Diversi-Key $45

We only sell our programs by mail-order, and will notify you of future program updates which you may purchase for $5 each.

REFERENCE

CONVERTING DIVKEY TO A SYSTEM FILE

You can convert Diversi-Key to a system file, so you can run it directly from a menu selection program. To do this, first run BASIC.SYSTEM. Then CATALOG the Diversi-Key disk and note the length of the DIVKEY file. Then, enter the following:

CREATE SDIVKEY,TSYS,A$2000
BLOAD DIVKEY
BSAVE SDIVKEY,TSYS,A$2000,Lxxxxx (where xxxxx is length of DIVKEY file)

MOVING DIVKEY TO DOS 3.3

First, boot DOS 3.3 and format a disk with:

INIT HELLO

Then, boot ProDOS again and enter:

BLOAD DIVKEY

Put in your new DOS 3.3 formatted disk PR#6

BSAVE DIVKEY,A$2000,Lxxxxx (where xxxxx is length of DIVKEY file).

REFERENCE

USING DIVERSI-KEY: SUMMARY

Executing a macro: Hold down option key and enter:

[nnn] let up option key executes macro nnn
[nnn+enter>] executes macro nnn .9999
[nn] executes special macro nn 0.99
[nn/] assigns macro's mn00 to mn95 to keyboard keys
nn 1.99
nn00..nn95 ASCII keys 0..95 (upper/lowercase)
nn95 = ascii 127 = delete
[cccc+] sets counter to value cccc .9999
[nnnn-] send definition for Numeric macro nnnn
[-]k send definition for keyboard macro k
[-@] send definitions for all keyboard macros A..Z etc.
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[-nnnn-] send definitions for macro's nnnn..9999
[--] send definitions for ALL macro's 0001..9999
use these to type macro definitions into a word processor
for review and later editing

----------
DEFINING MACROS
----------

Start definition: [] means keypad keys
[nnnn=] defines Numeric macro nnnn
or
[=]k defines option-k macro where k is keyboard key
During <definition>

Start with old definition on screen
[-] means backspace
[*] means forward space
[clear] means cancel definition
[enter] means accept definition
[/] means end of macro, start of comments

SPECIAL FUNCTIONS
----------

/nnnn call nested macro nnnn
/nn. call special macro nn.
/nn/ re-define keyboard
/K enter and send keystroke
/P pause until keystroke, ignore it
/E enter string until <ret> hit / don't send <ret>
/S/key> enter string until <key> hit / don't send <key>
/Rnnn repeat nnn times, nnn=2..254
/WWbb/aaaattt If conditional / values are HEX
/Tbb/aaaattt Test / no END statement needed
/N null
/Connnnnn set counter (8 digits)
/Laxx,nnnn do xxx macro's in list starting with macro nnnn
/xxx=1..255 / nnnn=1..9999
/Z zero list counters
/Mnnn Mouse button up macros start with [nnnn]
/Mnnn Mouse button down macros start with [nnnn]
/M/k Mouse button up macros start with [k]
/B/k Mouse button down macros start with [k]
/B Mouse button down macros start with [K]
/D Begin display message / end with {del}
/Ok Send key "k" with option key down (i.e. to trigger Pinpoint)

Special IF/WHILE conditions.

Address: 7F/00xx Test special location xx
Compare byte: ?xx

70 CVAL: Value at last IF/WHILE address
71 CVALL
72 CVALL
73 CVALL
74 MOUSE / <0 means mouse is ON
75 Y sensitivity
76 X sensitivity
77 DRPT typeahead amount for mouse
78 FFLAG format flag byte / default is 0 / bits ON as follows:
80- UPPERCASE
40- 24-Hour Clock
20- Lead space
10- Abbrev. ASCII month/weekday
8- Lead 0 or Space ON
79 STACKP stack pointer / >0 means nested macro
The following are set with [20.] macro

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[Count=cccccccc] set counter to cccc
[List:003,1000] alternate macro's 1000,1001,1002
[Mouse:1000] mouse macro [1000]
[Mouse:VP] mouse button down macro [1000]
[Display] start of message to display / ends with {<del>}
[Option-K] send "k" key with option key down

| end of macro definition, start of comments |

--------

SPECIAL MACROS call with [nn.]

-------- Format options for time/date
[01.] - Lead-in for [2.] and [3.]
[02.] - [1.][2.] means BSAVE macro file / must be in BASIC ] mode
[03.] - [nnnn][1.][3.] means BS ava macro file / startup macro [nnnn]
[04.] - Turn OFF trigger hold mode
[05.] - Trun ON trigger hold mode
[06.] - 10. means turn off Diversi-Key. FLUSH keys turn back on
[11.] - Turns on Diversi-Key again

ALSO clears KGOT to 0 / last key pressed in macro

--------

[12.] - Turn color off
[13.] - Turn color on
[14.] - Turn Prompting Display off
[15.] - Turn Display on / top line (set display message with /D)
[16.] - Turn Display on / bottom line
[20.] - Force new time computation
[21.] - Clear Tick Counter
[40.] - Option key triggers macro (normal)
[41.] - OA trigger
[42.] - Option-OA trigger
[43.] - Option-Shift trigger
[44.] - OA-Shift trigger
[45.] - Caps Lock trigger (Use for handicapped or easier mouse)
[46.] - Beeps ON
[47.] - Beeps OFF
[48.] - Sound Volume normal
[49.] - Sound Volume OFF
[50.] - MOUSE OFF
[51.] - Mouse on / max sens. / no typeahead / 2-way mode

saves old mouse status FIRST
[52.] - Disable X (horizontal) mouse action
[53.] - Disable Y
[54.] - Use X for Y with one-way mouse
[55.] - Decrease X sensitivity
[56.] - Decrease Y sensitivity
[57.] - Increase typeahead
[58.] - Restore old mouse status
[59.] - MOUSE SPECIAL MACRO / Don't use

[60.] - High-speed macros with typeahead / normal
[61.]-[67.] - Slow down macros /no typeahead / [67.] is slowest
[68.] - Allow interrupts during macro (normal)
[69.] - Disable interrupts during macro
[70.] - Print counter & INC

[71.] - DEC counter
[72.] - INC counter
[73.] - Clear counter to 1 / # dig to 0 (no leading 0's or spaces)
[74.] - INC # digits in counter (.2..8) to give leading 0's or spaces
[75.] - Save CVAL to CVALL, etc. (see IF/WILE section)
[76.] - Reset next LIST pointer to first macro in list
[77.] - SAVE Format
[78.] - RESTORE Format
[79.] - RESET Format to defaults (* below)

Format options for time/date
[80.]*- Lead 0,Space OFF (**=default)
[81.] - Lead ON
[82.] - 0 lead char
[83.]*- Space lead char
[84.]- 12-Hour clock format
[85.] - 24-Hour clock format
[86.]*- Full ASCII weekday and month
[87.] - Abbrev, ASCII weekday and month
[88.*- Send macros upper/lowercase
[89.] - Send all macros in upper case only

Date and time macros / print current clock information

Clock is read only when a macro is triggered manually
Use [20.] to force clock re-read if needed
[90.]-Weekday, 1..7 / i=Sunday
[91.]-A OR P (M)
[92.]-Month 1..12
[93]-Day 1..31
[94.-Year 0..99
[95.-Hour 0..23 or 1..12
[96.-Minute 0.59
[97.-Second 0..59
[98.-Weekday ASCII / i.e. "Sunday" or "Sun."
[99.-Month ASCII /i.e. "January" or "Jan."

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option, Select Drive, and press the
RETURN key. You will then be asked for
the number of the disk drive in which
the disks to be labelled will be.
Press 1 or 2, or press RETURN if you
want to leave it as the number
displayed. You will then be returned
to the Configuration Menu.

Choose the next option, Set Printer
Slot, and enter the slot number (1
through 7) that your printer is in, or
Press return for no change from the
slot displayed. You will again be at
the Configuration Menu.

The next option is Printer Interface
Setup. Choose this option and the
current interface setup string will be
displayed in its decimal ASCII form.
When the program is run for the first
time this string will be "009 054 053
078". this is the decimal ASCII
representation of "<Ctrl-I>65N", the
string needed by the Apple Parallel
interface card. Press RETURN to leave
it as it is, or enter a new setup
string in the same form that will set
the interface card to allow a 65
character line. The leading zeroes are
not necessary, but each value should
be seperated by a space. After you
enter this string you will again be at
the Configuration Menu.

Next, select the Choose Printer
option, and you will see the Choose
Printer Menu. The program
can be configured for printers capable
of printing compressed superscript
mode (17 characters
per inch, half height), you can
specify in the program a value of 17.

Disk Labeller Pro is menu driven for
ease of use. The menu selection
pointers can be moved with the
Left/Right arrow keys, the Up/Down
arrow keys, or by pressing the number
key corresponding to the item you wish
to choose. When the pointer is on the
option that you wish to choose, press
the RETURN key. At most places in the
program where you are asked to press a
key to continue, or at any menu, you
can return to the previous menu by
pressing the ESC key.

When the program is run for the first
time, you will be at the Configuration
Menu.

Move the menu pointer to the first
option, Select Drive, and press the
RETURN key. You will then be asked for
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Press 1 or 2, or press RETURN if you
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option that you wish to choose, press
the RETURN key. At most places in the
program where you are asked to press a
key to continue, or at any menu, you
can return to the previous menu by
pressing the ESC key.

When the program is run for the first
time, you will be at the Configuration
Menu.

Move the menu pointer to the first
option, Select Drive, and press the
RETURN key. You will then be asked for
the number of the disk drive in which
the disks to be labelled will be.
Press 1 or 2, or press RETURN if you
want to leave it as the number
displayed. You will then be returned
to the Configuration Menu.

Choose the next option, Set Printer
Slot, and enter the slot number (1
through 7) that your printer is in, or
Press return for no change from the
slot displayed. You will again be at
the Configuration Menu.

The next option is Printer Interface
Setup. Choose this option and the
current interface setup string will be
displayed in its decimal ASCII form.
When the program is run for the first
time this string will be "009 054 053
078". this is the decimal ASCII
representation of "<Ctrl-I>65N", the
string needed by the Apple Parallel
interface card. Press RETURN to leave
it as it is, or enter a new setup
string in the same form that will set
the interface card to allow a 65
character line. The leading zeroes are
not necessary, but each value should
be seperated by a space. After you
enter this string you will again be at
the Configuration Menu.

Next, select the Choose Printer
option, and you will see the Choose
Printer Menu. The program
can be configured for printers capable
of printing compressed superscript
mode (17 characters
per inch, half height), you can
specify in the program a value of 17.
Disk Labeller Pro has been configured before, the current values of each code will be shown. You may press RETURN alone to keep the values shown. Each function, with the exception of Expanded Mode (Double Width) On and Off, must have a value. If no value is entered, a space ("032") will be substituted, but the program will not print properly. When you are done, you will be asked to press RETURN if the values are correct, or to press ESC to re-enter the values if you made a mistake. If you press RETURN you will be returned to the Select Printer Menu. Select the Return to Configuration Menu option (or press ESC).

You are now finished with Configuration. Select the Return to Main Menu option or press ESC. The disk drive will come on as Disk Labeller Pro saves the configuration in a VAR file named "SETUP", and you will be at the Main Menu.

You are now ready to label disks. Select Label Disks from the Main Menu, and you will be shown the Label Disks Menu. Here you have the option of having all of the files in the disk catalog on the printed, or being shown the entry for each file and asked whether or not to include it on the printed label.

If you choose to print all the files, you will be prompted to put the disk to be labelled into the drive that you designated during configuration and press a key. The volume name and number of files on the disk will be displayed. If there are more than 42 files on the disk you will be returned to the Label Disks menu and prompted to use the Select Files option. Otherwise, you will be prompted to ready the printer any press a key. At this point you can press the ESC key to return to the Label Disks menu, or make sure the printer is ready and press any key except ESC to print the label.

If you choose the Select Files to Print option you will be shown the catalog entry for each file and asked if this file is to be included on the label. You can press Y for yes, or N for no; or you may press ESC to abort and return to the Label Disks menu, or press RETURN to stop selecting files and print the label. The Volume name and the number of files selected so far are shown above the file entry. When all files have been displayed you will be prompted to ready the printer and press a key, as above.

After the label has been printed you will be returned to the Label Disks menu. You may then label another disk or return to the Main menu.

The third option on the Main menu is See Documentation. It displays this file to the screen. Make sure that the file DLP.DOC is available in the same prefix as the program was run from, or you will get an error. After the screen is full, you will be prompted to press any key for the next screenful, or you may press the ESC key to return to the Main Menu.

If you select the Quit to BASIC option from the main Menu, you will be asked to verify that you wish to do this. If you answer Y then you will be in BASIC. N will return you to the Main Menu.

This is the first version of this program, and it has only been tested with the Epson RX-80 printer and a parallel interface. If you have any problems, suggestions, or comments, leave E-Mail to me at one of the following places:

GEnie, G-Email address D.TOUVELL
Apple Orchard BBS (Winston-Salem, NC) (919) 764 -3834, address Dave Touvell

I am particularly interested in hearing of any problems with other printers, and of the printer codes needed to make other printers work, so that I can include more ready-made printer setups in the next version.

I would also like to thank all of the people who answered my plea for printer command codes a while back. Since these were used in the program untested, I'd like to hear whether or not they work properly.
DOCUMENT dogpaw

Dogpaw:

Dogpaw is a powerful added-ProDOS-command program which provides an easy and convenient method of displaying and/or printing text files from the BASIC environment. It is primarily intended as a means of presenting on-disk program documentation, though I'm sure many will find Dogpaw useful for a variety of other text viewing/printing purposes. Dogpaw is public domain, and all programmers are welcome to "package" it along with their own public domain or commercial programs for the purpose of handling documentation files. Non-programmers will also find Dogpaw a useful thing to have on hand for displaying documentation (or other text) files. (Some non-programmer people may find parts of the instructions below to be overly technical. Not to worry; whatever you don't understand, you probably don't need to know.)

Dogpaw works with ProDOS TXT (ASCII text) files, AWP (AppleWorks Word Processor) files and "compressed" files. Compressed files will be explained later. Dogpaw will work with files of ANY length, to the maximum allowed by ProDOS. When displaying text on-screen, Dogpaw presents the text in word wrapped form on either the 40 or 80 column screen. Dogpaw allows you to page forward and backward through the text unlike many text-to-screen utilities, which only offer one-way scrolling. Dogpaw also has a "search" option, which allows you to scan through a file for occurrences of any word or phrase. If Dogpaw detects that it is running on an Apple II+, the on-screen text will be displayed in upper case, with lower case a selectable option.

When being used to print text, Dogpaw formats the text for the printed page, and has the option of printing a header at the top of each page. This header can be centered if desired, and can include the page number. While Dogpaw is printing, the number of the page being sent to the printer is displayed on-screen, and the user can pause or end the printing at page breaks. This is useful if single sheet paper is being used, and with some systems, by "printing" to a switched-off printer, this feature can be used to start (actual) printing at some given page in the text other than the first. Both the on-screen-displayed text and the printed text can be set to either single or double spacing.

Compressed files and /Doc.Stuff/: Dogpaw is included on a disk of public domain utility programs written by me. This disk is called "/Doc.Stuff/" and is available from public domain software vendors, is in the software libraries of some on-line information systems, or can be ordered from me for $3.00. The other utilities on /Doc.Stuff/ are also related to the task of preparing text, mainly for the purpose of program documentation. One of these utility programs is "Compressor", which takes TXT or AWP files and compresses them by about 30%. This minimizing the disk space taken up by such files. As mentioned, Dogpaw can display and print these compressed files as well as TXT and AWP files.

Using Dogpaw:

When you type DOGPAW (or "-"), Dogpaw installs itself as a new ProDOS command, and can then be used much like other ProDOS commands. (More correctly called "BASIC.SYSTEM commands", if ya wanna get technical.) For example, from the Applesoft prompt, you can simply type in "Dogpaw [filename]", with [filename] being the name or pathname of the text file you want to view. The text will be word wrapped for either 40 or 80 column display, depending on which is active when Dogpaw finds that the active output slot is neither 0 (40 column display) nor 3 (40 or 80 column) when it is called, it assumes that the output is for a printer, and the text is formatted appropriately. As with other ProDOS commands, Dogpaw can also be used from within a BASIC program in the form: PRINT CHR$(4)"DOGPAW [filename]". Thus, to use Dogpaw to print a file with a printer in slot 1, you would use a BASIC line such as:

10 PRINT CHR$(4)"PR#1: PRINT CHR$(4)"DOGPAW [filename]"

When Dogpaw finishes printing the file, it will return to "slot 0"; output to screen in 40 column mode. When printing, Dogpaw will ignore any embedded printer-control characters, AppleWorks margin and page-break settings, etc. One exception to this is AppleWorks line-centering. If you tell AppleWorks to center a line of text, Dogpaw will center it on the screen or printed page.

The page header option:

To have Dogpaw print a header at the top of each printed page, the following syntax is used:

10 PRINT CHR$(4)"DOGPAW [filename]\[header]"

That is, whatever you want printed at the top of your pages is written in after the pathname of the text file, separated from the pathname with a backslash. The header will be printed at the top left of each page. If you want the header centered on the page, separate it from the pathname with TWO backslashes:

DOGPAW [filename]\\[header]

If you want the page number included in your header, insert the "#" character where you want the page number to appear. The header option has no effect on Dogpaw's text-to-screen display.

The scan/search option:

When using Dogpaw to display text on-screen, you can have it scan through the text until a certain string of characters is found. The syntax for this is much like that for the page header option:

DOGPAW [filename]$[string] or
10 PRINT CHR$(4)"DOGPAW [filename]$[string]"

With [string] being whatever you want to scan for. If you enter

DOGPAW DOGPAW.DOCS.C $widget

then Dogpaw will put the file DOGPAW.DOCS.C on screen, and quickly flip through the pages until a page with the first occurrence of the word "widget" is being displayed. Then you can page forward or backward as usual. If no occurrence of the entered string is found, Dogpaw will scan through to the end of the text, and the "end of text" message will appear at the screen bottom. If, when Dogpaw stops scanning and displays the page of text with your string, you press the S key, Dogpaw will start scanning again for another occurrence of the string. When using the 80 column screen, Dogpaw will flag the line(s) the string appears in by inverting the first character of the line. Both the 80 and 150 column systems invert, not case sensitive; entering "cat" will also find "Cat" or "CAT". Including a scan-string in the Dogpaw command line will have no effect if Dogpaw is being used to print the file. The scan/search option can't be used in the same command line with the page header option.

Line spacing:

Normally, Dogpaw displays and prints its text single spaced. If you want a double spaced display or printout, simply include a "*" AFTER the filename, and BEFORE the header or search-string, if either is being used; like so:

DOGPAW [filename]$[header] or
DOGPAW [filename]+$[string] or
DOGPAW [filename]$

In my opinion, text on the 40 column screen is much easier to read if it's double spaced.

"As-is" mode:

Occasionally, you may want to use Dogpaw to print out a TXT file which has carriage returns inserted at the end of each line, and has the line-length set to 80 columns. This is sometimes called "80 column hard formatting". This kind of formatting is often found in text files that are uploaded to Bulletin Board Systems. Because Dogpaw normally processes its own word wrapping and lets the file use its own formatting, including "#" (circled "a", for "as-is") after the pathname when calling Dogpaw. Like this:

The scan/search option:

When using Dogpaw to display text on-screen, you can have it scan through the text until a certain string of characters is found. The syntax for this is much like that for the page header option:

DOGPAW [filename]$[string] or
10 PRINT CHR$(4)"DOGPAW [filename]$[string]"

With [string] being whatever you want to scan for. If you enter

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The "@" must come before the "\" header token, if any header is being used. It can be used together with "\". When this feature is used, Dogpaw will print without a left-hand margin. Using "@" won't affect on-screen text; hard formatted files will look fine on an 80 column display, but will have lots of oddly-lengthed lines on a 40 column display.

Case-convert for the II+:
When Dogpaw detects that it is running on an Apple II+, the text displayed on-screen will be converted to upper case. To accommodate II+’s that have been modified to display lower case, this conversion can be turned off by pressing "C". Pressing "C" again will turn it back on. When running on a II+, Dogpaw will put a prompt at the bottom of the text-display screen which explains this feature. Text sent to a printer on a II+ will not be converted to upper case. Dogpaw’s 80 column mode is compatible with Video Textterm standard II+ 80 column cards.

NODOGPAW:
To remove Dogpaw and free up the memory it uses (about 4K), enter "NODOGPAW". After this is done, entering any Dogpaw commands will result in a syntax error. Please note, however, that this command will release all the buffers that any other added ProDOS commands, ampersand (\) routines, etc. have allocated. (Dogpaw supports daisy-chaining of other added ProDOS commands.) This shouldn’t cause any problems with other added ProDOS commands or with ampersand routines - they will simply be removed and disconnected along with Dogpaw. Problems could be caused, however, if NODOGPAW is used when certain other buffer-alloccating programs are installed. Some such programs don’t use either the ampersand or the added-command "hooks". Beagle Bros. "GPLE" and "D,BUG" are a couple of examples. The NODOGPAW command will release the memory set aside for routines like these, but won’t "disconnect" them. Therefore, a crash becomes likely. In general, you should avoid using NODOGPAW unless you are sure that nothing that will cause problems is tuck away in the machine’s memory.

DOGPAW?:
Enter "DOGPAW?" will display the title, version number and date of the Dogpaw program, and also the name and address of its glory-hogging author (me). This is handy for checking whether Dogpaw is installed. This same information is printed whenever you BRUN Dogpaw in immediate mode (that is, from the keyboard, not from within a BASIC program).

Techy stuff:
Dogpaw BLOADs at $4000, and relocates itself above HIMEM, which is lowered accordingly. Before relocating itself, Dogpaw checks to see if it has already been installed. If it has, it simply returns to BASIC, rather than installing a second copy of itself. When loading a text file into memory, Dogpaw will use whatever room is unused by the BASIC program (if any) that’s loaded. Dogpaw has its own set of error messages to let you know if things go wrong. Dogpaw supports pathnames only, not S(lot) and D(rive) parameters.

I’d like to thank Garry Delong and Doug Trueman for their help with Dogpaw. Without their assistance, Dogpaw would be a mere bug-eaten shell of its current self.

Why "Dogpaw"? ~ thought you’d never ask. Very simple, actually: Start with "Documentation; Printer or Screen". Shorten that to "Doc.P.O.S." Now give it a couple of hard shakes & a slap, and VOILA! You get "Dogpaw". Obvious, huh?

Any comments, bug reports, etc. you may have regarding this program are more than welcome.

Karl Bunker
321 S. Huntington Ave.
Boston, MA 02130

INTRODUCTION:

DOS3.5 is a assembly language program which modifies DOS3.3 to run 3.5" disks.

DOS3.5 IS NOT IN THE PUBLIC DOMAIN!

Some code is from:
APPLE ASSEMBLY LINES
(C) COPYRIGHT 1986 S-C SOFTWARE
MAY & JULY & OCT 1986 issues
S-C SOFTWARE
P.O. BOX 280300
DALLAS, TX 75228

All code not from APPLE ASSEMBLY LINES 1986 IS:
===
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PRONTODOS is a trademark of BEAGLE BROTHERS
APPLE, APPLE II, and APPLE IIGS are trademarks of APPLE COMPUTER INC.

THE DISCLAIMER

These instructions and the program DOS3.5 is sold without any expressed or implied warranties whatsoever. No warranty of fitness for a particular purpose is offered. The user is advised to test the program thoroughly before relying on it. The user must assume the entire risk of using the program DOS3.5 and the modified disk operating system that it creates.

3.5*DOS3.3

3.5*DOS3.3 is the name given to the new disk operating system created by the program DOS3.5. This new DOS is DOS3.3 slightly modified so it can run 3.5" disks, and still retain compatibility with the DOS3.3 programming environment.

3.5*DOS3.3 seems to be compatible with all the APPLE II family of computers that have at least 48K of ram, including the APPLE IIGS.

NOTE:

BENIFITS:

1. Very little of DOS3.3 has been modified, so should be compatible with almost all programs that use an unmodified DOS3.3 programming environment.
2. Allows the use of 3.5" disks to run and store programs.

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
3. Will also run normal 5.25" disks that have been initialized by DOS3.3.

4. Allows approximately 800K bytes of information to be stored on one 3.5" disk. Data is stored as if each 3.5" disk was 2 disk drives each holding 400K bytes.

DRAWBACKS:

1. Can run only one 3.5" drive, and it must be in its own slot. (No limit to the number of 5.25" drives as long as not in same slot as 3.5" drives).

2. No INIT command. (To initialize a 3.5" disk you must run the program DOS3.5 and choose option to initialize 3.5" disk).

3. Cannot initialize 5.25" disks from the 3.5"DOS3.3 environment.

4. The program DOS3.5 should be copied onto the initialized 3.5" disk so you can use it to initialize new disks.

5. The startup program, more commonly known as the HELLO program, is not automatically copied onto the 3.5" disk when it's initialized. Instead you should put the HELLO program onto the 3.5" disk soon after it has been initialized. Also the HELLO program must be called "HELLO".

6. 3.5"DOS3.3 uses $BCDF-$BCFF. This area is officially unused by DOS3.3, so it's a popular place used to put patches. Example: PRONTODOS uses it.

GETTING STARTED

Assumptions:
You have an Apple II series of computers with at least 48K of RAM in it. You have the program DOS3.5 on a 5.25" disk that contains the disk operating system DOS3.3.

1. Boot up this disk
2. Type BRUN DOS3.5 (then press return)
3. Get to menu titled MODIFY DOS3.5 TO RUN 3.5" DISKS

When asked WHICH VERSION DO YOU WANT?
Chose choice #1 which is: 1. WITHOUT PATCH
DOS3.3 has now been modified to 3.5"DOS3.3

4. Get to menu titled MAIN MENU

Chose choice #1 which is: 1. INITIALIZE 3.5" DISK
then follow the directions on the screen. Make sure there is a 3.5" disk in the correct drive or the program will bomb!

Your 3.5" disk is now initialized.
5. Return to MAIN MENU
6. To initialize more disks repeat steps 4 and 5.
7. For every new disk that has just been initialized, it's strongly suggested that you copy the program DOS3.5 onto the new disk. (This step is optional)

8. Return to MAIN MENU
9. To leave program DOS3.5

CHOOSE WHICH VERSION DO YOU WANT?

1. WITHOUT PATCH

Version of DOS3.3

They are:
1. Normal DOS3.3 (not able to run 3.5" disks)
2. DOS3.3 modified for 3.5" disks with NO PATCH $BC56-$BCFF is used
3. DOS3.3 modified for 3.5" disks with PATCH $BC56-$BCFF unused

APPLE II COMPUTER DOCUMENTATION RESOURCES (A2_DOCS_DOCUMENTATION.MSW)

DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 357 of 1262
WARNING! Not all enhancements are compatible with 3.5"DOS3.3. When you're done, the newly initialized 3.5" disk will incorporate PRONTODOS's modification into 3.5"DOS3.3. Now, whenever you boot up with this 3.5" disk, the modified 3.5"DOS3.3 that's loaded into memory has PRONTODOS in it. You can use this disk to initialize a 3.5"DOS3.3 disk. You'll be impressed by the speedup of most disk commands.

GETTING DISK VERSION 3.5"DOS3.3 INTO COMPUTER

You boot up a 3.5" disk the same way as a 5.25" disk. Any 3.5" disk that has been initialized (using program DOS3.5) will have 3.5"DOS3.3 on it. This means that whenever it is booted up, 3.5"DOS3.3 is loaded into memory, and is used as the disk operating system (DOS). This is the best way to load it into Apple's memory. A more roundabout way would be to use the program DOS3.5 to change DOS3.3 to 3.5"DOS3.3, then to exit from this program. This roundabout way is only needed if normal DOS3.3 is in the computer, and you don't want to boot a 3.5" disk.

If 3.5"DOS3.3 is in the Apple, when you run program DOS3.5, the menu section titled:

MODIFY DOS3.3 TO RUN 3.5" DISKS

is skipped over, because this section is not needed. Also, you cannot change from 3.5"DOS3.3 "with no patch" to a "with patch" version, or vice versa.

MORE ON INITIALIZING

Initializing a 3.5" disk using the program DOS3.5 places the DOS currently in the Apple onto the 3.5" disk. Therefore, if you have PRONTODOS modified DOS3.3 in the computer when you initialize a new 3.5" disk, the new disk will contain PRONTODOS modified 3.5"DOS3.3.

REMEMBER:
1. INIT command won't work if 3.5"DOS3.3 is in Apple.
2. The only way to initialize a 3.5" disk is to use the program DOS3.5.
3. When 3.5"DOS3.3 is in Apple, you can't initialize 5.25" disks.

DETERMINING WHICH 3.5" DISK DRIVE IS USED

When a 3.5" disk that has 3.5"DOS3.3 is booted up, the 3.5" disk drive that does the booting is the one and only 3.5" disk drive that will be used by 3.5"DOS3.3.

3.5" disks with 3.5"DOS3.3 are NOT slot dependent!
For example assume:

Ann's 3.5" disks (with 3.5"DOS3.3) created on her computer will run on Bill's computer and vice versa.

The only time you ever have to identify which slot the 3.5" disk drive is in is when you boot up from a 5.25" disk and run the program DOS3.5 to install 3.5"DOS3.3. (Reason: you are booting up with normal DOS3.3 and not DOS3.5.)
only 3.5" disks can boot up with 3.5*DDOS3.3)

CHANGE NAME "DDOS3.5" WHEN COPYING PROGRAM

When you use the program DDOS3.5 to make a copy of itself, the copy is automatically named "DDOS3.5". To change the name that all further copies will be automatically named, you must alter the program DDOS3.5. The new name must be a valid DDOS3.3 name from 1 to 12 characters long.

CURRENT VALUES
$16C3= C4 CF D3 B3 AE B5
D O S 3 . 5
$16C9= A0 A0 A0 A0 A0 A0
$A0= blank space
(name assigned to copy is "DDOS3.5")
(ASCII values)

TO CHANGE NAME:
Put ASCII values of characters of new name starting at $16C3. Make sure the first character is a letter. Use ASCII values with bit 7=1 (all ASCII values must be greater than 127). If new name is less than 12 characters long, fill remaining bytes through $16CE with $A0 ($A0= blank space).

EXAMPLE: Change name to "INIT.N.COPY"
CALL -151
*16C3: C9 CE C9 D4 AE CE
*1: AE C3 CF D0 D9 A0
*3D0G
(new name is "INIT.N.COPY")
(enter monitor)
.(COPY )
(leave monitor)

Now save altered DDOS3.5 to disk. Better yet, run altered DDOS3.5 and initialize a new 3.5" disk. Then use this program to copy DDOS3.5 onto this new disk (the altered DDOS3.5 will be copied). Be sure to write on disk label that you are using a different startup program name.

CHANGE NAME OF "HELLO"

The name of the 3.5" disk's startup program is "HELLO". On an already initialized 3.5" disk you can always save a new startup program under the name "HELLO".

If you want to use a different startup name, then you must alter the program DDOS3.5. Once altered, whenever a 3.5" disk is initialized using this altered DDOS3.5 program, the new 3.5" disk's startup program will have this new name.

The new startup name must be a valid DDOS3.3 name from 1 to 30 characters long.

CURRENT VALUES
$10F1= 05
(number of characters in name)
$1D5E= C8 C5 CC CF
H E L L O
(ASCII values)

TO CHANGE NAME:
1. Put $A0 at $15AC-$15C9
   Put $A0 at $1D5E-$1D7B
2. Put number of characters in new name at $10F1. Must be from 1 to 30
3. Put ASCII values of characters of new name starting at $1D5E, making sure the first character is a letter. Use ASCII values with bit 7=1 (all ASCII values must be greater than 127).

EXAMPLE: Change startup name to "HI2"
CALL -151
*15AC: A0
($A0= blank space)
The "WAITING FOR CALL" message means that the system will auto-answer the telephone if a RING is detected.

PLACING THE CALL Type "C" to originate call. Then type the telephone number of the other APPLE as requested and let DFX dial the number via the modem. If an answer is received within 30 seconds, the call will be connected and the following M-$-& menu presented.

M .... MASTER MODE

$ .... MASTER MODE

& .... BOOT DRIVE 1

CHAT MODE
A flashing cursor near the bottom left of the screen indicates that you are in CHAT mode connection with the other APPLE. Likewise, the REMOTE APPLE will be in CHAT mode connection with you. This means that you may type messages to each other within a three line scroll area just above the STATUS display line at the bottom of the screen. All the non-control characters may be typed, and in addition, the control-G will ring the bell. The LEFT ARROW key will backup the cursor as far as the left margin.

FUNCTION MODE
To select any of the MENU items, you must toggle your keyboard from CHAT to FUNCTION mode by using the FORWARD ARROW key.

THE STATUS DISPLAY
As you play with the CHAT-FUNCTION toggle, you will notice that at the bottom right of the screen in the STATUS display there is a "C" or "F" indicating the current state of the LOCAL APPLE. If the REMOTE starts to toggle his CHAT-FUNCTION state, you will see his current state at the left of the STATUS display.

HANGING UP THE LINE
Selecting "$" will hangup the telephone line and within about 15 seconds, both APPLES will reset to the original C-4 menu and the WAITING FOR CALL state.

RETURNING TO DOS
Selecting "%" will leave the telephone line connected and cause the system to BOOT from DRIVE 1.

TRANSFERRING FILES
To transfer files, one of you must take control of the total system. This means that one of you elects to become the "MASTER" and the other end becomes the "SLAVE". To become the MASTER, type "M" from the FUNCTION mode and if you succeed in becoming MASTER the REMOTE menu will be replaced by the message:-

[CONTROLLED BY REMOTE]

You will be presented with the S-R-E menu:-

S .... SEND LOCAL FILES

R .... RECEIVE REMOTE FILES

E .... EXIT MASTER MODE

You can toggle between CHAT and FUNCTION mode at any time, but when ready to select from the menu, you must be in FUNCTION mode.

Selecting the "E" menu item will relinquish MASTER control and return both APPLES to the M-4 menu.
SELECTING FILES FOR TRANSFER
Insert into DRIVE 1 any disk that contains files to be sent, or has space for files to be received and select *F* or *R* from the menu. The APPLE that holds the files to be sent will read the CATALOG from its disk and send a copy to the other APPLE. When both ends have copies of the CATALOG displayed, the MASTER end can select the files to be transferred. This is done by moving the selection cursor up and down the screen with the < and > (or , and .) keys while in FUNCTION mode. The MASTER end toggles the file selection with the SPACE bar and both ends can see which files have been selected. When ready to start the file transfer, type CONTROL-C.

While your disk is actually being accessed, you will be barred from using the keyboard, but at all other times, including file transmission, you may select CHAT mode and converse with the other end.

WATCHING THE DATA GO BY
There are three display screens supported by DFX. They are called the MENU, UTILITY and the GRAPHIC screens. You may switch from the current MENU screen to either the UTILITY or GRAPHIC screen at any time. The ESC key toggles your APPLE between the three screens and the STATUS line shows a H, G or M so that you know where you are. You can even see which screen the REMOTE is currently selecting by looking at the left side of the STATUS line.

THE UTILITY SCREEN
This shows the Receive and Transmit data streams and an extension of the CHAT scroll area. In FUNCTION mode, the < and > (or , and .) keys move the small arrow under the data stream left and right. The hexadecimal values of the two indicated data stream characters are displayed at the right. A count of the total characters Received and Transmitted is displayed on the left.

THE GRAPHIC SCREEN
The GRAPHIC screen shows 32 blocks of any file in transit. If it is a HIRES picture file, the sender will see the picture as loaded from disk, while the receiver will see it slowly appear. There are no valid FUNCTION mode keys while using the GRAPHIC screen.

ERROR HANDLING
-------------------
FAILURE TO GAIN MASTER CONTROL
If you both managed to type *M* almost simultaneously while attempting to become MASTER, then you will both get a NOT ACCEPTED BY REMOTE message.

If you have placed a call to another computer that is not running DFX, then you will get the NOT ACCEPTED BY REMOTE message after typing **M**.

DISK ERRORS
If disk errors occur, both ends will be informed by a message at the top of the MENU screen. The MASTER end will be asked to type a SPACE in FUNCTION mode to terminate the file transfer and the system will reset to the S-R-E menu.

TRANSMISSION ERRORS
During file transmission, each block of 256 bytes has a checksum appended so if line errors occur, the checksum will not match the receivers calculated checksum. A RESEND PREVIOUS BLOCK signal (NACK) will be returned by the receiver and the block will be resent. However, no error correction is applied to the CHAT sequences.

INTERUPTION OF FILE TRANSFER
Once a selection of files has been made and transmission started, either end may ABORT the process without dropping the telephone line. Select the UTILITY screen, FUNCTION mode and type SHIFT-CONTROL-F. This will signal the REMOTE APPLE to close any open files and return to the M-S-E menu. If successful, the LOCAL APPLE will then do the same. If either APPLE was in the middle of a disk access at the time, you may have to repeat the sequence again.

LIMITATIONS
--------------
* All disk functions refer to DRIVE 1.
* The HAYES MICROMODEM II must be in slot 2.
* All files must be in standard DOS 3.3 format. (APPLESOFT, INTEGER, BINARY or TEXT).
* If the sender's CATALOG has more than 38 files, only the first 38 will be displayed for possible transfer.
* If the sender's CATALOG has more than 19 files, the display will show all file names truncated after the 12th character. However, the file names up to the 30th character are still used internally.
* At least one end must be running an original DFX PRIMARY DISK as provided by ARROW MICRO SOFTWARE. The other end may be a SECONDARY copy produced by any suitable file copy program, bit copier, or by the DFX FULL-THROUGH (DFT) utility. If you attempt to run SECONDARY copies of DFX in both APPLES, you will be permitted to place the call, CHAT and select files; but you will not be permitted to transfer any files. The slowly flashing "**" at the centre of the STATUS line will break into a fast flash if both ends are running SECONDARY copies of DFX. Also, the message:-

[NO PRIMARY DFX DISK]
will be displayed when you enable the M-S-E or S-R-E menu. If you attempt to transfer files between two SECONDARY copies of DFX, you will be forced to press RESET which will drop the line and reboot.

INTERNALS
----------
DFX is a small APPLESOFT program that loads and executes four binary program segments.

MODEMSUB.OBJ  is the operating system that supports the three screens, CHAT, FUNCTION, STATUS display and modem.

DFXAPPLN.OBJ  is the File Transfer Application routine.

DFXAPPLNMSG.OBJ contains all the messages for DFXAPPLN.OBJ.

DFXSIODS.OBJ makes various modifications to DOS 3.3 and initializes all variables. It then evaporates.

DFXDOCUMENTATION is a formatted text file of this documentation.

DOC is a rather slow and simple minded APPLESOFT program that prints the DOCUMENTATION file to a printer in slot 1.

DFT is an APPLESOFT program that will send a copy of the DFX files to a REMOTE.

GETTING OUT OF DFX
When exiting from DFX, it is necessary to reboot the system with a more normal DOS 3.3. The "*" character has been chosen as the menu selection character because it requires a SHIFT and "i" key to reach
Sit back and watch for about 8 3/4 minutes.

WHEN DPT FINISHES
He should now have a SECONDARY copy of the DFX files on his disk and
DFX should be up and running on both APPLES.

If all goes well, your DFX will be running a few seconds ahead of his
and you will see his CHAT status "C" appear when his DFX starts up. It
is now safe to chat to him. If you start chatting too soon, his system
may hangup the line because he sees strange bits on the line while he
is testing the connection.

SENDING THE REST OF THE DFX FILES
To complete the SECONDARY DFX file complement, you should now use DFX
to send him the files called:- DOC, DFXDOCUMENTATION, ORDERING, HELLO
and DFX. (HELLO and DFX are required to replace the temporary files
sent by DPT.)

COPYRIGHT
--------------
This software product (DFX) is copyrighted and all rights are reserved
by ARROW MICRO SOFTWARE. The distribution and sale of this product are
intended for the use of the original purchaser only. However, lawful
users of this program are hereby licensed to execute the DPT program
to transmit a SECONDARY COPY of any of the DFX files to other users
for the purpose of usefully executing the DFX program between APPLE II
computers.

Note: In any DFX to DFX communication, at least one end must run a
PRIMARY COPY of DFX to work correctly.

No warranty, either expressed or implied, is made with respect to any
part of this software. The programs are sold "AS IS". In no event
shall AMS be liable for any direct or indirect, incidental or
consequential damages resulting from any defect in the licensed
program.

SECONDARY COPIES
All the files on the DFX PRIMARY DISK may be copied to another disk
that has been initialized by the INIT program on the DOS 3.3 SYSTEM
MASTER. The result is a Secondary copy of DFX. The SECONDARY copy
will inherit the same serial number as the original DFX disk but the
letter "S" will be seen to be appended. (The serial number is
displayed at the bottom left of the screen before any call has been
placed.) You may make and distribute as many SECONDARY copies of DFX
as you please, but remember that to be able to transmit files, one of
the two APPLES must be loaded from an original PRIMARY copy of DFX
which is obtainable from ARROW MICRO SOFTWARE.

DFX FULL-THROUGH
There is a utility program called DFX PULL-THROUGH (DPT) on the DFX
PRIMARY DISK which will let you send a SECONDARY copy of DFX to
another APPLE by using the neat facilities of the HAYES MICROMODEM II
ROM. Here is what you do:-

Call the user at the other end and tell him to BOOT the DOS 3.3 SYSTEM
MASTER DISK. He should then remove the disk and insert a write enabled
blank disk into drive 1. Warn him that this disk will soon be
initialized and all existing files erased.

THE FULL-THROUGH CALL
Now you must get your APPLES connected together in the standard way as
described in the HAYES MICROMODEM II manual. That is:-

Let him type IN#2 <RETURN> so that you may place the call.

Now you type IN#2 <RETURN>, control-A, control-H, control-A,
control-Q. Enter the telephone number of the other Apple and
<RETURN>.

When the connection has been established, type control-A, control-X to
exit from TERMINAL MODE and then RUN DPT.
Introduction

Doublestuff is an applesoft compatible language, that is not loaded like applesoft, it is loaded into the area of memory were integer basic is loaded. It actually *Double*sthe graphics of your 128k //e or standard Apple //c. The Basic prompt now, instead of "]" is now "}". To use this you MUST be in 80 columns, and when you boot the disk, it will install Doublestuff into memory, and put you into 80 columns,with the "}" prompt.

The Demos

To see what's available for demo programs, type "catalog" and watch your typing. A program listed is called "ME FIRST" this program when executed will run the Double lo-res demo menu, if you press <ESC> from the inverse menu <made like that for easier viewing on color composite monitors>, pressing <ESC> will bring you to the double Hi-res menu. Just type the number you want on either menu, to select what you want to see.

The Language

Hi-res is now 0-559 by 0-191 pixels. (Hploting Co-ordinates:X=0 to 559,Y=0 to 191)
Lo-res is now 0-79 by 0-47 blocks of graphics. (Plot, Hlin, Vlin Co-ordinates:X=0 to 79, Y=0 to 191)
In Hi-res, the colors are the same as Lo-res.
The commands HGR and GR turns on graphics mode to the last color used, I.E.:Hcolor=5, then a HGR would turn on Hi-res with a grey screen. To get a black Hi-res or Lo-res screen, just do a Hcolor=0 or color=0 respectively.
The disk has Standard Dos 3.3 and Turbo dos, for faster access, this disk will not work with: Diversi Dos, David Dos or ProntoDos.
Here are the colors and numbers for HCOLOR=x and color=x, (x=the number of the color), 0=black.

Dr. Mario is a game of Virus's and Pills to cure them. The object of each level is to remove all the virus pieces from the screen. This is accomplished by getting 4 or more Pill Pieces of 1 color in a row horizontally or vertically. You get points for each virus you take out. If you take out more than 1 virus at a time then you get 400+ (400*number of viruses killed). Game is won after level 20 is completed.

Could it be Mario has settled down? After numerous adventures in the Mario Bros. series, he's tured in his running shoes for a stethoscope. Now he's a medical researcher at Mushroom Kingdom Hospital, experimenting in the virus lab. But of course, Mario is a trouble magnet. Everywhere he goes, something is bound to happen that only quick reflexes and superhuman hand-eye coordination can fix. So one day, just as Mario was beginning work, Nurse Toadstool came rushing in with news that something had gone horribly wrong. One of the experimental viruses was growing out of control inside a laboratory bottle.

Fortunately, Mario had just developed a new set of vitamins that should have been able to kill the viruses. Unfortunately, things got complicated. The vitamins worked, but each one was effective only against a specific virus, and only when enough virus capsules were used. In desperation, Mario began throwing vitamins into the laboratory bottle, trying to get enough of the right ones to the viruses they could kill.

An idea is to line up four or more pieces of the same color, either horizontally or vertically. By "pieces," we mean a whole capsule, or half of a capsule, or a virus. When that happens, all of those matching pieces disappear from the screen. If one or more of the pieces were viruses, you get points.

One key to shaping your strategy is to keep an eye on the upper right corner of the screen, where you can see the next vitamin Dr. Mario will toss into the jar. Although you can make the currently falling capsule fall faster by pushing down, you should probably just let it drop at its own pace. Use the time to look at what the next capsule will be and figure out where it will fit. It's also important to anticipate where broken pieces of capsules will drop.

Each capsule consists of two halves, and if one half disappears when you match a row, the other half remains on the screen. When this happens, the half left behind drops until something stops it. If it happens to land somewhere to make ANOTHER matching row of four colors, that row will also disappear, and any halves left behind will also drop, and so on.

It should be pretty obvious, therefore, that when you match a capsule to a row, you should also think about where the odd half will fall. How will the leftover piece affect the piles of capsules below it? The key to beating Dr. Mario especially at the higher more contaminated levels is getting the knack of lining up capsules so that when one half disappears, the leftover half can drop somewhere useful.

If you drop a capsule on top of a different-colored virus, there are only three ways to clear the virus later. The first method is to imply pile on more capsules of the same wrong color until they form a matching row and disappear, leaving the virus uncovered. This method is the most common, and it works, but it also takes time. In addition, the halves left behind might cover other viruses in the process, so careful planning is essential.

The second way to clear a virus that's buried beneath wrong-colored capsules is to match it with a horizontal row of pieces. This is probably better than method #1, but isn't always possible. Again, careful planning is the only way to keep those lines clear.

The third method is even more difficult - form a vertical stack by building up matching capsules beneath the virus. This is possible because viruses, unlike capsules, do not fall toward the bottom of the screen when there's nothing to support them. They hang in midair, and sometimes you can slide capsules into place underneath.

Like other tetris style games, Dr. Mario is an exercise in thinking ahead under pressure. You can usually recover from mistakes, but it always takes time. And the longer you take to clear a level, the faster Dr. Mario rises.

Unlike other Tetris variants however, Dr. Mario has viruses and you can see them magnified in the lower left corner of the screen. These viruses disappear as you clear all of that color virus out of each level.

---

Apple II Computer Info

Dr. Mario

Programmed By Blue Adept/USAlliance

ProjectBegan July 5th
Completed July 20th 4:48pm
Made workable for GS/OS August 17
Further Remodeled to fix some bugs on January 27, 1992

Dr. Mario is a game of Virus's and Pills to cure them. The object of each level is to remove all the virus pieces from the screen. This is accomplished by getting 4 or more Pill Pieces of 1 color in a row horizontally or vertically. You get points for each virus you take out. If you take out more than 1 virus at a time then you get 400+ (400*number of viruses killed). Game is won after level 20 is completed.

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---

This Game was written because of the massive lack of games on the market for the Apple //gs right now. Since I've cracked and released 183 games over the 5 years that I've been the leader of USAlliance I decided that it was time to give something really productive back. This is the first serious game I've ever written, so its not exactly incredible quality. Also, I wrote this game from scratch in 15 days in my spare time and the usual amount of time it takes to write an arcade game is more than 4 months. This is the first of several games I hope to write in my spare time for the GS.

I am also making most of the source code to these games available to anyone who wants to see it. Since these games are not authorized and nobody gets any cash for em then I'm not going to loose anything by other people getting hold of this code, eh?

later

EA/USAlliance

V2.1

Final Note: I have tested this game extensively as well as I can. I have played it through several times and for me it always works. If you find any bugs or problems with it then try to get word to me so I can fix the bugs as quickly as possible!!!

msg to jason/joe SMACK: deeeeeeeewwwwwwwwddddddddd... how long did it take you to get permission to leave your state? :>

msg to jas0n/j0e sMaCK: deeeeeeeeeewwwwwwwdddddddd....... how long did it take you to get permission to leave your state? :>

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THE FLASH DIRECTLY AFTER YOU SEE IT.

---

EACH ROOM HAS A DESCRIPTIVE TITLE WHICH WILL ALLOW YOU TO DETERMINE THE ROOM PATTERN YOU NEED. THE ROOMS ARE ALWAYS PLAYED IN A SEMI-RANDOM PATTERN.

---

ROOM #1: THE ROOM WITH THE BRICK WALL FORMING IN FRONT OF YOU.

MOVEMENT -- F.

(H) -- YOU MUST VERY QUICKLY MOVE FORWARD TO MAKE IT THRU THE WALL. THIS IS NOT DIFFICULT TO DO IF YOU ARE PREPARED....

---

ROOM #2: THREE ROPES SWINGING OVER THE FIRE PITS.

MOVEMENT -- R-R-R-R.

(H) -- THE FIRST JUMP SHOULD BE MADE WHEN THE ROPE NEAREST TO YOU IS CLOSE TO YOU. OTHER JUMPS ARE MADE WHEN DIRK REACHES HIS HAND OUT TO GRASP THE NEXT ROPE. (YOU WILL NOT SEE THE NEXT ROPE YET....)

(R) -- THIS ROOM CAN BE REVERSED. YOU MUST MOVE INSTEAD L-L-L-L TO CROSS THE PIT. IT IS FAIRLY OBVIOUS TO SPOT THIS ROOM REVERSED AS DIRK APPEARS ON THE LEFT SIDE OF THE SCREEN WHEN IT IS NORMAL AND ON THE RIGHT WHEN IT IS REVERSED.

---

ROOM #3: THE ROOM WHERE ROCKS FALL ON TOP OF YOU.

MOVEMENT -- R-R.

(H) -- MOVE RIGHT AS SOON AS YOU RECOGNIZE THE ROOM AND AGAIN AFTER THE FLASH IN THE RIGHT-HAND DOORWAY (SEE BEGINNING ABOUT FLASHES).

---

ROOM #4: DRINK ME ROOM.

MOVEMENT -- R.

(H) -- MOVE RIGHT AS SOON AS YOU ENTER THE ROOM. THIS IS AN EXAMPLE OF THE ROOMS IN WHICH FLASHES ARE NOT SHOWING THE CORRECT PATH.

---

ROOM #5: THE ROOM WITH JUMPING SKULLS OOOZING TAR, AND BIG HANDS.

MOVEMENT -- F-S-P-S-L.

(H) -- MOVE FORWARD AS SOON AS YOU SEE THE SKULLS (BE SURE TO LISTEN FOR THE "BEEP"!). PRESS SWORD WHEN DIRK LANDS FROM HIS JUMP FORWARD. CONTINUE THROUGH THE ROOM NORMALLY FROM HERE (LISTEN CAREFULLY AS THIS IS A NOISY ROOM.).

(R) -- THE ROOM CAN BE REVERSED. ONLY ONE MOVE IN THIS ROOM MUST BE CHANGED TO ACCOUNT FOR THE SWITCH AND THAT IS THE MOVE AFTER DIRK SWINGS THE SECOND TIME. SIMPLY LOOK WHICH WAY HE IS FACING

---

IN DRAGONS LAIR DIRK (YOU) MUST CORRECTLY NAVIGATE EACH OF THE ROOMS ONCE. ROOMS THAT CAN BE REVERSED MUST BE COMPLETED ONCE REGULAR AND ONCE REVERSED. THE ELEVATOR IS AN EXCEPTION TO THE RULE AS YOU MUST COMPLETE THE NORMAL ELEVATOR SIX TIMES AND THE REVERSED SCREEN ONCE. ONLY AFTER YOU HAVE DONE THIS WILL YOU REACH YOUR GOAL... THE DRAGONS LAIR... WHEN THERE YOU MUST KILL THE DRAGON AND THEN THE GAME ENDS...

---

THERE ARE TWO SECRETS NEEDED TO SOLVE DRAGONS LAIR. ONE INVOLVES LISTENING AND THE OTHER INVOLVES TIMING AND WATCHING. THE FIRST IS LISTENING. EACH TIME YOU MOVE THE DRAGONS LAIR JOYSTICK ONE OF THREE AUDIBLE RESPONSES OCCURS. ONE, NO SOUND AT ALL. TWO, A LOW FREQUENCY BUZZ EMINATES FROM THE SPEAKER, OR THREE, A HIGH PITCHED "DING" COMES FROM THE SPEAKER. EACH TONE (OR LACK OF TONE) MEANS SOMETHING. THE FIRST (NO SOUND) MEANS THAT NO MOVEMENT AT THAT TIME IS NEEDED SO NONE IS LOOKED FOR BY THE COMPUTER. IT SIMPLY DOESN'T KNOW YOU MOVED THE JOYSTICK. THE SECOND "BUZZ" SOUND TELLS YOU THAT THE COMPUTER DOES NOT ACCEPT THE MOVE... (YET) OFTEN THIS IS CAUSED BY A TIMING PROBLEM AND ANOTHER MOVEMENT IN THAT DIRECTION WILL OFTEN CORRECT THIS. THE THIRD SOUND IS THE "BEEP". THIS SOUND MEANS THAT THE COMPUTER HAS ACCEPTED YOUR MOVE. IT DOES NOT MEAN THAT IT IS WRONG OR RIGHT. JUST THAT IT HAS BEEN REGISTERED. MANY TIMES I HAVE BEEN KILLED AND REALIZED I WASN'T LISTENING FOR THE BEEP. I CANNOT OVEREMPHASIZE THE IMPORTANCE OF THESE SOUNDS.

THE OTHER IMPORTANT THING TO LEARN ABOUT DRAGONS LAIR IS THAT IN SOME OF THE ROOMS, THE DESIGNERS MAKE PARTS OF THE SCREEN FLASH (A DOORWAY FOR EXAMPLE). THIS IS OFTEN USED TO HELP THE PLAYER THROUGH A DIFFICULT SCREEN. THIS IS NOT ALWAYS THE CASE AS IN A FEW ROOMS IN THE GAME THE FLASH SHOWS THE WRONG WAY (AND YOU THOUGHT THIS WAS EASY!). OFTEN I WILL GIVE YOU TIMING HINTS BASED UPON THE FLASHES. USUALLY YOU WILL BE MOVING IN THE DIRECTION OF...
AFTER HE SWINGS AND MOVE THAT WAY. (NOT TERRIBLY DIFFICULT IS IT?)

ROOM #6: BREATHING DOOR WITH DIAMOND.

MOVEMENT -- R-R

(H) -- MOVE RIGHT WHEN DIRK GETS PULLED INTO SECOND ROOM AND RIGHT AGAIN WHEN THE DOORWAY ON THE RIGHT SIDE FLASHES.

ROOM #7: DUNGEON WITH SKULL HANGING FROM A ROPE.

MOVEMENT -- S-S-S-F

(H) -- SWING FIRST THREE TIMES AND KILL SNakes. DIRK WILL ALWAYS MISS THE THIRD SNAKE. AFTER HE SWINGS THE SWORD THE THIRD TIME PUSH FORWARD QUICKLY AGAIN AS DIRK ESCAPES THE DUNGEON.

ROOM #8: ROOM WITH GREEN TENTACLE REACHING IN THRU TOP LEFT OF SCREEN.

MOVEMENT -- S-F-R-B-L-F

(H) -- MOVE ONLY AFTER YOU SEE THE HORSEMAN APPEAR. AFTER YOU SWING THE FIRST TIME YOU MUST WAIT FOR A FLASH IN FRONT OF DIRK. AS SOON AS YOU SEE THE FLASH MOVE THAT DIRECTION, DIRK WILL END UP ON A STOOL AFTER HE MOVES LEFT. THEN YOU MUST JUMP THRU THE DOOR THAT IS OPENING AND CLOSING HE MUST JUMP WHEN IT IS OPEN. YOU WILL ONLY GET 2 CHANCES AT THIS.

ROOM #9: DUNGEON WITH LIGHTNING AND FIRE.

MOVEMENT -- R-F-B-L

(H) -- IN THIS ROOM THE LIGHTNING ACTS AS THE POINTER TELLING YOU WHEN TO MOVE. AFTER THE FIRST BOLT OF LIGHTNING, MAKE THE FIRST MOVE, SAME FOR THE SECOND AND THIRD. AFTER THE THIRD IS COMPLETE MOVE LEFT AND DIRK WILL EXIT (EXIT STAGE LEFT!).

ROOM #10: ROWBOAT WITH RAPIDS AND WHIRLPOOLS

MOVEMENT -- R-L-L-L....ECT....ECT

(H) -- THIS IS A VERY EASY ROOM DUE TO THE FACT THAT ALL YOU MUST DO IS FOLLOW THE FLASHES IN THE BEGINNING, GO TO THE LIGHT COLORED SECTIONS IN THE MIDDLE AND AVOID ALL WHIRLPOOLS. THE ROOM IS EVEN EASIER SINCE THE MOVEMENTS SWITCH BETWEEN RIGHT AND LEFT AT EACH DECISION SO AFTER YOU HAVE THE FIRST MOVE IN A SET, THE REST ARE EASY! BE AWARE OF TRICKS LIKE PLAYING A SCREEN WHERE YOU DO NOTHING FOLLOWED QUICKLY BY A DECISION SCREEN. ONLY ONE MOVE OTHER THAN R OR L IS NEEDED. AFTER THE WHIRLPOOLS END, SIMPLY WAIT FOR DIRK TO BE SHOT OUT OF HIS BOAT AND MOVE FORWARD TO GRAB THE CHAIN. I WILL LEAVE THE REST OF THE ROOM TO YOU (I PROMISE IT'S AN EASY ONE)

(R) -- THERE IS ONE STRANGE HAPPENING ON THIS SCREEN. ONCE IN A WHILE, YOU WILL SKIP THE FIRST WHIRLPOOL & HAVE TO MOVE THE OTHER WAY TO AVOID THE SECOND. DON'T SAY I DIDN'T WARN YOU!!!!!
(R) -- Defying us even more, the programmers have decided that this room may also be reversed. This proves to be a real challenge to learning players. It is very difficult to catch the pointer to the reverse your first few times but bear with it. You'll get it someday... To tell if the screen is reversed, you must watch the first energy bolt the knight sends at you. It will come at you and surround you on three sides. The side which is open is either the left or right side. If it is the right side, the screen is normal. If it is the left side the screen is reversed. (Good luck... you'll need it...)

Room #17: The Animated Weapons Room.

Movement -- S-S-L-S-S

(H) -- The first move must be made quickly and you must be very responsive to the last move takes effect. When you sword the spider, as soon as your sword contacts him go right and then keep going forward until Dirk is safely out.

(R) -- The swording in this room is the key. The best pointer to when to swing is when the weapon confronting you starts down at you. To press the sword button, it would be very beneficial to watch others do this to get the idea. Move left to avoid the anvil as soon as you see it. When Dirk enchants his sword and the smith comes to life press sword again before he begins to swing. Note that Dirk climbs up to the pot automatically and you need only move forward.

(R) -- This room can be reversed and the only difference is that he moves right to avoid the anvil this time. You can tell which way to move at this point because fire is on the side that you should not move to. Another pointer is that Dirk is on the left side of the screen when you should move left and the right side when you should move right.

Room 18: Spinner Room with Grunts (Grunts!?"

Movement -- F-S-B-F

(H) -- You are shown two spinners and Dirk attempting to pass through them. There are two separate versions (although they look the same, they are different and you must pass both to get to the dragon) but both use the same solution. As Dirk approaches the spinners, he will grunt aloud as he walks like "Uuhhh", "Uuhhh", wait for the second grunt and then move forward. If you do it right, he will sprint through and jump forward. Press sword as he jumps, pull back and wait for the view to switch. Finally push forward and he will exit.

Room #19: The Lava Monsters (Mudhens)

Movement -- S-F-F-F-ect...ect...

(H) -- Press sword and wait for him to swing and catch his sword. Then move forward quickly over and over. In the whole room only one move must be timed. You run out onto the end of a projection and must jump across a lava pit to the other side. Wait for the opposite side to flash and then jump. After that jump continue moving forward quickly until you exit the room.

Room #20: The Electrified Ground with a Steel Door Slamming in Front of Dirk.

Movement -- F-L

(H) -- Move forward over and over until Dirk makes it thru the door as you only have a split second to make the move and your chances are good if you keep moving the joystick forward. Then do the same for the left as the same circumstances are present.

Room #21: Room with the Square Pool and Crumbling Foundation.

Movement -- L-F-R-F-L-F-S-R-F

(R) -- The first move must be made quickly and you must be very quick to decide if the room has been reversed. All the moves require you to respond as soon as the last move takes effect. When you sword the spider as soon as your sword contacts him go right and then keep going forward until Dirk is safely out.

(R) -- To determine which way to go at this room you must recognize it quickly and
The Dragon's Eye

The Poker Table pits you against the "House". Both you and the dealer start with an equal amount of money, depending on the amount the player withdraws. You play "table stakes" rules meaning that, during play, you or the dealer cannot bet any amount of money that exceeds the others bankroll.

Normal Play

At the first prompt after entering the Poker Table, you may:

A)nte or Q)uit to the Casino Menu

If you choose to Ante, both you and the dealer put $5 in the "pot". Each is then dealt 5 cards. You or the dealer may B)et, C)heck or F)old. The winner of the previous round will always B)et or C)heck first. Betting may range from $2 to $25. After one B)ets, the other may either C)heck, R)aise, or F)old. If one B)ets and the other F)olds, the one who B)et automatically wins the "pot". If one R)aises, the raise is always limited to $25. There is also a limit of 3 raises before and after discsards. You are allowed to check and raise.

After both you and the dealer C)heck or C)all, you are shown your cards and asked which ones you wish to discard. If you wish to "stand pat", hit <RETURN>. You may discard from 1 to 5 (all) cards.

You discard by typing the number(s) of the cards:

To discard 1,2,5: 125 <RETURN>
To discard 2,4 : 24 <RETURN>
To discard all : 12345 <RETURN>

ALWAYS enter the numbers of the cards in ASCENDING order.

You are then shown the number of new cards that you and the dealer took. You new hand is then displayed and you are given the chance to bet these cards. The same rules apply to this round of betting that applied to the rst round.

After all betting is complete, the "house" analyzes each hand to determine the winner. If you win, the "pot" is added to your bankroll. In the case of a tie, the "pot" is split between the player and the "house".

Draw Poker

The Poker Table pits you against the "House". Both you and the dealer start with an equal amount of money, depending on the amount the player withdraws. You play "table stakes" rules meaning that, during play, you or the dealer cannot bet any amount of money that exceeds the others bankroll.

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A)nte or Q)uit to the Casino Menu

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At this point you may either A)nte for a new round of Poker or Q)uit.

DreamGraflix v0.50

Released by: The ACOS Master
Supplied by: Some kid named John

Inocent Exile GS – 914/693-5679
Appletree Midwest – 816/826-4158
Warehouse GS/Mac – 609/385-5552

I am releasing another 3200 color paint program for the benefit of the Apple IIgs community. This is my second release, the first being Emerald Visions v1.0.

I have also included in this archive some 3200 color pictures that I have drawn with DreamGraflix. If you have drawn any that you think are exceptionally good, I would appreciate it if you could upload them to one of the above boards. All of my future releases will be uploaded to those boards...

I want to thank Blue Adept, Mr. Z, and Bladerunner’s sister! Boy is she TIGHT!

Till next time!

;ACOS Master
Beware: A witch doctor’s curse is about to envelop you and your apple computer, wreaking havoc on ordinary reality, digital circuitry and network TV reception!

Your mission: Others have been lured in to this world before you; a little girl, a little boy, their pet lizard, their pet crocodile and their mother. Your task is to find them and bring them back to waking reality, safe & happily reunited.

Mission 1...rescue the little girl and her pet lizard. Watch out for scorpions, flying turkeys, and (on higher levels) green vacuum cleaners!

Mission 2...rescue the little boy and his pet crocodile. Watch out for monsters magnets, and the witch doctor!

Mission 3...rescue the mother. Watch out for serpents and flying weapons!

You are luckily wearing your trance-resistant, anti-gravity rescue suit. You're also well-armed with an unlimited supply of luminous reality pellets, which you can shoot to disintegrate monsters and other enemy phantoms that the witch doctor has cleverly conjured to thwart you.

You start with five lives. For each round of three missions completed successfully, you earn one extra life.

Each time you complete a mission, a curtain of dreams will descend, transport-?

Your wide-screen radar-scope at the top of the screen will prove indispensable in your quest.

Controls:
For joystick: use up/down/left/right movements. Press the button to fire.
For keyboard: A=up, Z=down, <--left, -->right (Apple //e uses K=left, right=L)
Press the spacebar to fire.

Scoring:
35....scorpions, monsters, snakes
100...daggers, swords, arrows, balloon, helicopter, witch doctor.
300....rescue girl/rescue boy
500...rescue mother
500...roast turkey
0.....hatchets

Survival tips: Flying turkeys must be shot at repeatedly. Green vacuum cleaners are indestructible. At higher levels, additional perils appear!

Special keys:
Ctrl-R   restart
Ctrl-J   change to joystick control
Ctrl-K   change to keyboard control
Ctrl-S   toggle sound on/off
Ctrl-V   toggle volume high/low
Esc      pause-press any key to continue
Joystick or paddles.

The object is to shoot the floating numbers and mathematical operands and place them down below in a balanced mathematical expression such as 234+14=248. Blank spaces don't matter, so 2 34+1 4=2 48 is acceptable. No operands may be on the right side of the '=' sign and the result can't be equal to 0.

The scarabs to the side indicate how many machines you have left. You may shoot and be shot by the other player which results in an award of 10 points to the shooting player and the loss of a piece to the victim.

Press the paddle button to shoot a number, then move your scarab down below the main screen and drop your number in one of the slots available. If you accidently pick up a number or operand you don't want, then you must position yourself above the 'garbage' hole toward the bottom center of the screen, then press the paddle button to drop the unwanted digit. If at any time you accidentally drop a number or operand in the wrong place so that your expression shows little chance of balancing, move your scarab as close to the bottom center of the screen as possible and press the paddle button. This will release all of your numbers and allow you to start over.

Scoring:
The four operands are + (addition), - (subtraction), x (multiplication), / (division). These are worth 1, 2, 3 and 4 points respectively. The computer goes through the equation and adds the value of the operands, multiplies this by the length of the smallest number, and multiplies that by 10. You also receive 10 points for zapping the other player. CTRL-S will toggle sound on/off.
INFO button, type in the full name of the human. The Human Database Service will then provide your MAD with information (Address, ID numbers, etc.) of the selected human. After receiving information, you may select REPEAT to try another name or select EXIT to leave the program. If you accidentally type in the wrong name, you can try again or type BYE to leave the program.

NOTE: The Orb Alliance has authorized Manhunters to visit any address furnished by the INFO system.

As a Manhunter, you are required to record all pertinent data that you discover during your investigations. Luckily, INFO provides a means to ENTER this data through its Autoscan feature. Whenever important information is picked up by a Manhunter (important documents, notes, etc.), Autoscan examines the data and stores important information into memory for future access. To observe this data, select INFO from your MAD and type NOTES in place of name.

SIGNAL TRACKER

All human movement is recorded in the Human Tracking Records database of the Alliance computer. Due to the low priority placed on these records, tracking information on each human is only available from shortly before the time of the alleged criminal activity to a time period not extending beyond the end of that day. Due to unforeseen difficulties with human tracking disks, the targeted human's identity is not recorded. Also, tracking of a target is cut off if the human should venture under earth soil. However, this practice is strictly forbidden and should not hamper your investigations.

One function of MAD is to tap into the appropriate human tracking records for your current assignment. When MAD first accesses tracking records, it will determine and then "tag" the most appropriate human target signal. A playback will then begin of that target's movements throughout the city. During playback, MAD will also display any other human targets that come in close contact with the tagged human target. You may tag any of these human subjects that you feel may be beneficial to your investigation. To tag a new target, simply place your marker over the desired subject and press ENTER. The yellow rotating target should change to the subject you have chosen. You may replay tracking records as often as you find necessary. Manhunters are authorized by the Orb Alliance to visit any location that a tagged target visits.

NOTE: Experienced Manhunters have found that the most efficient way to use the TRACKER is to watch it until it terminates transmission. Proceed to replay the transmission, closing the MAD after the target leaves each location. Travel to the location shown and investigate.

Signal Tracker

This is a recently installed feature that allows the recording of various signals entering and leaving the Alliance central computer.

The Alliance central computer contains a Signal Analyzer which resides in its I/O buffer. Once playback begins, the Analyzer examines the data and stores important information into memory for future access. If a tagged signal contains restricted information, the signal will change color when it has been tagged. After a signal has been tagged, it is automatically fed into the Analyzer. If the analyzed signal contains restricted information, the signal can then be traced back to its source by your MAD tracking device. After the traced signal leads you to a suspect, you will follow normal Manhunter procedure to complete your investigation.

MANHUNTER OVERVIEW

A Sierra 3-D Animated Adventure Game, simply stated, is an interactive movie where you become the main character. In this game, the main character is a Manhunter, an agent of the future who spies on fellow humans for an alien empire.

Each 3-D Animated Adventure Game has a main goal, and yours in Manhunter is to track down humans for the Orb Alliance, learn the whereabouts of the human underground, and ultimately discover the true purpose behind the alien invasion. You will need to move stealthfully and wisely, as time is quickly vanishing for America and its citizens.

Tips on Playing Manhunter

1. HOW TO MOVE AROUND

Basic instructions on how to interact with this game are included in this manual and the reference cards enclosed. For those who are still not sure of what to do, there is a WALK THRU included at the end of this manual.

2. KEEP YOUR FACE COVERED AND YOUR LIPS TIGHT

Due to the dangerous nature of this adventure game, you will want to save your game often. Follow the instructions on your Manhunter Quick Reference Card to SAVE GAME whenever you encounter a potentially dangerous situation.

If you do encounter danger, or fail to complete all the required tasks to get past a given obstacle, you can follow the instructions on your reference card to RESTORE GAME to the place you were at when you last saved your game. Intelligent use of this function has spared many Manhunter from having position terminated permanently.

NOTE: Manhunter a New York employs a convenient feature that automatically gives you a second chance after you have encountered the most grisly of situations (namely, a gruesome death!). This feature allows you to face the most unexpected of conclusions without requiring you to replay the entire game.

3. KEEP YOUR EYES OPEN

Look at and examine everything you can. Watch closely those around you. Pay close attention to detail. There are many clues, both visual and symbolic, which will help you succeed in your quest.

4. TEAM UP AGAINST THE ENEMY

This orb-infested metropolis can be one mean place for a Manhunter to live. You may find it helpful to play Manhunter with a friend. Different humans come up with different ways to interpret clues, and besides, it makes life a lot more fun.

5. GOT YOUR BACK AGAINST THE WALL?

If you've tried every trick of the trade and still can't get anywhere, don't panic. Even expert Manhunters have been known to get blown to shreds. It's just part of the job.
PLAYER INSTRUCTIONS

Defenders just before being killed...

The Elders. The last remaining wiseman, using telepathy, summon their GEM, VIAL, SACK. Neighboring town, Colnar's now evil warriors brutally attack and slay all of AT THE OLD MURAL. When getting or dropping items you may also use commas: TAKE this nucleus of organization. After taking over the minds and bodies of anything in that same sentence, ie: OPEN THE DOOR THEN GO NORTH AND HAVE A LOOK AGAINIST ANY EVIL FORCES. If life is taken for naught... then they must wrench from the floor and open the north door in that order. Halcar, a neighboring planet. "The Tellasien race must defend the Elders WRENCH THEN OPEN THE NORTH DOOR. This would immediately take the key and the avenge."

Colnar has reached Dondra and has initiated his devious plan to abolish time. You may also move between screens, look at objects, and do just about anticipate the need of foreign aid and form a pact with the Tellasien race of what you wanted to do in a particular room you could: GET THE KEY AND THE ADVANCED COMMAND ENTRY

The universe is filled with pestilence, crime and disease. Colnar is THE BEING who rules all evil, controlling everyone and everything. He is planning time travel to another state of being, a new universe which is prevalent with 2187, the year your legacy began. Dondra, world of the Elders...a place of harmony and tranquility. The masses were content and at peace with each other. War was virtually nonexistent and the wisdom of the Elders had been undisputed for over 100 years.

Meanwhile, in another dimension... The universe is filled with pestilence, crime and disease. Colnar is the being who rules all evil, controlling everyone and everything. He is planning time travel to another state of being, a new universe which is prevalent with happiness, so that he may once again spread his evil ways.

Time passes.... 2199, Colnar begins the domination of his new universe. The Elders anticipate the need of foreign aid and form a pact with the Tellasien race of Halcar, a neighboring planet. "The Tellasien race must defend the Elders against any evil forces. If life is taken for naught... then they must avenge."

Colnar has reached Dondra and has initiated his devious plan to abolish this nucleus of organization. After taking over the minds and bodies of a neighboring town, Colnar's now evil warriors brutally attack and slay all of the Elders. The last remaining wiseman, using telepathy, summon their defenders just before being killed...

PLAYER INSTRUCTIONS

MULTIPLE COMMAND ENTRY

One of the special text handling capabilities is the multiple command entry.

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 373 of 1262

Apple // Version: 1287k Needed, Joytick (optional)

Put in the boot disk "Side 1" in drive one and turn on the computer.

BEGINNINGS (FIRST TIME PLAYER NOTES)

In your travels on Ardnod you will be generating experience based upon how you perform in this world. You will also gain items that can be used in future Questmaster modules. Therefore, when you boot this program for the first time you will be asked to supply a name to assign to your first character. Even though you may be terminated many times during the game play, you will always be re-incarnated after being brought back to the boot disk.

EXPERIENCE

You will be given experience during your travels based upon:

- Total Number of saves
- Number of times terminated
- Number of objects gained
- Elapsed time

These results will be used to calculate you total experience gained. To view your experience at any time during game play type: EXP or EXPERIENCE.

ADVANCED COMMAND ENTRY

In this program there are many different ways to enter commands. You may use the standard two word method, ie: GO NORTH [RETURN], or you may type CONTROL-N, or you may press the joystick forward and press button (0) to move, or you can simply press N [RETURN]. When entering a command you will usually need an ACTION word and an OBJECT word. Some standard commands might be: LOOK DOOR, READ SIGN, TAKE KEY, OPEN DOOR. To enter and execute your commands you will be using something called a "parser", ie: the link between your nimble fingers and the computer of your choice. When typing in a command the prompt or starting line will read: ENTRY>. After familiarizing yourself with the program for a while using some of the basic commands above, try some of the following methods of getting around in Ardnod.

MULTIPLE COMMAND ENTRY

If you enjoy being more verbose in your description of actions and objects this parser will accommodate you. For instance, the basic commands from the previous paragraph could have been entered: READ THE SIGN ON THE DOOR, TAKE THE KEY OFF OF THE FLOOR, OPEN THE DOOR, FACTUS ARE SNIVELS. You may also use multiple actions and multiple objects in the same sentence. If, for instance, you knew what you wanted to do in a particular room you could: GET THE KEY AND THE WRENCH THEN OPEN THE NORTH DOOR. This would immediately take the key and the wrench from the floor and open the north door in that order.

Your capabilities are not limited to what is on the screen at the present time. You may also move between screens, look at objects, and do just about anything in that same sentence, ie: OPEN THE DOOR THEN GO NORTH AND HAVE A LOOK AT THE OLD MURAL. When getting or dropping items you may also use commas: TAKE GEM, VIAL, SACK.
You may type in a lengthy number of commands one after the other with a period between each: TAKE THE GEM, VIAL, AND ROPE. GO NORTH. GO UP. GIVE THE GEM TO THE MAN. GO DOWN. GO SOUTH. GO WEST.

Each of the commands will be executed in the order received until they are completed. Remember, if something was entered incorrectly, then the chances are the commands that follow will not properly execute.

TRAVELLING ON ARDNOD

Remember that you are always looking out the eyes of Terna, the last of the Tellasien race. We have tried to make it as easy as possible to understand your position at each location, while trying to maintain a proper perception of your facing. When you move to a location the description shown will give you a good understanding of your surroundings. In many cases it is possible to look in more than one direction. To accomplish this you may: LOOK SOUTH.

In your travels of Ardnod you will encounter many strange beings which will in some way have to be dealt with. Sometimes you might have to give them something or perform some action, to make them more friendly. You will also find that there are many "timed" events which keep you on your toes and prevent stagnant game play.

Keyboard Movement:

Earlier we discussed basic and advanced commands which game you an understanding of the parser. We said that you can GO NORTH to move to the next location in a northerly direction. You may GO in any direction you can think of: NORTH, SOUTH, WEST, EAST, NORTHWEST, SOUTHWEST, UP, NORTHEAST, AND DOWN. You can even GO AROUND OR GO BEHIND many things (hint, hint). However, it is not necessary to type GO every time: N, S, W, E, NW, NW, SE, SW, U, and D [RETURN] will get you around very quickly. After you have mastered these movement commands, try the ones below.

CONTROL - Movement commands (See Help Screen)

You are slumped over that machine, it is time to pack in a heavy hacking section and you couldn't type another move... Don't fuckin' worry! Pick up the joystick which is hiding under all of the ECC releases and type CONTROL-J. This command will toggle your joystick on or off. When you press the joystick in any direction you will see the corresponding movement command at the ENTRY> prompt. When you press button (0) it will then move in that direction. When you want to go UP or DOWN you will need to hold down the button (i) and move the joystick forward and back to make your selection. When you want to type something into the computer, let the joystick self center (there is no need to disable the joystick to type in commands).

SPECIAL FUNCTIONS

HELP:

This screen may be accessed to help you remember some of the features in Questmaster

EXPERIENCE (EXP):

Displays your present Questmaster stats as well as the elapsed time.

TIME (CONTROL-T):

Will display your elapsed time since you started your quest. This time will be a factor in calculating your experience.

CONTROL-J:

Toggles joystick function on and off; it can be used at any time for immediate movement. (make sure that you have your joystick adjusted properly.)

You have your joystick adjusted properly.)

Did you decipher the code on the north door?

Yes -it dropped to the ground.
No -try taking it.

Did you take the key?

Yes -it is a sliding code, (ie: B=A C=B):
To get the key you must:

OPEN THE SOUTH DOOR
KICK THE KEY SOUTH (The key steams up the south room.)
GO SOUTH
TAKE THE KEY
GO NORTH

To open the north door:

After you insert the key into the keyhole the door will open.
GO NORTH
Skeletons will appear and scream "SPEAK MORTL". Simply try what has worked before:
SAY DEATH TO COLNAR

The skeletons give you items helpful in your quest on Ardnod.

To get past the skeletons in one set of instructions when starting from the first screen:

TAKE KEY. OPEN S DOOR. KICK KEY S. S. GET KEY. N. SAY DEATH TO COLNAR. INSERT KEY INTO KEYHOLE. N. SAY DEATH TO COLNAR. N.

end of file.
centering is on, the white light just below the Pitch readout will come on. This feature will automatically return your pitch to zero (level flight) when the joystick is released.

9) Hover
('O', 'L', '.' keys)
These keys control the anti-gravity hover system. Push the Hover down key ('.') to make your ship descend. Push the Hover up key ('O') to make it ascend. The longer you hold the key down, the faster the ship will move. Press Hover Stop key ('O') or the Emergency Stop key (Space Bar) to stop ascending or descending.

10) Tracking
('O' key)
Push this key to toggle the RPV tracking system on or off. When your RPV is deployed, it will try to follow your ship at all times if tracking is enabled. The tracking indicator will turn blue when tracking is ON.

11) Emergency Stop
(Space Bar)
This key will zero all ship velocities.

12) Deploy RPV
('9' key)
Press this key to deploy your RPV. The droid is used only for exploration and reconnaissance as it has no weapons. You can activate its camera and sensors by selecting RPV View ('6' key).

13) Control
('C' key)
This key toggles between C-104 and RPV control.

14) Teleporter
(Left Arrow Key)
Pressing this key will engage the Object Teleportation System. Several conditions must be met before an object can be beamed aboard. All engines including hover must be stopped. Altitude must be at 50 meters or below and down view must be selected. In addition, there must be an object (flashing hour glass visible on the main screen. The teleporter is also used to retrieve the RPV.

15) Grid
('-' key)
This key is used to select full, partial, or no surface grid.

16) Data Link
(Right Arrow key)
Pressing this key will link your on board computer to the main computers at Echelon Headquarters. Once the data link is established you can select numerous playing options.

17) Weapons
('B', 'N', 'M', 'I' keys)
These four keys are used to arm and disarm the weapon systems aboard the C-104 spacecraft. Select 'B' to arm the Lasers, 'N' to arm the Photon Cannons, and 'M' to arm the missiles. Select 'I' to disarm all weapons.

18) Auto Bank Center
('/' key)
This key toggles Auto Bank centering on or off. When stick is released, the bank or tilt of the wings will automatically return to zero.

19) Full forward thrust
('I' key)
Pressing the 'I' key engages full forward thrusters.

20) Full reverse thrust
('K' key)
Pressing 'K' engages full reverse thrusters.

21) Sound
('R' key)
Toggles sound on or off.

Keyboard Controls
W - Pitch Down
Z - Pitch Up
A - Bank left
S - Bank Right
E - Forward Thrust
X - Reverse Thrust
D - Thrust Stop
F - Fire weapons

Activate Joystick by using the Data Link and selecting Controls from Game Options.

- END -
Operating Classifications:

There are three general classifications for operation of your spacecraft.

1. Scientific: Exploration and training without engaging enemy aircraft. To activate this level of play do the following:

   1 - Press the Data Link Key ( -> )
   2 - Press '2' (Game Options)
   3 - Press '1' (Combat)
   4 - Press '1' (No Enemies)
   6 - Press 'X' (Terminate)

2. Patrol: Encounter mild resistance from enemy spacecraft while exploring the unknown. This is the normal playing level.

   1 - Press the Data Link Key ( -> )
   2 - Press '2' (Game Options)
   3 - Press '1' (Combat)
   4 - Press '1' (No Enemies)
   5 - Press 'X' (Terminate)

3. Military: For non-stop enemy attacks follow the steps outlined above patrol except in step (5) choose:

   '4' Medium or '5' Heavy or '6' Very Heavy

   You may change classifications at any time, simply by re-entering the Data Link.

To return to Patrol Class, follow the same steps for the Scientific Class except in step '5' select '3' (very light enemies).

Your Patrol Zone:

The ZONE is a partially explored region of the planet ISIS that is 840 kilometers square. Within the ZONE are 36 smaller regions called AREAS (6 rows x 6 columns).

Each AREA is 140 kilometers square and is also sub-divided into smaller regions (14 rows x 14 columns). They are called Sectors and each is 10,000 meters square. There are 196 sectors in each area.

Your Base Station:

Your base of operations is a fully equipped orbiting base station. The Station is located in area B3, Sector G7 at altitude 10,000 meters. The orbit is geosynchronous so that the base will always remain in a fixed location. You must return here to Dock your spacecraft and receive more munitions or fuel or to repair any damage.

Your C-104 Spacecraft:

This ship is state of the art technology in the space exploration and combat vehicle. Your craft is equipped with twin laser fusion drive engines and three 100 ton magnetic flux generators. Two of these generators power the anti-gravity hover system while the third unit powers the shield defense envelope. The fusion drive engines use deuterium pellets for fuel and are capable of delivering 2 million pounds each of forward and reverse thrust.

Viewing Screens:

This vessel is completely computer monitored and controlled. Information from the infrared and microwave scanners are fed to the computer for interpretation.

The computer then displays this information on two viewing screens. The main screen shows point of view images of buildings, vehicles, terrain, etc. This screen will also display a blue grid which indicates the planet's surface. You can selectively shut off all or part of the surface grid. This is normally done to increase the rate at which the display is updated.

The smaller screen is the top view or overhead view. This is the computer's interpretation of an outside view looking down on your spacecraft.

Your ship is represented in outline form as 7 flashing dots. The dot in the center locates the center of your spacecraft. The green vertical and horizontal lines represent sector boundaries, the TOP VIEW can be turned on or off as needed by press 'T'.

Note: When the RPV view is selected, both screens will display images from the RPV's point of view.

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1 & 2) RPV View Indicators (Turn white when RPV View is selected)
3) Forward Ship Velocity
4) Ascending Vertical Speed Indicator
5) Reverse Ship Velocity
6) Descending Vertical Speed Indicator
7) Control Mode (C-104 or RPV)
8) Pitch Indicator
9) Current AREA
10) Bank indicator
11) Current Sector
12) X-coordinate
13) Z-coordinate
14) Heading indicator
15) Altitude
16) Shield Level
17) Center of Ship
18) Fuel
19) Pitch Readout
20) Pitch Auto-Center (On=White)
21) Bank Readout
22) Bank Auto-Center (On=White)
23) Heading Readout
24) Hover
25) Grid Display (Full = Blue, Partial = White, Off = Black)
26) RPV Indicator (Deployed = Blue, On Board = Black, Destroyed = White)
27) Tracking (On = White, Off = Black)
The Planet is broken down into a number of Patrol Zones. Since there is only one sector, and then coordinates and altitude within the sector. Since each sector is 10,000 meters across, coordinates are given as follows:

\[
\begin{array}{c|c|c|c|c}
\text{X Coordinate} & 0 & 10,000 & (west to east) \\
\text{Y Coordinate} & 0 & 10,000 & (south to north) \\
\end{array}
\]

Z = 10,000

Z = 5,000-

Z = 0

X Coordinate = 0 thru 10,000 (west to east)

Y Coordinate = 0 thru 10,000 (south to north)

North

West

East

South

Your altitude will range from 0 at the planet’s surface to a max of 13,500 meters. Your ship’s computer will not allow you to leave the zone or to fly above 13,500 meters without special authorization.

Velocity Indicators:

There are two sets of velocity indicators on your instrument panel. The display on the left indicates forward or reverse velocity.

The display on the right is the vertical speed indicator and shows the rate of climb or descent. Rate of climb or descent while hovering is also shown.

Zoom Indicator:

Both the MAIN and TOP VIEW screens have zoom capabilities. When one of the Zoom in or out keys are pressed, these indicators will show the amount of magnification being used. Main screen zoom has a range of 1X normal to 16X max. Top view has range of 1X normal to 22X max.

RPV View indicators:

If these console lights are white, they indicate that the main screen is now displaying the view from the RPV camera. If lights are black, the main screen is displaying the view from the C-104.

Scoring Indicators:

There are two separate scoring displays. The left display is the ‘B’ or Exploration score. Points are awarded here based on credits received through artifact and clue retrieval. The right display is the ‘C’ or combat score. Points are awarded here based on enemy ships destroyed. You are also awarded combat points for target practice and combat simulation. Virtually any structure or terrain on the planet can be a target. However, the ship’s computer will not allow you to destroy structures that are not hostile. If you fire at a hostile target, the computer will simulate the sequence on the screen. If the target was hit the image will be removed from the screen and points will be awarded.

Weapons:

Laser: These anti-matter packets are suspended in a magnetic field until fired. Once released, the disintegrate rapidly but are very effective at short range (up to 4000 meters).

Photon Cannon: This unit is basically a very high intensity pulse laser. The pulse power is supplied by rapidly discharging a P.C. power cell and the cell casing is ejected after each round is fired. The cannons are good at short to medium range (up to 4600 meters).

Missiles: These are medium to long range, solid fuel rockets with micro-nuclear detonators. (Acronym: LRN). They have no external guidance system which virtually neutralizes and electronic counter measure techniques (effective range 6300 meters).

Teleporter:

One of the most important functions of your spacecraft is teleporting objects aboard. There are hundreds of objects in the Patrol Zone that contain information needed to solve the maps and locate the Pirate Base. The RPV is also retrieved by the teleporter. To teleport objects, use the following procedure.

1. Locate an Object -

Objects that are teleportable are shown as flashing hourglasses on the viewing screen. From a distance the object appears as a small flashing dot.

Note: (to follow this procedure while attempting to teleport an actual object, fly to area B-2, sector J-7)

2. Approach -

When an object appears on screen, it may be in the adjacent sector. Fly towards the object and adjust your controls so that the object remains in the center of the screen. When your spacecraft gets close, the object will begin moving more rapidly. Lower your speed and altitude and continue your approach. If the spacecraft continues forward when you are very near the object it may disappear from the front view as the spacecraft begins to pass over it.

3. Activate ‘Down’ Screen -

To teleport an object, your spacecraft must be directly over it. Press the down view key (‘5’) to activate the down screen. The down screen shows the object directly below your spacecraft. There is a blind spot between front and down view screens and when the object passes out of view from the front screen, it is not immediately seen in the down screen.

4. Maneuver Your Spacecraft Over The Object -

If the object is in front of your craft, begin moving slowly forward so that the spacecraft passes over the object. The object should now be visible on the down screen. If the object passes outside the down view area, use the other views to locate it again. Use the down view teleport sight (small cross hairs) to line up the object. Maneuver the spacecraft so that the object is still partially visible when you are at or below 50 meters.

Note: Objects cannot be teleported unless your altitude is 50 meters or below.

5. Begin Teleportation Sequence -

Once the object is within teleport range (inside the screen are with the spacecraft below 50 meters), press the Teleport Key (‘<=’). This will activate the teleport sequence and bring the object on board. If the object is not properly lined up, the message "No object within range" will appear. This means either your craft is too high (over alt. 50) or not enough of the object is inside the screen area.

Combat:

If you wish to battle enemy spacecraft, enter the Data Link Combat Section and set enemy strength to a value other than 1.

The Planet is broken down into a number of Patrol Zones. Since there is only one C-104 per zone, it’s up to you to defend it. When your ship comes under attack, a small audio signal will sound. Enemy spacecraft should be visible on the top
view screen. They will be identified as small dots moving toward your spacecraft. Activate one of your weapons by pressing 'B', 'N' or 'M' and get ready for combat.

The only direction your weapons fire is directly ahead. Look at the top view screen and identify which of the enemy aircraft is the closest and position your spacecraft to view the approach from the front screen. When you are hit by an enemy weapon, the screen will flash white and strength will be taken from your shields.

The RVF

The RVF is a remote piloted vehicle and is used for all types of exploration and observation work outside the spacecraft. The RVF has its own propulsion system and can fly in much the same manner as the C-104. It also has a camera that allows the pilot to monitor the RVF’s viewing area.

RVF Controls:

To deploy the RVF, the C-104 must be at alt. 00. Once on the ground, press the '9' key. A message and the small figure in the lower left corner of the panel will change color. The RVF will always be deployed to the north of you.

The RVF is operated by using the same controls that are used with the C-104. To switch the controls from the C-104 to the RVF, press 'C'. The control indicator should read RVF. Press 'C' again will change control back to the C-104.

To switch to RVF view, press '6'. If you have not moved the RVF from where it was deployed, you will see the outside view of your spacecraft. To switch the view back to the C-104, press one of the Ship View keys.

You can use the RVF to explore buildings and structures or to fly around the sectors. The RVF responds to the controls in the same manner as the C-104. If the RVF collides with the C-104, the RVF will be destroyed.

To retrieve your RVF, press the teleport key ( < - ). The C-104 must be in control and you must be stopped.

Remote Control Flying

The tracking function allows you to fly the C-104 like a remote control aircraft. To try this, do the following:

1. Set your altitude at 00
2. Deploy RVF
3. Switch to RVF view (‘6’). You should see the C-104 in front of you.
4. Switch the controls to the C-104 (‘C’)
5. Press the Tracking Key (‘0’)

With the tracking on, the RVF will follow the C-104's flight pattern. If you get disoriented or lose track of your position, simply stop the C-104, switch to front view and press the teleport key. Your lost droid will be beamed aboard.

Training Courses

There are six different training courses designed to improve your skills in flying and operating the spacecraft.

1. Touch and Go: The object of the touch and go course is to set your spacecraft down on landing pads that are located in Area C-4, sectors H-6 through H-10. Start on the arrow ( --- > ) located in sector H-5 and at altitude 200. The landing pads are small yellow squares with a red X inside. They are located in the sectors directly east. Begin moving forward and try to set your spacecraft directly on top of the landing pad. This requires using the down screen view. Positioning your spacecraft over the landing pads is very similar to positioning your ship over teleportable objects. This course will improve your skills.
2. Floating Tunnel Obstacle Course: This course is also designed to improve maneuvering skills but you also need to watch your altitude and pitch carefully.

The course is in Area A-3 and starts in sector F-7 at X=369, Z=1029, alt=534. The course is a series of rectangles that you must fly through.
3. Aerial Target Range: The aerial target range is to increase your proficiency in the use of weapons. There is a target range located in Area A-2, Sectors H-4 through H-10. Start at Sector H-3 X=7884, Z=5281, alt=5175. The object is to fly through the range hitting as many targets as you can in the least amount of time. There are 14 triangle type figures staggered from Sectors H-4 to H-10.
4. Target Range: The target range located in area B-2 starts in sector J-10 and goes through several connected sectors. The object is to increase your weapon proficiency by flying through the sectors hitting as many targets as quickly as possible.

The Data Link

Press --> to request up-link to Echelon Headquarters. When the link comes on line you have 4 selections from the main menu.

1. Docking
2. Game Options
3. Pirate Maps
4. Terminate

1 - Docking

Docking Procedures:

This gives instructions on how to re-dock once leaving the base station. Any time during flight you can return to the base station to re-energize your shields, get more fuel, ammunition or droids. Any damage that your craft has sustained will be repaired.

2. Weapons and Fuel: This option allows you to select the amount of fuel and the amount of ammunition for each of your weapons. This can be done up to the maximum capacity (in weight) that can be held by the ship. To activate a category press the Space Bar. Use the (+) or (-) keys to add or subtract the amount of ammunition or fuel. To exit press '/'.

3. Default weapons/fuel: This option automatically selects the normal loading of ammunition and fuel. You may then make adjustments if you wish. Press '/ ' to exit.

2 - Game Options:

1. Combat: There are two choices you can make under this category.

   - Enemy strength - This allows you to vary the enemy strength between 6 different levels.

   - Structure Display - This allows you to either leave the structures or buildings on screen during combat or to not display them during combat. Having the structures not displayed speeds up game play.

2. Load/Save/Restart: This option allows you to SAVE a game in progress, LOAD a previously saved game and resume play, FORMAT a disk, or RESTART a game without re-booting. Please follow the instructions outlined on the screen carefully. You cannot save games onto the Echelon disk.

3. Controls: This option allows you to select between keyboard and joystick controls. The Default is keyboard. If you wish to use a joystick, you must use this option to select joystick mode.

4 - Pirate Maps

This allows you to view the pieces displayed on the pirate maps. The maps start with no information but gradually fill in each time objects are teleported. There are six different maps and each is used to help locate the Pirate Base.
Docking

1. The main base is located in area B-3, Sector G-7. Fly to this location at an altitude of 10,000 meters.
2. To get to the docking area, you must fly through one of the four entry bays.
3. Line your spacecraft up (at alt. 10,000 meters) directly in front of one of the bay entry doors and slowly begin to approach the opening.
4. As your spacecraft begins to enter the bay, your speed will automatically be reduced.
5. Keep your ship in the center of the entry bay. If you hit the sides of the bay, you’ll hear a thud. You cannot fly through the walls of the space station.
6. Keep an eye on your X and Z coordinates. When your coordinates are approximately X=5000, Z=5000 at altitude 10,000 meters you have reached the docking bay.
7. Rotate the spacecraft to a heading of 00 and the docking system will automatically be engaged.

ISIS - The 10th Planet

History of ISIS

Scientists had long suspected the existence of a 10th planet. In 1821, 40 years after the discovery of the seventh planet, Uranus, French Astronomer Alexis Bouvard noticed that Uranus' observed position did not agree with its calculated orbit. Uranus was being pulled slightly off course by the gravitational attraction of an outer planet. This led to the search and discovery of Neptune, the eighth planet. But the mass of Neptune did not account for the distortion in Uranus' orbit so a search began for the ninth planet. When Pluto was discovered in 1930, its mass was much too small to fully account for Uranus' wobble, so an earnest search for a tenth planet had been continuing at the U.S. Naval Observatory (USNO) since the early 1980's. In 1996 a research team from the USNO announced the discovery of Isis, the 10th Planet in our solar system. The Planet's mass, approximately five times that of earth, was so sufficient in size to effect the gravitational field of Uranus. Isis has a thin atmosphere made up of primarily Oxygen, Carbon Dioxide, Nitrogen and Argon. Its orbit is elliptical and it takes over 340 earth years to orbit the sun. The biggest surprise however, was yet to come. In 2011, the first unmanned landing probe reached Isis. The photographs and data sent back finally verified that Earth was not the only planet where life has existed. Signs of an ancient civilization were observed on the surface of the planet, but life was no longer present. Evidence indicated a great cataclysm had taken place and large areas of the planet showed incredible devastation. Upon analysis of the information, general consensus among scientists was that since conditions were too harsh and too cold for life to have evolved on the planet at its current position in our solar system, Isis must have been part of another star system in the Universe. The star exploded or died and the planets were released from the stars gravitational pull and wandered off to different parts of the Universe. Isis traveled through space until it was caught by the gravitational pull of our sun, thus becoming the tenth planet.

Statistics for Isis:

- Mean distance from Sun: 6.5 billion km
- Period of orbit: 341 earth years
- Period of rotation: 47 earth hours
- Diameter: 28,940 Km
- Mass relative to Earth: 5.3
- Surface gravity relative to earth: 1.25

Historical Time Line

1996 - Discovery of 10th planet.
2001 - First unmanned landing probe reaches Isis - Discovers ancient civilization once flourished on Isis when it was part of another Solar System.
2012 - United Nations organizes the International Space Federation (ISF).
2015 - First manned spacecraft sent to Isis.
2017 - Scientific team arrives on Planet. Discovery of Dylidium, a new element.
2020 to 2030 - Five more scientific expeditions are made to Isis.
2031 - Development of Laser Fusion Drive, cuts travel time to planet to 1.2 years.
2035 - First Martian Colonies developed and settled.
2037 - Miners arrive to collect Dylidium and other precious metals on Isis.
2041 - Alphan War Period begins when an ISF spacecraft accidentally destroyes and alien vessel. Skirmishes between Alphan spacecraft and ISF spacecraft continue.
2043 - Major battle of Alphan war takes place where new zone is established. Area A-A. Five ISF spacecraft destroyed; three Alphan spacecraft destroyed.
2045 - Contact finally made with Alphan officials and a non-aggresssion pact is reached. However, isolated random attacks still occur.
2054 - McAdams Penitentiary established on Isis. Prisoners of this facility are used to mind Dylidium.
2056 to 2081 - Exploration and mining continues - Many new colonies established between earth and Isis.
2082 - Prison riots occur at McAdams Penitentiary, 350 prisoners escape. Over 200 prisoners and guards are killed. ISF closes the Penitentiary.
2083 - Pirates begin raiding ISF facilities. Many pirates are believed to be escapees from the prison. Others are colonists who have grown disenchantened with ISF controls and regulations and want to set up their own systems of commerce.
2093 - Raid on Isis outposts continue. Pirates begin to control and dominate the area. Pirates have developed sophisticated disruption equipment which allows them to block communications between ISF spacecraft and their bases. In addition, Pirate space craft are equipped with stealth capabilities and are undetectable on long range scanners. The Pirates are not strong enough for a full attack on the ISF, but their guerrilla tactics have become increasingly more effective.
2094 - Establishment of ECHELON headquarters on Isis. Patrol Zones are set up to cover selected areas of the planet. Eight of the more strategic Patrol Zones have stationary orbit Base Stations for refueling, maintenance, supplies and sleeping quarters. These Base stations are fully automated and have a level 3 perimeter defense system. Only top military personnel are assigned to Echelon. Its presence on Isis will hopefully help the ISF regain control of this area of space from the Pirates. 2095 - Major Thomas Allen attempts to infiltrate the pirate organization. He is not heard from again. 2099 - The completion of a new combat and exploration vehicle, C-104 Tomahawk. The C-104 spacecraft has the latest in advanced weaponry and scientific equipment. A limited number of new spacecraft being delivered to Echelon will be flown by only the best ISF pilots.

Your Mission - Classified

Briefing: Space pirates have been a problem to the ISF since their appearance over a decade ago. Their past raids had mainly been restricted to isolated spacecraft and outposts. Then three years ago, major technological improvements in their equipment and weaponry occurred. Since then, their raids have become more daring. Equipped with electronic disruption equipment and stealth
The ISF established Echelon two years ago to regain firm control inside the area. Progress, however, has been marginal. Major Thomas Allen was given the task of infiltrating the pirate organization over 16 months ago, but his status at this point is unknown. Pirates continue to use the element of surprise and have enjoyed an increasing amount of success against ISF facilities throughout the area.

Objective: Your assignment is to locate the Space Pirates Main Base of operation. According to Intelligence reports, it is somewhere inside your Patrol Zone. Your investigation requires to retrieve artifacts and information throughout the zone to find the answer. Any pirate spacecraft spotted inside your assigned area should be neutralized. Good Luck, Commander!

The Six Steps

We also know that the Pirates have developed a secret code to encrypt all messages and transmissions. Your teleporter's material analyzer is programming to decipher as much of this code as possible. Many of the objects and artifacts that you teleport aboard will contain writings and inscriptions. Some of these are clues and many are written in Pirate Code. Breaking the code is essential to the solution of the game.

The Six Maps

Each of the six steps is represented by a map. The maps are in your Data Link System. The Maps have no information to begin with, but portions of a map will fill in each time an object is teleported aboard. Each map has a graphic and text section. Every time an object is teleported, a new piece of text and graphic will be revealed. (If you cash in the object for credit).

If any of the steps are executed out of order, one must start again.

To solve the mystery and complete your mission, do the following.

1. Fill in the maps by teleporting objects aboard your spacecraft.

2. Write down clues. Each map has its own important clues that pertain to that particular map. Most important clues will be encoded.

3. Break the Pirate code and interpret the instructions for each of the 6 steps. These clues are on teleported objects as well as written on walls or buildings. Each time you decipher a letter or number, write it down.

4. Determine the correct order of the steps. Once you finish all 6 maps and break the code, you will be able to read the instructions on how to complete each of the 6 steps. All steps involve flying to a specific point and performing specific maneuvers with your spacecraft. If you successfully follow the instruction for that step, a sign will be given. Thus you will receive 6 signs for successfully completing 6 steps. There is a problem, however. You must complete the 6 steps in a specific order to deactivate the cloaking system and win the game.

Hint: Look for clues of the form: "Something PRECEDES something" These are very important and should always be written down.

Hint: Each MAP graphic is important. It represents something within the zone and is related to a 'Precedes' clue.

5. Complete the 6 steps in their proper order. As each step is completed, the sign for that step will be given, but there will be no indication given as to whether or not you are still on the correct sequence. You will have to wait until all 6 steps are completed to find out. If you find the proper order, you'll know it. If not, try again. Use the PRECEDES clues. Without them, you may have a rough time. There are 720 different combinations.

- END -
Echelon - Patrol Zone Highlights

A-1: Ancient bridge spans a frozen river bed in Sector H-7. Elements of bridge date back 3,000 years.

A-2: Major battle of the Alphan War took place over this area. Several destroyed spacecraft of the Alphan and ISF configuration can still be found on the surface throughout the area. The Echelon target range is located in sectors H-4 thru H-10. Only ISF personnel with level 1 security clearance are authorized within these sectors.

A-3: The Echelon training simulator Floating Tunnel in Sectors F-7 through F-10. Only ISF personnel with Level 1 security are authorized within these sectors.

A-4: Remains of ancient Isis city can be found in Sector C-9.

A-5: The research station located in sector I-7 was set up by Dr. Adrian Van Kempe, his daughter Sonja, and his research assistance. Van Kempe was generally considered to be top of his field in the Science of Astro Physics. In April 2082 he sent a message to his old University informing them that his experiment with Lithicite crystal was a failure and that he was closing down his research facility to accept a position with a private corporation. Van Kempe, his daughter, and research assistance have not been heard from since. It is assumed their spacecraft was lost on its return back to Earth.

A-6: Mining and drilling operations were set up in Sectors D-10, E-11, and H-12 after rich deposits of dylidium were located in this area in 2082.

B-1: Probes sent to this area have been unable to verify a report that ancient civilization lies somewhere in this area. Ships on patrol are requested to report this find if any evidence is found.

B-2: Echelon Target Range located in Sectors F-8, G-8, H-8, I-10, and J-11. Only authorized ISF personnel with Level 1 security clearance are allowed within these sectors.

B-3: The Echelon Obstacle Course is located in B-12. Only ISF personnel with Level 1 clearance are authorized within this sector. A landing airstrip is in Sector J-10. Try your luck landing here.

B-4: The Echelon Ground Obstacle Course is located in Sectors F-4 through F-7. Only ISF personnel with Level 1 clearance are authorized within these sectors.

B-5: No information available. Area has several structures photographed by satellite, but large tracts of the area are unexplored.

B-6: Gigantic Rock Figures in Sector L-11 display detailed work of great craftsmanship. Many scientists have suggested that these figures had religious significance to the early inhabitants of the planet.

C-1: Large Ancient Dam is located on a frozen river bed in Sector F-10.

C-2: During an exploration of this area, an extraordinary and startling image was found. A huge star figure, covering an area of several sectors was discovered. A concentrated study has been made of this figure and comparisons have been made between the star figure and similar figures found on Earth in South America. So far, the purpose and origins or this star have not yet been established.

C-3: Ancient bridge spans a frozen river in Sector M-9.

C-4: In sector M-12 is an early refuel and supply area known as the Crossroads. The Crossroads was an early outpost used extensively in the early and mid 21st Century for scientific expeditions. More modern facilities at other sites were later constructed and the Crossroads was abandoned. The Echelon Training course (touch and go) is located in Sectors H-6 thru H-10. Only ISF personnel with Level 1 security clearance are authorized within these sectors.

C-5: One of the most severe blows to the ISF occurred in Sector C-5. After 16 months, a ship from Earth, Largo, the largest of the ISF superfreighters was nearing Echelon. The Pirate raids had been taking their toll on Echelon reserve supplies and many items aboard the Largo were in short supply at the base. The freighter was under military escort and last seen on December 11, 2082. The Alphans were watching the Largo on their monitor screen. Six LC-24s were scrambled to the last known heading. When they arrived, all that was found were the remains of several escort fighters but the freighter itself was gone. A thorough search was undertaken, but the huge freighter was never found. The loss of supplies nearly spelled disaster for the base. Supplies of food and medical equipment nearly ran out before an emergency shipment could be received from surrounding colonies. It is assumed that pirates attacked the Largo. By employing communication disruptors and stealth equipment, the distress message was blocked. The mystery of what happened to the freighter after the attack, however, remains to be solved.

C-6: Area C-6 was opened up in 2039 to independent mining operations. Isolated settlements can be found throughout the area. Most are abandoned now because of the Pirate attacks in the area.

D-1: Independent Mining Facilities are located throughout this area.

D-2: No information available. Area has several large structures photographed by satellite. Large tracts remain unexplored.

D-3: Remains of Ancient Isis City can be found in Sector H-3. City has several large buildings that are still intact.

D-4: No information available. Area has many large structures which have been photographed by satellite but large tracts remain unexplored.

D-5: The Refinery located in B-7 was built in 2042 to process Dylidium and Titanium into a high strength alloy. The facility was built to furnish replacement parts for spacecraft during the Alphan War.

D-6: The McAdams Penitentiary located in Sector I-10 was built in 2054 for prisoners who were considered too dangerous to be housed in other facilities. The inmates were required to work in the Dylidium mines. When Lithicite, a very unique crystal, was discovered at the mine, many prisoners were killed in a strange accident. Apparently the laser used to mine Dylidium can excite the crystal and under the right conditions cause an explosion. This led to riots in 2082 when 350 inmates escaped in a prison freighter. Most of the prison itself was destroyed in the revolt and the remaining inmates were transferred to other facilities. The prison was officially closed in March 2082.

E-1: The Abandoned Landing Strip in Sector C-7 was established in 2021 as the original ISF base of operations. The landing strip was attacked during the early phase of the Alphan War and personnel were evacuated to a more defensible position.

E-2: The Research Radio Telescope in Sector C-9 was built in 2037. Information and data at this site are analyzed by astronomers at Echelon.

E-5: No information available. Area has several large structures photographed by satellite but large tracts remain unexplored.

E-6: The Mining Facility located in Sectors C-7 was set up in 2039 when large deposits of the element Dylidium were discovered. Dylidium when combined with Titanium makes an extremely strong alloy and is used primarily in the construction of the outer hulls of spacecraft. The mining operations began using prisoners from the McAdams Penitentiary in 2054. In 2079, Lithicite crystal was removed and replaced with a material that was less likely to cause accidents. The facility was destroyed in 2082 during a prison revolt. Most of the inmates were killed in the explosion.
discovered at the site. This crystal is extremely dangerous and can explode if not handled correctly. Efforts to mine the Lithicite crystal were unsuccessful and over 30 prisoners were killed in mining accidents. The mine was shut down in 2083 when more plentiful Dylidium deposits were discovered at other locations. This location, though deserted is considered dangerous and only military and mining officials with Level 3 security clearance may visit the site.

F-1: Remains of an Ancient Isis city can be found in sector F-6.

F-2: Sector L-6 features a large object that has been nicknamed the Great Horn. The 'Horn' was constructed by some alien civilization over 20 million years ago. The material is metal that is not found anywhere in our solar system as far as we know. It is so hard that it is virtually indestructible.

F-3: The Space Platform in K-11 is owned by a private mining corporation. Remains of an ancient Isis town in Sector I-6 has been dated over 4000 years old.

F-4: No Information available. Area is unexplored.

F-5: Ancient remains of a small town located in Sector E-7.

F-6 No information available. Area is unexplored.

END
ECP-16 takes responsibility for launching your program and for passing the command line to the shell program (EXE file).

This latter feature is handy. As an example, I downloaded a public domain C source for a file squeezing program. I made no modifications to this file at all. I compiled the program using APW C (pre-release version) and I can now execute this program under ECP-16 the same way you would do so on UNIX, CP/M, or MS-DOS by just typing the name (pathname) of the program along with any arguments that might be required by the program. I'm including the object code to this program in the library with ECP-16 for you to play with. I'm sure you can see the potential for this. C sources from MS-DOS (and there are a lot of them and many in the public domain) are useless under the DeskTop and before now could only be executed from APW (a huge package that's ok as a development environment but who wants to wait for it to load when all you want to do is some quick file manipulation?).

Licensing:

Oh yes, ECP-16 will be licensable to developers who would like to include it with their ProDOS 16 applications and utilities that they sell. All I ask is that you pay me $60 per product per year and that you encourage your users to buy the full package (so they can get support and updates with the latest docs and all).

Feedback:

As with all of my programs I welcome suggestions and comments on my software and how it might be improved. If you want to wait until a more functional version of the software is ready before paying your shareware fee then that's fine. If you pay the fee right now you won't get any printed documentation for ECP-16 but you will get a bootable disk with ECP-16 and the full ECP-8 package (complete with docs). To a great extent the operation of ECP-16 will mirror ECP-16 when possible without sacrificing the nice features available under ProDOS 16.

You can launch the following types of files:

**S16** These are ProDOS 16 system programs. Right now ECP-16 stays resident.

**SYS** Note that calling a SYS program prevents you from automatically returning to ECP-16 but ECP-8 can relaunch ECP-16 if commanded to do so.

**BAS** You must have a copy of BASIC.SYSTEM in your CMDS subdirectory named as "BASIC" and you must have a copy of SYSTEM.LAUNCHER in your CMDS subdirectory.

**TXT** You can launch BASIC EXEC files by typing "BASIC FILENAME" where FILENAME is the name of the TXT EXEC file you wish to launch.

**BIN** The same rules that apply to BAS files apply here. BIN files are executed by BASIC.

**EXE** These are ProDOS 16 shell programs. Some will only run under APW but most will run under APW or ECP-16.

**BAT** These are ECP-16 Batch files. (Described below)

Filenames:

ECP-16 supports any valid ProDOS-16 file naming convention. The following are all valid pathnames for any command in ECP-16 that requires a filename as an argument:

- \.dl/subdir/file (uses device name in place of volume name)
- 1/subdir/file (uses a numbered prefix)
- /a/subdir/fi= (accept all file names that begin with "fi")
- /a/subdir/fi? (as above but prompt for matches)

Setting up your system disk:

ECP-16 can be set-up in a couple of different ways. One is to make the ECP-16 S16 file the START file program selector. To do this you just put ECP-16 in the SYSTEM subdirectory as shown below and name it as START.

The second method is to name the ECP-16 S16 file as ECP16.SYS16 and put it in the volume directory of your ProDOS 16 system disk and make sure it appears in the directory before any other S16 or SYS files.

```
/SYSTEM.DISK
PRODOS
ECP16.SYS16
CP.KEYS
CP.STARTUP
CMS/    
BASIC/   
SYSTEM.LAUNCHER
SYSTEM/  
P8
P16 
SYSTEM.SETUP/ 
TOOL.SETUP/ 
TOOLS/  
DESK.ACCS/ 
FONTST/ 
DRIVERS/   
START               
```

The CMDS subdirectory:

You may set PREFIX 6 to the directory you want ECP-16 to look to if it can't find a file (EXE or S16) in the current directory. The default value is a subdirectory named CMDS in the boot directory for ECP-16. You may set this anywhere you like.

The HISTORY buffer:

ECP-16 keeps a 'history' buffer to store your most recently entered commands. As a typing aid, you can scroll back and forth into this buffer and re-edit or re-enter previously entered commands with just a few keystrokes. To go back in the buffer, press the up arrow key. To go forward in the buffer just press the down arrow key. Try it... you'll figure it out.

Batch files:

Like ECP-8, ECP-16 supports powerful disk based Batch files. These files are standard ProDOS text files whose file type has been changed to BAT ($F5). These files can contain any valid ECP-16 command, either internal or external. When you enter a BAT file, the command line arguments for the BAT file are stored in the variables $1 - $9 with the argument count stored in $0. BAT file command lines are expanded into their full form prior to parsing and execution.

Example: The Move Bat file

```
if eq $0 "move" say "No arguments supplied" G"M"J;stop
copy $1 $2
delete $1
```
The above Bat file would be called from the command line as

`:move <source> <destination>`

When the Bat file is executed, the following statements are parsed:

`ifeq 2 0;say "No arguments supplied"^G^M^J;stop`

Copy <source> <destination>

delete <source>

Startup BAT files:

ECP-16 supports two types of auto-start BAT files. The first file searched for at boot time is CP.KEYS. This file should be kept in the same directory with the ECP16.SYS16 program file. It is typically used to define function keys but it can be used for any activity you'd like to take place when ECP-16 is initially loaded. Next, ECP-16 looks in the current PREFIX 0 directory for a file named CP.STARTUP. This file can also contain any command but you may have more than one CP.STARTUP file on your disk, perhaps one in the directory of each other program you frequently run from ECP-16. I.E. if you exit AppleWorks and AppleWorks is stored in /a/appleworks then you might want to put a CP.STARTUP file in /a/appleworks that would do any clean-up activities you'd like executed when you exit from AppleWorks. This could include backing up a ram disk or just setting the prefix back to your root directory.

I/O Redirection:

ECP-16 currently supports only Output redirection. You may direct output to the printer "*.PRINTER", to the null device (i.e. no where) "*.NULL", or to a named slot device "*.S1, *.S2, etc.", or to a file specified by the pathname. Output redirection currently routes only the STDOUT vectors. STDERR will be included in future versions. The following syntax is valid:

```
cat /vol >.printer               route to printer with init string sent

cat /vol/subdir >>spool.file      route to 'spool.file' but append to end

cat /vol/subdir >.s2             route to slot 2 pascal compatible device
```

Note that output redirection only lasts for the command that includes the "">" output specifier. You can output all command output to the printer by using the SET PRINTER ON command.

Commands Documentation:

Below are descriptions of the command that have been implemented in ECP-16 as of this version of the software.

! Anything

| Batch: Yes | Keyboard: Yes (though not useful) | Wildcards: No |

This is a comment command. The remainder of the current line is ignored by the command processor.

# Anything

| Batch: Yes | Keyboard: Yes (though not useful) | Wildcards: No |

This is a comment command. The remainder of the current line is ignored by the command processor.

This is a comment command. The remainder of the current line is ignored by the command processor.

Use this command to display a help file in the HELP subdirectory (designated by Prefix 5). Pressing any key will pause the display. Use ESC to abort this command. If no argument is supplied then the file "/5/CMDLIST" will be displayed.

```
BOOT <No Argument> ! <1-7>                                 Type: Internal
```

This command will boot the disk device in the slot (1-7) specified. If no slot is specified then the online devices will be searched in the default scanning order.

```
CAT <Directory names>                                     Type: Internal
```

The selected directories will be displayed. If no argument is supplied then the current prefix directory will be displayed.

```
CHTYPE <file> <typename>!<type in hex>                    Type: Internal
```

This command changes the ProDOS file type of <file> to the type specified. Types may be specified either by their 3 letter identifier or by their hexadecimal type number.

```
COPY <Src file> <Dest file>! <Src file>! <Dest Dir> Type: Internal
```

Copies the <Src file> to either the <Destination file> or the <Destination Directory> or to the Prefix directory if no destination is specified.

```
CREATE <directory names>                                Type: Internal
```

The specified subdirectories are created.

```
DELETE <pathname>                                      Type: Internal
```

The files specified by <pathname> are permanently deleted from the
Apple II Computer Info

DUMP <pathnames>  Type: Internal
Batch: Yes
Keyboard: Yes
Wildcards: No

The specified files are displayed to the screen as a hexadecimal dump with file offsets.

ECHO <No Argument>  Type: Internal
Batch: Yes
Keyboard: Yes
Wildcards: No

Batch file statements will be displayed to the screen as they execute after this command has been entered.

ERASE <device name> <volume name>  Type: Internal
Batch: Yes
Keyboard: Yes
Wildcards: No

Erases the volume directory of a previously formatted volume and rewrites a volume directory and boot blocks using <volume name> as the name of the new volume. Note that this command will essentially destroy all data on the target device. You should use the ONLINE command to see a listing of the contents of each device prior to using this command. You will be asked to confirm twice that you actually want to erase a volume.

Example:
Erase .d4 /new.volume
The above command would erase the volume in device .d4 and would create a new volume named "/new.volume".

FKEY <No Argument> ! <0-9!A-Z> ! <0-9!A-Z> <string>  Type: Internal
Batch: Yes
Keyboard: Yes
Wildcards: No

This command is used to display (with no arguments), cancel (with number or key argument only), or define user-defined function (macro) keys. Control characters are coded after the "^" character such that a carriage return is represented as "^M". Any character that may be typed into the line editor may be represented and multiple lines of input may be defined. Function key definitions are limited to 127 characters.

Example:
Fkey1 "^XCat^MOnLine^M"
The above definition assigns the indicated string to the Open Apple - 1 key combination. Pressing OA-1 will enter Cat, press return, enter Online and press return again.

FORMAT <device name> <volume name>  Type: Internal
Batch: Yes
Keyboard: Yes
Wildcards: No

Formats the media in <device name> and creates the ProDOS volume named <volume name>. A volume directory and boot blocks are also written to the new volume at <device name>. Note that this command will destroy all data on the target device. You should use the ONLINE command to see a listing of the contents of all online devices prior to using this command. You will be asked to confirm twice that you actually want to format a volume.

Example:
Format .d4 /new.volume
The above command would format the media in device .d4 and would create the new volume "/new.volume".

GOTO <label>  Type: Internal
Batch: Yes
Keyboard: No
Wildcards: No

Use this command to unconditionally branch within a BATCH program. A <label> is defined as the first word or quoted argument after a comment character in a Batch file. The following are legal labels:

Example:
GOTO ! <label>  ! "label"
HELP <No Argument> ! <Command name>  Type: Internal
Batch: Yes
Keyboard: Yes
Wildcards: No

Use this command to display a help file in the HELP subdirectory (designated by Prefix 5). Pressing any key will pause the display. Use ESC to abort this command. If no argument is supplied then the file "5/CMNDLIST" will be displayed.

Example:
HELP ! <Command name>  ! "Help"

IF <pathname>  Type: Internal
Batch: Yes
Keyboard: Yes (though not useful)
Wildcards: No

If the specified pathname exists on an online device then execution will continue with the statements that follow the IF command on the same line. If the file does not exist or if the name is improperly specified then execution will continue with the following line.

Example:
IF ! <pathname>

IFEQ <String 1> <String2>  Type: Internal
Batch: Yes
Keyboard: Yes (though not useful)
Wildcards: No

If the two arguments are equal (case ignored) then execution continues with the statements on the rest of the current line. If they are not equal then the rest of the line is skipped with execution continuing on the next line.

Example:
IFEQ ! String1 ! String2

IFNOT <pathnames>  Type: Internal
Batch: Yes
Keyboard: Yes (though not useful)
Wildcards: No

If the two arguments are unequal then execution continues with the statements on the rest of the current line. If they are not equal then the rest of the line is skipped with execution continuing on the next line.

Example:
IFNOT ! path1 ! path2
Apple II Computer Info

Batch: Yes
Keyboard: Yes (though not useful)
Wildcards: No

If the specified file does not exist on an online device then execution will continue on the same line. If the file does exist then execution will continue with the next line.

IFSHELL <ECP16> ! <ECP8> Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

This command, implemented in both ECP-8 and ECP-16 allows a running Batch program to determine which shell is executing it. This allows you to know which commands are available to you so you can have your BAT program branch to use appropriate syntax based on which shell is active. You can thus use the same BAT file under either ECP8 or ECP16.

IFYES <No Argument> Type: Internal

Batch: Yes
Keyboard: Yes (though not useful)
Wildcards: No

This command will display a cursor on the screen and wait for a Y or N keypress. If the user presses the "Y" key then execution continues with the statements that follow on the same line. If the user presses anything else then the remainder of the current line is ignored with execution continuing with the next line.

LOCK <pathnames> Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: Yes

The specified files are locked (made read only). The string "More..." is displayed to the screen and the command then waits for any keypress to continue.

MAKEB <vol name list> Type: External

PREFIX <No argument> ! <directory> ! <prefix number> <directory>

This command writes the boot block for the named volumes. This is typically used to allow you to boot from a ram disk without having to format the disk. You still need to have a copy of the operating system on the volume to make it capable of booting.

MEM <No Argument> Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

This command shows memory usage statistics.

MON <No Argument> ! <Monitor commands> Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

With <No Argument> this command will drop you into the system Monitor program. Press Control-Y <RETURN> to return to ECP-16. If you specify an argument, it will be passed to the system Monitor as a command with control staying in ECP-16.

NDA <No Argument> Type: External

Batch: Yes
Keyboard: Yes
Wildcards: No

This is an Apple IIgs Desktop program that merely sets up the desktop and allows you to execute NDA's or New Desk Accessories. The only other options are to display the copyright information and to quit back to ECP16. NDA's can only be launched from desktop programs which is why this external command is necessary.

NOECHO <No Argument> Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

Batch file statements will not be displayed to the screen after this command is entered. This is the default condition.

ONLINE <No Argument> Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

All OnLine disk devices will be displayed along with their device names, volume names, operating system type, and block usage statistics.

PAUSE <No Argument> Type: Internal

Batch: Yes
Keyboard: Yes (though not useful)
Wildcards: No

The string "More..." is displayed to the screen and the command then waits for any keypress to continue.

PREFIX <No argument> ! <directory> ! <prefix number> <directory>

This command either sets or displays system prefixes.

QUIT <No Argument> Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

Returns control to the program that started ECP-16.

RENAME <Original pathname> <New pathname> Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

Renames <Original pathname> to <New pathname>. On a future version of ProDOS 16 this command will actually move a file entry from one directory to another but under version 1.1 only a simple renaming operation is supported.
Apple II Computer Info

**SAY <string>**

Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

SAY, SET PINIT commands and others.

**SET PINIT <string>**

Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

This command allows you to specify the printer initialization string. The string may be enclosed in quotes and may include control characters by using the currently defined control token (default = ^). The default printer initialization string is "^I80N".

**SET PRINTER <ON ! OFF>**

Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

This command will cause all subsequent command output to be routed to the printer device attached to PSLOT (normally 1) or it will turn off such output previously enabled.

**SET PROMPT <prompt character>**

Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

This command allows you to set the prompt used when ECP gathers input from the keyboard. The default value is ":".

**SET PSLOT <0-7>**

Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

This command determines which slot your printer is attached to. The default value is 1. A slot setting of 0 designates that you do not have a printer.

**SET TOKEN <token character>**

Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

This command determines which character will be used as the control character token character. The default value is "^". Tokens are used by the FKEY,

**SET VERBOSE <ON ! OFF>**

Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

This command determines whether ECP will issue warnings before overwriting existing files when you tell ECP to do this via the COPY command. The default setting is "ON".

**SHELL <S16 Pathname>**

Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

This command will execute a ProDOS 16 SYSTEM (S16) program while keeping ECP-16 active and in memory. If you just enter the name of an S16 program then ECP-16 normally shuts itself down and remains dormant. With the SHELL command you can execute S16 programs from BAT files provided that the S16 program doesn’t close the BAT file being executed.

**SHIFT <No Argument>**

Type: Internal

Batch: Yes
Keyboard: No
Wildcards: No

Shifts the command line arguments down by one variable thus eating the next argument to be parsed.

**STOP <No Argument>**

Type: Internal

Batch: Yes
Keyboard: No
Wildcards: No

Terminates execution of the current BATch program.

**TEST Varies**

Type: Internal

Batch: Varies
Keyboard: Yes
Wildcards: Varies

This command shifts all command line arguments down one variable and decrements the argument counter.

**TIME <No Argument>**

Type: Internal

Batch: Yes
Keyboard: Yes
Wildcards: No

Displays the current date and time using the format specified in the Control panel.
What is an Essential Data Duplicator Program Information List?? This is a list of copy-protected programs which Edd has been known to copy. This list would contain the program name, the publishers name, and all known instruction for making back up copies. We compile this list from information gathered from EDD owners all around the world.

FINDING INSTRUCTIONS FOR COPING DISKS:
First of all ... note: if you are backing up Apple III software, remember to always use one of the synchronize track processing modes; mode#2, #5, #6. If you are using a IIe or IIc, the CAPS LOCK key must be in the DOWN position for EDD to run properly. This list is divided into two sections; Programs listed by name and Protection used by companies.

Since many software companies will use the same protection on all or most of their disks, if the name of the disk you are trying to copy is not located in the "Programs Listed By Name" section, try locating the company who publishes that disk in the "Protections Used By Company" section of the list. You have a very good chance that one of the instructions will work for that particular disk.

Here is an example for using this list to find the instructions for a disk. Suppose you want to make a back up copy of the disk named, "MICRO COURIER".

First, look up MICRO COURIER in the "Programs Listed By Name" section of the Information list. It says, "MICRO COURIER:MICA#a". This tell us that the protection used on this disk is "MICA"a. Now we look up "MICA" in the "Protections Used By Company" section of the list. This shows that we used the abbreviation "MICA" for the company "MICROCOM INC." (who is the publisher for this disk). Since we know that the protection used is protection "#a"; locate protection #a for this company. Here we find instructions for copying this disk:

Here is an example:  Let's say you want to copy a program with the instruction t22

To copy this disk you will need to copy the range of tracks from track "0" through track "23". So, when copying the disk, enter the value "0" when EDD asks you for the START TRACK (it's already preset to "0"), and enter the value "23" when EDD asks for the END TRACK. Since the instructions don't tell you to change anything else, don't. Simply just press Return for all prompts.

a. t22
t0-t23 parm 28=3

HOW TO USE THE INSTRUCTION FOUND IN THE LIST:
To make a back up copy of a program found in the list, you will need to know the coding used:
key:  t = TRACK START and/or END
      inc inc  = INCREMENT TRACK value
      parm mode# = PROCESS MODE#  
      normal = NORMAL; default values (push Return for all prompts)

Here is an example: Let's say you want to copy a program with the instruction t0-t23

To copy this disk you will need to copy the range of tracks from track "0" through track "23". So, when copying the disk, enter the value "0" when EDD asks you for the START TRACK (it's already preset to "0"), and enter the value "23" when EDD asks for the END TRACK. Since the instructions don't tell you to change anything else, don't. Simply just press Return for all prompts.
Here is an more involved instruction example:

```plaintext
mode#2 You will notice these instructions use three lines of information. Since there are three lines to this instruction and each line starts with a "t" (track) this means that there are three ranges of tracks to copy on this disk. The first range, "t0 parm 28=1" means that you will need to change the parameter "28" to the value of "1" (see OPTION 2). After the parameter is changed (any parameters that need to be changed for a range of tracks are always changed first), enter a "0" for the START TRACK. Since "t0" (track 0) is the only track specified, you will also need to enter it for the END TRACK. There is no additional information for this range, so, just press return for all other prompts. After EDD is done processing track "0", EDD will say "process done". At this point, one range of tracks has been copied. The second range of tracks says, "t1-t9 inc 4". Enter the value "1" for the START TRACK, and a "9" for the END TRACK. When EDD asks you for the INC TRACK value enter a "4". After you copy this second range of tracks, EDD will again say "process done". The third range of tracks, "tA-t22 mode#2" is the last range that needs to be copied. Enter an "A" when EDD asks for the START TRACK, and a "22" for the END TRACK. When EDD asks for the PROCESS MODE, enter a "2" (synchronize tracks mode).

NOTE: You MUST copy the ranges of tracks in the order they are listed. One reason for this is because any parameter that may have been changed for a previously copied range of tracks stays changed for the next range. If the list tells you to "write-protection before running", be sure you put a write-protect sticker on the duplicate disk covering the notch, BEFORE attempting booting that disk! A good rule of thumb is: If an original disk has a write-protect sticker on it, always put a sticker on the duplicate disk before running it. Disk drive speed can be very critical on some disks.

-END-
```
The control characters used for editing a line of BASIC code are:

control-A  Shift lock to allow lower case entry
control-B  Move cursor to beginning of line
control-C  Cancel editing of current line
control-D  Delete character under the cursor
control-F  Find next character typed and move cursor to it
control-G  Ring ProDOS bell (different than BEEP)
control-H  Left arrow or backspace function
control-I  Insert character(s) at the cursor
control-L  Change case of character under the cursor
control-M  Carriage return -- end of line edit
control-N  Move cursor to the end of the line being edited
control-O  Set insert mode to insert a special (control) character
control-P  Pack the line -- remove blanks
control-Q  Truncate the line being edited at the cursor, end edit
control-R  Restore line to former (pre-editing) state
control-T  Same as control-Q
control-U  Right arrow or forward space function
control-X  Cancel edit, edit range without changing current line
control-Z  Zap (delete) characters up to next character typed

ESCAPE  Same as control-A

A Few Last Words
===========================================

Once you use EDIT.Pro I think you'll find it becoming an indispensable part of your hackers toolkit. Everyone that we've sent a copy to has nothing but the highest of praise for the job Ken has done in compiling and creating the latest in "state-of-the-art" utilities for Apple programmers. Val Golding called EDIT.Pro "one of the best utilities I've ever seen for the Apple programmer" -- and we think you'll agree once you've had a chance to put it through its paces.

If you have any *brief* questions or comments about EDIT.Pro, leave E-mail for me [ 75746,2550 ] and I'll get back to you with an answer. If your question or comment requires some in-depth discussion, *do* *not* leave it as E-mail on this system!!!

Please direct any lengthy questions or comments (or just general BS!) to our bulletin board system in San Diego, Cal. The number is (619) 463-0176 and the password is 'guest'. The ProLine Message System operates 24 hours a day at 300/1200 baud -- except when Morgan or Joe are updating the software. If you would rather correspond in a different manner, please write to us at the address given at the beginning of this message or call us between 3 A.M. and 6 P.M. at (619) 222-6138. Remember we're on the West Coast, and make adjustments as necessary to your calling time...

Thanks for your interest -- hope to hear from you soon!

Jerry Hewett              Living Legends Software

Welcome to UPTIME's...

^: ELECTRONIC JUKEBOX :@

Every other month we will present you with three new songs that may be enjoyed on your Apple. Each song was transcribed to its electronic counterpart with the help of Electric Duet by Paul Lutus. If you have written any songs using this package send them to us. It may just put some extra money in your pocket!

^ Files Needed @

The following files are needed to run this program:

<table>
<thead>
<tr>
<th>File Name</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELECTRONIC JUKEBOX</td>
<td>-Program</td>
</tr>
<tr>
<td>PLAYER</td>
<td>-Machine Language Player</td>
</tr>
<tr>
<td>M.FUR ELISE</td>
<td>-Song File</td>
</tr>
<tr>
<td>M.MINUET</td>
<td>-Song File</td>
</tr>
<tr>
<td>M.HUNGARIAN DANCE NO.5</td>
<td>-Song File</td>
</tr>
</tbody>
</table>

---
ELIMINATOR SOFTDOCS
BY: DISK WIZARD

ELIMINATOR IS DESIGNED TO OPERATE WITH KEYBOARD, PADDLES, OR JOYSTICK. THE KEYBOARD IS ACTIVE REGARDLESS OF YOUR CHOICE. THIS ALLOWS YOU TO USE THE KEYBOARD WITH THE PADDLES.

KEYBOARD MODE
A - TOGGLES THRUST ON/OFF
S - TOGGLES DIRECTION OF SHIP
D - FIRES MISSLES
-> - MOVES SHIP UP
< - MOVES SHIP DOWN
SPACE - STOPS SHIP
ESC - PAUSES GAME

PADDLES MODE
PADDLE (0) - SET DIRECTION AND THRUST
BUTTON (0) - FIRE MISSLES
PADDLE (1) - MOVES SHIP UP OR DOWN
BUTTON (1) - OPERATES THRUST

WHEN USING PADDLES, SET PDL(0) TO CENTER AND USE PDL(1) FOR VERTICAL MOVEMENT WHILE USING THE KEYBOARD FOR MISSILES AND DIRECTION. THE ADDITION OF A JOYSTICK WILL PROVIDE FOR MAXIMUM ENJOYMENT AND EASE OF PLAY. YOUR SHIP CAN BE MOVED VERTICALLY, REVERSED HORIZONTALLY BACK AND FORTH, AND THRUSTED WITH MOVEMENT OF THE STICK, REQUIRING ONLY A FREE FINGER TO FIRE MISSILES.

ELIMINATOR HAS FIFTEEN LEVELS OF PLAY. THE SPACE BAR WILL INCREMENT THE STARTING LEVEL AND ANY OTHER KEY WILL START THE GAME. NOTICE THE BLINKING SCORE IN THE CORNER. THIS IS THE BONUS YOU GET FOR COMPLETING THE FIRST LEVEL. AS YOU COMPLETE HIGHER LEVELS YOU WILL BE ALLOWED TO START AT HIGHER LEVELS. HOWEVER, THE MAXIMUM STARTING LEVEL IS FOUR. BONUS SHIPS ARE AWARDED EACH LEVEL IF YOU ELIMINATE ENOUGH ALIENS.

SHIELD TEMPERATURE IS INDICATED BY THE GAUGE AT THE TOP OF THE SCREEN. YOU ARE ALLOWED 16 HITS OF THE SMALL BOMBS EMITTED BY THE ALIENS BEFORE YOUR SHIP IS DESTROYED.

THE BLUE BAR MOVING ACROSS THE TOP OF THE SCREEN INDICATES YOUR TIME IN THE PRESENT LEVEL. THE COMPUTER WILL STOP GENERATING ALIENS WHEN IT REACHES THE FAR RIGHT.
EMPIRE WORLD BUILDING COMMANDS

<table>
<thead>
<tr>
<th>Command</th>
<th>Order</th>
<th>Keystroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Land</td>
<td>Pieces</td>
<td>Ctrl T</td>
</tr>
<tr>
<td>All Seas</td>
<td>Pieces</td>
<td>Ctrl C</td>
</tr>
<tr>
<td>Blotch Land</td>
<td>Growth</td>
<td>B</td>
</tr>
<tr>
<td>Blotch Seas</td>
<td>Growth</td>
<td>Ctrl B</td>
</tr>
<tr>
<td>Build a World</td>
<td>Growth</td>
<td>W</td>
</tr>
<tr>
<td>Center Screen</td>
<td>Other</td>
<td>C</td>
</tr>
<tr>
<td>Delete</td>
<td>File</td>
<td>Ctrl D</td>
</tr>
<tr>
<td>Exit Editor</td>
<td>File</td>
<td>Ctrl E</td>
</tr>
<tr>
<td>Grow Land Mass</td>
<td>Growth</td>
<td>G</td>
</tr>
<tr>
<td>Grow Sea Mass</td>
<td>Growth</td>
<td>Ctrl G</td>
</tr>
<tr>
<td>Load Map</td>
<td>File</td>
<td>Ctrl L</td>
</tr>
<tr>
<td>Put City</td>
<td>Pieces</td>
<td>X</td>
</tr>
<tr>
<td>Put Land</td>
<td>Pieces</td>
<td>L</td>
</tr>
<tr>
<td>Put Sea</td>
<td>Pieces</td>
<td>S</td>
</tr>
<tr>
<td>Save Map</td>
<td>File</td>
<td>Ctrl S</td>
</tr>
<tr>
<td>Save Maps As</td>
<td>File</td>
<td>Ctrl A</td>
</tr>
<tr>
<td>Set City Info</td>
<td>Other</td>
<td>I</td>
</tr>
<tr>
<td>Sprinkle Cities</td>
<td>Growth</td>
<td>K</td>
</tr>
<tr>
<td>Validate Cities</td>
<td>Other</td>
<td>V</td>
</tr>
<tr>
<td>World View</td>
<td>Other</td>
<td>Ctrl W</td>
</tr>
</tbody>
</table>

COLORS USED IN EMPIRE

<table>
<thead>
<tr>
<th>Item</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>Green</td>
</tr>
<tr>
<td>Sea</td>
<td>Blue</td>
</tr>
<tr>
<td>Unexplore Areas</td>
<td>Black</td>
</tr>
<tr>
<td>Neutral Cities</td>
<td>Purple</td>
</tr>
<tr>
<td>Player One Units *</td>
<td>White</td>
</tr>
<tr>
<td>Player Two Units *</td>
<td>Yellow</td>
</tr>
</tbody>
</table>

* Player's Units include Conquered Cities, as well as, Armies, Fighters, Ships.

Call : The LookOut (403) 457 - 0114
"Where Quality Kracks Count!"

Illegal Access (804) 740 - 7660
Apple Tree MWII (816) 826 - 4158

Special Greetings To : The Freestyler and The F.U.C.K.

End of File.
Apple II Computer Info

DOCUMENT emu.d1500.ctrlc

[594x536]Apple II Computer Documentation Resources (a2_docs_documentation.msw)

DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 394 of 1262

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I.e. To get the cursor to point 'A' terminal should recieve: (Ctrl-^?.)
To get the cursor to point 'G' terminal should recieve: (Ctrl-^F.)
To get the cursor to point 'Q' terminal should recieve: (Ctrl-^?0)
To get the cursor to point 'B' terminal should recieve: (Ctrl-^-")

Capitals and other forms of letters are VERY IMPORTANT.

Text Management:

For Inverse text: Ctrl-O
For Normal text : Ctrl-N
Flashing: Non existant

To Clear Screen: Ctrl-L
To Clear screen BELOW cursor: Ctrl-K
Send cursor to top of screen: Ctrl-Y
Clear line that cursor is on: Ctrl-Z

Call: The Fourth Dimension [305] /792/\2024\)
FlashBack WhiPLaSh
[By [T]he [W]ay: [BTW]:
Ascii Express/Datamedia 1500 screen control

About the boards listed at the top...

[The Fourth Dimension /] is going 60 megs, and 9600/17.4k baud. Now supporting IIgs/Ile warez.
[The Hotel /] will hopefully be going to a transfer system and is going 20 or 30 megs.

Just A little Note From:

- The TraxSter -

See ya later...

JAMMIN'
Encrypt/Decrypt is an application which allows you to gain fairly good security. It needs to find the run-time file(s). You can control the EOS menus with a joystick, or from the keyboard. Both options are available at all times during the game. you may move the cursor to any part of the screen at any time during the game.

JOYSTICK CONTROL - Use the joystick to move the cursor right, left, up or down. Menu items are highlighted as you move over them. Press either the joystick button to select a highlighted command or module.

KEYBOARD CONTROL - Use the cursor arrows to move up or down through the menus. Press the Space Bar to move between the Tools, Goodies, and View menus, the Station Window, and the Command Window.

Highlight Up or Down on the menu to raise or lower the amounts of prices, payments, or other monetary figures. To change these values slowly, hold down Return or the first joystick button to select New Game. At the prompt, insert the Archive Disk, then press Return. The Archive disk contains program information for starting a new game.

LOADING AN EXISTING GAME - Follow the Loading EOS instructions above, but select OLD GAME. At the prompt, insert the Mission Disk for the game you want to play, and press Return. The game loads automatically.

Note: EOS WILL NOT RUN ON THE APPLE IIGS.

Moving Around

You can control the EOS menus with a joystick, or from the keyboard. Both options are available at all times during the game. you may move the cursor to any part of the screen at any time during the game.
stations on the bottom row of the screen. Use the right and left cursor arrow keys to select the station you want to work with.

Leaving Eos

If you'd like to continue with the current game at a later time, select SAVE from the Goodies menu, and follow the prompts. (You can only save one game on each Mission Disk.) To leave the program, simply turn off your computer.

-END-

OBJECTIVE: THERE ARE TWO GAMES ON THE ESC DISK. (SPACE FORTRESS & ESC). IN SPACE FORTRESS THE OBJ. IS TO DESTROY THE ATTACKING SHIPS AND ESC TO THE NEXT GAME.

SPACE FORTRESS: (Y) - UP
(G) - LEFT
(J) - RIGHT
(SPACE) - DOWN

THE ABOVE IS FOR KEYBOARD CONTROL.

IF YOU ESCAPE THE SPACE FORTRESS ATTACKS YOUR MISSION IS TO PROTECT THE PLANET (ESCAPE GAME)

PADDLE 0 STEERS SHIP UP AND DOWN. BUTTON 0 FIRES LASER. IF 4 SHIPS PASS YOU AND BOMB THE PLANET, IT WILL EXPLODE AND GAME ENDS.
+++ EYE

EVIL EYE
By: John Romero

In this fast-paced shoot-em-up, you are an eyeball moving around shooting different
enemy objects.

You can play using the keyboard or the joystick. The keyboard controls are A,Z,<-,->.
To switch between keyboard and joystick, use CTRL-J (activate joystick) and CTRL-
K (activate keyboard) commands. At the game demo, pressing a key will put you in
keyboard mode, while pressing a joystick button will put you in joystick mode.

Pressing [ESC] will freeze the game and give you the opportunity to return to the
UpTime desktop.

Files needed:

EVIL EYE
EVIL.OBJ

---commands. At the game demo, pressing a key will put you in keyboard mode, while
pressing a joystick button will put you in joystick mode. Pressing ESC will freeze
the game.

To get back to the UpTime main menu, answer Y to the question "Do you really want to
quit? (Y/N):" in the ESC mode. Enjoy!

John Romero, author of EVIL EYE

NEEDED FILES:

EVIL EYE -fast loader
EVIL.OBJ -actual game

---

Fatcat is a disk directory manager from Beagle Brothers. It will make a
text file containing all of your floppy's catalogs. It will work with
both DOS 3.3 and Prodos automatically. The commands for this program
are as follows:

<table>
<thead>
<tr>
<th>Key</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Catalog of disk in drive 1</td>
</tr>
<tr>
<td>1</td>
<td>Catalog of disk in drive 2</td>
</tr>
<tr>
<td>2</td>
<td>Disk name command: 1=Display disk names in memory</td>
</tr>
<tr>
<td>2</td>
<td>2=Display name of disk in D2</td>
</tr>
<tr>
<td>2</td>
<td>3=Change name of disk in D2</td>
</tr>
<tr>
<td>3</td>
<td>Add disk in D2 to file in memory</td>
</tr>
<tr>
<td>4</td>
<td>Clear memory [asks if sure first]</td>
</tr>
<tr>
<td>5</td>
<td>Load file from disk to memory</td>
</tr>
<tr>
<td>6</td>
<td>Save memory to disk</td>
</tr>
<tr>
<td>7</td>
<td>Turn printer on</td>
</tr>
<tr>
<td>8</td>
<td>Print file in memory</td>
</tr>
<tr>
<td>9</td>
<td>Add descriptions to files in memory</td>
</tr>
<tr>
<td>0</td>
<td>Delete an entry in memory</td>
</tr>
<tr>
<td>0</td>
<td>Search for specific file, etc.</td>
</tr>
<tr>
<td>esc</td>
<td>Quit or abort</td>
</tr>
</tbody>
</table>

These commands assume that you have configured Fatcat to read from drive
two, if you have not, the commands above will always access drive 1. To
change the parameters (drives, 40/80 columns, etc.) just run the program
and when it asks if the current parameters are OK, respond with No and
change the parameters you wish to change. Fatcat will remember the
parameters you used last time so that you will not have to modify them
every time you run Fatcat. The rest of the questions asked by Fatcat
are self explanatory.

NOTE: Do not write protect your Fatcat disk, because Fatcat sometimes
writes to the disk (when running Fatcat at first, when changing
parameters, etc.)
Creatures of Western Middle-earth

Typed: Otay and Beowulf

AN OBSERVER'S GUIDE

DWARVES: A long-lived race of valiant warrior/craftsmen. Dwarves and elves harbor a deep and abiding dislike of one another, due to an unfortunate history of mutual competition and mistrust.

ELVES: An ancient noble race if immortal folk. Elves are fair to the eye, and wise beyond human understanding.

HOBITS: A race of cheerful, strong-willed folk who chiefly inhabit the Shire. Shorter than dwarves, and lacking the latter's over-developed musculature, hobbits are quite nimble and dexterous. Most hobbits cannot swim (Merry is an exception). Of all the party, Pippin is the most agile, Sam the most sturdy, and Frodo the smartest. Sam, being Frodo's devoted friend and retainer, will always attempt to stay by his side.

MEN: Many different nations of men inhabit Middle-earth. The inhabitants of some, such as Rohan and Gondor, are implacable foes of the Dark Lord. Others, such as Umbar and Harad, aid Sauron with troops, war elephants, and gold.

ORCS: Orcs (or goblins, as hobbits call them) are the soldiers of the Dark Lord. They are powerful, stooped and twisted creatures, with long arms, hairy knuckles, and muzzles crammed with far too many teeth. Orcs hate sunlight, except for Uruk-hai, a new, more powerful breed recently spawned in the pits of Mordor.

TROLLS: Trolls are huge, flinty creatures; they have lumpen minds and brutal instincts and serve the cause of evil. They turn to stone when struck by daylight. In recent years, the Olog-hai - a wittier, more agile version of the troll that can withstand sunlight - have appeared on the scene. Observers report that they are similar in appearance to enormous, black Orcs of unusual ugliness.

WARGS and WOLVES: The wolves of the wildlands are particularly large and ferocious, and are frequently misnamed "Wargs." Wargs proper are werewolf-phantasms which only assume their real (and deadly) shapes after darkness has fallen. Sunlight nullifies their power.

WIZARDS: A mysterious race of magicians who first appeared in Middle-earth several millenia ago.

-End-
SARUMAN: Saruman the White is the chief of the Order of Wizards, and the most accomplished of the Middle-earth's wizards. He presides over the White Council, the defense committee of the forces of good.

SAURON: The Dark Lord, Sauron is the embodiment of evil in Middle-earth. Once thought to have been destroyed during the wars against him in the Second Age, Sauron has risen again and seeks to recover his Ring of Power, which will give him the ability to vanquish the weakened forces of good and enslave right thinking people everywhere.

SHIRE: The Shire is the area between the Brandywine River and the Tower Hills which the hobbits have made their own. It is a peaceful land of small rivers, gentle woodlands, and well-tended fields.

---END---
In the middle years of the Second Age of Middle-earth, Sauron the Great, master of the evil realm of Mordor, beguiled the great Elvin smith Celebrimor of Eregion to teach him the craft of making Rings of Power. Three rings were made to grant the Elf lords their powers of wisdom and magic, the Evenstar, and Celebrimor labored together to create the Seven and the Nine, which were given to the great lords of Middle-earth.

Unknown to Celebrimor, Sauron had betrayed him. Deep within the bowels of Mount Doom, Sauron constructed the Ruling Ring, a ring that could enslave the wearers of other rings to him forever. So powerful was the spell that Sauron bound much of his power into it, forever linking his fate with that of the ring. When Celebrimor realized that Sauron had betrayed him, he hid the Three Elvin-rings from him. Over the ages, the Dwarf kings eventually destroyed the Seven by their own volition, but their wearers were even so brought into an all-consuming greed and folly before they fell. The Nine-Mortal Lords “faded” from use of the rings and became the Nine Ringwraiths, forever enslaved in Sauron’s will. A bitter war took place, with the prize being the fate of Middle-earth. At last Sauron was overthrown, and the ring was cut from his finger by the human King Isildur.

Isildur was in turn slain by orcs in an ambush many years later, the ring slipping from his finger as he tried to swim across a river to safety.

Several millennia later, the ring was plucked from the river by a hobbitlike creature named Deagol. Deagol was tricked into giving up the ring by Smeagol, a skulking character, who saw the ring and coveted it. Smeagol was soon corrupted by the ring and eventually fled with his prize to the heart of Misty Mountains. There he hid himself in the darkness, and became to be known as Gollum. The ring sustained his life force for many dark centuries before it sensed its master stirring once again.

Many years ago, Bilbo Baggins found the ring in a goblin’s den, where it lay, hiding Gollum’s finger. After Bilbo returned home, he hid the ring at last to his home in the Shire. (much of this background material is covered in the book The Hobbit.)

The ring has now passed onto Frodo Baggins, Bilbo Baggins’ heir, Bilbo having long since retired and moved to Rivendell. In recent times, Gandalf the Wizard (an old and trusted friend) has told you of the ring’s dark history. The servants of the enemy even now are seeking the One Ring, and the hobbit Baggins who possesses it.

Gandalf tells you to take the ring to Rivendell, far to the east, and there set it in the hands of Elrond, who will advise you how to use it. The ring is dangerous treasure. As the Enemy is watching the roads he advises you to travel by circuitous routes, and to adopt a pseudonym for the time being.

To aid you in your quest are your three hobbit companions: Merry, Sam, and Pippin joining you at the Bag End, your comfortable home in Hobbiton-on-the-Hill. Merry awaits the group at the house in Crickhollow to the east of Hobbiton, by the western bank of the Brandywine river.

A quality inherent in the ring is that it makes the wearer invisible to all but the most powerful creatures. Gandalf has warned you not to make use of the ring yourself, lest you also “fade” and become a Ringwraith. Gaining power will aid you as much as he can, but he has many obligations to perform, and only the Ringwraiths can actually make to the passage to Rivendell as safe as possible for you. For all intents and purposes you are on your own.

COMMUNICATING WITH THE PROGRAM

The Fellowship of the Ring includes a very sophisticated communications program called Inglish. Inglish will allow you to enter commands and converse with other characters in familiar sentences. Those of you who have played the Hobbit Adventure will find that the Inglish language has been expanded in this program.

More details are given later about the power of Inglish, but the important thing is that you can enter your commands in simple, everyday language, instead of computer terminology.

The Fellowship of the Ring has a very large vocabulary, so you should have little difficulty expressing your ideas and commands. Commands will usually take the form of actions, and this guide contains an abbreviated list of some of the actions you can use. The list, however, includes only some of the most common commands and words; the program actually knows over eight hundred words, and hundreds of these are available to you in playing the game. The best thing to do is to try a word. The computer will tell you if it does not know it. In some cases, if the computer does not understand your command, it will ask for a clarification.

THE SCREEN DISPLAY

The Fellowship Adventure screen is divided into two windows; the description window and the communications window. The adventure descriptions—the text that describes your surroundings and the activities around you—appear in the description window at the top of the screen. Whenever you enter a new location, the computer will give you a full description of the area, the objects that are in plain sight, and a list of exits that are visible.

The second time you enter a location, the computer will give you only a brief description of the location. If you wish to obtain a more complete description, simply enter the command, LOOK, and the computer will reply with the lengthy text.

The description window is also the area where the location graphics appear. The picture will appear many adventures after the first time you enter a location, each time you use the LOOK command. The graphics provide you with pictures of the immediate location, though no characters will be pictured. These are left to your imagination.

Below the adventure script, and arrow indicates the communications window, or the space in which you type in the actions you wish to perform. These action commands will appear on the screen in capital letters.

Once you have typed in and entered your commands, the computer will perform and otherwise acknowledge your action, or inform you that it does not understand the command. Once the computer has acknowledged an entry, it will print any new text that results from your actions, and then indicate that it is ready to receive a new command.

ROLES YOU CAN PLAY

One of the most fascinating features of the Fellowship of the Ring is that it offers you the opportunity to play any one of seven roles within the game, and even switch roles while playing. This not only allows you to “be” hobbit characters throughout the game, but it also allows up to four people to play the game simultaneously.

SINGLE-PLAYER GAME

When you first load the Fellowship Adventure one of the questions you will be asked is:

WHICH HOBBIT CHARACTERS DO YOU WISH TO PLAY?

Frodo, Merry, Pippin, or Sam?

At this point you will chose all of the characters you might like to be
during that session of play. If you are playing for the first time, it is a good idea to choose only the role of Frodo. The first character you enter is the first character you will "be" in the game.

Whenever you chose to play just one character, the computer will take control of the other three characters and ensure that their actions are in keeping with their personalities. It also means that whenever you wish these characters to perform specific actions for you, you will need to instruct them by talking to them directly, using the SAY TO command (see the section of the Inglish language).

When you play more than one character, the computer will look after the characters you are not controlling at the moment, but only in situations where you have not instructed them to do anything for a while, or when the entire party moves somewhere else. This means that you will need to instruct each character much more carefully than if you had chosen only one character for the same session.

When you are ready to change characters, simply enter the command:

BECOME (name)

and you will be playing as that character. You may also change characters by entering:

I AM (name)

or omit either command and simply enter the name of the character you wish to become, as in:

PIPPIN

Once you have changed characters, it is a good idea to enter the LOOK command, since you may very well find yourself in a different place and situation.

MULTIPLE-PLAYER GAMES

The easiest way to play with more than one character is with a friend or three, each of you controlling one of the hobbits. In this way, you can help each other throughout the adventure, and the human interactions on top of the computer will make the game that much more fun.

The initial selection of characters and the commands to change characters are the same for a multiple player game as for a single player game. You select all the characters you want to play at the very beginning of the game. To change characters use the BECOME or I AM commands, or simply enter the name. By using these commands, you and your friends can "take turns" playing the different characters you have selected.

THE ENGLISH VOCABULARY

Included here is a list of actions you can use when playing The Fellowship of the Ring. Please note that this does not include the "magic words," or special verbs for actions that can be used only in certain areas and at certain times. Finding out what these words are and how to use them is all part of the fun of the game. Remember that this is only an abbreviated vocabulary list. You can always try a new word to see if the program will understand it.

MOVEMENTS

North (N)    Northeast (NE)    Northwest (NW)
South (S)    Southeast (SE)    Southwest (SW)
Up (U)       Down (D)

ACTION VERBS
ATTACK     GO THROUGH     SHATTER
BLOW       HELLO          SLASH
BREAK      KILL           SLICE
BUY        KNOCK ON       SMASH
CARRY      LIGHT          SMOKE
CLIMB      LOCK           STRIKE
CLOSE      OPEN           SWIM
CROSS      PAY            TAKE
DROP       PICK UP        THANK
EAT        PULL           THROW
EMPTY      PUT ON         TURN
EXAMINE    PUT OUT        UN LOCK
FILL       READ           UNROLL
FOLLOW     RUN            WAIT
GET        SAY TO         WEAR
GIVE TO

SPECIAL COMMANDS
BECOME     LOOK           SAVE
HELP       NOPRINT        SCORE
INVENTORY  PRINT          LOAD
QUIT

-END PART 1 OF 2-
The meaning of many verbs can be altered by the use of prepositions, such as:
ON, OFF, ONTO, and so on. Examples of Inglish sentences are:
ATTACK WITH THE SWORD
PICT UP THE RING

In Inglish, prepostions usually go before the noun, but in some cases it sounds more natural to put them after the noun, such as:
TURN THE LIGHT ON
PICT THE GOLD UP

Prepositions can also be used to specify the position of an object, or where you wish an action to be performed, such as:
PUT THE GOLD INTO THE BAG
TAKE THE PIPE FROM THE BOX

You can use punctuation to separate sentences. Use commas and periods as you normally would. The only limitation on commands is that they should not be more than 128 characters long. Prepositions can also be used to specify the position of an object, or where you wish an action to be performed, such as:
The following are some examples of the way Inglish sentences can be constructed. Note, however, that the specific example shown may not be valid in this adventure.
TAKE THE PIPE FROM THE BOX

When an action does not directly relate to an object, only a verb is necessary.
WAIT

This is also the case if you simply wish to travel in a particular direction.
SOUTH OR S
EAST OR E

If the action relates to an object or a character, it must be identified by a noun. Inglish grammar applies, any order of different parts of a sentence is usually not critically as in:
WEAR THE RING
GO THROUGH THE DOOR
DROP THE ROPE ONTO THE TABLE

Adjectives must precede the nouns they describe. If it sounds in English, it's probably good Inglish.
THROUGH THE HEAVY AXE AT THE HORRIBLE ORC
LIGHT THE WOOD PIPE WITH THE MATCH

Commands you give the computer must be specific and unambiguous. If there are two doors in a room, one red and one green, and you were to say:
GO THROUGH THE DOOR
DROP THE ROPE ONTO THE TABLE

The computer is placed in a quandary as to which door to put you through. In such situations, the program will put you through the first door it finds, which may not be the door you intended.

In this case, it would be better to specify exactly which door you mean.
GO THROUGH THE GREEN DOOR

You can abbreviate commands. For instance, to attack a green knight, you can say
KILL GREEN WITH SWORD

The computer will see that "green" corresponds with "green knight". Note also that the definitive article "the" can be omitted. In most cases, the computer will understand exactly what you mean.

Unfortunately, if the green knight is standing before a green door, then the word "green" is no longer enough to identify the knight only, in which case you should say:
KILL KNIGHT WITH THE SWORD

Multiple commands can be entered by placing a comma between instructions.
OPEN BOX, TAKE AXE, GIVE AXE TO SAM

Each of the commands will be carried out by the computer in the order in which they are listed.

SPECIAL COMMANDS

In addition to the extensive Inglish vocabulary, there are few commands specific to the Fellowship of the Ring. The following is a list of these special commands.

LOOK (which can be abbreviated to L) lets you see where you are, and all
that can be seen at a particular location, and all possible exits. This command should also be used after you take over the role of another character at another location (that is, after you use the BECOME command).

INVENTORY (which can be abbreviated to I) gives a full description of all inventory you are currently holding or carrying.

EXAMINE is a standard English word, but special mention of it is made here because it is also very useful when trying to obtain more information about your surroundings in Middle-earth. Examining objects also reveals information about those objects that is not readily apparent from a brief look.

SAVE allows you to save the game for play at a later time.

LOAD loads a previously saved game. After loading, play continues from the point where the game was saved.

SCORE tells you what your percentage of play is.

PAUSE suspends the game until you press another key.

PRINT allows you to send text of the adventure to your printer and to the screen. This instruction will not result in a mass exodus to the treetops by all members of your party within earshot. Only Sam will climb the tree. If you leave without instructing him and he can still see you, Sam will follow you and perhaps eventually, catch up with you.

INTERACTING WITH OTHERS

The Fellowship of the Ring allows you to converse with the characters you meet on your journey. When you encounter a character you wish to speak to, the general form of the command is:

SAY TO (name) "(sentence)"

As in:

SAY TO GANDALF "HELLO"

Saying hello is usually enough to draw most characters into conversation.

You can ask the characters within earshot to perform specific commands that are of use to you, such as:

SAY TO GANDALF "KILL THE ORC WITH THE SWORD"

SAY TO PIPPIN "TAKE THE GOLD FROM THE ORC"

It is not necessary to use the full form of:

SAY TO (name). You can just use the name of the character you wish to speak to, followed by the message, such as:

PIPPIN "GIVE THE GOLD TO ME"

Of course, because all the other characters act independently there is not guarantee that they will do as you ask. Their decision will be based on a number of factors, including their allegiance to you, what they are currently doing, and so on.

A few of the characters you encounter will have messages they will deliver only when you identify yourself or ask certain questions.

To solve some of the problems you will face in The Fellowship of the Ring, you will need to cooperate with other members of your party. Thus you will need to become familiar with the SAY TO command. Remember, too, that each character has its own limitations, such as degree of strength, and so on.

COOPERATING

In the Fellowship of the Ring you must lead a group of Hobbits through perilous situations. It will be necessary to tell other characters, including members of your own group, what you would like them to do in given situations.

Be warned that, in order to succeed, certain actions must be performed by certain characters. Thus you will need to become familiar with the varied talents of each member of your party.

Since you will often be in a group, it is comforting to know that it is not necessary to instruct each and every character on what he should be doing every moment. Most will follow your lead without any prompting. It is also possible to instruct characters to perform actions that will exclude the rest of the party, as in:

SAY TO SAM "CLIMB THE TREE"

This instruction will not result in a mass exodus to the treetops by all members of your party within earshot. Only Sam will climb the tree. If you leave without instructing him and he can still see you, Sam will follow you and perhaps eventually, catch up with you.

You can speak directly to any character and ask him to perform an action involving another character, as in:

SAY TO PIPPIN "GIVE ROPE TO FRODO"

Friends and members of your party are more likely to respond favorably than strangers, unfriendly creatures, or followers of Sauron. But even friends may say no from time to time.

Besides following your lead, most members of your party will come to your defense if you are attacked by enemies. There is no cosmic law that stops you from ruthlessly attacking a member of your own party. Do not be too surprised, however, if the other members of the party are a little cooler toward you afterward.

You can talk to yourself, but the result is not going to be impressive.

You can ask the characters within earshot to perform specific commands, such as:

KILL FRODO WITH AXE

In all probability, the result will be something like: "You attack him with the axe. With one well placed blow, you split your skull." If you find this an attractive alternative, then by all means be our guest.

The Fellowship of the Ring allows you another method of instructing the hobbits in your party using the BECOME command you can take over another character for a short time. (It is recommended that you become familiar with the adventure from a single player point of view before tackling the multi-character game). You can say:

BECOME PIPPIN

This technique can be used whenever a player wishes to put a character through a series of complex actions, or react to ongoing situations that will confront the character. This is a useful means of conducting operations without endangering the Ring, or for controlling the party if you want the hobbits to split up and go separate ways.
Remember that you can only become one of the four hobbit characters you selected at the beginning of the game. For example, if you enter FRODO, you can only become FRODO. If you enter FRODO, SAM, MERRY, you can not become FIFFLIN.

Note: The Original copy of The Fellowship of the Rings comes with a copy of J.R.R. Tolkien's The Lord of the Rings (partly for reference).

GENERAL CONCEPTS

During the adventure, you will encounter many objects. Some are useable as weapons, others are intended as food or drink, still others are used as containers in which to carry things. In Middle-earth liquids behave as they do in our world: they cannot be carried without a container.

Also, a character cannot lift too heavy an object or carry too great a load.

Most containers must be opened in order to reach their contents. Once a container is opened, you may look into it or take out the objects in it. Once the objects inside a container have been exposed, they may be used. Some containers may be transparent, allowing you to see the contents without opening the container itself.

Some doors are locked. This means that you need either a key or magic to unlock them, or that someone on the other side of the door must open the door for you.

FINDING YOUR WAY AROUND

Their are 10 possible directions of travel: NORTH, SOUTH, EAST WEST, NORTHEAST, SOUTHEAST, NORTHWEST, SOUTHWEST, UP, AND DOWN. You can also abbreviate directions for each word.

PASSING THROUGH THE PORTALS

If you want to go through a portal, such as a door or a window, it is quite possible to say so directly, as in:

GO THROUGH GREEN DOOR

When you first enter a location and are given the full text description, all visible doors will be mentioned. However, on a second visit to the location, the brief description may not include all doorways, but only mention objects that can be seen in the immediate area. This doesn’t mean that the doors or portals have disappeared, you can always get the full description by typing look or L.

FOLLOWING

If a character you have an interest in leaves an area, you may wish to follow him or her. For instance, if Strider suddenly said that he was going to leave, you might decide to:

FOLLOW STRIDER

LIGHT AND DARK

In some areas, there will be no natural light. Unless you have the means to create light - such as matches and a candle - you will receive no description of the area in darkness. Once a light has been struck, you will be able to see.

If you choose to travel in darkness, you may avoid meeting some unwanted characters. Remember, however, that orcs can see perfectly well in the dark.

MAPPING THE ADVENTURE

You should keep a map of your travels to assist you in finding your way. However, even your own carefully constructed maps cannot be entirely relied upon. Some locations can be revisited in a straightforward manner. With others, the direction you traveled to get from Point A to Point B may not be the opposite of the direction you must travel to get from Point B to Point A. For this reason, you would be wise to construct a grid listing locations you have already entered and directions you used to get to them from other locations.

COMBAT

Hobbits are poor fighters, albeit brave, but can often surprise even themselves by their abilities in one-on-one combat. (Don’t let this give you any false confidence, however.) To attack an opponent, you must tell the computer that you wish to KILL it with a specific weapon, such as:

KILL WOLF WITH SWORD

If you do not specify a weapon, the program will assume that you wish to ATTACK with your bare hands. This is never a good idea.

It is not possible to attack inanimate objects. They must be BROKEN.

No matter how well you arm them, be wary of throwing hobbits into the midst of a gory battle. Being rather slight little creatures, they have a tendency to die with spectacular suddenness.

Persistence in combat is rewarded, but be careful: Most opponents hit back, and an already-wounded character is much more susceptible to being killed than a healthy one.

Some weapons (like axes) can be thrown at an opponent. This removes the weapon from your character, and drops it into the area in which you stand. If you throw your only armament, you will, of course, become unarmed, and unfortunate situation.

CARRYING ITEMS

During the course of play, you will have to pick up and carry inanimate objects. Once you have found and item, simply TAKE the item in order to pick it up and carry it, as in:

TAKE ROPE

To check in equipment you are already carrying, take Inventory or I. If you do not want the item you have picked up, you are carrying too much at once, or you already have a rope, you can say:

DROP ROPE

As an alternative, you may give the item to another member of the party, as in:

GIVE ROPE TO SAM

Some objects not only add weight to your burden, they increase your effective size. This can be troublesome if you intend to go through a small door or tunnel, so beware of adopting the pack rat syndrome.

FATIGUE, WOUNDS, AND EATING

All characters are rated for strength and stamina. During the game these characteristics may suffer due to combat fatigue, wounds or simple weariness.

As a character is wounded, its strength ebbs, and its hold on life grows more tenuous. And, as time passes, a character becomes more and more...
tired as energy is used up. Highly strenuous activities, such as combat, may exhaust it even more.

The best remedy for depleted strength or stamina is a good meal and some rest. In your travels, you may encounter skilled healers and magical herbs that cure fatigue and damage. Needless to say, these items are rare.

REAL TIME

In Middle-earth a wandering party might encounter a variety of characters. Some are friends, some are foes, but many simply ARE. Such characters live lives of their own, traveling about the lands attending to their own affairs. If a character you meet does not fall over himself to help you, try being patient. Just say hello, or try waiting until he notices you.

Remember, while you and your band of hobbits are busy saving Middle-earth from the terror of Sauron the Great, other creatures and characters are busy with their own lives and adventures. As time goes on and things change for you, so they change for Middle-earth. Things may not be as they were when you return to a particular location.

A FINAL WORD

The best hints for playing the Fellowship of the Ring can be gained through reading the book. Otherwise, the only real hints that can be given here are these:

Be careful. If you race through the game, you will only limit your enjoyment of it, but will fail to pick up valuable details that might come in handy later on in the game.

Be smart. Hobbits are neither wise, strong, nor magical. If you are going to get anywhere, you will have to use your wits.

Don't be scared to try risky actions. If you take no risks, you will find no rewards. In other words, "Nothing ventured, nothing gained." And keep a good pair of running shoes handy.

You're on your own!

END PART 2 OF 2

The Keys:

's' : toggles the internal speaker on and off.
'.' : lowers the game volume
'.' : raises the game volume
'<' : lowers the music volume
'>' : raises the music volume
<ESC> : pauses the game and the music
'q' : quits the game
7 8 9 : upleft   up   upright
4   6 :     left          right
1 2 3 : downright down left downright

The Other Stuff:

When the program boots, there is a very loud "static screen." If you would like to prevent the static from blowing your eardrums out, hold down the Open-Apple key until you see the screen.

To skip or terminate the opening title sequence, press the <spacebar>.

This program was developed under System Disk 5.0 running on a 1.75 meg GS. I have no idea how much memory this game requires, but it will _probably_ run on a 512K GS. If it doesn't, then try booting it from ProDOS16 V1.6. If this still does not work, then get more memory.

To contact either Brian or Dave, here is some info:

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Net: circus@pro-lep.cts.com
USMail: 10918 Kirwick
Houston, TX 77024
** or, for a faster response **
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Austin, TX 78705

Dave Triplett:
America Online/AppleLink: DTriplett
Genie: D.Triplett1
CompuServe: 72220,1763

The Support:

* Pangea Software now has its own section on America Online in the Direct Connect section. Visit us there for talk about this and all of our other games including the critically acclaimed XENOCIDE!
* B&D Productions also has a support BBS where you can talk to us and download our other products. Call (916)894-0483 over at Dave's place.

We are always looking for new game ideas, so feel free to send us your ideas.

The Disclaimer:

* The characters and events portrayed in this game are fictitious and are not based on anyone, living or dead.

* Yes, this game does contain some material which may be offensive to some viewers, but even the most prude of humans should be able to take a joke which is exactly what this program is... a Joke!!! HAMARAHAMARA!!! So if you are a prude, don't give us a hard time or call us Sadists. Just laugh and enjoy it. This game is an amalgam of ideas that OTHER people gave to us, so blame them if you want to get all upset about a harmless joke.

P.S. If for some strange reason you don't like this game, just ask yourself one question: How much did you pay for it, eh?

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

In most of File-A-Trix’s functions, a text based file-selection dialog is used. Instead of clicking mouse buttons, the keyboard is used to navigate with this dialog. In the file dialog note, you are deleting several files and want to speed up the process, you can hold down the space bar to bypass the delay. Locked files must be unlocked before they can be deleted, and folders must be empty before deleting. Because of

Most users will probably only be interested in the lock/unlock portion of this function. The "Set Attributes" portion allows you to change the type and a subtype of a file. This is more for the "power user". To perform either operation, first select the files you want to modify, and then press <return>. Each selected file will then be presented to you in turn, and you will be allowed to lock or unlock it and/or enter a new type and/or a subtype for it. After making these modifications to a file, pressing <return> will save the changes to disk and proceed to the next selected file.

Allows you to rename files. As usual, select the files you want to rename, and press <return>. Each selected file will then be presented, and you will be prompted for a new name. Press <return> and the new name will be written to disk, and File-A-Trix will proceed to the next selected file. Extended GS/OS files can’t be renamed under ProDOS 8.

With this function, the file dialog will prompt you to select a location for the new folder. As when you are selecting a destination folder for copied files, only folder files will be listed, with the words "Select Current Folder" at the top of the list. When you have navigated to the disk and folder you want, press <return> with "Select Current Folder" highlighted, and you will be prompted for a name for the new folder. Enter this, press <return>, and the folder will be created.

This File-A-Trix function allows you to display ASCII text files (type TXT), source code files (SRC), and AppleWorks workbooks (type AW). You can only use File-A-Trix under GS/OS; you can also view Teach files (type WMF). Teach files can’t be viewed under ProDOS 8 because they are extended GS/OS files, and can’t be opened by the basic GS/OS text editor.

View behaves a little differently from the other File-A-Trix functions, most notably in the fact that you can only select a single file at a time for viewing. When you select a file (or Text File) from the main menu, the file dialog will display the file's contents in a text-based file dialog. If the file is selected by pressing <return>, and that file will then be displayed. As prompt buttons on the text-display screen note, you can view the next page (screenful) of the file by pressing down-arrow, the previous page with up-arrow, and exit from the text with OpenApple-period.

As another prompt button mentions, you can also print a text file from the View function by pressing OpenApple-P. When you do this, the text will (with no further prompts) be sent to your connected printer port. A printing in progress can be canceled by pressing OpenApple-period or <esc>.

As is noted by yet another prompt, you can find any occurrences of a word or phrase in the text you are viewing by pressing OpenApple-F. When you do this you will be prompted for the text you want to find. Enter this and File-A-Trix will scan through the file. If and when the text is found, the scan will stop at that page and the searched-for text will be highlighted. This search is not case sensitive; entering "Cat" will also find "cat" and "CAT".

View can also be used to display the text contents of ANY type of file, rather than just the various types of text files mentioned above. To do this, hold down the OpenApple key when you press <return> with "View" highlighted. When you do this the file selection dialog will display ALL types of files. If a file is an extended GS/OS file and you are under GS/OS, the data fork of the file will be displayed.

For the functions in this section, a text based file-selection dialog is used. Each file or folder information is presented, and you can either accept this information or choose to change it. After making these changes to a file, pressing <return> will save the changes to disk and proceed to the next selected file.

All normal files can be deleted under GS/OS, but extended GS/OS files can’t be deleted under ProDOS 8. Instead of clicking mouse buttons, the keyboard is used to navigate with this dialog. In the file dialog note, you are deleting several files and want to speed up the process, you can hold down the space bar to bypass the delay. Locked files must be unlocked before they can be deleted, and folders must be empty before deleting. Because of

This function lets you simply browse through your volumes and folders. For informational purposes, locked files are flagged with a "*", and extended GS/OS files are flagged with a "+".

Copy

Copies files. First you select the file or files you want to copy (again, pressing <space> selects and deselects files), and then press <return> to proceed and choose a destination folder for the files. In this second stage, the file-selection will only show folder files in its list, with the words "Select Current Folder" as the first item in the list. When you have navigated to the folder you want, press <return> with "Select Current Folder" highlighted. The files will then be copied.

Because of limitations to ProDOS 8 (see below) extended GS/OS files can’t be deleted under ProDOS 8.

Lock/Unlock, Set Attributes

This function lets you simply browse through your volumes and folders. For informational purposes, locked files are flagged with a "*", and extended GS/OS files are flagged with a "+".

If you like, you can manually type in a path (that is, the volume name, followed by any nested folder names) by first pressing either '/' or ":" and then typing the rest of the path. Under GS/OS, you can use a prefix number as part of an entered path, for example: "8:Old.Files". To do this you must first delete the ":" or "/" that normally begins a pathname.

In any function’s file dialog, you can get some additional information on the highlighted file by pressing OpenApple-I. This will cause the following information to be printed at the bottom of the screen: The file's type in hexadecimal (rather than the usual three-letter abbreviation) its AIXType, the date and time the file was created (the last-modified date and time are shown in the dialog listing), and the file's size.

And finally, OpenApple-period will always exit you from the file dialog, returning you to File-A-Trix’s main menu.

Catalog

This function lets you simply browse through your volumes and folders. For informational purposes, locked files are flagged with a "*", and extended GS/OS files are flagged with a "+".

Copy

Copies files. First you select the file or files you want to copy (again, pressing <space> selects and deselects files), and then press <return> to proceed and choose a destination folder for the files. In this second stage, the file-selection dialog will only show folder files in its list, with the words "Select Current Folder" as the first item in the list. When you have navigated to the folder you want, press <return> with "Select Current Folder" highlighted. The files will then be copied. Because of limitations to ProDOS 8 (see below) extended GS/OS files can’t be deleted under ProDOS 8.

File-A-Trix supports disk-swapping -- you can copy files between two disks using one disk drive -- but you'll find that this requires a large number of disk swaps.

After copying, the folder that File-A-Trix initially opens for subsequent functions will be the destination path you selected for the copy. You can quickly switch back to the source, or "copied-from" folder by pressing OpenApple-X in the file dialog.

Move

This function is the same as Copy, except that after copying a file, the original will be deleted. This is useful for using Move to move files from one folder to another on the same disk, then File-A-Trix will use the GS/OS "ChangePath" command, which allows files of any size to be moved almost instantly.

Delete

Deletes files. You select files -- as usual -- with the space bar, and then press <return> to execute the deletes. As the files are being deleted, a list of the selected files will appear in the file dialog window. A slight delay will occur before each file is deleted to allow you to cancel the operation by pressing OpenApple-period. If you are deleting several files and want to speed up the process, you can hold down the space bar to bypass the delay. Locked files must be unlocked before they can be deleted, and folders must be empty before deleting. Because of

Find File

Much like the Find File NDA provided with System 6, this function allows you to locate files by entering their name or partial name. First you select the volume you want to search, and then you enter the full or partial name you want to search for.
While entering the filename, you also select whether you want File-A-Trix to find files matching the text you type in, or include the text you type in. This selection is made by using the up/down arrow keys to highlight "matches", "starts with" or "includes" in the text-entry prompt. After you enter the text to search for, File-A-Trix will scan the folder in which the highlighted file was found. If the match is found, the contents of the folder the matching file is in will be displayed, and the matching file will be highlighted. At this point you can navigate around the disk as if you were doing an ordinary "Catalog" function with File-A-Trix. You can also continue the search by pressing OpenApple-F (as a prompt button notes) to find any other matching files. The search will be resumed from wherever the highlight bar is when you press OpenApple-F. A disk search in progress can be canceled by pressing (and holding for a moment) OpenApple-period or <esc>.

After successfully finding a file, File-A-Trix's other functions (Copy, Delete, etc.) will automatically open the folder containing the found file. If more than one matching file was found (via OpenApple-F to find again), then you can switch back to the folder in which the previous matching file was found by pressing OpenApple-X in any function's file dialog.

Initialize 3.5" Disk
------------------------
Initializes, or formats, 800K 3.5 inch disks. First you are asked to select a drive, and then to enter a name for the new volume. If GS/OS is active and you have the HFS FST (available with System 6.0 and later) installed, you will be given the option of initializing the disk as an HFS volume.

Set Preferences
---------------
The final item in the main menu is Set Preferences. This allows you to customize certain aspects of File-A-Trix's behavior. The procedure for changing preferences is clear from the on-screen prompts: The up/down arrow keys select an item in the preferences list, and the left/right arrow keys modify the selected preference. Preference setting will exit you from the function and keep the preferences you've entered, but they will not be saved to disk. <Return> also exits, saving the new settings to disk so they will be the same the next time you boot your computer. To ensure that your preferences are indeed saved to disk, use the Finder's (or another launcher's) "shut down" procedure before turning off your Ilgs. Here is a list of the preferences you can set:

1. Hot keys in Main Menu: With this item set to "on", pressing a letter key under File-A-Trix's main menu will send you directly to the function corresponding to that letter. With the default, "off" setting you press a letter key and then <return>.

2. Auto-scrolling when selecting: This affects File-A-Trix's behavior while you are selecting files in any of the functions that requires selecting (Copy, for example). When it is set to "on", the highlight bar will automatically scroll to the next file after you select a file with <space>.

3. Alphabetize file lists: Normally File-A-Trix displays the list of files in its file dialogs in alphabetic order. By setting this preference to "off", files will be displayed in their true order.

The maximum path length (the volume name, plus all nested folders, plus the name of the file being worked on) that File-A-Trix allows under GS/OS is 255 characters. (ProDOS 8 limits path lengths to 64 characters.) With HFS disks, filenames can contain special characters that aren't in the standard character set. Since these characters can't be displayed on the text screen that File-A-Trix uses (they require the graphical desktop screen), File-A-Trix will display any such characters as "~".

Occasionally, you may call up File-A-Trix and see the message: "ProDOS is busy right now; press a key to exit, and try again in a moment." If this happens, it's typically because you are in a program that has a frequently-updated time display. Usually, you can "get through" to File-A-Trix by just trying again, but sometimes you may have to go to some other part of the application you are using for File-A-Trix to work.

Enjoy!
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CIS: 71540,1767
==FONTRIX==

BY DATA TRANSFORMS

Arrakis - 612/561-0939

BOOT-UP

FIRST, CONFIGURE YOUR FONTRIX DISK FOR YOUR COMPUTER AND PRINTER.

MAKING A GRAFILE

WHAT IS A GRAFILE? A GRAFILE IS A BINARY FILE WHICH HOLDS ALL OF THE
EXTENDED SCREENS THAT YOU WILL BE WRITING ON. THE GRAFILE MUST BE MADE BEFORE
YOU START WRITING ON THE SCREEN. ONCE MADE, THE GRAFILE RECORDS INFORMATION
EVERY TIME YOU GO OFF THE SCREEN YOU ARE DRAWING ON AND THEN GIVES YOU MORE
ROOM, UNTIL YOU ARE OUT OF IT.

FIRST, CHOOSE THE "G" COMMAND FROM THE MAIN MENU AND GO TO THE GRAPHIC
WRITER SECTION. ONCE THERE, YOU SHOULD LOAD YOUR FONT THAT YOU WISH TO USE ON
THE GRAFILE. IF YOU DON'T KNOW WHAT FONT YOU WANT TO USE, JUST HIT THE "D"
COMMAND AND CATALOG THE DISK. ONCE YOU'VE FOUND THE FONT YOU WANT TO LOAD,
JUST LOAD IT BY HITTING THE "F" COMMAND AND TYPE IN THE FILE NAME, WITHOUT THE
"SET" PART, IT LOADS THAT AUTOMATICALLY.

NEXT, YOU NEED TO OPEN THE GRAFILE. DEPENDING ON THE SIZE YOU WANT TO OPEN
IT AS, YOU WILL NEED, ROOM ON ANOTHER DISK FOR IT. IT'S A GOOD IDEA TO HAVE A
DISK COMPLETELY FOR GRAFILES. ANYWAYS, CHOOSE THE "O" COMMAND AND ENTER THE
HORIZONTAL AND VERTICAL SECTORS (A TABLE FOR DIFFERENT SECTORS ARE AT THE END
OF THIS SECTION). THE DISK WILL WHIR FOR A WHILE AND THEN, THE GRAFILE WILL BE
MADE.

NEXT, CHOOSE THE "W" COMMAND AND MAKE SURE THE GRAFILE DISK IS IN THE DRIVE.
YOU WILL NOW BE PROMPTED IN FRONT OF A BUNCH OF COMMANDS, THESE ARE THE HELP
COMMANDS, AND CAN BE DISPLAYED AT ANYTIME BY HITTING CTRL-A. NOW YOU CAN
TYPE WHATEVER YOU WANT, AND WHEN YOU ARE READY TO CLOSE THE GRAFILE, JUST TYPE
CTRL-Q AND THEN YOU WILL BE BACK AT THE MENU.

NOW, TYPE "C" FOR CLOSE AND THE GRAFILE WILL BE CLOSED. YOU CAN NOW GO TO
THE DUMP SECTION AND PRINT OUT YOUR GRAFILE. IN THAT SECTION ALL YOU HAVE TO DO
IS INPUT THE NAME OF THE GRAFILE AND THEN JUST MAKE SURE YOUR PRINTER IS ON.

HORIZONTAL & VERTICAL SECTORS

HORIZONTAL SECTORS FOR A REGULAR 80 COLUMN PIECE OF PAPER IS 16.
HORIZONTAL SECTORS FOR A LABEL IN PERFORATED HOLDER IS 6.
MINIMUM HORIZONTAL SECTORS IS 5.
MAXIMUM HORIZONTAL SECTORS IS 20.

MINIMUM VERTICAL SECTORS IS 6.
MAXIMUM VERTICAL SECTORS IS 20.

GRAPHIC WRITER COMMAND CONTROL KEYS

CTRL - A = ASK FOR HELP (DISPLAYS SCREEN)
CTRL - B = SET BACKGROUND COLOR (CTRL-B + #)
CTRL - C = CAPITAL LOCK & UNLOCK
CTRL - D = DEFAULT WINDOW (RESELECTS WINDOW TO FULL SCREEN)
CTRL - E = ERASE WINDOW
CTRL - F = SET FOREGROUND COLOR (CTRL-F + #)
CTRL - G = GRAPHIC INPUT SELECTS CURRENT GRAPHIC INPUT DEVICE
CTRL - H = BACKSPACE

CTRL - I = INVERSE
CTRL - J = LINEFEED
CTRL - K = REVERSE LINEFEED
CTRL - L = SET LINEFEED SPACING (CTRL-L + #)
CTRL - M = CARRIAGE RETURN
CTRL - N = NORMAL (CANCELS INVERSE)
CTRL - O = OVERLAY (CANCELS R & T)
CTRL - P = POINT MODE (DRAW WITH A SINGLE DOT)
CTRL - Q = QUIT (BACK TO GRAPHIC WRITER MENU)
CTRL - R = REPLACE (CANCELS O & T)
CTRL - S = SET SPACING BETWEEN CHARACTERS (CTRL-S + #)
CTRL - T = TRANSPARENT. INVERT BACKGROUND (CANCELS R & O)
CTRL - U = FORWARD SPACE
CTRL - V = VIEWPORT. VIEW FILE PARAMETERS
CTRL - W = SET WINDOW (USE I,J,K,M TO SET)
CTRL - X = BACKSLASH CHARACTER
CTRL - Y = YANK SCREEN FROM GRAFILE (RESTORE)
CTRL - Z = ZERO CURSOR (MOVE TO TOP LEFT OF SCREEN)
ESC = USE I,J,K,M TO MOVE CURSOR.

FONTRIX FONT EDITOR

SET PARAMETERS:

SET NAME - 1 TO 15 CHARACTERS (ALPHANUMERIC AND PERIOD ONLY)
TOTAL CHARACTERS - 1 TO 34
FIRST CHARACTER - "!"-FIRST "-"-LAST
HORIZONTAL CELL SIZE - 1 TO 32
VERTICAL CELL SIZE - 1 TO 32
PROPORTIONAL - YES/NO

EDIT SET COMMAND KEYS:

1,J,K,M, AND ARROWS = MOVE CURSOR TO CHOOSE WHICH CHARACTER TO EDIT
V = VIEW THE ENTIRE SET (AGAIN TO CANCEL)
C = COPY ONE CHARACTER CELL INTO ANOTHER
O = OVERLAY ONE CHARACTER CELL OVER ANOTHER
RETURN = SELECT A CHARACTER FOR EDITING
Q = QUIT AND RETURN TO FONT EDITOR MENU

EDIT SINGLE CHARACTER KEY COMMANDS:

1,J,K,M, AND ARROWS = MOVE CURSOR WITHIN CHARACTER CELL
SPACE-BAR = CHANGE A PIXEL (ON/OFF)
CTRL - E = ERASE CONTENTS OF CHARACTER CELL
CTRL - F = POSITION WITHIN CELL. (I,J,K,M,ARROWS)
CTRL - X = RETURN TO EDIT SET WITHOUT SAVING CHANGES TO CHARACTER
RETURN = RETURN TO EDIT SET AND SAVE CHANGES TO CHARACTER

NOTES ABOUT GRAPHICS

ONE VERY IMPORTANT ASPECT OF FONTRIX IS THE ABILITY TO PRINT GRAPHICS ALONG
WITH YOUR GRAFILE. IN OTHER WORDS, YOU WANT TO BE ABLE TO NOT ONLY WRITE WORDS
AND PRINT THEM OUT; YOU WANT TO BE ABLE TO INCLUDE PICTURES ALONG WITH THE
WORDS. WELL, FONTRIX CAN DO THIS. THERE IS THIS THING CALLED A GRAPHIC; WHICH IS
JUST A FANCY WORD FOR A HI-RES PICTURE (YOU KNOW, THE KIND YOU SAVE AT $2000
AND $2000). IF YOU HAVE A SPECIFIC PICTURE THAT YOU WANT TO LOAD, JUST USE THE
COMMAND THAT LOADS THE GRAPHIC, AND MAKE SURE THAT YOU ARE ALREADY POSITIONED
IN YOUR GRAFILE (WHICH SHOULD ALREADY BE OPEN AND READY) SO THAT WHEN THE
PICTURE IS LOADED, IT WILL LOAD INTO THE SPOT IN YOUR GRAFILE THAT YOU WANT IT
to. THIS WAY YOU COULD LOAD ABOUT 16 SCREENS ACCROSS AND ABOUT THE SAME
DOWN WORTH OF GRAPHIC PICTURES AND PRINT THEM ALL OUT AT THE SAME TIME! THIS
SPECIAL FEATURE CAN BE VERY USEFUL ONCE YOU FIND THE USE.
G.A.L.E. CONTROL CODES
BY: THE PENGUIN

THE SOUTH POLE......[312] 677-7140

STANDARD ESCAPE FUNCTIONS (MACROS)

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<thead>
<tr>
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<th>CHARACTER STRING</th>
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<tbody>
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<td>ESC-A</td>
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<tr>
<td>B</td>
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<td>Y</td>
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<td>Z</td>
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IMMEDIATE MODE COMMANDS

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<td>NORMAL edit</td>
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<tr>
<td>.B</td>
<td>COMPACT edit</td>
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<tr>
<td>CTRL-G</td>
<td>GET edit directly</td>
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<tr>
<td>.C</td>
<td>AUTO numbering</td>
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<tr>
<td>.D</td>
<td>BLOAD parameters</td>
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<td>CTRL-E</td>
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<td>.E</td>
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<td>.G</td>
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<td>.H</td>
<td>CHANGE - delete</td>
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<td>.I</td>
<td>LIST-CTRL-M</td>
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<td>LIST-CTRL-M</td>
</tr>
<tr>
<td>.S</td>
<td>LIST-CTRL-M</td>
</tr>
<tr>
<td>.T</td>
<td>LIST-CTRL-M</td>
</tr>
<tr>
<td>.U</td>
<td>LIST-CTRL-M</td>
</tr>
<tr>
<td>.V</td>
<td>LIST-CTRL-M</td>
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<tr>
<td>.W</td>
<td>LIST-CTRL-M</td>
</tr>
<tr>
<td>.X</td>
<td>LIST-CTRL-M</td>
</tr>
<tr>
<td>.Y</td>
<td>LIST-CTRL-M</td>
</tr>
<tr>
<td>.Z</td>
<td>LIST-CTRL-M</td>
</tr>
</tbody>
</table>

EDIT MODE COMMANDS

<table>
<thead>
<tr>
<th>COMMAND</th>
<th>MEANING</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTRL-A</td>
<td>CASE TOGGLE</td>
</tr>
<tr>
<td>CTRL-B</td>
<td>COMPACT</td>
</tr>
<tr>
<td>CTRL-D</td>
<td>DELETE</td>
</tr>
<tr>
<td>CTRL-E</td>
<td>END OF LINE</td>
</tr>
<tr>
<td>CTRL-F</td>
<td>FIND</td>
</tr>
<tr>
<td>CTRL-I</td>
<td>INSERT</td>
</tr>
<tr>
<td>CTRL-K</td>
<td>KILL</td>
</tr>
<tr>
<td>CTRL-O</td>
<td>OVERRIDE</td>
</tr>
<tr>
<td>CTRL-P</td>
<td>PEEK</td>
</tr>
<tr>
<td>CTRL-Q</td>
<td>QUIT</td>
</tr>
<tr>
<td>CTRL-R</td>
<td>RESTORE</td>
</tr>
<tr>
<td>CTRL-S</td>
<td>START OF LINE</td>
</tr>
<tr>
<td>CTRL-T</td>
<td>TRUNCATE</td>
</tr>
<tr>
<td>CTRL-Z</td>
<td>ZAP</td>
</tr>
<tr>
<td>CTRL-E</td>
<td>HELP SCREEN</td>
</tr>
<tr>
<td>ESC</td>
<td>MACRO INERTRETURN</td>
</tr>
</tbody>
</table>
Computer will play itself. You will be able to select the level of play for the other side also.

Restart
Sets up Board for a new game

Quit
Just what it says.

Tutor
Takes you to the chapter menu at the bottom of the screen so that you can go through the tutorial chapters

Conditional Features.
Advice
Chess will suggest a move for you.

Option
Allows you to return to board from menu in order to continue play.

Back
Take move back, try again.

Replay
Shows a replay of a move that was taken back.

Program
When playing in manual mode, this instructs Chess to make the next move and return control to you.

Rerun
Replay all the moves in the game up to that point.

Resume
Restore Game to most advance point. Used if rerun is halted before entire game has been replayed.

Messages will appear at the bottom of the screen explaining what each function is.

To move a chess piece, select it with the cursor, press return. Then select the square you wish to move to and press return again.

Using the mouse with Chess is a little different. All you have to do is move the cursor to where you want and click, this goes for commands as well as moves, (much easier isn't it). Then move the mouse to the final location and click, if the move is valid the square will light up and all will go well, if it's not, you'll find out.

Skill Levels
0...Introductory
1...Intro level, Chess averages about 5 sec./move + opening lib.
2...Intro level, Chess averages about 20-40 sec/move
3...Intro level, Chess averages about 5 sec./move + opening lib.
4...Intro level, Chess averages about 20-40 sec/move
5...Moderate Strength, Chess averages about 20-40 sec/move

The opening library contains around 7000 moves. Advice is usually only available above level 3.

Levels in depth:

<table>
<thead>
<tr>
<th>Level</th>
<th>time/move</th>
<th>Search ply</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 Intro.</td>
<td>1-5 sec</td>
<td>0-1</td>
</tr>
<tr>
<td>3-6 Intermediate</td>
<td>10-80 sec</td>
<td>0-4</td>
</tr>
<tr>
<td>7-9 Advanced</td>
<td>1-6 min</td>
<td>2-6</td>
</tr>
</tbody>
</table>
Every Command is explained in a message line at the bottom of the screen, so it is very difficult to get lost. If you are in the middle of a game, pressing the "A", "I", or "O" keys will access the advice, inward or outward functions directly, without the need to go to the menu (that is if they are available at the time). Experiment with the tutorial as it is quite good and will allow you to practice. Pressing return at any point in a demo or tutorial will interrupt the computer and put you back in control, however sometimes it is fun to just watch. Have patience though, the computer moves slowly. Have Fun !!!

This exciting superhero series features a water beast of indomitable strength, a human gifted with flight of future visions, and an elfin princess of unearthly power! In Gamma Force No. 1, see the origins of the trio as they team up to free their planet from an evil overlord and his pit of a thousand screams!

Everything you need to know about Infocomics:

You need only 4 keys...

The RETURN key to "jump" when you see a turned-down page,
The LEFT ARROW key (<-) to rewind
The RIGHT ARROW key (->) to fast forward
The SPACE BAR to stop rewinding or fast forwarding or to pause

But, you can use...

The A key to advance one frame
The 1 key to change speed to SLOW
The 2 key to change speed to NORMAL
The 3 key to change speed to FAST
The B key to insert a Bookmark (story will restart from this point)
The R key to restart from the beginning

End of File
Lobbers: Lobbers attack by throwing rocks over the tops of dungeon walls. They run away so if you intend to fight them you have to corner them.

Sorcerers: Sorcerers can disappear while moving. They will attack evasively by flickering in and out of sight. They are immune to attack when invisible. Fight them hand to hand or shoot them.

Death: The Dark Prince drains health from you. He will steal up to 200 points from you and then die. Death cannot be killed by any weapon except magic.

Dungeons:

The dungeons are filled with a variety of objects...some good some evil. You should collect the good ones and avoid the evil ones. Here are a few pointers to help you tell the difference.

Potions: Poisons grant magical powers to those who know how to use them. When a potion is collected and used, all the monsters on the screen will be affected by the proportion to the magical power of the hero wielding the potion. Some potions. Some potions can be activated by a shot, but the effect is not as great.

Special Potions: These are just like regular potions when they are shot, but if they are collected, they give special bonuses to the player.

Food: Plates of cold food increase both your health and your score by 100 points.

Cider: Cider is the same as food, except it can be destroyed by a careless shot.

Poison: Looks a lot like cider, but it takes one special power and 100 points of health when consumed.

Keys: Score 100 points for collecting each key. Keys are used to open doors.

Treasurer: Treasure chests are worth 100 points each.

Amulet: A magical device that confers invisibility for a short time.

Walls: Most walls are impenetrable, but some of the older ones can be crumbled by multiple shot.

Traps: Glowing floor patterns that make some walls disappear

Transporters: These powerful devices transport you to the nearest visible transporter. If there are several within the same distance then one is chosen at random. There are ways to influence the direction of travel if you can find them.

Exits: These labeled holes lead down to specified level. If you do nothing for 30 seconds, then all walls will disappear, freeing all monsters. After another 30 seconds (if you avoid and combat) the walls turn into exits.

When you use an exit, there is a chance that you will end up in a treasure room. Collect all the valuables you can and escape within the time limit for bonus points. No score will be awarded if you do not escape.

In general, players are immune to each others shots, but in some portions of the dungeon, they may be stunned or injured by careless fellow adventurers.

Keyboard Control:

Player one: The right Apple key is your fire button. Return may also be used as a fire button. The following keys define movement.

[J] Left  [L] Right
The arrow keys may also be used to move player one's character. Player two: The left Apple key is your fire button. Use the D button to fire if player one is using a joystick. The following keys define movement.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[W] Up Left</td>
<td>[K] Up</td>
</tr>
<tr>
<td>[S] Left</td>
<td>[F] Right</td>
</tr>
<tr>
<td>[Z] Down Left</td>
<td>[X] Down</td>
</tr>
<tr>
<td>[C] Down Right</td>
<td></td>
</tr>
</tbody>
</table>

Reminders:

Hold the fire button to shoot.
Release to fire button to move.
Shoot the generators to destroy them.
Move toward monsters for hand to hand combat.
Food increases scores by 100 points.
Poisoned food looks a little different than regular food.
Treasure is worth 100 points.
Team play gives the best chance for survival.
Avoid death unless you have a potion and someone who can use it effectively.
Cooperate in treasure rooms.

END OF INSTRUCTIONS

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Apple II Computer Info

DOCUMENT gba.1

GBA Championship Basketball
Two-on-Two

Player's Guide for Apple IIgs Computers

Documentation by: The Doc

Released by Surfer Bill

King of the Court

Basketball. The lightning-paced sport for super-athletes. The game of strategy, guts, stamina, and--most of all--teamwork.

It's all here, in GBA Championship Basketball: Two-on-Two.

Two-on-Two helps you develop the strategies and skills to make you play like a pro. You can play with a teammate and learn teamwork. You can pick your offensive alignment while your opponent sets his defense. And when your opponent has the ball, you can choose among several defensive strategies.

Two-on-Two gives you lots of ways to compete: one player against the computer, two players against a computer team, two players against each other, practice sessions, and even a 24-team league competition climaxing in the GBA Championship Game.

This Player's Guide includes all the information you'll need to play Two-on-Two. The first section, "Getting Started," tells you how to load the program into your computer.

"The Chalkboard Menus" describes all your options for playing the game, from the two practice modes to the four game modes. There's also a DEMO mode that lets you watch two computer-controlled teams go head-to-head against each other. This section also tells you how to use the joystick and command keys.

"The Scouting Report" shows you how to rate your playing skills for inside and outside shooting, dribbling, stealing, quickness, and jumping. In addition, you'll get your first look at your computer opponents--all the teams you'll have to beat to make it to the GBA Championship game.

In "How to Pass and Shoot," you'll find all the information you need to develop your passing game and become a team player. And you'll learn all about jump shots, hook shots, slam dunks, tip-ins, and rebounds.

"The Player Draft" tells you all about your superstar computer teammates--10 players in all, each one patterned after a real professional basketball star.

"Calling Plays" describes the offensive and defensive strategies you'll need to outsmart and outplay your opponents.

The "Penalties" section explains fouls and other violations and describes how you can use the clock to your advantage by calling time-outs.

"After the Game" tells you how to read the box scores from the game you just played and how to start a new game.

Getting Started

You must have version 2.0 ROM chips in your Apple IIgs to play GBA Championship Basketball. If your computer is not so equipped, see your Apple II Computer Documentation Resources (a2_docs_documentation.msw) DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 414 of 1262
To load GBA Championship Basketball: Two-on-Two into your computer, follow these steps:

(Note: Do not write-protect your GBA Championship Basketball diskette.)

You may use a joystick or the keyboard to play a one-player game of GBA Championship Basketball. During a two-player game, player one uses the joystick and player two uses the keyboard. See "Joystick and Keyboard Controls".

If your computer is off:
1. Insert the GBA Championship Basketball diskette in your disk drive, label side up.
2. Turn on your computer and monitor. (Press the <esc> key to skip the title and credit screens.) After the title and credit screens appear, the PLAY OPTIONS chalkboard appears.

If your computer is already on:
1. Insert the GBA Championship Basketball diskette in your disk drive, label side up.
2. Hold down the command and control keys and press the reset button at the top left of the keyboard.

Sound

If you like, you may press <control> and <s> at the same time to turn the sound on and off. You can also press the up and down arrow keys to gradually raise and lower the sound level.

The Chalkboard Menus

Following the introductory music and credit screens, a green chalkboard appears on your screen with three choices: DEMO, GAME, and PRACTICE. You'll notice the GAME option is highlighted in white. If you're using a joystick, pull back or push forward on it to highlight the option you want, then press the button. If you're using the keyboard, use the up and down arrow keys to highlight the option you want, then press <return> to make your selection.

(Note: Both players can use the up and down arrow keys to highlight selections and the <return> key to make selections while at any of the chalkboard menus.)

A new chalkboard then appears. What you see depends on which type of action you've selected.

If you selected PRACTICE or GAME you are prompted to select between ONE-PLAYER or TWO-PLAYER action. You should now skip to "Practice Options" or "Game Options" to play a real game.

If you selected DEMO, the computer controls all players, and you're allowed to choose between SELECTED PLAYERS or RANDOM PLAYERS.

When you select RANDOM PLAYERS, the computer picks both players for both teams, then displays a chalkboard showing who was drafted. Press <return> to start the game.

When you select SELECTED PLAYERS, a chalkboard displaying the name of 10 players appears, and you're allowed to pick both players of both teams. You're prompted to first pick TEAM ONE PLAYER ONE and TEAM ONE PLAYER TWO, the repeat to process for TEAM TWO PLAYER ONE and TEAM TWO PLAYER TWO.

To make your selections, use the joystick or appropriate up or down key to highlight the player you want. Then press the button (with the joystick) or <return> to make your selection.

After you've selected a player, highlight CONTINUE and press <return> or the joystick button to move to the next chalkboard.

You'll then see a screen that confirms your choices and tells you what color jersey each player will wear when play begins.

Press <return> to start the game. The computer-controlled cagers will play four six-minute quarters, moving up and down court automatically each time the ball changes hands.

You can pause play by pressing <esc> (this does NOT stop action if a player is shooting). To return to the initial chalkboard menu and select another game before the demo contest is complete, press <control> and the <r> key together.

Practice Options

No one wants to hit the courts cold. Just as in real basketball, it's a good idea to warm up a little before playing a game, so you may want to select PRACTICE from the opening chalkboard menu. Two-on-Two offers you two practice modes: ONE- and TWO-PLAYER.

Use the joystick or the up and down arrow keys to highlight the option you want, then press the joystick button or <return>.

ONE-PLAYER (one player on the court by himself)

You can practice with either the keyboard or the joystick; use the up and down arrow keys to highlight your choice-- JOYSTICK or KEYBOARD-- then press <return> to practice. See "Joystick and Keyboard controls" for instructions on controlling your player.

If you selected JOYSTICK, make sure your joystick is plugged into your computer's joystick port. You can practice shooting inside and outside and work on your hook shots, jump shots, slam dunks, tip-ins, and rebounds. The scoreboard shows you how many points you've run up during this practice session. When you hit a basket or toss the ball out of bounds, the ball is automatically returned to you. Press <esc> to return to the chalkboard menus when you're through practicing.

TWO-PLAYER (two players on the court)

Player One uses the joystick, Player Two the keyboard in two-player practice games. Notice that Player One is always in the blue jersey, Player Two in light red. You can practice different shots, from hooks to dunks, as well as dribbling, rebounding, and tip-ins. (All tip-ins are scored to the shooter.) You can play straight one-on-one or other "pick-up" games such as "Around the World" and "HORSE".

How to Play "Around the World." Player One tries a shot from the baseline--say, at the edge of the key (the key is the area between the inner white line and the basket). Every time the player makes a basket, he or she moves further along the edge of the key, working around the key to the baseline on the other side of the basket. If Player One misses a shot, Player Two gets a turn. When a player misses a shot, he must shoot again from the same spot on his or her next turn, and stay in that spot until he or she makes a basket. The first player to go "Around the World" wins.

How to Play "HORSE." Player One makes a shot from anywhere on the court. Player Two must then make the same shot or he will get an "H." When Player One misses, Player Two can make a shot from wherever he or she wants, and then has to make the same shot. Everytime a player misses, he gets another letter until the word HORSE is spelled. Whoever gets all the letters first, loses. (Note: The letters in HORSE do not appear on the screen. You
must keep track of the “score” yourself).

As with the ONE PLAYER option, each basket you hit is recorded on the scoreboard, and there are no fouls or time clock.

To leave the practice game and return to the chalkboard menus, press <esc>.

The Scouting Report

Once you’re warmed up and ready to play ball, you still have to rate your playing abilities on a screen called The Scouting Report. It might look like this:

<table>
<thead>
<tr>
<th>INSIDE ......</th>
<th>OUTSIDE ......</th>
<th>DRIBBLING</th>
<th>QUICKNESS</th>
<th>STEALING</th>
<th>JUMPING</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>6</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

**RACE: BLACK/(WHITE)**

INSIDE refers to your shooting accuracy inside the key.

OUTSIDE refers to your shooting accuracy outside the key.

DRIBBLING rates your maneuverability with the ball.

QUICKNESS rates your maneuverability both on defense and when you’re not handling the ball on offense.

STEALING rates your ability to outmaneuver the ball handler and steal the ball.

JUMPING rates your ability to block shots and come down with rebounds.

The highest rating you can give yourself is 6 (very skilled), and the lowest is 2 (minimally skilled). Notice that INSIDE and OUTSIDE are grouped together, as are DRIBBLING and QUICKNESS and STEALING and JUMPING. Within each of these groupings, the total skill level always equals 8.

So if you choose to rate yourself 3 as an outside shooter, you must be a 5 inside. If you choose a 6 rating at stealing, you’ll only be a 2 at jumping. After all, you can’t be great at everything. Remember, too, that in a game situation you’ll want to select your offensive and defensive strategies according to your strengths and weaknesses.

Game Options

**TWO-PLAYER HEAD-TO-HEAD**

Each player has a computer teammate. Each player names his team, then types in his own name and rates himself when the Scouting Report screen appears (see page 7). (When entering your name or a team name, you may use up to 12 letters.)

Player One uses the joystick to highlight the choices and the joystick button to change the ratings and move between BLACK and WHITE. Player Two then uses the arrow keys to highlight CONTINUE and presses <return> to make the selection.

Each player also picks a computer teammate from the Player Draft, which includes ten pros, each one patterned after a real-life basketball superstar. (For details of the Player Draft, see the appropriate section).

A **STARTING LINEUP SUMMARY** screen lists player names, with corresponding uniform colors, and shows which team is “home” and which is “visitor”.

**TWO PLAYER TEAMMATES**

When you select this option, you and a friend team up against a hard-driving computer team. You first type in a TEAM NAME of 12 letters or less, then pick a DIVISION to play in. The division you choose determines the caliber of your computer opponents. NORTH is the easiest division, SOUTH is tougher, EAST is tougher still, and WEST is the toughest of all.

Take a look at the chart. It gives you a breakdown of all the teams in every division. Notice that the rating totals are higher in the tougher divisions. For example, in the easy North, the INSIDE and OUTSIDE ratings total 7; but in the tough West, they total 10. Since the players in the West are better, the West teams have higher ratings.

When Player One types in his name (12 letters or less) and presses <return>, the Player One Scouting Report allows Player One to rate his abilities. Then Player Two types in his name and rates himself. In this mode, Player One has the light blue jersey, Player Two the dark blue one.

**ONE PLAYER EXHIBITION GAME**

You and your computer-controlled teammate challenge a computer team. Type in your TEAM NAME and YOUR NAME and pick a DIVISION. Again, the division you select determines how tough your opponents will be. Next, rate yourself on inside and outside shooting, dribbling, stealing, quickness, and jumping.

Finally, you select your computer-controlled teammate from the Player Draft. Do you want the great outside shooting of Larry Berg or the dynamite inside moves of Kareem Ugrin? Strategy is important, because you’ll want a player whose talents will complement your own, someone who’s going to be effective against your opponents. (Again, use the chart “Your Computer Opponents” to scope out your opponents’ strengths and weaknesses).

Your team will always be the HOME team, with the player you control in the light blue uniform.

**ONE PLAYER LEAGUE PLAY**

This game mode allows you and a computer teammate to play in league competition that can take you all the way to the GBA Championship.

You first choose a division to play in (North, South, East, or West), then play a five-game season against the other five teams in that division.

Once you’ve selected League Play, the computer screen will ask if you want to GET TEAM or assemble a NEW TEAM. If you select GET TEAM, the computer team on the disk, the screen will display the message “Warning: Selecting new record will be ERASED from the game disk. In other words, you can have only one team at a time. (If you try to do this, you'll have to create a new team and there's already a team on the disk, the screen will display the message “Warning: Selecting new team will erase your current team.”) However, you can go from League Play to Exhibition Play without erasing your League Team from the game disk.

You’ll play a five-game schedule. The computer will select your opponents within your chosen division until you’ve played all five. Playing in the easier divisions will of course mean easier games—until you get to the playoffs. At the end of the season, the computer will compare your win/loss record with the records of the other teams in your division. If you have the best divisional record, or if you're tied but have beaten your co-leader, you'll advance to the playoffs. The playoff schedule is set up so that the easiest division (North) plays the hardest division (West) in Game 1; in Game 2, South meets East. The winners from Game 1 and Game 2 then meet in the GBA Championship Game.

**Your Computer Opponents**

<table>
<thead>
<tr>
<th>Divisions</th>
<th>Teams</th>
<th>Player #</th>
<th>OUTSIDE</th>
<th>INSIDE</th>
<th>STEALING</th>
<th>JUMPING</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>Cougars</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
In order to catch the ball you must be directly in line with it. Otherwise, the ball will go out of bounds or will be stolen by your opponents.

Shooting

Shooting Basics

When you have the ball and you're trying to make a shot, first hold down the joystick button. Your player will begin his shot by jumping and will release the ball at the same time you release the button. You must time the release to the jump. If you release the ball at the top of the jump, you have a better chance of scoring.

Do you think you're ready to put that timing to work? Here's what you must do to score a basket:

With your player in the area immediately surrounding the basket, the player will tip the ball into the basket if you make your shot. The player will also tip the ball in if you just barely miss.

To make a hook shot, you must be downcourt, near the baseline, with your back to the basket (as you look at your screen, he must be facing 9 o'clock or 3 o'clock). With a hook shot, the ball is released as the player's arm "hooks" over his head. The advantage of this type of shot is that it cannot be blocked.

Slam Dunks

A slam dunk may be the most satisfying shot in basketball. What could be better than actually stuffing the ball through the hoop? To do a slam dunk, you must have a player with a 4, 5, or 6 rating as an inside shooter. You must also be within a step of the basket line (LPL), or half a step right of low post left (LPR) (see "Zones on the Court"). Finally, there must be NO DEFENDERS under the basket. If all of these conditions are met, a slam dunk will ALWAYS be successful.

Tip-Ins

If an offensive player grabs a rebound while directly facing the basket (as you look at him on the screen, facing 12 o'clock with his back to you), he'll tip the ball in for a basket. As long as the player is facing the basket and underneath it, the tip-in will be automatic if you make your player jump. Again, only an offensive player can tip the ball in. (In the practice mode, either player can tip the ball in.)

Rebounds

A player can rebound only when he's in the area immediately surrounding the basket. To rebound press the joystick button in the same way you do to make a shot-- your player will jump for the ball. Timing your jump is the key to successful rebounding.

Shooting Percentages

Nobody can make every kind of shot every time. But you can increase your shooting percentage by working on the timing of your release. (Of course, it also helps to have a high rating). The following charts show the percentage
of outside and inside shots you'll make based on the timing of your release and your outside shooting ability.

Outside Shooting Percentages

<table>
<thead>
<tr>
<th>Outside Rating</th>
<th>Inside Rating</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>When release is:</td>
<td>Inside Rating</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>very early</td>
<td></td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>early</td>
<td></td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>a little early</td>
<td></td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>perfect</td>
<td></td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>a little late</td>
<td></td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>late</td>
<td></td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>very late</td>
<td></td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Inside Shooting Percentages

<table>
<thead>
<tr>
<th>Inside Rating</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td>very early</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>early</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>a little early</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>perfect</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>a little late</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>late</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>very late</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

3-Point Shots

If a player shoots a basket from outside the white 3-point line (see illustration on page 21), that basket is good for 3 points instead of the usual 2. Successful 3-point shots are based on a player's outside shooting rating and the timing of his release. However, if a player shoots from outside the white 3-point line, the odds of that shot's being good are only half the odds of a regular outside shot. For example, if a 6-rated outside shooter releases the ball perfectly from beyond the 3-point line, he has only a 35% chance of making that shot.

Shooting From Under the Basket

Whenever a player shoots directly under the basket, his chance of scoring is based only on his inside rating, not on his timing. As long as he releases the ball before he's called for traveling, it's assumed that his timing is perfect.

Notes on Defense: Stealing the Ball and Blocking Shots

To steal the ball from the offense, you must "bump" the ballhandler on the side on which he's dribbling or holding the ball. Any player's success at stealing the ball will be based on his rating at STEALING-- see "The Scouting Report."

To block a shot, move in close to the ballhandler and press your joystick button to jump just as he goes up for a shot. Your success in blocking the shot will depend on how close you are to the ballhandler and your rating at JUMPING-- see "The Scouting Report."

Your Computer Teammate

Your computer teammate is an intelligent player. If he's under the basket, he'll shoot. If he sees that you're open under the basket, he'll pass the ball to you. If the block is about to run out (either the 24-second shot clock or the quarter clock), he'll shoot if he has the ball. If he's being covered and he realizes he can't drive to the basket, he'll pull up and shoot from as close as he can get.

Remember, just as in real basketball, the key element in Two-On-Two is teamwork. Your computer teammate is designed to work with you to beat your opponents. Not matter how good you are as an individual player, you'll never make it to the GBA Championship unless you learn to play as a team.

The Player Draft

After you've rated your abilities, you get to draft a computer-controlled teammate. In the two-player mode, each player gets to draft a computer teammate unless you're playing the TWO PLAYER TEAMMATES option. You have ten players from which to choose, each patterned after a real basketball superstar.

When the player draft screen appears, you'll see ten names in white letters, with the two "pointer" basketballs on either side of a name. Use your joystick to line up the basketballs next to the name of the player you want, then release the joystick and press the joystick button. This will highlight your choice in yellow. Finally, move the balls down to the word CONTINUE and press the joystick button to go to the next screen.

Your Superstar Teammates

Here are the computer stars you can play with:

- Magic Lyndon. One of the best players in the game, famous for his sleight-of-hand passing. Now you see it, now you don't. Magic provides that extra magic that can take you all the way to the GBA Championship.
- Larry Orr. A consistently high scorer, Orr has been known to score over 50 points in a game. He knows how to draw fouls from opponents and almost never misses from the free throw line.
- Elgin Cutter. Some say he's the best pressure player in the game. He once scored 61 points in a GBA playoff game-- a record. Cutter has some deadly inside moves.
- John Madland. An excellent defensive player. When Madland's on the court, expect lots of turnovers. Also a dynamite outside shooter.
- Larry Berg. If you want a teammate who can do it all, Berg's your man. A real team player who knows how to win. Great all-around abilities. Berg can shoot and pass with either hand. He received the GBA Most Valuable Player Award two years in a row.
- Kareem Ugrin. Some say he's getting too old, but Ugrin seems to just get better. A great inside shooter with an almost unstoppable hook shot, Ugrin recently became the highest scorer in GBA history. He's also a ferocious rebounder.
- Walt Barnett. A superb rebounder and one of the best defensive players around.
- Julius Keith. Dr. K. When he's not selling basketball shoes or soft drinks on TV, Keith can be found driving defenders crazy on the court. He averages over 30 points a game and has some of the best moves in the game.
Oscar Dunbar. A player with all the right moves, Dunbar is considered the best guard of all time. A great player at any position, he's equally adept at inside and outside shooting.

Wilt Dulmage. a.k.a. Wilt the Tilt. This man is great at blocking shots and coming down with the ball. Also one of the few unstoppable inside shooters.

The Super Teammate Player Draft chart rates the talents of your computer teammates. The numbers indicate their skills at inside and outside shooting, dribbling, stealing, quickness, and jumping. Unlike the ratings for yourself, these are fixed. Because all these stars are excellent players, they rate no lower than 4. A 6 is the highest rating a player can have.

Notice that the total within each grouping (Inside and Outside, Dribbling and Stealing, and Quickness and Jumping) totals 10 for your superstar teammate, as opposed to 8 for your other player.

Superstar Teammate Player Draft

THE PLAYERS: Outside Inside Dribbling Stealing Quickness Jumping

<table>
<thead>
<tr>
<th>Player</th>
<th>5</th>
<th>5</th>
<th>5</th>
<th>5</th>
<th>5</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magic Lyndon</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Jerry Orr</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>5</td>
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<td>Elgin Cutter</td>
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<td>6</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>John Madland</td>
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<td>6</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Larry Berg</td>
<td>4</td>
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<td>4</td>
<td>6</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Kareem Ugrin</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Walt Barnett</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Julius Keith</td>
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<td>6</td>
<td>4</td>
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<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Oscar Dunbar</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Wilt Dulmage</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

Calling Plays

In all the game modes except two-player teammates, you must choose an offensive and defensive alignment every time you're on offense or defense. The PLAYCALLING SCREEN comes up whenever there's a change of possession because of a basket, steal, defensive rebound, or penalty.

Although the game is actually played on a full court, you see only half the court at a time. Every time there's a change of possession or a basket is good, the players run down the court and the offense brings the ball up from mid-court.

The playcalling screen replaces the scoreboard for about seven seconds while the players automatically run down the court and bring the ball back into play. The playcalling screen disappears when the ball handler crosses center court. So you have seven seconds to select a play. If you fail to select a play, the computer will automatically pick one for you. (On defense the computer will pick LOW ZONE (LZN) and on offense it will pick BASKET (BKT)).

The playcalling screen is divided into OFFENSE and DEFENSE. For offense the screen shows a picture of your joystick surrounded by the abbreviations BKT, RHT, TOP, LFT, and SCRN, which stand for the five offensive plays you can choose from. For defense the screen shows a picture of your joystick surrounded by the abbreviations LZN, HZN, MMD, and MML, which stand for the four defensive alignments you can choose from.

You select a play by moving your joystick forward, back, right, or left to "point to" the play you want: forward for BKT or LZN, back for TOP or HZN, right for RHT or MMD, and left for LFT or MML. On offense you can also use the joystick button if want to select the SCRN play.

If you've called a play, but change your mind while the playcalling screen is still visible, simply push the joystick in the direction of the new play you want. Whenever you call a play, you'll hear a tone at the same time the word
If you assign your teammate to the high zone, he covers the ball until someone comes up with the ball. Staying in the key too long results in the man outside the key in the high zone for more than three seconds at a time. However, when the ball is in the air low zone, your teammate always takes the man in the low zone, and you take the man in the high zone.

The Three-Second Rule is invoked if an offensive player stays inside the key offensive player without the ball. When your opponents are not flooding the low zone (which means BOTH offensive players enter the key), your teammate enters his zone, he covers him man-to-man. If the offense handler breaks away from the man playing the high zone, the man playing the low zone can usually cover the ball handler before he can get into position near the basket. The weakness of the zone defense is that one defender is always the key, resulting in a two-on-one situation outside the key. This sometimes means that one of the offensive players can take an easy outside shot.

If you're playing against the computer, it's easier to beat the computer when you play a zone defense. If you want a more challenging game, play man-to-man.

Offensive Plays

You have five offensive plays from which to choose:

- **Left Wing** (LFT)
- **Right Wing** (RFT)
- **Top of Key** (TOP)
- **Basket** (BKT)
- **Screen** (SCRN)

**Left Wing (LFT).** Your teammate runs to the high post left or high post right (HPL or HPR) and stays there for one second. Then he runs to the left wing (LFT), stays there for two to four seconds, and runs a random pattern on the left side of the court.

**Right Wing (RFT).** Your teammate begins by running to the high post left or high post right (HPL or HPR) and waits there for one second. Then he runs to the right wing (RFT) and waits there for two to four seconds before running a random pattern on the right side of the court.

**Top.** Your teammate runs to either the right of left high post (HPR or HPL), waits there for a second, and then runs to the top. He stays there for two to four seconds and then runs a random pattern at the top of the key.

**Screen (SCRN).** You see your teammate as a screen to block out any defenders trying to cover you. Your teammate runs to HPL or HPR and stays there for six seconds, allowing you to dribble around him as he blocks the defender. Then he runs a two-step pattern between the high posts.

**Basket (BKT).** Your teammate runs to the high post left or right (HPL or HPR), then drives under the basket. He waits there for two seconds and then runs a random three-step pattern under the basket.

Defensive Plays

You have four defensive plays to choose from:

- **Low Zone** (LZN)
- **High Zone** (HZN)
- **Man-to-Man Light** (MML)
- **Man-to-Man Dark** (MMD)

**Low Zone.** When you call low zone, your teammate will stay in the key (between the basket and the inner white line on the court). When an offensive player enters his zone, he covers him man-to-man. If the offense floods the low zone (which means BOTH offensive players enter the key), your teammate will cover the ball handler. In this case, you should cover the offensive player without the ball. When your opponents are not flooding the low zone, your teammate always takes the man in the low zone, and you take the man outside the key in the high zone.

**High Zone.** If you assign your teammate to the high zone, he covers the ball handler when that player is in the high zone. When the ball handler enters the low zone area around the key, YOU cover him, and your teammate covers the player without the ball.

**Man-to-Man Light.** Your teammate covers the opposing player who wears the light-colored uniform. He stays with that player everywhere on the court. You cover the player in the dark uniform. The goal in man-to-man coverage is to stay between the man you're guarding and the basket, trying to keep him from getting under the basket and making an easy shot.

**Man-to-Man Dark.** This is the reverse of man-to-man light. Your teammate covers the man in the dark uniform, and you cover the man in the light uniform.

### Strengths and Weaknesses of Zone Defense

The zone defense is very effective against inside shooters. If the ball handler breaks away from the man playing the high zone, the man playing the low zone can usually cover the ball handler before he can get into position near the basket. The weakness of the zone defense is that one defender is always the key, resulting in a two-on-one situation outside the key. This sometimes means that one of the offensive players can take an easy outside shot.

### Penalties

**Bumping into an opposing player continuously for more than one second results in a foul in the following situations:**

A defensive foul occurs when one of the defensive players bumps into the ball handler. The penalty is either the ball out of bounds to the offense or free throws.

Charging occurs when the ball handler bumps into a defensive player. The penalty is change of possession or free throws.

Fouls and other penalties are displayed on the scoreboard in flashing letters right after they occur. However, if the ball is fouled when shooting, the foul won't be displayed on the scoreboard until after the shot has either gone in for a field goal or missed. Fouling the shooter results in one free throw if the basket is good and two free throws if he misses his shot.

The number of TEAM FOULS is also displayed on the scoreboard. Teams get five fouls per half; the count is reset to zero at halftime. If a team accumulates more than five fouls in a half, this results in bonus free throws for the other team.

### Other Violations

Traveling is called if you jump to shoot but don't release the ball in time. It won't be called if your shot is blocked by an opponent and you come down with the ball. Traveling results in a change of possession.

The Three-Second Rule is invoked if an offensive player stays inside the key for more than three seconds at a time. However, when the ball is in the air or up for grabs, all players can stay in the key for as long as they like, until someone comes up with the ball. Staying in the key too long results in...
change of possession.

The 24-Second Shot Clock gives the offensive team 24 seconds to make a shot after they bring the ball into play. The scoreboard has a SHOT CLOCK which counts down the seconds. Failure to make a shot in time results in change of possession.

Here’s a summary of all violations and penalties:

With three of fewer team fouls:

- Fouling the Shooter: if ball goes in ...............1 free throw
- Fouling the Ball Handler ..................Ball out of bounds to the offense
- Charging ..................................Change of possession
- Three Seconds in Key ..................Change of possession
- 24-Second Clock ..........................Change of possession

With more than three team fouls:

- Fouling the Shooter: if ball goes in ...............1 free throw
- Fouling the Ball Handler ..................2 free throws
- Charging ..................................2 free throws
- Three Seconds in Key ..................Change of possession
- 24-Second Clock ..........................Change of possession

A word about free throws. Players don’t have control over free throw accuracy. It’s based on the outside shooting rating. To make a free throw, just push the joystick button and release it. All players can rebound after the last free throw attempt.

The Quarter Clock and Overtime

You’ll play four 6-minute quarters in each game. If the teams are tied at the end of the fourth quarter, you’ll automatically go into overtime, which is another 6-minute quarter. The amount of time left in each quarter is shown on the clock in the middle of the scoreboard. At the end of each quarter, a buzzer rings and the screen displays which quarter has just been played. You then go immediately into the next quarter.

At the start of the game, the home team always takes the ball out (Player One is always the home team). The visiting team brings the ball into play in the second quarter. The home team again takes the ball out when the third quarter begins, and the visiting team starts off the fourth quarter.

Calling Timeouts and Pausing the Game

To pause the game, simply press the <esc> key on your keyboard; TIMEOUT OR ESC TO RESUME will be displayed on the scoreboard. If you merely want to pause the game, press the <esc> key when you’re ready to resume.

You can call a timeout only when you’re on offense. If you want to call a timeout, first press the <esc> key, then press the joystick button. Each team is allowed five timeouts per half. On the scoreboard you’ll notice five little lights on the HOME and VISITOR sides of the board. Each time you call a timeout, one of the lights will go out.

Calling timeouts saves precious seconds at the end of the game. If your team is behind and the clock is about to run out, you should call a timeout right after you’ve called a play. When you call a timeout, your players don’t have to take the time to run down court and set up the play; they’ll just appear on the court, in position, when play resumes.

To quit a game in progress and start over, press <esc>, then <CTRL-R>.

After the Game

At the end of every game, you can read all about it. The sports page of the Gamestar Gazette appears on the screen with the following boxscore writeups: the team names, the final score, the total field goals for each team, shooting percentages, rebounds, steals, blocked shots, and the name of the leading scorer. Here’s what the numbers mean:

- Field Goals. This is the total number of baskets that each team made. Each basket is worth either 2 or 3 points, depending on where the player was on the court when he made the shot. Free throws do not count as field goals.
- Percentage. The field goal percentage is calculated by taking the total number of actual field goals and dividing it by the total number of field goal attempts. That number is the team percentage.
- Rebounds. Every time your team pulls down a rebound, it’s recorded here.
- Steals. This number records the number of times your team stole the ball from the opposition.
- Blocked Shots. There are two types of blocked shots. After the shot is blocked, either the defender comes down with the ball or the offensive player retains possession. Blocked shots are only recorded here when the defender gains possession of the ball.
- Assists. This is the number of times a player’s passing sets up a teammate for a basket. To get credit for an assist, you must pass the ball to your teammate, who can dribble the ball only one time before putting the ball in the basket.
- Fouls. The number of personal fouls—for example, charging and hacking—each player commits is listed here.
- Leading Scorer. The top scorer’s name will be displayed with the number of points he scored.

GBA Championship Basketball also gives you a breakdown of each teams’ statistics. Press <return> and you’ll see a linescore similar to:

<table>
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<tr>
<th>Team</th>
<th>PTS</th>
<th>FG</th>
<th>%</th>
<th>RB</th>
<th>ST</th>
<th>BS</th>
<th>AS</th>
<th>FO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pioneers</td>
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<td>2</td>
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<td>Sharks</td>
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<td>2</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Player One</td>
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<td>10</td>
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<td>5</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Player Two</td>
<td>10</td>
<td>2</td>
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<td>2</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

By Quarters

- Pioneers 12 13 10 47
- Sharks 10 12 14 46

Attendance 17,547

Press Button to Continue

In this linescore, PTS stands for points scored, FG for field goals (that is, baskets) made, % for shooting percentage (baskets made divided by shots attempted), RB for rebounds, ST for steals, BS for blocked shots, AS for assists, and FO for fouls.

This linescore also shows you the score at the end of each six-minute period.
and the final tally. It also lists the attendance for today's game, in this
case, 17,547.

If the game was part of league play, GBA Championship Basketball lists the
division standings after you press <return> to continue. It also tells you
<Parent Dir> O
<return>) to return to the chalkboard menu and start another game.

To Play Another Game

When a game ends, press the joystick button (or <return>) to return to the
chalkboard menus. If you've just played any game (except league play) and
want to play the same game again, you don't have to type in your name again
or select a new computer teammate unless you want to. Just press <return> or
highlight CONTINUE and press the joystick button as you move quickly through
the menus.

Note: For a recorded message about our [Activision] newest software, call
415-960-0518. For technical help, call Product Support between 9:30 a.m. and
4:30 p.m. Pacific time on Monday, Tuesday, Thursday, and Friday between 9:30
a.m. and noon on Wednesday: 415-960-0518.

The Spectrum........................................213/391-6835
Apple Tree IIGs....................................305/238-5999
Rock 'n Roll Harbor..............................305/821-2232

[End of GBA Championship Basketball Documentation]
I wrote this program with no more intention than to satisfy a computer science project requirement. It became actually useful at one stage, and this is that stage, so I am letting it loose on you. The second version reflects suggestions from a few users. I would like some more suggestions, in order to make GenericComm a staple in a telecommunicators diet.

Don't expect the world, ok? I didn't spend a year writing this program, and it shows. It is a fast though, and to the point quick and dirty terminal program for general usage. In this current version it doesn't support things like: terminal emulations, protocol transfers, GS/OS interaction and file control, and fancy text editors (though I have some of these planned).

But GenericComm v1.0 contains the following features:

- 65,535 line scroll back
- 65,535 line buffer ability
- 65,535 line buffer
- 255 item dialing list
- support for 300,1200,2400,9600,19200bps operation
- restartable and in expressload format for fast loading and re-execution

This program requires 768k and GS/OS. It should work in 512k, though no promises!

------------------------------------------------------------------
Installation
GenericComm v2.03
------------------------------------------------------------------

There should be three files included in this NuFX archive.
GENCOMM.SYS16
GENCOMM.DOC
GENCOMM.ICS

One file is the one you're reading, the other is the actual program.

The file GENCOMM.SYS16 is a GS/OS application and can be launched from any standard GS/OS launcher. The filetype "CNM" be changed to EXE and used from a shell like ORCA or ProSEL's shell.

The file GENCOMM.SYS16 can reside anywhere on a valid GS/OS file storage system and will create a file if you use the dialing directory. The file is a standard TXT file called "DIALLIST".

The modem port settings should all be defaults except for the second and third last selections, they must be deselected so that the check mark doesn't appear beside them. Without this setting, there can be no communication with the modem whatsoever.

The buffering should be enabled at any speed above 2400bps or if you wish not loose characters as you select menus.

------------------------------------------------------------------
Function Explanations
GenericComm v2.03
------------------------------------------------------------------

The following is a list of keys and the functions they perform.

Open Apple - ?      -    HELP!
This key combination will present a summary of the commands available for your usage within GenericComm.

Open Apple - A      -    Add a system to the dialing list

After pressing this key combination, a blank entry will be added to the Dial list, with default entries.

Open Apple - B      -    Change the current bps connection rate
This quick menu list will allow you to change the bps rate at which your communicating with your modem at (and ultimately the online system). It uses the up and down arrow keys to select the bps rate, and return to confirm it. Any other keys will abort the selection process. The current bps rate is displayed in the bottom left corner of the normal screen.

Open Apple - C      -    Turn on or off buffer capture
The modem port settings should all be defaults except for the second and third last selections, they must be deselected so that the check mark doesn't appear beside them. Without this setting, there can be no communication with the modem whatsoever.

The buffering should be enabled at any speed above 2400bps or if you wish not lose characters as you select menus.

Open Apple - D      -    Dial a system
This quick menu list will allow you to select a system to dial by using your up and down arrow keys. Return will confirm your selection. The dialing list represents the online systems added using the Open Apple - A command. Once confirmed, a second screen, which allows you to edit or dial the item is presented. Editing the entries is hopefully logical.

Open Apple - H      -    Hangup
This menu selection will allow you hangup from the foreign system. It will ask you to confirm your intention. Only by pressing return when "Hangup" is highlighted, will the program try and hangup. The hangup is performed by dropping the DTR line to the modem. Some modems have it set so that DTR is always held high, and as a result this command might no work with all modem configurations. Change your modem so that the "computer controls DTR" rather than "modem holds DTR constantly high". This will remedy any hangup problems you may encounter.

Open Apple - Q      -    Quit
This command does a GS/OS quit command and will mark the GenericComm program as restartable so that if you wished to run this program again, it would load from memory, rather than disk. This command will confirm your desire to leave the program.

Open Apple - R      -    Remove online system from dialing list
Removing an online system from a dialing list will delete the entry for good and must be used with caution. No confirmation is made before deleting an entry.

Open Apple - C      -    Turn on or off buffer capture
At first, when you select this option, you will be asked to enter a file name to act as the text file buffer of the session. If the file already exists, you will be asked to confirm appendage. Once the buffer is turned on, the status line at the bottom of the screen will indicate that the buffer is on. Pressing the Open Apple - C sequence again will turn off the buffer and save the file.

Open Apple - .      -    Quit
This quit command does a ProDes 16 level quit command and will NOT mark GenericComm as restartable. This command can be used to quickly exit back into the shell if the filetype has been changed to an EXE file.

Open Apple - Up Arrow - Enter Scroll Back
By pressing the above key combination the user will enter the scroll back mode of GenericComm. Once in this mode, the four arrow keys are valid. Left and right arrow keys will move through the scroll back one line at a time, while the up and down arrow keys will move through scroll back at a full page at a time.

Open Apple - D      -    Dial a system
This quick menu list will allow you to change the bps rate at which your communicating with your modem at (and ultimately the online system). It uses the up and down arrow keys to select the bps rate, and return to confirm it. Any other keys will abort the selection process. The current bps rate is displayed in the bottom left corner of the normal screen.

Open Apple - Q      -    Quit
This command does a GS/OS quit command and will mark the GenericComm program as restartable so that if you wished to run this program again, it would load from memory, rather than disk. This command will confirm your desire to leave the program.

Open Apple - R      -    Remove online system from dialing list
Removing an online system from a dialing list will delete the entry for good and must be used with caution. No confirmation is made before deleting an entry.

Open Apple - C      -    Turn on or off buffer capture
At first, when you select this option, you will be asked to enter a file name to act as the text file buffer of the session. If the file already exists, you will be asked to confirm appendage. Once the buffer is turned on, the status line at the bottom of the screen will indicate that the buffer is on. Pressing the Open Apple - C sequence again will turn off the buffer and save the file.

Open Apple - .      -    Quit
This quit command does a ProDes 16 level quit command and will NOT mark GenericComm as restartable. This command can be used to quickly exit back into the shell if the filetype has been changed to an EXE file.

Open Apple - Up Arrow - Enter Scroll Back
By pressing the above key combination the user will enter the scroll back mode of GenericComm. Once in this mode, the four arrow keys are valid. Left and right arrow keys will move through the scroll back one line at a time, while the up and down arrow keys will move through scroll back at a full page at a time.

Known Bugs and Problems
GenericComm v2.03
I do not know the limit of the dialing list. The limit would either be the limit of the document structure of the 360 TextTool Kit (65000+ entries), or the limit of the actual list structure which is 255 items I believe.

I have not tested what happens in low memory situations to the scroll back. Results would depend on the 360 TextTool kit used and how it is coded. The same is applicable to the buffered scroll back when turned on.

HST owners:

Because of the design of the HST in regards to error checking settings, when entering a dialing string include the following:

&m0 for 2400 or lower bps connections
&m4 for 9600bps HST connections

Since I am using the IIgs built in firmware there are limitations, including that of buffering. The limit on the IIgs firmware buffer is actually quite large, but to keep the code simple at the moment, I have not modified the internal buffer and it is left at 2048 bytes. On an HST connection, when large amounts of text are flowing into your computer, you will see the screen attempting to display text as fast as possible. I guarantee this will be faster in future versions, but for now you will lose characters after the program gets 2048 characters behind the incoming data.

------------------------------------------------------------------
Credits                                          GenericComm v2.03
------------------------------------------------------------------

This program was compiled in ORCA/C and as a result contains libraries that are copyrighted by The Byte Works. The Byte Works Inc., 4700 Irving Blvd. NW Suite 207, Albuquerque, NM, 87114.

This program contains routines from the 360 Text Toolkit by 360 MicroSystems and therefore some code is copyrighted by 360 MicroSystems, 360 MicroSystems, 12272 Fox Hound Lane, Orlando, FL, 32826. (407) 365-6714. This program borrows on John Snow's SERIO library of routines which he has distributed (used with permission).

I would like to thank D. Proni from 360 MicroSystems for helping me uncover several bugs and for the general help in using the TextTool kit to my advantage.

I would like to thank Martin Hill, for telling me to abandon this project a few times and help him build his dream program.

I would also like to thank Parik Rao for being a pest and saying it was too big and how he did this in assembler and it was 4k in length using the GS/OS console device. Parik: HA!

I would like to thank Stanley Wong for saying "heh, neat" and being so humble about everything when he actually was quite impressed. ;)

I can be reached through the following networks:
America OnLine: MMontano
InterNet: sysop@pro-generic.cts.com
UUCP: uunet!cacijl!crash!net01!pro-generic!sysop
Pro-Generic BBS: 416-237-0308 (Proline software) (System Administrator)
Slow Net: Matthew Montano
c/o ComputCentre Sherway Gardens
25 The West Mall
Etobicoke, ON, Canada
M9C 1B8

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 424 of 1262
GenericList is a quick and dirty GS/OS shell program for listing text and source files. Rather than having a clumsy editor or using the aggravating type command from the APW/ORCA shell, use GenericList!

Features: GenericList is a clean and to the point program which will load a text file and display it. You can scroll up and down, left and right, at very high speed. It can be installed as a shell utility in the APW/ORCA shells.

Why did I write this? I've used an MS-DOS (I know, I know) machine for a while now for telecommunications. I buffered my sessions to disk, and viewed them later with a small program called "I". In the spirit of "I", and the need I had to continually view files and the desire not to load up MaxEdit to view one file, GenericList was born. (I also needed something to do after I cleaned my room up this afternoon).

GenericList is Copyright 1991 by ventureTech. I ask you give this to EVERYONE YOU KNOW. I won't ask for any money, though I will gladly accept some. What I do ask is that whether or not you like the program or will continue to use it that you send me a note saying that you've tried it. My addresses (email and otherwise) are at the bottom of this file. If you could also tell me where you got it from, it would be appreciated as well.

Installing GenericList:

GenericList consists of one EXE file (GS/OS Shell Executable) that can be run from anywhere. If you are installing it in an ORCA/APW system, copy it to your UTILITIES directory. Then edit your SYSTEM/SYSCMNDs file and add the following line:

```
L               *U                 List Utility
```

That way, when APW/ORCA is loaded, L becomes available from any directory.

Using GenericList:

Type "$Filename" where filename is any valid GS/OS path to a valid text file. Valid files include SRC and TXT files. Sorry, AppleWorks and other word processor formats are not supported. Once loaded, you should see two numbers at the top left. The left number indicates what line you are on, the right indicates how many lines are in the document.

To scroll up by one line: Press the left arrow key.
To scroll down by one line: Press the right arrow key.
To scroll up by one screen: Press the up arrow key.
To scroll down by one screen: Press the down arrow key.
To scroll right by one column: Press the "." key.
To scroll left by one column: Press the "," key.
To quit GenericList: Press space bar or ESC.

About the Program:

You may notice that the source code has been included for your viewing pleasure. I emphasize viewing, as you probably won't be able to compile it yourself. GenericList uses many routines from the TextTool Kit from 360 MicroSystems. (more on 360 MicroSystems later). The program is small, and the source code is reasonably well documented. Note: I am not a classical "C" programmer! I have very BAD habits, which are ingrained into me from years of AppleSoft BASIC, Turing (I vow to torture Hume and Holt), and recently HyperTalk.

There are some limitations to this program that you may run across. If you loads faster than loading this is large, your memory size, unpredictable results may occur. I have no idea what might happen to your computer. Use caution with big files as the file is completely loaded into the IIgs memory before being displayed.

About the Author:

Matthew Montano is some strange, live by night programmer who works on a variety of projects. Recent IIgs projects include GenericComm v2.0 and several niche market Plus applications (a HyperCard compatible system form IBM's and Macs). GenericComm 2.1 or v3.0 (I haven't decided what version # to give it) is almost done and WILL include xmodem/xmodem-1k/xmodem-4k upload and download abilities. Also recently finished are several programmers utilities for adding quick and dirty help screens to programs. Although my use of computers ranges across MANY platforms, I still have one favorite, the Apple IIgs. I simply enjoy using it and will continue to do little things like this as long as I continue to enjoy using it.

The Future of GenericList:

I will add, very shortly a "search ability" so you can quickly search a text file for a string of text. I will also make this available from the finder by changing the filetype to s16 and adding code to handle MessageByName messages that pass GenericList a filename. There will also be a command that will take all long line (>80) and wrap them to a single screen. Hopefully within a few weeks I'll get to it.

About 360 MicroSystems TextTool Kit:

The TextTool Kit is a library of routines accessible from "C", Assembler and Pascal ORCA/APW languages. It provides an incredible list of routines for managing text files, windows, mice, text ports, pull down menus, menu-lists, direct screen writes and buttons and controls. They are very well debugged (I only found two, and once notified, they were corrected promptly by 360 MicroSystems). Even with the advent of Apple's fantastic GUI based tools, I still believe there is a place for text based tools and programs.

GenericList and GenericComm I think are two righteous programs. As well, 360 MicroSystems has developed and is selling MaxEdit, simply the best editor ever written for the IIgs. For the price it is being offered for, you cannot go wrong. I do NOT work for 360 MicroSystems but have just over a $100US with them and am VERY satisfied with the support and products they develop and offer.

360 MicroSystems
12272 Fox Hound Lane
Orlando, FL 32826
(407) 365-6714

Getting in touch with me:

Shnal Mail: PO Box 867, Station F, Toronto, ON, MAY 2N7
Apple II and high-technology personal computing discussions.

2400bps only.

This program is dedicated to my girlfriend, Kerry, who has put up with me for 6 months already.

Long live The Cure and decent music everywhere!

Chapter 1

Now that you have downloaded, pirated, or otherwise illegally gotten ahold of this fine program, you may wish to make backup copies for yourself (or a friend).

Program requirements:

Enhanced //e, //c with 128k and double hi-res with at least two drives and although a mouse is not required it is strongly recommended.

Along with the program and the docs that came with the original of the program came a IQR interrupt card which if you do not have a mouse re-routes the signals that were suppose to be going to the mouse to the joystick or the keyboard. This is not required, but there will be schemes for anyone wishing to build one out of 15 bux of (good ole) Radio Shack parts.

Boot the boot disk after it says 'OK' in a box press 'return' to continue. If you wish to install the boot on a hard drive hit 'h' a few times right after you press return and follow the instructions there. If not it will automatically load then. It will cycle thru the drives to find the on-line volumes and then the desktop will appear. Once this happens and you get a little arrow, use the U,i,o,j,k,l,n,m,' to move the arrows. You must hold down the open apple key at the same time. Insert the Drivers disk into the second drive and hit closed apple - a,b,c, or d to select which letter represents the drivers disk. Once is done loading the catalog track there will appear 6 icons of drivers for printers, etc... Move the arrow to the OPTIONS and use the 'k' to click that box, a menu will appear and you can move the arrow down to the INPUT DEVICE and select the device you wish to use.

Once this has been done things get much easier. Repeat the procedure, but now for the printer, interface, Clock, aux drivers. Then after you have that done. In order for GEOS to load your configuration up when ever you boot the program, you must have the drivers that you selected on the boot disk. You will need to copy those driver files to the boot disk. Refer to Copy Files.

SYSTEM disk

When GEOS is booted it looks for the following things: Drivers on the boot disk or the SYSTEM disk or directory. If you have installed GEOS on your hard drive, you will need to create a folder or (directory) named SYSTEM for GEOS. Select the drive you wish to have the SYSTEM folder by moving the pointer over the disk icons and clicking the chosen one. Click the FOLDER menu or press closed apple - U and you will be prompted for a name. In upper case type SYSTEM and press
return. Once you have done this, you may wish to copy the following files into it:

- Desktop, drivers (your selected ones) merge, Geopaint etc. This will be your work or SYSTEM folder where GEOS will go upon booting. Once you have done this you will be all set up to run the programs and begin your using of GEOS and the other utilities. Refer to Copy Files later in the file.

**VIEWing modes**

Go to the view menu or press closed apple G and click the following commands:

- by size (apple S) Sorts items in dir by size, largest item first
- by type (apple T) Groups items by file type
- by date (apple Y) Sorts item by date of last modification
- by name (apple N) Sorts items alphabetically

**Copying files**

Select source disk by clicking icon or hitting closed apple a, b, c, or d. Then click file icon once and then a second later again. Drag the ghost icon (transparent) down to the bottom of the screen and click again. It will do a few disk accesses and then the icon will re-appear down at the bottom. After you have done this for all the files you wish to copy on that page or until the thing is full select the destination disk and click the icon on the bottom of the screen and drag it up to the work space and click again. It will copy the file. Repeat process for other files.

**Group Icons:**

- if you wish to copy more than one icon onto a different disk select the icons by hitting closed apple and then the numbers 1-6 which rep the icons on the work space. After you have highlighted all the files you wish to by copied or dumped or whatever click any of the highlighted icons and then a group ghost icon will appear. This icon reps all the icons (or files) you have selected.

**Quick references**

- geos info: displays copyrights (ha!) and authors of geos (who cares)
- desktop info: displays copyrights
- alarm clock: a desk accessory for setting the time.
- calculator: quick calculations
- note pad: creating memos
- photo manager: managing photo albums
- text manager: managing text albums

**NOTE:** the geos menu displays the first eight accessories in SYSTEM folder.

- open (apple Z) loads and executes selected file(s) on desktop
- duplicate (H) creates a dup copy of the selected file or folder
- rename (M) renames the selected files or folders
- delete (X) deletes the selected file(s) or folder(s)
- info (Q) displays info about the selected file(s)
- print (P) prints the selected file
- folder

create (U) creates a new folder in the current folder

goto (/) opens a foldre in any disk drive after you enter its name

**open disk**

- view by icon (G) displays files in icon mode
- by size (S) by size of file
- by type (T) file type (SYS, TXT...)
- by date (Y) last date modified
- by name (N) alphabetically

**disk**

- open (O) opens disk in current disk drive and displays files on work space
- close (J) closes current disk
- rename (K) renames currently open disk
- copy (L) copies contents of one disk to another
- verify (V) checks the current open disk for errors
- erase (E) erase the contents of the open disk without formatting
- format (F) formats disk in any drive

**options**

- select printer: selects printer
- select interface: printer interface
- select input driver: (I) mouse, joystick, etc...
- select clock: clock
- select aux driver: (memory expansion device for ramdrives)

**RESET:**

- re-reads all the files and folders in all drives and repaints the screen

**Launching ProDOS files**

In order to do this you must copy GELOAD.system as the first file on the disk that you wish to load and run a prodos sys file. After this file PRODOS should be placed.

**Having big problems??**

Why not call Berkeley Softworks and ask them what to do, but sound intellegent. I have been having problems with launching ProDos files. (415)/644-3414 9 am and 5 pm Pacific time.
T: CLEAR UNITS AND SMOKE FROM SCREEN
D: CAUSES UNITS OF THE SAME DIVISION TO CHANGE COLOR AND THE HQ TO FLASH
<-=: SPEEDS UP COMPUTER MOVEMENT
-=>: SLOWS DOWN COMPUTER MOVEMENT
CTRL-S: SOUND ON/OFF
CTRL-P: COMBAT PAUSE ON/OFF
CTRL-L: GLOBAL LEAVE (CYCLE ROUND ALL UNITS)
CTRL-D: DIVISIONAL LEAVE (CYCLE AROUND DIVISION)
NOTICE: THE SPACE BAR WILL NEVER DO ANYTHING FATAL
NORMAL GAME KEYS

1-6: MOVEMENT KEYS (SEE ABOVE)
0: CENTER CURSOR ON SCREEN
S: SCROLL
1-9,A-C: CENTER CURSOR ON THESE SCREENS
O: CENTER SCREEN ON CURSOR
L,J,K,M: MOVE SCREEN IN DIRECTION
SPC: EXITS FROM SCROLL
E: EXAMINE THE CHARACTERISTICS OF THE FRIENDLY UNIT THE CURSOR IS ON WILL BE DISPLAYED
M: MOVE THE UNIT THE CURSOR IS ON WILL ENTER THE MOVEMENT PHASE
(ESC): WILL ENTER THE AUTO-MOVE PHASE AND COMPUTER WILL FIND THE NEAREST NON-MOVED UNIT
CTRL-A: ACTIVATE AIR POWER PHASE
CTRL-B: ACTIVATE SAVE GAME OPTION
Apple II Computer Info

CTRL-E:
END PLAYED TURN

CTRL-V:
WILL INDICATE STATUS OF ENEMY, FRIEND, OR NEUTRAL UNIT

MOVEMENT KEYS
---------------

THE FOLLOWING KEYS ARE USED WHEN A UNIT IS BEING MOVED

M:
SWITCH MOVEMENT TO THE OTHER UNIT IN THE STACK (IF POSSIBLE, OF COURSE)

1-6:
MOVEMENT KEYS (SEE ABOVE)

O:
CENTER UNIT ON SCREEN

S:
SCROLL (SEE ABOVE FOR DETAILS)

Q:
WILL EXIT FROM MOVEMENT PHASE

(ESC):
WILL EXIT FROM MOVEMENT PHASE, BUT IF UNIT HAS NOT MOVED, IT WILL BE ABLE TO MOVE LATER

C:
ALLOW A UNIT TO CHANGE MODE

L:
ALLOW AN UNMOVED UNIT TO BE LEFT

O:
ALLOWS PLAYER TO ISSUE ORDER TO UNIT

CTRL-C:
ALLWOS CONTINUED COMBAT WITHOUT MOVING

CTRL-H:
HIDES/EXPOSES AND UNIT

SEQUENCE
--------

NATO PLAYED ALWAYS GOES FIRST DURING MOVEMENT PHASE, A PLAYED MAY MOVE AS MANY UNITS AS HE WISHES. BUT, A UNIT CAN ONLY BE MOVED ONCE PER TURN! IF UNIT ENTERS ENEMY CONTROLLED HEX (ECH) IT MUST ENGAGE IN COMBAT, AND IF IT STILL HAS THE MOVEMENT POINTS (MP) AFTER COMBAT, IT CAN CONTINUE MOVING DURING THE MOVEMENT PHASE, THE FOLLOWING INFORMATION IS DISPLAYED:

TERN:
TERRAIN

TYPE:
TYPE OF UNIT MOVING

MODE:
MODE OF UNIT MOVING

TURN:
The turn of game (this number is inverse at night)

SM:MN:NC:
INDICATES (IF INVERSE) IF HEX CONTAINS SMOKE, MINES, OR NUCLEAR CONTAMINATION

EF:
EFFICIENCY OF UNIT

HQ:
DISTANCE TO HQ (* IF IT IS HQ, "-" IF OVER 9 HEXES)

MV:
MF'S REMAINING

STN:
STRENGTH OF UNIT

RAN:
RANGE OF ARTILLERY FIRE

ON THE RIGHT HAND SIDE OF THE SCREEN, THE POSSIBLE DIRECTIONS ARE DISPLAYED:

NORMAL:
MOVEMENT IS POSSIBLE

INVERSE:
MOVEMENT IS IMPOSSIBLE

FLASHING:
HEX IS ECH

MOVEMENT POINTS
----------

THE FOLLOWING ARE THE MAXIMUM MP'S ALLOWED TO A UNIT

<table>
<thead>
<tr>
<th>NATO</th>
<th>RUSSIAN</th>
<th>MP</th>
</tr>
</thead>
<tbody>
<tr>
<td>TANK</td>
<td>25</td>
<td>TANK</td>
</tr>
<tr>
<td>APC</td>
<td>25</td>
<td>BMP</td>
</tr>
<tr>
<td>SHG</td>
<td>20</td>
<td>ARTLY</td>
</tr>
<tr>
<td>AIRCV</td>
<td>30</td>
<td>KATCH</td>
</tr>
<tr>
<td>RECON</td>
<td>30</td>
<td>INF</td>
</tr>
<tr>
<td>ENG</td>
<td>20</td>
<td>ENG</td>
</tr>
</tbody>
</table>

NOTE:
AIRCv HAVE MP'S OF 15 AT NIGHT

THE ACTUAL NUMBER OF MP'S DEPENDS WHAT MODE IT IS IN, AND WHETHER ITS MAXIMUM MOVEMENT HAS BEEN HALVED. THE FOLLOWING RATIOS ARE USED TO CALCULATE THE INITIAL MOVEMENT ALLOWANCE. (IE. TANK IN NORM MODE WOULD HAVE 25*(3/4) OR 18 MP'S)

<table>
<thead>
<tr>
<th>MODE</th>
<th>RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFN</td>
<td>0</td>
</tr>
<tr>
<td>NECR</td>
<td>1/2</td>
</tr>
<tr>
<td>SUPT</td>
<td>1/4</td>
</tr>
<tr>
<td>ATTACK</td>
<td>1/2</td>
</tr>
</tbody>
</table>

MODE CHANGE
---------

THE CHANGE MODES, A UNIT MUST EXPEND MP'S BASED ON ITS EFFICIENCY AND THE NUMBER OF SIGHTING ENEMY UNITS (SEU)

EFFICIENCY
---------

COST
-----

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6-7 SEU/2
3-5 SEU + 1
0-3 SEU * 2 + 1

WHEN CHANGING MODES, THE * INDICATES THEY THE UNIT CAN'T CHANGE TO THAT

NEW MOVEMENT ALLOWANCE:
(MAX MP'S - CHANGE COST) * (NEW MODE RATIO) * (NUMBER MP'S LEFT / NUMBER
OF
MP'S AT START)

IN OTHER WORDS (HA!) THE MORE ENEMIES AROUND, THE HARDER IT IS TO
DO ANYTHING

MODES
-------

DEFN:
(DEFENSE) ALLOWS A UNIT TO JUST DEFEND ITSELF

SUPPORT:
(SUPPORT) ALLOWS A UNIT TO SUPPORT THE DEFENSE/OFFENSE OF A
UNIT FROM THE SAME DIVISION

NORMAL:
OBVIOUS (I HOPE)

TRANSPORT:
(TRANSPORT) INDICATES THAT A UNIT IS USING A ROAD AND IS
VULNERABLE TO COMBAT

RIVER:
ALLOWS A UNIT TO CROSS A RIVER

ATTACK:
(ATTACK) GIVES INCREASED COMBAT ABILITY, BUT LOSES WILL INCREASE

FIRE:
ALLOWS ANY UNIT WITH AN ARTILLERY
RANGE ABOVE 0 TO FIRE

REORGANIZE:
(REORGANIZE) INDICATES THAT A
UNIT IS REFITTING AND IS
INCREASING ITS STRENGTH AND
EFFICIENCY)

TERRAIN
-------

TERRAIN MP'S SIGHTING COMBAT DISTANCE BONUS
-------------------------
OPEN 2 5 0
L. ROUGH 3 3 1
ROUGH 4 2 3
FOREST 4 2 2
SWAMP 5 3 1
VILLAGE 3 3 2
TOWN 4 2 3
SAND 3 3 1
RIVER 4 5 0

AIRFIELDS AND NUMBERED HEXES ARE TREATED AS OPEN FOR MOVEMENT AND
COMBAT PURPOSES

MOVEMENT IN TRANS MODE COSTS 1MP/HEX AIRCV PAYS 1MP/HEX IN ANY TERRAIN

+2 MP'S TO ENTER SMOKE HEX
+1 MP (+2 IF IN TRANS) FOR EACH SEU
+1 MP IF IN TRANS MODE AND ENEMY HAS AIR SUPPERIORITY

ORDER PHASE ---------

WHEN MOVING A UNIT, ONE CAN GIVE AND ORDER BY HITTING "C"

1-C:
WILL MOVE UNIT TO APPROPRIATE POINT USING ROAD NET (PRESENCE OF
ENEMIES NEGATES THIS ORDER)

D:
CAUSES UNITS IN NORM AND FIRE MODE TO MOVE AND FIRE DURING THE ENEMIES
MOVING PHASE

X:
WILL CAUSE THE UNIT TO EXIT THE MAP WITH A 25% CHANCE OF COMING BACK
AS A REINFORCEMENT AT THE SAME SPOT 1-3 TURNS LATER, OR BEING
ELIMINATED

V:
WILL CAUSE THE UNIT TO CAPTURE ANY VILLAGES WITHIN 5 HEXES AND
CONTINUE (ENEMIES PRESENT NEGATE THIS ORDER)

F:
WILL CAUSE THE UNIT TO FIRE AT THE BEST TARGET WITHIN RANGE

R:
WILL CAUSE THE UNIT TO RUN UNTIL OUT OF SIGHTING RANGE WHERE IT WILL
CHANGE TO REOR MODE IF POSSIBLE

S:
WILL CALL IN FIRE FROM ARTILLERY AND AIRSTRIKES WITHIN RANGE ON ALL
ENEMY UNITS WITHIN 3 HEXES OF THE MOVING UNIT

M:
WILL CAUSE THE UNIT TO ADVANCE AND FIRE ON ENEMY UNITS

N:
WILL CAUSE THE UNIT TO ADVANCE AND ATTACK ENEMY UNITS

IF THE ORDER CAN NOT BE CARRIED OUT, THE ANNOYING BEEP WILL SOUND AND
CONTROL WILL BE PASSED BACK TO THE PLAYER (NO EFFECT WILL BE TAKE
AGAINST THE UNIT)

HIDDEN MOVEMENT
-----------------

ANY UNIT MAY BE HIDDEN DURING ITS MOVEMENT PHASE PROVIDED THAT:

IT IS NOT STACKED
NOT ADJACENT TO A UNIT
NOT IN TRANS MODE
NOT SIGHTED BY AN ENEMY UNIT
COMMAND TO HIDE:
CTRL-H (OR <-)

IF A HIDDEN UNIT ENTERS TRANS MODE OR FIRES, IT WILL BE "UNHIDDEN"

SIGHTING
---------

A HIDDEN UNIT THAT IS SIGHTED BY AND ENEMY UNIT OR MOVES ADJACENT TO
AND ENEMY HIDDEN UNIT WILL BECOME EXPOSED THE DISTANCE UPON WHICH A
HIDDEN UNIT BECOMES SIGHTED DEPENDS ON:

TERRAIN
NIGHT (MAXIMUM OF 2 HEXES)
IN SMOKE
IF IT IS IN DEFN (1 HEX) OR REOR (2) MODE
WHEN A UNIT IS SIGHTED, THE SPEAKER MAKE A BEEP

DELAYED MOVE
-------------

A UNIT GIVEN A DELAYED MOVE IN THE ORDER PHASE OF ITS TURN MAY MOVE DURING THE ENEMY'S TURN. UNITS IN FIRE MODE WILL ATTEMPT TO FIRE AT OTHERS AND UNITS IN NORM MODE WILL ATTACK. THE PROBABILITY THAT AN ENEMY UNIT WILL ACTIVATE AN ENEMY UNIT IN DELAYED MOVE DEPENDS IN THE NUMBER OF DELAYED UNITS WITHIN 5 HEXES.

L KEY
-----

WHEN MOVING UNITS, IF YOU CHOOSE TO MOVE A UNIT AND THEN HAVE NOT DONE ANYTHING WITH IT, YOU CAN HIT "L" AND CYCLE AROUND TO THE NEXT UNIT WHILE COMING AROUND TO THE OTHER ONE LATER.

MOVEMENT RESTRICTIONS
---------------------

NO MORE THEN 2 UNITS IN A HEX
NO UNIT MAY ENTER A UNIT OCCUPIED BY A HIDDEN UNIT
AIRCV'S CAN NOT ENTER RUSSIAN CONTROLLED VILLAGES, TOWNS, OR AIRFIELD HEXES
UNITS IN TRANS MODE MAY ONLY TRAVEL IN ROADS, OPEN TERRAIN, OR NON ENEMY CONTROLLED VILLAGES, TOWNS, AND AIRFIELDS
UNITS IN DEFN MODE MAY NOT MOVE

---

NIGHT MOVEMENT
-------------

DURING A NIGHT TURN, SIGHTING DISTANCE IS LIMITED TO 2 HEXES. AIRCV UNITS HAVE THEIR MOVEMENT ALLOWANCE HALVED.

NIGHT TURNS ARE INDICATED BY WHITE TERRAIN, UNLESS THE "B" KEY IS HIT. THE TURN COUNTER IS INVERSE WHEN NIGHT IS OCCURRING.

NIGHT OCCURS ON TURNS: 5, 6, 11, 12, & 17, 18

COMBAT
-------

WHEN AN ENEMY UNIT ENTERS AN ECH (ENEMY CONTROLLED HEX) OR CTRL-C IS HIT, COMBAT IS INITIATED.

THE COMPUTER RESOLVES COMBAT CONSIDERING:

THE NUMBER OF ENEMIES SIGHTING THE ATTACKER
THE NUMBER OF FRIENDLY UNITS SIGHTING
THE DEFENDER
THE TERRAIN THE DEFENDER IS IN
THE NUMBER OF FRIENDLY UNITS SUPPORTING THE ATTACKER
THE NUMBER OF ENEMY UNITS SUPPORTING
THE DEFENSE
THE DISTANCE FROM COMBAT OF THE RESPECTIVE HQ UNITS
THE EFFICIENCIES, STRENGTHS, MODES, AND TYPES OF THE UNITS ENGAGED
THE AMOUNT OF ARTILLERY FIRE THE DEFENDER HAS SUFFERED
ALL ADJACENT DEFENDING UNITS ARE ATTACKED FIRST BEFORE THE ATTACKING UNIT CAN SUFFER LOSSES. A UNIT SUPPORTS THE ATTACK BY BEING IN SUPPORT MODE, WITHIN 3 HEXES OF ATTACKED, UNMOVED AND WITH NO ENEMY UNITS ADJACENT TO IT. VICE VERSA FOR DEFENDING UNITS. HQ UNITS SUPPORT THE ATTACK IF THEY ARE WITHIN 9 HEXES (BONUS AT 4 HEXES) AND ARE WITHOUT ANY ADJACENT ENEMY UNITS.

ARTILLERY BONUS
---------------

AN ENEMY UNIT HIT BY ARTILLERY WILL SUFFER A LOSS IN EFFICIENCY. FOR THE USE OF FRIENDLY COMBAT, ONLY THE FIRST 2 HITS HAVE ANY EFFECT. ARTILLERY WILL NOT AFFECT A RETREATED UNIT.

RETREATS AFTER COMBAT
----------------------

AFTER COMBAT, A DEFENDING UNIT MAY BE FORCED TO RETREAT. IN THAT CASE, IT WILL SWITCH TO NORM MODE (OR FIRE MODE FOR ARTILLERY) AND RETREAT.

A RETREATING UNIT MUST FOLLOW NORMAL RULES AND NOT ABUSE IT'S MP'S
A RETREATING UNIT CAN'T INITIATE COMBAT
A retreating unit that fails to retreat the required number of hexes, will suffer additional losses and may be destroyed. If the unit cannot retreat 1 hex, it will enter defense mode.

A unit may retreat only once during a turn. If it is required to retreat again, it will instead suffer losses.

During the next movement phase, not including aircv units, the unit will have only 1/2 normal mb's.

Combat Display

During combat, the following will be displayed:

UNIT:
TYPE
STRN: of the defender (light, medium, or heavy)

RESULT: (RESULT) see later in docs for explanation of combat resolution

Artillery

A unit may only fire on a sighted enemy. Any friendly unit may sight for artillery. The "O" "F" sequence will not fire on hidden units, the manual approach must be used to do this.

Air Power

When ctrl-a is hit, the following will be displayed:

NATO: #: #: RUSSIAN : ALC: KEYS
[A] SUPERIORITY : SPARE #: #: 0-9
[T] AC. SUPPORT : STRKE #: #: C/F

#-- A number between 0-9

The side in inverse has superiority. If both sides are normal, neither has superiority.

Air Superiority

When the menu is displayed, the player may allocate 0-9 points. This is done by hitting "A" and then the number.

Superiority is decided by the side which has more points. A player may get 1-2 extra points if he has kept superiority for more than 2 turns.

Tactical Air Strikes

In turns 0-3, a player can allocate 3 strikes. This can be changed by 1-2 during the later turns.

To allocate the strikes, hit "I" and move the cursor to the place you want and hit ctrl-f to place the cursor.

On the player's next turn, when ctrl-a is hit, air strike markers will appear at the designated places. They may then be called in by units ordering support within 3 hexes. If the opponent has air superiority, the strikes fail to appear.

Artillery

A unit may be fired by:

Press "O" and then "F"

Being called into support when in supp mode

Operated manually by entering fire mode and hitting ctrl-f, positioning cursor, and hitting:

CTRL-F:
FIRE

CTRL-S:
SMOKE

CTRL-X:
RETURN TO MOVEMENT PHASE (WHEN IN THIS PHASE, THE COMMANDS WILL BE DISPLAYED IN INVERSE IF ILLEGAL)

Russian Note: The Russians must use the same division to sight an enemy.

Artillery Sighting

A unit may only fire on a sighted enemy. Any friendly unit may sight for artillery. The "O" "F" sequence will not fire on hidden units, the manual approach must be used to do this.

Bridge

The engineer unit can be used to aid units crossing a river.
SAVING THE GAME

---------------

TO SAVE THE GAME AT ANY TIME, JUST HIT CTRL-B. A SPECIAL SSI SAVE DISK MUST BE INITIALIZED TO DO THIS.

TO RELOAD THE GAME, REPEAT THE CTRL-B PROCESS, BUT POSITION THE ARROWS NEXT TO A NAME AND HIT <RETURN>. YOU CAN ALSO USE THE RESTART GAME FEATURE ON THE MAIN MENU.

LEVEL STRUCTURE

---------------

THERE ARE 3 LEVELS OF PLAY. I SUGGEST THAT YOU START OUT ON THE EASIEST LEVEL OR THE COMPUTER WILL BEAT THE CRAP OUT OF YOU. CHANCES ARE IT WILL DO THAT ANYWAY.

SCENARIOS

---------

GAME WILL END AFTER THE 20, 21, OR 22 TURN. THE IS A 50% CHANCE IT WILL END ON TURN 21, AND A 25% CHANCE FOR TURNS 20 AND 22.

ADVANCE TO COMBAT:

NEITHER PLAYER CAN GET AIR SUPERIORITY FOR THE FIRST 2 TURNS

INVASION:

THE RUSSIAN PLAYER HAS AIR SUPERIORITY FOR THE FIRST 2 TURNS. IN TURN 0, THE NATO PLAYER HAS THE OPTION OF SETTING UP HIS FORCES. THE RUSSIAN SIDE PLACES 2 DROP ZONES FOR PARATROOPERS. IT IS A GOOD IDEA TO PLACE THESE APART, BECAUSE IF A UNIT ATTEMPTS TO LAND ON A STACK, IT WILL FAIL TO ARRIVE AND BE LOST FOREVER.

VICTORY

---------

VICTORY IS ATTAINED BY WHO CONTROLS THE MOST VILLAGES, TOWN, ETC. USUALLY, WHEN YOU ARE PLAYING AND ONE SIDE IS KILLING THE OTHER, IT IS BORING TO CONTINUE ANYHOW.

TYPE MODE TABLE

---------------

Y = LEGAL     N = ILLEGAL

NATO:

DEF SUPT NORM TRAN RIV ATT REOR FIRE

-------------

TNK Y Y Y Y Y Y Y Y
SPG Y Y Y Y Y Y Y Y
AFC Y Y Y Y Y Y Y Y
AIR Y Y Y Y Y Y Y Y
REC N Y Y Y N N Y
ENG N Y Y Y N N Y

RUSSIAN:

DEF SUPT NORM TRAN RIV ATT REOR FIRE

-------------

TNK Y Y Y Y Y Y Y Y
BMP Y Y Y Y Y Y Y Y
ART N Y N Y Y N N Y
KAT N Y N Y Y N N Y
INF Y Y Y Y Y Y Y Y
When you arrive at the site of the disturbance, take the following steps with the joystick...

> Direct the first Ghost Buster toward the center of the building and push the button to deposit the trap. Then move him to the far left side of the screen, turn him towards the trap, and press the button again.

> The second Ghost Buster appears. Direct him to the far right of the screen, turn him toward the trap, and press the button. Both Ghost Busters will power up their negative ionizer backpacks.

> Move the Ghost Busters inwards to trap the slimer between the streams. But do Not, repeat do NOT, cross the streams.

> When you have the slimer over the trap, push the button... the trap will pull him in. (Be precise: if you miss, you know what will happen).

> Every trapped Slimer increases your credit rating. The amount earned depends on how quickly you respond. Your accumulated credit is shown on the screen at all times.

IMPORTANT SAFETY TIPS

> Hit the space bar during the game for a status report.

> Every escaped Slimer adds 300 to the city's PK energy level.

> Beware that monolith of marshmallow monstrosity. When a Marshmallow Alert flashes at the bottom of the screen, the Roamers will quickly run to inform him. You must immediately hit the "B" key to drop a dollop of bait before he stomps on any buildings.

END OF GAME: THE TEMPLE OF ZUUL

The game ends in one of three ways:

1. the Gatekeeper and Keymaster join forces at the Temple of Zuul and you have NOT earned more money than you started with.

2. Once the Gatekeeper and Keymaster have joined forces at Zuul, you DO have sufficient credit, but you are unable to sneak two of your three Ghost Busters into the entrance of Zuul.

3. You successfully reach the top of the Temple of Zuul by sneaking two Ghost Busters into its entrance.
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INTRODUCTION

Greetings: This manual is designed to assist you in the execution of commands found on your Gleaners diskette. The sequence of commands on the diskette corresponds to the steps in the manual.

As you proceed with the execution of the Glean program, the research potential for home and school becomes apparent. I feel that the development of research and computer skills with the use of the program makes for a winning combination.

It has been the intention from the beginning to share this program with students and educators. For all curious individuals who seek knowledge, especially with the help of National Geographic (R) magazines, I wish you the best of luck with this program!

I wish to thank my wife Trish, who's inspiration initiated the program, and who's many hours of data entry helped produce the final product.

Feel free to write or communicate with me at any time.

John Rubin

CONTENTS OF DISKETTES

Glean.exe    -    Main program
Cat1.rec     -    People category file
Cat2.rec     -    Place category file (A-L)
Cat3.rec     -    Event category file
Cat4.rec     -    Animal category file
Cat5.rec     -    Vegetable category file
Cat6.rec     -    Object file
Help1.txt    -    Help file #1
Help2.txt    -    Help file #2
Help3.txt    -    Help file #3
Help4.txt    -    Help file #4
Help5.txt    -    Help file #5
Help6.txt    -    Help file #6
Glean.doc    -    This file

MAKING BACKUP DISKETTES

When you receive your Gleaners Index diskette, first make backup copy of it, then store the original in a safe place.

1) Format one blank diskette with the DOS format command, using DOS version 2.1 or higher.

2) Place the original Gleaner Diskette in drive A, and a new formatted diskette in drive B. At the A> type "copy *." B:"
Window #1 is the title window. In it will be the program name and the selection title.

Window #2 is the action window. It will either contain a menu or it will be where records are displayed, edited, deleted, added or searched for.

Window #3 is the key selection window. This window will display active keys and what they do.

SPECIAL KEYS

F1 - The F1 key is the Help Key and it will activate a help window which corresponds to the screen you are viewing. You may use the PgUp, PgDown and ESC Keys to view the help file or exit the help file.

ESC - The ESC key will always bring the program back to the previous step in the program. Examples: if you are printing a category it will stop the printing, if you are at the main menu it will exit the program.

THE WINDOWS

#1 TITLE WINDOW

#2 ACTION WINDOW

#3 KEY SELECTION WINDOW
Below is a display of the CATEGORY MENU used in the program. You may search for the subject in any category by typing the corresponding number or all of the categories by typing "7".

There are 5 selections in the MAIN MENU as seen below.

GLEANERS NATIONAL GEOGRAPHIC (R) INDEX

(1) Search for a subject
(2) Display a category
(3) Print a category
(4) Edit or delete existing records
(5) Add new records

PLEASE MAKE YOUR SELECTION

TYPE IN THE CORRESPONDING NUMBER

SEARCH FOR A SUBJECT

At the MAIN MENU type in "1".

A) Entering a subject

You will be asked to type in any subject. At the question, type in a subject and press return.

The subject may be typed in any combination of upper or lower case letters. The subject matter may be as specific as "archaeology under the sea" or a general as the letter "a". The program will search the files for the subject and print a list of articles which contain this subject.

B) Selecting a category
INDEX. Type "3" at the MAIN MENU. You will be asked for a password. Type "PLEASE" and the CATEGORY MENU will appear.

Type in the corresponding number for the category you wish to print or type "7" to print a complete category index.

DISPLAY A CATEGORY

Selection #2 of the MAIN MENU will print to the screen any or all of the category files. Upon typing "2" the CATEGORY MENU will appear. You may view any category by typing the corresponding number.

The file will be displayed on the screen. You may scroll through the file using the following keys.

Up & Down Arrows - Moves up or down one record. PgUp & PgDown - Moves up or down one screen. Home - Move to the first record. End - Moves to the last record.

PASSWORD PROTECTION

Selection 3, 4 and 5 of the main menu, print a category, edit or delete a record and add new records, are password protected. The password is "PLEASE" is capital letters.

PRINT A CATEGORY

Selection #3 of the MAIN MENU will print out a copy of GLEANERS.
EDIT OR DELETE EXISTING RECORDS

Selection #4 of the Main Menu will edit, delete or add records to an existing category file. Type "4" at the MAIN MENU. You will be asked for a password. Type "PLEASE" and the CATEGORY MENU will appear.

Type in the corresponding number for the category you wish to edit. Records can be added, deleted or edited to the selected category. There is a maximum number of 200 records which can be added or edited at any one session. If disk space is limited the number of records which can be edited will be displayed in window #3, the bottom window next to REC.

Use the SCROLL KEYS to select a record to edit or delete by moving the pointer to the desired record. Use the SELECTION KEYS to either Edit a record, Mark a record for Deletion or Add a new record to the file.

Use the EDITING KEYS to perform the actual editing or adding of records.

**********************************************************************
Each field, (Category, Title, Volume, Number & Date) is completed by pressing the ENTER key. The Record is completed when the ENTER key is pressed after the Date field. The Record that the pointer is sitting at when you escape out is not recorded.
**********************************************************************

THE POINTER - >>>

SCROLL KEYS

Up Arrow & Down Arrow - Moves the pointer either up or down through the displayed records, one record at a time.

PgUp & PgDn - Moves the pointer either up or down through the
default. The field cannot be left blank.

Categories

1. - People
2. - Place
3. - Event
4. - Animal
5. - Vegetable
6. - Object

TITLE - Any character is accepted. The field cannot be left blank.

VOL. - Any number between 0 & 999 may be entered. The field cannot be left blank.

NUM. - Any number between 0 & 9 may be entered. The field cannot be left blank.

DATE - Any date up to the year 2999 is accepted. The date is entered as MM/DD/YYYY. The MONTH is 2 numbers. The DAY is 2 numbers. The YEAR is 4 numbers. The Date Field may be entered with or without slashes. The Date is checked for a valid date when the enter key is pressed.

FIELD LIMITATIONS

CATEGORY - Only the selected category can be entered and is set by
ADD NEW RECORDS

Selection #5 of the Main Menu will Add new records to any category file. Type "S" at the MAIN MENU. You will be asked for a password, type "PLEASE".

Press the F9 key to start adding records.
Press the ESC key to end adding records.
Records can be added to any category. There is a maximum number of 200 records which can be added or edited at any one session. If disk space is limited, the number of records which can be edited will be displayed in window #3, the bottom window next to REC.
Use the SCROLL KEYS to select a record to edit or delete by moving the pointer to the desired record.
Use the SELECTION KEYS to either Edit a record, Mark a record for Deletion or Add a new record.
Use the EDITING KEYS to perform the actual editing or adding of records.

****************** Important ******************
*Each field, (Category, Title, Volume, Number & Date) is completed by pressing the ENTER key. The Record is completed when*
*the ENTER key is pressed after the Date field. The Record that *
*the pointer is sitting at when you escape out is not recorded. *
****************** See Editing Records for Details of Keys. ******************

STARTING A NEW DATABASE

If you wish to create an index for another magazine or set of books, you may do this with GLEANERS INDEX. To do this, erase the Cat$.rec files and Gleaners Index will create new files when you add new records using the ADD NEW RECORD selection. Another method would be to delete all the records from the Cat$.rec files using the EDIT OR DELETE RECORD selection. Either method will allow the user to create a new index.

GOOD LUCK !!!!

If you need help or find a bug, give me a call or drop me a line.
The registration fee for Gleaner's Index is $15. If you use this program you should register with us. The fee is not an exorbitant amount of money and it encourages the production of both new and better programs for you and your children to enjoy.

Please send the registration to:

GLEANERS’S PRINTING
P.O. Box 617
Kingston, Nova Scotia BOP 1RO
Canada

********* Thank you for supporting shareware software *********

John Rubin
Apple II Computer Info

GNOMAN Kernel Reference Manual

Version 1.0 alpha
August 10, 1991
Written by Jawaid Bazyar

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The GNOM Multitasking Environment for the Apple IIGs
Copyright 1991, Procyon Software and Tim Meekins

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Matt Deatherage, for telling me it couldn’t be done, so that I could do it.

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In addition to being compatible with the Orca system, GNO is a very powerful programming environment. All the shells needed to control processes, support Inter-Process Communication, and other tools needed in a multitasking environment (see the chapter on Kernel calls for details). GNO also implements a completely consistent method for accessing serial and console I/O. The Ilgs TextTools have been incredibly enhanced to provide a truly all-encompassing interface to applications. Imagine being able to attach terminals to your GS, and have a useful shell in each one. Multituser BBSs, remote dial-ups, UUCP or SLIP that doesn't take over your computer—these applications are endless!

GNO works wonderfully with accelerator boards— in fact, software can work faster under the GNO environment than normal! Because programs no longer take processor time waiting for a I/O event to occur, they aren't constantly accessing the I/O memory—accelerator boards have to slow down and flush their caches when I/O is accessed. As an example, a GS/OS telecommunications program was 10%-15% faster during file transfers.

With all this talk of shell utilities, have desktop users (users of programs like PowerPoint) been left in the dark? Absolutely not. GNO allows multiple desktop programs to run concurrently, but it DOES let you run a desktop program with as many text applications as you like. In other words, no functionality is lost from the Ilgs by using GNO.

Finally, the GNO environment comes with a large number of free utilities that bring some of the power of a Unix system to the Ilgs. Also, a number of programming libraries are included that make it easy to port programs from Unix or MS-DOS systems to the Ilgs. A whole new world of software awaits the Ilgs. GNO by itself does not require any resources above what you normally use in your development environment. However, if you're going to be running several large programs at once (for instance, background communications software or multiple text compiles in the background), then you're definitely going to need as much RAM as you can afford. Also, since the IIgs is by no means a speed demon, an accelerator card is recommended.

The next several chapters describe the resources provided by the GNO system in a general manner. They deal mainly with concepts, and exist to provide an overview and a sort of 'textbook' understanding of how the system as a whole works. At the end of the notes is a list of a canonical list of the services that are provided by the system calls. These are presented in a Unix manpage format. This means you will also find these call descriptions on the GNO distribution disk. They are provided in this form so that one need not constantly refer to a printed manual. It also provides a method of impeccable indexing, via the grep program. The manpages detail exactly what the programmer must do in order to use the system calls, and also exactly what effect the call has.Enter the GNO system. What was once just dreamed about is now a reality. GNO provides an environment that is almost entirely compatible with software developed for the Orca environment. But GNO provides a wealth of new abilities, lots of new ground for developers and users alike.

Before we begin describing, we'd like to rebuttal those who say such a multitasking system isn't possible on the Ilgs. Obviously it is, but it's not in your hands. Some say the Ilgs isn't powerful enough to make multitasking useful. We point out that the Ilgs is much more powerful than the first computers Unix was designed to run on (times that had 64K of real memory! and were 16 bit machines). Some ask why you'd ever need to run more than one program at once. These are the same people who asked why we'd ever need more than 64K of memory, or more than 140K of storage on disks. (end soapbox)

First off, GNO provides pre-emptive multitasking. Many programs can be executing at the same time. Each process is called a 'process'. Each process is allowed to run for a short period of time (1/60th of a second on average). When its time runs out, the current process is set aside and another one chosen to run next. This cycle continues forever. Processes are no more processes with GNO. The most interesting up processes to run 'in the background' is a simple matter of adding a few characters to the Orca shell commands you're already familiar with. As mentioned before, most existing utilities are compatible with GNO. GNO provides a new shell that takes full advantage of the multitasking ability provided. The most important feature of the shell is process control (starting them up, killing them, and suspending them). But the shell also provides power never before seen on the Apple Ilgs. The ability to choose files by 'wildcard' has been around for a while, but GNO takes this to a new level with 'regular expressions', a very powerful yet simple programming language. Other benefits of the GNO shell are too numerous to mention. (see the chapter on the Shell for details).

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A. A. Kernel system call manuals

A. Kernel system call manuals
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Apple II Computer Info

Chapter 1: Modifications to GS/OS

The GNO system modifies the behavior of a number of GS/OS calls in order to allow many programs to be run efficiently. These new features are done in such a way that old software can take advantage of these new features without modification. Following is a complete description of all the changes affected. Each section has details in text, followed by a list of the specific GS/OS or Toolbox calls affected.

Mutual Exclusion in GS/OS and Toolbox calls

The Apple IIIGS was not designed as a multitasking machine, and GS/OS and the Toolbox rely on this fact in many important ways. Some of these calls have notable problem with making a multitasking environment work on the IIGS is the use of global (common to all processes) information, such as prefixes and direct page space for tool sets which includes information like SANE results, QuickDraw drawing information, etc. In most cases we've corrected these deficiencies by keeping track of such information on a per-process basis, that is, each process has it's own copy of the information and changes to it do not affect any other process' information. However, there were many other situations where this could not be done. Therefore, task switching is turned off during all GS/OS and Toolbox calls (except for User Toolbox and the Programming Language). This was the best solution for this problem, and doesn't hurt system performance much.

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B. Terminal I/O
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5. GNO Compliance

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Chapter 3: Process Management

Before discussing process management using Kernel calls, it would be wise to define just exactly what we refer to when we say process. A process is generally considered to be a program in execution. "A program is a passive entity, while a process is an active entity." (Operating Systems Concepts p.73, Silberschatz and Peterson, Addison-Wesley, 1999). The concept of process includes the information a processor needs to execute a program (such as the program counter, register values, etc).

In order to execute multiple processes, the operating system (GNO and GS/OS in this case) has to make decisions about which process to run next. GNO supports what is called round-robin scheduling. Under certain circumstances, a process can actually execute longer than it's allotted time slice because of a GS/OS or ToolBox call. In these cases, as soon as the system call is finished the process is interrupted.

Processes can give up the rest of their time slice voluntarily (but not necessarily explicitly) in a number of ways, terminal input being the most common. In this case, the rest of the time slice is allocated to the next process in line (to help smooth out scheduling) if such a process is available. If no other process is available, the process is blocked. There are many ways this can happen, and each will be mentioned in its place.

Important item to remember is the process ID. This is a number which uniquely identifies a particular process. It is assigned when a process is created, and is made available for reassignment when the process terminates. A great many system calls require process IDs as input. Do not confuse this with a userID, which is a system for keeping track of memory allocation by various programs. It is handled (pardon the pun) by the Memory Manager toolset. Finally, do not confuse Memory Manager userIDs- numbers which are assigned to the various human users of a multituser machine.

There are two methods for creating new processes- the system calls fork() and exec(). fork() starts up a process which begins execution at the location you specify. exec() starts up a process by loading an executable file (S16 or EXE). fork() is used mainly for use inside a specific application, such as running shell built-ins in the background, or setting up independent entities inside a program. forked processes have some limitations, due to the hardware design of the IIgs. The parent process (the process which called fork() must still exist when the children die, either via kill() or by simply exiting. This is because the forked children share the same memory space as the parent; the memory the children execute from is tagged with the parent's userID. If the parent terminated, the children’s code would be deallocated and likely overwritten. A second caveat with fork is the difference between it’s implementation at a process level (file prefix specific) and when executing at a GS/OS level. fork() allows this; GS/OS does not.

For a program to work effectively under the GNO system, certain rules must be followed. Most of these rules boil down to one underlying concept- never directly access features of the machine. Always use GS/OS, the ToolBox, or GNO to do this. Most of these rules boil down to one underlying concept- never directly access features of the machine. Always use GS/OS, the ToolBox, or GNO to do this.

Faults arise when a program tries to access machine registers, or make the processor execute a different program or user ID. For programs to work effectively under the GNO system, certain rules must be followed. Most of these rules boil down to one underlying concept- never directly access features of the machine. Always use GS/OS, the ToolBox, or GNO to do this. Most of these rules boil down to one underlying concept- never directly access features of the machine. Always use GS/OS, the ToolBox, or GNO to do this.

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Apple II Computer Documentation Resources (a2_docs_documentation.msw)
If your applications requires the GNO Kernel to be active (if it makes any kernel calls), then make sure this is so by setting a kernel call at the beginning of your program. The call will return no error if the kernel is active, or it will return an error code of $0001 (Tool locator - tool not found), in which case the value returned will be indeterminate if the kernel is not active, so you should only check for an error (toolerror() or _toolerr in C, the value in the A register in assembly).

You can also determine the current version of GNO by making the kernVersion call. The version number returned is the same as all the standard tools, and is documented in the Toolbox Reference.

Terminal I/O
The Apple II has always been lacking in standardized methods for reading keyboard input and controlling the text screen. This problem was compounded when Apple stopped supporting the TextTools in favor of the GS/OS Console Driver. The Console Driver has a number of problems that prevent it from being a good solution. There is high overhead involved in using it. It must be accessed like a regular file, which means any I/O on it must filter through several layers before being handled. There is no provision for patching the low-level routines, so it can only be used over a modem or in a desktop program. And GS/OS must be called to access it, which means that while a Console Driver access is occuring, no other processes can execute (see Chapter 1).

GNO ignores the console driver and replaces the TextTools with a high-performance, very flexible generic terminal control system. GNO directly supports the console (keyboard and screen), as well as the serial ports, as terminals. In order for a user program to take advantage of these features and be GNO compliant, you must do terminal I/O only through the TextTools. Calls to the GS/OS console driver will not crash the system, but they will make other processes stop until the call is completed. You must not get input directly from the keyboard latch (memory location $00D000), nor may you write directly to the screen memory. The TextTools Terminal I/O system has been designed so you don't have to do either of these things. If you need to wait for keyboard input without stopping your application, you can make the appropriate Control call (see the chapter on Terminal I/O) to put the tools in the appropriate mode.

(NOTE: late breaking news has it that Apple has modified the Console Driver to allow patching of the low-level I/O routines. This means that Console Driver support can very likely be added to GNO while still maintaining current functionality. We salute this move on Apple's part - keep up the good work!) Stack Usage
Stack space is at a premium on the IIGs. Process stacks can only be located in Bank 0 - a total of 64K. This theoretical limit doesn't apply, however, as GS/OS and other bits of system software reserve a large chunk of this without any way to reclaim it. There is approximately 48K of usable stack space. This space also has to be shared with direct page space for Tools and certain types of device drivers, however. For a program to be GNO compliant, stack usage analysis must be done and acted upon. Use of the stack should be minimized, in order that many processes can coexist peacefully. From experience we've found that 1K usually suffices for well-written C applications, and at a maximum 4K can be allocated.

Assembly language programs are very efficient when it comes to use of the stack. The 1K provided by default to applications is usually more than enough for assembly language programs. However, C programs can use up tremendous amounts of stack space, especially if recursion is employed or string manipulation is done without concern for stack usage. Below are some hints to keep stack usage at a minimum.

- Avoid use of large local arrays and character strings. Instead, dynamically allocate large structures such as GS/OS strings with malloc() or the Memory Manager.
- Try not to use recursion unless absolutely necessary. All recursive functions can be rewritten using standard loops and creative programming. This is a good general programming rule - your program will run faster.
- Orca/C generates 8K of stack by default, in case the desktop is started up. Since GNO compliant programs generally will not be desktop-based, make sure you judge how much stack your program will require and use the #pragma stacksize directive to limit how much stack space Orca/C tries to allocate for your program.

Disk I/O
Since the Apple IIGs doesn't have coprocessors to manage disk access and the serial ports, either of these requires the complete attention of the main 65816 processor. This can wreak havoc in an environment with slow disks or high-speed serial links, as accessing disks usually results in turning off interrupts for the duration of the access. This situation is lessened considerably with a DMA disk controller, such as the Apple High Speed SCSI or CV Technology RAMFast. But this isn't as bad as it sounds; the IBM PC and Macintosh also suffer from this problem, and the solution is robust programming. Make sure your communications protocol can handle errors where expected data doesn't arrive quite on time, or in full. The best solution would be an add-on card with serial ports and an on-board processor to make sure all serial data was received whether or not the main processor was busy (this is a hint to some enterprising hardware hacker, by the way).

Yet another concern for GNO applications is file sharing. GS/OS provides support for file sharing, but it is up to the application author to use it via the requestAccess field. Since GS/OS only allows file sharing if all current references to it (other instances of the file being opened) are read-only. GNO authors should use read-only access as much as possible. For example, an editor doesn't need write permission when it's initially reading in a file. Note that the fopen() call in C supports read-only mode.

Known Bugs
GNO crashes if AppleTalk in turned on
Some programs (most notably editors like emacs and ROSE) lose characters due to conflicts with the GNO keyboard buffering scheme. There is a random error that occasionally closes files when loading a program. This most often manifests itself when running programs in the gshrc file, but can wreak havoc elsewhere. Try 'ls & ls'. I've had trouble with an old version of magen not being able to find files.

Features
GNO now supports restartable programs, if they terminate with a Quit call and set the appropriate flags (the way Apple recommends it be done). Programs that I know support this are emacs. All applicable Shell Utilities will also support this at the next release.

About this special alpha version of GNO:
We have decided to release GNO in this partially-finished state for a couple reasons:
1) We want as much outside user commentary and suggestions as we can get. The feeblest news receive on this alpha version will to a large degree determine the course of GNO, regarding functionality and features.
2) We want to make a statement that this project is here, it's real, it's NOW. We want to make this clear to Apple and to other development community members. We want your support, and the best way of achieving that is showing what we have, and asking you where we should go.

Thanks for trying out the GNO system. I believe it can be a tremendous boost to the Apple II community; and it starts with you.

Sincerely,
Jawad Raza
p.s. Remember - if someone comes up to you on the street and offers you some IBM, Just Say GNO!
EXEC(2)  SYSTEM CALLS    EXEC(2)

NAME
exec  - load an executable file and launch as a new process

SYNOPSIS
#include <kerntool.h>

int exec(char *pathname, char *cmdline);

DESCRIPTION
exec is an alternative method for launching a new process under GNO. It is a combination of the fork() and execve() calls, and in fact is written in terms of them. The difference between exec and execve is that exec returns in all cases- it is a simplified interface for those who don't need to affect process information before a new executable begins (such as process group IDs or I/O redirection information).

The algorithm for exec (simplified somewhat) is as follows:

void exec2() {
    return execve();
}

int exec() {
    return fork(exec2());
}

RETURN VALUE
exec returns the process ID of the child, or SYSERR (-1) if an error occurs in the fork() call.

BUGS
See BUGS in execve(2) and fork(2).

If an error occurs in the execve phase of this call, it can't be detected by normal means. The wait system call must be used to get the return code of the process, which will be SYSERR (-1) if the exec fails.

SEE ALSO
execve(2), fork(2), wait(2)

EXECVE(2)  SYSTEM CALLS    EXECVE(2)

NAME
execve - replace current process with an executable image from a file

SYNOPSIS
#include <kerntool.h>

int execve(char *pathname, char *cmdline);

DESCRIPTION
execve is the preferred method for loading program files to be executed under the GNO system. A new userID is allocated for the process, and the GS/OS System Loader is used to bring the executable file specified by pathname into memory. pathname can be a partial or complete path. The executable loaded replaces the executable associated with the current process.

If the executable file does not contain an OMF Stack Segment (SEGKIND = $12), a default stack of 1024 bytes is allocated to the process. The direct-page pointer is set to the bottom of the stack memory (for C programs this is irrelevant).

The parameter cmdline is the list of arguments to be passed to the new process (a copy is actually passed). C programs parse cmdline automatically, and the individual pieces can be accessed through the argc/argv arguments to main(). cmdline can be accessed from assembly language through the X (high-order word of cmdline) and Y (low-order word) registers. However, if the executable file is of filetype S16 ($B3), the cmdline argument is ignored and the X&Y registers are set to null (i.e. the command line is only passed to an EXE executable). The 8 characters "$BYTEWRKS" are prepended to cmdline before being passed to the process (this is the same identifier used by the Orca shell). This Shell Identifier distinguishes the GNO and Orca environments from others that don't support the full range of shell calls, and can be accessed from C with the library function shellid(). The A register is set to the userID allocated for the process.

The child inherits the memory shadowing and machine state parameters of the parent, as well as signal blocking information and the ID of the controlling TTY. In addition, the child inherits the open file refNums of its parent. This can cause errors if the child closes an inherited file and the parent later tries to access it.

The child inherits the memory shadowing and machine state parameters of the parent, as well as signal blocking information and the ID of the controlling TTY. In addition, the child inherits the open file refNums of its parent. This can cause errors if the child closes an inherited file and the parent later tries to access it.

A forked process may share code with other children or the parent. However, this is only allowed in a forward manner- any forked process that exits by function return will be terminated. Note that any shared global variables will need to be moderated with some type of mutual exclusion, either the kernel semaphore(2) routines or custom routines.

RETURN VALUE
A successful execve does not return, as the current executable is replaced with the one specified in the call. If for some reason the call fails, execve returns SYSERR (-1).

BUGS
Orca/C currently ignores any stack space allocated for it by the GS/OS Loader (which execve calls) or by default in execve. Stack space in Orca/C programs is determined by code in the .root object file, and can be set with the #pragma stacksize directive. Read the section on GNO Compliance in the GNO Kernel Reference Manual for more information on this topic.

SEE ALSO
exec(2), fork(2), wait(2)

FORK(2)  SYSTEM CALLS    FORK(2)

NAME
fork  - start a new process from inside the current application space

SYNOPSIS
#include <kerntool.h>

int fork(void *addr);

DESCRIPTION
fork's argument is typically the address of a C function, although it can be any address inside the IIGS RAM space. fork creates a new entry in the process table, and sets up some default settings. The process is allocated 1K of stack space, and the direct page is set to the beginning of this memory. The process is executed in 16-bit full native mode, and the registers are set as follows:

x: 0
y: 0

The child inherits the memory shadowing and machine state parameters of the parent, as well as signal blocking information and the ID of the controlling TTY. In addition, the child inherits the open file refNums of its parent. This can cause errors if the child closes an inherited file and the parent later tries to access it.
fork returns the process ID of the child, or -1 (SYSERR) if an error occurs.

**BUGS**

If a child closes a file refNum inherited from the parent, system accounting can become confused. Note that this shouldn't result in a crash, but spurious "Invalid reference number" (S43) errors can be generated. We need the equivalent of dup() for GNO refNums to make this problem go away (and a more reasonable limitation on multiple access of open files).

**SEE ALSO**

exec(2), execve(2), wait(2), semaphore(2)

**GETPID(2)**

**SYNOPSIS**

```c
#include <kerntool.h>

int getpid(void);
```

**DESCRIPTION**

The getpid system call returns the process ID of the caller. No errors are possible.

**NAME**

g getpid - return process ID of caller

**SYNOPSIS**

```c
#include <kerntool.h>

int getpid(void);
```

**RETURN VALUE**

The process ID of the caller is returned. No errors are possible.

**KILL(2)**

**SYNOPSIS**

```c
#include <kerntool.h>

int kill(int pid, int sig);
```

**DESCRIPTION**

The kill system call sends a signal to a process or group of processes. Signals are software interrupts; they act just like hardware interrupts and can also be used for basic IPC (Inter-process communication). The various signals are described in signal(3).

sig can be a signal number, or it can be 0, in which case no signal is sent, but error checking is done (this can be used to verify a process ID). If sig has been blocked (sigblock(2)), the signal is deferred until it is unblocked, and kill returns immediately. Any previously pending signals of the same sig are lost (i.e. signals are not stacked).

If pid is 0, the signal is sent to all processes with the same process group ID as the caller, except for system processes.

Processes may signal themselves, in which case the signal handler is invoked immediately (if installed).

**RETURN VALUE**

Normally kill returns SYSOK (0). The following conditions can cause kill to return SYSERR (-1):

- pid does not correspond to an existing process
- sig specifies an invalid signal number

**BUGS**

Currently there is no way to distinguish the types of errors that can cause kill to fail. There is no obvious way to return such a value from the toolbox routines that are the kernel (and are written in C).

**KSIGNAL(2)**

**SYNOPSIS**

```c
#include <signal.h>

void (*ksignal(sig, func))();
```

**DESCRIPTION**

Signals are a basic form of IPC (inter-process communication), and are generally used to notify a process of some atypical event (although there is little restriction on actual use). For example, signals are sent in each of the following situations: user typing certain chars at a terminal ("^C", "^Z", etc.); execution of an invalid instruction; by request of another process (kill); stack overflow; and a process making an input request while running in the background.

Most signals cause termination, unless a handler is installed, or the signal is set to be ignored. Certain signals cannot have their default action modified; the system silently enforces this restriction. The following is a list of signals and default actions (taken from signal.h).

- SIGINT 2  interrupt
- SIGQUIT 3  quit
- SIGILL 4  illegal instruction
- SIGTRAP 5  trace trap
- SIGABRT 6  abort (generated by abort(3) routine)
- SIGSEGV 7  segmentation violation
- SIGFPE 8  arithmetic exception
- SIGKILL 9  kill (cannot be caught, blocked, or ignored)
- SIGBUS 10  bus error
- SIGSEGV 11  segmentation violation
- SIGSYS 12  bad argument to system call
- SIGPIPE 13  write on a pipe or other socket with no one to read it
- SIGALRM 14  alarm clock
- SIGTERM 15  software termination signal
- SIGURG 160  urgent condition present on socket
- SIGSTOP 17  stop (cannot be caught, blocked, or ignored)
- SIGCONT 19  continue after stop (cannot be blocked)
- SIGCHLD 20  child status has changed
- SIGTSTP 21  stop signal generated from keyboard
- SIGTTIN 22  background read attempted from control terminal
- SIGSTOP 23  stop signal generated from keyboard
- SIGTTIN 24  background read attempted from control terminal
- SIGSTOP 25  exceed error limit
- SIGTTOU 26  background write attempt
- SIG-USR 31  user defined signal
- SIG-IGN 32  user defined signal

If func is SIG_DFL, the default action for the signal is reinstalled. This is normally termination if the signal isn't ignored or caught. Signals marked with @ cause the process to stop. If func is SIG_IGN, any future occurrences of the signal are discarded, as well as any pending instances. Any other value is treated as the address of a shandler routine. The system will block further occurrences of the signal before the handler is called, and will unblock the signal automatically upon return from the handler. The handler remains installed after return, unlike earlier Unix signal facilities.

If a signal occurs during certain system calls (wait(), and input from a TTY), the call is automatically restarted upon return from the handler.
A forked child inherits all signal information, including pending signals and blocking and handler information. exec and execve restore all signal information to defaults and purge pending signals.

NOTES
The signal handler should be defined as follows:

```c
void handler (int sig, int code)
```
sig is the signal that invoked the handler, and code is additional information about the interrupt condition. Currently, code is always 0.

RETURN VALUE
The previous action is returned on a successful call. Otherwise, -1 is returned.

Errors will occur on any of the following conditions:
- `sig` specifies an invalid signal number.
- An attempt is made to ignore or supply a handler for SIGKILL or SIGSTOP.
- An attempt is made to ignore SIGCONT (by default SIGCONT is ignored).

BUGS
This call should be named signal, not ksignal. However, Orca/C already specifies a function named signal, although it’s not useful for anything but SANE exceptions. It was decided to leave Orca’s signal alone, to allow trapping of SANE stuff, and add our routine under a slightly different name. This may well change when we supply custom libraries.

SEE ALSO
kill(1), execve(2), fork(2), getrlimit(2), kill(2V), sigblock(2), sigpause(2), sigsetmask(2), sigvec(2), wait(2), setjmp(3), termio(4)

SIGBLOCK(2)
NAME
sigblock, sigmask - temporarily block signals
SYNOPSIS
```c
long sigblock(long mask);
#define sigmask(signum)
```
DESCRIPTION
`sigblock` is used to temporarily block the reception of signals. The input parameter `mask` is a bit vector that specifies which signals are to be blocked; a 1 in a bit `n` will block signal `n+1`. The mask is bitwise-ored with the current signal mask to create the new signal mask.

`sigmask` is a macro that can be used to calculate signal masks for `sigblock`. It takes a signal number (as listed in KSIGNAL(2)) as an argument and returns a mask.

If a signal is sent to a process but is blocked, the event is recorded for later release by `sigsetmask`. Blocked signals are not stacked; further occurrences of a blocked signal will overwrite any previous pending signal of the same signum.

It is not possible to block SIGKILL, SIGCONT, or SIGSTOP. This restriction is silently imposed by the system.

RETURN VALUE
The previous value of the signal mask is returned.

SEE ALSO
kill(2V), sigsetmask(2), ksignal(2)

SIGSETMASK(2)
NAME
sigsetmask - set signal mask
SYNOPSIS
```c
#include <signal.h>
```
```c
int sigsetmask(int mask);
#define sigmask(signum)
```
DESCRIPTION
`sigsetmask` is usually used to restore signal masks after modification by `sigblock`. The parameter mask is the absolute value the process signal mask will be set to (compare to `sigblock`, which adds the argument to the set of blocked signals).

If there are pending instances of signals which become unblocked by the `sigsetmask` call, they are 'released': they are released into the system signal queue and their 'pending' status is cleared. (The system signal queue is maintained by the kernel null process, and is used in situations where signals could not normally be sent (such as interrupt handlers)).

`sigmask` is a macro that can be used to calculate signal masks for `sigsetmask`. It takes a signal number (as listed in KSIGNAL(2)) as an argument and returns a mask.

ssignal increments the semaphore count by one. If the semaphore count is less than zero, `ssignal` releases arbitrarily a process that had been blocked.

RETURN VALUE
All the functions return SYSERR (-1) if an error occurs, and an OK (0) if no error occurs.
RETURN VALUE
The previous value of the signal mask is returned.

CAVEATS
If somehow the process re-blocks a signal released by sigsetmask before the system
signal queue processes it, it will be blocked and marked as pending. This can happen
if a signal handler makes a sigblock call.

SEE ALSO
kill(2), sigblock(2), ksignal(2)
Go into the bank. Make sure you know your account number. Go to a
seller and type GET MONEY. Give him the account number when he asks
for it. Go forth into the warehouse, and read the poster inside. The
address to get tickets is next door to your old house. Go downstairs
to the cemetery and find your parents’ graves. (Hint: They are the only
two that look alike and are next to each other.) Read each grave, and
put the flowers down (sniff).

WHAT TO BUY IN BROOKLYN

Up to this point, everything you need to accomplish in Brooklyn is
the same — no matter which route you take to get to
California. If you are planning to go via sea, you must remember that
the steamship leaves exactly 18 minutes after the game begins. Go to
the house next door to your old one. Answer the questions the man asks
you, and tell him which ticket you want. (Note: The price of the
tickets will skyrocket after the GOLD RUSH! starts. Make sure you buy
them before then.) If you intend to go via Panama, you'll need the
mosquito net from Hand's Hardware store. If you're planning to go via
the Cape Horn route, you will need the fruit.

If you want to go via land, then just go and buy your ticket from the
stagecoach office. After buying the ticket, go to the stable, and SHOW
TICKET to the little guy in white. He'll escort you to the coach.
Enter the coach, and the rest will take care of itself.

THE PANAMA ROUTE

There is nothing to do on the ship. You will not die of mosquito
bites if you bought the net. When you reach the jumble you will have
to allow the rest of the crew. Talk to the man under the tree, and
he'll give you a Bible. (No matter which route you take, there will
always be a man reading a Bible: Take the Bible.)

Walk to where you see the hanging vine. As soon as the killer ants
start to appear, jump onto the vine, and hang there until they leave.
Go onto the next screen. There are four paths through this screen, but
you can't see any of them. Do not use the first two. You will have to
do this screen by trial and error. (Save the game before you try it.)
The third and fourth paths take you through. For extra points, take
the fourth path -- the hardest to finish. When your toe hits
something, look down. Pick up the golden disk.

The next screen is also solved via trial and error. Don't take a
straight path across the swamp, or you will sink in. Occasionally, a
crocodile will eat you, too, but not every time. If this happens,
you'll have to restore. After that, the game runs by itself until you reach
Sacramento.

THE CAPE HORN ROUTE

Look around the ship. (The man who will give you the Bible is at the
right end of the ship.) There's not much to do until the storm;
anything you collect before the storm will be lost. So, even if you
find items before the storm, do not pick them up (except the
Bible). Purely at random, you may die of Cholera. If you do, you will
have to restore back to Brooklyn. (Restoring to a point later than
Brooklyn won't help.)

You will not die of scurvy if you have the fruit. Now, you need food,
and there seems to be plenty of fish in the sea; so, let's go fishing.
Do not stand on the deck during the storm, or you'll get swept
overboard. Sometime during (or after) the storm, get the string from
the bunk room, the paper clip from the captain's office, the bait
(half from the cooks' table, metal scraps from the junk room, and a
pole from the bottom floor (where the engine is being stoked). Go to
the back of the ship and type FISH. The game runs by itself after
that, until you reach Sacramento.

VI A LAND

Once you join up with the mining company, go over and talk to the
captain. He wants money, so give him what you have. He'll ask you
to obtain animals for the trip. Go down a screen and buy animals.
How many animals do you need? You're going on a long journey, so you are better
off buying the mature mules.

Go back and tell the captain, and he'll give you a second job. He
wants you to tell him when it's time to leave. Go up a screen, and
keep looking at the grass. As soon as you get a message saying that
the ground is getting greener and drying up, tell the captain. You
should have also bumped into our friend with the Bible (he's sitting
under the tree).

When you reach the steep hill, unhitch the team, and let the animals
go to drink and rest. To stop them from pulling you and the wagon over
the cliff, you must lock the wheels. When you get thirsty, drink water
from the barrel in the coach.

SACRAMENTO

Whichever way you arrive, you must immediately go to the stagecoach
office. It's in the building just left of the middle of the screen. Go
in, and look at the schedule. If you have missed the stagecoach to
Sutter's Fort, then you will have to restore; otherwise, get onto the
stagecoach.

SUTTER'S FORT

Walk around the fort. Find the blacksmith, and talk to him. Give him
your name and your brother's name. He'll give you your brother's
branding iron. Go to the graveyard and read the graves until you find
your father's. Read the grave. There is a cannon at the top. Psalms
23? Read it in your Bible. The phrase "Green Pastures" is in capital
letters. Use the envelope. Move it around until you are told it's in
place. Aha! So that's what those strange markings were for. Read the
letters. It says ROOM 12, or is it ROOM 21? Go back into the fort and
buy a gold pan. It's time to try your luck at finding gold.

PANNING FOR GOLD

You have to be at least 10 miles from the fort to find gold. (The
bottom of the screen will tell you how many miles away you are.)
Walk straight across the swamp, or you'll sink in. Occasionally, a
crocodile will eat you, too, but not every time. If this happens, in the
stream, and keep panning. You will be able to find gold 50
times. Do not pan if there is anyone else in the screen, or you'll be
hurt! Once you have all your gold, go back to the fort. Watch out for
the thieves: They'll take everything away from you.

BUYING THE REST OF YOUR SUPPLIES

Go and buy a mule. Take it to the blacksmith, heat up your branding
iron, and brand the mule (with your brother's mark). Take the mule to
the stable, and leave him there while you shop for supplies. Go back
to the stable where you got the pan, and buy the shovel and a lantern.
Now, go back to get your mule. Look at all the mules until you find
the one with your brand on it. If it says it's a quiet, tame animal,
you don't want it. Your brother has left his mule there for you; you
want to get his instead. Once you have it, head back toward town
(southeast). Be careful not to lose your mule.

THE GREEN PASTURES HOTEL

Find the hotel. It's called Green Pastures! You recognize that from
the Bible! Tie up your mule to the post outside. Go inside and look at
rooms 12 and 21. Hmm...Room 12 looks suspicious. Go back downstairs
and look around. There is a message box. Ask for your message. You are told you don't have any messages because you're not staying at the hotel! But can you do the man a favor by delivering a message to the man in Room 11. Say YES.

Take the message, knock at the door, and give the man his message. When he leaves, quickly walk into his room. (If he catches you in there, you'll have to restore.) To get into Room 12, go to the left wall, and look at the fireplace. Aha! You recognize that cannon. When you turn the wheel, the fireplace opens. Go through the fireplace into Room 12.

ROOM 12

Look around the room. Get the string from the floor, and the magnet and note from the table. Read the note. What is that bird cage doing there? Open the window, and in flies a bird. Look at the bird, read the note in the capsule, and put your identification in the capsule. What identification? The family picture, of course! Off flies the bird; when it returns, look in the capsule. Get the "pigeogram" and read it. Follow? Stubborn? Aha! You've heard the expression "as stubborn as a mule," right? Follow that mule!

JAKE'S HOME

Take the mule back out of town, and type FOLLOW MULE. It moves quite quickly, and seems to know where it's going; be careful not to lose track of it. (Watch out for robbers.) When you reach Jake's home, go inside. Get the matches. Go outside to the outpost, then go down the hole in the middle of the outpost.

THE CAVE

Light your lantern and proceed down the cave. Do this as quickly as you can; save whenever you make progress because you only have a limited amount of oil in the lantern. You reach a door that's locked, and you have no key. But there's a hole in the door, and it's the same shape as the branding iron! Tie the magnet to the string and lower it through the hole. Move it around until you hear a "clunk." Then, pull up the key carefully.

Open the door and go down in the cave. Be very careful on the ladders. Continue down to the bottom left, and get the pick. Keep digging for gold as you walk through the caves. Once you have found a couple of pieces of gold, go up the long ladder to the top. Take the gold nuggets on the right. Move down the ladder a little, and you find the mine on the left.

THE END

Carefully enter the mine (save the game first; it's very easy to fall off the ladder here). Down in the mine you go, keep using the pick as you go along. Eventually, you will find yourself in a large room which contains...your brother!

Talk to him, and he tells you that he's almost made the ultimate gold discovery! Use your pick. When you find gold, keep digging in that same spot. While you're digging, you will discover a cavern. As soon as the entrance is big enough, walk through.

You've done it! You and your brother now have as much gold as you could ever dream of! Well done!
reaches zero, Golem will be destroyed.

flower - A strange but harmless underground mutant that greatly increases your score.

lightning bolt - Alliance spies have not discovered what the lightning bolt does.

crew member - There are five crew members in the mines. If Golem makes it out of the caves alive he will receive 1000 points for every crewman he rescues or 10000 points if he rescues them all.

portal - The portal looks like a gray whirlpool. It is the entrance to the next level, but will not open until the key is found. The open portal is yellow.

bomb - A gray orb in the last level, the bomb must be shot with ten missiles before it will activate. Upon bomb activation, the portal will open and the whole room will begin to shake and flash. Get out as quickly as possible!

The mutants come in various shapes and sizes and pose the greatest threat to Golem in the mines:

Spiney - A mutated rock beast that eats rock and most anything else in its path. It also randomly lays gray rocks, constantly changing the layout of the level. If killed, a spiney will vanish and, possibly, reappear later.

rock flower - Rock flowers grow out of the ground, produce a flower, and then die. The flower has a tough outer shell, and can only be hurt when its flower is exposed. But beware - the flower is highly acidic and will destroy Golem if he drives over it.

Atom - Another mutated creature that only appears in the higher levels. The atom moves slowly around, occasionally emitting energy bursts. Golem will be destroyed if he is struck by an energy burst or if he shoots the atom. There is no known way to defeat this mutant. . .

?? creature - It resides below the terrorists headquarters in the next to the last room. It possesses the key for that level. What does it look like?

How to play:

The joystick moves the tank around the screen. The orange(main) button fires regular bullets, while the brown(secondary) button fires missiles. Note that the 'Open-Apple' key is equivalent to the orange button and the 'Option' key is equivalent to the brown button.

When the tank is destroyed press either joystick button to resume play.

At any time during the game, press either '?' or '/' to view the help screen and either 'Q' or 'q' to quit.

Other notes:

As the game level increases, creatures begin moving faster and more blue rocks must be destroyed before finding a key. Also the timer decreases more rapidly. Therefore, the higher levels require quick thinking and rapid movement.

Remember that 10 missiles are needed for the last level to destroy the bomb. When the detonation phase begins and the screen begins to flash, movement becomes very difficult due to the shaking ground. Try to shoot the bomb from as near the portal as possible and then get out fast!

The top ten scores of the game are automatically saved. If GolemGS cannot find the scores file it will automatically create a new one.

Other programs by me(Travelling Faire Software):

MAZE.LAUNCHER will run adventure game scenarios following certain guidelines. Included in the package are two scenarios and some starter characters.

The MAKE.CHARACTER program will create new characters for MAZE.LAUNCHER. It allows the creation of a character from various races and classes.

ExplorerGS - Graphic version of MAZE.LAUNCHER.

Shr Castle Metacus GS - navigate through the ever changing castle in search of five fragments of the star key.

GoldenBugGS - Eat as many bugs as possible but avoid the golden bug.

ORE.MINER and ARROW.DODGE - two old applesoft games that are really fun.

ShareWare Notice:

This program is shareware - If you really like this program or feel especially generous send $10 to:

Jason Smart  
1158 Panoramic Dr.  
Martinez, CA 94553

(Anyone who has sent in their fee for GoldenBugGS does not need to pay for Golem.)

Please say where the program was uploaded/purchased from.

Written by: Jason Smart (JULES33 on America Online). If you have any questions or comments, feel free to contact me. Have fun!

This program was written and compiled with TML Pascal II.

其它相关资源:

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

How to Play:

You are standing at the tee on Hole #3 at the Pinehurst No.2 course. It's a par four, 316/335 yards in length, surrounded by bunkers. You must decide how to play the hole—just like on the golf course.

1. What club should you use?
2. How hard should you swing?
3. How should you hit the ball—straight, with a slice or hook?
4. In what direction should you hit?

Let's look at the hole and "practice" a little before we hit. Press the 2 key. You will see a legend showing the colors, and the patterns they represent. You will notice that the colors correspond to bunkers, fairways, greens, trees, rough, etc. Now hit any key and go back to the tee. You can see the bunkers, trees, etc. on this hole.

Now let's think about club selection. At the end of this documentation you will see a table showing the clubs, force of swing, average roll, and degree of loft. This table helps you determine which club to select and the force with which to hit—full swing, half swing, quarter swing.

Your golf bag contains five woods, nine irons, a sand wedge, a pitching wedge, and a putter. The woods are numbered 1W-5W; the irons are numbered 3I-9I. The wedges are PW, SW, and the putter is PT.

Club Selection:

Look at the bottom left portion of the screen. You will see six figures: a golfer, a golf club, a vertical line, a clock, speaker, and letters with #s. Let's talk about the club first. Before you can hit, you must select a club. Press the letter 'C' and you will see this prompt:

Which club:

Type the two letter name of the club you want to hit with. For illustration, type 2W. You will return to the hole. Look at where the club was and you should now see 2W. You have selected the two wood. If you change your mind, type 'C' again and select a different club. You can select a club and return it to your "bag" as many times as you need, until you're satisfied with the selection.

Force of Stroke:

How hard should you hit the ball? Full swing, half swing, quarter swing? Anytime you select a wood or iron, you must decide on the swing; this is the force or the degree of swing.

Press the letter 'F' and you'll see the prompt:

Full, Half, Quarter:

Type the letter 'F' and return to the hole. Look at the golfer now; he's taking a quarter swing! (wow) Press 'F' again and respond by typing 'F'. Now he's taking a full swing. You can adjust the swing to fit the situation. For illustration, let's use a full swing. NOTE: The force of stroke is a little different for the wedges and putter. We'll discuss this in a moment.

Style—Hook, Slice, or Straight

DOCUMENT gols.best

Golf's Best Documentation typed up by The Sheik

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wedge for your next shot. The wedges (and putter) do not require you to select a degree of swing; instead you select force by specifying a distance, in feet.

Let's try a pitching wedge. Press the 'C' key, and select PW (pitching wedge). Now press 'F' key to select force. You will Enter Force:
Type the distance you wish to hit the ball, in feet. Remember: You may need to hit your second shot. Select a club, force, style and direction. Press 1 and watch the ball go. (If you ended up in the woods, you may want to select a hunting wedge. HA!)

NOTE: You do not select a style for putts or wedge shots.

The Putt:
When you are on the green and ready to putt, press the letter 'C' to select a club and type 'PT'. Press the letter 'F' to select the force and enter the force in feet. The computer shows you the slope of the green by displaying an arrow that points to the LOWEST area on the green. Be sure to take this into consideration.

For example, if you are 20 feet from the pin and the slope is steep, you may need to hit with a force of 30 feet to "play the break." Now select a direction and press 1. Did it go in? No? Try again!

The 19th Hole:
That's all there is to it! Just select a club, force, style, and direction to hit the ball. It's just like being on the course!

In all cases, the normal rules of golf apply. The person who is the farthest from the pin hits first; all out-of-bounds and water shots will cost you a stroke; and no Mulligans are allowed! The computer keeps score for you. Press 4 to see the scorecard. How are you doing?

Sometimes the real world interferes with the important things we like to do—like play golf. From time-to-time, we must return to work and family duties. The player who is "up" can quit at any time: just press the letter 'Q' and respond to the prompt by typing the letter 'Y' (yes). Press RETURN and you're off the course and back at work.

No need to take a shower, turn in your cart, or carry your clubs to your car—they are safely stored away until the next game!

Have a good round on Pinehurst No. 2!

Course Rules:
1. Player farthest from the pin hits first.
2. One stroke penalty if ball goes in the water.
3. One stroke penalty if ball goes out of bounds & loss of distance.
4. Replace all divots!
5. Courtesy demands "quiet" when a player is ready to hit.

Command Keys:
C - Club Selection Q - Quit
D - Direction R - Range
F - Force S - Style

Function Keys:
1. Hit the ball
2. Color Pattern legend
3. Sound Control
4. Scorecard Display

Your Bag of Clubs:
COMMAND - EXAMPLE

ATTACK - ATTACK SNAKE AXE
DIG - DIG
DRINK - DRINK FLASK
DROP - DROP SHOVEL
EXAMINE - EXAMINE ROPE
GET - GET AXE
INVENTORY - INVENTORY
LIGHT - LIGHT LANTERN
NEWGAME - NEWGAME
PRAY - PRAY
READ - READ DIARY
RUN - RUN EAST
SCORE - SCORE
SHOOT - SHOOT SNAKE
SMASH - SMASH BOTTLE
THROW - THROW AXE SNAKE

* - TO WALK IN A DIRECTION, JUST TYPE THE FIRST TWO LETTERS OF THE DIRECTION WITH NO OPTION AT ALL. EXAMPLE: NO, WE, ETC.

The Black Market.....[615] 377/6929!!
CONTROL P:
PACKS A LINE BY REMOVING EXTRANEOUS SPACES.

CONTROL C:
CONVERTS UPPER CASE CHARACTERS TO LOWER CASE AND VICE-VERSAl.
CONTROL C WITH THE REFT KEY SPEEDS UP THE CONVERSION. (SEE NOTE ON UPPER/LOWER CASE BELOW)

CONTROL Q:
DELETES ALL CHARACTERS FROM THE CURRENT CURSOR POSITION TO THE END OF THE LINE, AND THEN "EXITS" EDIT MODE.

CONTROL X:
CANCELS THE LINE YOU ARE EDITING AND "EXITS" EDIT MODE.

CONTROL M:
THIS IS THE SAME AS RETURN. IT TERMINATES EDIT MODE AND SAVES THE MODIFIED LINE.

CONTROL A:
THIS CONTROLS UPPER AND LOWER CASE MODES.

UPPER/LOWER CASE:
G.P.L.E. SUPPORTS BOTH LOWER CASE ADAPTERS AND A VARIETY OF 80 COLUMN VIDEO BOARDS. G.P.L.E. CONVERTS APPLE- SOFT, DOS, AND MONITOR COMMANDS IN LOWER CASE TO UPPER CASE. G.P.L.E. ALSO SUPPORTS THE VERY POPULAR "SHIFT-KEY MODIFICATION" WHICH MAKES ENTERING UPPER AND LOWER CASE A SNAP. CONTROL A PLACES YOU IN LOWER CASE MODE; HOWEVER, LOWER CASE IS NOT TURNED OFF BY HITTING THE RETURN KEY.

YOU REMAIN IN LOWER CASE MODE UNTIL YOU TYPE ANOTHER CONTROL A. ONCE IN LOWER CASE MODE, A SINGLE CONTROL A PUTS YOU IN UPPER CASE MODES. ENTERING CONTROL A "TWICE" (CONSECUTIVELY) PLACES YOU IN UPPER CASE.

GLOBAL EDIT COMMAND:
A GLOBAL EDIT COMMAND DISPLAYS EACH LINE REQUESTED OR FOUND BY A SEARCH, ONE AT A TIME. AS EACH LINE IS DISPLAYED, YOU ARE PLACED IN EDIT MODE WITH THE OPTION TO FURTHER MODIFY THE LINE, PROCEED TO THE NEXT LINE, OR EXIT GLOBAL EDIT MODE PREMATURELY. TO AVOID ENTERING EDIT MODE FOR EACH LINE, USE THE FAST OPTION (/F) ON THE GLOBAL EDIT COMMAND LINE. THIS PERFORMS A QUICK GLOBAL SEARCH AND REPLACE, OR LISTS ALL LINES WHERE A CERTAIN STRING EXISTS. FOR EXAMPLE, CTRL E "POKE"/F QUICKLY LISTS ALL LINES CONTAINING THE KEYWORD "POKE".

EXAMPLES:
CONTROL E L1,L2,"STRING1","STRING2"/O
L1 = STARTING LINE NUMBER
L2 = ENDING LINE NUMBER
STRING1 = SEARCH STRING (16 CHAR.MAX)
STRING2 = REPLACEMENT STRING (16 CHAR.MAX)
O = OPTION: R=RAW SEARCH, F=FAST SEARCH

HOW LINE SHOULD BE TYPED:
CONTROL E 100,150 = EDIT LINES 100 THRU 150
CONTROL E 10,50,"POKE" = EDIT ALL LINES BETWEEN 10 AND 50 WHICH CONTAIN THE STRING "POKE"
CONTROL E "READ","WRITE" = REPLACE EVERY OCCURRENCE OF "READ" IN YOUR PROGRAM WITH THE STRING "WRITE"

ALL OF THE ARGUMENTS DEFINED ABOVE ARE OPTIONAL. STRING1 AND STRING2 MUST BE ENCLOSED IN QUOTES (" "). TO IMBED QUOTES IN THESE STRINGS, YOU MUST DOUBLE THE IMBEDDED QUOTES. FOR EXAMPLE, IF YOU WANTED TO SEARCH FOR THE STRING "ENTER", STRING1 WOULD BE ""ENTER"". A SEARCH STRING WILL BE IGNORED IF IT IS A SUBSTRING OF A LARGER STRING. FOR EXAMPLE, THE SEARCH STRING "O" WILL NOT MATCH THE "O" IN THE KEYWORD "POKE". G.P.L.E. WILL FIND THESE SUBSTRINGS WITH THE RAW SEARCH (/R) OPTION ON THE GLOBAL EDIT COMMAND LINE (E.G. CONTROL E "O"/R)

PAGE LIST COMMAND—YOU STILL USE CONTROL S TO STOP AND START A LISTING OR CATALOG, AND CONTROL C TO TERMINATE A LISTING. CONTROL P (PAGE LIST) HALTS A LISTING AND EACH SUBSEQUENT CONTROL P DISPLAYS THE NEXT 20 LINES FOR THE LISTING.

ESCAPE FUNCTIONS:
ESC 1 - CATALOG DRIVE 1
ESC 2 - CATALOG DRIVE 2
ESC L - LIST PROGRAM-HIT ESC TO STOP/HIT ESC TO START AGAIN
ESC U - USER FUNCTION
ESC T - TEXT (POKE -16300,0)
ESC M - RUN
ESC W - BEGINNING AND END OF LAST BINARY LOADED FILE
ESC * - MONITOR
ESC O - CALL 936 - CLEAR SCREEN TO TOP
ESC / - PRINT SYMBOL (?)
ESC Q - MEMORY CONTENTS
ESC S - SECTORS FREE
ESC H - DISPLAY CONTROL CHARACTERS
ESC V - VTAB 1
ESC M - RETURN
ESC N - CLEAR, START, STEP, FROM, TO

TO SEE WHAT ESCAPE FUNCTIONS ARE IN THE ESC MENU, RUN ESCAPE PRINTER ON DISK.

ALSO YOU CAN CREATE YOUR OWN ESC FUNCTIONS.
G.P.L.E. supports both lower case adapters and a variety of 80 colu mn video boards. G.P.L.E. converts AppleSoft, DOS, and monitor commands in lower case to upper case. G.P.L.E. also supports the very popular "shift-key modification" which makes entering upper and lower case a snap. Control A places you in lower case mode; however, lower case is not turned off by hitting the return key. You remain in lower case mode until you type another control A. Once in lower case mode, a single control A puts you in upper case mode for the next character only. T yping control A "twice" (consecutively) places you in upper case.

Global Edit Command:
A global edit command displays each line requested or found by a search, one at a time. As each line is displayed, you are placed in edit mode with the option to further modify the line, proceed to the next line, or exit global edit mode prematurely. To avoid entering edit mode for each line, use the fast option (/F) on the global edit command line. This performs a quick global search and replace, or lists all lines where a certain string exists. For example, control E "POKE"/F quickly lists all lines containing the keyword "POKE".

Examples:
Control E L1,L2,"STRING1","STRING2"/O
L1 = STARTING LINE NUMBER
L2 = ENDING LINE NUMBER
STRING1 = SEARCH STRING (16 CHAR.MAX)
STRING2 = REPLACEMENT STRING (16 CHAR.MAX)
O = OPTION: R=RAW SEARCH, F=FAST SEARCH

How line should be typed:
Control E 100,150 = edit lines 100 thru 150
Control E 10,50,"POKE" = edit all lines between 10 and 50 which contain the string "POKE".
Control E "READ","WRITE" = replace every occurrence of "READ" in your program with the string "WRITE".

All of the arguments defined above are optional. STRING1 and STRING2 must be in closed quotes (" "). To imbed quotes in these strings, you must double the i mbedded quotes. For example, if you wanted to search for the string "ENTER", STRING1 would be ""ENTER"". A search string will be ignored if it is a substring of a larger string. For example, the search string "O" will not match the "O" in the keyword "POKE". G.P.L.E. will find these substrings with the RA W SEARCH (/R) option on the global edit command line (E.G. control E "O"/R).

Page List Command: You still use control S to stop and start a listing or cata log, and control C to terminate a listing. Control P (PAGE LIST) halts a list ing and each subsequent control P displays the next 20 lines to the listing.

Escape Functions:
ESC I - CATALOG DRIVE 1
ESC 2 - CATALOG DRIVE 2
ESC L - LIST PROGRAM-HIT ESC TO STOP/HI T ESC TO START AGAIN
ESC U - USM FUNCTION
ESC T - TEXT (POKE -16300,0)
ESC R - RUN
ESC W - BEGINNING AND END OF LAST BINARY LOADED FILE
ESC * - MONITOR
ESC 0 - CALL 936 - CLEAR SCREEN TO TOP
ESC / - PRINT SYMBOL (?)
ESC Q - MEMORY CONTENTS

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ALSO YOU CAN CREATE YOUR OWN ESC FUNCTIONS.

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TO SEE WHAT ESCAPE FUNCTIONS ARE IN THE ESC MENU, RUN ESCAPE PRINTER ON DISK.
ALSO YOU CAN CREATE YOUR OWN ESC FUNCTIONS.

Grafedit
------------
By: Philip Guiochon

Grafedit can be used with keyboard, joystick or mouse, although some operations operate from keyboard only, as you will see. If you have a mouse card in your Apple, you may hit escape when prompted to do so in order not to use the mouse. A whole picture is devoted to menu, which is made up of icons. The icons are explained below.

Here are cursor moves with keyboard:

A Printed copy of this documentation will show correct spacing.

W             I
A   D         J   L
S             K

Use with or without control for faster movements in some cases. In all options, return (or button 0 or a press on mouse) means "GO" while escape (or button 1) means "OUT". With some functions, you will have to crop picture with following moves (some with control to go faster):

W
-----------------
:       S       :
:               :
: A : D       J : L :
:               :
-----------------
:       I       :
:               :
-----------------
K

A little practice will show it is convenient, fast and easy! Do not forget that cropping is done only by keyboard! To go to picture after having selected a function, go to the lowest part of picture (on line 191) and press return (or button or mouse).

Color selection is a little strange: work color is composed of one color for even y and one color for odd y. You have: color1+color2=work color. With cursor and return (or equivalent), you have on screen:

back advance back advance result
col1 col1 col2 col2 color

Note that all plots are solid ones, to have some good control over color problems: therefore, grafedit works in 140 mode, although it could easily adapted to "normal" but awful 280 mode.

Functions are, from upper left to lower right (in nearly all cases, escape or equivalent is a undo function). To go back to menu while working on a picture, place cursor at lowest part of screen (on line 191) and press return. In most functions, a zoom feature is available with the space bar, while one also can toggle joystick/keyboard with the "!" key.

- erasure screen in current color.
- cut window to create a window which can be saved and loaded later on. Crop it with the frame.
Apple II Computer Info

- Paste: show the current window on screen. Then you can move it with A-S-D-W or I-J-K-L keys. "^T" toggles bit 7, "^I" inverse bits, "^R" reverses it, "^F" flips it, and four keys (; / > < on a II+) are used for rollings in four directions: which compensates for the byte operation.

NOTE: ^ = CONTROL

- Text adding is easy: set cursor to position then RETURN. <- and -> arrows control case (for II+), while CONTROL with I, J, K and L does a bit movement. Some control characters allow a II+ to generate non-keyboard characters.

- DOS 3.3 menu is obvious: hit key (inverse character means with CONTROL) then give filename if asked to. RETURN to exit, or "^X". Suffixes are automatic. The "Command" prompt allows a DOS 3.3 command such as LOCK, DELETE, UNLOCK. You can load and save 33 sectors pictures (*.PI*), packed ones (*.FC*) or windows (*.WI*). To save packed picture, just crop part of picture you want to pack, then hit RETURN and give a name. ESCAPE cancels this operation. Be careful, as windows and packed files share the same buffer! RETURN alone exits DOS menu.

- Point plots a point!
- Draw draws continually until a RETURN.
- Line wants a starting point and then a ending one, as in every graphics editor!
- Lines links them automatically.
- Fill allows you to fill on any standard primary color: it is fast and rather powerful. In some cases (on complicated colors), it can "hang up": press any key to exit or to stop filling.
- Circle: select center, then radius in relation to Y movement.
- Disk: same as circle, but will be a solid circle.
- Frame: obvious!
- Box: idem!
- Reverse: works on the Y axis after cropping.
- Flip: works on the X axis.
- Toggle toggles bit 7 which changes colors.
- Inverse toggles all bits.
- Clean is a very useful function: it can erase all colors, letting only outlines on screen. Used with inverse, it allows to wipe out colors without having to redraw everything.
- Shrink is a mere gadget, creating four small pictures with four different masks: not very useful with Apple's low Hi-RES resolution!
- Some brushes are here for the user: they work with functions like draw, plot, lines, frames, etc...

A zoom is available through SPACE key. You can toggle joystick and keyboard input with the [!] key.

We suggest that these instructions be printed for reference while working on a picture.

Files Needed
GRAFEDIT
GRAFEDIT.1
STANDARD.CS--Character Set (font)
This is only a list of the commands for the Complete Graphics System. If you want the complete docs, Email me on Apple Manor, and I'll type them in. No problem.

Main Menu
D) Drawing module 3) 3-D module  
T) Text module S) Shape module  
P) Draw a 2-dim panel for 3-D module K) Shrink a picture  
C) Display color bars for monitor adjustment  
I) Issue disk command

Drawing module
L) Load picture C) Clear background to color 0-7  
S) Save picture T) Load a shape table  
P) Draw a 2-dim panel for 3-D module K) Shrink a picture  
C) Display color bars for monitor adjustment  
I) Issue disk command

A: Auto fill, button 0 fills enclosed black area with color 0-107, paddles position cursor.  
P: Palette, displays palette for testing auto fill colors, to display a color, C clears palette, <space> returns to drawing page

B: Brush mode, select brush # 1-9, button 1 lifts brush, button 0 sets it down, destroys shape table in memory  
S: Shape mode, uses a shape table loaded in, button 0 plots shape, button 1 allows the paddles to be used for rotation and scaling. Any button returns from rotate ans scale mode

R: Arc  E: Ellipse  
Esc: Displays full screen graphics. O: Returns to options

J: Joystick toggle
M: Returns to master menu

3-D Module
A: Add figure, enter a name, then you are put in edit mode  
E: Edit a figure
Select name, type name or press <CR>, with the latter, names are displayed one by one using the arrow keys until you press <CR> to select the name.

L: Display and edit lines, color point 1, and point 2 are shown  
P: Display and edit points X,Y,Z coordinates are shown  
D: Delete the line or point at the cursor position

C) Color(0-107) large font only. S: Use small font  
L: Use large font. R: Type reverses background  
D: Destructive, background is covered by block, the size of the character.  
N: Nondestructive, character is placed over background

H: Horizontal spacing V: Vertical spacing

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
types ESC char.
Esc-.: One dot left
Esc-.: One dot right
G: Returns to options
G: Get font (large and small default are loaded automatically)
F: Save Font
E: Edit font
Displays large or small font, allows you to replace or edit characters. You specify which keystroke for ESC character.

C: Create a character
  I, J, K, M normal movement
Z: Plot on
X: Plot off
F: Finished

Shape Module:
N: Clear memory for a new table
L: Load an existing shape table
A: Add a shape
K: Keystrokes
  I, J, K, M normal movement
Z: Plot on
X: Plot off
F: Finished

Paddles rotate and scale figure as it is shown.
P: Paddles, select width and height: paddles move cursor, button 0 plot on button 1 plot off
F: Finished
Figure is displayed in hi-res and you have the following options:
S: Save as is
E: go back to lo-res and edit

R: Replace a figure that is already in table, same method as add
D: Delete shape from table
V: View a shape, paddles control rotation and scale, any key returns to options
M: Return to master menu

Panel Module:
S: Save panel on disk as a 3-D figure
C: Create panel, you may clear the screen. Or leave it displaying any previous panels for reference. You may also change the scale by which the points and distances are interpreted.
L: Draw a line connecting the points at the cursor positions
P: Move the flashing cursor to one of the previously used points Any key moves the cursor to the next point in sequence, <CR> selects that point
D: Display the coordinates of the cursor points and the distance between
C: Color, select 1, 2, 3, 4, 5, 6, or 7 lines will be drawn in last selected color I, J, K, M normal movement.

<space> switch cursors, so the other point will move
E: Esc: Full screen switch
F: Finished, return to options
M: Return to menu

Shrink Utility:
L: Load a picture
T: Transfer and save, transfers small pictures to page 1, and saves them.

S: Shrink picture, puts small picture on page 2, you select the quadrant (1-4) and intensity (1-4, 4 being brightest).
Esc: Full screen switch
<space>: Switches display between page 1 and page 2 of graphics
M: Return to menu

Color Bars:
Displays and labels primary Apple colors for TV or monitor adjustment

Colors:

<table>
<thead>
<tr>
<th>Color</th>
<th>0 Black</th>
<th>4 Black</th>
<th>8 Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Green</td>
<td>5 Orange</td>
<td>9 Orange</td>
<td></td>
</tr>
<tr>
<td>2 Violet</td>
<td>6 Blue</td>
<td>10 Blue</td>
<td></td>
</tr>
<tr>
<td>3 White</td>
<td>7 White</td>
<td>11 White</td>
<td></td>
</tr>
</tbody>
</table>

Colors mix well with those in the same column, but not with those of the other Orange and blue may be different on some TVs. The autofill colors are blends of one to four primary colors.
The key to using the Word Processor centers around HIGHLIGHTING TEXT. By selecting "Show Clipboard" from the Edit menu. The Clipboard window can be moved away from the document. It will allow you to take characters or words in your document and Cut them out, Copy, or Paste the Copy back into your document. These are used so often that they have keystroke equivalents for them: OPEN APPLE-X to Cut, OPEN APPLE-C to Copy, and OPEN APPLE-V to Paste.

Creating a New Document

To create a new document simply start up GraphicWriter and you're ready to begin typing. If you're already into a document, then save the changes (if you wish to), then CLOSE the window and go up to the File menu and select "New Document". This brings up a new, "Untitled" window, just the same as if you boot-up from scratch. A blinking cursor awaits your keystrokes. The blinking cursor advances along as you type indicating the eventual position of the next typed character. As you are typing the pointer changes from a cursor to what we call an I-Beam. By moving the mouse you can select where you would like the blinking cursor to be positioned and inserted within your document. You can maneuver this I-Beam Pointer between characters, click the mouse button and a new position of the blinking cursor will be obtained. From there you can begin typing in new characters, or BACKSPACING out characters on the left.

Copying Text

Another function you can employ while text is highlighted is to make a Copy of it. By selecting "Copy" from the Edit menu, the highlighted text will also be moved into the Clipboard, but this time the highlighted text will NOT be taken away from the document.

Cut-Copy-Paste

Removing Text

Another function you can perform while working with a document is to highlight the desired text, then press the BACKSPACE key. Another way is to highlight the text and just start typing. The first keystroke will eliminate the highlighted text before inserting the newly typed characters. The text will be removed permanently. (However, if "Undo" is active on the Edit menu, you may select it to cancel the last activity.)

Highlighting Text

The key to using the Word Processor centers around HIGHLIGHTING TEXT. By selecting "Show Clipboard" from the Edit menu. The Clipboard window can be moved away from the document. It will allow you to take characters or words in your document and Cut them out, Copy, or Paste the Copy back into your document. These are used so often that they have keystroke equivalents for them: OPEN APPLE-X to Cut, OPEN APPLE-C to Copy, and OPEN APPLE-V to Paste.

Processing Highlighted Text

When some text has been highlighted (selected), you can perform various operations upon it. For example, you could be choosing a different FONT from the Font menu, or a different SIZE from the Style menu, or any combination of them. Just as your document grows, you can even highlight multiple paragraphs (by dragging across them) and operate on the entire sum of highlighted text.

Other Ways To Highlight Text

There are a few other ways to highlight text besides dragging the pointer over it. DOUBLE-CLICKING ON A WORD will highlight that particular word. It doesn't matter which character of the word the pointer is on when you double-click, the whole word will become highlighted allowing you to choose a new font or style (or color) just for this word.

SHIFT-CLICK (holding down the SHIFT key while clicking) will highlight ALL OF THE TEXT BETWEEN the current position of the "blinking" edit cursor and the position of the click. For example, suppose the "blinking" cursor is located at the Beginning of a sentence. If you where to position the I-Beam pointer at the END of the sentence and do a SHIFT-CLICK, then ALL OF THE WORDS OF THE SENTENCE will be selected. In this way, multiple paragraphs, or even an ENTIRE DOCUMENT (through the use of "scrolling") can be highlighted and operated upon.
RULER SETTINGS
---------------------------------
The RULER is used as a "measuring stick". Although it is displayed across the top of your document, it is only IMAGINARY in that it will NOT appear when you print your final document. It simply serves as a "guide" for FORMATTING your documents. By selecting various SETTINGS, the text can be "molded" or confined within certain boundaries dictated by left and right margins, or it can be forced into certain positions on a line by using what's called TAB MARKS.

Rulers VS. Paragraphs
---------------------------------
A Ruler is always related to a specific PARAGRAPH. There is only one Ruler per paragraph and each paragraph will contain a Ruler. A paragraph is simply defined as a body of words or sentences that ENDS with a carriage return. When you are typing, as soon as you press the RETURN key, the paragraph ends and a new one begins. A new Ruler is automatically created for this new paragraph and will conveniently be an exact "copy" of the same Ruler from the previous paragraph just finished.

Since each paragraph has a Ruler, you can actually have SEPARATE Ruler settings for your paragraphs. A Ruler is set for a particular paragraph WITHOUT effecting any other paragraphs. The rule to remember:THE RULER YOU SEE ON THE SCREEN WILL ALWAYS BE RELATED TO THE PARAGRAPH THE "BLINKING" CURSOR IS LOCATED IN AT THE TIME.

Formatting A Document
---------------------------------
There are 4 possible ALIGNMENTS: Left, Right, Centered, and Fully Justified, as found under the Format menu. Select the type of justification and begin typing. The new text entered will then appear in the chosen ALIGNMENT. Or, for previously typed text, you can highlight the text (actually, any characters in the paragraph) and then select the justification. Multiple paragraphs can be highlighted, in the usual manner, and then justified all at once. LEFT JUSTIFY positions all the text, for each given line, at the LEFT SIDE of the document. RIGHT JUSTIFY forces each line to end exactly on the RIGHT SIDE of the document. CENTER JUSTIFY places the text an EQUAL distance between the LEFT and RIGHT MARGINS. FULL JUSTIFY is a type of alignment where the test is both LEFT AND RIGHT JUSTIFIED at the same time. If the words of the sentence do not add up to a full line across the page, the GraphicWriter adds spaces between the words in such a way until all of the words fit evenly on that same line.

Left And Right Margins
---------------------------------
The left and right sides of a document are called MARGINS. The RIGHT MARGIN can be set so that typing will never go past a specific mark.

Paragraph Indentation
---------------------------------
The INDENTION MARK, at the LEFT SIDE of the Ruler, signifies where the FIRST WORD of a paragraph will be positioned. As you type, and the sentence "wraps", a new line will begin at the LEFT MARGIN MARK. The INDENTION MARK can be moved by placing the pointer on it and dragging it to a new setting.

Single & Double Line Spacing
---------------------------------
The body of text of a document can also be formatted with Single or Double Line Spacing. Selecting "Double Spacing" from the Format menu will insert a BLANK LINE between every line. Re-selecting "Single Spacing" will remove the added lines. Note that the chosen Spacing will affect the ENTIRE document.

Tab Markers
---------------------------------
A TAB MARK is used to designate WHERE you want the cursor to go when you hit the TAB key. These MARKERS, when placed on the Ruler, will "force" the text to be positioned on the screen. When a TAB MARK setting is changed, the text will ADJUST to specific locations, as called for by the MARKS.

There are 3 types of TABS: Left; Center and Decimal, as found under the Format menu. They can be selected using OPEN APPLE-1, 2 or 3, respectively. They can be used individually or in COMBINATION. You may select up to a total of 6 for each paragraph.

Left Tabs
---------------------------------
When you select "Set Left Tab", a new mark will appear on the Ruler. To change this MARK, position the pointer on it and DRAG it to a new location. This will act upon the text in that paragraph only.

You can place multiple Left Tabs on the Ruler. For example, if a second Left Tab is placed at the 3 inch MARK, the edit cursor will move to the 3 inch MARK when you hit the TAB key again. In this way you can control where the edit cursor will move, but more importantly, you can begin to dictate where the typing will occur on the document window. This process is very important when it comes to designing the desired document.

Center Tabs
---------------------------------
A Center Tab can be placed in a similar manner and cause the text, after pressing the TAB key, to be CENTERED as you begin typing. The position of a sentence on a line will be determined by it's LENGTH when centered beneath this MARK.

Decimal Tabs
---------------------------------
A Decimal Tab has a "dot" to it's right. This is how you can tell the difference between a Decimal Tab and the other Tabs. The interesting thing about a Decimal Tab is that when typing begins, any numerical values will have their DECIMAL POINTS aligned vertically. This sets up the possibility of creating a professional report which will show a LIST OF AMOUNTS, such as PRICES or DOLLAR TOTALS and so forth.

Removing Tabs
---------------------------------
A TAB MARK can be removed at any time by simply dragging it off the Ruler and letting go of the mouse button.

PAGING
---------------------------------
Page Numbers
---------------------------------
You can type out a very long document without stopping (although you should always Save your document from time to time for "insurance" against unforeseen disasters). The Word Processor uses what's called VIRTUAL PAGE which means it acts as if you had an infinitely long piece of paper fed "forever" through the program's "typewriter".

As you type, the document will be separated into NUMBERED PAGES. These pages will simply be the divisions of what the document will look like when printed.
Each PAGE therefore represents ONE PIECE OF PAPER. The Page Number that you are currently typing in will be shown at the lower left corner of the window.

Scroll Bars

On the right side and along the bottom of the document window are what's called SCROLL BARS. These allow you to move through a large document rather swiftly, in order to point the exact Page you would like to edit.

Clicking on the DOWN ARROW moves the contents of the window upward a LINE or two at a time. Or clicking on the UP ARROW will move the contents downward on the screen. Holding down the mouse button on an ARROW will act like "consecutive clicks" and continue moving the contents. You can also SCROLL RIGHT or LEFT by using the bottom SCROLL BAR which works in a similar fashion. However you will really only need to do this when your RIGHT MARGIN is set beyond 8 inches. Note that you can go out to the right up to 15 inches, but you can ONLY print such a document on the Wide ImageWriter.

The Thumb

The way to move through the document a few "screens" at a time is by dragging the white rectangle called the THUMB. You might have noticed that when you clicked on the ARROWS, this THUMB also moved. The THUMB rectangle is positioned along the SCROLL BAR in the exact PROPORTION of the contents you currently see with respect to the ENTIRE DOCUMENT. Thus, if the THUMB is at the top of the SCROLL BAR, then you will know that you are at the very beginning of your document. If you drag it to the middle of the SCROLL BAR, then release the mouse button, you'll be at the halfway point of your document, and so forth. Clicking on the actual gray part of the SCROLL BAR will also advance the contents a few "screens" at a time. You can reverse the "scroll" by clicking on the OTHER SIDE of the THUMB (when the gray appears on that side).

As you drag the THUMB, the Page Number of its position will also be shown (in its usual place at the bottom left corner). Therefore, you can drag the THUMB while examining the displayed Page Number in order to "pinpoint" the exact page you would like to go to. Note that the actual SIZE of the white rectangle represents how much memory remains for you document. As you document grows in length, the THUMB rectangle will shrink.

Page Breaks

As you are typing a document, you will come to the end of a page (as it would be printed on paper). At this time a line will be displayed across the screen indicating the fact. This is known as a PAGE BREAK. What this means is that during printing, the paper will be fed through the printer to the next sheet. You can force this to happen at any time by positioning the "blinking" cursor at the desired place and then selecting "insert Page Break" from the Page menu.

During printing, a form feed will occur exactly at this point, with subsequent printing continuing on the next sheet of paper.

You can always tell where a Page Break exists by the fact that the screen will be "empty" between the Break and the bottom of that Page. Of course, you aren't allowed to type within this area. Upon reaching such a Break during typing, the cursor will move to the next Page. However, an inserted Page Break can be removed by positioning the cursor anywhere within the LAST PARAGRAPH of the Page and selecting "Remove Page Break" from the Page menu thereby removing the Break "area" from the document.

Headers And Footers

A HEADER, or a FOOTER, is simply a line, or a few lines, that you would like to have at the top or bottom of each page. To create a HEADER or FOOTER simply type the text and HIGHLIGHT it. Immediately select "Copy as Header" or "Copy as Footer" from the Page menu. The text will be saved (replacing any previous ones) and will appear during printing. You can examine a HEADER or FOOTER by selecting "Show Header" or "Show Footer" from the Page menu in which case they will appear on the screen. Common usages for HEADERS or FOOTERS include your company's name and address (or logos and other Graphics drawings as cover later) which will then become your special Letterhead stationery.

Show Full Page

Since an entire 8 1/2 by 11 page cannot "fit" onto the screen all at once, there is an item under the Page menu called "Show Full Page". By selecting this you will be shown a miniature representation of the current page of your document.

This function is often used to see what your page will look like prior to printing, especially when it contains numerous graphics drawings or complex layouts. By examining the Full Page from time to time, you can then create your document with full assurance it will be taking the form you had originally planned. Click the "ok" button when done viewing the Full Page window and you will be returned back to the normal editing mode.

CREATING DOCUMENTS

Saving Documents

When you have finished typing your document and are ready to save it to your disk simply go up to the File menu and select "Save Document" or press OPEN APPLE-S instead. Upon doing so you will be asked to give your new document a NAME (For untitled docs). The default name "Untitled" appears at the bottom of this Save window. Note that it is highlighted. As usual, it can be edited by simply typing in a name or by clicking the pointer between characters and begin typing or backspacing.

When ready, click on the "Save" button, or press the RETURN key (the "ring" around the button means it is the default button), and the document will be saved. You will then be returned back to your document, Notice that the TITLE of the window will change from "Untitled" to "XXXX" (the name you enter).

About The Save Window

It is important to know some more things about the Save window. At the top you will be shown the name of the current PATHNAME. The Disk icon will be followed by a name that indicates the main directory to where you document will be saved. You are also given the amount of disk space remaining.

Those items in the window which are grayed mean they do NOT apply to the activity. Naturally saving your new document with the same name as one already saved will completely destroy the contents of the original. The Cancel button when clicked, will simply return you back to your document WITHOUT saving the document.

Saving To A Folder

What you are really trying to do when you save a document is to save it INTO A FOLDER. Thus, you locate the FOLDER you want (clicking on the Up or Down Arrows to scroll through a large list of them) and then click "open" or press RETURN, or you may double-click on the folder name. In any case, THIS IS WHERE THE DOCUMENT WILL BE SAVED.

A Folder icon represents a SUB-DIRECTORY which in itself can hold other files, and these files can only be found by examining this particular folder. You can recognize it as a SUB-DIRECTORY since the name includes slashes "/", each one meaning a "step" up the hierarchy of files.

Note that you can use the same file in more than one folder and will be saved in (when you click on Save). When a folder icon is showing, the "Close" button will become activated. Clicking this will take you back to the
You can create a brand new folder by typing in a name for it then clicking on "New Folder". After this is done you would then type in the name for the document itself and Save it into this new folder.

The "Disk" button is used by first ejecting your disk and inserting another disk. Clicking "Disk" will then read the new disk for all of it's FOLDERS, and then you can carry on as explained above.

Closing A Document

You can put away your document (in order to get to a different document) by clicking on the CLOSE BOX. If you have been typing before closing your document and you haven't saved these changes yet, then you will be prompted if you wish to Save Changes Before Closing. Clicking "Yes" (or pressing RETURN) will automatically save the document before putting it away. Clicking "No" will put the document away WITHOUT saving any changes. "Cancel" will simply return you back to your document for further editing.

Opening Documents

When a document is put away, you can then open a previously saved document by selecting "Open Document" from the File menu. In this case the Open Document window will open. Selecting the filename, then clicking the "Open" button (or pressing RETURN), or double-clicking on the file's name will open the document.

New Documents

Once the current document is put away the screen clears, you may select "New Document" from the File menu which will bring up a blank "Untitled" window, the same as if you just entered GraphicWriter. Or you can re-open a document which you have already created and saved prior to this session.

Opening Documents

When a document is put away, you can then open a previously saved document by selecting "Open Document" from the File menu. In this case the Open Document window will open. Selecting the filename, then clicking the "Open" button (or pressing RETURN), or double-clicking on the file's name will open the document.

Working With Documents

You can then start working with this document in the usual fashion. When finished, you have the option of saving an changes and then Closing the window, or Close it and save it (or not) directly from the prompt window.

Sometimes one might just want to "see" a document, or "copy" some of its text (or graphics), then close the document and bring up another and paste the copy into this newly open document. Once you get the hang of it you will find there are a number of options available for creating and retrieving documents.

Importing Text Files

A document can also be created from TEXT type files. This is the process you can use to bring into GraphicWriter any documents or TEXT created from other programs. When you select "Import Text File" from the File menu, another "Open" type window will be presented allowing you to choose a TEXT file (you may import other disks during this "search"...). You then select the TEXT file just like you were opening a normal document, but this time the DATA from that file will be inserted into your document. The insertion of the TEXT will occur at the current point of the "blinking" cursor. Thus, you should first position this cursor and then select "Import Text File". After the TEXT is inserted, you are welcome to edit it (cut-copy-paste, etc). You can also just bring up a "New Document" then import the TEXT. When ready you can Save this new document, or use "Save As..." to a completely different file for an altered document.

GRAPHICS

The Drawing Tools

Each DRAWING TOOL can be selected by simply clicking on its ICON at the bottom of the screen. The "A." (or ASCII) is used for what is called TYPING MODE. Clicking on it (so that the square becomes highlighted) means you can then begin typing on the keyboard. Clicking on any of the other squares means you will go into the GRAPHICS MODE.

Next to the "A..." we have the LINE TOOL. After selecting it, the arrow pointer becomes a CROSS when you drag it up to the middle of the screen. This is also how you can tell that you are in the DRAWING or GRAPHICS MODE and that you can NOT type at this time.

To use the LINE TOOL you first click and hold down the mouse button and DRAG the CROSS about the screen. A LINE will be drawn FROM THE STARTING POINT of where you FIRST clicked, TO THE ENDING POINT of where the CROSS is when you RELEASE the mouse button. You can "eyeball" the LINE until it is perfectly straight.

Next to the "A..." there are four SHAPE TOOLS: a rectangle, a rounded rectangle, a triangle, and a circle (or oval). These tools work the same way, that is, you click and DRAG to draw with them.

The next four FILL SHAPES work exactly the same way, but instead of drawing a "border", the entire area is filled in.

The hand tool is used for moving pictures about the screen. It works by clicking ON the picture, holding the mouse button down, and DRAGGING the picture with the HAND. A ghost picture moves with the HAND and when the mouse button is released, the picture will move from its original position to the new destination. If not satisfied with the position, simply drag it again to another place.

You click on one of these drawing pointers and then choose the TOOL you wish to use.
draw with. To understand their differences, let's examine how the thinnest one can be utilized to create the same effects as the thicker ones. Using the smallest CROSS pointer, draw a rectangle, then position the pointer just inside the upper left corner and drag into place a new, internal rectangle. Repeating this process creates a thicker "border" just as if you used a larger CROSS. Therefore, as you draw with one of the larger CROSSES, adjacent multiple lines or "dots" are formed at the same time, thus yielding larger "rectangles".  

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Apple II Computer Info

The Paint Palette

Drawing in color is done with the aid of what is called the PAINT PALETTE. This is called up on the screen by selecting "Paint Palette" from the Goodies menu or using OPEN APPLE-A (for "Artist"). The palette is like an artist's tray of colors used during painting. The PAINT PALETTE can be kept on the screen as you are drawing and can be moved about by dragging on its top black part. It can be put away by selecting "Hide Paint Palette" from the Goodies menu, or by clicking in its CLOSE BOX. (Clicking on the title of your document at the very top of the window also puts the PAINT PALETTE away).

Selecting A Color

A COLOR is selected by simply clicking in one of the 48 colored ovals. A check mark next to the oval signifies that it has been selected. Also, the selected color will appear in the COLOR BOX at the bottom of the screen. All subsequent typing or drawing will be displayed in this color. Note that DOUBLE CLICKING a colored oval on the PAINT PALETTE will select that color and put the PALETTE window away.

Typing In Colors

The way to type in color is by first selecting one from the PAINT PALETTE just prior to typing. You can change the color of existing text by highlighting it and then selecting a color. Note that the text will remain highlighted and appear in an INVERTED color until you click the mouse to reveal its true color.

Painting Modes

There are 3 PAINTING MODES. The current MODE will always be checked on the Goodies menu. HEAVY PAINT is very simple to understand. Any color you draw with will paint directly over any drawings underneath it. WATER COLOR results in "mixed" colors when painting over a different color than the currently selected drawing color. The drawings below it will often "come through" resulting in bizarre combinations of colors. However, the primary purpose of WATER COLOR is TO LET THE BLACK SHOW THROUGH. DYE simply paints over any BLACK parts of a picture. On an empty screen, a drawing done in DYE will end up being transparent, but when you paint over a picture that contains the color BLACK, then just let the BLACK portions of the drawing underneath become DYED.

Hiding Colors

On the Display you will find "Hide Red, Blue, Green or Yellow. Selecting one of these will temporarily HIDE that particular color from the screen. The Display menu will then change to "Show Red" or "Show Blue", etc. Re-selecting one will once again SHOW that color. This is how you can view various colored OVERLAYS.

Living Color Or Black & White

You can also select "Black & White" from the Display menu in which case the entire screen will be displayed in black and white, or shades of gray where there are different colors. Selecting "Living Color" returns the screen back to all color again regardless of which colors were previously "hidden".

"Living Color" therefore SHOWS ALL COLORS, as if you selected them from the menu one by one. "Black & White" will override any "Show Colors" and HIDE them all at the same time.
Objects
-------

When you draw a shape, it becomes what's called an OBJECT. This means it is INDEPENDENT from the rest of the document or other OBJECTS.

Selecting & Changing An Object
-------------------------------

This is proven by the fact that you can change the size, position or color of an OBJECT without disturbing the others. This is done by SELECTING the OBJECT (clicking on it with the HAND TOOL). A "marquis" type border will surround the OBJECT telling you that it is currently SELECTED, which means you can now do various things with the OBJECT.

An OBJECT'S LINE THICKNESS can be altered by selecting the OBJECT and then immediately selecting a different CROSST.

An OBJECT can be RE-SIZED by holding down the CONTROL key while dragging it with the HAND TOOL.

An OBJECT can also be ROTATED by selecting "Rotate" from the Goodies menu. This is ideally used on TRIANGLES to obtain "arrows" of different direction.

You can change an OBJECT'S COLOR by clicking a different colored oval on the PAINT PALETTE. Likewise, the DRAWING MODE for this particular OBJECT can be changed by selecting "Heavy Paint", "Water Color", or "Dye" from the Goodies menu.

Selecting Multiple Objects
--------------------------

You can select a number of different OBJECTS at the same time by holding down the SHIFT key while clicking on them one by one. Each one of the OBJECTS will appear with a "marquis" frame.

These selected OBJECTS will then behave as a GROUP. You can change all their COLORS to the same color, as well as change their LINK THICKNESSES or DRAWING MODES. You can move ALL of them in unison by holding down the SHIFT key while dragging. However, if you try to RE-SIZE any one of them (with the CONTROL key), only that one particular OBJECT will be altered since the others will then become "de-selected".

Cut/Copy/Paste With Objects
----------------------------

Just as you highlighted text and performed Cut, Copy, or Paste, so can you select an OBJECT (or multiple OBJECTS with the SHIFT key) and choose Cut or Copy from the Edit menu. The copied OBJECT will appear on the Clipboard, replacing whatever was there before it. As you'll recall, the Clipboard's contents can be viewed as desired by selecting "Show clipboard".

When an OBJECT exists on the Clipboard, you can then select "Paste" from the Edit menu and the OBJECT will reappear at the top-left corner of the CURRENTLY SELECTED REGION. For example, if you Cut an OBJECT from your document, and then select a different REGION, the Pasted OBJECT will be placed at the top-left position of this REGION -- no matter what Page you are on (or have scrolled to). You may, of course, DRAG a Pasted OBJECT away from this position by using the HAND TOOL. When you Paste an OBJECT directly on top of another OBJECT, you might wish to move it away (using the HAND) in order to expose any "hidden" OBJECTS beneath it.

Regions
-------

A REGION can be simply defined as "an area". A REGION is usually comprised of a "group" of multiple OBJECTS that form a single picture.

Typing Regions
--------------

The simplest REGION is called the TYPING REGION. When you create a new document, a large TYPING REGION is automatically created which essentially "covers" the entire document. You don't have to worry about it. You just keep typing and as you hit RETURN, the lines of text keep growing and growing.

Bottomless Regions
---------------------

This beginning TYPING REGION is also known as a BOTTOMLESS REGION in that an imaginary "rectangle" surrounds the whole document, with no tangible BOTTOM. You can virtually type forever downwards. And just as you can keep typing, so can you keep drawing and adding OBJECTS into a BOTTOMLESS REGION.

Boxed Regions
-------------

A BOXED REGION is one that does have a bottom. It is finite to the degree that if you were to type in this REGION, you would eventually come to a point where you could no longer type, that is, the REGION'S boundaries will restrict the typing to the specified dimensions.

A BOXED REGION is most often used when you want to confine certain OBJECTS within a particular area and act on them without disturbing any others. Such is the case of a complex drawing that is complete to your satisfaction, and you wouldn't want it to be changed. The "set" of OBJECTS can be copied and sent to other places on your document, into other REGIONS or even to other documents (via the Clipboard, or GraphicWriter Scraps).

Creating a New Region
----------------------

As previously mentioned, a new, "Untitled" document begins with a BOTTOMLESS TYPING REGION. To create and define a totally NEW REGION, simply select "New Region" from the Regions menu and a default "rectangle" will appear on the screen.

The Object Mode
----------------

REGIONS have 2 different MODES. The OBJECT MODE is fairly straightforward. The REGION is simply made up of a collection of OBJECTS brought together to form a single picture. You create and draw the OBJECT directly within the REGION.

The OBJECTS within a REGION can be Cut or Copied. You may also create an OBJECT outside the REGION, Copy the OBJECT then Paste it into the selected REGION.

Therefore, the purpose of a REGION is to "group" OBJECTS together. The REGION will then behave as a single entity, which is discussed later. The reasons why you would want to use REGIONS will become much more evident under the heading "Page Making".

The Canvas Mode
-----------------

The CANVAS MODE is quite different. This is where you draw within the selected REGION using the PAINT BRUSH TOOL to do "free hand" drawings. You must understand that the drawings performed in the CANVAS MODE are NOT OBJECTS. The drawings are nothing more than "dots on the screen". These "dots" CAN NOT BE MOVED nor can they be re-sized. They merely form a picture within the REGION and have become "blended" into the area. You can, however, draw right over them, or erase them by selecting and drawing with "White" paint. You may also Cut or Copy an ENTIRE CANVAS REGION and Paste it into another CANVAS REGION, but NEVER into an OBJECT REGION.
The "normal" mode for most applications is "Black on White" which means "black text on white paper", much like a typewriter. However, GraphicWriter allows you to do the reverse by selecting "White on Black" from the Regions menu.

This ONLY EFFECTS NON-COLORED TEXT and pertains to the ENTIRE REGION. You can subsequently paint "over" any part of the REGION. You can revert to the opposite by re-selecting the other "inversion" from the Regions menu.

SELECTING & OPERATING UPON REGIONS

A REGION becomes selected by holding down the OPEN APPLE key while clicking on it with the HAND TOOL. The OPEN APPLE key is necessary so as to distinguish the REGIONS from OBJECTS. Upon selection, you can operate on the entire area of the REGION at once, such as RE-SIZING it to different dimensions by holding down the OPEN APPLE plus the CONTROL key at the same time while "tugging" on the REGION with the HAND. Note that by using the SCROLL BARS it is possible to create a REGION which is larger than the viewable screen. You would alternately RE-SIZE and SCROLL. However, due to memory limitations, a CANVAS REGION may NOT be larger than 8 inches wide by 10 inches long.

You can change the REGION from "Boxed" to "Bottomless", or you may choose to put a BORDER around a REGION by selecting "Framed" from the Regions menu. This will draw a BOUNDARY FRAME, which can thereafter be removed by selecting "Unframed"/

SELECTING "SHOW REGIONS" will allow you to see the positions and sizes of your REGIONS in the form of rectangular "frames" on the screen. Thereafter, the Regions menu will say "HIDE REGIONS" which will, of course, remove the viewing frames.

HELPFUL RULES

The OPEN APPLE key always pertains to REGIONS. If you do NOT use the OPEN APPLE key, then you will be acting upon OBJECTS or TEXT.

The CONTROL key gives you "Control" of a REGION or an OBJECT.

The HAND is used for SELECTING, MOVING and RE-SIZING both REGIONS and OBJECTS.

The SHIFT key, while used to select MULTIPLE OBJECTS or TEXT, unfortunately may NOT be used to select multiple REGIONS. However, you can Copy OBJECTS within REGIONS or CANVAS pictures, individually into or out of the Clipboard or GraphicWriter Scraps and Paste them elsewhere as desired.

PAGE DESIGN

For the advanced user or desktop publisher, REGIONS become almost mandatory for sophisticated page layout. For example, multiple text columns (required for creating a NEWSLETTER) can be defined by laying down REGIONS for these columns. You can choose separate colors for the entered text as well as separate justifications for each REGION. Changing one REGION will not alter the other. In this way, block text could be typed in one column with the writing carrying over and continuing on in the other column.

You can create as many columns as you wish, with each REGION having a unique size, and you can scatter these REGIONS around a page as well as using multiple pages. (See "Page Setup" to learn how you can change the actual page lengths).

Text Plus Graphics

The basic rule to remember when combining text and graphics pictures is that the pictures will always "override" the typed text. This is because a drawing is really a "painting" and will usually cover-up the text. Of course, a WATER COLOR or DYE will change the apparent color of any underlapping text (until you move one of these OBJECTS away).

TYPING OVER PICTURES

As you are typing, the characters might run under an OBJECT, as the text will tend to "disappear". In fact, you might even see a "blank line" across the screen during backspacing of text. What this means is that because you are in the TYPING MODE at the time, there will be an illusion of parts being "erased". You will experience this whenever you are typing and there are pictures that "get in the way".

To review the pictures or text, that is, to see what the document "really" looks like, all you have to do is click on the "Update" button at the bottom right hand corner of the screen.

This will show the OBJECTS in their proper and full pictures, in which case if any text is underneath them, the OBJECTS will "another" the text so that the text will not be seen. (except for most Water Color and Dye OBJECTS).

Text Within Regions

The text entered into a BOTTOMLESS or BOXED REGION can be operated upon with the normal editing functions such as cut & paste, highlighting and changing font, size, or color, and so forth. However, the REGION can also maintain a set of TABS and MARGINS and because of this, the real power of GraphicWriter begins to be noticed.

When we create a NEW REGION, the MARGINS are set, as a default, to the left and right boundaries of the REGION.

You'll recall the rule that the RULER you see is for the current paragraph. Well, in this case it's our REGION! As with any paragraph, dragging the RIGHT MARGIN MARK to a new setting will alter the text within that REGION.

Mixing Text And Graphics

You can also combine GRAPHICS pictures within the same REGION containing TEXT. For example, if you have a drawing in one REGION, and typed a "label" in a separate REGION just below the drawing, then if you wanted to move both the drawing and label to another position on the page (or to another page), you would have to move them individually. However, the correct way to do this is to COMBINE them all into one single REGION, making this unit much easier to work with.

Cut-Copy-Paste

You can use Cut, Copy or Paste on any TEXT within the OBJECT REGIONS. The TEXT is called REAL TEXT and when you think of each REGION as being miniature "documents" within themselves. You can take the text from one REGION and Paste it into another.

OVERLAYS

An OVERLAY is the term used for when you "mask" an OBJECT or a REGION by placing
a WATER COLOR or a DIE OBJECT directly over it. (Of course, using HEAVY PAINT will cover an OBJECT or REGION completely).

Through the use of the "typing fields" and OVERLAYS sophisticated artwork can be obtained. Keep in mind as well that when your creative ideas come to life in the form of a really good drawing, make Copies of them for safe-keeping.

Layouts

You'll recall that "Show Full Page" can be selected from the Page menu in order to view a miniature representation of the PAGE on which you are currently working. This process proves very valuable when applied to Page Making.

Using "Show Full Page"

When brought up on the screen, Show Full Page presents for your inspection the "overall view" of a document Page. Lines of TEXT in this window will be displayed as "waves". The window represents a single page, about 8 1/2 inches across (the "viewable" section of the document window, which will be just a portion of a wider document) and you can view different pages by first scrolling to them prior to selecting "Show Full Page".

Rearranging The Layouts

One of the best uses for Show Full Page is that, by using the HAND, you can actually drag and maneuver the OBJECTS or REGIONS about the page. In this way, Page Making becomes much easier to accomplish. The OBJECTS or REGIONS can also be Cut, Copied, or Pasted directly on the window (or into the Scrapboard). An other process that you can perform on the "regular" document window with an OBJECT or REGION can also be done on Show Full Page. The only function you can NOT do is to RE-SIZE an OBJECT or REGION during Show Full Page.

Templates

A template is the term used for a document which serves as a "model" that can be used to create similar type documents. This is so you don't have to keep creating the same drawings or layouts over and over.

Creating A Template

It is very easy to create a TEMPLATE. All you do is perform your drawings and then Save it back to the disk. For example, a document that has a logo at the top can be used as Letterhead stationery. Then, you open up this TEMPLATE and then Save it back to the disk. For example, a document that has a logo at the top can be used as Letterhead stationery. Then, you open up this TEMPLATE and then Save it back to the disk.

Examples Of Templates

The main reason for creating TEMPLATES is to avoid doing extra work. When you create a document or a report containing numerous REGIONS all carefully laid out, or sophisticated drawings, or special areas of the document set aside for graphs, etc, then stashing this "raw" document aside will allow you to use it again.

Of course, if the ONLY difference amongst your documents is the actual text you type in the REGIONS, then you could always bring up one of them, highlight the text and Cut it out, then begin typing anew.

It is also a very wise thing to set aside a FOLDER on the disk for special drawings, artwork, laid out REGIONS and so forth. The extra time spent in creating TEMPLATES and FOLDERS may well prove worth it.
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respective "boxes" (until a check appears). These are additional functions which allow you to print the Page Number, Header or Footer for each page during the actual printing. Clicking a checked box a second time will "un-check" it.

Clicking the "OK" button will accept the parameters, saving them for future printing, and then return you back to your document. Clicking "Cancel" will return you back to your document WITHOUT saving any changes you may have made to the parameters.

IMPORTANT NOTE: These Page Setup parameters are always saved uniquely for each document. You can therefore have many different documents, all with separate settings.

Should your printing not quite come out as desired, then abort the printing and bring up the Page Setup window, select the appropriate option, then continue printing.

Print Setup
------------

After assuring the Page Setup parameters are satisfactory, the very next step towards printing is to select "Print Setup" from the file menu. Upon doing so you will be presented with the Print Setup Window.

The COLORS boxes allow you to choose which of the main COLORS you would like included in your printing. You choose a color by clicking in its box (until it becomes checked). You can de-select (un-check) a COLOR by clicking the box a second time. If a COLOR is not checked, then it will be excluded from the final printing. In this way it is possible to print COLORED OVERLAYS by printing your document a number of times. Each time you can print by selecting different combinations of added or removed colors.

SCREEN TONES represent the degree of "screening" to be done during printing. This is as if a screen or "grid" of a specific DOT DENSITY was laid over the document, allowing only certain TIMES to show through. This is measured by the percentage of SOLID BLACK.

FORM FEED is your normal type of paper feed where the printer sends the specially prepared form paper on through during printing. CUT SHEET is where YOU manually feed each sheet of paper during printing, one by one when asked to do so.

The number of COPIES you wish to print can be entered by editing the COPIES box. Clicking "Cancel" returns you back to your document WITHOUT saving any changes to the Print Setup parameters.

Clicking the "START" button will save the current parameters and begins printing according to all of the parameters from both the Page Setup and Print Setup windows.

You can ABORT the actual printing by pressing OPEN APPLE-PERIOD.

Remember, these Print Setup parameters are saved uniquely for each document.

Bitmap Files
------------

Certain video scanning devices that DIGITIZE images (translate real life pictures into patterns a computer can recognize) have the capability of creating a disk file that, when loaded into the computer's screen memory, will display the digitized picture. Such files are called BITMAP FILES. Essentially, they contain BITS ("dots") that constitute a graphic picture for the Apple IIGS. GraphicWriter has the capability of importing these BITMAP FILES provided they have been generated from HIGH RESOLUTION graphics. For the GS this is 640 PIXELS ("dots") per line with 200 lines per screen.

To Import A Bitmap File
------------------------

1) SELECT or create a CANVAS REGION (you can only import a Bitmap File into a CANVAS REGION).

2) Select "Import Bitmap File" from the Goodies menu.

3) A standard file selection list window will be displayed. Select the file you wish to import.

A standard Bitmap File contains 32,000 characters which comprises an entire single GS screen in the High Resolution mode. The initial size of you CANVAS REGION is unimportant. The entire 640 X 200 matrix of "dots" is imported into memory. A smaller CANVAS REGION can be "stretched" in size in order to see more of the imported picture.

Exporting Bitmap Files
------------------------

It is also possible to EXPORT a Bitmap File from GraphicWriter to another program or device (providing, of course, they have the capability of "excepting" such a file). To do this, simply SELECT a CANVAS REGION and then select the "Export Bitmap File" from the Goodies menu. As usual, you will be asked to enter a new name for the file just prior to saving it.

NOTE: Since Bitmap Files require large amounts of disk space, it is NOT advisable to use "Import" or "Export" just to transfer pictures between GraphicWriter documents. Instead, use either Cut/Copy/Paste or GraphicWriter Scraps.

The Master Palette
-------------------

Since GraphicWriter uses "Super Hi-Res" graphics, there are certain restrictions applied to the selection of COLORS. In the "Super Hi-Res" mode, the GS can only display FOUR unique colors per screen line, and although this restricts the solid color spectrum, it is a necessary trade-off for good quality graphics or word processing.

GraphicWriter behaves like it uses more than FOUR COLORS by employing a technique known as DITHERING. This method, commonly used in the printing industry, blends the different colored "dots" into PATTERNS that give the appearance of different hues and shades. For example, the color PURPLE is created by displaying alternate RED and BLUE dots. ORANGE is created with YELLOW and RED dots, and so forth.

Changing the Master Palette
---------------------------

There may be times when SOLID COLORS will be preferred over DITHERED COLORS. For example, one might be designing a layout which will only have one or two colors for the camera-ready artwork at the printing press. In this case, the restriction to four colors (where WHITE and BLACK are two of them) is more desirable since solid, undithered colors are preferred.

By selecting "Set Master Palette" from the Display menu, the Set Master Palette Window will be presented. If you select "Dithered", colors will be displayed on your document using the DITHERING technique (described above). Note that the color selections have no meaning when Dithering is selected.
By selecting "Solid Colors", your document will be displayed using FOUR NON-DITHERED COLORS. White and Black are always chosen for two of the four colors as White is necessary for "background" and Black is necessary for "outlines". But, you can choose, Red, Blue, Green, or a combination of all three for the remaining two colors.

Red, Blue and Green are offered as choices that represent the actual colored "beams" that reflect on your monitor. By selecting different combinations, you can obtain the following solid colors. (Note: An X means the color box is checked while "O" means it is un-checked):

<table>
<thead>
<tr>
<th>RED</th>
<th>BLUE</th>
<th>GREEN</th>
<th>SOLID COLOR RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>O</td>
<td>O</td>
<td>RED</td>
</tr>
<tr>
<td>O</td>
<td>X</td>
<td>O</td>
<td>BLUE</td>
</tr>
<tr>
<td>O</td>
<td>O</td>
<td>X</td>
<td>GREEN</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>O</td>
<td>VIOLET</td>
</tr>
<tr>
<td>O</td>
<td>X</td>
<td>X</td>
<td>TURQUOISE</td>
</tr>
<tr>
<td>X</td>
<td>O</td>
<td>X</td>
<td>YELLOW</td>
</tr>
<tr>
<td>O</td>
<td>O</td>
<td>X</td>
<td>WHITE</td>
</tr>
<tr>
<td>O</td>
<td>O</td>
<td>O</td>
<td>BLACK</td>
</tr>
</tbody>
</table>

Colored Printing

GraphicWriter Version 1.0 supports the Apple ImageWriter and ImageWriter II printers, as well as some Daisywheel "letter quality" printers (which can only print TEXT). The LaserWriter will be supported pending Apple Computer's release of the actual LaserWriter driver software. The same holds true for the High Quality printer drivers for the ImageWriter II.

Of these printers, only the ImageWriter II is capable of printing in COLOR. Printing colored documents to a "Black and white" device requires some discussion:

How Colors Will Print

You can determine the exact way GraphicWriter will print colors to various printers by understanding three general rules:

1) If the selected print device is the ImageWriter II, the document is printed with the identical colored patterns as shown on the GS screen. 2) If the selected print device is the ImageWriter or LaserWriter, colors will print in Black and White patterns as follows.

A) If DITHERED is selected for the Master Palette, colors will be represented by various shades of gray, depending upon the original colors' relative lightness and darkness.

B) If SOLID COLORS is selected for the Master Palette, then only Black is affected, whereas if SOLID COLORS is selected, then Black and ALL SOLID COLORS will be affected by the SCREEN TONE selection.

Color Separation

GraphicWriter is an excellent tool for preparing multi-colored copy for printing. However, it's important to plan your document in advance, keeping in mind the various methods for printing, in order to achieve the desired results.

For example, if you are going to design a two or three colored promotional piece, it is best to force the Master Palette into SOLID COLORS. Then, you would print each OVERLAY one at a time. By selecting one of the colors from the Print Setup parameters (and remember Black is a color), only those specific colored portions of the artwork document will be printed in SOLID BLACK which is exactly what is required for your camera-ready copy.
BY THE METAL MANIAC
THANKS TO THE PHOTON

This summary of the great graphics adventure will take you from the very beginning to the very end in the least amount of moves. Therefore, there will be some short cuts here and there... OK... Let's begin!!!! 

(actions are printed inside "greater than" and "less than" signs)

Now you must instruct the ship's computer where to go...

You are now on your way to Venus.....

You are now on the alien ship... The objective here is to find the Black Orb... To open doors, you must use orbs to lock and unlock them... Meaning there will be a series of dropping and picking up orbs...

Now Deebo bitches for a while and then gives you a rock for all your troubles (Yippee...)

The butler answers the door and asks you if you are going to pay tribute to Lord Deebo....

Lord Deebo begins to speak telling you more about the plot... He also gives you stuff.

Now we have the Black Orb!!!

Now to get the ultimate item... The Gas!! Otherwise called "Heliotropanite"...

Now Deebo bitches for a while and then gives you a rock for all your troubles (Yippee...)

Failure to drop the gun results in death on the next move!!!

Now we have to go to Pluto where our stranded pilot is and give him his gas... But first we must destroy an enemy ship with our bomb...

Now we are on an alien ship... The objective here is to find the Black Orb... To open doors, you must use orbs to lock and unlock them... Meaning there will be a series of dropping and picking up orbs...
To call this routine from BASIC follow this format:

```
CALL xxxx,A$  [xxx=address of program, A$=any string variable]
```

As before A$ can be any string variable, and if it is not a string variable
or the comma is forgotten then a SYNTAX ERROR will result.

**Decimal locations:**

- $1650 = 5712 [so it would be CALL 5712,A$]
- $9200 = 37376 [so it would be CALL 37376,A$]
- $BC00 = 48128 [so it would be CALL 48128,A$]

In order to use GS CLOCK #2 with Telecat MF.STARTUP must be changed so
that the BASIC programs do not overwrite the clock drivers. To change
them LOAD MF.STARTUP and change the POKE 104,23 to POKE 104,24 - now
all BASIC programs will start at $1800, not $1700 as before. While you
do lose 256 bytes of memory for BASIC programs and variables I kind of
think it is worth it, I mean 256 bytes!

I'd also like to say that both programs can be used in any DOS, be it
DOS 3.3, ProDOS, or anything. GS CLOCK #1 is fully relocatable, whereas
GS CLOCK #2 is not - if you require a new originate address contact me or
simply change all of the address-dependent locations. Also do not try
to use either clock in immediate mode (from the "[" prompt) they are only
made to work inside of a BASIC program. The variable you signify when calling
either clock does nt have to be defined already, if it is not it will
define it and if it is already defined then it will replace it. Another thing
is that the clock drivers must be BLOADED not BRUNNED to be installed in
memory.

Program and Docs by The Screamer -- 1/21/87

I can be found on these boards:

- Apple Tree //.........................305/556-6858
- Cap. Connection ]...............716/473-8051
- Rock'n Roll Harbour..............305/821-2232

This routine reads the clock and returns it in a string variable in this format:

```
SUN DEC 25 12:00:00 PM    
```

This routine is fully relocatable and can be loaded up practically anywhere
in memory and is only 60 bytes long, the default address is $300 (768) - and
does not interfere with Telecat's Driver in any way. To access the routine
follow this format:

```
CALL 768,A$    [768=decimal BLOAD address, A$=any string variable]
```

If you do not put a comma or do not put a string variable then a SYNTAX ERROR will
result and the normal ONERR routines will take over.

If you plan on using it on your Telecat board simply BLOAD GS CLOCK #1,A$1650
and to call it issue this CALL 5712,A$. MF.STARTUP does not have to be changed,
and you lose *NO* memory for BASIC programs or variables with this. Loading
it at $1650 gives you quite a bit of extra memory for your driver as well.

**GS CLOCK #2:**

```
SUN DEC 25 12:00:00 PM    
```

This routine is almost the same as the first version, except that it's
output is exactly the way the Thunderclock, Thunderclock Plus, Timemaster II
H.O., and compatibles output time - it's also much more professional looking.
This routine is NOT relocatable and cannot be loaded anywhere in memory, if it
is not loaded at it's original address then it will also yield unpredictable
results. This routine is exactly 349 bytes long and therefore does not fit
at $300. I have assembled 3 versions, all the same but with different
originate address ($1650, $9200, and $BC00). The $1650 version should fit in
fine for all Telecat sysops with a minor change in MF.STARTUP (see end), the
original Telecat driver ends at $15F7 so this provides quite a few (about 70)
extra bytes for any modified drivers. The $9200 version is perfect
for 48k DOS and HIMEM must be set accordingly. The $BC00 version is perfect
for 64k DOS and HIMEM should also be set. By the way each version is
notated by it's end address (ie: GS CLOCK #2 $1650 = $1650 originate version).

The output for all of them is in this format:

```
SUN DEC 25 12:00:00 PM    [dow=day of week, mon=month, dy=day
^   ^   ^  ^  ^  ^  ^      hr=hour, mn=minutes, sc=seconds
```

And dow mon dy hr mn sc AM/PM  AM/PM is obvious
GSBug & Debugging Tools Update Release Notes
8/26/91

This folder contains the latest pre-release version of GSBug & Debugging Tools. These tools are useful with or without GSBug, and can be used in development environments (i.e.: if you're using Merlin, Microl, TML, or any other development environment to write Apple IIGS software, then these tools (especially GSBug) will be very useful in finding bugs in the software you're developing.

These tools are a fully copyrighted work of Apple Computer, Inc and may NOT be redistributed. They are being provided to you for your own use as our way of saying, "Thanks for developing for the Apple IIGS". All Rights Reserved.

Futher information on using GSBug itself can be found in the "GSBug.Tutorial" file which is in the same folder as this "Read.Me" file. Reading those two files will explain a LOT of things to you. The tutorial is especially useful if you do not have the manual (or you have the manual, but never bothered to read it).

The tutorial and specs files will only teach you the basics, there is a LOT more that can be done with GSBug, but you'll need the manual to be able to tap into them. The 140 page manual for GSbug & Debugging Tools contains full details on how to use these tools. Those of you without this manual can get one by contacting APDA at 1-800-282-2732 (in the U.S.), 1-800-637-0029 (in Canada), and 408-562-3910 (International). The part number for this package is "A0037LL/A" and the price is thirty dollars ($30). You no longer need to be a member of APDA to be able to order this product, contact APDA for full details.

GSBug best supports debugging of 16-bit software. Recent changes made to it provide minimal functionality for debugging 8-bit software. Please read the "GSBug.Specs" file for details.

ONLY the INIT version of GSBug is being provided. The application version is most likely going to "go away" in the future. Instead, we'll provide an easy way for you to install and remove the INIT version on the fly. Currently, you can remove the INIT version after booting by simply entering the debugger (the tutorial file tells you how) and typing "UNLOAD", then pressing RETURN. This removes the debugger. If your application crashed into the debugger and you unload the debugger, your application will still be crashed (but into the monitor now that GSBug is gone). If your application is NOT crashed (i.e.: you entered the debugger by pressing the key sequence that drops you in safely), then unloading GSBug will resume operation of your application as though nothing happened (actually, plenty happened - GSBug was removed from memory and you can't drop into it any more because it's gone).

Having only the INIT version solves several problems you would have encountered had you tried using the application version of GSBug along with an application that uses resources. GSBug is technically the "current" application, so calls to the Resource Manager would actually look in GSBug's resource fork (which is non-existant) instead of your application's. The INIT version prevents this conflict (and several other similar ones caused by confusion of which app is the "current" one).

Directions for installing these tools are below:

GSBug & Debugging Tools installation:
- copy the files in the "GSBug/System.Setup/*" folder
to your boot disk's System.Setup folder (full path would be:"*/System/System.Setup/*"). This will provide you with the INIT version of GSBug, the next time you boot your computer from the disk you just

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Apple II Computer Info

DOCUMENT gsbug.specs

GSBug -- Current Version 1.6b20

Version 1.6b20 (DAL)

Added new GS/OS call name SetStdRefNum, call number $203A.

Fixed the version string so it doesn't say "Apple Confidential."

Version 1.6b19 (DAL)

To automatically load a templates file at boot time, it must be named

If you use LoadTemp without a pathname, it still defaults to GSBug.Templates.

Version 1.6b18 (DAL)

Versions with 6.0 stuff included are now 1.6bxx; without 6.0 stuff is still 1.5bxx.

LoadTemp command no longer returns a bogus error after successfully loading a
templates file. Also, if you type LoadTemp with no pathname, it uses

Turned off high bits on the GSBug.Setup file pathname, so you don't get a
strange error while booting from an AppleShare server.

KNOWN BUG: Don't put a breakpoint on an imbedded name. If you do, the
name can get overwritten when the breakpoint is removed.

Version 1.5b17 (DAL)

Now supports inline imbedded procedure names (as generated by the name and
proame macros in M16.Debug, for example). These show up in disassembly and
as the operands of JSRs and JSLs.

GSBreaks trigger regardless of call class now. For example, you can SetOSBrk
for either Open or OpenGS, and either one will cause a break.

Changed named-resource call names to begin with RM (RMLoadNamedResource,
etc).

When GSBug notices a toolbox call being made in other than full 16-bit mode, it
displays a warning dialog (using TLTextMountVolume). Hitting ESC at
that dialog cancels future warnings until you unload GSBug.

When GSBug detects a toolbox call being made with Decimal mode on, it stops
cold at a BRK $F8, rather than letting things get completely baked before
crashing.

Fixed one old reference to $010100 to store $C0 instead of $80. Interrupts
should reliably use $100..1C0 for stack space now.

Added 5 blanks to end of 'TRACE ' message so it completely overwrites the
'SINGLE STEP' message.

Version 1.5b16 (DAL)

No such thang.

Version 1.5b15 (DAL)

Option-space now works reliably to bypass a memory-protect range, including
a tool call. (This is an old feature, but keyboard translation normally
prevented it from working!)

In trace mode, Space and ESC now kill "swaiting RTx" mode.

Fixed "n" command so it won't crash if nobody has called DebugSetHook.

Having tool breaks on calls which get made indirectly by GSBug no longer
cause a crash. You can break on NewHandle now, for example.

In Breakpoint subscreen, Space maps trigger count from 0 to 1 and from
nonzero to zero. Tab moves between the address and count fields (easier
than hitting arrows).

In the memory-protect subscreen, Tab moves between columns.

Added $01/FC00.FFFF (OS system service calls) to the memory protect list.

Changed the default trace-window setting to center-screen.

Changed the EmulStack value from $80 to $C0 (trying to get rid of some
unpredictable crashes, probably caused by AppleTalk running out of stack
space). This means you can safely trace a program while the stack is in
the $01C1..01FF range, and that interrupts use $0100..01C0.

GSBug now takes a whole bank, minimizing its effect on things which
are located in memory relative to each other, and ensuring that tool breaks work
reliably (tool calls never break if they come from the same bank the debugger
is in).

Note that templates do work; you can ignore the garbage error you still get
from loadtemp.

Version 1.5b14 (DAL)

Versions 1.5b12 and b13 were never officially released. 1.5b14 is fine,
except that I make no guarantees about the Template commands. I think they
work, but you'll get a funky error message from loadtemp.

When you let a JSL execute in real time (including a tool call), the debugger
temporarily changes the owner ID of its own handle to match the owner of the
handle containing the code you're debugging. This way MMStartUp returns the
appropriate memory ID, instead of always returning the debugger's ID.

DebugSetHook(nil) now removes the hook.

The 1K bank 0 segment GSBug allocates now has the same ID as the debugger (was
previously always $80xx).

Fixed OS breaks to work after return from ProDOS 8 (added a Notify Proc to
re-trap the OS vectors).

Changed the "." command so that if you don't type a number, it's like typing
zero. For example, if you have a template called _Template which displays an
informational message, you can type _Template instead of _Template 0.

DP:xxx command dumps 16 bytes from DP to the command line.

Tool call SOCFF DebugGetInfo(word):long. Word=0 returns the current value of
the program counter (useful from a procedure called by the N command).

Note that real-time counted breakpoints don't work for JMP(), JMP($X)
($7C), JML($), (JSL), (JIF), (JDC), and JSR($X) ($FC).

With Monte's help, located the misplaced CLI that was causing the X command
used on a JSR to accidentally return with the Bank register set to the
debugger's bank, and the Stack set to the Interrupt-time stack.
Fixed DebugStr to return no error (previously it was returning the high two bytes of the caller's address as an error).

Changed 'D' command to 'I' so it doesn't interfere with typing a hex number that starts with a D. The I command toggles the 'ignore REP/SEP instructions' mode when disassembling.

Changed parsing for the P (Print screen) command so that it just beeps if there are any characters after the P. (Typing 'put' instead of 'out' can no longer hang your system.)

Put the help screen for MP mode back in.

The solid flashing cursor in MEM, MP, and BP no longer flashes. In exchange for this, special characters (like braces) that happen to be in inverse don't flash while you're in the subscreens.

Added pseudo tool call $0BFF=DebugSetHook (one Long parameter). The N ("meat-o") command calls this hook.

Removed a conditional hard-coded increment of $004002 when X-ing a JSR.

Added REP $30 on the two tool-dispatcher-intercept routines. Making tool calls in other than full native mode is still not a good idea.

Fixed real-time breakpoints for most 1-byte instructions and all 16-bit load immediate instructions. Previously, they crashed when used with a count greater than one.

Please note that */System/System.Setup/GSBug.Setup is *already* loaded automatically (has been for quite a while).

Version 1.5b10 (D.L)

Stepping in emulation mode should be much more reliable now, although it isn't perfect (in particular, one place where there's a window of vulnerability is using X on a JSR in emulation mode, but if you have the I bit set in your P register there's no problem).

Having the stack in $01xx works much better now, whether you're in emulation or not. This works by frequently stuffing a $80 into $01/0100 (EMULSTACK, 0F23) and getting the expected ID returned (the application's instead of the debugger's).

Changed 'D' command to 'I' so it doesn't interfere with typing a hex number that starts with a D. The I command toggles the 'ignore REP/SEP instructions' mode when disassembling.

Changed parsing for the P (Print screen) command so that it just beeps if there are any characters after the P. (Typing 'put' instead of 'out' can no longer hang your system.)

Put the help screen for MP mode back in.

The solid flashing cursor in MEM, MP, and BP no longer flashes. In exchange for this, special characters (like braces) that happen to be in inverse don't flash while you're in the subscreens.

Added pseudo tool call $0BFF=DebugSetHook (one Long parameter). The N ("meat-o") command calls this hook.

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Added REP $30 on the two tool-dispatcher-intercept routines. Making tool calls in other than full native mode is still not a good idea.

Fixed real-time breakpoints for most 1-byte instructions and all 16-bit load immediate instructions. Previously, they crashed when used with a count greater than one.

Please note that */System/System.Setup/GSBug.Setup is *already* loaded automatically (has been for quite a while).

Version 1.5b10 (D.L)

Stepping in emulation mode should be much more reliable now, although it isn't perfect (in particular, one place where there's a window of vulnerability is using X on a JSR in emulation mode, but if you have the I bit set in your P register there's no problem).

Having the stack in $01xx works much better now, whether you're in emulation or not. This works by frequently stuffing a $80 into $01/0100 (EMULSTACK, 0F23) and getting the expected ID returned (the application's instead of the debugger's).

Changed 'D' command to 'I' so it doesn't interfere with typing a hex number that starts with a D. The I command toggles the 'ignore REP/SEP instructions' mode when disassembling.

Changed parsing for the P (Print screen) command so that it just beeps if there are any characters after the P. (Typing 'put' instead of 'out' can no longer hang your system.)

Put the help screen for MP mode back in.

The solid flashing cursor in MEM, MP, and BP no longer flashes. In exchange for this, special characters (like braces) that happen to be in inverse don't flash while you're in the subscreens.

Added pseudo tool call $0BFF=DebugSetHook (one Long parameter). The N ("meat-o") command calls this hook.

Removed a conditional hard-coded increment of $004002 when X-ing a JSR.

Added REP $30 on the two tool-dispatcher-intercept routines. Making tool calls in other than full native mode is still not a good idea.

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Removed a conditional hard-coded increment of $004002 when X-ing a JSR.

Added REP $30 on the two tool-dispatcher-intercept routines. Making tool calls in other than full native mode is still not a good idea.

Fixed real-time breakpoints for most 1-byte instructions and all 16-bit load immediate instructions. Previously, they crashed when used with a count greater than one.

Please note that */System/System.Setup/GSBug.Setup is *already* loaded automatically (has been for quite a while).

Version 1.5b10 (D.L)

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Having the stack in $01xx works much better now, whether you're in emulation or not. This works by frequently stuff...
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0004 QuickDraw
0005 Desk Manager
0006 Event Manager
0007 Scheduler
0008 Sound Tools
0009 ADB
000A SANE
000B Integer Math
000C Text Tools
000D Window Manager
000E Menu Manager
0100 Control Manager
0101 Loader
0102 QuickDraw Aux
0103 Print Manager
0104 Line Edit
0105 Dialog Manager
0106 Scrap Manager
0107 Standard File
0109 Note Synth
010A Note Seq
010B Font Manager
010C List Manager
010D ACE
010E Resource Manager
0120 Midi
0121 Video Overlay
0122 Text Edit
0123 MIDI Synth
0124 Debugger

GS/OS Call Names

Brought the list of GS/OS call names up to date for System Software 5.0.3.

Removed this call:
$000E ExpandPath (because there's no class-0 version)

Added these class-1 call names:
$2029 Quit
$2033 FSTSpecific
$2034 AddNotifyProc
$2035 DelNotifyProc
$2036 DRename
$2037 GetStdRefNum
$2038 GetRefNum
$2039 GetRefInfo

What It Doesn't Do Yet

Note—sometimes the debugger gets mysteriously disconnected from the
Apple-Ctl-ESC vector. If you can reproduce this, let me know.

Some of the help screens are incomplete or inaccurate.

Templates currently limited to 64K. If template file >64K, it gets lost open
by accident.

Breakpoints don't work quite right in bank-switched memory, either (it doesn't
store the original instruction into the right bank?).

Should show GS call names on a JSL $E100B0 (examine stack if stepping, and
look for a PEA $xxxx in a disassembly).

The debugger chains into the tool-dispatcher vectors its own way. It should use the
standard method defined in GS Technical Note #87.

Will implement pseudo Tool calls to set and clear debugger breakpoints under
program control.

May make the MEM locations labelable (and save labels in the config file).

"Handle" template partially implemented?

Upload should call UserShutDown on self (under ProDOS 8, just beep instead).

Make sure that "\" for changing display modes is documented.

Documentation

The GSBug manual from APDA of 3/16/89 seems to be the latest there is. All
features not covered there should be in these release notes.

History

This part of the document details all changes made to the debugger from
version 1.3b1 to 1.5b8.

Bug Fixes:

Real Time Tool Breaks - The mechanism for using tool breaks real time has
been modified, the old method never worked quite right, what used to happen
was that when a tool break was to occur, the stub in the dispatch vector
would simply jump into the debugger, this would cause the stack and processor
not to be set as if they came from an interrupt, and the next exit of the
debugger would cause code execution to start at an inappropriate case, also
the actual tracing of a tool break would also cause the debugger to
improperly save the current registers, so that the stack/direct page and
processor status might come back damaged from a tool break. The stub has
been modified to now enter the debugger with a break instruction instead
of jumping to the front. This seems to solve all real time tool break
problems.

Error tool breaks - These also did not work well, and did not seem to be
used by anyone anyway, so they have been removed to make room for GSBreaks.

Version 1.5b3:
\% display code was fixed so that the "\" would properly be displayed in
front of any toolbox glue that is detected.

\% Fixed template data display so that if the data being displayed crosses
a bank boundary, the data is properly followed into the new bank.

\% Modified the IN command so that it respects trigger counts of 0 and does
not insert real time breaks.

Version 1.5b5:
\% Added support for real time conditional breaks.

% Added Glue tool break support. Now toolbreaks work for regular and glue
tool breaks. ErrorBreaks do not work for glue as they do not make a lot
of sense.

% Made debugger work even when a DA window is open. See new features below.

% Added keyClick so that you hear whenever the system draws a key from the
event queue. Also, cleaned up some comments.

Version 1.5b6:
% Added new DebugStr toolcall that can be used to get more from the debugger.

Version 1.5b7:
% Added support for real time conditional breaks.
SetMilestone operates exactly the same way as debugstr except that the debugger is not actually entered. This will allow tracking of random crashes by allowing you to call the SetMilestone routine with milestones that have been met. Any time the debugger is entered via a BRK instruction or thru the keyboard, the last string passed via the SetMilestone call will be displayed. The call number for SetMilestone is $0AFF, the MPW IIGS Pascal interface might look like this:

```
Procedure SetMilestone (theString:str255);
  INLINE $0AFFA2, $E1000022;
  ...;
```

Version 1.5b8:

% Added OSBreaks.
% Fixed the Debugger tool calls (like DebugStr) so that they use the proper tool numbers (they had the toolset number in the high byte instead of the low byte). Documentation for them should also be right.

Version 1.5b9:

% Added a debugger version and status call to the debugger tools.
% Enhanced the OSBreak facility.

Version 1.5b9:

% Fixed the keyclicks because Dave complained.
% Fixed some bugs.

New Features:

DebugStr:

This feature is designed to allow developers to better know where in their program the debugger was entered. The way this feature works is that if you want to enter the debugger programatically you can now also pass a string to the debugger which will be printed on the bottom line of the screen when the debugger is entered.

The way this mechanism works is a fake tool call that the debugger now supports. Since this looks like a normal tool call it can be easily called by any high level language as well as by assembly language. The toolcall called DebugStr takes a single parameter, a pointer to a pascal string. When the tool call is made the debugger is entered as if you had put a break into your code, but the string you passed is displayed on the screen and the program counter has been bumped past the tool call jsl. This way you can simply resume execution with two simple keystrokes (with the init version hit 'K' <return>).

Calling this new feature might look something like this:

```
PushLong #DebugStr
  ldx #$09FF
  jsl >$E10000
  ...
```

DebugStr: 'You are about to do blah.'

from pascal the same would be achieved by doing this...

```
DebugStr('You are about to do blah.');
```

I would recommend that assembly language users use a macro to make the toolcall and call it _DebugStr. MPW IIGS Pascal users could use the following to define the debugstr routine:

```
Procedure DebugStr(theString:str255);
  INLINE $0AFFA2, $E1000022;
  ...
```

This call will also work when being called via the glue vector.

NOTE: Since this call is only available when the debugger is loaded you will ALWAYS want to be sure to remove ALL calls to the debugger before releasing your program (or even using it on machines that do not have a debugger installed).

SetMilestone:

Glue Snypher:

Glue snypher is a routine that can recognize high level language tool calls that are made with the standard glue entry, when a call to glue is detected while disassembling an instruction the call to glue will be replaced with _TooName in a manner similar to how real tool calls now work. Glue snypher is also used by the memory protect feature, if a glue call is detected while the standard toolbox memory protect range is on, the glue call will be treated as if it were a JSL>$e10000. All glue entries MUST be a JSL to one of 3 standard types of glue that are shown below:

```
ToolGlueType1   ldx #$ToolNum
    JSL >$E10004
    ...
    RTL
```

```
ToolGlueType2   ldx #$ToolNum
    JMP CommonCall
    ...
    CommonCall  JSL >$E10004
    ...
    RTL
```

```
ToolGlueType3   ldx #$ToolNum
    JMP CommonCall
    ...
    JMP CommonCall
    ...
    RTL
```

If any other types of glue calls are used, they will not be properly detected.

Glue Breaks:

In addition to glue snypher further support was added for high level languages by extending the tool break support to the glue vector ($E10004). Since error conditions are treated differently with glue (The second RTL ain't mine no more...) it seems unreasonable to also support error breaks via the glue vector.

OSBreaks:

OSBreaks work very much the same way that tool breaks work with three exceptions. First, instead of breaking on a tool call they will break on a call to the OS. Next, you can NOT specify an OS break by name, only by number. Lastly, they are not supported in trace mode, only in real time mode. To use OSBreaks you simply type setOSBrk #xxx where xxx is the
number of the OS routine that you want to break on. This number is matched
exactly when an OS call is made, so if you do not know if the target call
is class 0 or class 1 you must set the break for both calls. OSBreaks are
supported via both vectors, inline and stack based. The following is a
list of commands that operate on OS breaks and what they do.

SetOSBrk - adds a number to the OS break list
ClrOSBrk - Removes a given number from the OS break list
ClrAllOSBrk - Removes all numbers from the OS break list
OSBrkIn - enables real time scanning for OS breaks
OSBrkOut - disables real time scanning of OS breaks
ShowBrks - lists all tool and OS breaks currently set.

DA Debugging support:

In the past it has always been difficult to debug certain new desk
accessories because they accept keystrokes, and keep the debugger from
receiving them. I have added a patching mechanism to the system event
call that is installed when the debugger is installed that fixes this
problem. The way this feature now works is that if the caps lock key is
down no keyboard events get passed to system event (and then to any open
DA’s) and the debugger will always get them. A side effect of this is that
when the debugger screen is not active applications will get the same
keystroke events if the CAPS LOCK key is down. As a gentle reminder of
this feature, when installed, it will make your GS speaker click whenever
a key is processed by getNextEvent. The debugger used to click on every
keystroke, regardless of the state of the CAPS LOCK key. Dave complained
enough that the debugger was changed to only click when keys are pressed
if the CAPS LOCK key is down.

New Template types:

We have added support for a few more data types in templates, these are
mainly for use with GS/OS strings, but can also be used for any word
length string. they are:

- InputStr: This type will read the next word of data and treat it as
  a length word for string data that follows. The entire
  contents of the string will be displayed.

- OutputStr: Similar to InputStr except that the first word is a buffer
  length and the second word is the string length. After the
  string is displayed the debugger will skip to the end of
  the buffer to find the next byte of data to process.

RealTime Conditional Breakpoints:

The debugger now supports conditional real time breakpoints. In the past
when a breakpoint was entered in the breakpoint list and you used the IN
feature to make them work real time, the trigger count that you entered
was ignored. Now, if you the trigger count is supported the same way it is
supported in trace mode, that is, if you insert a real time breakpoint
with a count higher than 1 it will break on the Nth execution of the
opcode at that location. NOTE: Currently the following opcodes are not
supported as real time conditional breakpoints: JSL(mem), JSR(mem),
JSR(mem,x), JMP(mem), JMP(mem,x), RTI.

In addition to supporting a count value for real time break points, the
debugger now also allows a simple conditional statement to be used instead.
The debugger allows only one conditional statement at a time, but as many
of the breakpoints can use it as you want. To enable the conditional
statement (henceforth called IF) simply type an “i” when entering a
breakpoints trigger value instead of a hex digit. To set the current IF
use the command SetIF. the syntax of the SetIF command is as follows:

SETIF {width} {Spec1}{Operator}{Spec2}
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Apple II Computer Info

GSBug Templates Release Notes
Version 1.0d3
Written by: James M. Luther
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Revision History

Date  Version  Who  Description Of Changes
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01-Mar-90  1.00d1  JML  Initial draft of document.
18-Jun-90  1.00d2  JML  Cleanup for release.
18-Jun-90  1.00d3  JML  Fixed Print Manager templates PrStyleRec and PrRec.

About the templates

This is a complete set of templates for the Apple IIGS system software 5.0.2. It includes templates for almost all toolbox records, GS/OS parameter blocks, FST specific parameter blocks, and ProDOS 16 parameter blocks. GSBug cannot support variable length data structures, so those data structures were either implemented partially (up to the point where the structure becomes variable length) or were not included.

Very briefly, here's how to use the templates:

Type "LoadTemp GSBug.Templates" to load the template file.
Type "_name address" to view the memory starting at 'address' through the template specified by 'name'.

About the help templates

Help templates are included in GSBug.Templates, so you don't have to remember what data structures are templated or how to spell the template names. A help template will display a list of template names for the toolset or part of the operating system you specify.

Type "_Templates 0" to see the names of all the toolsets and operating system parts. For example, with this release, you'll see this:

Templates
ADB
AppleShareFST
Controls
Dialogs
Events
Fonts
GSOS
HighSierraFST
LineEdit
Lists
Locator
Menus
MiscTool
NoteSeq
NoteSyn
Print
ProDOS16
ProDOSFST

Type "toolSetName 0" where toolSetName is one of the names shown by "_Templates 0" to list the template names for that toolset or operating system part. For example, to see the templates for the Print Manager, you'd type "_Print 0" and you'd see this:

Print
PrInfoRec
PrJobRec
PrRec
PrStatusRec
PrStyleRec

About template formatting characters

Several of the data structures included in this template file have substructures imbedded in them (for example, in a GrafPort, the portInfo field is a LocInfo structure). To highlight the substructure fields in a structure, I've prefixed each field name with a "^" character. For example, here's what the GrafPort template looks like:

_{START} GrafPort
portInfo(LocInfo)
portSCB  WORD
.ptrToF pixImage  LONG
.width  WORD
.boundsRect  WORD  4
.portRect  WORD  4
.clipRgn  LONG
dataRgn  LONG
bkPat  BYTE  32
.pnloc  WORD  2
.pnsize  WORD  2
.pnMode  WORD
.pnPat  BYTE  32
.pnMask  BYTE  8
.pnVis  WORD
.fontHandle  LONG
.fontID  LONG
.fontFlags  WORD
txSize  WORD
txFace  WORD
txMode  WORD
dxExtra  LONG
.chExtra  LONG
.bgColor  WORD
.picSave  LONG
.rgnSave  LONG
polySave  LONG
grafProcs  LONG
.arcRot  WORD
.userField  LONG
.sysField  LONG
_{END}
GSBug is Your Friend
(a quick intro to GSBug)

v.1.2

by: Tim Swihart

So, you just got GSBug installed for the first time and don't have a clue how to use it. Sure, you could call APDA (1-800-282-2732) and order the complete package (part #A0037LL/A, price $30), but you're not sure if GSBug will really help you find those nasty bugs in the Apple IIGS software you're developing.

Well, from the next paragraph until the end of this file, I'll present a quick introduction to some of the reasons why GSBug is a "MUST HAVE" tool for all II GS developers. It doesn't matter what language you program in, or which environment you use, GSBug is the key to tracking down and exterminating those nasty bugs that make your software look shabby.

The version of GSBug that APDA currently stocks is older than the version found on the disk containing this tutorial. So why buy APDA's version? To get the full manual - it's well worth the thirty bucks they're asking!

Installation:

Before we can really get into it, you need to install GSBug and the GSBug.Templates file and reboot your IIGS. If you only have one computer, then print this file and continue reading from the printout. GSBug is an INIT file with the file name "GSBug.INIT" - install it by copying this file into your boot disk's SYSTEM/SYSTEM.SETUP folder. Copy the *GSBug.Templates* file into the same folder.

Over the course of time, the name used for the GSBug init file has changed slightly. To be certain you don't accidentally install two (or more) copies of GSBug, carefully examine the contents of your boot disk's System/System.Setup folder. If you see more than one file with a name similar to "GSBug.init" (such as "debug.init" or "GSBug.BiInit"), the file with the same number is the correct one. Having more than one copy of GSBug installed tends to cause problems (such as crashes during booting).

Care & Feeding of GSBug:

Now that everything is installed, reboot your computer. No need to launch any particular application just yet, I have to explain the various parts of GSBug's screen and I want to cover a few basic GSBug commands before we get bug hunting. I'll assume you're running the Finder right now, but it really doesn't matter what application is running, as long as it is a 16-bit application (i.e.: a true IIGS desktop application).

You can pop into GSBug at any time (assuming interrupts aren't disabled) by pressing OPEN APPLET-OPTION-CONTROL-ESC (if you're having troubles remembering all of those keys at once, just think of it as the same keys that you use to get to the built-in control panel plus the OPTION key). You'll be presented with a rather busy-looking 80-column text screen. (there's a screen dump right below this paragraph - I told you it was busy-looking screen)

----- cut here to start the screen dump -----  

KEY BRK DebugD K/PC B D S A X Y M Q L P nvmxdizc e d  
00 0 d 9500 FD/688D FD 2500 1FE0 0000 4D95 0044 0C BE 1 03 00000111 0 0  
1FE2:60 00 0000: BE 'o' 00 0000-00-00  
1FE1:43 00 0000: BE 'o' 00 0000-00-00  
1FF0:FE 00 0000: BE 'o' 00 0000-00-00  
1FFE:37 00 0000: BE 'o' 00 0000-00-00  
1FED:DC 00 0000: BE 'o' 00 0000-00-00  

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if your app pushes anything on the stack, that's the address it would wind up at. As you single step through your application, you'll see how in a minute, patience...) the stack will scroll upwards as things are pushed onto it and downwards as things are popped off of it.

The Not-So-Left-Hand Side:

The next major area should be a column of "00/0000: BE ->" known as the "RAM subdisplay area". This area is used to display any 19 memory locations that you want to keep an eye on. The value at each of those locations is shown in hex (that's what the "BE" means - location 00/0000 contains hex "BE" when I wrote this) and in ASCII (the ASCII version is between the single quote marks). Pressing the "*" key (upper or lower case work the same these days) and then press RETURN. This will fill the disassembly subdisplay with 19 lines of disassembled code (which 19 lines were disassembled really doesn't matter). Study it until you can tell at a glance which parts are the address, which parts are the hex bytes, and which parts are the disassembled code. The "00/0000" part of the breakpoint subdisplay is obviously an address - in fact, it's the address you want to break on. The next part "->" is the trigger value. GSBug is smart enough to count how many times an address has been reached on a single pass through your program (the "->" is the "breakpoint trigger"). So if you're working in a high-level language. It also makes it a LOT easier to see what you're doing!

GSBug also knows about the alternate Toolbox entry point (E10004) and will display those as tool calls also. The leading underscore ("_") lets you know that GSBug is substituting the tool's name for you. If the Tool call is being made through "glue", then the underscore is preceded by an asterisk ("*_")

If you've ever used the built in "monitor" (I'm not talking about your RGB monitor, I'm talking about the disassembler that's been built into Apple II's for a LONGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG
Lock a Tractor Beam onto Them:

Want an easy way to have the computer step through source for you without having to bang again and again on the SPACE BAR? Start single-stepping (*S* and RETURN), then press RETURN again. VRRRROOOOOOOOOOOOO!!!! Can’t read all the stuff flying by? No sweat, press SPACE BAR and you’ll be back to single-stepping.

Pressing the RETURN key a second time kicked GSBug into "Trace" mode.

Trace actually has two speeds, the default is fast (we like to test developers' speed reading skills). To kick TRACE into low gear, press the left arrow key. If you’re in single-step mode, then you won’t see the speed changing, but since you’re listing the tool calls, you saw the tool calls. The developer, the speed change has been made. Press RETURN again (to be sure you’re in TRACE mode) and press the left arrow key (if you didn’t a few lines ago) to kick TRACE into low gear. Want to get back into high gear? Press the right arrow key (sneaky, eh?).

RED ALERT!!:

Do _NOT_ press the down arrow key while TRACING or single-stepping (unless you know what you’re doing). The down arrow key tells GSBug to SKIP the highlighted instruction! This is a great way to step over BRK instructions, but it’s a bit hard to do at random while TRACING through an application (randomly skipping an instruction generally results in a crash).

Move That Line Up:

If you want to raise the highlighted line within the disassembly subdisplay, then press ESC (to get back to the command line) and type "SET" (don’t type the quotes, ok?) and press RETURN. The up and down arrows now control the very position of the highlighted line within the disassembly subdisplay. Position the bar where you want it and press ESC. That position will be remembered until the next time you move it or until you reboot (then it goes back to where it was before you rebooted). The manual for GSBug tells you how to save this new position to a configuration file (it also tells you that pressing the left and right arrow will move the stack subdisplay up and down, and that pressing a number less than eight will change the slot used to print the screen).

Reaching the Breaking Point:

Alright, time for some fancy stuff! The next couple of sections will assume that you were running the IIGS Finder when you popped into GSBug (other apps will work just fine, but why be difficult?). GSBug will let you break on any tool call (or calls) that you specify, so let’s set a few tool breaks and learn how to use this feature.

From GSBug’s command line (press ESC if you’re still stepping or tracing), type "setbrk _sysbeep" and press RETURN. If GSBug beeps at you instead of accepting this line, then you didn’t type it right (there are two t’s in "setbrk" and don’t type the quotes). Type "setbrk 090E" and press RETURN. You just added two tool calls to GSBug’s list of tools to break on. The first one was added by naming the tool to break on ("_sysbeep") and the second one was added by specifying the tool’s number ("090E"). This lets you set tool breaks regardless of whether you know the tool’s name or number.

Type "showbrks" and press RETURN to see the complete list of tool breaks that GSBug has been told about. Notice that the left hand side of the screen now implies that you can set breaks on GSBuOS calls? That’s because you can! GSBug/OS breaks have to be set by number (not by name).

All we’ve done so far is make a list of tools for GSBug to break on. We haven’t actually told GSBug to break on them, that requires a separate command. Type "brkri" to tell GSBug to break on all of the tool calls in its list. Now, when either a call to SysBeep or a call to NewWindow (tool 090E is NewWindow) is made, we’ll be dropped back into GSBug.

Oh Yeah? Prove It:

Make sure you’re at GSBug’s command line (press ESC if you aren’t). Type "R" and RETURN. This resumes full execution of your application. To test the tool breaks we just set, we need to force the Finder (or whatever app you stubborn folks decided to use instead of the Finder) to make a call to NewWindow and/or to SysBeep. Double click on a disk icon, get info on a file, open a folder, open a desk accessory, etc to get the Finder to open a new window. Notice that you land in GSBug?

Press "S" and RETURN to enter single-stepping. Notice that the highlighted instruction is "NewWindow". Ah, the tool break works. Now, press ESC to execute the NewWindow call, but press ESC also to display the tool breaks for the NewWindow call. Type "R" and RETURN to resume running the Finder. (if we didn’t bother to single step across the NewWindow call, we would just fall right back into the debugger since we have a break point set on that call).

Take It Out, Wise Guy;

Tired of falling into GSBug everything a new window is opened? There are several ways to remove tool breaks. The easiest way is to type "tbrkout" to stop breaking on the listed tool calls without trashing the list. Typing "tbrkin" makes GSBug start breaking on them again.

Cheap Trick #1:

Being able to break into the debugger based on a tool call is VERY handy! But what if you don’t want to see the stack being set up BEFORE your code gets all the way down to the tool call itself? After all, if you’re not putting enough parameters on the stack (or too many), then breaking on the tool call itself is too slow. Stick a "call" (or whatever) before the tool call to log the data you want to break on. There’s an easy solution for this – stick a SysBeep call in your source ABOVE the tool call you really want to break on and set a tool break on SysBeep. This will let you single step through the stack setup for the call you’re really interested in.

OK, so it’s a cheap trick, but it’s darned effective...

This trick was invented in the dark ages before DebugStrt was part of GSBug (DebugStrt is explained near the very end of this document and is a little trickier to use than Cheap Trick #1). I Don’t Like My Registers:

Remember earlier when I mentioned that you can change the values of the various registers from within GSBug? This lets you change values that are about to be pushed on the stack and do all kinds of neat things. You’re sharp, so I won’t bore you with all the things this lets you do, I’ll just cut right to the description of HOW to do it...

To change the accumulator's value, type "a=value" on the command line. Replace "value" with the hex value you want to stuff into the accumulator. Type "x=value" to set the x register, "y=value" to set the y register, etc. You can’t type "a=x" to set the accumulator to the value in the x register, but since you can see the x register's value, this isn’t that big of a loss.

Cheap Trick #2:

If you accidentally SKIP an instruction that you didn’t mean to (and you haven’t executed any more since then), you can "unskip" it by exiting single-step mode, then type "pc" set, we need to force the Finder (or whatever app you just want to be safe) that the skipped instruction is at. Press RETURN and then resume single-stepping (notice that you’re back at the skipped instruction now).

This tricks works because the "pc" register is the program counter (the thing that determines what address will have its instruction executed next).
Cheap Trick #3:

Fudging the program counter (pc=value) will let you push extra info on the stack in cases where you didn't push enough for a call. Be careful with this - you may need to set the accumulator before re-executing an already-executed PPA and you could totally trash the stack if you're not paying attention. One place this is handy is to compensate for passing a WORD instead of a LONG (easy to do with C when you're dealing with resource ID's). If you don't understand this trick, don't use it!

A minor modification on this stunt is (obviously) to pull extra bytes OFF of the stack in cases where you left something on there but didn't have left on. Once you spot problems like too much or too little data on the stack, FIX YOUR SOURCE CODE AND RECOMPILE IT!!! You don't really want to have to find this bug a second time do you?

Cheap Trick #4:

GSBug is a lot like the monitor in certain respects. That means many of the commands you're used to from the monitor will work under GSBug. Setting variables in memory under GSBug is done just like it is under the monitor (i.e.: address : value1 value2 value3 value4 ...). address? and return start tracing at the memory location specified by "address". address? and return starts single-stepping at the memory location specified by "address". address? and return lists 19 lines of disassembly starting at the memory location specific by "address". You can even start using the built-in mini assembler if you want (type "asm" and return).

Peering Into Memory:

The 19 "windows on memory" can be used by typing "mem" and return on the command line. This puts the cursor on the far right of the first line in the RAM subdisplay area. The address you want to watch and press return. That will move you to the next line (so you can set the address for the second memory location). If you want to see two bytes starting at that address, press "P". To see three bytes, press "L". "Z" toggles between direct-page and absolute addressing, "I" toggles between direct, 2-byte indirect, and 3-byte indirect addressing. Press "Z" for more info.

This provides a nice way to look at variables in memory, dereference pointers/handles, etc. When the contents of any "peered into" location changes, the corresponding line on GSBug's screen will change also.

Cheap Trick #5:

(this one's actually not cheap, it's pretty dangued useful!) While single-stepping or tracing, you can see other "screens" by pressing various keys. Load the weird effect (hot key to setting up various screen, how to disassemble pieces of memory (using "I"), how to single-step and trace (at different speeds) through your application, etc.). To set, use, and clear breakpoints, how to display various screens, and how to set up the RAM subdisplay area.

don't Touch That Dial!!

The material covered so far gives you a decent foundation to draw upon as you hunt bugs in your own software. We've only lightly touched on what GSBug can really do! We're not typing all 150 or so pages of the manual into this "introduction" to GSBug. GSBug offers a lot of power and capabilities that should be learned by all developers.

Before I wrap up this tutorial I want to cover the use of templates and describe some of the new features in GSBug v.1.5b11 that aren't described in the APDA documentation (because we just added the features and haven't replaced APDA's master manual yet).

Templates By Jim:

GSBug provides an easy way for you to view portions of memory through templates. This allows you to "see" the data structures in memory just like they appear in the documentation (i.e.: see them divided into the various fields). The GSBug.Templates file that Jim placed have been placed in the SYSTEM/SYSTEM.SETUP folder of your boot disk contains a complete set of templates for use with our interface files. One of the Apple II Developer Technical Support Engineers put these templates together (and came up with a pretty neat way to build in a "help system" - so tell Jim "thanks" next time a template bails you out of a jam).

GSBug does NOT automatically load those templates unless you rename them (see the "GSBug.Specs" file for more information). You have to tell GSBug to load them (and you can unload them later). To load these templates, just type "loadtemp */system/system.setup/gsbug.templates" and press return. Keep trying until you get it right - it does work (watch out for typos, etc.).

To view a piece of memory with a template, simply determine the starting address of the template. The starting address can be found in a number of ways - you can dereference a pointer that you just pushed on the stack, etc. Then, type the underscore (i.e.: see underscore tool manager's tool calls, type "_toolmgrname 0" and press return. This will give you a list of all the categories of help you can get more info on (such as ADB, FONTS, etc.). The categories are grouped by toolbox manager. To get details on a particular toolbox manager's tool calls, type "_toolmgrname 0" and press return (replace ".toolmgrname" with the name of any toolbox manager - lead with an underscore or it won't work). (i.e.: ".quickdraw 0" for details on QuickDraw data structures) For more details, read the separate documentation file on using the templates.

If you want to create your own custom templates, then read the GSBug manual (pages 86-88) or decipher the templates in the GSBug.Templates file. To use the built-in template help system that Jim came up with (thanks Jim!), just type "type 0" and press return. This will give you a list of all the categories of help you can get more info on (such as ADB, FONTS, etc.). The categories are grouped by toolbox manager. To get details on a particular toolbox manager's tool calls, type "_toolmgrname 0" and press return (replace ".toolmgrname" with the name of any toolbox manager - lead with an underscore or it won't work). (i.e.: ".quickdraw 0" for details on QuickDraw data structures) For more details, read the separate documentation file on using the templates.

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The New Stuff:

As if all of this weren't reason enough to use GSBug, the man behind this jewel added several more reasons (he calls them features). All of these are fake tool calls that the debugger sees, intercepts, and acts on.

The new calls are SetMileStone, DebugStr, DebugVersion, and DebugStatus. The two most important ones (in my opinion) are "SetMileStone" and "DebugStr".

SetMileStone simply changes the debugger's copyright message to be a string of your choice and lets your app keep running. If you're having a problem figuring out where your code was last at before it jumped off into the weeds, then sprinkle SetMileStone calls into your source code (with different strings on each, of course). Then, when your app chokes and dies, you'll be presented with the text from the last SetMileStone that was executed.

DebugStr works like SetMileStone (i.e.: changes the copyright string....)
Apple II Computer Info

DebugVersion and DebugStatus act just like normal version and status calls for regular tool sets - they simply allow you to verify whether GSBug is running and if so, what version of the debugger is running before you try to make any debugger tool calls.

The tool numbers and parameter lists for these calls are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Tool #</th>
<th>Parameter (returns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DebugStatus</td>
<td>$06FF</td>
<td>(non-zero = true, ToolLocator error if not loaded)</td>
</tr>
<tr>
<td>DebugStr</td>
<td>$09FF</td>
<td>pointer to Pascal-style string</td>
</tr>
<tr>
<td>DebugVersion</td>
<td>$04FF</td>
<td>($159F for v.1.5B9)</td>
</tr>
<tr>
<td>SetMileStone</td>
<td>$0AFF</td>
<td>pointer to Pascal-style string</td>
</tr>
</tbody>
</table>

Cheap (and short) Trick #6:

If you get really fancy, you can build the strings for DebugStr and SetMileStone on the fly and imbed the values of key variables into them to further simplify locating bugs.

Calling all Debuggers:

Do _NOT_ leave calls to these debugger tools in your software when you ship it to customers! Why? Because making these calls on a system that doesn't have GSBug installed makes a real mess...

Want More Info?

Contact APDA and order the full package (you have a newer version of GSBug with this file, but APDA has the full manual). Order it by calling APDA (1-800-282-2732) and asking for part A0037LL/A (the price is $30). Due to recent changes in APDA, you no longer need to be a member before you can order this product.
GS-ShrinkIt v1.0.5 (3/21/92)

Fixed a bug which made GSHK unable to extract several (usually small) files from Stuffit and ARC files. The bug only happened if the file was compressed with HZE (run-length-encoding).

Fixed bug when archiving, the name displayed would be prefixed by ellipsis, but the right-hand side of the name wouldn't be displayed at all (Andy McFadden). The default text for "New Folder" is now selected.

Fixed a bug that caused EOF errors to happen when extracting from .QQ files which were smaller than 4k (Karl Bunker and Bryan "Zack").

Fixed a bug where if you'd extract and overwrite an existing file, the extracted file would magically inherit the filetype, auxtype, and other attributes from the file that was overwritten, not from the file that was being extracted (Karl Bunker).

When archiving an HFS disk, if you have the HFS FST installed, GSHK will now save the file_sys_id for the disk inside the archive.

Added "Save COMpress files as" popup to preferences so that when compression files are decompressed, they can be saved as binary or text files.

Fixed bug where if a file was saved with "Save as .BXV file" and it was renamed something like "filename.bxy", the Binary II header would contain "filename.bxy.SHK". Now it properly contains "filename.SHK" (Dean Esmay).

If "Save as .BXV file" is checked and the filename is filename.SHK (instead of the more common filename.BXY), the last character before the suffix will be incremented to provide a name unique from the outside name instead of incrementing the first character (which seemed to confuse some people) (Dean Esmay).

Changed "Save as .BXV file" to "Add Binary II to this archive" (Dean Esmay).

When archiving a disk with a bad block, GSHK will report the error instead of just closing the thermometer dialog and deleting the archive (how annoying!)!

The HFS filetype and creator are now used when extracting from a Stuffit archive (very handy if you're extracting to an HFS disk using System 6's HFS FST which you intend to someday use on a Macintosh).

The high bits are only removed from files in archives which need them removed, not always removed. Also, slashes ("/") are no longer turned into colons for files in Stuffit archives.

GetFile dialogs now display prettier and more distinct icons in the standard file lists.

Added elipsis to a few buttons to indicate a modal dialog will happen if the button is clicked.

Changed text of 'Cancel' button in extraction dialog (the one with the thermometers) to more accurately be 'Stop'.

Fixed bug which caused data to not be able to be extracted. The exact problem was that if a clear code was issued by the compressor with 1 byte remaining to be compressed in a 4k chunk, the decompressor would put garbage in the output file. The decompressor has been fixed (which means that if you archived something with an older version of GSHK, if you use v1.0.5 to extract, you won't lose any data).

GS-ShrinkIt v1.0.4

Extracting NuPX from America-Online actually works now.

Graph box now listens to OA-period to get it to abort.

Fixed bug which would cause data to be archived such that it couldn't be extracted. The exact problem was caused by the string table filling up and issuing a clear code ($101) after the last character for a block had been output. The corresponding decoders in Shrinklt and GS-ShrinkIt know nothing about an extra leading code in a block and get very confused at that point saying that the data has been corrupted.

GS-ShrinkIt v1.0.3

Fixed a bug which caused "Fatal Error $0401" to occur after clicking "extract" when some of the static segments were bank-aligned. Apple D7S (specifically, Dave Lyons) helped me track this down at the A2-Central Kansas-City Developer's Conference. Extra credit goes to Dennis Doms who built a system disk which duplicated the problem.

GS-ShrinkIt v1.0.2

The select-all button in the archive, addto, and delete dialogs now works faster.

Fixed a problem that caused GSHK 1.0.1 to crash whenever someone hit a key which was mapped to the SF list on screen. This only happened to the archive, addto, and delete dialogs. (Stowe Keller)

When a stuffit file's forks are split into separate file (presumably to make use of ResSpy), the filetype for the res fork was whatever the HFS filetype routines deemed appropriate. Now the res fork is saved as a BIN file to make ResSpying yet even easier -- it probably should have been BIN in the first place. (Robert Rosenberg)

Prefix 18 is no longer used. Prefix 20 (and 8) are now saved before GSHK starts and restored after exiting gshk. (Bryan Pietrzak)

Separate source and destination directories are now provided. The destination pathname is initially set to the source pathname minus the source path prefix as prefix 8 if prefix 8 exists and prefix 0 if prefix 8 is null. "New Archive" works from the source TO the destination. "Open Archive" works from the source and TO the destination when extracting. The paths can not be predefined, yet. (most of the known world).

GS-ShrinkIt v1.0.1

DO NOT use the ShowText NDA or ShowPic NDA (below v4.60) with GS-ShrinkIt. ShowText causes really bizarre stuff to happen, especially when GSHK shuts down. You will occasionally get an "Error $0003" message if ShowText is installed. Chris Haun's WriteIt! 2.0 NDA is a good replacement for ShowText in that it's much faster and you can edit what you see. ShowPic's before version 4.60 can not handle having the "shadow" bit set in System 5 QuickDraw II and trash the scanline control-bytes (SCBs) leaving the screen a horrible mess.

If you suspect something is wrong with GSShrinkIt, before you jump to any conclusions please remove all the Desk Accessories (DAs) and INITs from your system. It's quite possible that a DA or INIT is contributing to the problem. If you have a problem which occurs with GS-Shrinklt and/or several DAs (ie, each one seems to always cause the same problem in GS-Shrinklt), then most likely the problem is with GS-Shrinklt and you should tell me. If you find that the problem is only caused by a single DA or INIT, most likely the DA or INIT is flakey and you should contact its author.
Fixed problem that GS HK 1.0 had leaving a file open after receiving an error when someone would try to sort an archive, such as trying to sort on a write-protected disk. (Stowe Keller)

A "Select All" button has been added to the New File Archive dialog, the Add Files dialog, and the Delete Files dialog.

Because the AppleDisk 5.25 Driver doesn't support getting the volume number from a DOS 3.3 disk (or specifying it when formatting), DOS 3.3 disks can't be archived or extracted under GS HK. Warnings have been installed to this effect.

If the preference "Split Stuffit forks when extracting" is checked, each of the forks of a Stuffit file will be saved as a separate file. The res fork's default name is filename.r.-- this should make people who use ResSpy happy.

There are 2 more pop-ups in the prefs. "Save ARC files as: TEXT/BIN" and Save ZOO files as: TEXT/BIN" -- these cover some of the most frequently asked-for enhancements.

The TextEdit flag RE cordDirty is checked to see if any changes have taken place since the last time the update button was clicked to determine whether or not to highlight the update button instead of relying on finding that the TE control got hit. This allows you to scroll through the comment without GS HK thinking that you need to click the update button.

Changed the way the info icon is displayed. If any text is available in the archive comment, the icon will be shown as a yellow comment icon. The difference is probably subtle enough that some people will not notice the change, but the icon looks better with the interior colored grey than if it's masked with alternating dots. If you edit a comment and change the amount of text in it, the correct icon will be redrawn in the list when the update button is clicked.

Added HFS creator_type of "pdos" support for the unStuff routines. The filetypes are now interpreted the same way that the AppleShare FST does a filetype translation from Macintosh HFS. The ProDOS filetype and auxtype are now set correctly if the creator is 'pdos'. If the filetype is TEXT, then the prodos filetype is set to TXT. The create date is now set correctly if the creator is 'pdos'. If the filetype is TEXT, then the correct filetype and creator are set if you unstuff to an AppleShare volume.

Added recursive delete routines to the DELETE option in the file menu. 1.0 used to refuse to delete folders unless they were empty. Now, if you select a folder, everything in that folder will be deleted. You'll be properly prompted if a file is locked, also. (Dennis McClain-Purmanski)

Fixed problem with GS HK 1.0 reporting "file not found" when a folder with files in it was archived with "delete after archiving" turned on. This always happened with 0 files remaining to be archived and didn't affect the resultant archive. (Rick Zeman, Dennis McClain-Purmanski)

Fixed problem with GS HK 1.0 always saying it got error $1202 whenever it couldn't finish the _StartUpTools call. The error code was wrong -- new error codes have been installed which explain the error and what to do about it.

What is GS-ShrinkIt?

GS-ShrinkIt is a utility program for archiving files and disks.

*Archiving*, in this usage, refers to the process of placing files or disks "within" another file -- the archive file. This is usually done to prepare the files/disks for transmission via modem, or for storage purposes. Thus, an archive file, whether created with GS-ShrinkIt or another archiving utility, will be a file which serves as an envelope, containing one or more other files, or complete disks. There are a number of reasons for archiving files before transmitting them with a modem. The principal reason is that an archive provides a means of sending the "attributes" of a file -- its filetype and other information -- along with the file itself. An archive also allows several related files (or an entire disk) to be packed together into a single file. True archiving utilities will also have the capability of compressing the files they contain to minimize the transmission time and disk space the archive requires.

GS-ShrinkIt uses a highly efficient compression algorithm known as dynamic LZW, and creates archive files with a format called NuFX. GS-ShrinkIt and the 8-bit version of ShrinkIt are currently the standard archiving utilities for Apple II telecommunications.

GS-ShrinkIt can unpack files which have been archived with GS-ShrinkIt, as well as those which have been packed with certain other Apple II file-packing utilities, such as BLU and ACU. One of GS-ShrinkIt's most exciting features is that it can also unpack a variety of non-Apple II archives. This will be discussed in more detail later in these instructions.

About These Instructions

Most users of GS-ShrinkIt will be interested in unpacking files that they have downloaded from a Bulletin Board Service or Information Service. Others will also be using it to pack files that they want to upload to such a service. In these instructions I will first describe how one uses GS-ShrinkIt to unpack archives, and then how to create a new archive file. Then I will give an explanation of each of the options available in GS-ShrinkIt's pull-down menus. If you are ONLY interested in how to unpack a file which you have downloaded, you can read as far as the end of the section entitled "Unpacking an Archive", and skip the latter sections. I will attempt to make these instructions understandable to the relatively new computer-user; if you are unfamiliar with any of the terms used, or become generally

---

Send comments/suggestions on this documentation file to:
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Send comments/suggestions on ShrinkIt to:
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Apple II Computer Documentation Resources (a2_docs_documentation.msw)
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confused, you may want to consult the instruction manual to your telecommunications software, or a magazine article on telecommunicating with the Apple II.

System Requirements

GS-ShrinkIt requires a IIgs with System Disk 5.02 or later, and a minimum of 768K of RAM. If you are using a GS/OS program launcher other than the Finder, it's possible that your system (boot) disk doesn't have an "Icons" folder. GS-ShrinkIt requires that you have this folder on your system disk, and that it contain (at least) the file "Ftype.Main".

GS-ShrinkIt and ShrinkIt

GS-ShrinkIt is (of course) for the Apple IIgs. There are also versions of ShrinkIt available for 8 bit Apple II's. Archives created with GS-ShrinkIt can be unpacked with version 3.0.3 or later of the 8 bit ShrinkIt, providing that none of the files being extracted from the archive is an "extended" GS/OS file (also known as files with resource forks). Since ProDOS-8 can't handle extended GS/OS files, someone who doesn't own a IIgs would probably have no reason to extract such a file.

Distribution and Copyright Info

GS-ShrinkIt is a Freeware program. This means that you are under no obligation to pay the author anything for it, but the copyright is retained by him. You are encouraged to distribute this program to whomever you please.

Some Terms Defined

In the Apple II telecommunications community, there are a number of different file- and disk-packing formats which have been used over the years. Most of these formats have been superseded by ShrinkIt and its NuFX format, others are still used. These various formats are usually denoted with a three-letter suffix appended to the file's name (as in "MY.FILE.BNY"). The following is a list of the suffixes you are likely to encounter, with brief descriptions of their related file formats:

- .BNY: Binary II format. Though not a true archive format, a Binary II "envelope" will preserve a file's attributes through a download or upload. GS-ShrinkIt can unpack .BNY files, and they can be additionally unpacked during downloading by many telecommunications programs.

- .BXY: "Squeezed" (i.e., compressed with a different algorithm than the one used by GS/SHrinkIt) files within a Binary II envelope. GS-ShrinkIt can detect the utility BXY, these files can be unpacked with GS-ShrinkIt.

- .QQ: If you remove the Binary II envelope from a .BXY file, the squeezed files it contains will have the suffix .QQ. These files can be unsqueezed with GS-ShrinkIt.

- .ACU: The archive format used by America Online (formerly AppleLink Personal Edition); these files can be unpacked with GS-ShrinkIt. (America Online currently uses .SHK format for new uploads.)

- .SHK: NuFX format; can be created and unpacked with GS-ShrinkIt.

- .BNY: NuFX archive within a Binary II envelope. This is the format currently required for new uploads to the Apple II libraries of GENie and Compuserve. .BNY files can be created and unpacked GS/SHrinkIt. Although this "envelope" format may seem redundant, it has several advantages. Ideally, the Binary II envelope will be entirely "transparent" to end users; files in it will be automatically added by telecommunications software during uploading, and automatically removed during downloading. As more telecommunications programs come to support automatic Binary II packing and unpacking, this ideal will be increasingly realized. Thus, if your telecommunications software supports automatic Binary II unpacking during downloading, you can turn this option on when downloading a .BNY file. Doing this will give you a downloaded file which is a "bare" NuFX archive. Thanks to the Binary II wrapper, this file will automatically be given the correct name and filetype.

Unpacking an Archive

GS-ShrinkIt uses the standard Apple Desktop interface commonly found in IIgs programs, with the familiar pull-down menus and dialog boxes.

When you have downloaded a file with one of the suffixes given above, you will want to process this file through GS-ShrinkIt to unpack it and get at the files or disks it contains. It doesn't matter which of the packing formats your download is in; GS-ShrinkIt will automatically recognize the format and handle the file accordingly. To unpack an archive, you select "Open Archive..." from the "File" menu. This will give you an "Open which Archive?" file-selection dialog box. In addition to the usual "Disk", "Open", "Close" and "Cancel" mouse buttons, there are also two radio buttons labeled "Show Only Archives" and "Show All Files". GS-ShrinkIt uses two methods to decide whether a file is an archive file: It checks the attributes of the file (its filetype and auxtype), and it checks to see if the filename has an appropriate suffix. When a file is downloaded, its attributes may not be preserved through the download. If your archive doesn't have EITHER the appropriate attributes OR a suffix that GS-ShrinkIt recognizes, GS-ShrinkIt won't be able to identify that file as an archive. If you don't see your archive file listed in the window (after you've opened the appropriate folder), try clicking the "Show All Files" button. A bug in System 5.0.2 sometimes causes the file dialog to hang if it can't find a disk which it expects to be online. To avoid this, you should only swap disks in your drives AFTER the file dialog is on.

When you click the "Open" button with your file highlighted, a window will be displayed showing what type of archive file you have selected, and listing the "items" (the packed files or disks) contained within the archive. This window will also show several buttons: "Extract", "Info", "Delete", "Sort", "Add Files", and "Add Disk". To unpack an archive, you must first highlight those items which you want to extract. Usually you will want to extract all of the items listed, but you also have the option of extracting only a few items. To highlight all of the items, press Apple-A. You can select several individual items by holding down the Apple key while you click on those items you want. You can select a group of files by holding down the shift key and clicking on the first and last items in the group you want, and then on the last of the group.

A double-click on the items you want will highlight them, click the "Extract" button. Another file-selection dialog box will be displayed allowing you to choose which disk and folder you want to put the new, unpacked files in. If you have the appropriate folder opened in the Finder, and click on the "Accept" button. If there is a file in the folder with the same name as the file you are about to unpack, GS-ShrinkIt will ask if you want to overwrite the existing file. If you have added the unpacked file, skip this step. You can set GS-ShrinkIt to automatically overwrite any existing same-name files by turning off the "Prompt before overwriting" check.
Creating an Archive

As you might expect, creating an archive is somewhat more involved than unpacking one. However, the process is quite straightforward.

If you are going to be archiving files (rather than a disk), select "New File Archive..." from the "File" menu. A file-selection dialog box will be displayed, allowing you to select the files to be archived. There are two check boxes in this file-selection dialog box; select "Use Compression" (usually you will want to compress the files you archive) and to "Delete after archiving".

When selecting items to be extracted from an archive, GS-ShrinkIt gives you several ways to highlight files in this dialog box. You can select all the files in the open folder by clicking the "select all" button, you can select several individual files by holding down the Apple key while you click files, and you can select a group of files by holding down the shift key and clicking on the first and last items of the group.

When the files you want to archive are highlighted, click the "Accept" button. A new file-selection dialog box will appear, prompting you for a "Destination Name" — a filename for the archive file you are about to create. After opening the disk and folder you want your archive to be saved to, enter a name for the archive in the text box. To avoid confusion, be sure the filename has the correct suffix: Straight NuFX archive should have the suffix "SHK", and NuFX-within-Binary-II archives should be suffixed "SHK". After entering the filename, press "return" or click the "Save" button, and the archive will be created.

There is a check box in the "Destination Name?" dialog box labeled "Save as '.BXY' file". This box must be checked if you want your archive to be saved to disk in the NuFX-within-Binary-II format. The best way to create a .BXY file is to use GS-ShrinkIt to make a .SHK file, and then let your telecommunications program add the outer Binary II envelope during uploading. However, not all telecommunications programs can do this. GS-ShrinkIt does not allow you to add new items to a .BXY archive after it has been created. This can only be done with "bare" NuFX archives. For this reason, if you are using GS-ShrinkIt to make a .BXY file, you must start out with all of the files you want to archive in the same folder, so you can select and pack them all at once.

After creating a new archive, you can perform a number of operations on it. You can delete items, you can add a file or disk item (provided the archive isn't a .BXY file), you can sort the archive to change the order in which its items are listed, and you can add a short message to the archive to be read when the "Info" button is clicked. All of these operations are performed via the "Open Archive..." option in the "File" menu; that is, you must first select and open the archive, just as you would if you were going to unpack it.

To add a message, or "comment" to an archive, you first highlight the top item listed in the archive, and then click the "Info" button. Enter the text of your message in the lower half of the "Info on Item" window, and then click the "Update" button in that window.

The above instructions give a fairly thorough overview of GS-ShrinkIt. This section provides a list of each of the options available in GS-ShrinkIt's pull-down menus. This will serve as a reference section to the instructions, and will also fill in some details not dealt with above.

*Apple* Menu:
- About ShrinkIt...: Information about the programmer, distribution & copyright information, addresses for user support, thanks to those who helped out.
- Your NDA's are also under this menu.

**File** Menu:
- New File Archive... (Apple-N)
- Open Archive... (Apple-O)
- Open an existing archive to unpack its contents or to modify it.
- Close (Apple-W)
- Close (Apple-W)
- Delete...: Delete files from your disks.
- Quit (Apple-Q)
- Exit from GS-ShrinkIt.

**Edit** Menu:
- Undo
- Cut
- Copy
- Paste
- Clear
- These are provided for use when editing an archive message, and for possible use by NDA's.
- Select All (Apple-A)
- Select all files in the displayed folder, or all items in the displayed archive.

**Disk** Menu:
- New Disk Archive... (Apple-D)
- Create a new archive from a disk.
- Erase...: Erase the contents of a disk.
- Format...: Format a disk. Due to a quirk in the ROM 03 IIgs firmware, the Format option will not work on this machine.

**Special** Menu:
- Create AppleSingle...
  - AppleSingle is a relatively simple file-packing format designed by Apple, Inc. to provide a means by which extended GS/OS files can be handled. Unfortunately, due to a bug in the IIgs 0.0.2 system Disk, GS-ShrinkIt disk-archiving only functions correctly with 3.5" disks and ProDOS 5.25" disks; non-ProDOS 5.25" disks cannot be archived or unpacked. To archive or unpack 5.25" disks, you have to use the 8 bit version of ShrinkIt.
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AppleSingle within Binary II files.

Preferences...

This option puts up a dialog box with several check boxes and pop-up menus, allowing you to set a number of parameters. These settings will be saved in an "invisible" file called "ShrinkIt.Prefs" in the folder containing GS-ShrinkIt.

The check boxes are as follows:

Show invisible files
Show invisible files (such as "Finder.Data") in file-selection displays.

Prompt on every extraction
When multiple items are selected for extraction from an archive, you will be prompted to select a new disk and folder for each file before it is unpacked.

Force extracted names to fit ProDOS
When extracting a file from one of the "foreign" archive formats (see below), the name of the file may not fit ProDOS's rules for filename syntax. With this box checked, GS-ShrinkIt will automatically modify such a filename to make it legal. If the box is unchecked, you will have to modify such filenames manually.

Use sessions when archiving
"Sessions", also referred to as "cache-deferred writes", are a feature of GS/OS which can save considerable time with disk-intensive operations, such as creating large archives. With "Use sessions" selected, the new archive will be saved in memory until the entire archive-creation process is completed (or until memory runs out). Then it will be written to disk. A disadvantage of using sessions is that it uses up memory which GS-ShrinkIt may need for its file compression process.

Use sessions when extracting
This option corresponds to "Use sessions when archiving" above, but enables the use of sessions when an archives are being unpacked.

Attach suffix when archiving
With this box checked, GS-ShrinkIt will automatically add the appropriate suffix -- either ".SHK" or ".BXY" -- to the default archive name it offers you.

To the right of these check boxes there are eight labels with pop-up menus; the titles of these menus are:

Sort by:
This allows you to set how the items in an archive will be sorted when you click the "Sort" button. The choices are:

- Name (Alphabetical order)
- Length (Of the uncompressed file)
- Percent Size (How much the file was compressed)
- Date Archived
- Filetype
- Auxtype
- Ascending
- Descending
- Comment size:

This lets you set the maximum size of the comment that can be added to an archive; the choices are:

- 100 Bytes
- 200 Bytes
- 400 Bytes
- 800 Bytes
- 1000 Bytes
- Add Comment to:

- First File
- All Files

With First File (the default), a message can only be attached to the first item in an archive. This menu gives you the option of adding comments to all of the items.

Archive As:

- Hierarchy
- Flat File

It is possible to select a folder for archiving with GS-ShrinkIt. When you do this, the entire contents of that folder (including the contents of any folders within the folder you selected) will be archived. Normally, when this archived folder is unpacked, GS-ShrinkIt will first create the folder that was archived, and then extract the folder's contents, placing them within the new folder. By changing the "Archive As:" preference from "Hierarchy" to "Flat File", you can change this procedure. A "Flat File" archive will only contain the contents of any selected folders; it will not contain the folders themselves. Thus, when this archive is unpacked, no new folders being created, even if that archive contains one or more folders.

Save ARC Files As:

- Binary
- Text

Save ZOO Files As:

- Binary
- Text

"ZOO" and "ARC" are two "foreign" archive formats supported by GS-ShrinkIt; this is discussed in more detail below. These two options in the Preferences window allow you to set how files which GS-ShrinkIt extracts from these archives will be saved on your disk. The ZOO and ARC archive formats don't include any internal information that GS-ShrinkIt can use to determine what type the files should be when they are extracted, so the user has to make this decision.

*Foreign* Archive and Compression Formats

This part of the instructions was left for last because it's a little technical, and you shouldn't feel too intimidated even if many of the terms used here are unfamiliar. The "short version" of this section is simply this: Thanks to the remarkable versatility of GS-ShrinkIt, IIgs users can now unpack MOST of the files found in MOST of the download libraries of the online services. Whether these files are for Macs, Atari STs, Amigas, IBM PCs, or Unix systems, there is a good chance that GS-ShrinkIt will be able to unpack them. Although programs which were written for these other computers will not run on a IIgs, such things as text files, program's source code and graphics files (which can be converted for IIgs viewing with utilities such as SHR.Convert) CAN be used on the IIgs. It's probable that certain other types of non-IIgs files will become usable on the IIgs in the future. The wide range of formats supported by GS-ShrinkIt make it the most versatile archiving utility available for ANY personal computer. So take advantage of this and go exploring in those other libraries!

What follows isn't intended to be a complete description of the archive and library standards used by these various other computers. It only presents the salient points of using GS-ShrinkIt with the archive formats it supports. The "foreign" (non-Apple II) formats...
supported by GS-ShrinkIt are:

**StuffIt (Used on the Macintosh)**
ZOO (Used on the IBM PC, Amiga and Atari ST)
ARC (Used on the IBM PC, Amiga and Atari ST)
Compress (Used on computers running the Unix operating system)

**StuffIt:**
GS-ShrinkIt can extract files from StuffIt archives, sort them, and delete items from them. Encrypted items can not be extracted, nor can HFS folders within other folders. Such items will be dimmed in GS-ShrinkIt's display. StuffIt archives within MacBinary I or II "envelopes" are supported, as are StuffIt archives from America Online.

**ZOO:**
ZOO archives can be opened and their contents extracted with GS-ShrinkIt. ZOO archives can't be sorted or items within them deleted, however.

**ARC:**
GS-ShrinkIt's unpacking of ARC archives works only for those created with ARC 5.0, not ARC 6.0, which are less common. Some of the types of compression used in ARC files are not supported, and archive items using these methods will appear dimmed. Sorting and deleting of ARC items is not supported.

**Compress:**
GS-ShrinkIt should be able to unpack all types of Unix Compress files.

Two fairly common archive formats which are not currently supported by GS-ShrinkIt are ZIP and LHarc (LZH). These formats are used on IBM PCs and other machines.

### Table of Supported Formats

<table>
<thead>
<tr>
<th>Format</th>
<th>Filename</th>
<th>Computer(s) Which Use This Format</th>
</tr>
</thead>
<tbody>
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<td>NuFX</td>
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</tr>
<tr>
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<td>C Apple II</td>
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<td>U Apple II</td>
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<td>Binary II in Binary II</td>
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<td>ACU (Used on America Online)</td>
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</tr>
<tr>
<td>ACU in Binary II</td>
<td>--</td>
<td>U Apple II</td>
</tr>
<tr>
<td>SQ (BLU)</td>
<td>.QQ</td>
<td>C Apple II</td>
</tr>
<tr>
<td>SQ in Binary II (BLU)</td>
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<tr>
<td>StuffIt in MacBinary I or II</td>
<td>.SIT</td>
<td>U Macintosh</td>
</tr>
<tr>
<td>StuffIt from America Online</td>
<td>.SIT</td>
<td>U Macintosh</td>
</tr>
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<td>Zoo</td>
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<td>U IBM PC, Amiga, Atari ST, Unix systems</td>
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<tr>
<td>ARC</td>
<td>.ARC</td>
<td>U IBM PC, Amiga, Atari ST</td>
</tr>
<tr>
<td>Compress</td>
<td>.Z</td>
<td>U Unix Systems</td>
</tr>
</tbody>
</table>

For More Technical Information...

If you want to know more about the NuFX ("nu-ef-ex") archive format, please consult the Apple Filetype Technote for $E0/$8002.

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I. What is GUIMaster?

About a month ago, a friend of mine was telling me how nice it would be if he could spruce up the GS GUI (Graphic User Interface). Maybe change an arrow here, shade in a check box there, change the close boxes on all the windows. At first I thought that would be a nice idea, and left it at that. Four days ago (Jan. 1, 1991), however, as I was flipping through GS toolbox reference manuals, I noticed that there were commands built into the toolbox that let me do some of what my friend had suggested a month ago. Some days later, I finished programming. The result: GUIMaster.

GUIMaster lets you change nearly every component of your GS desktop: scroll bars, check boxes, radio buttons, regular buttons, the menu bar, the window size box, and the window close and zoom boxes. Not only can change the way they look, however, you can change their colors, too.

II. Detailed Installation Instructions

Here are explicit instructions on how to install GUIMaster:

1) Launch the Finder
2) Open your boot disk
3) Open the System, then System.Setup folder. System.Setup should be your top window.
4) Copy "GUIMaster" into System.Setup.
5) Create a folder and name it "GUIFiles" in the System.Setup directory.
6) Copy the necessary GUI files into the folder.
   E.g., If you wish to install a GUIFile called "LacquerGUI" (the one provided), copy all the files beginning with "LacquerGUI" into the folder you have just created (for LacquerGUI.c, this includes LacquerGUI.w and LacquerGUI.c). Suffixed files are "support" files. The unsuffixed file is the "main" file.
7) Copy the file "MasterGUI" into the folder.
8) Copy the file "GUISetup" into your NDA folder.

You are finished. If for any reason, GUIMaster cannot read or interpret the "main" file, or if the MasterGUI file is corrupted, you will be presented with the "standard" GS desktop.

III. Creating your own GUI Files

This part gets a little technical. At this point, there is no way for the ordinary GS user to create his or her own "custom GUI files". In the future, if people show interest in the program (by paying the ShareWare fee (I’ll get to that later) or by sending me comments, suggestions, etc.), I will write a GUI editor using the standard GS desktop, which will be able to create GUIMaster compatible files.

If you are an ordinary user, and not interested in the technical mumbo-jumbo, skip to section IV.

A Little About the "Main" and "Support" Files

The "main" file stores all the color code information for the GS desktop, in addition to storing the file names of the "support" files. "Main" files are of filetype $C4. (Maybe in the future also by the three letter code GUI!)

"Support" files are merely the font files used to replace the standard GS controls and window icons. However, these font files must be created by modifying the provided standard control and window files, as they use custom boundaries, etc. The file names of the standard control and window files are "StandardControl" and "StandardWindow" respectively. Once again, "Support" files are standard GS font files; filetype $C8.

In addition, to standardize things, and can be edited with any GS font editor. Created "support" files should be given the name of the "main" file that they are associated with, suffixed with either a ".w" (for the window font), or ".c" (for the control font).

Writing "Main" Files

To understand how to write a main file, it is best to look at an example. The following is the source code for LacquerGUI (written in standard ORCA/M source), with added comments:

```plaintext
;;;;;;;;;;;;;;;;;;;; ;;;;;;;;;;;;;;;;;;;; ;;;;;;;;;;;;;;;;;;;;
;;;;                     ;;;;   Master ;;;;         ;;;;
;;;;;;;;;;;;;;;;;;;; ;;;;                ;;;; ;;;;;;;;;;;;;;;;;;;;

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Writing "Main" Files

To understand how to write a main file, it is best to look at an example. The following is the source code for LacquerGUI (written in standard ORCA/M source), with added comments:
```

```
Once you have finished writing your source code, save it as how you plan to name the finished "main" file, with the suffix '.src', e.g., I saved "LacquerGUI" as "LacquerGUI.src". This will provide compatibility with the enclosed EXEC file.

The EXEC File and Assembling Your "Main" File Source Code

Encluded with this archive is an EXEC file for use in assembling your source into GUIMaster readable code.

To use the macro, enter "GUIMaster" followed by a space and the name that you plan to use for your "main" file (see Saving Your Source, earlier on), e.g., for a source code file called "LacquerGUI.src", to be compiled into a GUIMaster "main" file called "LacquerGUI", enter "GUIMaster LacquerGUI.src". The "main" file that you wanted will then be generated and saved on your disk.

---Note---
Do NOT type "GUIMaster" and follow it with the name of your source code or GUIMaster will delete your code! E.g., Do NOT type "GUIMaster LacquerGUI.src" if LacquerGUI.src is the name of your source code; type "GUIMaster LacquerGUI".

To manually assemble your source code, type:

ASNL +M "name of your source code"

MakeBin "name your file was 'kept' as" (using the keep primitive in the source)

FileType "the name your file was 'kept' as" $c4

This will also create GUIMaster compatible code.

Making "Support" Files

See the A Little About the "Main" and "Support" Files section for details.

Installing Your New GUI

Follow standard GUI-installing instructions, aforementioned.

IV. Selecting Which GUI File to Use

Select this NDA "GUI Setup" to choose your GUI file. Make sure that you select a GUI File in the "GUIFiles" directory (see the installation section for more info).

In the future I'd like to write a cdev to do the work of this NDA, but I have no information on how to write a cdev (living in Japan leaves me out of touch).

V. Where It Doesn't Work and Future Upgrades

GUIMaster has trouble with new, extended controls implemented in system v5.0 and up.

Unfortunately, this includes the new TextEdit controls and pop-up menus.

I tried very hard to implement support for these controls in this version, but could not. As a result, you cannot change the color of pop-up menus, or the frame or background of TextEdit controls. In addition, scroll bars that are part of the TextEdit control will appear in the usual GS desktop colors and format, although the icons will remain the same in.

Another drawback was unavoidable short of rewriting Apple's code for the list control: the list control cannot support a dithered frame. As a result, if you use dithered colors for your scroll bar, they may not blend in well with your list.

I also tried to add provisions for a default "desk pattern" to appear, but despite my efforts to do so with the new _MessageCenter message type 2, I could not get this feature to work. (As a result of this, I have included a file called "DeskPicture" on this disk which works nicely with the LacqueredGUI GUI, through the use of a desk picture displayer such as DeskPicInit.)

Using this with programs that rewrite different parts of the two icon sets may cause an icon that you originally drew to take on a different shape. A good example of this is with AWGS v1.0 v (...?). In the telecomm module, among others, the resize window
icon is replaced with a smaller one. I have just figured out a way to circumvent this minor annoyance and will include it in the next release.

There is only one actual inexplicable problem ("bug" if you will) with this program: when using AWGS v1.0 (v(...?), various custom list records (such as the file requester list) will have some foreground and background colors swapped. I have no idea why. I don't know if this bug is present in v1.1. I was loaned my version from a friend of mine. If anyone knows why this happens, or if it happens in the latest release of AWGS, please write and tell me why, so I can fix it.

Future upgrades, in addition to attempting to fix the "bugs" and "shortcomings" present in this version, will probably include the aforementioned GUI Setup cdev in place of the NDA, and a desktop GUI-creation application.

There have been no other conflicts, unwarranted crashes, etc.

I plan to make all future upgrades of this program free, except for the cost of a disk and postage, to all registered users. I will notify registered users when an upgrade is available.

VI. ShareWare Fee and Final Notes

The ShareWare fee for this program is $5-$10, depending on how much you think it is worth (more is also accepted!). I spent 5 LOOOONG days writing this init file, a total of about 30 hours! Please be honest and pay the ShareWare fee if you think the program is worth it. Otherwise, delete all your copies of it.

Please give unaltered copies of the archive that this file came in to every GS owner you know!

The money I receive from this and my other ShareWare programs will go towards my programming. For further projects I have in mind, please see the "FutureProjects" list. I don't want to bore you here, but I think I have some pretty interesting projects, so it'll pay to send in the ShareWare!.

My addresses:
America: Kris Olsson
5051 American Embassy
Roppongi 2-1-1
Tokyo 103

Japan: Kris Olsson
Box 215
APO San Francisco, CA 96503
Minato-ku

If you find a bug, have a suggestion or complaint, or have created a nice GUI file, please write to me.

Enjoy!

Apple II Infintum!

Avast thar ye scurvy knaves!

Must a modem have a tail and whiskers to hack? Tired of hearing the famous line "You should have bought a Cat?" Ever wonder if there was more to that little square box under your fone than meets the Cat-scratched eye? If your answer to any of these questions is "yes", then The Hayes Hackamatic is for you. Finally your Hayes Smartmodem compatible can join the ranks of respectability!

("Hayes Smartmodem compatible" includes the following modems: Hayes Smartmodem (usually compatible with itself), Volksmodem, U.S. Robotics, Signalman, Apple modem, Prometheus Promodem, and others. Check your manual for Hayes compatibility if your modem is not listed.)

The Hackamatic consists of three main programs: The Prefix Prowler, The Code Crusher, and The Password Penetrator Program. Have you lost your password to your favorite BBS, but don't want to risk your high access by bothering the sysop? No problem, use the Password Penetrator. Have you lost your Sprint or MCI access codes, but don't want to get lost in red tape by calling the company? No problem, use the Code Crusher. Have you lost the phone number to the school computer which you need to use to finish your term paper (by tomorrow), but everyone at the school has gone home? No problem, use the Prefix Prowler. As you can see, these programs can be very useful.

Warning: Users other than those described above can be hazardous to your health and continued state of freedom. Use only as directed.

Throughout the programs I have made every effort possible to ensure compatibility with various Hayes compatibles. The Prefix Prowler and Code Crusher should work without difficulty on any Hayes Smartmodem compat connected through a semi-normal serial card (or Apple /c serial port). The Password Penetrator, however, for reasons to boring to describe, requires an Apple Super Serial Card (SSC) or an Apple /c serial port to work properly. The SSC is the most commonly used serial card I have seen, and this restriction should not be too serious. Since there are so many different Hayes Smartmodem compatcs, though, I cannot guarantee that the
Hackamatic will work on every Hayes known to mankind. For this reason I chose to stick to widely known BASIC wherever possible so the programs could be individually tailored to fit any modem.

I have also tried to maintain compatibility between the programs. They all use the same keyboard input routine. At every requested input, the default value is shown between brackets, and it can be changed by simply backspacing over it and typing the desired value. In each program, the default values are specified and REMarked in the first segment of the code. If you need or want to change the defaults, LIST the program from the beginning until you see REM DEFAULTS. After this point, the default variables are initialized. I have included REMarks for each variable value, and you should have no trouble changing them. Note, however, that this is not necessary if datafiles are used with the programs. Each of the three programs allows you to name and save a datafile which contains all necessary values. When the datafile is later loaded, the saved values become the defaults. This feature is very useful, since different prefixes, alternate long distance services, and mainframe systems behave differently but can be handled individually through separate datafiles.

Because of its many special features not found on other modems, the Prometheus Promodem is specifically supported in each of the programs. Since all of the methods of software Promodem identification I tried proved unreliable, the user is asked if there is a Promodem installed. If you have a Promodem answer (Y)es, and the special features of this modem will be used.

If you have any questions about the Hackamatic, I can be reached through the Utah Elite on:

[|C|omputer] [P]irates of [U]tah
<CPU>
(312) 623-6761

I would like to thank Peregrin Goodbody and The Crackon for the skull in the title sequence.

Oh yes, by the way....It has come to my attention that there is another pirate with the alias Automan. I strongly suggest that this person acquire a new pseudonym. I am AUTOMAN from area code 801, and I would *NEVER* operate a Cat-fur, a Cat-paw, a Cat-ear, or any other piece of bloody feline anatomy.

Yo ho ho.....Blow the man down...a bottle of rum...and all that rot. May you hack long and pillage prosperously.

AUTOMAN

-|-~~~~~~~~~~~~~
of the K.G.B.
Kracking Guild

---

THE SCSI HACKER V1.1
A Format/Utility Program for Apple's SCSI Card And ANY Hard Drive

THE SCSI HACKER is a "NO FRILLS" PROGRAM DESIGNED FOR THOSE WHO UNDERSTAND HARD DISK LOW-LEVEL FORMATTING (AND ITS IMPLICATIONS). THE PROGRAM HAS LIMITED WARNING MESSAGES AND NO HELP MENUS. IT IS CAPABLE OF TOTALLY DESTROYING ALL DATA ON ANY HARD DISK CONNECTED TO AN APPLE SCSI CARD, WITHOUT ANY CHANCE OF RECOVERY VIA "UNDELETE" TYPE PROGRAMS, ETC. THEREFORE, IF YOU DO NOT WHAT YOUR DOING, DO NOT USE THIS PROGRAM!

(C) 1988 Joe Jaworski
18405 Tamarind Street
Fountain Valley, CA 92708

THE SCSI HACKER is FREWARE. It is copyright material but you may use it and/or distribute it free of charge to anyone for personal, non-commercial use.

Revision History:

Version 1.0 First Release  12/19/88
Version 1.1 Fix Error reporting bug  3/19/89

To get the most out of SCSI HACKER, you will need the following:

1) Apple SCSI Card (Rev C. EPROMs)
2) A SCSI Integrated Hard Drive or ST506/SCSI Controller
3) HDSCPartition program (included on the SCSI.TOOLS diskette)
4) ADV.DISK.UTIL (from the GS System Tools diskette)
5) DiskTimerGS (FREWARE program, available on most BBSs)

INTRODUCTION

THE SCSI HACKER allows you to low-level format any hard disk drive in your choice of interleaves. This will allow you to optimize your hard drive for the fastest possible speed. It also provides an extended ("overnight") test program that will verify proper operation of a disk after formatting. In addition, you can selectively park the heads on any drive connected to the SCSI Bus.

Needless to say, you should have adequate backup before experimenting with this program.

MAIN MENU

After launching, THE SCSI HACKER provides the following options in its Main Menu. If you get an error message, either a SCSI Card was not found in any of your slots or there are no devices currently active on the SCSI Bus. If you get an SME/ProDOS Error and an error number, see note 6 in the section on troubleshooting at the end of this file.
NOTE: The Apple SCSI Card only issues a SCSI HARD RESET on power-up. Among other things, this forces you to power-up your drive before your system unless the drive's power-up sequence can respond to UNIT READY's before the motor is up to speed. If things aren't working properly, power-down for 10 seconds and power back up again—Drive first, then Computer second.

Test Unit: This option performs a READ test of every block on a formatted partition. It uses what is called a “butterfly” test, in which blocks are tested from the lowest to the highest and then are incrementally changed, which excercises the stepper motor and most of the electronics on the hard drive. This test is non-destructive (only does READs) to the data on the drive. If you receive an error, HACKER will report the logical block number that is bad. Run Mr.FixIt or any other bad-block lockout program to prevent ProDOS from using the block. Depending upon how defects are mapped on your drive, bad blocks may be normal.

Select Unit: This option allows you to select any unit currently active on the SCSI bus. The currently selected volume (if any) is listed at the bottom of the screen. Also included is the current slot. If you have two SCSI cards installed in your system, only one in the upper-most physical slot can be used with SCSI HACKER.

Low-Level Format: This option allows you to perform a low-level format of any drive. You will also have the opportunity to select an interleave value for the low-level format. This test is destructive, destroying all data, all partitions, and all directories on the drive selected.

For the last time, don't play games with your data. Do a full back-up before using this program.

Park Heads: This test will allow you to park the heads of any and/or all devices currently active on the SCSI Bus.

Quit: This exits you from THE SCSI HACKER, getting you back to more friendly territory.

OPTIMIZING YOUR HARD DRIVE

A Proper Interleave setting of your hard disk can make a tremendous difference in performance. Most manufacturers who sell hard drives (especially those who do in different markets) optimize the interleave factor for either the IBM-XT or the Mac. These systems are faster that IIGS’s and use interleave factors that are completely different. The object here is to maximize the interleave for the IIGS and GS/OS. Once done properly, you will truly notice a speed-up in Disk I/O when using your everyday applications.

A few notes that will save you headaches:

1) Low-level Format your drive at room temperature. I’ve worked on these things long enough to know that most drives suffer from temperature differential problems, aggravated at the high end. Leave your system powered-on for a half-hour before starting.

2) Make sure the drive is terminated. Look near the connector on the Drive's printed circuit board for resistor termination packs. Make sure they're firmly in their sockets. Also set the SCSI ID to 6 (for single drive setups) and if you have a choice of LUN settings (see your drive/subsystem manual), set the drive for LUN 0.

FINDING THE BEST INTERLEAVE

The first step is to find the best interleave for your setup. This is a trial and error period that will take some time, but once done, you'll never have to do it again.

Step by Step Procedure:

1) Low-level format the drive using the low-level format option in the Main Menu. As a starting point, set the interleave value to 5.

2) After formatting is completed, Run the HDSCPartition program that came on the SCSI.TOOLS diskette included with your Apple SCSI Card.

NOTE: If you have upgraded your SCSI card to a Rev C ROM via your dealer, make sure you also get a copy of the diskette called "SCSI Card Utilities". If your dealer is stupid (not uncommon), ask him if you can make a copy of the diskette included in the box with the new SCSI cards.

With HDSCPartition, It doesn't matter what partition sizes you set at this point, as long as you set one that is at least 10 megabytes in size.

NOTE: If you're launching these programs from the FINDER, be sure to answer EJECT from the Finder's request to initialize the volume. DO NOT use the Advanced Disk Utility (ADU) at this point. The two programs do two different things. HDSCPartition creates a DPM (Device Partition Map), while ADU will only allow you to modify the DPM. If ADU doesn't find a DPM, it will low-level format your drive at 1:1 interleave, something you do not want. Hence, don't use ADU at this time.

3) After running HDSC partition and then quitting, answer "Initialize" to the Finder's prompts this time, instead of EJECT. This will high-level format your drive, allowing you to name the volume(s). If you're not using the FINDER, run Copy II Plus or the FILER or any other program that does high-level formatting. Name the disk(s) anything you want. At this point, don’t worry about capacity, even if your 64 Megabyte drive only shows up as 20 Megabytes. We’ll be fixing that shortly.

The High-Level Format should take only a few seconds. If it takes longer, (indicating that a low-level format has been forced), you messed up somewhere, so go back and start over.

4) Put a Copy of DiskTimerGS on the new volume and launch it from there. Write down the test results.

5) Now try an interleave factor of 10 ($0A), going through each step again. Now do it again with 15($0F).

What we’re doing at this point is finding the best interleave factor. For example, suppose you get the following results from DiskTimerGS:

<table>
<thead>
<tr>
<th>Interleave</th>
<th>READ Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>5($05)</td>
<td>90  61  69  78</td>
</tr>
</tbody>
</table>

In this example, the READ numbers from DiskTimerGS got dramatically better when going from an interleave of 5 to 10. This means that the optimum interleave factor is somewhere between 5 and 10. (Don't concern yourself with the SEEK or ADAPTER numbers from DiskTimerGS). Also, you might want to run DiskTimerGS twice each time to make sure your numbers are stable.

Now go back and do the interleave one at time, from 5 through 10. Your results might look like this:

<table>
<thead>
<tr>
<th>Interleave</th>
<th>READ Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>5($05)</td>
<td>90 95 96 58 59</td>
</tr>
</tbody>
</table>
Apple II Computer Info

Most of all, have Fun! And I hope I took a little mystery out of this
Hard disk game.
-Joe

Bingo! An interleave of 8 is best. This is where the READ timing drops
off dramatically. However, as a rule of thumb always add 1 or 2 to get
best overall performance when using real applications. Therefore, the
best interleave for your drive is 9 or 10.

Now do the following:

1) Reformat at an interleave of 10 (if needed).
2) Run HDSCPartition as described above.
3) Run ADU.
4) Select your drive and set up your partitions exactly the way you
    want them. You should now get your full capacity. The partitions will
    be named "Apple //" from HDSCPartition. Name them to whatever you want
    to use as the volume names, adjusting partition size accordingly.
5) You're Done! Your hard drive will now work at peak performance.

USING TEST

It's a good idea to run the TEST option at least two passes on each
partition before using your drive. TEST will run continuously until
stopped by the ESC key, so if you want, you can run it overnight or
all day while you're at work. Be patient. Even two passes can take
over an hour, depending upon the capacity of your drive. You'll have
to high-level format the drive before running test.

PROBLEMS, TROUBLESHOOTING, CAVEATS

1) It has been reported that PARK doesn't work right on Chinook
drives. The park routine simply issues a SCSI STOP UNIT command to the
unit selected. However, Seagate, Quantum, and Rodime drives support
this command, as it is part of the Common Command Set and Apple's SCSI
variation.

2) If your subsystem uses an ST-506 drive and a separate SCSI
controller (in addition to Apple's SCSI card), make sure the drive's
defects are recorded in the Primary List. The low-level format routine
will map out primary list defects, but not grown defects. You may have
to use an IBM or Mac with appropriate software to access the Mode
Select pages to do this. Check the manual of the Controller. An
alternative to fixing defects is to run a bad block mapping program
(ala Mr.Fixit), but this is a less reliable method of finding all the
media defects.

3) If your low-level format operation takes a horrendous amount of
time, your controller is probably doing media Certifies. This is good,
since all defects are being mapped out for you. Be patient.

4) SCSI HACKER won't run if it doesn't find an Apple SCSI card and at
least one Unit on the SCSI Bus that will respond to a UNIT READY
command. Therefore, the program won't work if you try to use it with
anyone else's Apple Disk Controller card.

5) The permissible Interleave Factors are governed by the physical
number of sectors on your drive. For standard RLL 26 sector units, you
can use from 0 to 25 (0 or 1 will both format out to an interleave
factor of 1). For 13 sector MFM drives, expect a range of 0 through
12. SCSI HACKER won't format if you specify a number out of range and
will report an error message.

6) All error numbers reported are passed from the SmartPort and/or
ProDOS 8. See APDA's SCSI reference manual or the ProDOS 8 reference
manual for a list of error codes and their meanings.
Apple II Computer Info

HCADgs

Copywrite (c) 1990, Joseph A. Huwaldt

HCADgs is a shareware 3-D computer aided design program. It is useful in viewing, rotating, and scaling 3-D objects. With HCADgs you can line draw, rotate, scale and translate objects in three dimensions. With the perspective feature you can view objects as they appear in real life (larger nearer to you and smaller farther away). This is opposed to the standard isometric views where distant objects appear the same size as nearer objects. You can print 3-D objects to any printer that your Apple IIgs supports (that you have drivers for), including the Apple Imagewriter II, Apple LaserWriter, and standard Epson printers.

Please note that HCADgs is _Shareware_ and as such is NOT public domain or freeware. Details of the shareware agreement can be found below.

Version 1.2: This version repaired many bugs that were found in 1.0 soon after its initial release. The general flow and features of the program were not altered.

Future versions (if anyone sends me the shareware fee) will have the following improvements:

Definately: The ability to draw with the mouse as opposed to using the keyboard (if anyone wants, I could make a joystick version too I suppose). Multiple objects that can be moved in relation to one another. Rulers, gridlines, etc for measuring. These things are relatively easy.

Probably: Hidden line elimination, shading and reflection (if my plans for hidden line elimination work out, then the others will be simple). A 320 graphic mode version that uses shades of any hue that you wish for shading. Solid modeling. Fee form curves, circles, cylinders, spheres, cones, etc.

Wish List: High speed animated rotations (for now you will just have to purchase a Transwarp GS for that).

HCADgs is not difficult to use. It sports the standard graphic desktop interface complete with pull down menus and all your favorite desk accessories. When the program is initially opened it shows a blank screen with the x and y...
coordinate axes visible. The view angle is Rx = 0, Ry = 0, and Rz = 0 degrees. The y axis is defined as positive downward, x is positive to the right, and z is positive into the screen. If you hold down the Apple (Command/Propeller) key and press y you will move the drawing cursor (a small red dot) to the left (negative x) direction 1 unit. Whenever you use one of the drawing commands the x,y,z position of the cursor will appear in the upper left hand area of the drawing page. The drawing keys make use of the numeric keypad for drawing as follows:

- z (7) - y (8) + z (9)
- x (4) + x (6)
+Ry (1) + y (2) +Rz (3)
+Rx (0)

Just play with the direction keys (make sure you hold down the Apple key) and learn how the drawing cursor moves. Press Apple-B to begin a line at some x,y,z coordinate (initially the beginning will be set to 0,0,0). Move the cursor to the 3-D coordinate for the end of the line and press Apple-D. The line will then be drawn between these two points.

You may use Cut (Apple-X) to remove the last drawn line and you may use Paste (Alt-V) to replace the last cut line. Type in as many lines as you wish in any sequence but you will only be able to paste back the last cut line! Remember that. This is rather limited editing so look forward to better editing features on future versions...

You may rotate the object that you are drawing by pressing Apple-R. You will be asked to input the rotation angles in degrees. For example you could enter in the edit boxes 30 30 30. This will rotate the object (positively in a right handed system) 30 degrees about the x, y, and z axes all at once. This is a commonly used setting for view angle. With the view set to this angle you will still be able to draw, but now Apple-4 will move the cursor diagonally upward and to the left. This is because you have rotated the xy plane in 3-D by 30 degrees from the starting position. Move in by 30 degrees and see if you get used to it after a while. I recommend that you follow the x,y,z coordinate information in the corner of the screen to keep track of where you are. It is even kind of fun to learn to move the cursor downward to the right when you press the negative y direction key. :)

==Menu Explanations==

=>Draw
This menu is where the keyboard commands for moving the cursor are found. The use of the numeric keypad for moving the cursor is explained above. You may also use the 0oto option. Here you may enter the 3-D coordinates that you wish to move the drag cursor to. With this you may jump around in a drawing rapidly if you know the relative 3-D coordinates. This is often the case if working from other engineering figures. You may use the Set Begin Line, and enter in the beginning of a line that you wish to draw, then move to the end of the line you wish to draw and choose Draw Line... This will draw in a line in 3 dimensions.

=>HCAD
This is a general all purpose menu. A goodies menu if you wish. Here you may move the object around in 3-D space with relation to the origin (Translate) or you may move the origin around in space relative to the screen (Move origin). You may also turn on perspective mode here. Perspective mode will cause parts of objects that are closer to you to appear larger and parts of objects that are further away will appear smaller. This does increase calculation and drawing time though, so you may not want to have this option turned on all the time. You will be able to draw with perspective mode in operation though. Finally, you may turn on or shut off the axes. This will either show or remove the little 3-D axes that appear in the center of your drawing area when you initially start the program.

==Need Technical Help?
If you encounter any problems with HCADgs or if you have any comments or questions on the operation of HCADgs, then please feel free to contact me. You may write me at:

Joseph A. Huwaldt
314 BB Bristol Terrace
Lawrence, KS 66044

I may be reached on America Online as "JH Huwaldt" or you may reach me at a BBS that I frequent: Sherwoods Forest -- (913) 842-5025. On Sherwoods I am known as "Joseph A Huwaldt", and in the first place that you will find my latest greatest programming feats as well.

HCADgs is written entirely in TML BASIC. This has often turned out to be a feat in itself. However, it turns out that TML is great for the number crunching needed for this program. (Hint: Don't use TML BASIC if you are going to be manipulating a lot of string variables. It is a mess.) The source code at this point is about 30k long and contains numerous lines.

HCADgs is a shareware program. You may use this program on a trial basis for 7 days. After, after seven days, you are not pleased with HCADgs, then please discontinue using it. However, you may upload it to any BBS or information system that you please and you may give as many copies to friends as you wish. In fact, I encourage you to do this in order that others may enjoy this program. If you are indeed pleased with HCADgs and would like to see more programs developed for the Apple II series (including more engineering graphics programs) then please send me the small fee that I request.

Here's the deal:

$10 -- You will become a registered HCADgs user and will receive the latest version of HCADgs (and any other useful programs that I may choose to have hanging around). And you will receive the next version of HCADgs free! You will also be free to own any future versions of HCADgs that you ever encounter.

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 500 of 1262
Apple II Computer Documentation Resources (a2_docs_documentation.msw)


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Apple II Computer Info

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You will become a registered HCADgs user and will receive the latest version of HCADgs (and any other useful programs that I just happen to have hanging around).

In both cases you will be supporting the development of useful software for the Apple II series. And if you pay the shareware fee, my family won't complain so bad that I spend to much time programming and not enough time working at a "real" job. :) Please send your shareware fee to:

Joseph A. Huwaldt
314 BB Bristol Terrace
Lawrence, KS 66044

IMPORTANT: Please include your real name, full address, and the program and version number that you are registering (I have several). I will then send you the latest version of HCADgs as soon as possible.

Thank you for your support.

Ad Astra, Joseph A. Huwaldt

---

Hacking Construction Set

---

Program and Docs by Cyborg

---

Hacking Construction Set's features:

1. Totally user-definable, including the service format.
3. Auto-verification of codes.
4. Random dialup delay.
5. Codes can progress forward or backwards randomly or stepping in any step up to 99999, or completely randomly.
6. Up to nine service configurations on one parm file.
7. Codes are dated to show age.
8. Codes are 95% reliable.
9. Easy to use; entirely menu-driven.

HCS is to the //c what Megaphreak is to the AppleCat!

HCS can only be used on a //c until I make a //e version.

---

Starting out

---

HCS will appear on the screen, and set up the modem. You will be prompted to set the date in MM/DD/YY format; set the date correctly.

The Screen

---

At the top middle of the screen you should see a block containing

Main  04/14/86

The "Main" is the current module you are on, and the numbers are the current date.

On the bottom row of the screen you should see a line containing

CARRIER  CODE  WAIT 00  DISK  HUNGUP

These are the status registers. They are currently inversed (black on white), but if any of them become 'activated' they will be shown as normal (white on black).

Register......Purpose

CARRIER  to show if a carrier is detected
CODE     to show if a code has been found
WAIT 00  to show a delay of 00 seconds
DISK     to show any disk access
HUNGUP   to show that the modem is hung up

NOTE: The WAIT register alone means awaiting carrier or service hangup.
On the screen now you will see 9 names that have been loaded from a disk based parameter index. Each is a separate configuration. You will see:

EMPTY D:0 F:0 00.0%

name dialed found ratio
\--------total--------/

Name : Name of parameter
Dialed: Total number of tries since created.
Found: Total number of codes found since created.
Ratio: Ratio of total found over total dialed, percent found in total tries.

MAIN MODULE To manage parameter files.

-------total-------/
name dialed found ratio
\-------total-------/

Use: [ARROWS] to MOVE the highlight
[RETURN] to SELECT the highlighted service parameter file.
SPACE to EDIT the highlighted file.
[D] to DELETE the highlighted file forever.
[ESC] to RETURN to MAIN MENU

CONFIG MODULE To configure an empty parameter file

After selecting an empty parm file

Use: [ARROWS] to MOVE the pointer
[SPACE] to EDIT value
[RETURN] to save and exit
[ESC] to exit

Use arrows to advance off the page onto next page.

Page One of configure:

Name: Input the name of the service here.
Service Number: Input the access number for the service here.
Carrier Number: Input a number which will give a carrier CONSTANTLY when dialed up, and will NEVER be BUSY!

Format: define the way in which you wish the digits to be dialed using [S]ervice Number: Dial Service Number.
[Carrier Name: Dial Carrier Number.
[N]umber : Enter N followed by a numeric digit you wish to be dialed. EX: N0 dials 0.
[T]ry code : Enter T followed by a numeric digit that specifies the number of digits in the CODE. EX: T6 try a 6 digit code
[D]elay : Enter D followed by a numeric digit which specifies the number of seconds you wish the delay to be. EX: D4 wait 4 seconds.

Combine the five to make a dialing FORMAT that will work for your SERVICE.
The most common example is:

FORMAT: S##T##
dial service, wait 4 seconds, try 6 digit code, dial carrier number.

if you make a mistake, use the [DELETE] key to erase the last step you did. When you are satisfied with the format, hit [RETURN] to continue.

You will then be prompted for the Number of seconds to wait for a carrier. This is how long you want the modem to await a CARRIER after finishing the dialing FORMAT.

Page Two of the configure contains (If [ON] these will...):
After pressing return, HCS will open the datafile IF it's a new datafile, or if it's an old one, simply APPEND the date of hacking on the end. HCS will highlight in inverse the numbers it is dialing AS it dials them. It'll also use the status registers (Remember those?) to show what the modem is doing.

You will see:

```
|000000| D:0 F:0 00.0%
100000|
100005|
```

The line of numbers is the last code dialed current code code coming up

NOTE: If you use a random increment, then HCS can't tell what the next code will be, therefore the "code coming up" will be blank.

D=Number of codes dialed
F=Number of codes found
00.0%=Ratio of codes found over codes dialed.

When the "WAIT" register is on, you can use these commands:

- [SPACE] to go to the next code.
- [S] to toggle the modem speaker. NOTE: the speaker isn’t cut on/off until HCS goes to the next code. IE: use [S,][SPACE].
- [ESC] to save progress and go to MAIN.

HCS will give you a "CHARGE" tune when it gets a good code (hahha..). If it is done with the hacking routine, it will play another tune.

Notes

You can view the text file created during hacking, or any other text file using the main menu "VIEW TEXT" feature.

The input date routine is easy to modify so it uses your clock, as long as you know a little BASIC. Just go to the subroutine that reads the clock (it’s labelled..) and read your clock. Set $X="MM/DD/YY" and use a RETURN to return the date.

The file where all the parameters are stored is named "HCS.INDEX". HCS will look for the file on the current drive, and if not found, will create an empty file.

HCS can function without the fake word processor screen "FAKENP" if necessary.

The End. Wake Up.

You can reach me on The Dungeon.......... 714-877-3044
Rock&Roll Harbour... 305-557-8778
Kleptic Palace...... 314-527-5551

For comments, additions, complaints, modifications or conversation...

Credit goes to: The Oracle, The Bucketeer, Rick Rocker, and Disk Phantom.
Press the escape key and then press 1 from any event to get back to the main screen.

COMMAND MODE

The command mode allows you to perform various operations. Pressing the escape key takes you into command mode. Once in command mode, press a key as follows:

KEY ACTION
1 - Return to main menu
2 - Enter slow motion mode
3 - Save a performance
4 - Load a performance
5 - Watch an instant replay
6 - Enter control mode
7 - Turn sound on and off
8 - Switch between running and hurdles
9 - Switch to next player
I - Initializes a disk
D - Display the files on the disk
ESC - Leave command mode

CONTROL MODE AND PLAY MODE

Each event has two modes: a control mode and a play mode. In control mode, you review the established records in that event, and change some event options (such as type of dive and amount of weight). In play mode, you participate in the event. Press ESC-6 to go into control mode. Press ESC to exit control mode and return to play mode.

CHECKING RECORDS

To see the US, world and Olympic records in each event (except diving because no records are kept in diving), enter control mode by pressing ESC-6. Press the left or right cursor keys to cycle through the records.

INSTANT REPLAY

You can replay a particular performance if you want to watch it again and study your technique. Press ESC-5 and the last performance will replay. You cannot use the instant replay feature in the archery event.

SLOW MOTION

Press ESC-2 to participate in an event in slow motion. Slow motion works in all events except archery and weightlifting. Slow motion is in effect for one round only and can be used with instant replay by pressing ESC-2, then ESC-5.

CLASSIC REPLAY

The classic replay repeats any performance you have saved on a disk. The classic replay works with all events except archery.

INITIALIZE A DISK

To save one of your performances, you need a specially prepared performances disk. To prepare a performances disk, insert a new disk into the disk drive. Press the ESC key and then press 3 to start the save function. The program asks you for a filename. Press ESC and then 1 to start the initialization process. This will take about one minute. When initialization is completed, the program asks for a filename.

DISK DIRECTORY

To get a listing of the performances you have saved on a disk, first press ESC and then 3 (for save function) or ESC and 4 (for load function). The program will ask for a filename. Press ESC and then 8 to list the directory.

SAVING YOUR PERFORMANCES

First, make sure you have a prepared "performances" disk in the drive. To save your best performances, type ESC-3 from any event screen immediately after the performance. A filename prompt will appear at the top of the screen. The filename consists of an abbreviation of the name of the event, a slash, and a filename you provide.

LOADING A PERFORMANCE

To load a saved performance, type ESC-4 from the event screen. Make sure the disk with the performance that you want to load is in the disk drive. A filename prompt will appear - enter the appropriate filename then simply press RETURN.

Each event (except archery) has a sample performance on the HesGames disk. To load the sample, press ESC-4 and type in the following for the filename:

R/DEMO - RUNNING
R/DEMO - HURDLES
L/DEMO - LONG JUMP
C/DEMO - CLEAN AND JERK
T/DEMO - TWO HAND SNATCH

After you have loaded in a performance, press ESC-5 to see the classic event replayed.

100 METER SPRINT

- Press the ACTION key once to indicate you are ready to start the race. You'll hear the message ON YOUR MARK, and soon after, GET SET. Begin the sprint when you hear the word GO. If two players are running, both must indicate readiness before the race can start. If a previous performance is loaded in, it is always in readiness.
- Press the ACTION key of the second player (when you are running by yourself) to run against the computer.
- The starting blocks are equipped with sensing devices to detect if a false start was made.
- The instant you hear GO, start running by pressing the RIGHT and LEFT keys in rapid succession until you reach the finish line.
- After the runner crosses the finish line, he will continue to run a victory lap until you press any key.

SWITCHING BETWEEN RUNNING AND HURDLES

You can switch quickly between 100 meter sprint and 110 meter hurdles. While in either one of these events, press ESC-8. Now use the left and right cursor keys to select the event, then press ESC to exit control mode and go to the new event.
Apple II Computer Info

110 METER HURDLES
-----------------
- Press the ACTION key once to indicate that you are ready to start the race. When you hear the word GO run by hitting the LEFT and RIGHT keys rapidly.
- Run at an even pace between the hurdles and press the ACTION key when you want to clear the hurdle.
- Skim over the top of each hurdle—try not to fall down or tap the hurdle.
- Timing in the leap is critical—if you hit the hurdle you’ll lose seconds.
- The hurdler will continue running a victory lap until you hit a key.

LONG JUMP
---------
- Start off running as fast as you can by pressing the RIGHT and LEFT keys.
- The white line is the take-off board. Plant your feet and jump as close to the center as possible without going over the line (which would cause a foul and a message "bad jump"). Take off by pressing the ACTION key.
- To make sure you always land forward, press the RIGHT key just before you land.

ARCHERY
-------
- Each player gets six shots at each distance. (The scores are multiplied by six so that they compare to the actual outdoor event.)
- Keep an eye on the wind speed and direction, which can be unpredictable depending on the weather conditions for that day, such as clear or overcast.
- To select between a clear or overcast day (an overcast day has variable and higher wind speeds), press ESC-8, and use left and right cursor keys to choose. Press ESC to return.
- Select one of the targets; roughly position the bow by pressing the keys below:
  - U I O
  - J K L
  - M , .
- Nock the bow by pressing the space bar.
- Aim the bow as above using the sight and adjusting for wind direction and speed. Press the space bar when you are ready to release the arrow.
- The longer you take to aim and shoot, the harder it will be. Your grip becomes unsteady as time passes, and muscle fatigue sets in under the strain.
- You are allowed only a certain amount of time to shoot. If you fail to shoot in the time allowed, that shot will be cancelled and you will get a score of 0.
- If more than one player participates in this event, pressing ESC-9 switches from player to player.

SPRINGBOARD DIVING
-------------------
- Start with the easier dives until you get the feel of the board. You’ll soon be able to execute more difficult dives with precision, and eventually be able to “call” the dive.
- For a simple dive, press RIGHT once for a forward dive, or LEFT for a reverse dive. This signals to the judges the type of dive you will perform. The scores will clear and you’ll stand at attention to alert the judges that you are about to dive.
- Press the ACTION key once to start the forward momentum. You do not need to run down the board using the left-right motion.
- With no further action, the diver will spill off the end of the board. To make a better entry position, press the DOWN key to stop the rotation at the precise moment.
- Once having mastered the basics of diving, work on your spring action where you jump at the end of the board. Press the UP, DOWN, UP keys anticipating the movements of the diver towards the end of the board.
- Correct timing and rhythm give you the proper amount of height and power.
- Once in the air, time your entry into the water to complete the required number of somersaults for your chosen dive. Press the DOWN key to begin the entry. In a perfect entry, you enter the water vertically, your toes are pointed, and you make very little splash.
- You will be making a total of five motions once the type of dive has been selected—ACTION to start the run down the board; UP-DOWN-UP to obtain the proper spring; and DOWN to start the entry.
- Each judge scores the overall dive, however they may have different criteria for scoring the dives.
- Practice different types of dives by playing with the timing if the up-down-up motions.

CALLING THE TYPE OF DIVE

To "call" or announce the dive you plan to do, enter the control mode by pressing ESC-6. The TYPE OF DIVE box should flash. The dive you are required to perform will be indicated before each round. Press the up cursor key (CTRL-K/II+) until the ROUND flashes. Select the round by pressing right or left cursor keys. Press the down cursor key (CTRL-J/II+) to move to TYPE OF DIVE. Press the right or left cursor keys until you want to perform for the selected round flashes. You can pre-set up to ten rounds. Remember to set the round back to 1 if you want to start at round 1. Press ESC when you are ready to begin the diving sequence.

If you fail to perform the dive announced, you will get a FAILED DIVE message and receive no points, even if the dive was done well. If you complete the dive you announced, the judges will add a bonus of 10% to the score for pre-calling the dive.

CHANGING PLAYERS
To switch to another player press ESC-9.

WEIGHTLIFTING
-------------
- Your weightlifting power is in your thighs. You can control the
  thigh muscles with the UP and DOWN keys.
  - Start with lighter weights—45 kg is the lightest; 300 kg is the
    heaviest, until you develop weightlifting skills. Timing is critical
    and changes as you increase or decrease the weight.
  - If you watch weightlifters in action during competition, you may
    notice that the lifters develop precise rhythm as they lift all that
    weight.
  - To obtain this rhythm, press the DOWN and UP keys, pausing briefly
    to rest and gather strength at critical moments.
  - In the two-hand snatch, reach down, pull on the barbell, then bend
    down slightly to split the legs when the weight reaches chest level.
    Steady yourself and then thrust the weight up extending your arms
    overhead. (You will be making a total of four down and up motions—
    DOWN-UP-DOWN-UP.)
  - In the clean and jerk, first lift the barbell up to hip level and
    then drop down into a squatting position. Pause slightly and strengthen
    your legs (up) as you hold the weight at shoulder level. Pause to
    summon more power. Drop down slightly to bend your knees and
    immediately push up to center the weight in front of your nose. Push
    down to split your legs and extend your arms. Steady the weight and
    push for the final thrust. (You will be making a total of eight up and
down motions—DOWN-UP-DOWN-UP pause DOWN-UP-DOWN-UP.)
  - One player will continue lifting until you switch to the second
    player by pressing ESC-9.

CHANGING WEIGHTS
To change the amount of weight on a barbell, first enter control mode
by pressing ESC-6. The weight box will flash. Use the left cursor key
to decrease the weight and press the right cursor key to increase the
weight. Hitting these keys will change the weights in 2 1/2 kg steps. The
minimum amount of weight is 45 kg, and the maximum is 300 kg.

CHANGING EVENTS
To switch from one weightlifting event to another, press ESC-6 to
enter control mode. Press the up and down cursor keys until the event
flashes. Press the left and right cursor keys until the name of the
other event appears. Press the ESC key to leave control mode and go to
the new event.

CHECKING RECORDS
To see the U.S., World, and Olympic records press ESC-6. Press the up
and down cursor keys until the records flashes. Use the left and right
cursor keys to cycle through the records. Press ESC to leave control
mode.

Apple II High-Speed SCSI Card
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The Apple II High-Speed SCSI Card is a performance upgrade device for
Apple II personal computers and SCSI devices such as hard disk and CD-ROM
drives. The card provides increased transfer speed between the computer and
SCSI devices, which results in faster data processing and increased
performance. The card is compatible with all SCSI devices and is designed
to work with Apple II personal computers running ProDOS or AppleWorks.

Features and Benefits:
- **DMA Data Transfer** — On the Apple IIGS computer, data can be transferred at
  a rate of up to 1MB per second. On the Apple Ile computer, data can be
  transferred at a rate of up to 0.5MB per second. There are four switches on the
  card. One is used to set DMA on or off. The other three are used to set the
  SCSI identification number of the card — each SCSI device, including the
  computer, is set to a unique number from 0-7.
- **SCSI Compatibility** — The Apple II High-Speed SCSI Card requires only device-specific
  applications and drivers be installed on the system. The card comes with drivers
  and applications for hard disk and CD-ROM drives.
- **On-Board Terminator** — simplifies setup for the user when connecting
  SCSI devices to the computer. The user simply places one terminator at the end of
  the chain of SCSI devices.
- **Utilities** — Comes with improved hard disk utilities that partition and
  verify hard drives, and backup information. The Partition and Verify utilities
  take advantage of the improved firmware commands for hard disk drives. The
  Backup utility is now able to handle the resource forks that are part of the
  IIGS files. These are all ProDOS utilities and can be used by both Apple IIe
  and Apple IIGS users. In addition, the CD-ROM desk accessory for the Apple
  IIGS, CD-Remote, comes with the card.

System Requirements:
The Apple II High-Speed SCSI Card works on an Apple IIGS personal computer
or an Apple Ile computer with a 6502 microprocessor (note: older Apple Ile’s,
that have a 6502 microprocessor, will need to upgrade with an Apple IIe
Enhancement card). The Apple IIGS requires a 3.5-inch disk drive, while the
Apple Ile requires either a 3.5- or 3.5-inch disk drive. Both require a
device with a SCSI port, appropriate SCSI cabling, and one SCSI terminator.

There is no upgrade program for owners of the previous Apple II SCSI Card.

Apple II High-Speed SCSI Card
Order #: A022011/A

New Product Descriptions
New Product Highlights
3/19/90
Welcome to Middle-earth. This is the world of Bilbo the hobbit, of Thorin and Gandalf, of dwarves and trolls and wizards. This is the magical and mysterious land of J. R. R. Tolkien’s The Hobbit.

You are about to play one of the most sophisticated adventures ever designed for the microcomputer. Addison-Wesley and Melbourne House are very proud to be able to present the Hobbit Software Adventure, based on Tolkien’s brilliant fantasy novel. In the Hobbit Adventure, you play the role of Bilbo Baggins. You will be able to roam freely through Middle-earth, explore and discover this enchanted land. You will meet all types of creatures, some friendly and helpful, others very dangerous. Your adventure will be exciting and will hold many surprises each time you play.

If you are unfamiliar with hobbits, you should know that they are “a little people,” about half the size of humans. Since they spend a great deal of their time eating (at least six meals a day), they tend to have large and fat stomachs. Unlike most creatures of Middle-earth, they are not very magical, capable of performing only the most ordinary kind of trick. Hobbits wear bright-colored clothing but no shoes, since their feet have leathery soles and thick fur on the tops to protect them. They are a quiet and simple folk and do not care for anything unexpected. No self-respecting hobbit has any use for adventures.

Like other good hobbits, Bilbo just wanted to be left alone in quiet comfort. But there was always a little spark of adventurouness in him, a tiny bit of the not-entirely-hobbitlike Took-clan, inherited from his mother, Belladonna Took. Perhaps this was why Bilbo was singled out by the dwarves and mistaken for a burglar, and why he found himself reluctantly agreeing to join Gandalf and Thorin on the most incredible adventure any hobbit could imagine in his most un-hobbitlike dreams.

As the adventure opens, Gandalf the wizard has talked you (as Bilbo) into entering a new and exciting adventure helping Thorin the dwarf. Your Mission is to seek out the evil dragon, return the treasure he is famous for, and protect him. If he should die early in the game, it will be shown here. This is also the place where the computer will indicate when it does not understand something you typed. For instance, if you mistype the word door as “DOR,” the program will come back with:

I DON’T UNDERSTAND THE WORD “DOR.”

Other messages will also appear when the program is unable to execute your instructions. Each window will scroll independently of the other.

The rest of the screen is the “adventure window.” This is where you will find out what is happening in the adventure, what you can see, and what other creatures are doing and saying.

The adventure window is displayed on the screen in upper- and lowercase. Events that take place, whether performed by you or one of the other characters, will be shown here. Descriptions of locations and of objects and their contents, etc., will also be shown.

Usually, the text that is displayed on this screen is short enough to fit in one window. Occasionally, however, the screen must scroll to fit all of the information. When this happens, the screen will pause and the word MORE will appear. Press any key to see the rest of the information.

The adventure window is also the area where graphics depictions of the various locations will appear. Over 80 locations described in the book are represented in this adventure. When this happens, the bottom two lines of the adventure window will remain text to let you know what is happening, and the rest of the window will change to pictures.

Through the pictures of the locations contain many details, it is possible that Bilbo can see things and people in the area that you cannot see on the screen. Don’t be deceived by thinking that the screen shows everything. It is always a good idea to take a look around.

THE ENGLISH LANGUAGE:

The Hobbit program can understand the following words (valid
THE INGLISH VOCABULARY:

Movements:

NORTH (N)          NORTHWEST (NW)
SOUTH (S)           SOUTHWEST (SW)
EAST (E)            SOUTHEAST (SE)
WEST (W)            NORTHWEST (NW)
UP (U)              DOWN (D)

Action Verbs:

BREAK              SAY
CLOSE              GIVE
CROSS              GO
DIG                KILL
DRINK              LOCK
EAT                PUT
EMPTY              OPEN
ENTER              RUN

Special Commands:

EXAMINE            LOOK (L)
HELP               NOPRINT
INVENTORY (I)      PRINT
LOAD               PRINT

Prepositions:

ACROSS             INTO
AT                 OFF
FROM               ON
IN                 OUT

Adverbs:

CAREFULLY          QUICKLY
SLOWLY             VICIOUSLY

RULES OF INGLISH

English is one of the most sophisticated language-recognition programs developed for the microcomputer. It allows you to communicate with the program in a language and structure that is familiar to you. The rules of English are simple. The main thing to keep in mind is that each instruction must be in the form of "verb-the-noun," where the noun (or pronoun) can also be implied. Each sentence must have a verb.

RUN; CLIMB; WAIT are all valid sentences, with an implied pronoun of "I."

The meaning of the verb may be altered by the use of adverbs.

Run quickly
Viciously break the door

English grammar applies, and the order of the different parts of the sentences is usually not critical.

WITH THE SWORD CAREFULLY ATTACK THE TROLL
ATTACK THE TROLL CAREFULLY WITH THE SWORD

Adjectives that describe nouns must come before the noun. If it sounds right in English, it is probably valid in English.

OPEN THE GREEN DOOR is correct, but
OPEN THE DOOR GREEN is not.

Prepositions usually come before the noun in English.

ATTACK WITH THE SWORD
Pick up the gold
The preposition could go before or after some verbs, or even at the end of the sentence if it sounds more natural.

TURN THE LIGHT ON
Pick the gold up

USE OF AND:

You can use the word AND in all its normal meaning in English. This means, among other things, that you can enter more than one sentence or perform more than one action at a time.

Take the lamp and the rope out of the barrel
Drop the short and the long sword
Take the treasure and run

PUNCTUATION:

Sentences can be separated by the use of punctuation. You can use commas, semicolons, and periods as you normally would.

Quotation marks are used when you are speaking to another character. (see the section on Conversing.)

The only limitation the computer puts on what you can enter is that the command must not be more than 128 characters long.

Keep in mind, however, that if you enter a very long instruction, other characters in the adventure could use that time their own advantage.

USE OF EVERYTHING, ALL, EXCEPT:

It is sometimes not convenient to have to enter a long list of objects when the words EVERYTHING or ALL would suffice. You are able to use these words in English just as you normally would.

You may also specify what you want to manipulate by using EXCEPT in conjunction with ALL and EVERYTHING.

Eat everything
Break all the bottles
Open all except the green door

LIMITATIONS OF ENGLISH:

To describe an object, you are only able to use the object’s name and its associated adjectives (if any apply). For instance, if you see some delicious foamy beer in a bottle, you could say:

Drink beer
or Drink delicious beer
or Drink foaming beer
or DRINK DELICIOUS FOAMING BEER

all of these would result in quenching your thirst. You cannot, however, use the position of an object as its description.

DRINK BEER IN BOTTLE

would not be acceptable.

You cannot have more than one indirect object in a sentence. Basically, this means that you cannot do one thing in more than one way in the same sentence.

PUT THE ROPE ON THE TABLE and
PUT THE ROPE ON THE CHAIR
are both valid, but
PUT THE ROPE ON THE TABLE ON THE CHAIR
is not.

By the same general rule, you cannot say things like
ATTACK THE TROLLS WITH EVERYTHING

SPECIAL COMMANDS:

There are a number of special commands unique to the Hobbit Adventure:

LOOK (L) gives you a graphic depiction of your location. Then, by pressing a key, you will receive a text description of the location, including all exits and objects (other than any you are carrying).

INVENTORY (I) describes everything you are carrying.

EXAMINE (object) enables you to have a closer look at any object you come across.

WAIT passes the time.

@ (no return) instructs the program to repeat the last command. (This must always be the first input of a sentence.)

NOPRINT disables the PRINT command. (PRINT and NOPRINT may not be available in all versions. Check your reference card.)

SAVE allows you to save your current game on disk. After you have saved the game, play will continue normally. The next time you play, you can pick up where you left off.

LOAD loads a previously saved game from the disk.

QUIT restarts the game.

SCORE tells you what your percentage is so far.

Pause suspends the game until another key is pressed.

DOCUMENT hobbit.2.of.2

INTERACTING WITH OTHERS:

One of the fantastic features of the Hobbit Software Adventure is ANIMACTION. With ANIMACTION, each creature in the program has an independent character of its own. It is capable of performing a wide range of actions and of making decisions based on what is happening around it.

Each character will follow a general course of action that is in keeping with its particular personality. However, the specific actions it takes are (naturally) unpredictable and will be different each time you use the program. They will react in some way, not only to what you do but also to what every other creature they come into contact with does!

Just like in our world, the creatures here are doing things all the time, even when you cannot see or hear them. They will go about their business even when you are not around. This is because the Hobbit is played in "real time," which means that things will happen even if you are doing nothing. If you just sit and watch the screen, you will find that after about 30 seconds, the following message will appear:

- You wait -
-Time passes. . .

Only when you are actually keying in an instruction will time "stop" in Middle-earth.

Because of these special features, you will find that each time you enter the Hobbit Adventure, the game will proceed in a slightly different manner. The further you get into the Adventure, the more different your experiences will be. This means that there is no unique solution to the Hobbit Adventure; you will face slightly different problems each time you play.

This is not a program that you will use only once. Each time you play you will be embarking on a new exciting adventure.

CONVERSING:

The Hobbit Adventure also features Animtalk, which allows you to talk to the other creatures in Middle-earth.

Of course, because all creatures are animated through Animation, they will make up their own minds about whether to talk to you or follow your suggestions.

The way one talks to others in the Hobbit Adventure is quite simple:

You enter

SAY TO (name) "(sentence)"

For instance:

SAY TO GANDALF "READ MAP"

But remember that although this form is certainly correct, you may still receive the message:

- Gandalf says "No!"
Try not to say too much to one creature at a time. If you are long-winded, a creature may think you are a bore and not agree to help you. For the same reason, it is a good idea to try to limit the use of ALL in your sentences to other creatures.

You must be more careful than usual in typing in what you say to other creatures. They, unlike the computer, will not tell you when they do not understand what you are trying to say. They will just think you are a little odd and will probably not be too anxious to stay around you.

COOPERATING

It is important for you to know that, for some of the problems in the Hobbit Adventure, a solution only exists if you are willing to cooperate with the other creatures in the adventure. As you are only a hobbit, you have no magical powers, and you will find that there are many things that others are able to do better than you (see the Laws of Physics in Middle-earth). So you must stay on good terms with your friends. Of course, sometimes you will have to be on your own and learn to fight your own battles.

FIGHTING

As much as Bilbo might like to think otherwise, there would be no adventure in the Hobbit without danger, and many of the creatures you will meet in Wilderland are less than friendly. Many will attack you on sight. Some will try to kill you, while others will want to capture you. It is also safe to assume that any creature will fight back if it is attacked.

As you do not specify a weapon (even if you are carrying one), the program will assume that you want to fight with your bare hands. Because of the viciousness of some of the creatures in Wilderland, don’t be surprised if you a dead body in your travels. Take care that it isn’t your own!

******************************************************************************

GENERAL CONCEPTS

As stated above, in the Hobbit Adventure you play the part of Bilbo Baggins, roaming around Middle-earth and interacting with the other characters.

On your adventure, you will encounter many strange and wonderful objects. Some may have magical properties. Some may be deceiving, and may not be what they first seem to be. Some can be used as weapons, others can be eaten, and so on.

LAW OF PHYSICS IN MIDDLE-EARTH:

There are certain general laws of physics that apply in the Hobbit Adventure and they must be understood and obeyed.

You cannot lift an object that is too heavy for a hobbit to carry. In addition, if you are already carrying something, you cannot lift another object if the combined load is too heavy. This applies to all of the creatures in the adventure, also. However, since they are likely to be stronger than you are, they will be able to lift objects that you can’t.

You do not have to be carrying an object in order to be able to use it. For example, if there is a sword lying on the ground, you can say

KILL THE GOBLIN WITH THE SWORD

combining the two actions (picking up and killing) into one sentence. The exception is when the object that you want to use is being carried by someone else. Other creatures are not likely to let you take things away from them.

Some objects can act as containers, such as sacks, barrels, etc. You cannot put an object into a container if it is too large to fit, nor can you put something into or take something out of a container that is closed.

Some containers may be transparent; others are opaque. You will be able to see the contents of any transparent containers from the outside. However, you can only see the contents of an opaque container if you open it.

Liquids behave as you would expect - they cannot be carried unless they are in a container; if the container breaks or falls, the liquid will spill, and so on.

Some objects may be locked. Doors are obvious examples; others are windows, chests, caches, and so on. To unlock them, you will need the right key.

Some objects are breakable, so you must be careful in how you handle them. In some cases, you might want to break an object. Be careful how you choose to break things. If, for instance, you try to break a door with a bottle, you will find that the bottle will break not the door.

Fighting will make you weaker, as it takes a great deal of energy. You will need to eat regularly to get your strength back. If you don’t you may find that you are too weak to lift even the smallest object. But be warned - don’t be a glutton. While hobbits may be inclined to eat 7 or 8 meals a day in their quiet, ordinary lives, there isn’t time for such things on adventures.

In order to reach the dragon and his treasure, you will need to go through caves, dungeons, and other underground locations. Some places will have natural light (if it is daytime), but others will be dark and forbidding. If you go into a dark location without a lamp or other source of light, you will not be able to see anything. Be careful, since you may become disoriented and lose your sense of direction. It is very dangerous to move around in total darkness.

FINDING YOU MAY AROUND:

If you want to go through an entrance or passageway, it is quite valid to say something like

GO THROUGH THE GREEN DOOR

You may also go through windows, trap doors, and other passageways. Obviously, if a passageway is closed, you must open it before going through.

You are also able to LOOK THROUGH openings. This can be very useful if you want to see where you would get by going in that direction, or to see who is there waiting for you.

ENTERING PLACES:

If you know where you are going (maybe you have been there before), you can specify the location you want to enter rather than the direction of movement. For instance, to the east of your home is the Lonelands, so you could say

ENTER LONELANDS or GO INTO LONELANDS

if someone you want to talk to has entered another location, you can follow him.

FOLLOW GANDALF
Apple II Computer Documentation Resources (a2_docs_documentation.msw)

DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 511 of 1262

SPECIAL CROSSINGS:

Crossing rivers, ravines, chasms, and so on can be dangerous and difficult. You can try to jump across a ravine or swim across a river. In some cases you might be able to use materials you find to build a temporary bridge, or use a rope to swing across.

MAPPING:

As you make your way around the wilderland, you will find that movement here is much more complex than it is in the world of man. You will find yourself on trails and paths, in caves passageways, some of which seem to go around in circles with no escape. For this reason, you will find it very helpful to make a map as you go along, adding to it each time you play the game.

However, one of the obstacles you will encounter in Middle-earth is that the direction you take from point A to point B may not be quite the reverse of the way from point B to point A. In addition, you will at times be climbing up or down, requiring representation of several levels in your map. Therefore you may need to devise an even more creative method of recording your movements. One way is to create a grid, such as the mileage charts used on some road maps. Locations travelled from could be listed on the rows and those travelled to in the columns. The intersecting spaces would contain the directions travelled to get there. Using a grid will enable you to record how you made your way from one location to another and even back again. You can keep track of where you have been and know where you can go from where you are. This method is particularly effective for mapping the twisting, turning paths of Winderland, entering and leaving the underground locations, and keeping track of secret or magical passageways.

SCORING:

While playing the Hobbit Software Adventure, you build a cumulative score in increments of 2.5 percent for visiting particular locations or performing certain actions. If you should come to an untimely demise, the program will tell you what your score is. You can also receive the score "in progress" by typing the special SCORE command. You do not have to reach 100 percent in order to "complete" the adventure. In fact, you can fulfill your goal while accumulating a score of only 50 to 60 percent. To build your score, try to be as active as possible, visiting many locations and seizing all opportunities for adventure.

************************************************************************

INGLISH DICTIONARY:

Key:

A = adverb
M = movement
P = preposition
S = special verb
V = action verb

GO - V     LOCK - V
HELP - S    LOOK (L) - V
IN - P     NOPRINT - S
INVENTORY (I) - S NORTHEAST (NE) - M
KILL - V    NORTHWEST (NW) - M
LOAD - S    OFF - P
SHOOT - V    ON - P
SOFTLY - A   OPEN - V
SOUTH (S) - M OUT - P
SOUTHEAST (SE) - M PAUSE - S
SOUTHWEST (SW) - M PICK - V
SWIM - V PRINT - S
TAKE - V    PUT - V
THROUGH - P QUICKLY - A
QUIT - S
TIE - V     RUN - V
THE BOTTOM, CENTER OF YOUR SCREEN. WHEN AROUND THE COMMAND YOU WANT HIT [RETURN]. THE FOLLOWING IS A BRIEF DESCRIPTION OF ALL ICONS AND THE USES.

THE MAIN MENU

<PRINT>
TO PRINT PREVIEW YOUR TEXT, SPECIFY PAPER TYPE, OR CHOOSE BEGINNING PAGE NUMBER. THIS ICON LOOKS LIKE (WHAT ELSE?), A PRINTER.

<EDIT>
TO ERASE, PUT AN ERASED PART BACK, MOVE OR COPY PART OF THE TEXT, FIND A WORD OR A PHRASE AND REPLACE IT WITH SOMETHING ELSE. THIS ICON LOOKS LIKE A PIECE OF PAPER WITH AN 'X' IN IT.

<FILE>
TO GET A DOCUMENT OUT OF THE FILE, INSERT SOMETHING FROM ONE DOC INTO ANOTHER, FILE A DOCUMENT, OR INCLUDE ANOTHER DOCUMENT WHEN IT'S TIME TO PRINT.

<EDIT>
TO SET SPACING, START A NEW PAGE, SET TEMPORARY NEW MARGINS, MAKE AND OUTLINE, BOLDFACE OR UNDERLINE YOUR TEXT, OR TO MAKE A HEADINGS AND OR FOOTINGS ON YOUR DOCUMENT.

<CUSTOMIZE>
TO MAKE YOUR HOMEWORD DISK FIT YOUR NEEDS.

WHILE IN THE TYPING AREA, YOU MAY USE THESE COMMANDS. IF THE CONTROL KEY IS INDICATED, PRESS IT DOWN AND HOLD IT DOWN WHILE YOU PRESS THE APPROPRIATE LETTER KEY.

CURSOR MOVEMENT

--- ---- ----

<PRINT>
TO PRINT PREVIEW YOUR TEXT, SPECIFY PAPER TYPE, OR CHOOSE BEGINNING PAGE NUMBER. THIS ICON LOOKS LIKE (WHAT ELSE?), A PRINTER.

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CURSOR MOVEMENT

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<EDIT>
TO SET SPACING, START A NEW PAGE, SET TEMPORARY NEW MARGINS, MAKE AND OUTLINE, BOLDFACE OR UNDERLINE YOUR TEXT, OR TO MAKE A HEADINGS AND OR FOOTINGS ON YOUR DOCUMENT.

<CUSTOMIZE>
TO MAKE YOUR HOMEWORD DISK FIT YOUR NEEDS.
 Lieutenant, Captain, and Commander. Once you have successfully completed the
ASSAULT Mission as Captain, you will be promoted to the rank of COMMANDER. As
Captain and Commander, you will attempt the same series of missions -- but
against progressively fiercer opponents.

With each promotion you will be given a secret access code that must be
entered before you are allowed to select either the CAPTAIN or COMMANDER level.
Unless you have been promoted, select LIEUTENANT by highlighting that option
and pressing the fire button (or fire key).

CHOOSING YOUR MISSION

Next, you must choose a mission from among the five shown. Missions are
listed from easiest (TRAINING) to most difficult (ASSAULT) -- the harder the
mission, the less time you have to complete it.

o TRAINING (without hostages)
 o TARGET
 o ULTIMATUM
 o RESCUE
 o ASSAULT

Move your control forward or back to highlight the mission you wish to
choose, then press the fire button to select that mission.

You will direct all operations from Command Headquarters. Surveillance
cameras will allow you to see what is happening at all times, and you will be
in constant contact with your men; their code names are DELTA, ECHO, MIKE, HOTEL, TANGO, and BRAVO. They are all skilled professionals, but will not act
without your guidance. While you are directing one man, the others will remain
in their current positions.

THE MAP

After selecting a mission, your Command Console will display a map of the
Embassy and the surrounding area. A message detailing your first operation will
scroll across the screen; when you have read the message, press the fire button
to continue. Note the three locations that are marked on the map with an "X."

Your first assignment is to place the team's three marksmen (DELTA, ECHO, and
MIKE) in these strategic locations across the street from the Embassy. Once
inside the selected building, they will make their way to the roof and set up
sniper positions to provide cover for the Direct Intervention Team.


"Don't be tempted to put two men at the same location -- you want snipers
on all three sides of the building. For maximum coverage, only one man
should be place at each target area. So what if the last guy takes a few
hits -- that'll teach him to stay out of the line of fire next time..."

PLACING YOUR MARKSMEN

To control each man in turn, press the corresponding function key:
Delta: Z  Echo: X  Mike: C

An image of the man you are directing will appear on the map in his current
location. To begin the maneuver, press the ESC key. A surveillance camera
shows your marksman in his current hiding place across the street from the
Embassy. Time remaining is shown on the upper left side of the Console (the
game clock runs slower than real time); the name of the active man is shown on
the upper right.

Terrorists sweep the area with spotlights, looking for Assault Force team
members. Once the man you are directing leaves his hiding place, he runs the
risk of being caught in the spotlights. If they spot him, the terrorists will
immediately open fire and he will have to move quickly to avoid being gunned
down. (Your marksmen are vulnerable when out in the open, since they have no
protection and are not able to fire back.) The marksmen can drop, roll, duck
into doorways, or dive through windows to avoid the gunfire.

- CONTROLS -

STANDING UP

Hide

Run left <- oo -> Run right

Roll left || \ Roll right

Drop

LYING DOWN

Stand up

Crawl left <- o -> Crawl right

To PAUSE the game, press the "P" key; press any other key to resume play. Move the joystick left, right, or back to leave your hiding place. If your man is lying down and does not crawl in either direction, he will automatically stand up. If you do not move your man, he will automatically hide in the nearest location after a few seconds.

If one of your marksmen is gunned down on the street, you must return to the map and select another man (by pressing his function key). When your last man is in position, you are given the option of starting over or proceeding to the next stage. NOTE: If all three marksmen have been killed, you MUST start over.

---: { STAGE 2 } :=--

THE ROOF

Once your marksmen are in place, a helicopter will carry the three-member Direct Intervention Team (HOTEL, TANGO, and BRAVO) to the roof of the Embassy. Once your men are on the roof, the Console screen will display a map of the Embassy and the surrounding buildings. An "X" shows the position of each man on the roof, as well as the locations of the men stationed across the street. The "X" of the active man is shown in red; the others are shown in white. The name of the man currently under control is shown on the upper left side of the Console. You may switch to a different team member at any time simply by pressing the corresponding key:

Delta: Z  Hotel: V  
Echo : X  Tango: B  
Mike : C  Bravo: N

A control panel on the right side of the Console shows the time remaining and the names of the surviving team members. If one of the team members is in immediate danger, his name will begin to flash. In this case, you should switch to that man and take whatever action is necessary to prevent him from being killed.

USING YOUR MARKSMEN

By selecting one of the marksmen across the street from the Embassy, you can survey the side of the Embassy in his field of vision. To view the Embassy from the vantage point of a marksman, select that man and press ESC. The Console screen will show your marksman on the left, and a view of the Embassy as seen through his gunsight on the right.

Move the joystick to move the gunsight around the screen (keyboard users should press the corresponding direction keys). When the gunsight is within range of a window, a dot will appear in the middle of the cross hairs. To shoot, press the fire button while the dot is visible. Press the ESC key to return to the map screen, or activate another man by pressing his function key.


"Think twice before you order a marksman to shoot -- the person in his gunsight may be a hostage, or even one of his own team. Be sure to scope out the situation using a man on the inside before you make your move."

RAPPELLING

---: { STAGE 2 } :=--

The Direct Intervention Team (HOTEL, TANGO, and BRAVO) must gain access to the Embassy by positioning themselves on the edge of the roof, rappelling down the side, and breaking in through a window. To select one of these men, press the corresponding key. Next, you must position your man on the edge of the roof. Press the fire button to cycle through the available positions. When you have selected a position, press the ESC key to view the man as he prepares for his descent. Follow the instructions below to direct your man as he descends from the roof.

- CONTROLS -

Climb up

Stop <- o -> Descend

PUSH AWAY: Fire button

First, press fire to have your man push away from the wall. (The longer you hold down the fire button, the further he will push himself away from the wall when the button is released.) Let go of the fire button and quickly move the joystick right to have the man begin his descent; move the joystick left to stop his descent. If your man descends too far and ends up below the first floor windows, you can have him climb up the rope by pushing the joystick forward. (To perform these maneuvers with a keyboard, simply press the corresponding keys.)

BREAKING A WINDOW

---: { STAGE 2 } :=--

As he approaches a window, your man must stop his descent quickly and attempt to break the glass with his feet. (NOTE: Even if a window has already been broken by one of your men, the next man must still "break" through it.) Once the window is broken, your man will automatically enter the building. Watch out for terrorists inside the Embassy, who can shoot your men through the windows!


"To hit a window with enough force to break it, you have to push as far away from the building as possible. Also, it's a lot safer to descend in a series of short jumps. If you get moving too quickly, you may not be able to stop in time and you'll hit the sidewalk like a ton of bricks -- I lost a couple of rookies that way."

IN Inside THE EMBASSY

---: { STAGE 3 } :=--

Once inside the Embassy, a view of the room your man is in is displayed on the right side of the Console. Above this screen is the name of the man currently being controlled. A control panel on the left shows the time remaining, and surviving team members. If one of the team members is in immediate danger, his name will begin to flash. In this case, you should switch to that man and take whatever action is necessary to prevent him from being killed. A mini-map is shown in the center of the control panel.

THE MINI-MAP

---: { STAGE 2 } :=--

The mini-map shows the rooms and hallways of the floor that your man is on.
By noting where he came in, you will be able to pinpoint his location on the map and then follow his progress as he moves from room to room. The floor number is shown in the lower right corner of the map. Use the stairways on the east side of the building to move to a different floor; the stairs to a higher floor are marked with an up-arrow, the stairs to a lower floor with a down-arrow.

Additional Mini-Map Clues:
As lieutenant, you are given additional clues on the mini-map that show you the location of your men as well as that of the terrorists and hostages. The man you are directing is indicated by a small red arrow; other men are indicated by red dots; terrorists are indicated by yellow dots, hostages by white dots. As captain, you will see terrorists and hostages only while you are in the same room with them.

Richard M. Lawrence, Assault Force Commander 1969 - 1977

"Pay attention to your surroundings and try to learn the layout of the Embassy like the back of your hand. Take advantage of the extra clues on the mini-map -- once you're promoted, you won't have that luxury anymore..."

CONTROLS

Forward
•
Turn left < 0 > Turn right
•
Turn around
•
FIRE: Fire button

MOVEMENT

Move your man forward and turn left or right by moving the joystick in the corresponding direction. To turn completely around, pull the joystick back. Inside a room, your movements will always place you with your back to a wall (or doorway), facing the center of the room. Move the joystick left to face left; move the joystick to face right. Push the joystick forward to move forward through a doorway. If you move forward toward a wall, you will automatically turn around so that your back is to the wall. If you are in a doorway, pull the joystick back to turn completely around; if your back is to a wall, you will not be able to turn around.

Commie Scum, Hostage GS expert 1990 - ?

"Steering yourself through hallways is a lot easier, but maneuvering around in rooms is a bit tricky and will take a little getting used to. But don't worry; it'll come to you in no time. After all, if you're smart enough to own an Apple IIGS personal computer, don't you think you'd be able to figure out some silly game controls?"

TERRORISTS

When you encounter a terrorist, be prepared to kill... or be killed! Press the fire button to shoot. (you have unlimited ammunition.) While the fire button is pressed, move the joystick left or right to move your weapon in the corresponding direction. Pull the joystick back to shoot higher, and push it forward to shoot lower. (These are like the controls to an airplane, right?) Terrorists move quickly from room to room, and may hide behind other terrorists or a hostage. Hostages will only move if they are accompanied by a team member or a terrorist; if you see a hostage moving, you can be sure that there is a terrorist behind him! If a terrorist is guarding a hostage, you must try to kill the terrorist without harming the hostage.

Vincent "Hit Man" Perelli, Assault Force Captain 1983 - 1986

"If you're in a room with a terrorist, you won't be able to move to the same side of the room as the terrorist. If a terrorist is behind a door, you won't be able to go through that door until he moves away."

RESCUING THE HOSTAGES

The hostages are scattered throughout the Embassy, and can be alone or guarded by terrorists. When you meet face-to-face with a hostage, he will automatically follow you (as long as another hostage is not already following you). In order to secure the hostages you must move them all, one by one, to the small room in the upper right corner of the third floor (the room without any windows). Once you lead a hostage into this room, he will remain there and will not follow you out.

As a Lieutenant, you will be able to locate the hostages and terrorists easily by using the clues on the mini-map. As a Captain or Commander, you will have to search each floor room by room to find all the hostages. Once you have placed hostages in the corner room on the third floor, keep an eye on the stairways -- terrorists may go after them while you are searching other floors.

DON'T FORGET THAT YOU CAN CONTROL ANY (SURVIVING) TEAM MEMBER SIMPLY BY PRESSING THE KEY FOR THAT MAN -- SUCCESS DEPENDS ON YOUR ABILITY TO CO-ORDINATE THE EFFORTS OF THE ENTIRE TEAM.

Actually, there is no real Stage 4 in the game, but the manual has a section entitled "Stage 4". Go figure!

THE OUTCOME

When your men have secured all the hostages, or killed all the terrorists (or if all three members of your Direct Intervention Team have been wiped out), the final screen will appear. Press the fire button to get an assessment of your performance.

Your mission is a success if you manage to kill all of the terrorists or regroup all of the hostages in the third-floor room, without losing any of your men.
Proterm Special Emulation

First of all ill just explain what this is, for those who dont know...

PSE is a special 'Apple' emulation developed by the makers of Proterm (an apple Terminal program) they took the idea of DataMedia Emulation (the use of inverse blocks and characters over the modem for crude graphics further by adding the capability of also using the apple's built in 'Mousetext Characters'. This allowed for an interesting way to 'Liven' up Bbs', menu's were no longer just text, but now could be snazzy and eye-catching...

To use Proterm special in the beginning you had to have Proterm version 1.9 or better, and you also needed a BBS that supported PSE. By setting the Emulation to 'Proterm Special' when calling a PSE Bbs, you would then see any PSE the board used... At first it was quite the trend, but like all things it died out eventually, and was seen here and there. But in the last few years it has come back into use for Bbs' and Advertisements for Bbs', along with some imagination, PSE was responsible for some of the best Bbs' seen...

'A Emulation'

Quick reference for using the Emulation

[1] Boot up Proterm 1.9 or Better (current is 2.2)

[2] Once at the Main Menu, you must goto your dial list (cmd 'D') and choose or add a PSE Bbs.

[3] If Editing an old Bbs dial data, you must choose 'EDIT'.

Now press return until the highlighter is on 'Status Bar: Yes No'

When using a PSE Bbs, it is best to turn off your status bar so that any PSE they use wont be messed up by the missing screen area... now rtn, This gives you the 'Terminal Emulation' Prompt, use your left and right arrow keys to flip through the supported emulations until you find 'Proterm Special'. Press return until you are back at the 'Dial' prompt (Proterm will save the newly edited Spec's to Disk)

[4] Now.. whenever you dial that BBS, you can view whatever PSE they have!

Proterm Special Charcters (Control & Mousetext)

When using PSE, you have the ability to Turn on & off the different functions such as 'Mousetext', 'Inverse', and Ascii. You do this by using the Control characters given in chart [--A.1--] & [--A.1b--]. These Control Charhs have various functions, from screen movement to Insert/Deletion.

Depending upon how you are typing up a PSE file, you might not have access to most or all of these options. When using the Proterm Editor you may use all of these options by pressing ::Open Apple 'P':; then you type the actual Character needed (example: Open Apple 'P' + 'N' this will show you the actual character in inverse like this ) By using certain of these you turn on Sub functions like Mousetext, whatever is after the Ctrl-P in the file will be converted to its Mousetext Equivalent [chart --A.2--] (Not all Keys have Mousetext equivalents).

Viewing PSE with Proterm outside of a BBS

[1] Boot Proterm 1.9 or Better

[2] Use the 'Open Apple/Control/T' command to put Proterm into a fake Online Mode

[3] Now use the Open Apple 'O' command to edit the online parameters.

Press Return until you reach 'Duplex', change this to Half. Change the 'Status Bar' to 'No- status bar. And then change the Emulation to 'Proterm Special'

[4] Now use the Open Apple 'S' command (Send) and choose ASCII send

[5] You can either send a PSE file from disk or from the Copy Buffer, so choose whichever.

[6] Now, Edit the ASCII send Parameters like this:

Change the line width to 'AA'
Use the left arrow key to change the Inter-Char and Inter-Line to '0'
Now send... it should goto the screen, if not, recheck the Online parameters, and make sure you are in half duplex.

Chart [--A.1--]

Pse Control Charaters

(AOA-P = Proters Open Apple 'P' Ctrl Char Command)

(These FT keys -ONLY- work in Proterm, SS allows limited use of Ctrl Cmds)

<table>
<thead>
<tr>
<th>Ctrl Char's</th>
<th>PT Key's</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OA-P 'O'</td>
<td>Turns on the 'Inverse' Command (inv=on/mt=off)</td>
</tr>
<tr>
<td></td>
<td>OA-P 'P'</td>
<td>Turns on the 'Mousetext' Command (inv=on/mt=off) ('Look to chart --A.2-- for Mousetext Info~')</td>
</tr>
<tr>
<td></td>
<td>OA-P 'N'</td>
<td>Turns off both the Mousetext and/or Inverse Cmds</td>
</tr>
<tr>
<td></td>
<td>OA-P 'H'</td>
<td>Move cursor Left one space</td>
</tr>
<tr>
<td></td>
<td>OA-P 'U'</td>
<td>Move cursor Right One Space</td>
</tr>
<tr>
<td></td>
<td>OA-P 'K'</td>
<td>Move cursor up one line</td>
</tr>
<tr>
<td></td>
<td>OA-P 'J'</td>
<td>Move cursor down one line</td>
</tr>
<tr>
<td></td>
<td>OA-P 'I'</td>
<td>Move cursor to next TAB (Tab's are every 8 spc's)</td>
</tr>
<tr>
<td></td>
<td>OA-P 'A'</td>
<td>Move cursor beginning of line</td>
</tr>
<tr>
<td></td>
<td>OA-P 'B'</td>
<td>Move cursor to end of line</td>
</tr>
<tr>
<td></td>
<td>OA-P 'X'</td>
<td>Moves cursor to Home Position (0,0) w/o Clearing</td>
</tr>
<tr>
<td></td>
<td>OA-P 'D'</td>
<td>Delete cursor's current position</td>
</tr>
<tr>
<td></td>
<td>OA-P 'F'</td>
<td>Insert a space at cursor</td>
</tr>
<tr>
<td></td>
<td>OA-P 'Z'</td>
<td>Delete Current Line</td>
</tr>
<tr>
<td></td>
<td>OA-P 'V'</td>
<td>Insert a Blank line at cursor</td>
</tr>
<tr>
<td></td>
<td>OA-P 'Y'</td>
<td>Delete from cursor's position to end of line</td>
</tr>
<tr>
<td></td>
<td>OA-P 'W'</td>
<td>Delete From Cursor to end of line</td>
</tr>
<tr>
<td></td>
<td>OA-P 'L'</td>
<td>Clears Screen and moves Cursor to Home pos (0,0)</td>
</tr>
<tr>
<td></td>
<td>OA-P 'G'</td>
<td>Sounds Apple's --Bell--</td>
</tr>
</tbody>
</table>

The next chart [--A.1b--], contains more Ctrl Chars, but these require a better explanation, they are MORE involved

Chart [--A.1b--]
Control Characters:: Complicated

Control 'R':{[Repeat]}:::::::
This Control function is used when repeating one Character 3 or more times in a horizontal line (ie: Top of a box) it is used like so:

------- AB -------
'A' stands for the Actual Character you wish to repeat
'B' stands for the ascii equivalent of the number of times you want it repeated
(i.e: Line of 64 equal signs would be --> =8)

Control 'T':{[Tone]}:::::::
This is the PSE sound generator command, with some skill you can use this to play simple songs... it is used in this format:

-------- T1T2D -------
'T1' stands for Sound Tone 1
'T2' stands for Sound Tone 2
'D' stands for Duration

For a single tone use the same value for T1 and T2, dual tone use Diff values for both...

Control 'E':{[PSE Detect]}:::::::
This is sent out by a BBS to detect wether PSE is allowed by the User. If the user does have PSE active, a control-[ ] is sent back (Ascii 29) It gives an easy way to detect PSE users for ASCII/PSE BBS's

Control '^':{[Position]}:::::::
This is an easy way to Position the Cursor anywhere on the screen. It is used like this:

------- -AB -------
'A' stands for the Ascii equivalent of the Horizontal position +32
'B' stands for the Ascii Equivelent of the Vertical position +32

(i.e:Positioning the cursor at 'Horizontal=5 and Vertical=5' would look like this: 5+32= 37 / Ascii(37) = % ----->> -%% real easy!!)

Character | Description
-----------|----------------------------------
A | Hollow Apple shape (apple //) Hollow triangle (Laser128)
B | Pointer, solid upside down check
C | Hour Glass shape
D | Check mark
E | Inverse Check mark
F | Left half of a running man
G | Right half of a running man

The end.....
Well, this is just file one, the next files will discuss techniques of making Fast/small PSE files, as well and hints on animation

Also, there will be specific files or parts of files discussing the different PSE editors out (Thier good & Bad points!!)

Thank you all, Ace McCooy
Hello, yes, finally i have been talked into writing part 2 and soon part 3 of this series... maybe more? Dunno, but i am thinking of writing my own Pse editor which will incorporate some of the best editors into a single easy to use program... well on to the file.

Proterm Special Emulation:: Speed and Size!

Speed in Pse is a very touchy subject, alot of the best heavy pse games and Boards out are slow and clunky... people still refuse to do the extra work required to make Pse go like lightening. Size, with the use of message bases to distribute Pse ads and animations, people started to worry about size. The normal Msg base has a 4k limit on messages entered or uploaded, although this is plenty for a nice ad, some ad's are chopped off, many dont work at all! This is why you are going to learn about giving speed and size to Pse ads and animations!

Speedy Pse....

In using Pse you can do a number of things that will speed up those ads, most will be covered, those that arent will be at a later date once you've become Pse affluent...

---

An Ace McCoy / Wetware Inc. Production...

-- This is part of a series of files --
-- Written to help Moderners learn to --
-- write PSE ads/Animations....... --
-- Proterm Special Emulation --
-- :::::::::::::::::::::::::::::::::::: --
-- How to Guide --
-- ::Part 2: :: --
-- --
-- Written By Ace McCoy --
-- Jan 23, 1991 --
--
--
---

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New Commands...

This Ctrl-^ function is used to position the cursor. If they are used to reposition the cursor space by space (like Street Scenes) the extra commands tend to slow the pso. In order to speed up Pse, you should remove all extra ctrl-"s used...

Extra Ctrl-"s are used when you are positioning the cursor constantly space after space to print a horizontal sentence or string like so:

-ab<<-bb<<-cb<<-db<<-eb<<-fb<<-gb

Will give an output of '<<<<<<<' at line:66 columns:65-71

This does the same thing, just alot faster... remember, look to file #1 for Ctrl-R info... some is also given at the end of this file...

Size... it really does matter!!

Size in Pse ads is usually not a problem, seeing as you have a whole 4k to use that is... But in some really good ads where room is used in large amounts, it is best to try and shorten the file by removing unneeded characters...

Here are some of the most common space wasters in pse ad's:

[1] Excess use of Ctrl-"s... this was covered earlier in the file... it will make the pse faster and smaller.

[2] Repeated characters without using ctrl-R. Use Ctrl-R whenever possible... it save alot of room and speed. It was also covered earlier.

[3] Printing over 4 Spaces in a string when not needed. If you print a string like:

-abABCDEFGHI.KL

MNOQPQRSTUVWXY2

You can save time and space by either replacing the spaces with a Ctrl-R of the equivalent number of spaces, or remove them and just use a Ctrl-" to reposition the cursor to print the rest of the string that many spaces away... these are used like so:

Ctrl-R: -abABCDEFGHI.KL MNOQPQRSTUVWXY2

Ctrl-": -abABCDEFGHI.KL-zbMNOQPQRSTUVWXY2

Apple II Computer documentation Resources (a2_docs_documentation.msw)
Both are the same size... but the Ctrl-R wastes a little time by printing the spaces, either will work though.

Well... this isn't as comprehensive as I had hoped... but it is fairly easy to understand for a person who read and understood the first part of this series. Look for updates to the series giving more detail and information, possibly, if I follow through, you will see a fully featured Editor combining the abilities of all of the best editors... it will even do speed and size editing (fudgepacking) on its files...

Don't get your hopes up though, you might just see improved or rewritten Street Scenes or Fudgpackers before then...

>>>>>>>>> Appendix <<<<<<<<<<<

Control 'R': [Repeat]:::::::
---------------------------------
This Control function is used when repeating one Character 3 or more times in a horizontal line (ie: Top of a box) it is used like so:

----- AB ------

'A' stands for the Actual Character you wish to repeat
'B' stands for the ascii equivalent of the number of times you want it repeated

(ie: Line of 64 equal signs would be --> =@)

Control '^': [Position]:::::::
---------------------------------
This is an easy way to Position the Cursor anywhere on the screen. It is used like this:

----- -AB ------

'A' stands for the Ascii equivalent of the Horizontal position +32
'B' stands for the Ascii equivalent of the Vertical position +32

(ie::Positioning the cursor at 'Horizontal=5 and Vertical=5' would look like this: 5+32=37 / Ascii(37) = % ---->> -%% real easy!!)

(Look to How.to.pse.p1 for more indepth info on PSE)

Call these Bbs's:
708/312 area code!

Black Dragon Society // 708-510-0404 Running DDBBS/Awesome Game & Msg area
Martial Art Academy 708-967-7503 Running modified Tacs -- Cool BBS
The Gallery 708-656-5355 Running modified GBBS/Awsm Gms/Mogs
Gates of Delerium 708-881-1811 Running modified Infinity Gs--Cool--

End......

--- DOCUMENT iconed ---

IconEd 1.3

Copyright (c) 1988, Paul Elseth

IconEd is a shareware program for creating and editing Apple IIGS icons. With IconEd, you can change the appearance of icons, change the names of their files, and tell the Finder where to find the application that created a particular document file. You can also add icons to and remove icons from existing icon files, as well as copy icons between files. In short, IconEd is a complete icon maintenance utility.

Please note that IconEd is _shareware_, not public domain. You are welcome and encouraged to give copies away to anyone and everyone. If after using IconEd for a trial period you find it useful, you should send in the shareware fee of $15 (see below). If you do not want to pay the shareware fee, you should stop using IconEd.

--- Any commercial distribution of IconEd is expressly forbidden without prior written permission from the author.

I plan frequent and substantial improvements (and bug fixes), so registering would definately be to your advantage.

Here is the shareware deal:
When you send your $15, I will send you back a 3.5" disk with the latest version of IconEd, plus the next update free. After you register your copy of IconEd with me, you may use any future updates free. Updates ordered directly from me will cost five dollars or three dollars plus a blank disk.

Send your $15 to:
Paul Elseth
2739 Fairview Ct SE
Rochester, MN 55901

CompuServe: 73457,226
BIX: pelseth
ALPE: PEIseth

NOTE: Apple IIGS, GS/OS and Finder are trademarks of Apple Computer, Inc.
Use Open to load an existing icon file from disk. Icon files are usually stored in the folder called ICONS in the main directory of a disk. There must be a file called FINDER.ICONS in the ICONS folder on the boot disk. In addition, any disk can contain a folder called ICONS containing additional icons (see ICONS AND THE FINDER below). IconEd can handle any number of icon files open simultaneously.

**Close**

Close closes the front window. If the front window is an icon file window and changes have been made to that file, you will be asked if you want to save the changes (just like selecting Save from the FILE menu).

**Save**

Saves the front icon file using its current name. If you originally loaded this file from disk, it will be saved in the file it was loaded from. If this is a new icon file, you will be given a chance to indicate where you want the file saved (just like using Save as... from the FILE menu). If you've moved the icons in the window, the new positions are not saved with the file, however, the current order of the icons _is_ saved.

**Save as...**

Similar to Save, but allows you to change the files name, and select where to save the file. If you want to Finder to use the icons in the current file, save it in the ICONS folder on the boot disk (or in the ICONS folder on another disk).

**Save as source...**

Saves the front icon file as an APW ASM65816 source file. This option can be used to generate source code for icons to be included in a program.

**Quit**

Use quit to leave IconEd. If you have any changed icon windows open on the desktop, you will be asked if you want to save them before quitting.

**EDIT Menu**

**Undo**

Undo will cancel the last change editing change made in the Fat Pixels window.

**Cut**

Cut will copy the first selected icon in the front window to the clipboard and remove the icon from the window. Cut will allow icon images to be "exported" into any program that supports the graphic clipboard.

**Copy**

Copy copies the first selected icon in the front window to the clipboard without removing it from the window. Copy will allow icon images to be "exported" into any program that supports the graphic clipboard.

**Paste**

Paste will copy a previously cut or copied icon from the clipboard to the front icon window. Paste also allows graphics to be "imported" from any program that properly supports the graphical clipboard, such as Deluxe Paint II. Note that icons in IconEd use 640 mode (with dithered colors). If you copy an icon from a program in 320 mode, you may end up with an icon of only the left half of what you intended. If this happens, either convert the original to 640 mode, or cut a section twice as wide as the intended icon. I am looking into this, and will hopefully come up with a better solution soon.

**Clear**

Clear removes the first selected icon without copying it to the clipboard.

**Revert**

Similar to Undo, but more extreme. Revert changes the icon being editing in Fat Pixels back to its original form.

**SPECIAL Menu**

**Cleanup**

Cleanup repositions the icons in the front window in the current order (which can be changed by dragging the icons in the window – see REORDERING ICONS below).

**Select all**

Select all selects all of the icons in the front icon window.

**Add new icon**

Use Add new icon to create a new icon in the front icon window. Add new icon creates a generic document icon which can be edited to your liking.

**Fat pixels**

Use Fat Pixels to edit the first selected icon in the front icon window. This option will bring up the Fat Pixels window which allows you to change the appearance of the icon.

**Edit attributes...**

Edit attributes allows you to change the filename, file type, aux type, and application pathname associated with the currently selected icon.

**Colored mask**

The colored mask option allows color in the icon mask. This provides for "special effects" when the icon is selected. Experiment.

**Copy icon to mask**

Copies all the pixels in the icon image to the icon mask in the Fat Pixels window. All colors except white are copied as black.

**Copy mask to icon**

Copies all the pixels in the icon mask to the icon image in the Fat Pixels window.

**Fill image**

Fills the icon image in the Fat Pixels window with the currently selected color.

**Fill mask**

Sets the icon mask in the Fat Pixels window all black pixels. (If Colored mask option is selected, Fill mask will set the icon mask to the current color.)

**Clear mask**

Clears the icon mask in the Fat Pixels window to all white pixels. (If Colored mask option is selected, Clear mask will clear the icon mask to all black pixels.)

**VIEW Menu**

by icon

Displays all of the icons in the front icon window in their large icon form.

by small icon

Displays all of the icons in the front icon window in their small icon form.

by name

Displays the filename associated with each icon beneath the icons in the icon windows.
every icon dealt with by the finder has associated with it four attributes: file name, file type, auxiliary type, and application pathname. These four attributes help the Finder to match files with their icons.

document icons will generally use only the file type, aux type, and application pathname. Application icons will generally use the file name and type.

name to match:
- the file name of the icon matches the name of the file the icon belongs to. the '*' character can be used as a wildcard character to match "don't-care" sequences of characters. for example:
  - ICONED will match only a file called ICONED.
  - *.ICONS will match any file with a name ending in *.ICONS.
  - * will match any filename

file type to match:
- the file type of the file the icon belongs to. a file type can either be selected from the list provided or entered, if it does not appear in the type list.
- the filetype can also match hardware devices. appendix B contains a list of file types and devices currently included in the IconEd list.

aux type to match:
- the aux type matches the auxiliary filetype of the file the icon belongs to.
- an aux type of $0000 matches any aux type.

application pathname:
- this field is used by document icons only. when a document is opened from the finder, the large icon should be around 16x16 pixels. the small icon cannot be resized - it is always 8x8 pixels.

colors for editing the icon image can be selected from the colors menu. for convenience, the colors menu can be "torn-off" and placed near the Fat Pixels window. a color can also be "picked-up" from a color in the image by holding the *shift* key while clicking on a pixel. if you change a pixel by mistake, clicking on it a second time will change the pixel color back.

the icon being edited can also be "shifted". holding down the shift key while the cursor is in the image area changes the cursor to the "shift cursor" which appears as arrows pointing in all four directions. clicking on the image with the shift key down and dragging allows you to move the image icon around. when you release the mouse button, the image and mask will be shifted to the new location (the image and mask can only be shifted together).

icons may be reordered by dragging them in the window. although the new order will be maintained, the exact new location is _not_ saved with the icon file.

if an icon or group of icons is dragged into another icon window, those icons are copied to that file.

double-clicking on an icon allows you to edit that icon in the Fat Pixels window.

The Fat Pixels window is used to change the appearance of an icon. Each pixel in the icon is "blown-up" to four times its normal size in the Fat Pixels window.

An icon is made up of two parts: the icon image, and the icon mask. The icon's image defines the colors of the icon, while the mask generally defines its shape. When the Finder draws an icon on the screen, the image is "masked" against the icon mask. Every black pixel in the mask allows the corresponding image pixel to be displayed, while the white pixels in the mask allow the background to show through. The icon image may be editing using all sixteen colors, while the mask normally may only be black and white.

If the Colored mask option is selected, masks may also consist of all sixteen colors. With colored masks, white pixels allow the corresponding image pixel to be displayed, while black mask pixels allow the background to show through. This is the reverse of when Colored mask is off. The purpose of colored masks is to allow a selected or "open" icon to be colored all. Experiment with colored masks, and watch the sample icons to see what happens. Note that to prevent confusion, you should generally not switch Colored mask mode between on and off repeatedly during an edit session.

The icon image is the actual icon as it would appear in the Finder, shown normal, selected, and open - on both on white and colored backgrounds.

Beneath the icon image is shown the current height and width of the icon.
ICONS AND THE FINDER

The Apple IIGS Finder gets its icons from the files in the ICONS subdirectory on any disk. The icons can be in any file with a type of $CA (ICN) in the ICONS subdirectory. The only required icon file is the file called FINDER.ICONS in the ICONS subdirectory on the boot disk. This file contains the generic icons and icons for disks and disk devices. When the finder searches for an icon to match a particular file, it searches through all the icon files found, searching FINDER.ICONS last, so the icons in FINDER.ICONS are used only if another match is not found. You should normally not add any new icons to FINDER.ICONS. When you create new icons for files and documents, it is best to put them in another file, leaving FINDER.ICONS uncluttered, and used only for generic icons.

Any time a new disk is inserted into a drive, the FINDER checks for an ICONS subdirectory on that disk, and loads any icon files it finds there. Most application disks will have an ICONS subdirectory containing a file with the icons that are specific for that application.

When a document is opened from the Finder, it tries to run the document's application from the application pathname associated with the document's icon. This means that if you move or rename an application, it's document icon must be changed to reflect the new pathname.

REORDERING ICONS

New in version 1.3 of IconEd, the icons in an individual icon file can be reordered. When an icon is dragged to a different position within it's window IconEd reorders the icons internally to reflect the new order. The first icon in the file is always in the upper-left corner, while the last icon is always in the lower-right corner. If things become somewhat muddled, selecting Cleanup from the Special menu will redisplay all the icons in the current order.

Reordering icons can be useful since when the Finder is searching for an icon for a particular file, it searches only until the first matching icon is found. Therefore, the most general icons (such as the generic file icon) must appear last in each icon file. For example, the icon for IconEd (name = "ICONED*") must appear before the generic GS/OS application icon (name = "**") otherwise when the Finder is looking for an icon for ICONED, it will stop when it finds the generic GS/OS application icon, and use it.

Note that since the FINDER.ICONS file is always last in the list, generic type icons should generally be in FINDER.ICONS.

Appendix A: ICON FILE STRUCTURE

This is a brief description of the format of an icon file on the disk. Fields used by the Finder internally are filled with zeroes in the disk file.

ICONBLK (icon file):

IBlkNext  LONG  ;used internally by the Finder
IBlkId  WORD  ;ID number for this ICONBLK (00001)
IBlkPath  LONG  ;used internally by the Finder
IBlkName  BYTE[16]  ;used internally by the Finder
IBlkIcons  ICONDATA[n]  ;list of icon records

ICONDATA (icon record):

iDataLen  WORD  ;length of the record (0 terminates list)
iDataPath  BYTE[64]  ;application pathname
iDataName  BYTE[16]  ;file name associated with this icon
iDataType  WORD  ;file type associated with this icon
iDataAux  WORD  ;aux type associated with this icon
iDataBig  ICON  ;icon image data

This appendix lists the filetypes and device types currently known by IconEd, and has been newly updated for GS/OS.

Files

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Appendix B: FILE AND DEVICE TYPES

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 522 of 1262

Apple II Computer Info
Apple II Computer Info

DOCUMENT immortal

-- THE IMMORTAL GS by Mill Harvey/Electronic Arts --

Cracked by ECC
docs typed by Xentraedi

thanks to Joe Hack, The Mercenary, Star Gazer, and the rest of the ECC Staff

--------------------------------------------------------------------------------

NOTE: Do not attempt to enter the Control Panel once the game has booted. It will

--------------------------------------------------------------------------------

"The morning sun heats the jagged peaks as you follow the forgotten road down
to the valley floor. The bleached ruins of great columned temples and towering
citadels rise from the grassy plain like the bones of some colossal beast. This was
the ancient city or Erinoch, destroyed by dragon’s fire over 1000 years ago. Mordamir
spoke often of this city... and the labyrinth below...

"Mordamir. You think back to the days when you were young and eager to learn
the spells of sorcery. The old wizard Mordamir took you in and patiently taught you
the arts of magic. He taught you how to read the runes and unleash their power. The
power of charms and fire. He showed you the strength of steel and taught you to use
your wizard’s cunning. Mordamir was your master, your mentor. He was your guide down
the treacherous path of wizardry. He was your friend.

"Many years have passed since you last saw the old man. You assumed he was
dead - that is, until a few nights ago, when he called to you in a dream. You woke
with the uneasy feeling that Mordamir still lived - trapped in a bottomless cavern.
And so you set out to unravel the secrets of the Immortal."

KEY COMMANDS:

Music On/Off:
To toggle the music on and off, press Ctrl-S.

Restart:
To restart a game/level, press Ctrl-R.

Quitting:
To quit, turn off computer. (simple, huh?)

GAME CONTROLS:

Your view is similar to Last Ninja (although much much, better!). However,
you are not limited to only four directions... You may move the wizard in all 8
directions by means of the joystick (no keypad equivalents available).

COMBAT:

Attacking:
When a monster attacks, you cannot break away until your opponent is dead.
Push the joystick forward to jab. To slash, pull joystick back first, and then
forward.

Parrying:
To parry, move the joystick left and right. If the wizard is facing you, then
the movements are reversed. Just remember that you must move the joystick in the
direction you want him to lean, not "his right" or "his left". Remember, when an opponent pulls back, lean away from his weapon.

USING ITEMS IN PACK:
Once you take an object, it is in your pack. Hit button A to enter your pack. To use an object, highlight the object and hit the button to use. In some cases, the object is "used" by placing it on the ground, such as a gem. If you still want it later on, remember to pick it back up. To see other items in your pack, highlight "other*" (another simple one!) and hit a button. To exit, highlight an empty space, or an object you don't "use" (such as gold) and hit a button.

Most items are activated by simply selecting them - others require further commands.

Blink Spell/Fireball - once selected, use button B to cast.

Carpet/Protean Ring - select to use object. select again to stop.

NOTE: Each kind of item has a specific use - Spores can only be planted in the dirt, while the Troll Ritual Knife can only be thrown. You can't control HOW an item is used, just where and when.

ALSO: Some items only function on a particular level. Before you descend to the next level, the magic of the labyrinth will remove any items you don't need from your Pack.

RESTING:
Occasionally, you will come across a pile of hay. If you stand on it long enough, you will sleep on it. PAY ATTENTION TO YOUR DREAMS!

COMPLETING/RESTARTING A LEVEL:
Whenever you complete a level, you get a certificate number. You will be asked for a certificate if you wish to continue on that level later on.

To restart on the level you're currently on, when asked for a new game hit "NO", and when the certificate prompt comes up, hit a joystick button.

For a previously completed level, enter your certificate number after hitting "NO" for a new game.

To start again at level one, hit "YES" at the NEW GAME? prompt.

---

I, Mordamir, Wizard of the Crimson Keep, wrote these notes for you, my loyal apprentices and students, to explain the mysteries of this dark labyrinth.

Today, I go forth to explore the dragon's lair. I hope my wits are keen enough, you will sleep on it. PAY ATTENTION TO YOUR DREAMS!

---

LEVEL 1:

Dunric - my faithful student in the art of wizardry - will be the first to come looking for me. He's often accompanied by Erek, a fighter.

Ulindor - my servant and bodyguard.

Upper levels - a tribe of primitive creatures known as goblins. Hostile to strangers, but seem to possess reason, intelligence, some ingenuity with tools.

The tribe goes by the name of Drull. Their king is Gresh the Wise. The goblins are currently at war with a more hostile and powerful tribe of creatures known as trolls. Both sides desperately seek control over the upper levels of the dungeon. Perhaps a show of force would convince one of them that wizards make better friends than foes...

A safe path for the arrow room - along the right wall. I got midway before I set off the trap.

Danger! Pit traps in the next room... If you happen to fall into one of these deadly traps, and can't hold yourself up by your staff, remember to try and swing out (move joystick back and forth at an even rate) before it breaks! Walk along the left wall to avoid them.

In the dark room that follows are dark and deadly creatures, invisible to the eye. Only their shadows can be seen in the light. Keep a torch lit and watch their moments carefully. They move quickly! There are pit traps in this room as well.

Riddle of the Sun:
Deep in immortal Dragon's Lair,
Once in one Millenium,
The Portal opens to the Stair,
When a single Gem greets the Sun.
Mechanism tripped every thousand years by light.

Something shiny...

LEVEL 2:

From a text I found on the history of this evil place:

"...After two days of bitter combat, Arinar the Elven Lord escaped the enemy, but through his veins ran a fatal poison, drawn from the keen edge of the Shadowlord's blade. Arinar fled over the high mountains to the ruined city of Erinoch, where he entered the labyrinth in search of the fabled Water, said by many to heal even the deepest wounds.

"Deep in the chilly caverns of the forgotten labyrinth, the Elven Lord searched desperately for the Fountain, slaying the evil minions that dwell in that dark place with Solondul, a sword of great might. But on the second day, foul slime creatures caught him off guard and stripped the flesh from his body. To this day his bones and his sword lay there still...""

Legends have told of wayfarers being attacked by Will O' The Wisps. I reckoned such stories as the products of childish imaginations, but now I have seen these hateful creatures with my very eyes. I know little of their nature... Are they intelligent? Perhaps they are disembodied spirits of some sort, or maybe creatures of the elements. In any case, they are EXTREMELY dangerous - they despise the living and eagerly attack mortal flesh.

Maybe I can devise a spell to bring them under my control...

Spores - the goblins sometimes use them as a kind of weapon. When planted in spft dirt, these spores produce mushrooms that grow to waist height in a matter of seconds. The full grown mushrooms immediately fire more spores in a radius of 30'. These spores, in their minute deadliness to humans, goblins, and trolls. The goblins typically carry them in sacks to protect themselves. They can be recognized by their strong, sickening smell.

Years ago, when sorcerer's towers stretched toward the heavens and the Halls of Wizardry protected the knowledge of the spheres, the city of Erinoch had need of locksmiths. The most cunning locksmiths, I recall, was a dwarf by the name of Lindil. His locks never involved anything as boring as a simple lock and key. Lindil's mechanisms required the unusual - finely crafted gems, beams of light, paces around an object...

Lindil prospered while serving the wizards of Erinoch. But when the dragon came over 1000 years ago, his house was destroyed and his family perished in the flames. Lindil went quite mad after seeing the beast devastate his dreams, and he cursed the wizards who unleashed the dragon's wrath. He vowed to seal off the labyrinth forever so that men would no longer seek the Water...

The magic dust can be thrown to make an irresistible old fool your friend.

The gems must be dropped in the holes in the circles. Gresh the Wise knows the combination. One must defeat him before he'll speak.

LEVEL 3:

Only the fierce might of an angry dragon could split the earth and form this deep chasm. The crack cannot be crossed by rope - the brisk winds rising from the dragon's lair make it too dangerous! The only way across is a magic gate - a teleport.
mechanism - hidden in one of the rooms below. The shaft of light on the other side is where the magic gate leads.

Trolls - The Shindrak, as they call themselves, rule much of the lower levels. For the most part, they are stupid and quick-tempered - something to take advantage of. A troll will only throw his ritual knife when he wants to challenge another troll to combat.

Proteus, a god of the sea, was a master shapechanger. This ring was forged by Him when the earth was still young. It allows the wearer to take the form of a goblin. Beware! Some are too wise to believe it's charms!

Troll bombs - one whiff of these devices and trolls are paralyzed.

Red gems look best in purple light.

LEVEL 4:

When Dunric interfered with the trolls' battle against the goblins, they kidnapped his daughter, Ana, and dragged her into the labyrinth. As she possesses some of her father's skills in sorcery, she had no trouble escaping the trolls. But on her way out, she lost a special ring given to her by her father.

Some rings are never worn on the body.

LEVEL 5:

The potion transforms and poisons you at the same time. You will benefit from its power to shrink you, but you must find Water and drink it soon afterward or you'll never live past the hour.

Many mice but fewer men can pass through to the next level. The crack in the wall is the only way down.

Worm sensor - The faster it chimes, the greater your danger.

The weight of one will open the way. Set down food and a flying lizard could hold the door.

LEVEL 6:

When the giant spider rears up, she's ready to web. Move back! She's most vulnerable when all four legs are on the ground.

Now is not the time to imbibe spirits.

LEVEL 7:

The goblins crave the Water as much as men, but a horrid water creature guards the way! If the water monster were distracted long enough, the goblins could open the gate and the creature would be washed away into the deepest underground sea. Only a wizard, adept at sailing, stands a chance of distracting the monster and making his escape.

This is the final step before entering the dragon's lair... do whatever you must to help the goblins open the way. Your journey is almost complete - if fortune finds us, we will stand together against the dragon!

end of codex.

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"THE STORY SO FAR"

The strange little man in the trench coat and Porsche sunglasses seemed a little out of place. After all, the unveiling of the new McGibbits Wing of the Library of Congress (in honor of your 47-volume treatise on the Dewey decimal system) was a strictly formal affair. You paid little notice to him at the time, however as you moved gracefully to the piano in your McGibbits Trim-Fit bulletproof jeans. As you started into the third movement of your piano Concerto No.2 in E, you heard a whisper in your ear: "We need you Jimbo baby! The whole world is in danger and only a super-soldier, ace helicopter pilot, ballistics expert, engineer, neurosurgeon, politician, movie actor, rock star, world-class motorcyclist, explorer, karate expert, and devil-may-care all around nice guy like you can save the day!"

"Not again!" you thought to yourself as you finished up the concerto, christened the library, and leapt onto your Super Gizmo 8 motorcycle with cruise control, AM/FM, auto seat warmer, and heat-seeking missiles) all in one fluid move. "Its; getting so I barely have any time to myself what with that Mad Leader running around!"

Back at your modest country estate/training grounds/experimental aircraft test facility, you quickly solve the prime-key encrypted note the agent left with you (lucky thing one of your doctorates is in combinatorial mathematics and cryptography!)

"TOP SECRET"

Message to: Captain Johnny "Jimbo-Baby" McGibbits/AKA Infiltrator

Captain,

We need you! The world is on the brink of destruction only you save us. The Whizbang Enterprises Gizmo DHX-1 Attack Helicopter is on the pad. The mad leader must be stopped only you can stop him. Stop him at all costs. Enclosed is a Gizmo Flight Manual, secret communication code names, and other mission info, weapons- film (with pre-paid processing mailer), and the McGibbits Guide to Ground Installation Infiltration (Pocket Edition).

Good luck Jimbo-Baby! - The fate of the world is in your hands!

Brigidier General Bunson "Old Blood -n- Guts"
O'Shaughnessy"
"So what else is new?" you say as you gather your gear and head out to the waiting Gizmo. "Heart surgery will have to wait. I hope the patient can." And whistling the theme from your new TV series, you head out to save the world....

You will begin all of your missions from your Home Base, just beyond the border of the country. At the base, you will be briefed about your mission goal just before takeoff. You must successfully pilot your chopper from Home Base through enemy airspace and reach one of the Mad Leader's installations to complete the ground mission assigned during the briefing. There are a total of 3 missions, each progressively more difficult, in keeping with your growing skill, stature, and worldwide acclaim. Good Luck!

"OWNER'S FLIGHT MANUAL"

Welcome to the Whizbang Family

You should be feeling pretty good right now. You've just purchased a Whizbang Enterprises

Gizmo DHX-1 Attack chopper

Which is known affectionately around here at Whizbang as "The Snuffmaster"

Welcome once again to our family.

"WE THINK YOU'LL LIKE IT"

Your new Whizbang Gizmo DHX-1 Attack Chopper is loaded with the following Whizbang goodies:

* Turbine-Thrust Dual Propulsion Whizbang Whirler engine, capable of a top speed in excess of 450 knots
* Four Whizbang Waster air-to-air heat seeking missiles
* Two rapid-fire Whizbang Whizzer 20 mm cannons
* Anti-heat seeking missile magnesium flares
* Anti-radar guided missile chaff dispenser
* Whizbang Whomper turbo booster
* Ultra-sophisticated communications systems
* State-of-the-art computer guidance, control, and surveillance systems
* Whizbang Whisper silent travel capabilities

*TAKOFF PROCEDURES*

Upon entering the cockpit of your Gizmo, you will find yourself facing an ultra sophisticated array of controls. Through the windshield you can see the Home Base. At the bottom of the screen, note your hands holding the control sticks which control the movement of the chopper. You might wish to take off after you finish admiring your manicure, so here are the instructions:

1. Turn the battery on by pressing the "B" key. The computer screens will light up and the warning lights will initialize at the top of the display.
2. Turn on the engine ignition by pressing the "I" key. The engine will not provide enough power for movement until it exceeds 2300 rpm's.
3. Pull back on the joystick until you have cleared your base and are looking at a green landscape with mountains in the distance.
4. Press the FIRE BUTTON (note that your right and on the display registers this) and push forward to accelerate.
5. Press the FIRE BUTTON (note that your right and on the display registers this) and push forward to accelerate.

"THE CONTROLS"

(joystick) The joystick controls all of the movement of the helicopter.

To CLIMB, pull back on the joystick
To DIVB, push forward on the joystick

To ACCELERATE, hold the button down and push forward
To DECELERATE, hold the button and pull back
To BANK LEFT, push to the left
To BANK RIGHT, push to the right
To SPIN COUNTER CLOCKWISE, hold the button and push to the left
To SPIN CLOCKWISE, hold the button and push to the right

"COCKPIT DISPLAY"

ARTIFICIAL HORIZON (lower-middle gauge on main panel) The artificial horizon indicates your present altitude (degree of tilt or bank) and indicates whether you are climbing or diving by the location of the horizon is level and centered in the gauge, you are flying straight and level.

DIRECTIONAL COMPASS (lower-right gauge on main panel) The compass displays the directional heading of the Gizmo in degrees, shown in both analog and digital format. The dial is accurate within 23 degree increments; the digital readout is accurate to smaller values.

FUEL GAUGE (far right of side panel) This horizontal bar displays remaining fuel. The tank is empty when the red bar disappears.

OIL AND BATTERY TEMP (on vary top of chopper) These two bar graphs at the top of the screen display the temperatures of your battery and oil. When the bar reaches the red zone, heat is critical and the temperature warning lights will flash and beep until you reduce the heat (by slowing your speed to reduced strain on the battery or by turning off the turbo to conserve oil).

WARNING LIGHTS (on vary top of middle of chopper) The six warning lights at the top of the cockpit, when flashing red while a buzzer sounds, indicate:

E ngine damaged
B attery overheated
O il overheated
F uel low
A ltitude level below 200 ft.
R pm deficiency in engine or rotors

The warning lights will alert you to any noteworthy status conditions that require immediate attention. You have some direct control over the B, O, and A warning lights. The E, F, and R lights refer to problems that cannot be corrected mid-flight. In these cases, you might want to reach your destination as quickly as possible and avoid an further damage from air combat.
AIRSPEED INDICATOR (top-left on main panel)
This dial shows the Gizmo's present airspeed, in knots. The digital readout under the dial displays the same information. Maximum speed is 450 knots (without the turbo engaged)

ADF (top-middle of main panel)
The Automatic Direction Finder (ADF) will aid you in arriving at the proper destination. Therefore, you may want to program it immediately after takeoff. Once programmed, the ADF always points toward your destination. If you are moving forward and the ADF points straight up, you will eventually reach your target, regardless of the compass heading. Moving off course will cause the ADF to spin, adjusting itself to the Gizmo's orientation. The ADF will move only when you spin the helicopter or when you bank. To correct the orientation of your helicopter so it is heading toward the destination, you can either spin the chopper (for minor heading changes) or bank (for more drastic changes in direction).

Note that if the ADF is blinking on and off, it has not been properly programmed at the communications terminal. (see communications.)

If the ADF is flashing black and white and moving around radically! then your destination is directly over your destination. You should slow down and proceed to land immediately. (see Landing Procedures.)

ALTIMETER (top-right of main panel)
The altimeter displays your present altitude in feet. The hand on the dial is accurate only within jumps of 65 feet or more, so use the digital reading for greater accuracy. Each time the dial sweeps past 12:00, it registers 1000 ft. Maximum altitude is limited to 8000 ft. If your altitude is below 200 ft., the low altitude warning light and buzzer will sound.

RPM INDICATOR (bottom-left of main panel)
The RPM indicator displays the rate at which the blades are spinning. Helicopter blades do not speed up or slow down to maintain a constant rate since it is the angle tilt of the blades that causes the movement. The onboard computer systems monitor and maintain steady rpm's. Optimum rpm's is 2300. No flying can take place until RPM's are at or above optimum. At this time the takeoff alert will sound until the Gizmo is airborne.

MISSILE WARNING LIGHTS (far-left of main panel)
The missile warning lights, to the left of your instrument panel, flash to indicate that a missile is heading toward your chopper. A warning siren will sound as well. If the R light is on, then a Radar guided missile is heading towards the chopper, and chaff must then be used to decoy it. If then H light is on, then a Heat seeking missile is headed towards the Gizmo, and flares must be used to decoy it.

"ARMAMENTS"

The next four items are represented by buttons that flash when set to active. When set to active, they can be activated by pressing and releasing the FIRE BUTTON on the joystick. Any or all of these may be damaged or rendered inoperable by enemy fire.

CANNONS-The Whizbang Whizzer 20mm cannons are armed by pressing C (gun) key. An enemy must be within the HUD (heads-up display) cross hairs may be damaged or destroyed if you fire upon it. You have unlimited ammunition.

MISSILES-Pressing the R (rocket) key arms the Whizbang Waster air-to-air heat seeking missiles. An enemy must be visible to be hit, but it doesn't have to be in the cross hairs. You are limited to four(4) missiles per mission.

FLARES-Pressing the F key sets the flares. These are used to decoy enemy heat seeking missiles. The flares, made of Magnesium, will fool the missile into thinking that the flare is actually your exhaust.

CHAFF-Unlike heat-seeking missiles, radar guided enemy missiles must be deceived by dropping strips of metal into the sky, creating a fake radar image of Gizmo. Pressing the C key sets chaff for dropping.

"OTHER FEATURES"

HEADS UP DISPLAY-Pressing H displays the Head-Up Display (HUD). Using the latest technology available, a compute image of your cannon cross hairs is superimposed on your windshield. Use the to aim at a target for firing. With your cannon armed, any object that passes through the crosshairs should be hit. Missiles do not use visible tracking methods, so you may turn off the HUD if you wish by pressing H again.

TURBO BOOSTER-Press the + key to turn on the Whizbang Whomper turbo booster. Press the - key to turn it off. The turbo booster will double your present speed (to a maximum of 900 knots). It also causes the oil to heat up at a very fast rate, so it must be used sparingly. When the turbo booster is on, the turbo indicator to the right of the instrument display will light up. The turbo can be made inoperable if hit by enemy fire.

WHISPER MODE-Pressing the W key engages the Whisbang Whisper. This effectively silences the Gizmo. Whisper mode must be activated whenever attempting to make a secret landing, or else the noise from the helicopter may alert enemy ground personnel. When the whisper mode is on, the Whisper Indicator to the right of the instrument display will light up.

PAUSE-Suppose you want to suspend the game and take a break from all this excitement. Switch to either the computer terminal (press the T key) or the communications screen (press the * key). Press any unassigned key to get back into the thick of it.

THE COMPUTER TERMINAL

The computer terminal, the small screen located on the right of the cockpit, is activated by pressing the T key. You will then be presented with a weapons inventory and two optional categories for status update. Pressing any unassigned key returns you to the cockpit view. If your computer system has been destroyed by enemy fire, the cockpit terminal will be blackened and you will not be able to access it. The Weapons store is displayed in LED bar graphs indicating remaining Missiles, Flares, and Chaff. Press the 1 or 2 keys to review chopper status information or your tactical map, respectively.

1. Status Display- This represents your Gizmo's present status. If any damage has been sustained, the picture of your Gizmo at the top of the screen will be highlighted by visual damage circle indicators where the damage has occurred, accompanied by flashing text descriptors. Below this are displays for remaining missiles, flares, and chaff. Cannon rounds are unlimited. Pressing the SPACE BAR returns you to the main terminal screen.

2. Tactical Map- The top of this screen houses a small computer screen with a digital readout. The numerical value is you calculated ADF frequency. See COMMUNICATIONS for more details. The large gridded map below is a tactical map of the country. Your position within the country is displayed by a flashing sphere. This sphere moves along the bottom of the display between the sphere and the shadow represents your altitude. If you have programmed the ADF, a small flag will appear on the map as well. This is your destination. This display can be used to determine your relative position to your destination at any time during your mission. Press SPACE BAR to return to the main terminal.

COMMUNICATIONS

The Whizbang Gizmo DHX-1 is equipped with the kind of highly sophisticated communications equipment that is often necessary for the successful completion of missions for which this machine has been expressly designed. Pressing the *
key on the keyboard takes you from the cockpit display to the communications terminal (which is located on the left of the cockpit screen). Be careful, this system can be destroyed by enemy fire. The system is used as follows:

*Press "A" to program the Automatic Direction Finder (ADF). Type in the three numbers from the tactical display, ignoring the decimal point. Your ADF is now programmed. You do not have to program it again unless the numbers were entered incorrectly. Your ADF will not function properly if the values are incorrect.

*Press "S" to go into send mode. Send mode allows you to send messages to other aircraft or to ground controllers. Once you are in send mode, you may type messages at the top of the screen on the Comm-bar. No punctuation is allowed. Use the DEL(ete) key to backspace. Pressing RETURN sends the message to either another aircraft or to a ground controller (as appropriate). The flashing S or R represents the current Send or Receive status. Press the space bar to return to the cockpit view.

OTHER AIRCRAFT
As you begin a mission by flying the chopper to your destination, you will encounter other aircraft along the way. Some may be other infiltrators also trying to upset the Mad Leader’s plans, while others may be staunchly loyal to the Mad Leader and his evil goals. There are three types of other aircraft: the friend, the enemy, and the maniac. Upon encountering another aircraft, you must determine whether it is a friend or an enemy. Since there are no distinguishing markings on your ship, and because helicopters are not an unusual sight over the Country, other pilots will also try to determine your loyalties and intentions by talking to you via the communications system (sending and receiving messages). You should always try to communicate with an unidentified aircraft first. As soon as you see an aircraft, your first time, press the "S" key. Once on the communication screen, press the S key to send a message. The only phrases the comm systems of other aircraft will understand are:

REQUEST ID
INFILTRATOR (TYPE THAT TO A FRIEND)
OVERLORD (TYPE THAT TO AN ENEMY)

After requesting the identification of another aircraft, examine the response for a code name. With experience, you should be able to distinguish friendly code names from those of enemies. This will provide you with the information necessary to respond properly to their request for identification. Giving the correct ID to an aircraft will allow you to continue on your mission unhindered. Giving the wrong ID to an aircraft will result in a battle that will last until one of you is destroyed!

oh, by the way, we weren’t kidding about the maniacs out there. A few of the other infiltrators have snapped and, in their rage, have begun to attack. You're not matters what code name you use in a response. They will always attack, and you're going to have to fight against a former friend, turned deadly foe!

SAMPLE FRIENDLY NAMES:
WHIPPLE AND HAYMISH
SAMPLE ENEMY NAMES:
BOOMER AND SCUM
(The rest you on your own!)

LANDING PROCEDURES
Once you have arrived at your assigned destination, you will have to land to continue your mission. To land safely you must make sure of the following:
1. your speed is between 20 knots and 0 knots
2. the artificial horizon is level and you are not banking
3. your rate of descent is at minimum

Once you have descended below 200 feet, you will hear the low altitude warning buzzer sound. Reduce your rate of descent to a minimum. Wait until your altitude is reduced to 0 and the Gizmo shakes and thumps loudly as it hits the ground.

UPON LANDING
Once you have landed, your view will change. You will now be looking down at yourself standing next to your trusty chopper. You must pretend that you are an enemy guard, much as you may have had to pretend to be an enemy in the sky. Avoiding the enemy is the key to ground missions.

OBJECTIVE
To complete the mission displayed in the briefing without being captured, blown up, or running out of time. If you fail five times, your dead! There are three missions that become increasingly more difficult. Once you finish one mission you will be assigned your next task.

MISSION COMPLETED AND LEAVING
If you successfully complete your ground mission, make your way back to the helicopter. Moving into the cockpit section onscreen will take you inside so that you can return home.

RESUMING PLAY
If you stop playing once you have successfully completed a mission, you will be given the option to either start from scratch or to start at the beginning of a new mission. You can then continue from where you left off. If you haven't completed your mission, you won't be allowed to enter the helicopter. You will have to go back to the briefing and complete your mission before you can return home.

GROUND CONTROL AND INVENTORY ITEMS
When you see the screen with a grey figure standing next to a helicopter, move the joystick in any direction to start the next phase of the mission.

YOU are the small dark grey figure on the screen. You have a limited amount of time on the screen to complete the mission. The active item will cause you to move in that direction, unless you are busy with an item that is currently active. An active item is an object from your inventory that has been selected to be used. Note that at the beginning of the ground mission your papers are present as the active item.

FIRE BUTTON
Press the FIRE BUTTON to activate the active item. The current active item is always indicated at the bottom of the main screen. Depending on the item activated, you may not be able to move until you are finished.

PAUSE
To take a break, press the SPACE BAR to go to the inventory screen. Your game will pause until you are ready to continue. Press any unassigned key to return to the main screen, and your mission.

The inventory screen allows you to change the active item and displays important inventory information. You may select an item by moving the cursor with your joystick. Press the SPACE BAR again (or any unassigned key), and you would also try to determine your loyalties and intentions by talking to you via the communications system (sending and receiving messages). You should always try to communicate with an unidentified aircraft first. As soon as you see an aircraft, your first time, press the "S" key. Once on the communication screen, press the S key to send a message. The only phrases the comm systems of other aircraft will understand are:

REQUEST ID
INFILTRATOR (TYPE THAT TO A FRIEND)
OVERLORD (TYPE THAT TO AN ENEMY)

After requesting the identification of another aircraft, examine the response for a code name. With experience, you should be able to distinguish friendly code names from those of enemies. This will provide you with the information necessary to respond properly to their request for identification. Giving the correct ID to an aircraft will allow you to continue on your mission unhindered. Giving the wrong ID to an aircraft will result in a battle that will last until one of you is destroyed!

oh, by the way, we weren’t kidding about the maniacs out there. A few of the other infiltrators have snapped and, in their rage, have begun to attack. You're not matters what code name you use in a response. They will always attack, and you're going to have to fight against a former friend, turned deadly foe!

SAMPLE FRIENDLY NAMES:
WHIPPLE AND HAYMISH
SAMPLE ENEMY NAMES:
BOOMER AND SCUM
(The rest you on your own!)

LANDING PROCEDURES
Once you have arrived at your assigned destination, you will have to land to continue your mission. To land safely you must make sure of the following:
1. your speed is between 20 knots and 0 knots
2. the artificial horizon is level and you are not banking
3. your rate of descent is at minimum

Once you have descended below 200 feet, you will hear the low altitude warning buzzer sound. Reduce your rate of descent to a minimum. Wait until your altitude is reduced to 0 and the Gizmo shakes and thumps loudly as it hits the ground.

UPON LANDING
Once you have landed, your view will change. You will now be looking down at yourself standing next to your trusty chopper. You must pretend that you are an enemy guard, much as you may have had to pretend to be an enemy in the sky. Avoiding the enemy is the key to ground missions.

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The inventory screen allows you to change the active item and displays important inventory information. You may select an item by moving the cursor with your joystick. Press the SPACE BAR again (or any unassigned key), and you
will return to the main screen. The newly selected item will be active, and is so indicated at the bottom of the screen. Once you have returned from the inventory screen, pressing the FIRE BUTTON on the joystick activates the item you have selected.

In addition, important items found during your search will appear in a text line at the bottom of the inventory screen. Activation of these items will occur without having to select them as active when and where appropriate.

SLEEPING GAS—You have a hidden canister strapped inside your jacket which contains a colorless, odorless sleeping gas. Anyone sprayed will fall asleep for twenty seconds and forget what has happened. Pressing the FIRE BUTTON on the joystick sprays the gas. You have specially treated nose plugs which allows you to breathe the gas harmlessly.

PAPERS—These are your fake ID papers. You should activate your papers when a guard asks to see them. When that happens, move directly over and stand next to the guard. If the papers are not already active, move quickly to the inventory screen and select them. Return to the main screen, press the FIRE BUTTON on the joystick. Upon showing the guard, he will decide whether or not they are "in order" and valid. If they are in order, you can go about your business, undetected as an infiltrator. If they are out of order, you have a short tie to gas the guard or run away before he tries to take you in for questioning. But be forewarned, running away will cause the guard to sound an alert throughout the compound. (See Mission Interference)

GAS GRENADE—This grenade has the same effect as the sleeping gas canister, except that it has a greater range. When used inside, all guards in the room in which it is dropped will fall asleep.

MINE DETECTOR—This is used to detect mines. Selecting the mine detector on the inventory screen enables it to be used whenever you press and hold the FIRE BUTTON on the joystick as you move through enemy territory. You will hear the detector working. Stepping on a mine with the detector activated is harmless and exposes that mine. Stepping on a mine without the detector activated is fatal—and stupid.

EXPLOSIVES—Explosives are planted by selecting the explosives icon on the inventory screen as the active item, and then pushing the joystick up under the main control panel in the control room or under the desk in the lab. Only one bomb per room is permitted. Upon setting your last remaining bomb, an automatic countdown timer will go off. You then have about 20 seconds to leave the building before all the bombs detonate. If you don't make it out of there in time, you will be trapped inside during the explosion, and it's bye! bye! (Jimbo-baby that is!)

CAMERA—Use the camera to photograph any vital documents. To use it properly, face the papers you want to photograph and press the FIRE BUTTON on the joystick. Only one picture per room is permitted.

INFORMATION UPDATES—At the bottom of the inventory screen are four graphs which update the following:

**S**-Sleeping gas  **M**-Mine detector
**P**-Papers      **E**-Explosive charge
**G**-Gas grenade **C**-Camera

"MISSION INTERFERENCE"

GUARDS

Enemy guards within the compound are fanatically loyal to the Mad Leader. They are assigned to patrol certain areas of the compound, and they will carry out their orders unflinchingly. If one of the guards spots you, he may ask to see your papers. If you do not comply, an alert will be set off and guards throughout the compound will chase after you. Within the compound buildings, an electronic key will turn off the alarms temporarily, but it will only work once during a mission. Find the electronic key, and a line of text on the bottom of the inventory screen will note that you have it. Make your way to the alarm control center. Stand directly in front of the card slot in the wall and place the electronic key in the slot. This will turn off the alarm temporarily, and you will have to start over again. Tough luck dude! (you have about 20 minutes to do this once during a mission only while you are inside the compound.)

MINES

Mines are usually scattered in the forest and in restricted areas to prevent enemy installation structures) an electronic key will turn off the alarms temporarily, but it will only work once during a mission. Find the electronic key, and a line of text on the bottom of the inventory screen will note that you have it. Make your way to the alarm control center. Stand directly in front of the card slot in the wall and place the electronic key in the slot. This will turn off the alarm temporarily, and you will have to start over again. Tough luck dude! (you have about 20 minutes to do this once during a mission only while you are inside the compound.)

MAPPING UNIT

While inside any of the compound's buildings, your mini-mapping unit will appear at the bottom of the screen. The room you are in is represented by a flashing box within the mapper screen. All rooms are shown as boxes with highlighted doors. Moving into a new room maps it into the unit's screen.

ROOMS ARE COLOR CODED AS FOLLOWS:

**RED:** designates a room of great importance (prison, control room, etc.)
**GREEN:** designates the building entrance or an elevator
**BLUE:** represents a room of no special importance

SEARCHING CHESTS

You may search any of the chests (on the top far wall only-chests on the side walls seem to be empty...) in any room by moving in front of it and pushing up with the joystick until you find whatever it contains.

DOORS AND THE SECURITY ROOM

Locked doors must be de-activated before you can enter these rooms. To unlock all the doors in the enemy compound, you must first find the security card.
Apple II Computer Info

(document for it!). With it in your possession, you can unlock the doors. Once you have found it, a line of text will appear on the bottom of the inventory screen to indicate that it is in your possession. Now, find the security room. It is the room with the lock status indicator light on the wall and a passcard slot directly below it. To unlock the doors, stand directly in front of the passcard slot and press the joystick up. This will cause the passcard in your possession to be inserted into the slot, without having to select it. (You cannot select this particular item to be active. If you have it, activation will occur automatically when you push up on the joystick.) The lock status indicator light is red when the doors are open.

THE END

DOCUMENT inspecto.app

THE INSPECTOR IS A UTILITY WHICH ENABLES ONE TO INSPECT EITHER MEMORY IN THE APPLE OR ON A DISK. THE DISK BEING EXAMINED CAN BE EITHER NORMAL OR ABNORMAL DOS. IT COMES IN 2 FORMS: AND EPROM WHICH IS PLUGGED INTO AN INTEGER CARD, OR AS A PROGRAM WHICH IS LOADED INTO THE LANGUAGE CARD.

INSTALLATION OF EPROM:

----------------------
I AM NOT GOING TO GET INTO THE EXACT DETAILS OF PLUGGING IN A CHIP BUT BASICALLY, ON THE APPLE II (NOT +!) THE INSPECTOR REPLACES THE D8 ROM ON THE MOTHERBOARD. ON THE II+ WITH INTEGER CARD, THE CHIP REPLACES THE D8 ON THE INTEGER CARD. MAKE SURE THAT THE CHIP IS ORIENTED CORRECTLY, WITH THE NOTCH FORWARD (OR UP, AS ON THE INTEGER CARD)

WITH THE DISK VERSION, BOOT A MASTER. INSERT INSPECTOR DISK AND TYPE "RUN INSPECTOR" THEN YOU WILL BE PROMPTED WITH:

DO YOU WISH TO MODIFY
1) DOS 3.3 BASICS
2) DOS 3.3 SYSTEM MASTER

DEPENDING ON WHAT DISK YOU ARE MODIFYING, INSERT IT AND HIT <RETURN> THAT'S ALL THERE IS TO IT.

ACCESSING THE INSPECTOR:

------------------------
STANDARD APPLE II:

FROM    TO    TYPE
--------------------------------
INTEGER   INSPEC. CALL -10240
MONITOR   INSPEC. C081 N D800G
APPLESOFT INSPEC. CALL-151 C081 N D800G
APPLE II+ WITH INT CARD OR LANG CARD

FROM    TO    TYPE
--------------------------------
INTEGER   INSPEC. CALL -10240
MONITOR   INSPEC. C080 N D800G
APPLESOFT INSPEC. CALL-151 C080 N D800G

ONCE THE INSPECTOR IS INITIALIZED, YOU CAN GO IT WITH THE FOLLOWING:

FROM    TO    TYPE
--------------------------------
INTEGER   INSPEC. CALL -10240
APPLESOFT INSPEC. &
MONITOR INSPEC. <CTRL-Y>

THE DISPLAY:

-----------
WHEN THE INSPECTOR IS ACCESSED, THE FOLLOWING WILL BE DISPLAYED:

TRACK 00 SECTOR 0 SLOT 6 DRIVE 1

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BUFFER 0800 DOS 16 VER ???

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AND THEN A BLACK SCREEN.... B: BUFFER LOCATION

ALLOWS USER TO SELECT BUFFER LOCATION WHICH IF USED. ONLY THE FIRST 2 DIGITS
OF THE BUFFER CAN BE CHANGED. (NOTE: DO NOT USE PAGE ZERO FOR THE BUFFER!)

DISK COMMANDS:

V: DOS VERSION
    SWITCHES BETWEEN 13 AND 16 SECTOR DOS

P: PERIPHERAL SLOT
    SELECTS THREE SLOT OF THE DISK CONTROLLER CARD

D: DRIVE NUMBER
    TOGGLES THE DRIVE TO BE ACCESSED

T: SELECTIONS THE TRACK THAT YOU WANT
    TO READ OR WRITE

S: SELECTIONS THE SECTOR THAT YOU WANT TO
    READ OR WRITE

NOTE: TRACK, SECTOR, AND BUFFER
INFORMATION ARE IN HEX

R: READ
    CAUSES THE TRACK/SECTOR WHICH YOU HAVE DESIGNATED TO BE READ (ERRORS
    ENCOUNTERED WILL BE DISPLAYED IN THE UPPER RIGHT HAND PORTION OF THE SCREEN)

J: SCAN FORWARD
    CAUSES THE NEXT SECTOR TO BE READ INTO THE PRESENT BUFFER LOCATION

$: SCAN BACKWARD
    CAUSES THE INSPECTOR TO SCAN BACK ONE SECTOR AND READ INTO THE SAME BUFFER
    LOCATION

A: ASCII/HEX
    TOGGLES BETWEEN ASCII AND HEXADECIMAL DISPLAY

X: EXCHANGE
    EXCHANGES FLASHING AND INVERSE CHARACTERS WITH NORMAL ASCII CHARACTERS.

E: EDIT

HEX EDITING:

1) TYPE HEX NUMBER OF BYTE TO EDIT
2) HIT <SPACE> TO DISPLAY CURRENT VALUE
3) TYPE IN NEW VALUE
4) HIT <RETURN> TO ENTER VALUE
5) IF YOU WANT TO CONTINUE EDITING, HIT <SPACE> INSTEAD OF <RETURN>

ASCII EDITING:

1) ENTER BYTE TO CHANGE
2) TYPE:
    L FOR LOWERCASE
    N NEGATIVE ASCII
    <SPACE> NORMAL

NEGATIVE ASCII DATA IS ASCII WITH THE MOST SIGNIFICANT BYTE OFF (IT WILL BE
FLASHERING)

3) ENTER VALUE TO REPLACE THE BYTE
4) HIT <RETURN> TO ENTER IT AND EXIT
   FROM EDITING MODE

CTRL-W: WRITE
    CAUSES THE CURRENT VALUES IN THE BUFFER TO BE WRITTEN TO THE TRACK/SECTOR

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6) PRESS "L" TO SEARCH DISK
7) WHEN A SECTOR IS FOUND, A BEEP WILL BE SOUNDED

OTHER COMMANDS:
---------------
CTRL-Z: USER COMMAND
WHEN <CTRL-Z> IS Pressed, A JUMP TO LOCATION $0300 IS EXECUTED
CTRL-C: RETURN TO BASIC
THIS IS FAIRLY SELF EXPLANATORY
TIPS AND OTHER STUFF:
---------------

FINDING RWTS ON A FOREIGN DOS DISK
(THIS CAN BE USEFUL!)
1) SET BUFFER TO $0000
2) CHANGE BYTES $00-$04 TO 04 84 48 85 49 (THIS IS THE START LOCATION OF ALMOST ALL RWTS'S)
3) PRESS "F" TO FIND THIS STRING
4) IF FOUND IN A DIFFERENT THAN USUAL PLACE, THE INSPECTOR CAN BE MADE TO THINK IT IS NORMAL BY CHANGING ADDRESS $3D9 TO POINT TO DOS
5) CHANGE BUFFER TO $0300
6) CHANGE BYTE $3D9 TO INDICATE WHERE DISK IS

THIS FEATURE IS MAINLY USABLE BE THOSE OF YOU WHO HAVE THE ROM VERSION OF THE INSPECTOR. IF YOU HAVE THE DISK VERSION, THE IS A GOOD CHANCE THAT IT WILL BE ERASED FROM THE LANGUAGE CARD IN THE EVEN OF A BOOT.

USING A PRINTER:
ENTER THE FOLLOWING AT LOCATION $300
300: A9 01 20 95 FE 20 8E FD A9 FF 20 A8 FC A2 00 8A
310: 20 C1 FB A5 28 85 10 A5 29 85 11 A0 00 B1 10 C9
320: AD 80 04 89 40 D0 FB 20 3A 03 C8 C0 28 D0 EE 20
330: B0 04 69 40 D0 F8 20 3A 03 C8 C0 28 D0 EE 20
340: 04 84 48 85 49

BYTE $301 IS SLOT OF PRINTER
THIS FUNCTION CAN BE USED WITH THE CTRL-Z COMMAND TO GIVE A HARD COPY OF DATA

SAVING THE ROUTINE TO DISK: THIS CAN BE DONE WITH ANY ROUTINE WHICH IS LOCATED IN ONE PAGE ONLY. IT TAKES ADVANTAGE OF THE FACT THAT DOS DOES NOT USE TRACK 2 SECTOR F. IF YOU ARE USING THAT SECTOR, DO NOT USE THIS ROUTINE!
1) SET BUFFER TO $0300 (OR WHATEVER YOU WANT)
2) SET TRACK TO 2 AND SECTOR TO F
3) HIT <CTRL-W>

TO LOAD, JUST DO THE SAME THING BUT HIT "R" INSTEAD OF <CTRL-W>

TURNING PRINTER ON:
(OR USING PRINTER WITH NIBBLE EDITOR)
1) SET BUFFER TO $0300
2) ENTER THE FOLLOWING IN BYTES

$00-$05
A9 01 20 95 FE 60

BYTE $01 IS SLOT OF PRINTER
NOW, HITTING <CTRL-Z> WILL TURN PRINTER ON UNTIL <RESET> IS PRESSED

READING HALF TRACKS:
UNDER NORMAL DOS, THE STEPPER MOTOR ON THE DRIVE IS PULSED TWICE FOR EVERY TRACK IT WANTS TO MOVE. HOWEVER, IF YOU FORCE THE MOTOR TO PULSE >ONCE< YOU WILL BE AT THE HALF TRACK. WHEN READING HALF TRACKS WITH THE INSPECTOR, ONLY THE NIBBLE EDITOR CAN BE USED. THIS IS BECAUSE RWTS DOES SOME CHECKS TO SEE IF IT IS READING THE CORRECT TRACK, IMPORTANT: THE INSPECTOR WILL NOT REALIZE THAT IT IS DOING HALF TRACKS! THEREFORE, TO READ TRACK $4, YOU MUST SET THE INSPECTOR TO READ TRACK $8. TO READ TRACK $10.5, YOU MUST READ TRACK $21.

HOW TO SET UP
---------------

1) USING THE B COMMAND, SET THE BUFFER TO $0200
2) ENTER EDIT MODE WITH E
3) CHANGE BYTE $D4 FROM $01 TO $00

YOU CAN NOW READ HALF TRACKS

AVOID RELOADING LANGUAGE CARD:
THIS IS NOT UNIQUE TO THE INSPECTOR, BUT I FELT THAT THERE WAS JUSTIFICATION TO INCLUDE IT.

ALL YOU HAVE TO DO IS CHANGE BYTE $CC ON TRACK $0, SECTOR $9 TO $10.

NIBBLE INFO
---------------
THIS IS JUST SOME BASIC INFO ON USING THE NIBBLE FEATURE ON THE INSPECTOR
ON DOS 3.3, 342 NIBBLES REPRESENT THE 256 BYTES. EACH TRACK ON A DISK IS MADE UP OF 2 FIELDS:
1) ADDRESS FIELD
   [VOLUME,TRACK,SECTOR]
2) DATA FIELD
   [ACTUAL DATA]

ADDRESS FIELD MARKER:
D5 AA B5 (13) D5 AA 96 (16)
VOLUME NUMBER: 2 NIBBLES
TRACK NUMBER: 2 NIBBLES
SECTOR NUMBER: 2 NIBBLES
ADDRESS FIELD CHECKSUM: 2 NIBBLES
ADDRESS FIELD TRAILER: DE AA
DATA FIELD MARKER: D5 AA AD
DATA NIBBLES............
DATA FIELD CHECKSUM: 1 NIBBLE
DATA FIELD TRAILER: DE AA
THE 2 NIBBLE COMBINATIONS ARE ENCODED WITH THE FOLLOWING TABLE:

NIBBLES VALUE
---------------
AA AA 00
Ever wish you could whip up a super looking Icon?
Ever see a graphic on your SHR screen that you would like to have as an Icon?
What!, you say you can’t draw worth a darn....... Well, there’s hope yet...... Instant Icon NDA will allow you to mark off part of the SHR screen and save it as an Icon. Just open the NDA, hold the mouse down to start marking off, and release the mouse when done. Fill out the attribute box, pick a filename, and that's it. Instant Icon.
The Icons you save will load into an Icon Editor, or can be used right away.

Tips:

Icon pathnames can be up to 64 characters long. You will only be able to view about 40 characters in the Instant Icon attribute box. You can keep typing, but you will only be able to view the first 40 or so characters.

You can "Capture" images from a 320 mode screen. Instant Icon will convert the colors to 640 mode.

Icons are displayed in the standard palette. If you create an Icon from a screen that is not in the default palette, it will usually look pretty sad...

Instant Icon will allow you to mark off approx a 70x70 square, although, you could make a rectangular Icon. Square Icons usually look the best, and not too large. Large Icons tend to clutter up the desktop.

This is version 1.2 of Instant Icon, the first release. If you have any suggestions, or find bugs, you can contact me at:

America Online -- Nuzz
Genie -- M.Nuzzi
Phone -- Triad Venture Inc (516) 732-3771

If you haven't seen it already, please look for a demo of our Graphic Disk Labeler program (GDL).

Happy Icons

Mike Nuzzi
President Triad Venture Inc.
WHAT DOES INTELLIHACKER DO?

IntelliHacker is a multi-purpose hacking and phreaking tool. Hacking is using your resources to illegally break into someone else's computer via modem and access their data. Successful hackers are usually very dedicated and really don't care too much about much else. When you see a 19 year old buying VAX assembly language manuals and walking around a major company looking at license plates, you can be pretty sure that he is either nuts, or is a hacker looking for some obscure bit of information that will get him past the security of the system he has his sights on.

Phreaking, on the other hand, is making phone calls for free.

Users used to do this with various colored boxes, but now, since the phone companies have wised up and look for people using these boxes, they are somewhat rare. In addition, it's harder to box a free call than it is to use an extender.

An extender is a number that you dial, get a beep, dial an authorization code, and dial the phone number that you want to reach. If you're not using your own authorization code, some other sucker gets billed for the call. These are dangerous, but since it's impossible for a long distance company to detect you from a valid user, they are usually only dangerous after extended periods of time. They also can't be used to make calls outside of the continental U.S.

IntelliHacker aids you in both hacking and phreaking. In addition, as you'll see later, it can even help you out if you just want to harass the shit out of someone. If you've got the hardware, the guts, and if you aren't asleep yet, read on, and learn how....

HOW INTELLIHACKER WORKS

IntelliHacker is made up of several modules:

1. Terminator
2. Code Breaker
3. Scan Man

I will deal with each one separately. It is a good idea to read about them all in order, since I may refer to each of them from within the description of the other.

TERMINATOR

In the movie, The Terminator, the terminator is a hunting machine. He hunts until he finds his prey. And if you're his prey, it's terminal. Well, IntelliHacker's Terminator works the same way.

The terminator program looks for carrier. If you saw that dreadful movie, WarGames, you saw that the kid had a program that just looked for terminals. Well, that's what terminator does.

If you're a hacker looking for new prey, this is your program. It is based on suffixes and prefixes. The prefix is a number that you set one time and it stays the same. It is the first part of the number that you want to dial. An example might be 212-637-. This is the first part of 212-637-2938, 212-637-4949, and about 9998 other numbers. The suffix, as you might have guessed, is a four digit number that is tacked on the end. The suffix is the part of
number that changes. You might try a range of suffixes, like 2112 to 9999. If your prefix is 212-637- this will try out every number between 212-637-2112 and 212-637-9999. That’s as complex as suffixes get.

Prefixes can be more complex, though. If you use an 800 extender to call the number, the prefix might be:

1-800-738-3849, 828392 212-637-

The 1-800-738-3849 is the number of your extender number. The 828392 is your authorization code, and the 212-637- is your area code and exchange. That’s about as complex as prefixes get.

When the program asks you for starting and ending suffixes, put in any range of numbers that you want. They must be four digits long, though. If the starting suffix is higher than the ending suffix, the computer will know to count backwards. You can have the carrier numbers that it finds sent out to disk, and/or you can have them printed out. If you prefer to watch, you can do that too. You can have the speaker either on or off.

If you want to change the speaker status, just press joystick button 0 or open-apple. Hold it down until it finishes calling the number it is trying. Let it go when you see on the status board that the speaker is off (or, if it was already off).

If you want to pause the program, perhaps to make a phone call or build a bomb, press joystick button 1, or solid-apple. When you here the bell the computer is in pause mode. Let go and go about your business. Just press the same button to start it up again.

If you want to abort the procedure all together, just hold both buttons down at once. When you hear the bells, the program is calling it quits. You will be taken back to the main menu.

**CODE BREAKER**

Boy, these dox are long! But, shit, it took me a few weeks to write the programs and I’m no bum. There’s a lot to them! But, I realize that everyone wants to run the program, so I’ll condense the rest of the dox.

Code Breaker looks for authorization codes for a long distance number that you supply. The number for Sprint here in NY is 950-0777. This is the number that you would put in as the long distance company's number.

You then put in a range of codes to try. They must be of the same length.

There are more features to Code Breaker, like increments. If you’ve used MM/e Hacker, you know that it counts in sequence. So does Code Breaker, but you define the sequence. Even though Code Breaker will count backwards, you must put in a positive number for the increment. To make it count backwards just make the starting code larger than the ending code.

You can also have randomness with Code Breaker. Just say yes to the randomness feature and the program will stay within your bounds, playing tricks with the increment.

If this is an inconvenience, let me know.

**SCAN MAN**

If you call a lot of AE’s you know what it’s like to get a busy signal all night. And redialing with the modem is no fun.

What this program does is scans a few BBS or AE or Whatever numbers until one picks up and you get a carrier. It then either switches you to Terminal Mode or boots the AE disk.

You have a directory with Scan Man. It contains your computer numbers. You can delete or add numbers as you please, keeping up to fifty numbers at a time. You will also be asked for a key by which to identify the number. An example key might be the password or the name of the BBS. It’s up to you, but there is a 34 character length limit on the key. You will also be asked if you use an extender for this number. If you reply yes, the computer will automatically dial whatever extender number you are using at the time. This way, when you change extenders (do it frequently) you don’t have to revise the entire directory.

When asked for the extender number, put in the long distance phone company's number, the time delay commas, and the authorization code. Scan Man will automatically dial it before the numbers that you ordinarily use with extenders, and won’t dial it for numbers that you don’t ordinarily use with extenders.

You can, of course, delete numbers from the directory, but by no means should you delete every number! This will cause an error and Scan Man will not work!!!!

Again, the joystick/apple keys control abort, pause, and speaker status.

**CALL ME**

If you have any problems, comments, suggestions, or just want to gab, call the Protestor’s AE/BBS at 512-396-0780. It’s not my AE but I am in charge of the Anarchy Board. It’s got all the latest wares and one of the coolest sysops around. Give it a ring.

And keep your eyes peeled for IntelliHacker V2.0. It will be a result of the feedback I get through the Protester’s AE/BBS and a few other that I belong to.

Now, Scan, man.

**BY THE WAY**

If you want to really harass the shit out of someone, put their name and number in the Scan Man Directory. Then leave it on, calling their house every 30 seconds. Also, put their name on the directory and pass the program around with their name on and a note to bother the shit out of them. Before you know it, they’re getting calls from all kinds of pervs and who knows what the fuck else!!!! Great, huh?? Try it on your teacher some time.

Czar Peter
Anarchy Unlimited
New York City
7 Oct 1985

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IntelliHacker Dox - Page 4

Again, the joystick/apple keys control the speaker, pause, and abort.

Unlike Terminator and most other modem hacking programs, Code Breaker also write and saves the bad codes to disk. The reason is simply this: with the randomness feature on, you have no other way of telling what numbers, bad or good, you’ve tried.
Section 2: How to use Intercept:

Intercept v1.3 documentation

The Voice Over

Okay...This is the latest version of Intercept. I wrote it because I learned that Intercept 1.2 wouldn't work properly with the Apple //c, and also, one of the instructions in the driver routine wasn't truly slot-independent, as I had hoped. Anyway, it's done, so have fun...

Section 1: How it works:

1.0: The process of booting:

When a disk that has been modified with Intercept is booted, the following is what takes place:

1) The disk controller ROM reads Intercept's BOOT1 routine from track 0, sector 0 into page 8 of RAM.
2) Intercept clears the screen to either spaces or printed 8's and prints Intercept 1.3 in the upper left corner, and the user-defined message in the center of the screen.
3) Intercept reads in the track/sector list from the sector stored at track in $8FE, sector in $8FF.
4) Intercept reads in the Intercept driver, the old BOOT1 routine, and the code to be run as an interception from the sectors listed in the track sector list.
5) Intercept jumps to the driver routine at $A00.
6) The driver routine calls the intercepted code, and when the intercepted code returns to the driver, it moves the old BOOT1 routine to page 8 from page B, sets up memory as if a disk had just been booted, and jumps into the controller ROM's routine that sets up the crack of Planetary Construction Set.
7) The boot continues as if nothing had ever happened.

1.1: Intercept's structure:

Note: In the docs for Intercept 1.2, I kindly included a breakdown of the technical workings of Intercept, T/S list format, etc. Unfortunately, certain people (The Sector Smasher, Mad Rat, The Nudge, 6-Golds, and Knight Writer of The Star League) decided to be ASSHOLES and remove the small bit of credit I try to reap by putting Intercept 1.2 in the corner of the screen by changing the message to all spaces on their crack of Planetary Construction Set. These guys are so lame, they couldn't even figure out how to NOP out the print routine...they went and changed all of the data that made up 'Intercept 1.2' into data that would produce spaces. Well, guys, the whole reason I put in the user-defined message was so that people wouldn't take out the title and replace it with something of their own. Thanks to these morons who were not only too dumb to write their OWN boot routine, but also stupid enough to get caught stealing someone else's, there is no longer any technical information concerning Intercept available. I'd suggest you call them up and thank them if you wanted the data. The boards that they frequented are on the title page for Planetary Construction Set. Now I know how you felt about Bun E. Boot, Tyrone.

Section 2: How to use Intercept:

1) Crack a ware

2) Make a title page program for it.
3) Boot the Intercept 1.3 disk.
4) SCANNING FOR BLANK SECTORS: Place the disk you plan to intercept in drive one or two and press the appropriate key. Intercept will begin to scan your disk for blank sectors that contain all 00s. If you already know where enough free sectors are to hold your title page program, plus 3 sectors for overhead, press the <ESC> key. Once you think Intercept has located enough free sectors to hold your title page, hit <ESC>. Note: You can let Intercept scan the whole disk for free sectors, as it will continue merrily along until it locates 255 blank sectors, but why spend the extra time?
5) DEFINING THE BOOT PARAMETERS: There are four parameters you will have to set for Intercept to continue. They are:

   CLEAR SCREEN TO: This option allows you to clear the screen either to spaces or to inverse 0 signs. Choose whichever you like best.
   BOOT MESSAGE: This option allows you to enter a 20 character long message that will be displayed in the center of the screen as Intercept loads your title program. If you do not wish to have a boot message displayed, just hit <ESC> at the prompt.
   TITLE FILENAME: This is where you enter the name of the file you wish to use for your title program. Hit ESC to catalog the drive you booted Intercept from.
   FILE TYPE: This option allows you to select the type of file you wish to use for your title program. Use F if you simply have a standard Hi-Res picture, or P if your title program is a BRUNable file. If you choose the P option, Intercept will load the picture and ask you if it's the correct one. If so, the picture will be packed and an unpacker will be included as part of the title page.
6) DEFINING THE TRACK/SECTOR LIST: This section is where you work with the list of tracks and sectors on which you want your title page to be written. If you want to use the blank sectors found with the scan function, use option 1 at this menu.

   OPTION 1: USE BLANK SECTORS FOUND WITH SCAN: This option will allow you to use any blank sectors you found with the scan function as the track/sector list. You will be notified if not enough sectors were found to accommodate Intercept's requirements.
   OPTION 2: DEFINE TRACK/SECTOR LIST MANUALLY: This option will allow you to enter a track/sector list. Intercept will automatically stop asking for track/sector pairs once you have entered enough to hold your title program plus 3 sectors for overhead.
   OPTION 3: VIEW CURRENT TRACK/SECTOR LIST: This option will allow you to view your current track/sector list to verify that it's correct.
   OPTION 4: EDIT LIST: This option will allow you to edit the current track/sector list. Use the arrow keys to select the pair that you wish to edit, and hit the spacebar to edit it, or D to delete it from the list. Note that if you delete a track/sector pair from the list, you may have to add a pair using option 5 in order for there to be enough room for Intercept to function properly.
   OPTION 5: ADD TO LIST: This option is similar to option 2, except it does not initialize the track/sector list to 0 entries when you select it.

Once you are finished editing/defining the track/sector list, hit <ESC> to intercept the disk.
7) INTERCEPTING THE DISK: Once you have completed the necessary preliminary steps, you will be prompted to place the disk to be intercepted in drive one, and to press <RETURN>. Make sure the disk to be intercepted is in drive one and not write protected. Intercept will attempt to place your title program on the disk. If an error occurs, you will be informed, otherwise, the message, "Intercept 1.3 has been successfully written to the disk" along with the ')' prompt will be displayed. I suggest that after you intercept a disk, you boot it and verify that it functions as it did before the Intercept process.

8) NOTES: If you make a BRUNable title page program, it MUST NOT BEGIN at an address lower than $2400. If it does, it will interfere with Intercept. If it DOES begin at a location lower than $2400, but greater than $BF, the area from $0000-$07FF is used by the Apple internally, and the area from $800-$BFF is used by the Intercept 1.3 loader program.

NOTE: If you're a GnU WaReZ Kid, you can use Intercept to add a title page to cracks that are already out, but let's face it...how much lower can you get than to steal credit for someone else's crack?

Well, that's about it. If you've got any questions about Intercept, feel free to leave me mail on any of the following boards:

Club Zero.............(213) 395-0221 Transfers ]|(.........(514) 738-1247
RAPS ]|...............(907) 753-RAPS Halifax.................(301) 445-5897

-The Voice Over

Documentation completed 19, December, 1986, 11:19 PM, MDT.
That's it dudes, have fun, and enjoy this great ware from:

Let's say the code is 310 you look down the first column until you find 310....the code is 36980...If you need 311, you just go over one column to the right...the code for 311 is 41976...etc...etc... you find 310....the code is 36980...If you need 311, you just go over one column to the right...the code for 311 is 41976...etc...etc...
About: NOISE TRACKER v1.0
(VAMPS DEMO DISKS
INTROMUSIC & INTROMUSIC.W

The INTROMUSIC files and INTROMUSIC.W wave files, found on all VAMPS DEMO DISK, are a complex (VAMPS) version of both new and earlier Noise Tracker and/or SoundSmith music files. It took several days of work to create each of these files using my Apple IIgs, porting the data to a Macintosh and/or IBM with customized DSP (Digital Signal Processor) cards for editing, processing and encoding, then porting them back to the IIgs for final editing and composition.

They were then converted, along with their selected individual sound samples to the Macintosh II format, after being digitally remastered as VAMPS they were saved and converted to files that could be processed with a special VAMPS designed super-computer system. After the final VAMPS full digital encoding was mixed, recorded and mastered, they were saved for use with Noise Tracker (VAMPS) v1.0. Some of the original samples/sounds; (voice samples, musical riff instrument combinations and single music instruments) were selected from a vast collection of digital samples from both the IIGs and Macintosh II/guadra. In some of the VAMPS intromusic - wave files, some VAMP sound/samples and wave files include characters like; ( Wolfman Jack, Bart Simpson and family, StarTrek digital voice clips, Amiga, Atari, NeXT and CRAY II sound samples, plus an original (RARE) digital voice clip of Marilyn Monroe. Oh yes!, let's not forget the Church Lady from Sat. Night Live, with her famous, " Isn't That Extra Special " classic ).

The VAMPS samples list in the OSRL library collection is so complex and gigantic, (with over 6000 sound/samples), I might have left something out. If I did, you can view and listen to the individual VAMPS sounds that will be loaded from the INTROMUSIC.W VAMPS wave files, associated with each VAMPS INTROMUSIC file, via the NoiseTracker v1.0 program.

To the best of my knowledge, no other music and wave file combinations (available for the Apple IIGs), can even come close to the special VAMPS digital encoded effects and complexity of these on these disks. Featuring tracks in the GS-RamBased sounds, with VAMPS sound/samples and tracks in the Ensoniq RAM with VAMPS sound/samples, all playing together, some having separate speed-time rates and play-track maps set to loop or play for infinity. These and the other ( 2 file/2 disk VAMPS sets) are the most complex yet devised for use with the Apple IIGs, using Noise Tracker v1.0 !

Many of the VAMPS - INTROMUSIC (music files) & INTROMUSIC.W (wave files) audio aspects, that have been released for use with: - Noise Tracker VAMPS v1.0, (according to many experts in this field of Audio Directional Localization ), have virtually the same VAMPS and Psychoacoustic effects as can be found on the " ROLAND SOUND LOCALIZATION SYSTEM ", which cost around $45,000 !

So, Apple IIGs users and owners rejoice ! With the VAMPS system, using Noise Tracker v1.0 and your Apple IIGs; with a Stereo card, a good high-quality, high-velocity set of full sized headphones and the unique built-in IIGs Ensoniq chip, you can experience the same quality of Vortex Audio Mastered Psychoacoustic Sounds (VAMPS), that might cost upwards of $45,000, using other computer systems and add-on hardware/cards.

I hope you will enjoy the revolutionary new ( VAMPS ) sound experience you have available with this DEMO disks set. (AGAIN I WISH TO POINT OUT), you can only experience VAMPS, via your IIGs, with a Stereo card, a good quality - high velocity full-sized headphone set, a good stereo system & Noise Tracker (VAMPS) v1.0. I also hope you find some humor and laughter in listening to the various INTROMUSIC files presented during the start of this and the other VAMPS DEMO disks that are released. Be prepared to wait a bit for the music and wave file to load and play for you. PLEASE NOTE: Some INTROMUSIC files are set to play in a loop (for infinity). When you grow tired of it, press any key or click the mouse, to enter the program or press the Apple key during the boot to by-pass it and go directly into the NoiseTracker program.
DOCUMENT IR.v2.0

**What is IR 2.0?**
IR 2.0 is a lot like IR 1.0, but better. IR originally stood for "Init Retarter" and was written to get the GSBug Init installed after booting because it didn't work with my terminal program. It was quickly expanded to also load CDAs, NDAs and GS/OS drivers, and made it onto the Developer CD. There it stood for a long time.

The new features in System Software 6.0, specifically inter-process communication (IPC), make it possible to go IR 1.0 one better -- IR 2.0 installs a Finder Extension so that CDAs, NDAs, inits and GS/OS drivers and even Finder Extensions are installed without ever leaving the Finder. It has preferences, presented through an "Extras" menu item and does a lot more than 1.0.

How do I use it?
To install IR 2.0, put it in the System.Setup folder of your boot volume’s system folder, or double-click on it if IR 1.0 is installed. It’s a permanent init.

Once it’s installed, you’ll see the "IR Preferences..." item in the Finder’s "Extras" menu. The preferences available are discussed later in this document. More importantly, you can double-click on any of the document types listed above and they will be installed instantly. Usually you’ll get extra copies of anything that was already installed when you double-clicked on it, but you can ask IR to try to kill old versions first, or instruct it not to do anything if an old version is around. NDAs appear in the Apple menu instantly and open their windows. Finder extensions' "Extras" menu items show up instantly. New GS/OS volumes appear on the desktop instantly. Everything’s very whizzy and snappy.

Also included in this seed is a Nifty List 3.4p module called "IR.Module." This module will eventually include all kinds of IR things to do, but currently only has one command, "\killir". \killir takes no parameters and does what it says — it kills IR. It displays error messages or tells you what user ID IR had before it was brutally murdered.

What is "not" yet included?
The following capabilities are coming someday, but aren't included in the 2.0 release of IR:

* Some inits don't want to be launched in the Finder, where all the tools are started. IR has an option to let applications have first shot at IR documents. The final package will include a C application that accepts Finder long path messages (message type #11, word-length strings and fully-expanded pathnames) to install these files. The source won't be too impressive; it will call the IR init to do all the work. The application will allow you to change IR preferences if you launch it with no message of type $0011.

IR's Preferences
IR's preferences dialog has three radio buttons, four checkboxes and three simple buttons to dismiss it. You might want to look at the dialog while reading these descriptions to make it clearer.

"Open existing NDAs' windows," if checked, instructs IR to just open the window of an NDA that's already installed instead of installing a duplicate copy. This allows you to double-click on something like the Control Panel NDA icon and get the window open instead of getting a second Control Panel in your Apple menu.

"Open new NDAs' windows," if checked, instructs IR to open NDAs after they're installed if possible. This is only possible if the Desk Manager is active.

"Install Finder extensions permanently," if checked, tells IR to install Finder extensions (file type $8C, auxiliary type $0001) and forget about them; they'll be in the system until you reboot. If this checkbox is not checked, IR keeps track of each Finder extension it installs and shuts them down when the Finder quits or when IR is told to go away.

"Let applications try first," if checked, lets the Finder look for an application to launch first. Only if the Finder finds no application for the file will IR install it. In technical terms, checking the box makes IR respond to finderSaysOpenFailed instead of finderSaysBeforeOpen. You can reverse this preference on the fly by holding down the Control key as you open a file IR would normally install.

"Tell me about problems" tells IR to show alerts (if possible) in certain situations where you might want more information and a chance to change your mind. If you leave this box unchecked, IR won’t display any such alerts.

The three radio buttons determine how IR responds to duplicates -- files the System Loader already knows about with the same pathname. "Install a new copy" installs what IR 1.0 did -- it blindly and always installs a new copy of the file. This creates duplicate entries in your DA menus and can cause problems with some inits.

"Try to remove the old one" sends the srqGoAway code to the existing copy in the system, but installs a new one whether or not the old one goes away. This is what I usually use.

"Always remove the old one" takes no action if the existing copy won’t accept the srqGoAway code. This is the most conservative but least useful approach. If you also check the "Tell me about problems" checkbox, IR will tell you when a duplicate can’t be removed and give you one more chance to change your mind and install a new copy. If you hold down the option key while clicking "Install another copy" (actually, IR doesn’t check until immediately after the window closes), the old one will be killed without mercy. You should only do this if you know exactly what you're doing. It’s necessary for Finder Extensions that accept the Finder’s "goodbye" message but won’t accept an srqGoAway code -- otherwise weird things could happen. Most Finder Extensions won't have this problem, but EasyMount does.

"Cancel" dismisses the dialog with no changes to your preferences. "Accept" dismisses the dialog, saving your changes in memory until you reboot. If you click "Save," IR writes your preferences to disk (in the same folder where the IR init file is located). IR will attempt to load such preferences when it’s initialized, and the file is less than one block long so you might as well use it. (Actually, the logical length is only two bytes.) Most of the controls have semi-logical key equivalents, too.

Programming with IR 2.0
IR 2.0 is a permanent init because it sits around and accepts requests to do things. In addition to accepting requests the Finder says, IR defines several requests you may send to it at the string "Apple~IR~". The file E16.IR, included with this seed, gives the definitions of all the symbolic constants outlined here.

The preference items are in a one-word field, and the bits of the field are defined in the E16.IR file also. Assemble whatever bits you want and pass them to the routines that take "preferences" or "flags." If you pass flags to the askIRToInstall routine, be sure to set the low-order bit (irSpecialPrefs) or IR will use the existing preferences instead. If you want IR to write preferences to disk, also set the low-order bit, otherwise the preferences will stay in memory only.

Here are brief descriptions of the IR requests. They are all made to the string "Apple~IR~" with the Tool Locator call SendRequest. See the System Software 6.0 Toolbox Delta ERS for details on SendRequest.

**askIRStartUp**

Starts IR. You shouldn’t have to send this; the Init portion of the IR file sends this request as soon as the request procedure is installed. This is where IR calls ShowBootInfo to display the icon or text string. It also reads the IR preferences from disk if it can find them, and uses the default preferences if it can’t.

**dataIn:** Pointer to IR’s user ID.
**dataOut:** Reserved

**Results:** None.

**askIRAreYouThere**

A simple request; IR accepts it if it’s present. An easy way to see if IR is around so you can send it other requests.

**dataIn:** Reserved
**dataOut:** Pointer to the following structure:
+000 Word recvCount (filled in by Tool Locator)
+002 Word userID -- IR’s user ID for your convenience

**Results:** None.

**askIRToInstall**

The workhorse. Here you give IR what it needs to install a file, and it does it if it can and if the preferences permit it.

**dataIn:** Pointer to the following structure:
+000 Word Flags/Preferences
+002 Long Pointer to class one pathname of file to install
+006 Word File type of file to install
+008 Long Auxiliary type of file to install

dataOut: Pointer to the following structure:
+000 Word recvCount (filled in by Tool Locator)
+002 Word ierror -- a result code about what happened
+004 Word user ID of file just installed

**Results:**
- irDuplicateWontDie -- you told IR not to permit duplicates, and it found one it couldn’t kill.
- irNoFinder -- Finder wasn’t active when you installed a Finder Extension.
- irGSSNavail -- GS/GS isn’t available so the file can’t be read from disk and installed.
- irNotIRFile -- not a file IR can install
- irBusy -- IR was already busy doing something non-reentrant

**askIRGetPrefs**

Returns IR’s preferences. If the low bit of dataIn is set, the preferences are (re-)read from disk instead of returned from memory.

**dataIn:** Low bit set ==> read from disk
**dataOut:** Pointer to following structure:
+000 Word recvCount (filled in by Tool Locator)
+002 Word ierror -- result code
+004 Word flags (defined in E16.IR)

**Results:**
- irBusy -- IR was busy at the time
- Toolbox or OS errors returned unchanged

(However, “file not found” makes IR create a new preferences file.)

**askIRSetPrefs**

Sets IR’s preferences. The new preferences are in the low word of dataIn and are written to disk as well if the low-order bit is set. The preferences are always saved to memory even if disk errors occur.

**dataIn:** Preferences in low word, low bit set ==> write to disk
**dataOut:** Reserved

**Results:**
- irBusy -- IR was busy at the time
- Toolbox or OS errors returned unchanged (except file not found)

**askIRDoPrefs**

Asks IR to present the preferences dialog, interact with the user and record the user’s changes to memory and/or disk. The preferences dialog works in either 320 or 640 mode, and it is initialized with the current preferences; if you want to present the dialog with different preferences, you need to call askIRGetPrefs before calling askIRDoPrefs.

The dialog should only be presented if the Desk Manager (and NDA capability) is active, but right now it just assumes these things are there, so it will probably blow up big-time if you call it without the desktop tools active.

**dataIn:** Reserved
**dataOut:** Reserved

**Results:** None.

-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

A word about installing things like IR does yourself:

If you have any doubts that installing DAs and inits and stuff on the fly and making it do what the user expects is easy, check the voluminous release notes at the beginning of each source code file, especially RequestProc.aif. The entire process is pretty delicate to begin with, and trying to move it to your own application is still risky.

So now you have source code to IR and you know all of its secrets. Now you can go off and do these things in your own programs, right?

Wrong. Please don’t, for several reasons.

First, the code is still kind of delicate. It has several interdependencies and I very seriously considered moving all the delicate stuff into a separate source file and not releasing it -- just releasing the object code to that part. I decided against it so you can see what’s going on, not so you could duplicate it in your own programs.
Second, if you want your desk accessory or application or other code
to duplicate IR functionality, there's no reason to require the user to
take the memory to duplicate these functions. IR can do the same
work and not require nearly as much space in your code.

It's by far easier and better to provide the same functionality by licensing
IR and including it with your program, and using SendRequest to call it.
Or, you can just use askIRAreYouThere to implement IR-like features if
IR is already installed, avoiding any licensing paperwork.

This stuff is tricky and it can change without warning. I'd feel a lot
better if you let IR take the risks and you just ask it to do the dirty
work. That way, any number of desk accessories, applications or utilities
of any kind can have useful IR-like features without taking up lots of
memory and without taking undue risks.

You can either license IR (it will be, in the immediate future, part of
the GSBug distribution package, which costs less to license than most
programmers spend on fast food in a week) and ship it with your product,
or (if, for example, you're a shareware author) you can just use the
askIRAreYouThere request to see if IR is installed and enable IR-like
features if it is. This allows virtually _any_ application to provide
IR's capabilities when not in the Finder for very little memory.

You can contact Tim Swihart (AppleLink: TIM.SWIHART, address: 20525
Mariani Ave., MS: 70-3M, Cupertino, CA, 95014) for more information about
licensing IR as part of the GSBug package. Once everything's settled,
Tim will undoubtedly point you to Software Licensing, so if you know things
are settled you should feel free to contact Software Licensing directly.

Please AppleLink comments/bugs/suggestions to me at DEATHERAGE1, or AIIDTS.
If you like the sample, you can tell my management that it was a good use of
my time by writing to DTS.FEEDBACK.

(Oh, by the way, IR 2.0 doesn't work reliably on any system earlier than
6.0.059, but it only checks for 6.0 generically.)

Package release notes are not included here, but there are voluminous
change histories at the beginning of each source file.

Matt Deatherage
Developer Technical Support
Apple Computer, Inc.
Apple II Computer Info

--- with varied skills. (Check the next section for complete descriptions)

- Point and click on the left and right arrow keys which appear next to
  the Name Window to cycle through the players' names.
- Choose a name, point to the next OK to go to the next player, click on
  the mouse button, and the player's skill level, tee position, and
gender are automatically set.

3. Name

- To create a new player, type the desired name (up to eight letters) and
  press Enter

4. Skill

- Beginner: Wind conditions don't affect your shots as much, and your
  slices and hooks are less extreme. On each shot, your club is
  automatically selected for you.
- Expert: Wind really comes into play, and hooks and slices are most
  extreme. In addition, you must select your club for each shot.

5. Tee: Pro

   Farthest from the hole

   Men's Far away, but not as far

   Ladies' Closet to the hole

   Note: Some holes are designed with less than three tees, in which case
   some players share a tee.

Who Are These Computer Players?

Jack N

The Golden Bear himself. Naturally, the Player of the Century plays
at the expert level and hits from the pro tees. His shots are carefully
planned, well executed and he hits the ball further than the posted
distance for each club. Nicklaus is one of those rare golfers who
almost always does exactly what he set out to do.

Nancy D

Though enthusiastic, Nancy's just beginning. She often suffers a wicked
slice on her drivers. And long putts give her lots of trouble.

Lars X

Calls himself Mr. X and likes to think of himself as an expert -- which
is why he drives from the pro tees. Has a tendency to hook drives and
pull putts to the left.

Babs R

A true competitor, Babs considers herself an expert. She usually hits
the ball straight -- with an occasional slice. When it comes to
putting, she's overly cautious, and frequently leaves her putts short.

Art M

Art's a weekend golfer who could use a little practice. His shots tend
to be short but straight. And his putts to be long and off-line.

Natasha

Natasha's a big hitter. She drives from the men's tees, and has played
at the expert level for years. If she doesn't slice, her tee shots are
beautiful. But she often lags her putts.

Eddie C

He's no Jack Nicklaus, but this guy's Good. So good, in fact, he makes
a living suckering players into a "friendly" game of skins. Naturally
he plays at the expert level and drives from the pro tees.

Sally C

Though she's been playing for years, Sally is still a beginner. She
just can't seem to get the swing of it. She hits from the ladies' tees.
Her drives could go either way -- hook or slice. And she leaves her
putts short.

Curly O

Curly just took up golfing this year and loves it. Problem is, he
doesn't really play that well. He shoots from the men's tees, and plays
at the beginner's level. His slices could end up just about anywhere.
So could his putts.

Select Prizes for Your Skins Game

You can choose to play Championship Skins -- a $36,000 match with single hole prizes
of $100, $2000, and $3000 for each set of 6 holes -- or change the entire prize
structure.

1. To play the existing game, point to the box beside Championship Skins and
   click the mouse button.

2. To alter the total wager, point the the box beside Change Total Prize,
   then click the mouse button.

   - Type in the new total beside the $ symbol (not to exceed $9,999,999), and
     press the Enter key. New wagers are automatically assigned for each
     hole.

3. To alter the prize for any hole, point to the box beside Change Hole
   Prized, then click the mouse button.

   - Point to the hole you want to change, and click the mouse button.

   - Type in the desired prize amount from the keyboard and press Enter,
     the computer automatically recalculates the prize total for the
     entire course.

4. Point and click on the Done box to continue to the next screen.

Pick A Game Option -- Practice or Play

Choose one of the following activities by entering its number.

1. Play a round

   - 18 holes: 9 out and 9 in

2. Practice a hole

   - Enter the number of the hole (1-18) you want to practice, and press
     Enter.

   - After you hole out, you automatically view the Scorecard and
     Statistics Sheet for that hole.

   - Continue to press the mouse button to return to the Practice or Play
     menu.
3. Driving range
   o Hit as many balls as you want with any club (except the putter)
   o Keep your eye on the wind indicator; it may change after each shot
     (see Wind).
   o Press Q to quit the driving range and return to the Practice or Play menu.

4. Practice green
   o Hose your stroke. Get the feel of lining up your putts, playing the
     break, and controlling the speed (see Putting). Press Q to return to
     the Practice or Play Menu.
   Note: Computer players don't go to the driving range or practice green
     -- they feel they're good enough already.

5. Quit
   o Answer the prompts (yea or no) to return to the Course Selection screen or to
     exit the game.

Gameplay -- Tee to Green

Overhead Views of Each Hole
An overhead view of each hole appears before you tee off. It gives you basic data --
course name, hole number, par, distance, from each tee -- as well as a detailed look
at the layout.

1. Study the hole. Jack excels at this; so can you.
   o Par attention to the pin placement. It's random which changes the
     length and character of the hole every time you play it
   o Analyze the potential hazards -- doglegs, trees, water, traps, out of
     bounds, cart paths -- then identify the optimum target areas for your
     shots.
   o Jack puts it this way: "There is an ideal route for playing every
     golf hole ever built, and the more precisely you can identify it, the
     greater your chances for success.'

2. Click the mouse button when you're prepared to tee off.

3. Press the Letter O anytime during the hole to return to this Overhead
   view.

A Tip From Jack...
The Overhead View can help you be a smarter Skins player because it shows you the
relative locations of every ball that's played. Use it to compare your next shot to
what your opponents must face. The information will tell you whether to play safe,
or go for it.

"A definite time to be conservative in a Skins game is when your opponent, hitting
first, finds serious trouble such as out-of-bounds," says Jack. "Swallow your pride
and play it cozy. Conversely, if you're in trouble and he's obviously in A-1 shape,
there's little to be lost by gambling."

Choose Your Clubs
1. Beginner
   o A club is automatically selected for you on each shot from tee to
green. It appears in the Club Selection box at the bottom right of
your screen, along with the posted maximum distance for that club.
   o The computer calculated your yardage from the pin, then selects the
     club whose posted maximum distance (see the Club Distance chart on
     the back cover) is closest to that yardage.
   o Be careful: The computer only takes distance into consideration --
     not wind, trees, rough or other conditions which can affect club
     selection.
   o You can override the computer's choice by pointing and clicking on
     the Up and Down arrows beside the selected club. Stop when the club
     of your choice appears:

   Eight irons          (2-9)
   Two fairway woods   (3-6)
   One pitching wedge  (P-Wedge)
   One sand wedge      (S-Wedge)
   One Driver

You Don't Have To Use A Mouse
You can also use the keyboard to control aiming and swinging, but for sake of brevity
we omit those instructions throughout. Use the left and right arrow keys to aim the
shot, the Up and Down arrow keys to make your club selection, and the space bar to
replace the clicking of the mouse.

2. Expert
   o You must select your own clubs for each shot; the Club Selection box
     defaults to the last club you used until you select another stick
   o The computer automatically defaults to the sand wedge in the sand,
     the putter on the green, and the Driver on the tee; but it won't
     default to the Driver off the tee.
   o Base your decision on the yardage to the pin -- as shown on the
     bottom center of the screen -- and other playing conditions such as
     wind, hazards and rough.
   o Check the Club Selection chart on the back cover to see the maximum
     distance each club can be hit without overswinging (no yardage
     appears in the Club Selection box)
   o If you don't select a club, the computer selects either the last club
     you used (except the Driver), or the sand wedge or putter if you're
     in the sand or on the green.

A tip from Jack...
Club selection is wide open in this game except for three exceptions: Your driver
can only be hit from the tee, your putter can only be hit from the green, and the
sand wedge can only be hit from a sand trap.

But before you select any club, prepare for your shot mentally. "Before every shot,
look hard at what confronts you and then decide on a club, and target," Jack says.
"Identify the specific risks -- Out-of-bounds, water, bunker, heavy rough, wind,
ground slope, pin placement -- and weigh them against your capabilities."

Aiming Your Shots
Atop the Play screen, a small flagstick always indicates where the pin is located in
relation to your position. (This is especially helpful on blind shots where hills or
trees obstruct your view of the real flag.)

1. Point and click on the arrow keys beside Aim Shot to adjust the "Aiming
   Ball" to the left and right of the small flag. (or, you can point to
the Aiming Ball, click and hold the mouse button, and "drag" the ball to your desired location.
2. Place the Aiming Ball directly over the flag if you want to aim your shot directly at the pin.
3. Place the ball to the left or right of the flag to compensate for wind conditions, obstructing hazards, hooks and slices, and for the break on break on break.

Changing Your Perspective
If you don't like the direction you're aiming toward -- say a tree blocks your shot -- you can change it:
1. Point and click on the arrow keys beside Aim Shot to slide the Aiming Ball past either of the two vertical pegs that bookend the top of the screen. (Or, you can point to the Aiming Ball, click and hold the mouse button, and "drag" the ball past the pegs.)
2. Slide it past the left peg: The screen automatically redraws and you now see what you would see if you had physically shifted your vision to the left.
3. Slide it past the right peg: It causes the same shift of perspective, but to the right.
4. If you want, you can continue to scroll right or left and see a 360 degree view of the hole from where you're standing.

A tip from Jack...
This feature can be used anytime, but it's especially helpful between the tee and green where you're deciding whether to gamble or not gamble. It's often better to shift trouble than to always aim for the pin on your approach shots.

It's usually higher handicappers who don't play away from obvious dangers -- bunkers, trees, water, etc. "Unless you are forced by the competitive situation to gamble, " Jack says. "I lean toward playing safe and moving on. It's paid off for me -- especially on the tough courses used in major championships."

Swinging
The movement of the Power Bar on the left of the screen corresponds directly with your players' swing on screen. To control the swing, you control the Power Bar. And to control the Power Bar, you use the mouse.

Every shot required three clicks of the mouse button to execute. (the mouse pointer must be inside the golf course portion of the screen to make it work. The timing of the clicks determines how hard and how straight you can hit the ball.
1. Click the mouse button once to begin your backswing.
2. Click the mouse button a second time to control the distance of your shot (and start your downswing.)
3. Click the mouse button a final time to strike the ball -- and control how far left or right of straight you want to hit it.

"Swinging" the Power Bar
The middle section of the Power Bar -- let's call it the Swing Zone -- is divided into ten segments, each of which represents 10% of your club's potential distance (as determined by the Club Distance chart, and as shown in the Club Selection Box.)

Thus, the bottom line of the Swing Zone represents 0% or 0 distance; the top line represents 100%, or the maximum distance for each club as set by the computer; and the Half Line represents 50% or half that maximum distance.

A Sample Shot:
You're sanding on the tee of a 300-yard hole, so you take your driver and you want to hit it full. If you're a man, a full driver, means 250 yards in this game. You decide to hit it dead straight because that's the way the hole goes, and there's no offending wind of hazards.
1. Click the mouse button to start your backswing; a color rises like mercury from the bottom of the Swing Zone towards the 100% line.
2. Watch the rise carefully. Try to click the mouse button the moment it reaches the 100% line.
   o A Triangular arrow to the left of the Power Bar indicates exactly where you make your click.
   o After the click, the color descends, just like your backswing.
3. To keep your shot straight on target (the flagstick), make yours third click on the '0' line.
   o Another arrow appears to mark your click.
4. If each click is right on the button, your ball sails 250 years straight down the fairway, and you're left with a 50-yard approach shot to the green.
   o The computer automatically tells you how far you hit your last shot.

Controlling Your Distance
Of course, you don't hit every club full if you want to stay in bounds. Let's continue the sample hole to see how to control the distance of your shots.

You're 50 yards from the pin, so you select your pitching wedge (P-Wedge) because the chart says the pitching wedge can whack it 100 yards if you hit it full. But you don't want to hit it full; you want to hit half a wedge 50 yards:
1. Click the mouse button to start your swing.
   o Notice that the color rises much more slowly with a wedge than it does with any other club.
   o The smaller the club, the slower the rise -- because the most humans smaller clubs (like the high irons) are easier to hit than big ones (Drivers and fairways woods)
2. Click the mouse button the moment the rising color reaches the Half Line -- that's 50% of the wedge's full distance (100 yards) or 50 yards.
   o Remember that each line in the Swing Zone represents 10 percent of any club's posted maximum distance
3. As the color descends, make your final click right on the bottom line of the Swing Zone to hit the ball straightaway.
   The ball should loop gently 50 yards into the air than nestle onto the green -- inches from the cup.

Overswinging and Underswinging
What happens if you don't make your second, or distance, click directly on the 100% line of the Swing Zone?
1. If you make the second click late -- inside the Power Swing Zone -- you overswing.
A Tip From Jack...

The "ability" to hook and slice can destroy a hole or an entire round, but with a little strategy, technique and practice they can give you a major advantage over your opponent.

"Let's say I'm playing a 5-iron shot to a green 80 feet wide with the pin centrally located," says Jack. "If I aim at the pin and attempt to hit straight, I have only 40 feet of green to work with if I hook or slice the shot."

"But by aiming, says 20 feet to the left or right of the pin and trying to face or draw the ball in toward it, I give myself a much greater margin for error. Now I can "miss" the shot by 40 feet and still keep the ball within 20 feet of the hole."

"That is the tactical reason good golfers rarely try to hit the ball dead straight. The technical reason is that a straight shot is much harder to keep repeating than a fade or draw."

Hazards and Course Conditions

Your swing isn't the only variable you have to consider (or overcome) when you're trying to hit the ball straight.

Wind

Technically not a hazard itself, wind can certainly help you find the legitimate ones in a hurry. The amount and direction of the wind that affects each shot is registered on a circular Wind Gauge at the lower left of your screen.

Wind Direction

- Imagine that you are standing in the center of the circle, facing straight ahead at the flagstick.
- The line inside the circle is the wind.
- Now imagine there's an arrow on that line aiming away from you -- that's the direction the wind is blowing.

Wind Speed

- A bar gauge labeled WIND -- below the direction circle -- tells you how hard the wind is blowing.
- The indicator is a red bar which slides from left to right on the gauge: 0 mph on the left, 10 mph in the center, 20 mph on the right.

A Tip From Jack...

"You need intelligence and patience to play well in wind," says Jack, "but most of all you need a strong sense of realism and sure emotional control. Par climbs for all golfers along with wind force."

Tailwinds

A following wind makes it harder to stop the ball in the fairway or on the green, so you have to adjust your swing accordingly. Jack: "I take one or two clubs less than the distance would normally require and hit hard. Don't ever "baby" a shot when you want height -- give it a good, solid whack."

Headwinds

Obviously, you need a compensate for a strong headwind by swinging harder or using more club. "Your goal any time you're firing dead into a strong wind," says Jack, "is to gain a competitive edge. "A prefect example is the 15th at Augusta Nationals," says Jack. "Almost everyone cuts loose here because the reward can be a shot at the green with an iron for a two-putt birdie."

"That is the tactical reason good golfers rarely try to hit the ball dead straight. The technical reason is that a straight shot is much harder to keep repeating than a fade or draw."

Hooking and Slicing

If there's no wind and if you make your third, or accuracy, click right on the bottom line of the Swing Zone, the ball should fly straight. But just as you can't hit every club full, it's unlikely that you can hit every shot straight. And sometimes you don't want to hit it straight.

1. How to hit a hook, so that it "draws" the ball to the left (for a right-handed golfer):

   - After your second, or distance, click, the color descends toward the bottom line of the Swing Zone.
   - Click the mouse button before the color reaches the bottom line -- in other words, swing early -- and your shot hooks to the left.

2. How to hit a slice that "fades" the ball to the right (for a right-handed golfer):

   - After your second, or distance, click, the color descends toward the bottom line of the Swing Zone.
   - Click the mouse button after the color reaches the bottom line -- in other words, swing late -- and your shot slices to the right.

- How far it slices depends upon how late you swing (the later the swing, the bigger the slice), and how hard you swing (if you overswing into the Power Swing Zone, the slice is randomly exaggerated).
**Crosswinds**

Jack: "You have two options whenever the wind is fully or partially across the line of a shot. One is to hook or slice against the direction of the wind, thus "holding" the ball more or less straight. The other option is simply to aim as much off the direct lines as you think the wind will move the ball and play your normal shot, allowing the ball to be blown back to the target."

**Rough**

Use more club or more power to hit out of the longer, thicker grass that borders the manicured fairways.

**Sand Traps**

Like the rough, you need more power or more club to get distance from a fairway bunker.

**Water and Out-of-Bounds**

Hitting into the water costs you a one-stroke penalty, and the computer gives you the option of hitting the ball again from the same location or dropping the ball near the water (but no closer to the hole).

**Cart Path**

It depends on the situation whether or not a cart path is hazardous or not. The ball bounces higher and farther off of it, which may be desirable on a trouble-free drive. But on some shots, the carom can carry you right Out-of-Bounds.

**Putting**

You can only hit the putter on greens, and you use the same technique to aim and stroke a putt as you use to hit any club.

**Aiming and Stroking**

1. Imagine an invisible straight line that connects your ball, the hole, and the Aiming Ball at the top of the screen.

2. Point and click on the Right and Left arrows beside Aim Shot to move the Aiming Ball onto the end of that imaginary line. (or, point to the Aim Ball, click and hold the mouse button and "drag" the ball there.)

3. Use the three-click procedure on the Power Bar to control the distance and direction of your stroke.

   o Remember that the maximum distance on your putter is 80 feet, thus every segment on the Power Bar represents 8 feet.

**Reading the Break**

Unfortunately, many greens aren't flat, so your putter won't always go straight. To find out how much a putt is going to break right or left, or if you're putting uphill or downhill, check the Break Indicator. It's in the same location as the Wind Gauge and operates, in a similar way.

**Right, Left, Uphill, Downhill?**

1. Imagine that the line in the circle has an arrow on it pointing outwards -- that's the direction that the putt will break (right or left) if you're aiming directly at the hole.

   o If there's no line, there's no break.

2. If the arrow points due south as on a compass, that means that the putt is uphill and has no break.

   o Uphill puts are slow' make a firm stroke.

3. If the arrow points due north, the putt is straight downhill.

   o Downhill puts are fast; ease up on the mallet.

4. If the line points, say, northeast, that means you putts is uphill and it breaks to the right. Compensate for both factors.

**How much does it break?**

   o A bar gauge labeled BREAK -- below the direction circle -- tells you the intensity of a putt's break.

   o The Indicator is a red bar which slides from left to right on the gauge: if at the far left (no color), the break is virtually non-existent; if at the far right, you have a major break.

**A Tip From Jack...**

"The amount any putt breaks depends on its speed," says Jack. "The harder you hit it, less the break will alter its course. This is good to remember, especially on short putts when you're under pressure. The greater the pressure you're under, the better off you are playing boldly rather than cutely on 'must' short putts."

**The Scorecard, Statistics, Best Round Board**

The Scorecard and Statistics screens appear consecutively after each hole. To view, the Scorecard in the middle of a round, press C. For the Statistics Screen, press S.

The Scorecard changes for each format:

**Stroke Play Scorecard**

   o Shows the hole score and aggregate score for each player, as well as the par for each hole, each nine, and the course.

**Skins Game Scorecard**

   o Indicates the winner of each hole, how much money is won on each hole, and the total money earned for each player.

**Statistics Screen (the same for both formats)**

   o Longest drive (in years) and the yardage of your last drive.

   o Closest ball to the pin (in feet, if you hit the green in regulation)

   o # of Fairways hit (only on Par 4 or 5 tee shots)

   o # of Greens hit (only on Par 3 tee shots)

   o Putts taken

   o Birdies and Eagles made

**Best Round Sheet**

   o At the end of each round, your final score is compared to the score of anyone who has ever played your disk.

   o It records the seven best rounds of all times of each course. (Make sure that your disks are "write enabled" which means that if you're using a 3.5" disk the sliding tab in the corner is closed.)

   o To view it from the game screen, Press B.

**Strategy**
Apple II Computer Info

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DOCUMENT jai.alai

+++ Jai-Alai (pronounced Hi Li)
By: Joe Heidcamp

Jai-Alai on a computer? Absolutely! There is nothing sports master, Joe Heidcamp can't program on the Apple. Right Joe?

Jai-Alai was designed both for entertainment and as a learning tool for those unfamiliar with the betting environment that surrounds the game. Jai-Alai uses a paramutual system of betting. That is to say the odds are determined by the amount of money placed on the players. So if the majority were to bet on #1 to win, #1 would be the favorite on the odds chart.

How Jai-Alai works:

Jai-Alai is a game similar to handball. The players wear a CESTA which is a hooked extension of the hand that catches the ball and throws it at incredible speeds. For our purposes we will use team play only, but Jai-Alai is played equally as well with just two players. Points in the game are scored by forcing the other team to make a mistake (and there are many mistakes to make as you will see in the program).

Teams are numbered 1 thru 8 and the play is in a single elimination format, but if you lose you don't "go home" you just go to the end of the line and wait your next time up. The rotation of teams is something best learned by example with the program. One note of interest, after the first round is over, (all teams have had a chance on the court) the points double! This makes for faster play in a live setting.

The game is over when the first team scores 9 points. This team occupies the WIN position. The second place team occupies the PLACE position and the third place team has the SHOW position. For betting purposes you may place a bet on a team to win, place or show as well as others described in the table below.

To make your bet press "H" for HELP. (You can also use the HELP command in the program.)

Betting terms:

WIN: First place
PLACE: Second place
SHOW: Third place
Win/place/show: Bet on a team to win, place or show.

Trifecta: Pick the first/second/third place teams in exact order. *
Exacta: Pick the first/second place teams in exact order. *

Quinela: First and second place in any order. *

* - These bets may be BOXED. When you box a bet the numbers you picked may come up in any order as is the case with the trifecta or you may place more than one bet on the same ticket. (IE: 123 Quinela box pays if either 1,2 or 3 end up in first or second place.)

EDITOR'S NOTE: Jai-Alai is an exciting game of skill that we at UpTime prefer to just watch for its entertainment value. Jai-Alai rules differ from state to state. Local Jai-Alai rules will be posted at the Jai-Alai Fronton.

Press '['}-{6} to run Jai-Alai.

Files needed:

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JELLYFISH is a sort of undersea defender. The object is to destroy all of the creatures you see. (Ha ha) But before you shoot all of them you should go down to the very bottom and try to pick up all 6 of the little things that are embedded in the sand. The keyboard is the easiest way to control the ship. The controls are:

S - Left
D - Right
E - Up
X - Down
Q - Fire (also extend arm to get salvage)

When you go to the bottom you'll notice that doors on the bottom of your submarine open. This means if something is in your way, you can't shoot it. Also to pick up the stuff you should be directly over it, press the Q once. if you don't explode or you got it or missed all together press the Q again, this will raise the arm back into the ship. If you run into one of those things with the arm down you will blow-up. You get 5 ships in total. You get 1000 points for each thing you pick up. Once you have gotten them all the doors close and you can shoot anything in your way again. Be careful if you don't hit a creature dead center it will break up into many creatures. Have fun with this it's not too bad.
At SubLOGIC we've been steadily developing a comprehensive system of real-time three-dimensional display and simulation technologies for microcomputers. Jet is an exciting application of these technologies in a realistic simulation of both the F-16 Fighting Falcon and F-18 Hornet jet fighters. These jets have tremendous power and agility, and each is very easy to fly. Jet includes a free flight mode for practicing aerobatics and precision maneuvering, and two different combat modes to test your skills. We hope Jet will provide you with some excitement of flying the real thing.

Menu #1: Display Type

A) Color
B) Black & White#

Menu #2: Select Mode

#1) Dogfight  #2) Target Strike
#3) Free Flight  #4) Demonstration
#5) Load Scenery Disk

Menu #3: Skill Level

0) Practice (no crash)

9) Difficult (easy to crash)  

Menu #4: Aircraft Type

#1) F18 (Carrier)
#2) F16 (Land Based)

Menu #5: Select Armament

1) Aim-9 Missile (Dogfighting. 1 to 6 of each.)
2) Aim-7 Missile (Dogfighting. 1 to 6 of each.)
3) AGM-65 Missile (Target Strike.)
4) MK-82 Bomb (Target Strike.)
5) Exit Arming Menu

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Frame loading measures the force exerted on the aircraft perpendicular to the wing surface. This force is measured in G's, where one G equals the force of gravity. If frame loading shows a negative value, the force is applied upward with respect to the wing. This instrument is important because of the human body’s limited tolerance to high acceleration. If frame loading exceeds 9 G's, the pilot will black out.
due to blood draining from the head. If frame loading drops below \(-3\) G's, the pilot will red out as blood rushes to the head.

D. Gear Status Indicator
This indicator displays the aircraft's landing gear status. Press Ctrl-G to toggle the landing gear up or down as required.

E. Brake Status Indicator
This indicator displays the status of the jet's airbrake. To toggle the airbrake on or off, press Ctrl-B.

F. Fuel Level Indicator
This indicator displays the amount of fuel remaining as a percentage of total internal fuel capacity. As the throttle is increased, fuel consumption will increase proportionally. With afterburners on, fuel consumption is doubled. If your fuel supply is depleted, the engines will flame out and you will have to attempt a dead-stick landing.

Selectable Instruments
Several other instruments may be enabled or disabled at any time. These instruments are optional because they can obscure the out-the-window view and because they slow down overall animation speed.

G. Radar Display
The radar display is superimposed over the outside view. It shows the location of enemy targets—missiles in your home base with respect to your aircraft. Your own aircraft is displayed as a blue dot in the center of the display. Enemy aircraft or ground targets appear as red dots (your selected target flashes red) and enemy missiles appear white. Your home base will appear as a flashing red/white dot. If your home base is outside normal radar range, the red/white dot will be plotted at the edge of the radar screen in the direction home base is located. The radar display can be turned on and off by pressing the [W] key.

H. Attitude Indicator
The attitude indicator is toggled on and off with the [A] key. This instrument shows the orientation of your aircraft with respect to the ground. A scale of lines in 20-degree increments both above and below the horizon indicates the pitch of your aircraft. Single points at the top and bottom of the scale indicate a 90-degree pitch attitude. The aircraft's bank angle is displayed by rotation of the pitch scale. This instrument is very useful when the horizon is not visible outside window.

I. Range Indicator
The range indicator is toggled on and off with the [R] key. This instrument, which appears as a circle in the center of the screen indicates the distance to your selected target (see WEAPONS SYSTEMS). A white circle indicates that the target is out of range. When the target comes into range, the circle turns black and diminishes counterclockwise as your close in. In Target Strike mode range is computed by measuring the distance to the point on the ground that intersects your aircraft's flight path. This is the target point your guided ordnance will track when released. The range indicator can also be used in conjunction with the attitude indicator to determine precisely which way your aircraft is pointing.

View Control

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The AIRBRAKE is used for landings and quick midair decelerations. Use [Cntl-B] to toggle it on and off.

Ejection
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In extreme emergencies (imminent crash or missile hit) it may become necessary to bail out of the aircraft. Press [Cntl-K] to eject.

Sample Flight
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To begin a sample flight, load the Jet and select the appropriate display device. Make your menu selections as follows:

- Game Mode: [3] for Free Flight
- Skill Level: [0] for Practice Mode
- Aircraft Type: [2] for F-16

Now you should see the flight mode display, including the out-the-window view and instruments. Turn the attitude indicator on by pressing [A]. This overlays pitch markings on top of your window display. Turn on the range indicator by pressing [R]. This overlays a small white circle in the center of the screen which can be used to indicate direction the jet is flying in.

NOTE: You may pause the simulation at any time by pressing the P key. Press any key to resume flying. Press [Cntl-P] to pause the simulation without displaying the pause message.

Flight Simulation Continued Next File: Complete Jet Docs Part 2

Sample Flight
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  - Watch: o Thrust Indicator
  - o Airspeed Bar
  - o Afterburner Indicator


  - [Cntl-G] to get Landing Gear up.


[7] Try views & zoom: o For left view [S][F]
  - o Zoom in using [Y] until 8x is reached
  - o Zoom out using [N] 3 times until 1x is reached.

[8] Front View: [S][T]

  - Stop banking by [G].


  - o Reduce power hold down [<->]
  - o Stop pitching by [G]
  - o Altimeter is dropping
  - o Runway in sight. Airbrakes press [Cntl-B]
  - o Landing gear down by [Cntl-G]

[12] Landing: o Turn off attitude indicator [A]
  - o Bank right/left to guide yourself to runway
  - o At 500 feet, raise nose, by [B]


Takeoff and Landing on the Carrier
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If you choose to fly the F-18, you will start out on the deck of an aircraft carrier. Superimposed over a forward view of the launch catapult is a flashing message:

PRESS [L] TO LAUNCH FROM THIS CARRIER

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First increase throttle to full thrust with afterburners on. Then press [L] to launch the jet. The jet will be released and will accelerate rapidly down the deck. As airspeed increases, pull back on the elevator. When the F-18 clears the bow of the carrier the nose will come up and you will start gaining altitude.

In order to re-arm or refuel the F-18 you must land back on the carrier. To do this you should try to position yourself about 3 miles west and slightly south of the carrier on a heading of 80 degrees. As you approach the Nimitz the carrier's landing strip should be visible to the left of it's superstructure, angled slightly north with respect to the ship's hull. Lower your landing gear and engage the airbrake to reduce airspeed. Now you must try to keep the jet parallel to the landing strip by banking left or right, and aim your nose for the stern of the carrier by pitching up or down. Reduce the throttle to about 20% to cut airspeed even more. If you begin losing altitude too soon, increase the throttle. If approach speed is too high, decrease throttle. As you pass over the stern of the ship, begin to flare by raising the jet's nose and try to touch down just short of the trip wire. If you catch the tripwire the jet will stop abruptly & you will be returned to the launch catapult (in Free flight mode) or to the re-arming menu page (for either combat mode). Weapons Systems

A. Ordnance

In either combat mode, once you've selected a skill level the arming menu then appears as:

Select Armament

[1] Aim-9 Missile 160 lbs x 0
[2] Aim-7 Missile 500 lbs x 0
[3] Mk-82 Missile 460 lbs x 0
[4] Mkh-82 Missile 500 lbs x 0

For the F-16 the following weight data appears below the menu:

F-16 Empty 14000 lbs
Internal Fuel 3700 lbs
Total Weight 17700 lbs

Corresponding figures are displayed for the F-18.

Choose your weapons by pressing the appropriate number key (of course). Each time you make a selection the number to the right of that weapon is incremented by one and your total weight is increased accordingly. If you select more than 6 of one weapon, that weapon's counter is reset to 0.

Press [5] when you're done. Remember the combined weight of your weapons affects the performance and flight characteristics of your jet. As you burn fuel and fire weapons your weight decreases and the jet becomes more maneuverable. When flying the F-16 you can return to the arming menu at any time by landing and steering the jet into the hanger at your homebase. If you are flying the F-18 you can return to the arming menu by catching the trip wire on the carrier's deck landing strip. After re-arming the F-18 you will be placed on the launch catapult.

Dogfight Armament:

[1] Aim-9 Side Winder : 5 mile range
   Heat seeking, light weight
   Accurate
   Good for close combat

   Radar homing
   Disadvantage - high weight

   Can be used against MiGs
   20mm cannon

Target Strike Armament:

[1] Mk-82 Smart Bomb : Bomb. No propulsion
   Tracks a point on the ground
   Limited accuracy
   Large warhead - large hit radius

   14 mile range
   Optically guided
   Accurate
   Small warhead - small hit radius

The Dogfight Game

A. Object & Rules

Dogfight is an intense 3-dimensional combat scenario that pits you against Soviet MiG-21 and MiG-23 fighter aircraft. They are equipped with Atoll air-to-air missiles, while you can select from a variable arsenal of Aim-9 missiles and/or Aim-7 missiles along with your 20mm Vulcan cannon. Your mission is to engage and shoot down all enemy aircraft at the skill level you've selected (hint! Start off easy and work your way up. You don't want to fight their best, with your worst now do you ??). Then return home to refuel and re-arm. If your mission has been a success, a new wave of enemy aircraft will then appear at the next higher level. For each successful enemy hit you score, a token marker appears on the fuselage of your jet. Your score can be viewed on the rear window as the number of tokens lining the right side of your jet. If your score exceeds 9, ten digit tokens are marked along the left side of the fuselage. Shoot down all enemy aircraft before returning to base and a two-point bonus will be added to your score. A warning beeper will sound if an enemy missile comes within the danger threshold of your aircraft. If you're hit by an Atoll missile the screen will flash red and orange and the jet will spin out of control. You have seconds to eject before your jet explodes and your body becomes no more bits and pieces. If you eject in time you'll float back to earth (provided the parachute opens) where you'll be recovered and given a new jet to fly in combat. Once you get shot down 3 times, you are grounded and the game is over.

Enemy Aircraft

At the start of each mission, the enemy aircraft will come at you from the south. You will encounter two different types of enemy jets: the MiG-21 and the MiG-23. These aircraft utilize the same flight equations as your jet, but since they weigh more and have less thrust they are less maneuverable. The skill level you select will determine the type & number of aircraft you must shoot down. During a dogfight the MiG's will track you and fire their Atoll air-to-air missiles. Missiles also detonate their warheads if they get within a hit radius.

To shoot down an enemy aircraft you must first select one as your target. The current targeted aircraft flashes out your window & on the radar display. Press the [1] key & your onboard tracking computer will lock onto the selected target. Press it again, and you'll be homed in on the next target. Since there can only be a maximum of 3 enemies in your airspace at any time, you can cycle to the desired target with a maximum of 2 keystrokes.
Once you've selected a target you can fire the active weapon. Press the [RET] or [CR] key to recycle through your available weapon systems and choose the one you'd like to use. Press the [Spacebar] to fire that weapon. Air-to-air missiles will automatically track the target and detonate if they get within the hit radius. A rising tone from your onboard computer will indicate that the MiG has been hit. The MiG will flash, spin out of control (leaving a trail of flak in its wake) and finally explode.

After shooting down all opponents, or if you run out of weapons and ammo you have to return to base. Any remaining MiG's will chase you until you enter the safe zone surrounding your base. You then land, re-arm and get back up in the sky to nuke those Commie's.

Object and Rules:
Your mission in the Target Strike game is to seek out and destroy all enemy ground targets. When flying the F-16, targets will be randomly selected from the local area airstrips, fuel depots, factories, and missile silos. In F-18 mode, your targets are Soviet Kynda-class cruisers randomly placed in the sea to the south of your carrier. Each target will be designated by a flashing red point. Your ordnance can include both Agm-65 air-to-ground missiles and Mk-82 smart bombs. Press [RET] or [CR] to cycle through your available weapons systems & choose the one you like best.

Turning on your range indicator automatically activates the ground target ing computer. As you fly, the range indicator will show the distance from your jet to the point on the ground that intersects your current flight path. If this distance is greater than the range of your selected weapon, the range circle will show all white. As you come within range, position the desired homing point in the center of the range circle and press the [Spacebar]. The weapon will be released and will track that point to the ground. If it impacts within the target's hit radius, the target will explode and a shock wave will spread from the impact point. Scoring is the same as in Dogfighting.

Surface to Air Missiles
Enemy SAM launchers are only capable of detecting your presence within the conical airspace directly above them. If you pass within this airspace they will track your jet and launch their missiles. Because of this you should fly as low as possible when nearing your target. Should an enemy missile come within the danger threshold of your aircraft, a warning beeper will sound. If you are hit, the screen will flash read and orange then spin out of control. Rules of Ejecting are the same as always. Get out or be fried.

Aircraft Technical Data

The Target Strike Game:
When dogfighting, it's important to have the zoom set correctly. At great er distances, a higher zoom factor (4x-8x) will greatly increase your accuracy. During close-in fighting the lowest zoom factor will increase your field view and make it easy to find a target. Viewing the battle from the control tower can help determine enemy aircraft altitude. You may want to get into the habit of scanning several viewing directions during a dogfight to give yourself a better overall view of the surroundings.

As when dogfighting, high zoom factors increase accuracy. When firing air-to-ground weapons remember that aiming errors are magnified at shallow pitch angles. Approaching the target from a steeper pitch will allow you to deviate slightly from the target and still impact the ground near it. However, this will also place you in greater danger of being detected by the ever-hated SAM launchers.

Avoiding Missiles:
Should you detect an approaching enemy missile, there are two ways to in- crease your chances for survival. You can try to evade the missile, but this will be difficult. However the missile will run out of thrust quick ly and lose speed rapidly once it begins to coast. Tracking imperfections can also cause the missile to miss you (don't count on it). Another way to avoid the dang thing is to fly at right angles to its flight path. It will keep turning, wasting its energy, and degrading its homing accuracy. If all else fails, you can eject, but this will forfeit one of the three aircraft you are allowed each game.

Game Tips & Strategies
---

The Dogfight Game:

Game Instructions:

The Target Striking Game:
First hit the '5' key and then:

- T-----View Front
- B-----View Back
- F-----View Left
- H-----View Right
- G-----View Up
The Journey screen is divided into three distinct areas:

A) The story of Journey will appear here. Frequently, however, there is more to be
told than can fit within this area. In that case, the word "MORE" will appear at the
bottom; you can view the rest by pressing any key on your keyboard (or pressing your
mouse or joystick button).

B) You will glimpse the world of Journey through the handsome illustrations that
appear here.

C) All of your selections, while playing Journey, will be made in this area, which
itself is divided into three sections, described on the following pages in the
Playing the game section.

The initial menu. On the startup screen, five options are displayed in the lower
left.

Start - sets you off on your Journey

Background - relates the events leading up to your Journey. If you are playing for
the first time, it would be worthwhile to read this prologue before selecting Start.

Change Name - allows you to personalize your Journey by renaming the narrator of the
story from Tag to a name of your own choosing.

Help summarizes these instructions.

Game displays a group of options that do not affect the story, but rather the play of
the game (e.g. saving your place, making a transcript, etc). These options are
described in detail in the Game option section.

Selecting the options

Selection methods. You can make selections with your mouse, joystick, or keyboard. If
you have two these devices (e.g. a mouse and a keyboard), you can make selections
with either of them or both.

Mouse: Point at, then click on, your desired selection.

Joystick: Move the joystick to highlight your desired selection, then press the
joystick button.

Keyboard: Use the arrow keys to highlight your desired selection, then press the
RETURN or ENTER key.

Party and individual commands. In playing Journey, you have the task of making
decisions not only for your party of characters as a group, but the individuals as
well. As each decision is made, the story will move inexorably forward.

Looking at the bottom portion of the screen, you will see that it is divided
into three areas.

The first column lists the PARTY COMMANDS, those actions which are taken by your
entire party as a group. Most often, these will involve moving from one place to
another. On the screen you would select Proceed to continue down the road or Enter
to enter the provisioner’s shop.

The second column lists the members of your party. When your Journey begins, there are
four: Bergon, Praxix, Esher and Tag. During the course of your Journey, characters
may be added (by choice) and lost (rarely by choice); all such changes will be
reflected here.

To the right of each character’s name are INDIVIDUAL COMMANDS, actions which which
the character can perform at any given moment. On the screen you will see that Bergon can
get the advice of the group (Get Advice), Praxix can cast a spell (Cast) and examine
objects (Examine) and Tag can drop things (drop) and check on what he’s carrying
(Inventory). These options change frequently during play to reflect the circumstances
of the story (e.g. Tag might have an option to Pick Up if there is anything on the
ground to take).

Many of the actions you can select require additional information (e.g. which spell
to cast, which object to take, which Legend to tell). When you select one of these
options a list of possibilities will appear. Simply select your choice from the list,
or select [cancel] to change your mind about taking that course of action.

Notes for keyboard users

1) A quick way to move the highlight bar back and forth between the PARTY COMMANDS
section and the INDIVIDUAL COMMANDS section is to use the space bar.

2) You can quickly highlight AND select an option by typing its first letter.

3) You can select [cancel] with your BACKSPACE, back arrow or DELETE key.

Hints: The musing option

Your Journey will be long and challenge, it is unlikely that you will see it
through to a happy conclusion until you have played for some time. Do not fear - all
of the obstacles and pitfalls you face can be overcome in a logical manner; yet some
may initially baffle even the most sophisticated player.

If you should reach an unsatisfactory ending, you will have the option of
reading some of the narrator’s “musing”, thoughts made in hindsight about the
decisions made during the Journey. Each “musing” refers to a specific point in the
story, where an additional piece of guidance, rather than using these
musing right away, it might be more enjoyable to first experiment with different
courses of action.

The game option

The Game option is always available as the last of the PARTY COMMANDS, at the
lower left of the screen. Selecting this option displays a menu of control functions
that have no direct effect upon the story, but rather upon the playing of the game.

The options are:

- Save - allows you to make a “snapshot” of your position in the story (a bookmark, if
you will) so that you may return to that precise spot in the story at a later time.

- Restore - returns you to a previously Saved position. As with Save, the exact
procedure will vary among computers. Check your Reference Card for details.

- End Session - ends your play of the game, either by saving (Save), quitting (Quit),
or by starting over from the beginning (Restart). Selecting End Session will cause
another menu to be displayed allowing you to choose between these three options.

Remember, you must Save your game before ending a session if you wish to Restore your
current position.

Controls - causes the Controls Menu to be displayed. The controls are:

- Script On: this allows you to use your printer to make a transcript or the story.
You may wish to use this feature to aid your memory about events earlier in the
story, or just to have a souvenir of your journey. A menu will be displayed asking if
you wish your transcript to include the party’s commands or not by selecting Commands.
or No Commands. If you select Controls while you are making a transcript, you will be
given the option of Script Off; this option can now be used to end your transcript.

* Refresh: This option refreshes the screen display, in the unlikely event that it
should become garbled by a power glitch or other such nuisance.

* Version: This will display the release version of Journey as well as the serial
number of your copy of the game. Please include this information in any call to
Customer Support.

* Check Disk: This option performs a check on the contents of your game disks(s) to
ensure that they are undamaged. If you suspect a problem with your disk, use this
option to "verify" its contents. If the disk checks out "OK" then there may be either
a problem with your computer hardware or a bug in the game.

** Most of the Game Menu and Control Menu options can be accessed with function keys
(closed-apple/option key). The keys are defined as follows:

1. Save
2. Restart
3. Quit
4. Script On/Off
5. Refresh
6. Version

Tips for enjoying Journey
================================================================================

* Try to play as much as possible without overusing Save - remember all puzzles can
be solved logically and without resorting to "try-and-die, brute force" methods. If
you are unable to solve a puzzle, you might eventually want to refer to the musings
option after reaching an ending.

* You might find it appropriate to make a Save each time you visit the Wizard Astrix.

* There are no "dead ends" in Journey; feel free to experiment and take chances.
Every action you take will cause the story to move forward.

* Utilize the options available to you judiciously; if more than one character can
take the same action (e.g. examining something) do not assume that the result will
always be the same.

* If you are using a keyboard, remember the available shortcuts (space bar to move
between PARTY and INDIVIDUAL COMMANDS, and using the first letter of choices to make
a selection).

Some of my favorite boards:
Bombay..............................714-897-0412
Lexicon of the Cabal.................213-690-6366
USA West............................714-592-8996
Digital Dimension....................301-599-1079
Bill's Board...........................602-298-9310

...note: this is all of the docs...there is no list of spells, the map that came with
it does not tell you much...certainly not how to get up the mountain (left 4-5 times,
then right, well it was the first time...maybe its random)...you also get a
crystal...and not a very good one at that...
WILL PAUSE DURING PLAY.
THE BUTTON WILL FLAP YOUR WINGS AND THE JOYSTICK MOVES IN THE
COMPLIMENTARY DIRECTION IN WHICH YOU MOVE IT.

SPECIALLY KEYS:

AS DISCUSSED IN THE EARLIER MODES, THERE ARE BUT TWO SPECIAL KEYS:

[CTRL-Q] WILL EXIT THE GAME AND BOOT YOUR DISK DRIVE.

[ESC] WILL PAUSE DURING PLAY.

THE GAME ITSELF: 1.1. Apple DOS File Characteristics

IN ORDER TO THIS YOU MUST JOUST AND DEFEAT ALL FOES ON THE SCREEN.

AS LEVELS INCREASE THE PLAINS WILL VANISH, LAVA WILL BE YOUR BASE, AND
YOUR FOES WILL GET MUCH HARDER.

TRY TO GET EGGS FOR BONUS, AND EACH LEVEL YOU INCREASE ALSO RAISES
YOUR SCORE.

EVERYONE HAVE FUN WITH THIS ONE, IT IS A SUPER GAME!

THE WYVERN

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 568 of 1262
**Apple II Computer Info**

Alternate block checks: No  
Terminal emulation: Yes  
Communication settings: Yes  
Transmit BS BM: Yes  
IBM communication: Yes  
Transaction logging: No  
Session logging (raw download): Yes  
Raw upload: No  
Act as server: Yes  
Talk to server: Yes  
Advanced commands for servers: No  
Local file management: Yes  
Handle file attributes: No  
Command/init files: Yes  
Printer control: Yes

KERMIT-65 is a program that implements the KERMIT file transfer protocol for the Apple II| Microcomputer system. It is written in 6502 assembly language and should run on any Apple II| or compatible running DOS 3.3 or PRODOS 8. This section will describe the things you should know about the file system in order to make effective use of KERMIT, and then it will describe the special features of the KERMIT-65 program.

### 1.1. The DOS 3.3 File System

Items of importance which will be discussed in this section include Filenames and File Characteristics.

#### 1.1.1. Apple DOS Filenames

Filenames under Apple DOS may contain almost any ASCII character (including space). It is not recommended that special characters, i.e. control characters or spaces) be used in a filename to be transferred by KERMIT-65 since they may cause problems when parsing the filename. Filenames may be up to 40 characters in length. No wildcarding of any kind can be done in KERMIT-65.

#### 1.1.2. Apple DOS File Characteristics

All files in Apple DOS have a file type associated with them which is contained in the directory entry for the file but is not part of the filename itself. There are four types of files in DOS 3.3. They are:

- **APPLESOFT**  
- **INTEGER**  
- **BINARY**  
- **TEXT**

All file types have their data stored in eight-bit bytes although not all of them need the eighth bit. The two file types containing basic programs required the eighth bit due to the nature of the data being stored. BINARY files are images of memory copied into a file. Often, these are machine code programs. These files require all eight bits. TEXT files normally contain only printable or carriage control characters. They are stored in the form of seven-bit ASCII characters but the eighth bit should always be set since Apples manipulate all text internally as "NEGATIVE ASCII". When transmitting non-text files the user must insure that both Kermits are handling eight bit data so that no information is lost. If an eight-bit data path is not available (i.e. the remote Kermits needs to do parity checking with the eighth bit), then eight-bit quoting should be used. Of course, BINARY files as well as Apple BASIC files will not have much meaning on a different system. If the user desires to edit a BASIC file on a mainframe, for instance, he must convert it to a TEXT file before sending it over. After receiving the file back on the Apple, the user may convert it back to BASIC once again. The reason BASIC files would be meaningless to a different machine is that the Apple stores BASIC keywords as single character tokens to save space and processing time. To convert a BASIC program to and from a TEXT file, consult the Apple DOS 3.3 Manual. File information can be obtained by issuing the CATALOG command. For example:

```
CATALOG
DIISK VOLUME 010
* A 002 HELLO
B 078 KERMIT
A 002 READER
T 005 TESTFILE
```

When KERMIT-65 is receiving a file, the file it creates on diskette will be of the type indicated by the FILE-TYPE parameter. The file will always be left in an unlocked state after it is closed by KERMIT-65. When sending a file, KERMIT-65 will use the FILE-TYPE parameter to determine how to detect an End-of-file condition. Thus, it is important to have this set properly in all cases. Recommendations for archiving files When using a large system for archiving purposes, there is no reason to convert Apple Basic programs into text files before sending them since there is no need to edit them on the mainframe. The FILE-TYPE parameter must always be set correctly when sending and receiving files. The procedure for archiving files is:

- Run Kermit on remote system
- SET FILE-TYPE MODE TEXT ! (or APPLESOFT or ...) on KERMIT-65
- Send files

### 1.2. The PRODOS file system

The prodos system is essentially the same as the dos system with the exception that performance has been improved, hardware usage has been expanded and file names have different syntax. File names are the major importance to the kermit system. File names have the following syntax:

```
/volnane/subdirectory/ . . /subdirectory/filename
```

Volname is the volume name where the file is located. Subdirectory(n) is a subdirectory on the volume and may be omitted. Filenames are much more restrictive than dos filenames. Prodos filenames are limited to 15 characters no imbedded spaces few special characters and must begin with an alpha character. Volname may be omitted from the filename by use of the prefix command.

Binary file transfer using prodos has its dangers when creating new files. Prodos keeps its size & starting location in the directory which is of course not transferred. Therefore a new binary file will have its starting location 0 which can cause some interesting problems if you try and brun the file. Basic files all start at $801 (it says here) so kermit creates new basic files with a starting address of $801.

### 1.3. Program Operation

#### 1.3.1. HARDWARE CONSIDERATIONS

Prior to using KERMIT-65 for transferring files, the modem interface must be set to handle data in a certain manner. Firstly, the data format should be 8 data bits and 1 stop bit. Secondly, the card should be set to no parity. The baud rate (if adjustable) must be set to whatever rate the modem can handle. For the D.C. Hayes Micromodem, these parameters are set correctly by default, so very little has to be done. For the Apple Super Serial Card these are set from within KERMIT-65 except the interrupt switch(sw6-2) which must be set for interrupts on. For the Microtek sv-622 all applicable parameters are set by KERMIT-65. Some mainframes may need parity checking (i.e. most IBM machines). In this case some parity setting (other than none) will usually work. When talking with such mainframes, binary and basic files on the Apple cannot be transferred unless Eighth-bit-quoting is acceptable to the host. If
you have the parameters set correctly then the "connect" command will start kermit
   talking out the com port.
File transfer is very dependent upon parity. Make sure the host and local parity are
   the same. Following is one ibm sites method for file transfer:
We have an IBM 3033 and 4381 and use both 3705/3725 and 7171/Series 1 front ends. The
   only difference in front ends as far as any microcomputer Kermit is concerned is
   duplex (local-echo on for the 3705, local-echo off for the 7171). In Kermit-65 they
   need to set the following parameters:

BAUD     - whatever is supported.
PARITY   - EVEN for us, maybe MARK for others.
(Floor is the PARITY which usually causes people problems.)
FLOW     - XON for the 7171, NONE for the 3705.
FLOW DELAY - 00

1.3.2. CONVERSING WITH KERMIT-65
KERMIT-65 reads file kermit.init from the default drive when started. The lines of
   this file are executed one at a time starting at the begining. This should be a
   ascii text file and contain commands to setup kermit the way you would like its
   parameters set. It will also execute kermit's other commands. However, any command
   which reads a file (like modem) or leaves local mode (like connect) will terminate
   reading of this file and continue with the command specified. Use your favorite
   editor to produce this file.

Following is an example of what might be in the file:

set display 80 3
set keyboard 2e
set baud 4800
modem

KERMIT-65's prompt is "KERMIT-65>".

To run KERMIT-65 and issue commands to it, type the following:

]BRUN KERMIT

NOSC/STEVENS/CU - APPLE ](K) KERMIT-65 - VER X.XX

Kermit-65>SEND TESTFILE

file is sent

Kermit-65>STATUS

performance statistics are printed

Kermit-65>Other commands

Kermit-65>EXIT

Kermit-65 uses a TOPS-20 style command parser. During interactive operation, use
   may use the ?-prompting help feature ("?"") and recognition (ESC) features while typing
   commands. A question mark typed at any point in a command displays the options
   available at that point; typing an ESC character causes the current keyword to be completed
   (or default value to be supplied). If you have not typed sufficient
   characters to uniquely specify the keyword or filename (or if there is no default
   value) then a beep will be sounded and you may continue typing. Keywords may be abbreviated to any prefix that is unique. There are several different
   Apple ]]'s which can run KERMIT-65. Kermit will have no problems running on an Apple

}]}+,,//e,//c,or //gs system. Of the different communication devices available for
   the Apple }, seven are currently supported:
   - Microtek sv-622 Card
   - D.C. Hayes Micromodem
   - Apple Super Serial Card & //c serial port
   - CCS 7710 Serial Card
   - Apple Com Serial Card
   - Prometheus Versacard - use the apple com card driver
   - CPS card
   - //gs serial port

It is possible that other cards may have operational characteristics very similar or
   identical to one of the devices above. If this is the case, it may work using one of
   the currently available device drivers. The user may want to try each of the above
   options to see if any of them work. KERMIT-65 must be told in which slot the card
   resides. This may be done with the 'SET' command (documented below).

1.4. Remote and Local Operation
KERMIT-65 is normally run in local mode. It may be run as a remote Kermit as well
   although there is no advantage to doing things that way. KERMIT-65 supports User-mode
   commands for talking to a Server. It does support a limited server mode.

1.5. KERMIT-65 Commands

1.5.1. THE SEND COMMAND
Syntax: SEND filespec
The SEND command causes a file to be sent from the Apple to the remote system. The
   filespec is the name of the file on the Apple diskette to be sent. The parser will
   not accept control characters and certain special characters in a filename (i.e. a
   comma), so the user may have to rename the file before it is sent. The user may also
   have problems in filename compatibility with remote Kermits. If the remote Kermit
   does not have the facilities to read the filename into a format that is system
   likes, the user may have to rename the file before sending it. The default disk drive
   used is for file transfers this can be changed with the 'SET DEFAULT-DISK' (dos) or
   'SET PREFIX' (prodos) command (explained below). As a file is being sent, the screen
   displays either 'SENDING PACKET...' or 'WAITING PACKET...' followed by the absolute
   packet number since start of transmission. If a packet must be transmitted several
   times and it reaches the maximum retry count, the transfer will fail and the 'KERMIT-
   65>' prompt will return. If the remote Kermit sends an error packet, the text of the
   packet will be displayed on the screen and the prompt will return. Currently, a
   packet can be retransmitted manually by typing anything on the keyboard. If a 'Q' is
   typed, the entire transmission will be aborted.

1.5.2. THE RECEIVE COMMAND
Syntax: RECEIVE [filespec]
The RECEIVE command tells KERMIT-65 to receive a file or file group from the other
   system. If only one file is being received, you may include the optional filespec as
   the name to store the incoming file under; otherwise, the name is taken from the
   incoming file header. If the name in the header is not a legal filename, KERMIT-65
   will attempt to change it into something legal. If FILE-WARNING is on and an incoming
   file has a name identical to a file already existing on the diskette, KERMIT-65 will
   issue a warning to the user and attempt to modify the filename to make it unique.
   Currently, a packet can be retransmitted manually by typing anything on the keyboard.
   If a 'Q' is typed, the entire transmission will be aborted.
1.5.3. THE GET COMMAND

Syntax: GET remote-filespec

The GET command requests a remote KERMIT server to send the file or file group specified by remote-filespec. This command can be used with a KERMIT server on the other end. The remote filespec is any string that can be a legal file specification for the remote system; it is not parsed or validated locally. If the remote KERMIT is not capable of server functions, then you will probably get an error message back from it like "illegal packet type". In this case, you must connect to the other KERMIT, give a SEND command, escape back, and give a RECEIVE command. Currently, a packet can be retransmitted manually by typing anything on the keyboard. If a 'Q' is typed, the entire transmission will be aborted.

1.5.4. THE CONNECT COMMAND

Syntax: CONNECT

Establish a terminal connection to the remote system. Get back to KERMIT-65 by typing the escape character followed by the letter C. The escape character is Control-8 by default. When you type the escape character, several commands are possible:

B Send a BREAK Signal.
C Close the connection and return to KERMIT-65.
D Drop the phone line to the remote and return to KERMIT-65.
P Toggle the printer on/off.
R Print the screen, >> / e required
S Show status of the connection.
W Swap the del and backspace key.
D Send a null.
Connect-escape
Send the Connect-escape character itself.
? List all the possible single-character arguments.

You can use the SET ESCAPE command to define a different escape character. When 'CONNECTED', KERMIT-65 will be passing characters entered on the keyboard to the remote system, and passing characters from the remote system to the Apple screen. If VT52-EMULATION is turned on, Kermit will trap escape codes and simulate the appropriate functions of a VT52 terminal. On an Apple ][+ with an incomplete keyboard, special characters can be obtained by prefixing regular characters with a right-arrow. Also, Uppercase is shown in inverse and lowercase characters are displayed as normal uppercase characters. Here are the rules for using the special 2/2+ input, to get all printable ASCII characters, and how they appear on the screen:

Special meanings are applied in various contexts to certain characters. The left and right arrow keys do special things, and sometimes the escape key does as well. For letters, the keyboard is always in either default UPPERCASE mode or default lowercase mode. When in UPPERCASE, all letters typed are sent out as uppercase. In lowercase, all letters are sent as lowercase. To switch the case for the next character only, hit the right-arrow ("prefix") key. To switch the default case, hit the prefix-key twice in a row. For funny characters, the keyboard is always in either default UPPERCASE or default lowercase, depending on whether the prefix-key is on or off. The prefix key is also used to get the unusual punctuation characters which are not on the Apple keyboard. Here they are: (To represent the prefix character I am using the letter p).

To get Type Appearance
Left Square Bracket p[ [ ]
Right Square Bracket p] ]
Left Curly Bracket p< { }
Right Curly Bracket p> } Unterline p- _
Backslash p\ \ Tilde (wiggle) p^ ^

The left-arrow key sends a rubout.

With left-arrow and right arrow doing special things, its a little hard to enter their characters ("h" and "r" as escape). There is therefore an escape from prefix mode sequence. If you type prefix-ESC, the next character is sent without any interpretation. If you have the capability for upper/lower case etc then use the 'SET KEYBOARD' and 'SET DISPLAY' commands to specify complete keyboards.

1.5.5. THE HELP COMMAND

Syntax: HELP

Typing HELP alone prints a brief summary of the KERMIT-65 commands.

1.5.6. THE QUIT COMMAND

Syntax: QUIT

Typing QUIT causes the file kermit.modem in the default drive to be used as a menu. You will be able to select any line in the file to be sent to the modem. Sorry cant back up to a previous menu, you will have to quit and execute modem again. A "connect" response from the modem will cause kermit to leave the modem command and execute the connect command. This file should have commands for a Hayes modem using text status responses (not numbers). One command per line with comments allowed after the first space (blank). Use your favorite editor to produce this ascii text file. Since the attention Hayes command requires a delay the & character takes on time delay for kermit. Each & causes a delay of one second on a 6502 chip. If you have a //gs or an accelerator board the timing may change and you may require several to produce a one second delay. Normally kermit will wait for 27 seconds (again on a 6502 chip) for the modem to respond, any character typed on the keyboard will terminate this wait. You may hear the busy signal and there is no sense waiting any longer, so hit (crash-not so hard) any key on the keyboard. Following is an example of the file:

+++&64AT gets the hayes modem's attention and then hangs up
ATDT1234567 call your local bbs with pulse dialing
ATDT901234 call your work dialup phone with touch tone dialing

1.5.7. THE CATALOG COMMAND

Syntax: CATALOG

Typing CATALOG produces a catalog listing of your default drive.

1.5.8. THE DELETE COMMAND

Syntax: DELETE filespec

Typing DELETE causes the file specified to be deleted.

1.5.9. THE SERVER COMMAND

Syntax: SERVER

Typing SERVER alone turns kermit into a file server to a remote kermit. Currently server mode will handle remote "send", "get" and "fin" commands. Variants of the above commands will probably work but file serving is very limited at present. Because the apple requires knowledge of file types and there is no current way for a remote to change the file type. You must set the appropriate file type before going into server mode. You can exit server mode by typing a control C ("c") when not doing file transfers or the remote can of course terminate via the "fin" command.

1.5.10. THE EXIT AND QUIT COMMANDS

Syntax: EXIT

Exit from KERMIT-65. You can restart the program, provided you haven't run anything else, by typing "CALL 4096".

Syntax: QUIT
1.5.11. THE SET COMMAND

Syntax: SET parameter [option] [value]

Establish or modify various parameters for file transfer or terminal connection. You can examine their values with the SHOW command. The following parameters may be SET:

- **BAUD**: Which baud rate should the com card use?
- **CURSOR-KEYS-VT100**: In vt100 mode cursor keys work directly.
- **DEBUGGING**: TERSE or VERBOSE packet information.
- **DEFAULT-DISK**: Diskette drive used for dos 3.3 file transfer.
- **DISPLAY**: Which type of screen display is being used?
- **ESCAPE**: Character for terminal connection.
- **FILE-TYPE**: Type of Apple DOS file being sent/received.
- **FILE-WARNING**: Warn users if incoming file exists?
- **FLOW**: Should xon/xoff flow control be used?
- **KEYBOARD**: For the super serial and the microtek it can be 300 to 19200. The actual values will depend upon the com card you are running with.
- **LOCAL-ECHO**: Full or half duplex switch.
- **PARITY**: Character parity to use
- **PREFIX**: Which default prefix to use with prodos?
- **PRINTER**: Should the printer be used for the display?
- **RECEIVE**: Various parameters for receiving files
- **SEND**: Various parameters for sending files
- **SLOT**: Which slot # is communication device in?
- **TIMER**: Should Kermit observe the rec. timeout value?
- **TERMINAL**: Which type of terminal should kermit emulate?
- **SET BAUD**: Value is the baud rate for your com card. For the super serial and the microtek it can be 300 to 19200. The actual values will depend upon the com card you are running with.
- **SET CURSOR-KEYS-VT100**: In vt100 emulation the cursor keys can also emulate the vt100 cursor keys.
- **SET DEBUGGING**: Don't display debugging information (this is the default).

Record the packet traffic on your terminal. Options are: TERSE Show packet info only (brief). VERBOSE Display packet field descriptions with packet info (lengthy). OFF

Syntax: SET DEFAULT-DISK parameter value

This dos command will tell KERMIT-65 which disk drive should be used for file transfers. The three parameters which may be set separately are SLOT, VOLUME and DRIVE. The value for SLOT ranges from 1 to 7. The value for DRIVE is either 1 or 2. The value for VOLUME ranges from 0 to 255.

Syntax: SET ESCAPE hexadecimal-number

Specify the control character you want to use to "escape" from remote connections back to KERMIT-65. The default is 0 (Control-@). The number is the hex value of the ASCII control character, 1 to 37, for instance 2 is Control-B.

Syntax: SET FILE-TYPE keyword hex-value

This will inform KERMIT-65 what type of file is being sent or received. It is important that this is set correctly since KERMIT-65 must create a file of the appropriate type when receiving (and it has no way of knowing what kind of file it is). When KERMIT-65 is sending, it must also know the type of file since that tells it how to detect the actual end-of-file. The keywords for this parameter are APPLESOFT, INTEGER, TEXT, BINARY and OTHER. Other has an added hex-value so that the user may specify the hex value of the file-type. This has meaning only in prodos and allows the user to specify any of the many different file types used in prodos.

Syntax: SET FILE-WARNING ON or OFF

This tells KERMIT-65 whether to warn the user about incoming filenames conflicting with existing files or not. If there is a conflict KERMIT-65 will attempt to change the file name to something unique.
Syntax: SET FLOW (off/xon/delay) number

This allows one to use the xon/xoff protocol when you are connected to a remote site.
Delay timings are part of this command. Using delay times is probably a desperation move to keep the screen/printer from losing characters. Setting the timings will have to be set by experience. Perhaps the best way to set the timings is to bring the values down until you get failures and then double the timing figure. Both LOG and SET PRINTER will probably depend on flow control.

OFF - turn off flow control
XON - turn on xon/xoff flow control with the remote

DELAY number - delay the micro tix xoff takes effect

Delay followed by number (including 0) delays the program for number milliseconds after the xoff is given to the remote. This delay allows the xoff to take effect before the program continues.

SET KEYBOARD
Syntax: SET KEYBOARD {on/off}

SET KEYBOARD tells KERMIT-65 if the user has a full keyboard (2E) or not (2P). If the user is on an Apple ][+, this should be set to 2P (which is the default). When set to that, certain character translations are available by using the right-arrow key as a prefix character.

SET KEYPAD
Syntax: SET KEYPAD {on/off}

SET KEYPAD tells KERMIT-65 if the user has a Mac style keypad available. This is automatically set on a Mac but must be set on other machines. With keypad set, then "vt100 keypad on an apple keyboard" (see below) will not be used but the actual keypad will be.

SET PRINTER
Syntax: SET PRINTER {on/off/slot} number

This allows one to turn the printer on for printing what is displayed on the screen. With all the different printers and printer cards there will be a lot of variability here but flow control (xon/xoff) is probably required when you are connected to a remote site. The printer can also be toggled on/off via the ESCAPE character followed by the command *P*.

Remember when you use your printer there are a lot of variables here. What was being sent to the screen now is being sent to your printer. If you were emulating the vt52 your printer may not know how to handle the escape sequences, tabs etc. It may be you can tell the host you are a tty or some such device that will give carriage returns etc that your printer can handle. Some printers may require the flow control and delay to get readable printing.

ON - turn the printer on, slot number is required
OFF - turn the printer off
SLOT number - printer card is in slot "number"

SET SLOT
Syntax: SET SLOT parameter

This option tells KERMIT-65 in which slot the communication device is located. The range for the parameter is 1-7.

SET TIMER
Syntax: SET TIMER ON or OFF

SET TIMER will turn on or off the timeout checking for receive file transfers. Since there is no clock for exact timing a loop of instructions has been set up assuming a 1 megacycle cpu. Cpus which run faster will have to make allowances via the SET RECEIVE TIMEOUT command.

SET TERMINAL
Syntax: SET TERMINAL {monitor/none/vt100/vt52}

MONITOR emulation

This emulation simply displays all the characters received from the remote (except nulls) without any formatting of the screen (40 or 80 ch per line). Control characters are displayed inverse.

NONE

In this mode all incoming characters (except nulls) are passed directly to the display.

Vt100 emulation

The vt100 is a small but working set of a true vt100 terminal, it appears to work with most of the standard full screen editors and processors on bsd un*x machines and vax vms machines. A //e, //c or //gs is probably required with the apple 80 column text card. Sorry but the II and II* will probably have to use one of the other terminal options. The vt100 keypad has also been defined for the application mode via the CA/CA/game button. Following is a picture of what the keypad looks like to ed (vms). When using evie (vms) the meaning of the keys will of course change.

Vt100 keypad on an apple keyboard.
Vt100 keypad on a gs or equivalent keypad.

```
<table>
<thead>
<tr>
<th>PF1</th>
<th>PF2</th>
<th>PF3</th>
<th>PF4</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLEAR</td>
<td>=</td>
<td>findnxt</td>
<td>delline</td>
</tr>
<tr>
<td>gold</td>
<td>help</td>
<td>find</td>
<td>undelln</td>
</tr>
<tr>
<td>page</td>
<td>section</td>
<td>append</td>
<td>dellword</td>
</tr>
<tr>
<td>command</td>
<td>fill</td>
<td>replace</td>
<td>undelwd</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>advance</td>
<td>backup</td>
<td>cut</td>
<td>delchar</td>
</tr>
<tr>
<td>bottom</td>
<td>top</td>
<td>paste</td>
<td>right</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>word</td>
<td>eol</td>
<td>char</td>
<td>ENTER</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>chgcase</td>
<td>deleol</td>
<td>specs</td>
<td>enter</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>sub</td>
</tr>
<tr>
<td>bline</td>
<td>select</td>
<td>openline</td>
<td>reset</td>
</tr>
</tbody>
</table>
```

V752 emulation

SET TERMINAL V752 will turn on the v752 terminal emulation. One thing that is required is your 80 colomn card must handle the 516 command in order for reverse scrolling to work. The /e 80 col handles this fine.

The v752 keypad has been defined using the open/closed apple. For II or II+ one will have to have a game paddle or joy stick (key shift mod too????) and use the buttons. When a button /open /closed apple is pushed then the keys starting with 6,7,8 & 9 form the top of the keypad. Key 6 is the blue key key 7 is the red key etc. The keys directly below the 6,7,8 & 9 and shifted one-half key to the right form the second row of the keypad etc. Every thing is fine until you get to the last row on the keypad. There the sp bar is 0 and the other two keys are moved to the upper right as the 0 4 - keys. This way the arrow keys are available as v752 keys with the OA/CA/game button combination (thanks to Dick Atlee for this idea). With those two exceptions the keypad is physically similar to a v752 keypad. Remember the open/closed apple or the game button must be pushed (like the cntl key) to get the keypad emulation.

How about a picture to clear up the questions?

(^ is up arrow) "BLUE RED GRAY ^ ENTER"

```
| 6 | 7 | delline | up | select | enter |
| gold | help | 8 | undelln | replace | reset | sub |
```

[v is down arrow]

```
| 8 | 9 | v |
| findnxt | deleol | |
| command | find | undelwd |
| 4 | 5 | 6 | -> |
```

The arrow keys work as v752 arrow keys with the OA/CA/game button.

1.5.12. THE SHOW COMMAND

Syntax: SHOW [option]

The SHOW command displays various information:

- ALL
  All parameter settings (this is quite long).
- BAUD
  Baud rate of the com card.
- CURSOR-KEYS-VT100
  Are cursor keys emulating the vt100 keys?
- DEBUGGING
  Is debugging mode on or off?.
- DEFAULT-DISK
  Which Diskette drive is being used?
- DEVICE-DRIVER
  Which communication device is being used?
- DISPLAY
  Which screen display is being used?
- ESCAPE
  Character used for terminal connection.
- FILE-TYPE
  Of Apple DOS/PRODOS file being sent/received.
- FILE-WARNING
  Warn users if incoming file exists?
- FLOW
  Is xon/xoff flow control being used?
- KEYBOARD
  What is the keyboard in use?
- KEYPAD
  Does a gs style keypad exist?
- LOCAL-ECHO
  Full or half duplex switch.
- PARITY
  Character parity to use
- PREFIX
  Which default prefix to use with prodos?
- PRINTER
  Is the printer being used for the display?
- RECEIVE
  Various parameters for receiving files
- SEND
  Various parameters for sending files
- SLOT
  Which slot # is communication device in?
- TIMER
  Is the receive timeout on or off?
The above options are analogous to the equivalent \texttt{SET} commands.

1.5.13. THE STATUS COMMAND

\textbf{Syntax: STATUS}

Give statistics about the most recent file transfer. This includes information such as number of characters sent/received, number of data characters sent/received, and last error encountered.

1.5.14. THE LOG COMMAND

\textbf{Syntax: LOG filespec}

When connected to a remote site, log the remote sessions output to the specified file. The file type and file warning protocols are observed. This command is dependent upon the flow control (xon/xoff) working. Without flow control there is little possibility of getting a correct copy of the terminal session. The logging begins when you connect to the remote and is terminated when you escape back to the local kermit with the \textit{ESCAPE} character followed by the "C" command.

1.6. Standard installation

To bootstrap kermit to the apple, get the files \texttt{a2k3xx.1} thru \texttt{a2k3xx.3} on a dos \texttt{3.3} diskette, where xx is the current version. Make sure the diskette is a master diskette and empty. Rename the files to \texttt{ker3xx.1} thru \texttt{ker3xx.3}. Then:

\texttt{EXEC KER3XX.1,R25}

You will be asked several questions about your hardware and the program should execute and produce a binary with some starting instructions. If you want to run kermit on prods simply use the prods conversion routines to move the binary to prods. If you want to make settings permanent in the binary. Start up kermit and set all the parameters in kermit the way you want them. Then \texttt{"exit"} kermit and \texttt{"bsave kermit,A$1000,L$6900"}. The next time you \texttt{"brun kermit"} you will find all your parameters already set.

FILES SUPPLIED FOR KERMIT-65

The following files should be supplied on the distribution tape:

- \texttt{a2acc.hex} - apple com card hex
- \texttt{a2acc.m65} - apple com card source
- \texttt{a2cchs.hex} - ccs 7710 com card hex
- \texttt{a2cchs.m65} - ccs 7710 com card source
- \texttt{a2cps.hex} - cps com card hex
- \texttt{a2cps.m65} - cps com card source
- \texttt{a2diff.doc} - difference between the original m65 doc and this
- \texttt{a2gs.hex} - gs serial port hex
- \texttt{a2lmm.hex} - hayes micro modem card hex
- \texttt{a2lmm.m65} - hayes micro modem card source
- \texttt{a2k3xx.1} - easy install file 1 (an exec file for dos 3.3)
- \texttt{a2k3xx.2} - easy install file 2 (an exec file for dos 3.3)
- \texttt{a2k3xx.3} - easy install file 3 (an exec file for dos 3.3)
- \texttt{a2m65.doc} - complete documentation (it says here)
- \texttt{a2main.hex} - main kermit pgm hex
- \texttt{a2main.m65} - main kermit pgm source
- \texttt{a2mak.unx} - make file for unix xasm (to assemble kermit)
- \texttt{a2mov.hex} - microtec com card hex
- \texttt{a2mov.m65} - microtec com card source
- \texttt{a2sac.hex} - super serial com card hex
- \texttt{a2sac.m65} - super serial com card source
- \texttt{a2xasm.1} - xasm for unix system part 1
- \texttt{a2xasm.2} - xasm for unix system part 2
- \texttt{a2xasm.3} - xasm for unix system part 3

1.7. Alternate installation

The main problem exists in getting the hex files onto your diskettes as a text file. But again that is a test of your creativity. If you have a version of kermit running then \texttt{GET A2ERASE.} the file as a text file and you are in business. Since kermit has been separated into two assemblies then two hex files will have to be present on the diskette. Get the main hex file \texttt{a2main.hex} and select which com card hex you will need. First \texttt{"exec p2main.hex"}. Your apple (or comptable) will go into monitor and show you the "s" for several minutes. This is the monitor loading the hex into binary. If you get beeps from the monitor it probably because you didn't get a good copy of the text file. Now \texttt{EXEC} the com card driver you are going to use. You will have to get back into basic (aka another test for you) \texttt{try "3DOG"} to do this. And you will see the monitor loading the card driver. The order of \texttt{EXEC}'s is important. The com card should be loaded last. Next get back into basic and do \texttt{"BSAVE kermit,A1000,L6900"}. You may have to specify the drive to do this binary save, with a slot or drive on the end of the \texttt{BSAVE}'s (aka another test!). You now run kermit via \texttt{"BRUN kermit"}

If you want to customize kermit for your equipment. Do all your \texttt{"set"}'s etc and then do an \texttt{"exit"}. Now you should be back in basic. At this point do a \texttt{"BSAVE name,A1000,L6900"} and when you do a \texttt{"BRUN name"} all your setup will be remembered. \textbf{NOTE:} If you save your current settings via \texttt{"bsave kermit ..."} you may find that moving that binary to another type of apple (eg. \texttt{//e -> //e+}) will not be possible. So make sure you keep the original binary to move between machine types.

Since the org is now \texttt{1000} if you have been using kermit and then went back to basic for some trivial thing a \texttt{"CALL 4096"} should start up kermit without having to reload it.

In summary:

\texttt{EXEC A2MAIN.HEX}

Choose the com card driver you will use. For example \texttt{A2SSC.HEX}.

\texttt{3DOG}

\texttt{EXEC A2SSC.HEX}

\texttt{BSAVE kermit,A1000,L6900}

And you should be in business. Remember there is the command \texttt{HELP} and whenever you are into a command a \texttt{"?"} will give you the possible options available at that point of a command. The escape key will finish typing an option if it is possible. The syntax of all the commands and options only requires enough characters to make that command or option unique.

1.8. Problems

1.8.1. Installation

\textbf{NOTE:} When using the super serial driver you must have the cards \texttt{sw-2} on. This allows the card to use interrupts. The rest of the switches are set from within kermit. It appears to me that you can run your apple 2 with \texttt{sw-2} on and in 99% of the cases will cause no problems. This is because dos runs with interrupts locked out ("sei" in assembly language) and the program must explicitly give a "cl1" for interrupts to work (the super serial driver does). The microtek driver is a super serial look alike which does not run with interrupts. If you have trouble with the super serial driver you might try the msv driver. For you people with the msv-62ic card. You might try running a jumper from the UART 6551 pin 26 to the card edge pin 30. This will enable interrupts just like the ssc \texttt{sw-2}, and then you can use the super serial driver.

The prometheus card will work with the apple com driver. However you will have to set the switches on the card for baud etc. Evidently this card can not be programed by the software. If that is not true then here is an opportunity for you to write a better driver. If you do please pass it on for other prometheus users.

Unconfirmed reports have it that the apple cat will work with the apple com driver. Would appreciate a confirmation.

Some have noted the apple com card must be initialized via the \texttt{"IN#x"} before starting kermit. Ike has now updated this driver and the initialization is now done with the apple com driver. Thanks Ike.
1.8.2. Usage

There is the command HELP and whenever you are into a command a "?" will give you the possible options available at that point of a command. The escape key will finish typing an option if it is possible. The syntax of all the commands and options only requires enough characters to make that command or option unique. When using flow control you may appear to hang. Type a "Q" (control Q) and that may free you up. Remember when you use your printer there are a lot of variables here. What was being sent to the screen now is being sent to your printer. If you were emulating the vt52 your printer may not know how to handle the escape sequences, tabs etc. It may be you can tell the host you are a tty or some such device that will give carriage returns etc that your printer can handle. Some printers may require the flow control and delay to get readable printing. File transfer is very dependent upon parity. Make sure the host and local parity are the same.

1.9. Customizing Kermit-65

CUSTOMIZING AND BUILDING KERMIT-65

The source code to KERMIT-65 is in 6502 Assembler. It has been formatted for a cross assembler which runs on a unix 2's complement machine. Files a2xasm.l thru a2xasm.3 are the cross assembler for unix. Get the files on a unix system and then look at the documentation at the start. They will easily make you a xasm to reassemble all of kermit's parts. KERMIT-65 currently supports the following communications devices:

- The Microtech sv-622 card
- The D.C. Hayes Micromodem.
- The Apple Super Serial Card
- The CCS 7710 Serial Card
- The Apple Com Serial Card
- The Prometheus Versacard - uses the apple com card driver
- The CPS card
- The //gs serial card

Kermit 3 has now been separated into two assemblies. The main routines and the command routines. A vector has been set up in low memory for the two assemblies to communicate. Look at the working com drivers for tips on how to incorporate your version of the com driver. some things to note: It is probably best to buffer the input from the remote and to get input characters from the remote every chance you get. Note the Microtek SV-622 driver, whenever the input is checked for a character and has a character the character is put into the buffer immediately. Also when the output is checked for ready to output, if the card is not ready to output then it is checked for a character to input. All this should help prevent lossing characters.

1.9.1. Communications card vector area

<table>
<thead>
<tr>
<th>address</th>
<th>size</th>
<th>function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1003</td>
<td>byte</td>
<td>main</td>
</tr>
<tr>
<td>1004</td>
<td>byte</td>
<td>main</td>
</tr>
<tr>
<td>1005</td>
<td>word</td>
<td>main</td>
</tr>
<tr>
<td>1006</td>
<td>byte</td>
<td>main</td>
</tr>
</tbody>
</table>

- address - size - provided by - function
- This is the baud rate index as follows:
- 3 - 110
- 4 - 135.4
- 5 - 150
- 6 - 300
- 7 - 600
- 8 - 1200
- 9 - 1800
- 10 - 2400
- 11 - 3600
- 12 - 4800
- 13 - 7200
- 14 - 9600
- 15 - 19200

for example:

- if index is a 6 then line should be 300 baud
- if index is a 0 & then set flag non zero

all the routines should return with the "rts" instruction. Routines which can return a true/false indication should return with the P reg zero flag set appropriately. That is: a "beg" instruction will branch on a false indication and the "bne" will branch on a true indication. Currently the com driver should start its routines at address $7600. If your com driver gets too large then the 8 byte address would have to be changed when you are saving the binary to diskette.
A long, long time ago, when creatures of myth and magic walked the earth openly with lesser mortals, there dwelt in the kingdom of a King named Graham. He had one the crown by his wit and courage, when he went forth to uncover and reclaim the three lost treasures of Daventry. Now Graham ruled over the land, with the aid of the mirror that foretold the future, the bottomless treasure chest, and the invincible shield. The people of Daventry prospered under the reign of the kindly monarch. Just one year after returning from his first victorious quest, King Graham rose and looked into the mirror as he went to do daily. Much to his astonishment, he beheld the face of Edward, the King who came before him in the succession.

King Edward spoke, "Graham, your kingdom is strong now, thanks to the recovery of the three treasures and your wise leadership. But it will soon grow weak again, if you do not provide and heir to the throne. Marry, my son, and give your people a prince that make their future secure."

The vision faded. King Graham pondered how he might find a bride fit to reign over Daventry. He consulted with Gerwain, his wise prime minister.

"She must be good, and kind, so that she will love my people and they will love here," said Graham. "She must have the wisdom to counsel me in my daily problems, and a loving heart to bring me comfort. I wish my Queen to glow with an inner beauty of spirit as well as beauty of face and form."

Gerwain suggested that Graham host a celebration, and invite all the maidens of marriageable age from his whole kingdom. He could then observe and conserve with the likely candidates, and see if any one of them fit his idea of a queen.

The invitations were sent out, and the whole kingdom turned out for the celebration. From every corner of Daventry the maidens came. Short and tall, slender and plump, fair and dark, pretty and plain. There were maidens from all stations of life, from Dukes' and earls' daughters to the village goose girl and the scullery maid from the castle kitchens. They all had but one thing in common: They greatly admired the handsome King, and were eager to catch his eye.

For two days the celebration wore on, and though he tried to be cheerful, Graham gradually became somber. None of the maidens he had met quickened his pulse. One maid squinted, another tripped over everything in sight. After she digested constantly. They all had some fault, however small. It was with great relief that Graham saw his guests ride away at the end of the celebration. He retired to his room to reflect gloomily.

"My kingdom is home to hundreds of lovely maidens," he mourned. "Why is there not one among them who touches my heart and my dreams."

As he asked the question, King Graham was standing near the magic mirror. He glanced toward it, and noticed that the glass had grown inexplicably cloudy.

The mist cleared, All at once, King Graham beheld the most beautiful maiden he had ever seen. She had hair of glowing auburn, and eyes of midnight blue. Her skin was the color of rich cream, but alas, no roses bloomed in her cheeks, and the corners of her pretty mouth drooped in sorrow.

She was standing at a window, motionless except for the stray breeze that stirred her hair. A tear fell from one eye, and sparkled on her cheek like a diamond on velvet. She put up one hand to brush it away, and Graham was struck by the grace of her movement.

The king's heart was suddenly enveloped in a strange fever. He knew that this was the maiden for whom he longed - this was the woman who must be his queen. He wanted to find her and bring a smile to her lovely face. He wanted to take her in his arms, and protect her from trouble forevermore. Eagerly he consulted the magic mirror.

"Oh mirror wis," said Graham, "I have vowed to make this maiden my bride. Where may I find her?"

The mirror clouded again, and a voice was heard. "This is the maiden Valanice. She is from the kingdom of Kolyma, and is known for her goodness no less than her beauty. The jealous crone Hagatha whisked Valanice away to an enchanted land, and imprisoned her in a quartz tower guarded by a ferocious wild beast.

"I must rescue her or die in the attempt," declared King Graham. "How may I find this enchanted land?"

"You must travel to the kingdom of Kolyma," said the mirror. "There you may search for the keys which unlock the three doors to the enchanted land...

The voice faded and the mirror cleared. Graham stared at his own reflection. Vainly did he call for its return, to give him more clues to the whereabouts of the magic keys. Finally, he shouldered his provisions, and set out on his quest of love.

Only you, my bold adventurer, have the power to finish this tale. Accompany King Graham on his quest to find the magic keys. Encounter characters of legend, folklore and fantasy. Explore underground caverns, eerie towers, and ocean wonderlands. Help him rescue the enchanted maiden, so he can lay his kingdom and his heart at her feet.

You will be faced with challenges that would intimidate those of lesser timbre. Summon all your strength and courage. Leave no stone unturned, no avenue unexplored, and your perseverance will be richly rewarded.

It may be possible to find each key through more than one avenue. The more imaginative your solutions, the greater you reward.

Study all the ancient lores for clues. Along the way collect as many treasures as you can - treasures fit for a queen.

**Game play instructions:**
King’s Quest II requires either a //c or a 128 //e with double hi-res graphics capabilities.

Commands for the Hero:

Talk to your computer in commands of one or two words, or even simple sentences.

Use a joystick or the Keyboard to move King Graham around.

Joystick-Directions for directions. Button 0 for return, Button 1 for swim.

Keyboard-
- North-West
- North-East
- South-West
- South-East

Arrow keys for North, South, East, and West

Initial a save game disk - "INIT DISK"

Saving the game - "SAVE GAME" then under the A-Z position on disk.

Restoring a game - "RESTORE GAME" then under the A-Z position on disk.

Additional commands:

ESC - Pause King’s Quest II
TAB - Inventory and Score
1 - Turn music off/on
3 - Save Game
5 - Restore Game
7 - Restart Game
9 - Echo last command
= - Swim

King’s Bounty Reference Card

Monsters | Skill Hit Points Movement Damage Recruitment Morale
----------|------------------|----------------|----------------|-----------------|-------------|
ARCHERS 1 | 12               | 1              | 1              | 1               | 10          |
PIKEMEN 3  | 12               | 1              | 1              | 1               | 30          |
CAVALRY 4  | 12               | 1              | 1              | 1               | 80          |
KNIGHTS 5  | 12               | 1              | 1              | 1               | 1000        |
PEASANTS 1 | 12               | 1              | 1              | 1               | 10          |
WOLVES 3   | 12               | 1              | 1              | 1               | 40          |
NOMADS 3   | 12               | 1              | 1              | 1               | 300         |
BARBARIANS 4 | 12               | 1              | 1              | 1               | 750         |
ARCHMAGES 2 | 12               | 1              | 1              | 1               | 1200        |
SPRITES 1  | 12               | 1              | 1              | 1               | 15          |
GNOMES 2   | 12               | 1              | 1              | 1               | 60          |
ELVES 3    | 12               | 1              | 1              | 1               | 200         |
TROLLS 4   | 12               | 1              | 1              | 1               | 1000        |
DRUIDS 5   | 12               | 1              | 1              | 1               | 700         |
ORCS 6     | 12               | 1              | 1              | 1               | 75          |
DWARVES 3  | 12               | 1              | 1              | 1               | 350         |
OGRES 4    | 12               | 1              | 1              | 1               | 750         |
GIANTS 7   | 12               | 1              | 1              | 1               | 2000        |
DRAGONS 8  | 12               | 1              | 1              | 1               | 5000        |

Notes:

1. Archers have 12 shots
2. Archmages may cast 2 Fireball spells
3. Elves have 24 shots
4. Living Trolls regenerate to full hit points
5. Druids may cast 3 Lightning Bolt spells
6. Orcs have 6 shots
7. Giants have 6 shots
8. Dragons are immune to magic
9. Ghosts absorb creatures they kill
10. Vampires heal their own wounds equal to the damage they inflict
11. Demons may halve any troop
**Apple II Computer Info**

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<th>+6</th>
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* * = Must learn magic to cast spells

### Morale Chart

**Units Morale Group**

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<tr>
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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<td>N</td>
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<tr>
<td>E</td>
<td>L</td>
<td>L</td>
<td>N</td>
<td>N</td>
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</tbody>
</table>

L = Low morale (if any low in army)
N = Normal morale
H = High morale (only if all units are H)

- A Few = 1-9
- Some = 10-19
- Many = 20-49
- A Lot = 50-99
- A Horde = 100-499
- A Multitude = 500+

### Locations

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<td>43,27</td>
</tr>
<tr>
<td>Lorshe</td>
<td>52,57</td>
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</table>

If your picture isn't next to the word LAME in the dictionary call these boards:

- Byte Bastard BBS 201-697-7001
- Third Stone 201-652-7349
- Wizzards Annex 201-402-0786
The crypt below the ruined keep was dank and musty. Moisture congealed on the floor, forming small puddles. A pair of grimy grave robbers braved the crypt and its tormented dead. Caneghor the Mystic, old and bent, sifted through ancient relics buried along with an equally aged mummy. His young and somewhat frivolous companion, Hack the Rogue, sought treasure in the tomb of an ancient warrior queen. Caneghor smiled as he turned the pages in a book and silently wished Hack luck, warrior queens were not renown for their bounty.

"Aha! Hack come here and look at this," chortled Caneghor. His eyes gleamed like a librarian who has found a rare and precious volume. One of the tomes floated in the air before Caneghor. He was studying it intensely, leafing through the pages with a rapidity surprising for one his age.

Hack strutted out wearing glistening jewelry he had just liberated from the warrior queen. His eyes betrayed fear as he noticed the levitating book.

"I wish you wouldn't do that around me, I hate it!" Hack paused and gave an appraising appraisal. "Book looks valuable...gold inlay on the leather...I'll see it!"

As Hack reached for the floating book, Caneghor shouted fiercely, "No!" His eyes blazed with mystic power, "This is for the Master."

The cave was unfathomably large as was it chief occupant Arech Dragonbreath. Arech wondered what his henchmen wanted now. Hack the Rogue was an unbearable, a petty thief who acted the part of an accomplished master criminal. Arech laughed, hot smoke streaming from his scaly nostrils, as he thought of several bloody ways for Hack to die. Hack paled as he was bathed in the utterly exquisitely warm smoke. He backed away from the immense dragon, trying to blend in with the natural crevices of the cavern wall.

Caneghor decided that it was time to speak, "O Arech, mightiest of dragons, most cunning of all, I bring you knowledge of unbridled power."

Arech smiled, rows of dagger-sharp teeth glistening with saliva. Caneghor always knew how to please him. A very useful man, even though he was unambitious.

"What do you bring me, master sage," queried Arech. "A book, milord. A book with a prophecy," intoned Caneghor. He straightened, "The prophecy is how Good King Maximus can secure the kingdom from his throne and supplant it."

"How is that, Caneghor?" Arech's greed for power was aroused, "How can I dethrone Maximus?"

"We fight now," bellowed the dim-witted Bargash Eyesore. "Arech says attack castle now!" He focused on the girl with his solitary, menacing eye, "Kill! Bargash smiled toothily as the slave cringed with fear.

The guards reappeared, silent as ever, waiting once again. Prince Barrowpine stood regally into the room. The pair of guards escorting him remained just inside the entryway, waiting silently. The Prince spoke, "You should be studying, not daydreaming, O mighty wizard."

The King grinned, "Well done. The Four Continents are safer now that he lays in captivity."

The Baron frowned as he lay staring at the stone ceiling. The cell just would not do. Bargash snoozed louder than an army. Still, he contemplated, Arech would be pleased that the first stage of his plan was successful. He closed his eyes and dreamt of the riches that would be his.

Baron Johnno Makahl strode his considerable girth across the pillows which lay strewn across the tent floor. A slave girl murmured dreamily next to him. He contemplated her sleek back as dawn slowly approached. "Enough games, Deathspell. Tell me more about the passage in the book."

"Excellent," he roared, "Excellent! You both shall be rewarded."

Caneghor and Hack were assailed by a tepid gust of sulfurous air. As Hack watched in sorrow as Bargash was captured. It was time to flee. A dirt encrusted horsemen knelt before King Maximus, "My liege, Baron Makahl has been captured. We have thrown him in the dungeon next to his single visioned compatriot."

The King grinned, "Well done. The Four Continents are safer now that he lays in captivity."

The Baron sat mounted upon a dazzling white charger. Bargash stood next to him towering over the mounted men. Thousands of troops stretched behind them, a motley crew of men and monsters. Raising his gauntleted hand, the Baron signalled the trumpeter to sound attack. Galloping and trumpeting, the Baron led his men to The King's Castle, home to King Maximus. At first the battle went well. The Baron withdrew to a hill overlooking the field of battle surrounded by his entourage. His troops slaughtered the surprised garrison that met them on the filed. Bargash was especially impressive, laying waste to all about him. He pulverized friend and foe alike with his deadly spiked club.

Then, Maximus appeared on the castle parapet. He was adorned in mirrored armor, a beacon of blazing light reflecting the midst-morning sun. He held the Scepter of Order high, so all could see it. Suddenly, pikemen rushed from the hastily opened castle gates, clearing a path for the charging cavalry and knights.

The Baron's troops hesitated, suprised by the ferocity of the counterattack. Within minutes, it was clear that Maximus had won the day. On his hilltop, the Baron watched in sorrow as Bargash was capturred. It was time to flee.

A bearded wizard, garbed from head to toe in crimson, bent over the Tome of the Prophecy muttering to himself. Magus Deathspell could not belive it. He was translating the second part of the Prophecy, taunted the elf. Magus wondered wht he put up with Arech's orders. Maybe he should research a way to kill the mighty dragon. Slow poison or a dry rot spell would do nicely. Magus' index finger glowed eerily with power as he anticipated the demise of his master.

Prince Barrowpine stoode regally into the room. The pair of guards escorting him remained just inside the entryway, waiting silently. The Prince spoke, "You should be studying, not daydreaming, O mighty wizard."

"Arech will be displeased with you, most ingenious of wizards, if we do not finish the translation of the Prophecy," taunted the elf.

Prince Barrowpine stode regally into the room. The pair of guards escorting him remained just inside the entryway, waiting silently. The Prince spoke, "You should be studying, not daydreaming, O mighty wizard."

"Really Magus, you should not go around destroying my illusions like that. I shall just have to surround myself with new ones."

Prince Barrowpine then proceeded to reach into a pouch and removed his fabled enchanted cloak. He held it aloft and it flickered briefly like a lighthouse beacon. The guards appreared, silent as ever, waiting once again.

"Enough games, Deathspell. Tell me more about the passage in the book mentioning the Demon. The Prince returned, "Arech could not be trusted with the information."

"How dare you," he yelled. "What do you want?"

"We both know now," bellowed the dim-witted Bargash Eyesore. "Arech says attack castle now!" He focused on the girl with his solitary, menacing eye, "Kill! Bargash smiled toothily as the slave cringed with fear.

The Baron grinned, "I like it not also, but it states clearly in this passage here, The Good King and his symbol of Order will be replaced by an Evil King and a
symbol of Chaos." Magus continued, "The only kings extant now are Maximus and
Urthrax Killspite, the Demon King."

"Very well," sighed the Prince, "I suppose we should inform Arech of this."

IV

It was after midnight. Furtive clouds stole quickly over the face of the moon, as
it strayed to remain in any one place for too long.

The devastated castle crested a desolate hilltop. Long moon shadows played
ominously over the empty courtyards, highlighting the bleakness of the ruins. The
whole place seemed to shimmer and glow with the embers of the dead, with the
churning of the wind across the empty stones.

In the still functional north wing of the castle, three figures sat across from
one another at a table in a dimly light room. Two were Undead, and the third
gestated suddenly over a map which lay across the top of the table. A demon and
two more Undead were involved in a discussion.

"It cannot be done at night. It is not proper to conduct a battle after dusk.
We have enough forces, let us attack by daylight," pleaded the lone human in the
room, Auric Whiteskin.

Auric was a bear of a man, tall, heavily muscled, and full of life. He wore his
customary Whiteskin, sewn together flesh of baby lambs which he believed would
protect him from disaster, disease, and other malig occurences. He was worried, the
undead could not understand the foibles of the living.

Dressed in moldering green strips of cloth and garnished with the odor of
death, Ragface, mightiest of the Undead, spoke, "At night, we have a distinct
advantage. Our troops will fight better and the humans will be scared. After all, it
is the Week of Demons and we wouldn't want to disspoint thier superstitions."

Rinaldus Drybone, the Lich Lord, crossed his arms. Bone, yellowed with age
peered from the folds of his robe. His head, a human skull, gazed expressionlessly
outward. The burning red embers that were his eyes floated in  otherwise empty eye
sockets, scanning slowly from first Auric and then to Ragface. He spoke with a hollow
voice. "There will be more death during the light than in the dark. The humans will
kill more of each other if they can see each other. We will fight during the daylight."

Easing the map once more, Auric outlined his battle plan to the two
Undead. The continent Sahara would be liberated from King Maximus' rule quickly.
Afterward, Auric, Ragface, and Rinaldus would rule jointly over what was left.

V

King's Castle was in a state of uproar. Rebels had successfully wrested
control of the entire continent of Sahara from King Maximus in a matter of days. A seemingly
endless stream of refugees were pouring into the castle daily, seeking safety and
shelter.

To make matters worse, a trio of disreputable nobles from a distant land were
in the castle. They were forever moving from restricted areas with innocent looks on their faces, and mercilessly running the
royal stewsards ragged. It seemed that the nobles felt that they had to take the king
life, or he would elect them to run the castle. Without the king, until he could give
them a proper audience.

At the moment, the trio of nobles appeared to be giving the royal stewsards a
break, allowing them to prepare for the evenings feast.

The Czar Nickolia, a strange and wild looking man, paced around his tower suite
in a frenzy. His disheveled appearance made him look more like a crazed conjurer or
a possessed soul than a king from a foreign land.

"I have some said revealed," I heard a heard back and forth across the room,
glancing at everything and recognizing nothing. Nickolia's fists clenched and
unclenched constantly, moving in a strange cadence with the mutterings which passed
under his breath as if he was prancing with himself. "If it were anything
but me I would have no problem. Yet they have so much power to offer. Demons
bother me, noting else does. I don't let them bother me. Demons don't care what I
let them do or don't do, they do what they want. What are you going to do?"

Sir Moradon the Cruel, a knight with a rather sinister backround, took the
Czar's question as a cue. "I think we should ally with this Arech Dragonbreth. He
has impressed me more than this knave Maximus. Arech said he would liberate Sahara and
he did. Maximus was supposed to have a conference with us more than a week ago about
establishing trade between our two empires.

A change swept over Nickolia’s body. He stood up and surveyed the completely
clompletely

VI

A man of inaction and indecision does not impress me as much as a man willing to
take risks to it failure, even if it fails. I think it would be very thrilling to poison our unsuspecting Maximus at a public
feast."

Grinning savagely, he drew a long sharp dagger from a hidden sheath.

"And admired his work. Fit to enslave the Demon King, he thought. He was snapped out
of his reverie abruptly and ran his razor sharp dagger across the exposed throat. A fountian of
coruscating blood leaped from the youth's slit arteries, spraying the walls with a
multitude of tiny crimson droplets.

Moradon smiled a simple smile of pleasure as he watched Nickolia with utter fascination in his eyes. He could not
wait for his renegade to live. It was to no avail. Nickolia arched the boy's head backward and ran his razor sharp dagger across the exposed throat. A fountian of
coruscating blood leaped from the youth's slit arteries, spraying the walls with a
multitude of tiny crimson droplets.

Magus placed the finishing touches on his pentagram. The five pointed star shone brightly in the protective circle and runes of
protection were drawn in enchanted powder made of ground bone. He stepped backward and admired his work. Fit to enslave the Demon King, he thought. He was slapped out of his reverie abruptly and ran his razor sharp dagger across the exposed throat. A fountian of
coruscating blood leaped from the youth's slit arteries, spraying the walls with a
multitude of tiny crimson droplets.

"Let's prepare for the feast." he commanded to the Czar. "Go to your rooms and
meet me as soon as you can. I shall take care of my little mess."

Aimola and Moradon had left. Nickolia fell to the floor trembling, "No, I cannot agree that life would be much easier if
Arech held sway in the government. I found his arguments very persuasive. Besides, I
think it would be very thrilling to poison our unsuspecting Maximus at a public
feast."

Aimola and Moradon turned and stared at one another. Maybe the rumors were
ture, their sorcerer Lord Nickolia had cast one spell to many in his thirst for
power.

Magus Deathspell placed the finishing touches on his pentagram. The point
of his knife cleanly pierced the protective circle and runes of
protection were drawn in enchanted powder made of ground bone. He stepped backward and admired his work. Fit to enslave the Demon King, he thought. He was slapped out of his reverie abruptly and ran his razor sharp dagger across the exposed throat. A fountian of
coruscating blood leaped from the youth's slit arteries, spraying the walls with a
multitude of tiny crimson droplets.

"Is it done, wizard?" That was Arech, impatient and imposing, "Let us finish
our buisness."      The Czar Nickolia, a rather striking if overweight woman known more for
her deceitfulness than her beauty, sat upon a great stuffed chair. Absentmindedly
surveying the castle's inhabitants, she asked "What Sir? Moradon the Cruel had
said. She also pondered the treasure hoard that Arech had
shown her. It was to be hers if she supported him with one small indiscretion.

The book was left open to rule the Four Continents. No
matter how powerful this dragon Arech is, will he be able to control a demon as he
would a puppet? I think not. Yet I cannot agree that life would be much easier if
Arech held sway in the government. I found his arguments very persuasive. Besides, I
think it would be very thrilling to poison our unsuspecting Maximus at a public
feast."

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Aimola and Moradon turned and stared at one another. Maybe the rumors were
ture, their sorcerer Lord Nickolia had cast one spell to many in his thirst for
power.

Magus made the door and thrust it open. A kitchen boy, no doubt sent to
notify the trio of the exact time they were expected at the feast, paled with fear at
being caught eavesdropping. The Czar picked up the child roughly and shut the door.

Grinning savagely, he drew a long sharp dagger from a hidden sheath.

"No, I cannot agree that life would be much easier if
Arech held sway in the government. I found his arguments very persuasive. Besides, I
think it would be very thrilling to poison our unsuspecting Maximus at a public
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coruscating blood leaped from the youth's slit arteries, spraying the walls with a
multitude of tiny crimson droplets.
was getting harder and harder to wake up. He heard something. He ached when he got up. He scratched his balding head and rubbed his bearded jaw. It was time to fight! Mahk dressed quickly, picking up clothes off the floor of his cabin and waited.

The two groups of pirates, one led by Rob and the other by Mahk, waited at the castle gate. Rob gave the signal which opened the gate. He waited. The troops bristled with adrenaline, anticipating the upcoming battle. Slowly the gate raised. Before it was halfway up, both groups were in the castle.

Maximus woke to the sounds of battle. He had thought he was dreaming of the days when he, as a warrior king, had united the Four Continents. Not today. He rushed to his tower window. A group of men crossed the courtyard furtively. A small company of guards stood at the ready, clad in armor. There were at least five manned figures away from the dungeons.

Maximus shouted, drawing attention to the second group of intruders. More guards rushed forward reinforcements alerted by the alarm that was sounding.

The captain was on the castle walls. His cape covered his eyes, holding his own, except against one brute of a fellow who turned them into mincemeat with his giant sword.

Dread Pirate Rob laughed gleefully. It had been horrendously easy. Walk in, free the prisoners, and walk out. Mahk had done his job excellently, drawing all of the attention to himself and allowing the other group to accomplish their mission.

All that remained now was to return the five convicts to Arech. Rob laughed again, exulting in the sea breeze whipping across his face. They were asleep below decks and his and Mahk's ship were sailing quickly away, with no pursuit in sight. Arech would reward him well.

VIII

Magus stood in the center of the cavern dressed in his finest red robes with his arms upraised. His brow was furrowed in concentration which threatened to break as a single, warm bead of sweat slowly traced a cold, wet path down his forearm to his bicpess and finally to his sweat drenched chest.

The incantation was harder than he thought. He realized that summoning Urthax Killspite, the Demon King, was near impossible task. But the fight the demon put up! He either really did not want to be summoned or he was testing Magus to see if he was-worth anything but a slow, lingering death.

Their dialog distractedly around, approached by the strong magic Magus was working and no doubt sent by Urthax to disturb the wizard. Magus shut them out, they could not enter his protective circle anyway. No harm could be perpetrated.

Which of these three had helped the fight to continue? Magus knew, but he could not be sure. Urthax had come! Sulfurous vapors swirled madly in the center of the pentagram. A ring of towering flames flared up inside the protective circle of the pentagram. The curtain turned totally black. Slowly, from the center of the pentagram, a fiery light shone. Urthax Killspite had come.

He was huge and terrifying. His skin was bright green and had a scaly texture. His eyes were a searing red, and his mouth was a pitiless grin. He was the most frightening sight he had ever seen. Urthax was the most powerful being that he had ever encountered, and he knew that Urthax was the one who had summoned Caneghor and his allies.

Magus took his leave and went to his chambers to rest and prepare for the evenings exertions. Arech returned to his chambers. The news he had received was disheartening. He would have to arrange for his servitors to be rescued from King's Castle. Baron Makahl and Bargash Eyesore were faithful servants and Arech knew their abilities completely. But the three new allies were another question altogether.

Czar Nickolia, Sir Moradon, and Princess Aimola were held captive for attempting to murder Maximus. Overconfident, they had made mistakes. Before the feast had begun, an outcry was raised, a kitchen boy was missing. Maximus and the revelers left the table to search for the lad. The three panicked and began preparations to leave.

The youth had not turned up after many hours, the search was called off until morning. The food for the feast had been left untouched and Maximus had given it to his servants. The one eating Maximus' portion had died from poisoning.

Conspicuous by their absence, the three were brought before the King. Poison had been found in Aimola's belongings, which were packed neatly away for a midnight journey. Furious, the King ordered the three and their execution for the first day of the king's birthday. Arech wondered if he could trust such a trio to serve him. However, it did not matter. They had to be removed from the castle along with the rest. Arech rummled and exhaled smoke, a dragon's laughter. He knew just the pair to free them all from Maximus. Now, on to the conjuration.

VII

The two pirate ships cruised silently over the ocean waters. They were sailing blind at night, sneaking up on the King's Castle with only the light of the quarter moon to guide them.

The Dread Pirate Rob stood alone at the prow of the flagship, inhaling deeply the sea air. Nothing thrilled him more than the sea and sailing. And fighting.

Rob was a small man, but lithe and swift. He fought with a rapier to make the most of the small advantages he possessed. It was enough to make him the scourge of the seas, a threat to anyone who tried to have Arech Dragonbreath pay him an exorbitant sum to rescue his five servants.

On the second ship, a hesitant knock woke Mahk BellowSpeak from his well deserved rest. Mahk lived up to his name and bellowed, "It had better be good for you to wake me up. You know I get cranky when I don't get enough sleep.

A voice quivering with fear answered, "The Dread Pirate Rob signalled us, sir. We have arrived."

A second group fought noisily on the castle walls. His guards were holding their own, except against one brute of a fellow who turned them into mincemeat with his giant sword.

The troops bristled with adrenaline, anticipating the upcoming battle. Barrowpine continued, "No evil maybe in the castle except the evil stealing the Sceptre. Once the Sceptre has been stolen, we must wait. King Maximus will sicken and die soon after the theft. While he sickens, so will the land. Chaos will slowly replace Order. When the King is finally dead, the demon will sit upon the throne."

Mahk left the table to search for the lad. The three panicked and began preparations to leave. A wave of joy and terror flushed violently through Magus now trembling body.
Areh to appear next to Maximus and the Sceptre, but only for a matter of moments. Arech would have to secure the Sceptre in his grasp to be sure that when he was sucked back to Urthrax's domain the Sceptre would travel with him. Contrary magics often held a negative effect to one another. Arech's stomach churned. All his work and that of his minions led up to this point. It all depended on him. There was not even a chance of treachery from Urthrax, blood oaths were signed between them. What if he failed?

Arech searched and found Urthrax, who was deep in conversation with Rinaldus Drybone and Ragface. *It is time, Urthrax.*

*Then let us go.*

Maximus could not believe that his advisors were so helpless. The meeting was utter chaos, nothing was being accomplished. His subjects needed help, his enemies needed to be stopped.

Maximus stood, Sceptre of Order clenched firmly in his hand. The room quieted. His advisors attention fixated on the King.

*"We know that the Dragon Arech Dragonbreath leads our opposition." Maximus continued. "We know where he is. It is a time to end counsel. It is time for action." He raised the Sceptre over his head. "We will lead an army now. We will crush him once and for all."

Suddenly his advisors gasped collectively. Behind Maximus a large, rectangular void had appeared. A scaly head protruded from the void, a dragon head.

Maximus, sensing that something was wrong, began to turn. He instinctly drew the Sceptre to his body while he moved but, it was to late. An immense claw pried the Sceptre of Order from his grip and withdrew into the void.

Looking into the Void Maximus could see the dragon who had just stolen his precious Sceptre. Beside the dragon was a fierce looking demon who guffawed wildly. Flames surrounded the pair, licking them but not burning. The void closed. Maximus was frozen in place. His advisors stared at him, hoping that what they had just seen had not happened. Maximus collapsed and their fears were realized.

X

Months had passed since the theft of the Sceptre. The Four Continents were falling into ruin. All the many castles which crossed the land were inhabited by one of Arech's henchmen or a horde of monsters. The last remaining outpost of Order was the King's Castle, where some trace of the Sceptre's location was eagerly being sought after.

Maximus was dying. All Arech wanted now was his death and it seemed as if Maximus was going to give him that too. Arech was patiently waiting for the day Urthrax Killspite would sit upon the throne and Chaos would rule supreme. Arech knew that the dragon was planning a last minute of hope. He had a surprise for Arech and Urthrax.

A hero was on his side. Recently returned from a conquest of a ferocious, evil dungeon, he was raised armies and recovered the Sceptre from Arech. Maximus would cling as long as he could to life. The hero was the only chance for his people and his land, to remain pure and the hero only had until the time Maximus died to recover the Sceptre.

A need of worry bloomed in Arech's mind. Resting comfortably within his newly acquired castle. Arech listened to Magus' report with distress.

They were sending a mighty hero after him to recover the Sceptre. Damn heros. Arech put his plan into action. He buried the Sceptre in a secret location after they fragmented the map into 25 pieces. He and his followers each kept a piece of the map and he placed the remaining 8 artifacts of power which he could not use.

Let them find the Sceptre now. I will rule. Chaos will prevail.
Admiral G. Thometz, Commandant Star Fleet Academy, Earth

(P.S.: Let's see them cheat on this one, huh, Jim? Also, 'Eliake sends her regards. Best, Greg)

BRIEFING

Presentation of disk SFC/SFAMK2 #664658: Audio/sleep-learning cadet preparation session. Authorized personnel only.

(CAUTION: Full Vulcan cadets should not take the direct-experiential version of this briefing, due to the presence of species-idiomsyncratic emotional reactions.)

The communicator whistles right into your ear. The dream you were having about hiking in the Grand Canyon falls right out of your head as your eyes snap open. You lie there staring at the ceiling for just long enough to let your heart rate slow down a little, then sit up and swing out of bed, hitting the communicator switch.

"Kirk here. This had better be good, Lieutenant."

"It may not be good, sir," says the dry voice of the duty communications officer, "but it's important. Eyes-only dispatch from Star Fleet." *WARNING: Heinlein was pursuing a mission, the objectives of which are indicated in the squirt.*

You groan softly to yourself and sit up a little straighter, just enough so that you can reach the keyboard by the bed and type in the long string of characters that will give the comm officer access to your command ciphers.

"Have the computer send it down here."

"Aye, aye, sir."

You wait a few seconds. The communications officer wakes up your desk screen by remote, then switches off.

"Voiceprint," says the desk computer.

You say your name.

"Retinal," says the computer.

You hold still and let the low-power laser flicker in your eye. Without further ceremony the desk screen fills up with print, amber on black.

****************************************************************

From: SFC, EARTH VIA SFC, DENEK TOP SECRET/EFTO/SC937-0176CEC To: JAMES T. KIRK, CAPT. (COMMANDING) From: NHauris Rihaul, ADM., SFC, Deneb Subject: SPECIAL MISSION ORDERS

TEXT: U.S.S. Heinlein, on exploratory mission in Trianguli area, has fallen out of communication under what we consider suspicious circumstances. Routine hourly telemetry squirts ceased without explanation twelve hours ago. Appended to these orders is the contents of a single unscheduled squirt that came to us via an unusual routing dump to a robot communications satellite near Gama Trianguli, apparently by high-powered communications tachyon packet beam. You are to evaluate the contents of the telemetry squirt and report immediately at maximum warp to the Heinlein's last known position, which is indicated in the squirt.

WARRANTING: Heinlein was pursuing a mission, the objectives of which are highly sensitive and have not yet been declassified for any personnel except those of Star Fleet Command, Earth Fleet Admiral's Office. This mission material will be available to you as soon as declassification procedures are completed.

Address any inquiries to Star Fleet Command, Earth. (Respectfully) NHS. Rihaul, Admiral, Star Fleet Command, Deneb

****************************************************************

You say a little where you sit, letting out a worried sigh as the screen scrolls down and adds:

P.S.: Jim --- Stay out of trouble. You're going to be a long way from help. Best, Nhauris.

****************************************************************

"Stop," you say to the screen as you get up and head for the closet to get into uniform. Damn, you think. Sulu has the Heinlein. What's he gotten himself into now? Brand-new ship. And you were the one who recommended him for this temporary command assignment. When one of command rank with sufficient knowledge of the Trianguli sector was available, he was the perfect choice. You thought he'd just ride around for a few weeks, enjoy the scenery, and not get himself right into trouble.

You pull the uniform top over your head and sit down at the desk. "Go," you say to the computer.

"Appended," it says. "Visual and audio content."

"Ready. Go."

The text vanishes. Part of the screen begins reading out printed telemetry, the ongoing status of a starship's main function boards. The rest of it fills up with an image of the ship's bridge. The Heinlein is one of the newer light-cruisers and, though the bridge is a touch smaller than the Enterprise's, it's sleeker, neater. Banks of switches have been replaced by light-controlled relays or motion sensors; screens are bigger and clearer: the fore screen looks more like a picture window, one that you could walk right out of and into the stars drifting slowly toward you. You look past the helm, at that screen. Sitting in the center seat is a lithe young form, with his back to you. You know that familiar form well, having stared at it for so many years when you were sitting where he is now. But he's not so young anymore, and very straight he sits in his own center seat, superbly self-assured. He is staring at the contents of the screen intently.

"Don't lose it, Michael," he says softly. "You lose it, I promise you I'll dock your pay."

The navigator looks over his shoulder for a second. Wearing the slightest grin, he says, "Sir, this fish is hooked. Eighteen light-years and closing."

"Screens," says Sulu.

"Deployed," says the helmsman, glancing over her board. "At full intensity."

"Phasers---"

"Ready, sir."

"Don't get trigger-happy, Brynne. They're just in case."
"Noted, sir," says the helmsman. But you notice that her fingers are twitching a bit --- the way Sulu's used to, once upon a time. Despite the building tension, you smile a little.

"Target at sixteen light-years," says the navigator.

"Identification yet?"

"Not close enough, sir."

"I want to know who that is," Sulu says softly, "and what they're doing here so close to what we just passed."

"Target's accelerating, sir! Warp five now --- warp six ---"

"Oh, no you don't," Sulu says. "Catch him. Maneuvers at your discretion. Mr. Wilhelmsen, hail him. Ask him politely to stop and be identified."

"Warp seven now, sir," says the navigator, and the ship moans softly in its bones as it leans into higher speed. You lean forward a little with it. Stars stream by the screen faster. And up there in the darkness, just barely visible, something shines.

"Visual!" says the comm officer. "No response to hails."

"All right," Sulu says, not sounding entirely regretful, "we'll do this the hard way. Rhia, what do its engines' power-consumption curves look like? Can you get a fix on them?"

---

Mr. Wilhelmsen, hail him. Ask him politely to stop and be identified.

--- five ships --- six --- eight now ---"

--- fore screens down to forty percent, sir!"

--- fire at will ---"

--- hull pressure ---"

--- explosive decompression!"

--- seal down decks five and eight ---"

--- Wil, dump the log three ways, hurry it --- packet the top --- no, even better, just one buoy ---"

"Star Fleet Command, Deneb, this is Heinlein ---"

--- twelve of them, sir ---"

"What are they? who are they?!

--- can't even ---"

--- hull pressure ---"

--- starboard nacelle ---"

And then comes another terrible explosion and crash and flinging of bodies about. Visual goes down, leaving you with a screen two-thirds black, the rest displaying frantic and deranged readouts from science station, helm, navigations: all systems near failure, life support going, matter-antimatter reaction near critical --- and the voices, the terrible voices, confused, desperate, brave:

"--- come on, Wil, move it!"

"--- phasers ---"

"--- tubes are crushed, no use ---"

"--- Star Fleet, Deneb, do you read? U.S.S. Heinlein ---"

And worst of all, Sulu's voice, flavored with something you've never heard in it before --- despair.

"Oh, my god ---"

A scream; then nothing but black noise, the complacent hiss of uninvolved stars. And even the telemetry dies.

"End file," says the screen.

You have to hold still for a few seconds, again, to let your heart slow.

"Bridge," you say then.

"Bridge. Lieutenant Renner."

"Get me Star Fleet," you say. "And once you've done that, recall the special-missions crew. We've got trouble."

"Yes, sir"

Sulu... you think.

"Any other orders, sir?"

You think about that too.

THE CREW

Cadets may wish to review the histories and careers of the principal Enterprise special-missions command crew. Although much of this information is common knowledge among Star Fleet personnel, cadets of species in which latency has occurred recently (plus/minus ten standard years) may not be familiar with the qualifications of the command crew of the Enterprise. For their benefit, and to dispel many rumors (justified or not), a brief career history of each crew member is included. (Excerpted from Who's Who in the Federation, revised edition. Reproduced by permission, Marquis, Who's Who Interstellar, Earth/Vulcan/Deneb V.)

ADMIRAL JAMES T. KIRK

Admiral (Commanding) James T. Kirk: A legend in his own time; soldier, diplomat, and student of history; past and present commander of a ship whose name is synonymous with bold adventure; born Iowa, U.S.A., 28 July 2132; graduated Star Fleet Academy with highest honors; relieved Captain Christopher Pike and served as captain of U.S.S. Enterprise for the duration of her second five-year mission; promoted to commodore, then admiral, and assigned to Star Fleet Command, San Francisco, Earth; reassigned to the refitted Enterprise at the time of the Veurj crisis; now commanding Enterprise for special exploratory, diplomatic, and interventional missions; adviser to the Federation Council on Interspecies Affairs; Chairman, Cadet Commandant's Training Studies Group, Star Fleet Academy, Terra.
CAPTAIN SPOCK

CAPT. Spock First Officer and Science Officer, USS Enterprise
Half-vulcan  WEIGHT: 170 lbs. at 1g Typical Vulcan physiology: Two hearts and manganese based blood cells. Special attributes: Contact telepathy; scientist and mathematician of galactic repute.

Captain Spock: An inseparable part of the Enterprise legend; galactically renowned scientist, research mathematician, and computer specialist; serving for these missions as First Officer and Science Officer; born ShiKahr, Vulcan, 56 Tasmee, 503 VSD; graduated Star Fleet Academy with highest honors; assigned to Enterprise during Captain Christopher Pike's command; associated with her ever since, excluding a period spent on sabbatical on Vulcan after the second five-year mission; returned to service aboard Enterprise during the Vejur crisis; promoted to captain shortly thereafter; assisting Star Fleet in designing the courses and curricula to be used when the Enterprise becomes a training ship; currently in special-mission service.

DOCTOR MCCOY

CMDR. Leonard Edward McCoy, MD.
Chief of Medicine and Psychiatry, USS Enterprise
Human - WEIGHT: 5'11"; HAIR: Brown; EYES: Blue; BLOOD TYPE: A+
Special Attributes: Fellow of the Interstellar College of Xenomedicine.

Leonard McCoy, M.D. (Commander): Another name that made Enterprise famous (or vice versa); chief medical officer during the second five-year mission and again (after a brief retirement) during the Vejur incident; commissioned full commander after the incident; born Atlanta, Georgia, 24 October 2119; M.D. and internships, Cornell Medical Center/New York Hospital; board certified in human and exopsychiatry, Payne Whitney Clinic; senior fellow, the Interstellar College of Xenomedicine; enlisted and assigned to Enterprise; one of the most decorated medical officers in Star Fleet; Legion of Honor; Star Fleet Awards of Valor; Fleet Surgeons' "LifeStar" with double cluster; rumored to have had the Enterprise's sick bay rebuilt to his own specifications.

COMMANDER SCOTT

CMDR. Montgomery Scott
Chief Engineer, USS Enterprise
Human - HEIGHT: 6'1"; HAIR: Brown; EYES: Brown; BLOOD TYPE: O-
Hobbies: Comparative alcohol appreciation, Reading technical manuals.

Commander Montgomery Scott: Renowned throughout Star Fleet as the man who can make anything work; chief engineer of Enterprise for almost her entire period of commission; born Aberdeen, Scotland, 31 August 2121; shipwright's apprentice in the P&O Orbital Shipyards at L5/"Glasgow Yonder" until old enough to enter Star Fleet Academy; junior engineer aboard U.S.S. Potemkin; assistant chief engineer aboard U.S.S. Hood; transferred to Enterprise under Captain Pike; brief stint at Star Fleet Corps of Engineers, Planetary Division, following second five-year mission; Nobel Prize nominee (structural engineering) for the design and construction of the dome for Greater Mariner Base; serving aboard Enterprise for special missions; working on engine plans for NX transwarp starships.

COMMANDER UHURA

CMDR. Nyota Uhura
Chief of Communications, USS Enterprise
Human - HEIGHT: 5'5"; EYES: Brown; HAIR: Black; BLOOD TYPE: AB+
Hobbies: Comparative Xenolinguistics, Denebian Opera.

Commander Nyota Uhura: Rumored to have opened more hailing frequencies than any other entity alive; known throughout the galaxy as "the Voice of Enterprise"; born Nairobi, United States of Africa, 24 October 2140; M.S., comparative xenolinguistics, Queen's College, Cambridge; enlisted in Star Fleet, Communications Division; assigned to Enterprise early in the second five-year mission; promoted to full commander at the mission's end; assigned to Federation True Universal Translator Project (which she created); serving as special-missions communications chief; concurrently conducting research on the potential of thought as a carrier for instantaneous interstellar communications and species-specific context in language.
LT. Pavel Chekov
Weapons Officer, USS Enterprise
Human - HEIGHT: 5'6"; HAIR: Black; EYES: Brown; BLOOD TYPE: O-
Hobbies: Ski-yacht Racing, Old Cyrillic and Slavic Linguistics
and History.

Lieutenant Commander Pavel Chekov: Navigator and weapons officer par excellence; one of the youngest officers in fleet history to achieve "high mastery" rating on three stations at once (helm, weapons, science); born Moscow, U.S.S.R., 6 March 2145; attended Moscow University at Flamsteed, Luna; completed his Bachelor's degree in astrophysics while in Star Fleet Academy; assigned to Enterprise during the second five-year mission; promoted to lieutenant commander at its end; transferred to Star Fleet Command, Earth; awaiting first officer’s billet aboard one of the new Grissom class exploratory starships; currently posted to Enterprise for special missions; captain of the solar-sail yacht Volga and of the winning America's Cup sky yachting team for the past two years.

CAPTAIN SULU

Captain Hikaru Sulu: Former helmsman of Enterprise, temporarily assigned as captain of the exploratory ship U.S.S. Robert A. Heinlein; born Wailuku, Maui, Hawaii, 3 July 2146; enlisted in Star Fleet Academy; graduated with highest honors with a dual specialty in engineering and helm functions; assigned to Enterprise early in the second five-year mission; promoted and decorated on various occasions, most notably for conspicuous heroism during the raid on the Romulan StarSeed Project and during the events surrounding Enterprise's tests of the elective-mass inversion drive; promoted to captain after the Vejur incident; presently on a one-year exploration and mapping mission in the Great Rift area of the Sagittarius Arm.

LT. CMDR. Harb Tanzer
Chief of Recreation, USS Enterprise
Human - HEIGHT: 5'9"; HAIR: Silver; EYES: Blue; BLOOD TYPE: A+
Special Attributes: Past Contact Bridge Champion of the Federation - Four standard years.

LT. CMDR. Lia Burke, RN, MD, ND, FICN
Assistant Commanding Nurse, USS Enterprise
Human - HEIGHT: 5'5"; HAIR: Blonde; EYES: Hazel; BLOOD TYPE: A+
Hobbies: Recreational Computer Simulations, Chess (2-D & 4-D), Alien Mythologies.

LT. Jerry Freeman
Assigned to Biology, USS Enterprise
Human - HEIGHT: 5'10"; HAIR: Brown; EYES: Brown; BLOOD TYPE: A+
Hobbies: Antigue Entertainment forms, Image Processing.

LT. Janice Kerasus (pronounced JANICKUS)
Chief of Linguistics, Communications Department, USS Enterprise
Human - HEIGHT: 5'11"; HAIR: Brown; EYES: Brown; BLOOD TYPE: A+
Hobbies: Cats, Creative Writing, Equestrian Events.

LT. Derval Seamon Ni Avoca
Replacement Helm Officer, USS Enterprise
Human - HEIGHT: 6'1"; HAIR: Black; EYES: Brown; BLOOD TYPE: A+
Hobbies: Irish Studies, Amateur distilling of off color limericks.

LT. Sean Ohara
Assistant to Security, USS Enterprise
Human - HEIGHT: 5'9"; HAIR: Brown (shaggy); EYES: Green (2);
Distinguishing Marks: Blonde Patches on Mane.
Hobbies: Moon Watching, Burger Eating.

LT. Azrieh Lee
Junior Weapons Officer (specialist in phaser technology), USS
Enterprise
Human - HEIGHT: 5'5"; HAIR: Brown; EYES: Brown; BLOOD TYPE: B+
Hobbies: Graphics Arts, Historical Costumes.

LT. Olga Litowinsky
Chief Computer Librarian, USS Enterprise
Human - HEIGHT: 5'6": HAIR: Salt & Pepper; EYES: Blue; BLOOD
TYPE: AB-
Hobbies: Children's Books, Surf Fishing.

LT. Theresa Renner
Transporter Technician, USS Enterprise
Human - HEIGHT: 5'5": HAIR: Brown; EYES: Blue; BLOOD TYPE: AB+
Special Attributes: Professional Violist; Third Degree Black Belt (Kung Foo)
Hobbies: Collecting Purple Things and Teddy Bears.

EN. Dahi Lahor Naraht
Assigned to Biology & Biomaths, USS Enterprise
Horta - 8,412th Egg of the Horta; HEIGHT: 2'3"; SKIN: Orange-Brown "Islands"; Voder strapped to "Back"
Hobbies: Recreational Gambling, Cooking with Heavy Metals.HF

SHIP’S COMPLIMENT

KIRK (COMMANDING) TANZER (RECREATION ROOM)
SHOCK (ENGINEERING) MCCOY (SICKBAY)
UCHURA (COMMUNICATIONS) BURKE (SICKBAY)
CHEKOV (NAVIGATIONS) KERSUS (LABORATORY)
AVOCA (HELM) OHARA (SECURITY)
SCOTT (ENGINEERING) LEE (SECURITY)
VARAH (ENGINEERING) LITOWINSKY (LIBRARY)
FREEMAN (WARP DRIVE) BENNER (TRANSPORTER)

SHIP’S SYSTEMS

Some candidates may not have detailed information concerning the theory and operation of Constitution class starships. Since basic knowledge of these systems is required for participation in this scenario, a brief rundown of equipment structure and capabilities is included. (Excerpted from Starfleet Planning Starships, vol. 1. Federation Starship Vessels: revised edition. By kind permission of the publisher, Jane Interstellar Ltd., London WC1/Deneb V.)

ENGINES

Propulsion is by controlled matter-antimatter reaction. Total annihilation of both substances takes place within magnetic bottle. Maximum speed: Warp Factor 4; maximum safe cruising speed: Warp Factor 6. If Warp Factor 6 is maintained for more than twenty-four hours at a time, the magnetic bottle containing the matter-antimatter reaction erodes dangerously and becomes un-regenerable because of magnetization of the generating equipment. Damage to the dilithium crystals is also likely, especially if the crystals have seen more than 3000 hours of service. Failure of dilithium crystals (which help channel power to the warp engines from the matter-antimatter reactors in the nacelles) will force the ship to drop out of warp. The ship may proceed on impulse power until repairs are effected (usually eight hours).

Destruction of all of the ship's dilithium crystals will force the ship to proceed to a planet where they can be obtained through mining or trade. However, just getting to such a planet is likely to take anywhere from several months to several years. Captains who burn out all of their ships' dilithium crystals are rarely entrusted with another starship command.

Matter for the matter-antimatter reaction is usually interstellar
hydrogen, NH, or other radicals that are "scooped" out of space by the accretion layer of the ship's warp field. Antimatter is manufactured periodically aboard ship by accepted laboratory methods (each nacelle has a collapsed-mirror linear accelerator adapted for use as an antimatter "breeder"). Fuel is therefore a regenerable resource. However, there are places in space where even monatomic hydrogen is so sparse that the ship will be in danger of running out of "steam." Sensors can be used to locate these interstellar doldrums in advance.

Primary life support is powered by the warp engine system. Secondary life support is powered by the impulse engines. Periods longer than thirty days on impulse will exhaust secondary life support, leaving the ship without backup.

PHASERS

Phasers come in two kinds: the large "ship's phaser" and the small "handphaser." A "phaser beam" is hypercoherent radiation from an artificially grown cesium-dilithium crystal LED that is energized by ganged conventional high-power laser (descendants of the "satellite killers" of old). The multiple lasers and the crystal are manufactured and tuned to emit a "chord" of frequencies only a few hundred-millionths of an angstrom apart. The multiple beams exponentially augment one another's efficiency and are still more coherent than any conventional laser alone while they remain in phase (hence the name). Phasers are independently powered out of the ship's secondary energy supply (as opposed to those on the newly designed Enterprise, which are powered directly out of the warp engines). When a starship is in warp, the phaser beams (at firing) share its faster-than-light (FTL) acceleration for a brief period after punching out of the warp field. Therefore, they can be used in FTL battle, but over long distances they quickly lose their FTL speed. Phasers can be "burned out" by excessive use (bombardments of more than five minutes without a rest-and-recycling period). Their most common malfunction -- also related to overuse (which often occurs after approximately three minutes of constant use) -- is failure of one of the ganged lasers. This causes the phaser chord to lose effectiveness. Full power is not always necessary. A captain may call for half- or quarter-power.

Ship's phasers are the most effective way to reduce another ship's defensive screening. A sequence of three hits (sustained barrages lasting from 3 to 10 seconds each) at full power on another ship's screens will begin overloading those screens and reducing their effectiveness. Subsequent hits knock the target's screen down another 10 percent to 15 percent for each hit until there is no power left and the target ship's naked hull is exposed.

Enterprise's phaser "banks" are located both fore and aft. The fore bank is located under the main "disk" hull, near the center; the aft bank, on the rear edge of the disk, above the impulse engines. Both banks are aimable within about a 270-degree spherical radius, leaving very few unprotected angles. (But there are a few.)

Handphasers are small versions of the large ship's phasers. Setting range from "stun" to "kill." The stun setting will leave the average human being unconscious for anywhere from ten minutes to an hour, depending on the victim's physical condition. A handphaser on the highest setting is capable of heating a small boulder red-hot in a matter of seconds or melting through a metal door. Handphasers are good for about twenty minutes' continuous use before needing recharge. They are rechargeable either aboard ship or, in the field, by use of extra power packs (which contain about fifteen minutes' power each).

Handphasers have the same tendencies to burn out or lose chord as the big ship's phasers do. They can be set to intentionally overload and explode. Some alien species (for example, Hortas) are not affected by handphaser fire unless special alterations have been made to the weapon. They have small limited-range warp-field generators that enable them to

PHOTON TORPEDOES

A photon torpedo is a simple, elegant, and effective weapon comprised of a very small amount of antimatter contained in a magnetic bottle and the generating apparatus to maintain the bottle. On command, the bottle degenerates, which brings the antimatter into contact with the generator's matter and produces a tremendous explosion of both standard shock waves and extremely hard radiation. Photon torpedoes can be fired directly at a nearby object to explode on contact with it, or they can be set with delayed fuses and ejected as mines.

Photon torpedo "tubes" must be recharged after each use, both by reloading the tubes with new torpedo apparatus and equipping the torps with fresh antimatter from ship's breeder. The process takes from thirty seconds to a minute after a "full spread" has been fired.

Enterprise is equipped to fire photon torpedoes from both front and rear: each bank is comprised of four aimable tubes. A "full spread" is eight torpedoes, one from each tube: front, back, right front, right rear, left front, left rear, upper center, lower center. Simultaneous fire from all four tubes pointing in a given direction may be concentrated on one point.

TRACTOR BEAMS

Tractor beams are actually "grasers": coherent beams of gravity-wave packets. A tractor beam locks onto a given object

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

and, by mimicking a radically increased gravitational field, pulls it closer to the ship for examination or other purposes. Pressor beams use the same technology but with polarities reversed to exert great gravitational pressure on a small area. Conventional tractors and pressors are effective only on massless or extremely small objects; pressors can be tuned to ensure that living beings get safely from one location to another, tractors are cranky and delicate, and are constantly malfunctioning for one reason or another: dilithium-crystal misalignment, interstellar jamming, or "black noise." The aim is to distort the signal: and so forth. When screens are up, the transporter cannot be used to beam out of the ship. Overuse (heavy continuous powering) may cause transporter circuitry to burn out. Intraship beaming is extremely dangerous and is not recommended except in utmost emergencies. The result of beaming from one location to another within the ship is almost always fatal.

SHUTTLECRAFT

Shuttlecraft are small general-use spacecraft powered by impulse power only. They are used for trips that exceed the transporter's effective range, when the transporter is malfunctioning, and for carrying objects either too large or too delicate to entrust to the transporter. Their power supply is rechargeable from the Enterprise but is still somewhat limited. Their effective range is about 500,000 miles at .10 c. (Shuttlecraft do not exceed this speed limit for fear of relativistic effects.) This gives them up to about eight hours at cruise or an hour at top speed.

COMMUNICATIONS

Subspace "radio" is actually a tachyon-based technology bearing little resemblance to the radio of old. It is not dependent on lightspeed -- indeed the slowest it can go is c; its high speed limit is about 136,000 c, or warp 9. But even this great speed becomes insufficient for effective communication as one's distance from Star Fleet increases. Out near the Romulan Empire, for example, it takes nearly three weeks for a message to reach Star Fleet. This leaves a starship captain with obvious reasons. Those who bluff self-destructs often find their bluffs called.

SENSORS

Enterprise's main sensor array (sometimes referred to as "scanners") includes a variety of tachyon-based devices capable of detecting movement or radiation and analyzing the composition and location of almost any known element. At short range (up to 500 miles), the sensors can detect individual creatures' life signs. At medium range (500 to 50,000 miles) they are better at detecting movement and radiation from the infrared up through visible light, the ultraviolet, and x-rays; and doing compound analysis. Long-range sensing (50,000 miles to approximately 10 parsecs, or 32 light-years) is confined primarily to very strong and artificial radiation sources (i.e., other ships, which in warp drive tend to leave a readable "ion trail" behind them), or large-scale physical movement (planetary orbits, stellar motion, etc.). Certain lead-bearing and heavy-metal-bearing compounds can interfere with scanner functions. Long range scanning in particular is easily disrupted by interstellar "jamming" and "bad weather," because of the extreme length of the tachyon particle/wave on which it relies.

Personal scanners, such as the tricorder, are also more effective at close range (1 to 1000 feet) than at long range (5 to 10 miles). Tricorder readings usually have to be supplemented with on-site investigation: they tend to be vague.
Sick bay contains various kinds of medical scanning equipment and numerous devices for healing the sick; primarily the "anabolic protolaser," which forces tissue regeneration. The more delicate or specialized the tissue (heart, brain, etc.) the longer such regeneration takes. A broken bone can be reknit in about an hour. Damaged brain or neural tissue regenerates in one to two days, but rehabilitation or retaining time must be added.

SHIP LAY-OUT

DECK #1  Bridge
DECK #2  Lab
DECK #3  Turbo-lifts
DECK #4  Turbo-lifts
DECK #5  Spock’s quarters
DECK #10  Cargo hold
DECK #11  Phaser banks
DECK #12  Observation deck
DECK #13  Lounge
DECK #20  Gym
DECK #21  Kitchen
DECK #22  Bowling alley
DECK #23  Turbo-lift
DECK #14  Turbo-lifts
DECK #15  Maintenance
DECK #16  Warp-drive
DECK #17  Computer
DECK #18  Hydroponics
DECK #19  Shuttlebay

MISSION AREA


ORN/IO TA TRA N GULI

This system has 6 planets
Planet #2 has 2 moons
Planet #3 has 3 moons

Free traders report one intelligent species (Name: ORN/AE). They have a reputation as great tool makers. Last contact: One standard year ago. The Ornae were reported to be interested in Electronic Equipment and Extracultural Artifacts. A striking borderline M-class world of blue sandstone canyons and evaporated salt-pan seas. This is the home of the Ornae, a strange protoplasmic/amoeboid species... never yet contacted by Federation personnel but rumored by free traders to be the greatest toolmakers in the galaxy. An Ornaet will use anything as a tool... even itself.

MALAKIYY 12/769 CIRCIINI

This system has 9 planets
Planet #1 has 2 moons
Planet #5 has 3 moons
Number from primaries: 9
Diameter: 1860 miles
Mass: 3.5 sextillion metric tons
Distance from primary: 48.6 astro-units (4,519,800,000 miles)
Pre-existing information: Location uncharted; no preliminary mapping.
Planet name: Unassigned

From the surface of this small, dark rocky world, far out in its solar system, a radio signal whispers desperately into endless night, crying out for help... and the language it uses is ancient English.

ANDORGA / KAPPA-1 APODIS

This system has 8 planets
Planet #1 has 3 moons
Planet #2 has 2 moons
Planet #3 has 7 moons
Planet #5 has 2 moons
Planet #6 has 4 moons

Planet location charted on two occasions. No confirmation of the presence of intelligent life. U.S.S. Hastings attempted contact and assumed lost. U.S.S. Vincennes also lost. Causes: Unknown. AREA QUARANTINED. Commanders are cautioned to keep clear of this system unless absolute necessity. An M-type world with a silvery, murky methane atmosphere and a bad reputation... no Federation vessel investigating it has ever come back.

HASTORANG/1214 NORMAE

This system has 6 planets
Planet #1 has 2 moons
Planet #2 has 8 moons
Planet #3 has 4 moons
Planet #5 has 1 moon
System charted and mapped.
Planet name: Hastorang
Translation: "Lifemother" Intelligent Hominid life
Level of civilization: Feudal
Single language: Dainsa

Opened to licensed free trade four standard years ago. Prime Directive is in force. A gorgeous M-type planet, almost a twin of Earth... but an Earth stuck fast in the tenth century and populated by alien kings, armored knights, distressed damsels, and wizards... "white" and otherwise. And what of the dragons?

ACHIR/R OCTANTIS

This system has 1 planet
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Location and existence noted within last standard year. Area outside the Federation’s patrol corridors. Several forms of intelligent life reported to share the sphere. All the species reported to be technologically advanced. An alien species has built a Dyson sphere around this lovely rose-colored sun—a stupendous feat of engineering, now home to billions of people. But the star is dangerously variable and about to flare up. Without the help of a Federation starship, billions could die.

NIAU/I 139 CIRCINI
***************
This system has 8 planets
Planet #1 has 2 moons
Planet #3 has 3 moons
Planet #4 has 2 moons
Planet #6 has 2 moons
Planet #7 has 2 moons
Planet name: Niau
Type of planet: Class "H"
Diameter: 6000 miles
Mass: 5 sextillion metric tons
Distance from primary: 2 astro-units (186,000,000 miles)
Satellites: 1
Intelligent life: Not confirmed
Contact: Unconfirmed finding of "BONES" of unknown landing party. An Earthlike planet populated by an intelligent feline species in the early stages of its space program. As yet there has been no official contact with the Federation. However, a delirious free trader picked up in a derelict ship near the system reported seeing the bones of a previous exploratory expedition there. This observation has not been confirmed.

JAUZAH/4403 PAVONIS
***************
This system has 4 planets
Planet #2 has 2 moons
Planet #4 has 3 moons
Location charted and preliminary mapping done. Intelligent life readings un-confirmed. Readings confused and no final determination made. No artifacts or other signs of life forms known to the Federation. Planet name assigned randomly. A small, dry, cold planet, rich in minerals, but barren of cities or other artifacts. Sensors insist that life has evolved here...but it has not yet been found. Star Fleet cannot tell if this is a trap, a sensor malfunction, or a misunderstanding.

KLUSOS/515 ARAE
***************
This system has 1 planet
Location charted and preliminary mapping done. Intelligent life found. Hostile action precluded direct contact. U.S.S. Nihal attacked in orbit. All communication refused. Nihal withdrew to avoid prolonging the engagement. About as non-Earthlike as a planet can get—a world of corrosive soil and an atmosphere full of hydrochloric acid. Why this world’s sleek, glassy starships attack everyone who passes by remains a mystery... as does what can be done to stop them.

TSNIO/803 MUSCAE
***************
This system has 6 planets
Planet #1 has 4 moons
Planet #3 has 3 moons
Planet #6 has 7 moons
Location charted. No mapping. Intelligent life found. Anomalous sensor readings indicate possible contamination by no other advanced culture. PLANET QUARANTINED. Position classified. Prime Directive in full effect. A world superficially Earthlike but housing a bizarre culture uprooted from Earth by another spacefaring species in the dim past.

KHUT/43 PAVONIS
***************
This system has 2 planets
Planet #2 has 2 moons
Intelligent life found.
Contact: Ceased by request of Khut. Reclusive species, extremely cautious. Privacy has religious importance. Federation vessels are advised to avoid planet except in extreme emergency. A hot world of mountainous continents washed by soupy seas of hydrocarbons and liquid plastics. In those seas live the a’Khut, intelligent and reclusive beings who in the past have asked only to be let alone. Recently, however, they have been desperately hailing every ship that passes their planet.
GENERAL INFORMATION

Star Fleet Command Verbal Commands and Queries

NAVIGATION

=======

TAKE THE CONN

CHART (set or plot) A COURSE FOR (to)

WARP (factor) (0-12)

INCREASE/DECREASE WARP SPEED

GO SUBLIGHT

IMPULSE POWER

ORBIT THE THIRD (3rd) PLANET

ORBIT PLANET (#)

(begin) EVASIVE MANEUVERS

PERSUE

Sensors

======

SCAN = LONG RANGE SCAN

SCAN THE PLANET (object)

LONG RANGE SCAN

CLOSEUP OF THE PLANET

SYSTEM SCAN

SCAN FOR LIFE READINGS

COMMUNICATIONS

==============

OPEN A HAILING FREQUENCY (communications channel) TO (ship or planet)

KIRK TO ENTERPRISE (or any crew member) [ACTIVATES THE INTERCOM AND COMMUNICATOR]

Weapons

--------

LOCK PHASERS (photon torpedoes or tractor beam) ON TARGET

DIVERT ALL POWER TO THE SHIELDS (or any other system)

SET PHASERS ON (to) (full) (maximum) (power)

FIRE PHASERS (torpedoes)

TRACTOR (beam) ON/OFF

ENGAGE/DISENGAGE TRACTOR

SHIELDS (screens) UP

RAISE/LOWER SCREENS (shields)

TRANSPORTER

==========

SET COORDINATES (coords) AT

ENERGIZE

BEAM ME (us or any object) DOWN/UP

TURBOLIFT

----------

DECK (1-23)

ENGINEERING (or any location within the Enterprise)

OTHER COMMANDS

==========

TRICORDER READINGS

ANALYZE (any object)

GIVE ME THE (any object)

SEARCH

GO TO (any location or person)

TAKE THE (object) TO (any person or location)

RESULTS

=======

SENSORS

SCAN = LONG RANGE SCAN

SCAN THE PLANET (object)

LONG RANGE SCAN

CLOSEUP OF THE PLANET

SYSTEM SCAN

SCAN FOR LIFE READINGS

COMMUNICATIONS

OPEN A HAILING FREQUENCY (communications channel) TO (ship or planet)

KIRK TO ENTERPRISE (or any crew member) [ACTIVATES THE INTERCOM AND COMMUNICATOR]

WEAPONS

LOCK PHASERS (photon torpedoes or tractor beam) ON TARGET

DIVERT ALL POWER TO THE SHIELDS (or any other system)

SET PHASERS ON (to) (full) (maximum) (power)

FIRE PHASERS (torpedoes)

TRACTOR (beam) ON/OFF

ENGAGE/DISENGAGE TRACTOR

SHIELDS (screens) UP

RAISE/LOWER SCREENS (shields)

TRANSPORTER

SET COORDINATES (coords) AT

ENERGIZE

BEAM ME (us or any object) DOWN/UP

TURBOLIFT

DECK (1-23)

ENGINEERING (or any location within the Enterprise)

OTHER COMMANDS

TRICORDER READINGS

ANALYZE (any object)

GIVE ME THE (any object)

SEARCH

GO TO (any location or person)

TAKE THE (object) TO (any person or location)
computer data prior to proceeding with any mission.

Identify yourself by name to all alien beings.

Inform all beings that you come in peace.

Ascertain the identity and/or species of all alien entities.

Caution is advised in the use of telepathy.

Personnel may "Fan Out," on a planet's surface, but must remain in radio contact at all times.

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KINGS QUEST III MAGIC SPELLS
Understanding The Language Of Creatures

Page II
Ingredients:
- One small feather from a bird
- One tuft of fur from any animal
- One dried reptile skin
- One rounded spoonful of powdered fish bone
- One thimble full of dew
- One magic wand

Directions:
1. Put the small feather in a bowl
2. Put the fur in the bowl
3. Put the reptile skin in the bowl
4. Add a spoonful of powdered fish bone
5. Put the thimble full of dew in the bowl
6. Mix with hands (mixture will be doughy)
7. Separate mixture into two pieces
8. Put dough pieces into your ears
9. Recite this verse:
   feather of fowl and bone of fish,
   molded together in this dish,
   give me wisdom to understand
   creatures of air, sea and land
   X) Wave the magic wand
You will now be able to understand the speech of animals, birds and fish. You will not, however, be able to speak to them. The spell will last as long as the dough is in your ears.

Flying Like An Eagle Or A Fly

Page IV
Ingredients:
- One tail feather of any eagle (to fly like an eagle)
- One pair of fly wings (to become a fly)
- One pinch of saffron
- Rose petal essence
- One magic wand

Directions:
1. Put a pinch of saffron in essence
2. Recite this verse:
   Oh winged spirits, set me free
   of earthly bindings, just like thee
   in this essence, behold the might
   to grant the precious gift of flight
3. Wave the magic wand
You now have a potion which will allow you to cast the transformation spell. To cast the spell any time later:
4. Dip the eagle feather in the essence (if you want to become an eagle) or dip the fly wings in the essence (if you want to become a fly). You will turn into an...
nightshade juice like bitter wine,
silently in darkness you creep
to bring a soporific sleep
You can use this spell until your rose petal/saffron potion is gone. to return
to your own form before the spell wears off, recite this verse:
IX. Wave the magic wand
X. Put the sleep powder in the pouch [4 safekeeping]
You have now mixed a powder for casting a sleep spell over
whoever is nearby. To cast the spell, pour the sleep powder on
the ground [or floor] in a dank, dark place. Then recite:
Slumber, Henceforth!

Transforming Another into a Cat

Teleportation at Random

Page XXV

Ingredients:
1/2 cup mandrake root powder
1 small ball of cat hair
2 spoonfuls of fish oil
1 magic wand

Directions:
I. Put mandrake root powder in a bowl
II. Put the cat hair in the bowl
III. Put 2 spoons of fish oil in bowl
IV. Stir mixture with a spoon [dough will be oily]
V. Put the dough on the table
VI. Pat dough into a cookie [let harden on table]
VII. Recite this verse:
With this kiss, I thee impart,
power most dear to my heart. Mandrake root and hair of cat
take me now from this place hither,
to another place far thither.
VIII. Wave the magic wand
You now own a charm which will allow you to cast the random teleportation spell.
To cast the spell, rub the stone. It will instantly whisk you away from where
you are. Remain alert, however --even though you use the spell to run away from
danger, nothing guarantees that you will not arrive in a more precarious
situation than the one you left. The power of the charm remains-- or as long as
you can retain the stone.

Brewing a Storm

Page LXXXIV

Ingredients:
1 cup of ocean water
1 spoonful of mud
1 pinch of toadstool powder
1 magic wand
1 empty jar

Directions:
I. Put a cup of ocean water in bowl
II. Light a charcoal brazier
III. Heat the bowl on the brazier [heat slowly, but not to boiling, then remove from heat]
IV. Put a spoon of mud in the bowl
V. Add a pinch of toadstool powder
VI. Blow into the hot brew
VII. Recite this verse:
Elements from the earth and sea,
combine to set the heavens free.
When I stir 'tis magic brew,
great god thor, I call on you.

Causing a Deep Sleep

Page XIV

Ingredients:
Three dried acorns
1 cup nightshade juice
1 magic wand
1 empty pouch

Directions:
I. Grind the acorns in a mortar [with a pestle]
II. Put the acorn powder in a bowl
III. Put the nightshade juice in the bowl
IV. Stir the mixture with a spoon
V. Light a charcoal brazier
VI. Heat the mixture on the brazier [boil the mixture until the nightshade juice is almost gone, then
remove from heat]
VII. Spread the mixture on a table [wait until dry]
VIII. Recite this verse:
Acorn powder ground so fine
You have mixed a potion that you can use to brew a storm. To activate the spell, stir the storm brew with your finger and recite:

**Brew of storms,**
**churn it up!**

Outdoors, a rainstorm complete with thunder and lightning will occur. It will last for some time, but will eventually rain itself out. If you wish it to subside earlier, recite:

**Brew of storms,**
**clear it up!**

---

**Page CLXIX**

**Ingredients:**
1 jar of lard
1 cactus
1 spoonful of cactus juice
2 drops of toad spittle
1 magic wand

**Directions:**
I. Cut the cactus with a knife
II. Squeeze the cactus juice on spoon
III. Put the cactus juice in a bowl
IV. Put the lard in the bowl
V. Add 2 drops of toad spittle
VI. Stir the mixture with a spoon
VII. Recite this verse:

Cactus plant and horny toad
I now start down a dangerous road
combine with fire and mist to make
me disappear without a trace

VIII. Wave magic wand
IX. Put ointment in the empty lard jar

You now have a magic ointment that will allow you to turn invisible [but beware, the ointment only works in a place where there is both fire and mist]. To cast the invisibility spell, rub the ointment on your body. You will be invisible for a short while. You have enough for one.

---

**-END-**
Programs that work under Leapfrog

SnowTerm(1)
Acer
the Finder
Music Seq Maker(2)
SHR Convert(3)
AWGS
Sonic Blaster Demo (From AE)
DiCeD

(1) Snowterm works just fine but the Snowterm default files must be in the directory that leapfrog is in. Also, when you shell back into Snowterm, you no longer have ANY menus on the menu bar.

(2) Music seq maker doesn't work with sequences (of course because the tool set isn't loaded)

(3) Works fine but program comes up with messed up color table. If you load a picture and then click, the normal color table is restored.

Programs that do not work under leapfrog

Tml Pascal 1.5A and II. They will load perfectly but they somehow take over and will not allow you to shell back out.
Any text based GS/OS applications (De-Arc)
320 Mode games

Some programs seem dependant on what order they were loaded. DiCeD and Fontasm seem to perform much better if they are loaded first or second. The finder seems to be able to be loaded at any time, as with Acer and SHRConvert.

Move joystick left and right to choose player and starting level, press button to select.
Press button or spacebar to start.
CTRL-R:
restarts
CTRL-L:
returns game to titles screen to change player and starting level.
ESC:
to pause. Begin again with spacebar or the joystick button. Repeat ESC key to advance game action one frame at a time.
CTRL-S:
toggles sound on/off
To throw, strike or fire weapon - joystick button 0
To throw net - joystick button 1
To repeatedly fire the gun from a standing still position, hold the button down and aim the joystick. To strike repeatedly with the club, javelin or trident, press and release the button for each hit.
There are 8 game levels. After level 8, the game returns to level 5 with more monsters and continues to cycle.
For Apple IIe:
boot and play with CAPS LOCK key locked down.
"Leap Frogs" -- a second pre-release version of a multitasking program by William Gulstad (wogg0743@uxa.cso.uiuc.edu)

Note on this release--Pre-release means that it works but not all the time. A lot more programs will run successfully under this version, but I would not (I must emphasize this) use Leapfrog in a situation where valuable data could be lost.

"Leap Frog" is a program which allows up to eight other programs to run all at the same time! It is like a combination of Multifinder and Switcher, with some advantages all its own.

What is new in this (pre-)release: Resource-oriented programs should now run more successfully, including AppleWorksGS. Also, the Finder will run under Leapfrog (though I suggest that you make Leapfrog the Start program, and rename the finder to "finder" if you want to try this). You cannot run other applications from the finder by double clicking on an icon. All that will happen is the finder will start to shut down and the system will crash. Probably, though I will prevent the crash in a future version, Leapfrog will never allow finder to run other programs. If Apple wants true MultifinderGS, they can pay me to edit Leapfrog hooks into their finder code, otherwise there isn't much I can do short of writing a program to patch finder, something that strikes me as a stupid way of doing things.

How to use it--Run the program leadfrog from GS/OS 5.0.2 or later. It will bring up its menu bar, which has apple, file, edit, and applications menus. You may then proceed to open applications with the open menu item.

Shelling out of a program--press Control-@ at any time to return to the standard Leap Frog menu bar. Use the applications menu to get back to the program you want, open another application, or whatever.

Selecting windows--like Multifinder (on the Mac), if you click on a window, the application owning that window becomes active. This does not work while the Leap Frog menu bar is visible, only when an opened application is in control.

Quitting--quitting from a program should return you to the Leap Frog menu bar. All other programs opened should be accessible through the applications menu.

How it works--Leap Frog uses patched to TaskMaster and GetNextEvent to allow all opened programs to run at once. Only the "hot" program (the one owning the top window) will receive input, but all others will continue to operate, thus allowing any number of different activities (animation, sound generation, computation) to take place in the background.

William Gulstad
(e-mail me! I like user response. A new version of Carpet Bag is coming real soon now.)
Upper left box is filled with missile count.
Lower left is speedometer.
Middle is radar.
Upper right: (S)hield Power
(L)aser's ability to inflict damage.
Below Middle is a thin line which is fuel level.
Lower right is the time clock.
Under every gauge is a small indicator light:
Green = Go
Red = Damaged/Depleted

Joystick commands:
Button 0 - Thrust
Button 1 - Space Brakes
Both 0&1 - Fire Enabled weapon

Keyboard commands:
Ctrl-S - Sound on/off
Ctrl-. - Pause game

Ships:
Blue - These weak vessels always attack you.
Purple - getting tougher, this bandit craft is a formidable foe.
Red - Top notch alien Terraackian fighters that are mean in spirit, and deadly at heart.
Green - These weak fighters are from the planets own defenses and they are your allies. They help in getting ships off your tail.

Objects in space:
Moons - These annoying rocks in space will damage your craft upon collision.
Planets - You may only land on base planet (Big, half white half orange planet on map).
Far planets - These can never be reached.
Space stations - Green and white, 8 sided rotating object which you defend.

Misc bullshit:
To land on home base, fly into it then you will see the pad. Fly towards yourself then pull down to the right attempting to land on the pad's white cross in the center.

To win a mission, hyperdrive to a planet under attack, help it out, try to land on the station and get 10 tons of ore accumulated. After sufficient ore is stored on your ship, return to base planet to land.

Quadrant map:

Descriptions:
.. - Moons in sector and if attempting warp through these, you may encounter a hyperspace storm.
1 - Taurus. (Space station)
2 - Beta. (Space station)
3 - Gryphon. (Space station)
4 - Unknown planet (no ss)
5 - Unknown planet (w/ ss)
6 - Unknown planet (w/ ss)
7 - B-12. (Space station)
8 - Alpha. (Space station)
9 - Unknown planet (w/ ss)
10 - Quantum. (Space station)
11 - Epsilon. (Space station)
12 - Unknown (no ss)
BP - Base planet
O - Outpost
How to set up LISA816:
LISA816 runs under the ANIX shell. Therefore, you must have ANIX running before you can use LISA816. Either
1) run ANIX.SYSTEM from basic (ie "-ANIX.SYSTEM")
2) make a boot disk with PRODOS and ANIX.SYSTEM
Then, after you have run ANIX, from the ANIX command line, type
LISA816
(assuming that the LISA816 file is in the currently prefixed directory).
ANIX is a command-line interface with many useful programmer extensions; that's why LISA816 uses it (ANIX was actually developed mainly so that there would be a decent environment to run LISA in).
After that, you're up and running. We hope.
Have fun!

Source Editing Commands
LISA has a few special characters of its own, that only have meaning in the insert mode. These special characters are used to enhance source-file editing.

<return>> is used to exit insert mode. This command, as do all the following commands, needs to be used as the first character of an insert line.

<control-A>> has the effect of moving the insertion point to before the line immediately preceding the current insertion point. The previous line is displayed (for user convenience), and the new line number displayed for insertion.

<control-B>> has the effect of moving the insertion point to after the line immediately following the current insertion point. The next line is displayed (for user convenience), and the new line number displayed for insertion. If the insertion point is line N, then line N+1 becomes line N, and the new insertion point is line N+1.

<control-W>> has the effect of deleting the line previous to the insertion point, and then starting insertion at that point. The deleted line is displayed (for user convenience), and the new line number displayed for insertion. This is the most useful of the four special editing commands. Typically, a line will be entered, the user will press return, and then notice an error. Using <control-W>> has the same effect as:

<return>>
M nn
...

<control-C>> has the effect of deleting the next line in the source following the insertion point, and placing the insertion point following that line. The deleted line is displayed (for user convenience), and the new line number displayed for insertion. If the insertion point is line N, then line N+1 is deleted, and the new insertion point is line N (because line N+1 was deleted).

Importing and Exporting Text Files
LISA source files are stored in a compressed, tokenized form. This has several advantages:
* files are smaller
* assemblies are faster
* most errors are caught at edit time, not assembly time

The disadvantage, of course, is that files are not stored in a pure text format. It is, however, easy to import text from a text file, or to save a LISA file out as text, by using the READ and WRITE commands. To import text, simply use a command of the form

```
READ nnn <textfile
```

where nnn is the line to start insertion, and textfile is the name of the text file to read from. LISA will convert each line from the text file into its tokenized format. If an error is detected in a line, LISA will stop momentarily and ask you to fix it — note that you can abort the read-in process (if, for example, you weren’t reading a program text file) by pressing <return> by itself to exit insert mode.

Exporting to a text file is just as easy, using a command of the form

```
WRITE n1,n2 >textfile
```

where n1..n2 is the range of lines to write to the text file named textfile. Normally, LISA writes text files with no space padding to line columns up. If you want the space padding, insert the TAB switch in the write command:

```
WRITE -t n1,n2 >textfile
```

and spaces will be added to pad the columns out as they would be if a LIST command were issued.

READ and WRITE can also be used to move portions of code from one LISA file to another. If you have libraries that you raid routines from, or you have equate files that you only want certain lines from, you would use WRITE to extract the lines needed, and READ to insert them into the correct source file.

LISA editor commands

Note: each command may be abbreviated to the characters shown in upper case. Optional parameters are enclosed in braces, as {optionalparms}; required parameters are encased in double-brackets as, <<requiredparms>>.

- (execute ANIX command) Parameters: output file/device.
  Usage: <<ctrl-D>> <<anix command>>
  Executes the command following the <<ctrl-D>> as an ANIX intrinsic command. ANIX will report any errors that occur in the execution of the command.

- (list 20 lines around current line) Parameters: none.
  Lists the 20 lines around to the last line listed (by any list command).

- (list previous 20 lines) Parameters: none.
  Lists the 20 lines previous to the last line listed (by any list command).

, (list next 20 lines) Parameters: none.
  Lists the 20 lines after the last line listed (by any list command).

  Usage: ? {>outfile}
  Prints a short summary of all the LISA commands available; if {>outfile} is present, output is redirected to the selected file or device.

Assemble (assemble source) Parameters: output file/device.
  Usage: Assemble {>outfile}
  Assemble the source file in memory; if the optional parameter {>outfile} is present, output is directed to the selected file or device. If the source file in memory ends with a CHN " <file>" and not an END, the file in memory is saved out to disk as "T.." and then assembly continues with <<file>>.

BReak (break to monitor) Parameters: none.
  Exits from LISA into the LISA monitor. To return to LISA, use <<control-C>> for a LISA warmstart (leaves file intact) or <<control-B>> for a LISA coldstart (does a NEW on re-entry to LISA).

COpy (copy source lines) Parameters: start line, end line, dest line.
  Usage: COpy <<startline>>, <<endline>>, <<destline>>
  Copies source lines in the range <<startline>>.. <<endline>> to a position in the file starting at <<startline>>. Note that <<endline>> must not be less than <<startline>> and <<destline>> cannot lie within the selected range <<startline>>.. <<endline>>.

CPu (set CPU type) Parameters: CPU type
  Usage: CPu <<cputype>>
  Set CPU type to be of type <<cputype>>. CPU Type must be one of the three: 6502 65C02 65816
  If <<cputype>> is omitted, the current CPU type is displayed.

Delete (delete source lines) Parameters: delete line 1, delete line 2.
  Usage: Delete <<delline1>>, {delline2}
  Deletes source lines in the range <<delline1>>.. <<delline2>>. If <<delline2>> is not specified, only line <<delline1>> is deleted. The range must be legal — <<delline2>> must not be less than <<delline1>>.

DS (dump symbol table) Parameters: optional file/device.
  Usage: DS {>outfile}
  Will print the symbol table from the last assembly to the standard output device. As usual, output may be directed to any ANIX device (>.,P for printer, >filename for file, etc).

Find (find search string) Parameters: search string.
  Usage: Find {searchstring}
  Looks for {searchstring} in the file and displays all lines it is contained in. FIND may be aborted by pressing <<control-C>>. If no search string is specified, FIND will do nothing.

FReplace (find and replace) Parameters: start line, end line, dest line.
  Usage: FReplace <<startline>>, <<endline>>, <<destline>>
  Replaces the specified text in the range <<startline>>.. <<endline>> with the specified replacement string.

FShow (show symbol table) Parameters: optional file/device.
  Usage: FShow {>outfile}
  Prints a short summary of all the symbol names defined in the file to the standard output device. If {>outfile} is present, output is redirected to the selected file or device.

LISA file out as text, by using the READ and WRITE commands. To import text, simply use a command of the form

```
READ nnn <textfile
```

where nnn is the line to start insertion, and textfile is the name of the text file to read from. LISA will convert each line from the text file into its tokenized format. If an error is detected in a line, LISA will stop momentarily and ask you to fix it — note that you can abort the read-in process (if, for example, you weren’t reading a program text file) by pressing <return> by itself to exit insert mode.

Exporting to a text file is just as easy, using a command of the form

```
WRITE n1,n2 >textfile
```

where n1..n2 is the range of lines to write to the text file named textfile. Normally, LISA writes text files with no space padding to line columns up. If you want the space padding, insert the TAB switch in the write command:

```
WRITE -t n1,n2 >textfile
```

and spaces will be added to pad the columns out as they would be if a LIST command were issued.

READ and WRITE can also be used to move portions of code from one LISA file to another. If you have libraries that you raid routines from, or you have equate files that you only want certain lines from, you would use WRITE to extract the lines needed, and READ to insert them into the correct source file.

LISA editor commands

Note: each command may be abbreviated to the characters shown in upper case. Optional parameters are enclosed in braces, as {optionalparms}; required parameters are encased in double-brackets as, <<requiredparms>>.

- (execute ANIX command) Parameters: output file/device.
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  Lists the 20 lines around to the last line listed (by any list command).

- (list previous 20 lines) Parameters: none.
  Lists the 20 lines previous to the last line listed (by any list command).

, (list next 20 lines) Parameters: none.
  Lists the 20 lines after the last line listed (by any list command).

  Usage: ? {>outfile}
  Prints a short summary of all the LISA commands available; if {>outfile} is present, output is redirected to the selected file or device.

Assemble (assemble source) Parameters: output file/device.
  Usage: Assemble {>outfile}
  Assemble the source file in memory; if the optional parameter {>outfile} is present, output is directed to the selected file or device. If the source file in memory ends with a CHN " <file>" and not an END, the file in memory is saved out to disk as "T.." and then assembly continues with <<file>>.

BReak (break to monitor) Parameters: none.
  Exits from LISA into the LISA monitor. To return to LISA, use <<control-C>> for a LISA warmstart (leaves file intact) or <<control-B>> for a LISA coldstart (does a NEW on re-entry to LISA).

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  Usage: COpy <<startline>>, <<endline>>, <<destline>>
  Copies source lines in the range <<startline>>.. <<endline>> to a position in the file starting at <<startline>>. Note that <<endline>> must not be less than <<startline>> and <<destline>> cannot lie within the selected range <<startline>>.. <<endline>>.

CPu (set CPU type) Parameters: CPU type
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  Set CPU type to be of type <<cputype>>. CPU Type must be one of the three: 6502 65C02 65816
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Delete (delete source lines) Parameters: delete line 1, delete line 2.
  Usage: Delete <<delline1>>, {delline2}
  Deletes source lines in the range <<delline1>>.. <<delline2>>. If <<delline2>> is not specified, only line <<delline1>> is deleted. The range must be legal — <<delline2>> must not be less than <<delline1>>.

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  Usage: Find {searchstring}
  Looks for {searchstring} in the file and displays all lines it is contained in. FIND may be aborted by pressing <<control-C>>. If no search string is specified, FIND will do nothing.

FReplace (find and replace) Parameters: start line, end line, dest line.
  Usage: FReplace <<startline>>, <<endline>>, <<destline>>
  Replaces the specified text in the range <<startline>>.. <<endline>> with the specified replacement string.

FShow (show symbol table) Parameters: optional file/device.
  Usage: FShow {>outfile}
  Prints a short summary of all the symbol names defined in the file to the standard output device. If {>outfile} is present, output is redirected to the selected file or device.
The decimal digits are the numerals 0 through 9.

A token is the smallest meaningful unit of text in a LISA source line. The tokens of LISA are classified into special-symbols, identifiers, numbers, character-strings, and comments.

A LISA source line is composed of tokens, separated by blanks (a blank is defined as the ASCII space character). The tokens are classified by type according to the field they are in- label field, opcode field, operand field, and comment field. Two adjacent tokens must be separated by one or more separators if each token is an identifier, number, or opcode. Only 1 token may be in the label, opcode, and comment fields a line- the operands field can (and often does) contain multiple tokens.

13.1 Character Set and Special Symbols.

The letters are the English characters A through Z, and a through z.

The decimal digits are the numerals 0 through 9.

**Parameters:** search string, replacement string.

**Usage:** FR {searchstring} ^ {replacestring}

Looks for {searchstring} in the file and replaces it with {replacestring} where-ever found. FR will prompt for replacement at each occurrence of {searchstring}. FR may be aborted by pressing <control-D>. If no search string is specified, FR will do nothing. If no replacement string is specified, FR will delete the search string if allowed.

**Insert (insert source lines)**

**Parameters:** insert line.

**Usage:** Insert {insline}

Starts insertion of source code lines at <<insline>>. If <<insline>> is not specified, insertion starts at the end of the file. Insert mode is exited by entering <<return>> on a blank line.

**Length (source file stats)**

**Parameters:** optional file/device.

**Usage:** Length {>outfile}

Will print the statistics for the current source file in memory- length, number of symbols.

**List (list source lines)**

**Parameters:** list line 1, list line two, output file/device.

**Usage:** List {linenum1},{linenum2},{>outfile}

Lists source lines in the range <<linenum1>>.. <<linenum2>>. If no lines are specified, then the entire source file is listed, starting at line 1. If only the first line is specified, then only that line is listed. If one line number is given, followed by a comma, then 20 lines are listed starting at that line number. If one line number is given, followed by two commas, then entire source file is listed, starting at that number. If both numbers are given, then the source lines in that range are listed. If the optional parameter {>outfile} is used, output is re-directed to the selected file or device.

**Load (load source file)**

**Parameters:** ProDOS pathname.

**Usage:** Load {pathname}>

Used to load a LISA source file from disk. Errors- applicable ProDOS errors.

**System (system call)**

**Parameters:** none.

Returns control to ANIX shell. To return to LISA, type RUN 303 from ANIX.

**Insert (insert source lines)**

**Parameters:** insert line.

**Usage:** Insert {insline}

Starts insertion of source code lines at <<insline>>. If <<insline>> is not specified, insertion starts at the end of the file. Insert mode is exited by entering <<return>> on a blank line.

**Insertion ends when end-of-file is reached. 13.1.1 Character Set and Special Symbols.**

**List (list source lines)**

**Parameters:** list line 1, list line two, output file/device.

**Usage:** List {linenum1},{linenum2},{>outfile}

Lists source lines in the range <<linenum1>>.. <<linenum2>>. If no lines are specified, then the entire source file is listed, starting at line 1. If only the first line is specified, then only that line is listed. If one line number is given, followed by a comma, then 20 lines are listed starting at that line number. If one line number is given, followed by two commas, then entire source file is listed, starting at that number. If both numbers are given, then the source lines in that range are listed. If the optional parameter {>outfile} is used, output is re-directed to the selected file or device.

**Load (load source file)**

**Parameters:** ProDOS pathname.

**Usage:** Load {pathname}>

Used to load a LISA source file from disk.Errors- applicable ProDOS errors.

**System (system call)**

**Parameters:** none.

Returns control to ANIX shell. To return to LISA, type RUN 303 from ANIX.

**Insert (insert source lines)**

**Parameters:** insert line.

**Usage:** Insert {insline}

Starts insertion of source code lines at <<insline>>. If <<insline>> is not specified, insertion starts at the end of the file. Insert mode is exited by entering <<return>> on a blank line.

**Insertion ends when end-of-file is reached. 13.1.1 Character Set and Special Symbols.**

**List (list source lines)**

**Parameters:** list line 1, list line two, output file/device.

**Usage:** List {linenum1},{linenum2},{>outfile}

Lists source lines in the range <<linenum1>>.. <<linenum2>>. If no lines are specified, then the entire source file is listed, starting at line 1. If only the first line is specified, then only that line is listed. If one line number is given, followed by a comma, then 20 lines are listed starting at that line number. If one line number is given, followed by two commas, then entire source file is listed, starting at that number. If both numbers are given, then the source lines in that range are listed. If the optional parameter {>outfile} is used, output is re-directed to the selected file or device.

**Load (load source file)**

**Parameters:** ProDOS pathname.

**Usage:** Load {pathname}>

Used to load a LISA source file from disk. Errors- applicable ProDOS errors.

**System (system call)**

**Parameters:** none.

Returns control to ANIX shell. To return to LISA, type RUN 303 from ANIX.

**Insert (insert source lines)**

**Parameters:** insert line.

**Usage:** Insert {insline}

Starts insertion of source code lines at <<insline>>. If <<insline>> is not specified, insertion starts at the end of the file. Insert mode is exited by entering <<return>> on a blank line.

**Insertion ends when end-of-file is reached. 13.1.1 Character Set and Special Symbols.**

**List (list source lines)**

**Parameters:** list line 1, list line two, output file/device.

**Usage:** List {linenum1},{linenum2},{>outfile}

Lists source lines in the range <<linenum1>>.. <<linenum2>>. If no lines are specified, then the entire source file is listed, starting at line 1. If only the first line is specified, then only that line is listed. If one line number is given, followed by a comma, then 20 lines are listed starting at that line number. If one line number is given, followed by two commas, then entire source file is listed, starting at that number. If both numbers are given, then the source lines in that range are listed. If the optional parameter {>outfile} is used, output is re-directed to the selected file or device.
13.1.2 Labels.

A label is an identifier appearing in the label field or the operand field (regular and numeric), or in the opcode field (macros only). A label serves to denote a constant, variable, program address, data address, or macro call. Identifiers can be any length up to 63 characters, all of which are significant. Case is not important in identifiers. Labels can have the same spelling as an opcode, because type is determined by context. A label must begin with either a letter (regular labels), the special character (\^) (numeric local labels), or the special character (_~) (macro call). Regular labels can contain letters, numbers, and the special characters (-_ and (\}). A regular label in the operand field can be followed by the type-coercion tokens {:A} or {:L}.

Numeric local labels are (\^*) followed by 1 numeric digit, and are referred to as (\^0) to (\^9) in the label field, or (<0>) to (\^9) and (>0) to (\^9) in the operand field. Regular labels must be unique (within their scope); numeric local labels do not have to be.

13.1.3 Operands.

An opcode is an identifier appearing in the opcode field. An opcode may be classified into one of three groups—instruction, pseudo-op, or a macro. The following opcodes are the legal instructions and pseudo-ops for the assembler:

<table>
<thead>
<tr>
<th>Operator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Absolute</td>
</tr>
<tr>
<td>D</td>
<td>Immediate</td>
</tr>
<tr>
<td>H</td>
<td>High</td>
</tr>
<tr>
<td>L</td>
<td>Low</td>
</tr>
<tr>
<td>S</td>
<td>Stack</td>
</tr>
<tr>
<td>T</td>
<td>Test</td>
</tr>
<tr>
<td>X</td>
<td>X-register</td>
</tr>
</tbody>
</table>

Any other identifier appearing in the opcode field is assumed to be a macro-all macros must begin with the macro lead-in character (_~). Any token appearing in the opcode field that does not parse to an instruction, pseudo-op, or macro is declared illegal by the editor.

13.1.4 Operands.

The operand field contains one or more expressions; each expression is separated by the special symbol (_~). An expression consists of a term, which is an operator, expression, operand number, or macro call. Operators are either monadic (operator preceding expression) or dyadic (operator infix between two terms). An expression may be prefixed by one or more prefix operators (\@, \~, and (\{). A monadic operator is one of the following special-symbols:

- \@ 
- \~

A dyadic operator is one of the following special-symbols:

+ - * / < > = <= >= <> & | ^ %

Expression modifiers are used to modify an entire expression, and are always the first prefix to an expression. There are five expression modifiers:

- select low byte (LISA mode) or low word (APW mode 16-bit)
- select middle byte
- select high byte (LISA mode) or high word (APW mode 16-bit)
- select low word (LISA mode)
- select high word (LISA mode)

When used with a 65816 instruction, all the expression prefixes indicate immediate addressing mode. When used with LISA pseudo-ops, the expression prefixes select various parts of a 24-bit value for code generation.

13.1.4.2 Operators.

Operators are either monadic (operator preceding expression) or dyadic (operator infix between two terms). A monadic operator is one of the following special-symbols:

- \@ 
- \~

A dyadic operator is one of the following special-symbols:

+ - * / < > = <= >= <> & | ^ %

13.1.4.3 Labels.

An instruction appearing in the operand field has the same format as one appearing in the label field, except for the special case of numeric local labels. A numeric local label reference in the operand field has the form (<0> to (<9) and (>0) to (<9), where (\<) and (\>) indicate the direction relative to the expression of the particular local label.

A label in the operand field may have a type-coercion suffix that is used to force address mode type regardless of the declared type of the label- {(:A) is used to force the absolute attribute for a label, and {(:L) is used to force the long attribute for a label.

13.1.4.4 Numbers.

A number can be either decimal, hexadecimal, or binary. Decimal numbers use no prefix. Hexadecimal numbers use the (\$) character as a prefix. Binary numbers use the (\%) character as a prefix.

13.1.4.5 Character Strings.

A character-string is a sequence of characters delimited by the special string delimeter characters (\^*) or (*~). If (\^*) are used, the high-order bit of each byte is set to 0; if (*~) are used, the high-order bit of each byte is set to 1. Inside the delimiters, a doubled occurrence of the delimiter inserts one char of that delimiter in the string without terminating the character string.

13.1.4.5 Special Operand.

A special-operand is a sequence of one or more characters representing a certain value. There are several special operand types. The current program-counter value (of the assembler) can be referenced by (*~). Macro parameters can be referenced (inside a macro) by (0) to (9). Parameters to a macro are numbered by occurrence; parameters, where required, may not be omitted.

13.1.5 Comments.

A comment begins with the (\{) character, and optionally (first column only) with the (*~) character. The comment field is the last field in the source line, and is terminated by a \(<\{return\}>\) character.
13.2 Source Line Formats.

Each source line is separated into 4 fields: label, opcode, operand, and comment. All four fields do not have to be present on a line, but there are some restrictions to field appearance. The general case of a LISA source line is:

```
line # label     opcode     operand                 comment
```

The assembler supplies all line numbers. PROGRAM is in the label field (the first field), so it is parsed as a label. LDA is in the opcode field (the second field), so it is parsed as an opcode, and recognized as a 65816 mnemonic. SEQUENCE:L+R.OFFST is in the operand field (the third field), so it is parsed as an operand, in this case as an address expression. The remainder of the line starts with the character (;), so it is parsed as a comment.

If a colon (:) follows the token in the label field, then the line is assumed to have only the label field in it.

```
11 PROGRAM lda     SEQUENCE:L + R.OFFST ;get record byte from sequence
```

If the first character of the line is a comment char (;) or optionally (*), the line is assumed to have only the comment field in it.

```
29 STUB:
```

If the first character of the line is a blank (space character), then the label field is assumed to be null, not specified.

```
122 mvp   L.BANK,R.BANK ;move var set
```

If the line ends after the opcode field, or a comment character is found following the opcode field, then the operand field is assumed to be null, not specified.

```
45 asl                       ;shift twice for x4 indexing
```

Note that in each of the above cases, the lines were listed as LISA would list them, not as they might be entered. LISA tokenizes and formats all source lines according to it's model, checking syntax at line entry time. A line entered in as:

```
122 draw lda #myset ;get set number for DRAW
```

would be parsed and listed as

```
122 draw lda #MYSET ;get set number for DRAW
```

```
with a leading space) would be parsed and listed as
```

```
123 jsr newplot ;call version 2 plot routine
```

There are two types of labels. Alpha labels must start with an alphabetic character, (upper/lower case), and contain only {A}..{Z}, {a}..{z}, {0}..{9}, and {._}. Labels have a maximum length of 63 characters. Alphabetic case is maintained as entered, but has no significance on assembly ("Label" is the same as "LABEL"). Labels start in the first column of a source line. Errors generated by a bad label include:

- Bad character in symbol
- Illegal label
- Label required here

Numeric local labels start with a caret (^) and are followed by a numeric digit {0}..{9}. Only 1 digit is permitted after the (^) symbol. A space () or a colon (:) must terminate entries in the label field.

13.3.2 Opcode field.

There are two types of mnemonics that are legal in the opcode field. The first type are the 65816 opcode mnemonics and LISA pseudo-ops. The second type are macro invocations. All legal 65816 opcodes and LISA pseudo-ops are listed in section 13.1.3. Macros are identified by a special lead-in character, currently defined as (_). Examples:

```
23 jsr      PRINT
24 byt      "Enter file name",0
25 _GETNAME
```

where line 23 contains a 65816 mnemonic {jsr}, line 24 contains a LISA pseudo-op (byt), and line 25 contains a macro call (_GETNAME). Errors pertaining to the opcode field include:

- Illegal mnemonic
- Illegal label

13.3.3 Operand field.

The operand field contains 1 or more expressions; the expression type depends on the mnemonic in the opcode field. Expressions can be:

- address expressions
- string expressions

If the mnemonic is a 65816 opcode, the expression is embedded in address type selectors, to indicate addressing modes. Legal 65816 address expressions are:

```
1 iny ;implied
2 asl ;implied (accumulator)
3 ldx #dexpr ;immediate (8 bit)
4 ldy |aexpr |;immediate (16 bit)
5 asl aexpr ;direct page
6 inc aexpr ;absolute
7 and aexpr ;absolute long
8 ldy dexpr,X ;direct page indexed,X
9 dec aexpr,X ;absolute indexed,X
10 ora lexpr,X ;absolute long indexed,X
11 ldx dexpr,Y ;direct page indexed,Y
12 ora aexpr,Y ;absolute indexed,Y
13 sbc (dexpr) ;direct page indirect
14 jmp (aexpr) ;absolute indirect
15 adc (dexpr,X) ;direct page indexed indirect
16 jsr (aexpr,X) ;absolute indexed indirect
17 cmp (dexpr,Y) ;direct page indirect indexed
18 eor (dexpr) ;direct page indirect long
19 jsr (aexpr) ;absolute indirect long
20 sbc (dexpr,Y) ;DF indirect long indexed
21 and dexpr,S ;stack relative
22 sta (dexpr,S,Y) ;stack relative indirect index
23 mvn bexpr,bexpr ;block move
```
24   bcs rexpr ;program counter relative
25   brl rlexpr ;program counter relative long

where expr can be any legal expression that evaluates to an address. Dexpr
must evaluate to a 8-bit (direct page) address. Aexpr must evaluate to a
16-bit (absolute) address. Lexpr must evaluate to a 24-bit long address.

Address expressions consist of identifiers and constants combined with
operators. An expression is of the form

(modifier) (prefix) term (operator-term) . . .

There are 5 expression modifiers:
#   use low byte (LISA mode) or low byte/word (APW mode) of expression
/   use mid byte (LISA mode) of expression
\   use low byte of expression
^   use high word of expression

There are 3 prefix operators.
@expr at-operator. evaluates to (PC-expr), where PC is the value of
the assembler program counter at the start of the instruction line
.expr negate-operator. evaluates to (0-expr)
~expr negate-operator. evaluates to (SFFFFFFFF EOR expr).

There are 10 types of terms.

identifier statement label or equate label (from EPZ, EQU, EQL etc).
The value of the label is used.
35B  decimal number (no prefix character).
$3B   hexadecimal number.
&1011  binary number.
+   value of PC counter (of assembler)
7   macro parameter value (only inside macro). select one of
  the 10 possible macro parameters.
7#expr evaluate expr; result must be .9 and is used to select
  one of the 10 possible macro parameters.
>0..<9 local label reference in forward direction. >0 refers
to next >0 local label in forward direction, etc. The
value of the local label is used.
<0..<9 local label reference in backward direction. <0 refers
to next <0 local label in backward direction, etc. The
value of the local label is used.

There are 14 infix operators
+   addition
-   subtraction
*   multiplication
/   division
%   modulo
&   bitwise AND
^   bitwise EOR
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT

There are 3 prefix operators.
@expr at-operator. evaluates to (PC-expr), where PC is the value of
the assembler program counter at the start of the instruction line
.expr negate-operator. evaluates to (0-expr)
~expr negate-operator. evaluates to (SFFFFFFFF EOR expr).

There are 10 types of terms.

identifier statement label or equate label (from EPZ, EQU, EQL etc).
The value of the label is used.
35B  decimal number (no prefix character).
$3B   hexadecimal number.
&1011  binary number.
+   value of PC counter (of assembler)
7   macro parameter value (only inside macro). select one of
  the 10 possible macro parameters.
7#expr evaluate expr; result must be .9 and is used to select
  one of the 10 possible macro parameters.
>0..<9 local label reference in forward direction. >0 refers
to next >0 local label in forward direction, etc. The
value of the local label is used.
<0..<9 local label reference in backward direction. <0 refers
to next <0 local label in backward direction, etc. The
value of the local label is used.

There are 14 infix operators
+   addition
-   subtraction
*   multiplication
/   division
%   modulo
&   bitwise AND
^   bitwise EOR
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
\   logical NOT
note the result, press ESC again to return to line entry, and enter in the calculated constant.

The calculator is fairly self-explanatory. It is a regular infix calculator (TI style rather than HP style); so you enter number then operator then number, etc, The RETURN key doubles as the "=" key, for ease of use (most people are well accustomed to hitting RETURN after data entry, much more so than "="). Also, once you've hit return, all is not lost. You can keep on with operator and number pairs after that.

The calculator will also retain the value in the display between calls to it. However, if you do an assembly, the accumulator number will be lost. HEX, DEC, OCT, and NOT operations are instantaneous; they affect the accumulator value only, and do not upset pending calculations.

In the upper right-hand corner of the calculator are some prompts for some important help screens. First of all is the ubiquitous ASCII chart. This comes in handy when you are writing programs that will execute under the ANIX shell (new extrinsics, little utilities, etc), and don't want to include the master file of ANIX equates in your small program. For ANIX v2.1 running LISA816 v4.0, this will be a list of absolute equates (since this presumes you are running a //e, or IIGS in emulation mode) for JSR calls; for ANIX v3.0 running LISA816 v5.0, this will be a list of COP parameter values, since ANIX v3.0 calls are made via the COP instruction. Once again, pressing ESC will return you to the main calculator display.

Second, there is a help screen for ANIX equates. Pressing "Q" will bring up the ASCII equates screen. This comes in handy when you are writing programs to invoke that function for the installed console driver. Pressing ESC to exit from an individual parameter list, and ESC from the ProDOS equates screen. This comes in handy every once in a while (although LISA does handle character constants well, it helps to know what the actual values are if you're doing anything the slightest bit tricky or innovative). Just hit a "T", and the ASCII chart pops up. Press ESC to return back to the main calculator display.

Third, there is a help screen for ProDOS equates. Pressing "P" will bring up the ProDOS equates screen. This reference will not only show the ProDOS call numbers, but also the parameter list structures for each call. Once again, if you are running ANIX v2.1, this will show ProDOS 8 (which also is applicable to ProDOS 1.1.i) calls, and their parameter lists; if you are running ANIX v3.0, this will show ProDOS 16 calls. The ProDOS equates screen will show the calls by names; pressing the letter next to the name will bring up a further screen showing the parameter list required for that call. Press ESC to exit from an individual parameter list, and ESC from the ProDOS equates screen to return back to the calculator.

Finally, there is a help screen for the CHARIO calls. Pressing "M" will bring up the CHARIO equates screen. This will show you the call numbers for each CHARIO function; the call number is the parameter to CHARIO needed to invoke that function for the installed console driver. Pressing ESC will return you to the main calculator display.

LISA pseudo-ops

Note: not all of these pseudo-ops are implemented in the share-ware version of LISA816 (LISA v4.0G). Specifically:

HEX .DB LA .LX .SA .DX
LIB PSM LNK RLS ICL

Assembly listing control:

LIST turns assembly listing on.
NLS turns assembly listing off.
GEN prints all object bytes for each source line.
NOG prints at most 4 object bytes per source line.
EX turns assembly listing on.
NOX turns assembly listing of macro expansion off.
CHD turns assembly listing of conditionals on.

Conditional assembly control:

IF1 turns assembly listing of conditionals on.
IF2 turns assembly listing of macro expansion on.
NLS turns assembly listing off.
LST turns assembly listing on.
HEX hexdigits define hex string of bytes.

Macro assembly:

.MD macro starts a macro definition with name macro.
.ME ends macro definition.

Program origin control:

.SEK (expr) start new SEGMENT with attributes "expr".
.OBJ expr specifies where the object code is stored in memory.
.PRS expr starts in-line assembly of code with new ORG address.
.DFWa ends in-line assembly and restores to old ORG address.

Labels and equates:

label EPZ expr define "label" as ZERO PAGE label with value "expr".
label EPD expr define label as LONG label with value "expr".
label EQP expr define label as LONG label with value "expr".
label = expr define label as ABSOLUTE label with value "expr".
label = expr define label as ABSOLUTE label with value "expr".
label CON expr define label as CONSTANT label with value "expr".
label SET expr define label as SET label with value "expr".
FZR label define label as ZERO PAGE (needed if label used before it is defined).
FAR label define label as LONG label (needed if label used before definition).
INP label prompt for assembly-time definition of label.
LCL label define label as local to specified section (scope ends with RLS).
RIS label marks end of local label scope defined with LCL.

Constats and storage:

BYT expr, .. define byte constants of low-order 8 bits of each expr.
BBY expr, .. define byte constants of mid-order 8 bits of each expr.
BBY expr, .. define byte constants of high-order 8 bits of each expr.
.DA expr, .. define byte, word, string constants.
.ADR expr, .. define word constants (usually addresses)
low byte, then high byte.
.DBY expr, .. define word constants (usually addresses)
high byte, then low byte.
.CSF expr, .. is JSR followed by byte, word, strings (same syntax as .DA)
.DFS expr, (e) define space of expr bytes, optionally initialized to e.
.HEX headigits define hex string of bytes.
APPLE II COMPUTER DOCUMENTATION RESOURCES (A2_DOCS_DOCUMENTATION.MSW)

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APPLE II Computer Documentation Resources (a2_docs_documentation.msw)

CONTROL OPERATIONS:

CPU type

set CPU to assemble for. type = {6502, 65C02, 65816}

.DB declare what bank the DBR (data bank register) is

going to.

.LA declare 16-bit ACCUMULATOR mode.

.LX declare 16-bit INDEX mode.

.RV declare 8-bit ACCUMULATOR mode.

.SX declare 8-bit INDEX mode.

END end of source.

.TF "file",type

declare file to which generated code is saved to,
type (type is defined in HEX).

.SAV "file"

saves memory as binary file.

.ANX "cmd"

send cmd to ANIX shell to be executed as an ANIX

intrinsic.

.CN "file"

chain to next file to be assembled.

.IX "file"

include source file in assembly.

.PSM "file"

include packed-sym file in assembly.

.LNK "objfile"

include object code in link.

.LIB "library"

extract needed object code from library in assembly.

.RLB "objlib"

include information from Run-Time-Library in linkage.

.GO expr

jumps to address expr to execute a machine language routine.

.USR expr

parses expr, and jumps to user command.

.MGB "string"

print message to stdout during assembly

.PAU

force assembly error ("PAU encountered")

ANIX Commands

The format for these commands is given in parenthesis. Unless otherwise stated, these commands are to be followed by a carriage return.

INSTRINIC COMMANDS

* (Asterisk)

if an asterisk appears in the first column, that is, the first space, in a line processed by ANIX, then the rest of the line will be ignored. The use of this instruction may not be obvious; it is used to insert comments within an EXEC file.

Brk (BRK)

Transfers control to the Apple monitor at location $FF/$FF65. To return to ANIX, type A000G from the monitor to do an ANIX warmstart.

LONG expr...

define long (and byte and word) constants

Catalog

(CATALOG [pathname] <<return>>) Displays the listing of a directory file. Abbreviation: "CAT". The pathname is optional; if it is present, ANIX will give the specified directory, and if it is absent, then ANIX will look for the default directory. The pathname must be of a DIR (subdirectory) type file, or a disk (a disk is identified with ".Dn", where "n" represents a number between 1 and 8).

Close

(CLOSE <<return>>) Will close any and all open ProDOS files. This command may be useful after a program bombs, in order to make sure all the programs opened by the program are closed properly, and their buffers are freed by ProDOS.

Date

(DATE <<return>>) This prints the date, in the format "mm/dd/yy"; it will, that is, if you have a ProDOS compatible clock installed. (always the case on a IIgs). Otherwise, this command will print the last date specified with the SETDATE command; and if the SETDATE command has not been used, then "--NO DATE" will be printed.

Delete

(DELETE <<pathname>> <<return>>) This will erase a file from a disk; the pathname is not optional for this command. It will not erase a file if its "D" attribute flag is turned off (if you don't know what an attribute flag is, wait for the latter part of this section), so it will have to be unlocked before it may be deleted.

NOTE: When deleting a subdirectory, it must be empty before the DELETE command will work on it.

Exec

(EXEC <<pathname>> <<return>>) The EXEC command is used to redirect input from a textfile rather than a keyboard; the pathname is not optional, and must be the name of a TXT type file, a sequential text file. When the EXEC command is executed, ANIX then begins looking for ANIX commands from the named textfile rather than the keyboard.

Load

(LOAD <<pathname>> (hex address) <<return>>) Loads a BIN or SYS file from disk into memory; the pathname is required, but the hex address is optional. If the optional hex address is not present, then the file is loaded at the location from which it was saved. Example: LOAD SHORT PROGRAM

Lock

(LOCK [-N -R -W -D] <<pathname>> <<return>>) This command and the Unlock command are closely associated, and they share the same syntax. The Lock command will set any or all of four attribute flags: the N (rename) flag, the R (read) flag, the W (write) flag, and the D (Delete) flag. The N (rename) flag, upon being set, will thereafter prevent the given file from being renamed, until the N flag for the file is Unlocked. The R (read) flag will stop anyone from reading a file which isn't meant to be touched. The W (write) flag will prevent someone actually saving a new version of a program with the same name of a version you wish to preserve. Finally, the D (delete) flag will stop the deletion of a file.

Any of these flags, once locked, may be reset, using the Unlock command.

Online

(ONLINE <<return>>) Lists all the volumes currently on-line

The result will be a line for each volume of this form:

s/d volume-name
In these lines, "s" is the slot number, "d" is the drive number, and volume-name is the name of the volume in the specified slot and drive.

Prefix

(PREFIX <pathname> <<return>>) The pathname is optional. See the discussion of pathnames and prefixes following this listing for an explanation of this command.

Rename

(RENAME <pathname>, <pathname> <<return>>) Changes the name of a file in a directory. The pathnames are not optional, and they must be the same, except for the ending filenames. Examples:

- Rename /directoryname1/subdirectoryname2/thisprogram, /directoryname1/subdirectoryname2/thatprogram.

Run

(RUN <hex address> {parms} <<return>>) Runs (calls) the assembly language program at the hex address named; the hex address is required. The optional parameters are for the use of the assembly language program.

Save

(SAVE <pathname> <<start addr>> <<length>> <<return>>) This is for saving out an object file. The hex address and length must be included.

Syssave

(SYSSAVE <pathname> <<start addr>> <<length>> <<return>>) This is the same as the Save command above, except that it saves a SYS type file rather than a BIN type file.

Time

(TIME <<return>>) Prints the time, assuming there is a ProDOS compatible clock present. If there is no clock, then this command prints the last time set by the extrinsic SETTIME command, or 00:00 if SETTIME has never been used.

Unlock

See LOCK.

How to Make Sure the LCP Is Healthy, Happy, and Totally at Home

Although LCP's are basically quite independent, once they move into their new home they are, in a sense, living in your world. So they will need help in certain areas. To insure that your LCP is healthy, see that he always has food and water (The dog also needs food). Both hunger and dehydration can make LCP's sick (they generally turn green and just lie in bed when they are sick).

Also, because they tend to be quite active, they should not be allowed to sleep too much. They would much rather have your attention.

The following is a list of keyboard commands to help you to take optimum care of your LCP:

Caring for Physical Needs

[CTRL] F - food is delivered to his front door
[CTRL] W - fills the water tank (in the kitchen on the first floor).
Each time you press W, approximately one glass of water is added to the tank.
Apple II Computer Info

[CTRL] A - rings the alarm clock

[CTRL] D - leaves dog food at the front door. Your LCP will do the rest.

Caring for Emotional Need
Addressing the physical needs of your LCP is relatively easy. Simply look to see if his supply of food and water is running low. Addressing his emotional needs, takes more sensitivity and careful study. First of all, you must be aware of his different moods. There are four distinct moods for LCP's as identified by the expression on his face.

Happy
He's probably getting plenty of attention

Content
He's fine but could be better (see MOOD BOOSTERS)

Sad
He needs MOOD BOOSTING immediately

Sick
This happens when he has gone without food or water for a while

MOOD BOOSTERS
There are several ways to elevate the mood of your LCP. Some are more effective than others.

[CTRL] C - a phone call Many LCP's enjoy receiving phone calls - unless they're constantly interrupted to the point of irritation. Who knows what they say or who they talk to.

[CTRL] P - physical contact ("petting") - In order to pet your LCP, he must be sitting in his easy chair in the living room. To call him to the chair, press [CTRL] P and he will know you want to pet him.

[CTRL] R - leaves a record for his stereo at the front door

Playing Games
This is one of LCP's favorite pastimes, so naturally it makes them feel great. Usually, an LCP will allow you to make the game selection. He will knock on the glass of your TV or monitor to get your attention and ask you to select a game from the list at the top of the screen. Type in the number of the game you want to play.

1. CARD WAR
This is the standard game of WAR where each player is dealt 26 cards. You both draw the top card from your pile. The LCP will show you his card first. To show your card press "A" as indicated by the command menu in the upper right corner of the screen. Whoever has the higher card wins the hand and both cards are added to the inner's stack. When a WAR occurs (both of you have cards of equal value showing), the LCP will deal 4 more cards to each of you face down. He will turn over his last card; press "A" to show your last card. Whoever has the higher card wins the hand and all of the cards on the table are added to his stack. After the last card dealt reveals another WAR, then 4 more cards are dealt to each hand and play continues as above until the WAR is broken. If at any time you wish to quit before either of you has won all 52 cards, just press "D".

2. ANAGRAMS
The LCP will be the one to think of the word and you will be the one to unscramble it. A scrambled version of the word he's thinking of appears in big type on the screen. You type in what you think is the correct word and he will tell you whether your guess is right or wrong. He'll let you yells 8 or 9 times before he tells you the word.

If you need a hint, press "I" which will cause a letter to assume its correct place in the scrambled word. An LCP will not give you two hints in a row.

3. 5-CARD DRAW POKER
Standard poker rules apply. You each start out with 200 poker chips as displayed at the top left of the screen. Your number of chips is below his. Bets are limited to 20 chips apiece.

Press "A" to ANTE UP one poker chip. The LCP will deal you 5 cards (yours are face up) and ask if you want to bet any chips. Here are your choices:

A - Bet one poker chip
B - enters you bet
C - lets you PASS if you don't want bet or CLEARS your bet if you decide to bet a different amount

After you make a bet or pass, the LCP will either match your bet or pass. When the LCP asks if you want cards, press any combination of numbers from 1 to 5 (corresponding to the cards from left to right) on the keyboard to discard the cards that you don't want. Now press "A" to DRAW replacements or if you didn't want any, press "B" to stay. Your LCP then follows your steps himself. You now have the following above options (A,B, or C) to make another bet. At this point the LCP can raise his bet and gives you two choices:

A - lets you match his bet.
B - lets you fold, losing your bet.

Choosing option A gives you three more choices:

A - raise the bet even higher
B - enters your raise
C - stops betting for the hand and lays the cards down on the table to determine who has won.

After each hand you have the option of quitting by pressing "D".

Recreation and Relaxation
Most LCP's are very good at entertaining themselves. They are good pianists and can play compositions from classical to jazz. They also like collecting records. So give them records often to please them. LCP's also exercise frequently, enjoy playing with their computers, or sitting down in their easy chairs with the newspaper. You may even be able to talk them into building a fire in the fireplace (see KEYBOARD COMMUNICATION).

Keyboard Communication
You communication with LCP's by typing sentences in the form of questions, suggestions, or requests. This will evoke a wide range of responses and reactions from the LCP. Here are a couple of suggested requests:

Please type a letter to me Please light a fire

LCP's are especially responsive to good manners. So remember to incorporate the words "please" and "thank you" into your requests.

-END-
L.L.L. is a program which allows you to design and print fancy labels using Print Shop graphics, borders, fonts. L.L.L. allows you to:

- Print color labels on supported color printers.
- Use multi-color graphics like those found on the IIGS version of Print Shop and the IIGS Sampler Edition.
- Load graphics, borders, and fonts from DOS 3.3 or ProDOS disks.
- Design custom sized labels
- Load and save label designs
- Preview labels on screen
- Merge AppleWorks database records with fancy labels

L.L.L. can be used as a stand alone program, but it is designed to be used with AppleWorks, Print Shop, Print Shop GS, The Print Shop Companion, Print Shop Graphic Libraries, and MiniPix.

Comaptibilities

What you will need

- Apple ][+, //e, //c, IIGS, Laser 128 or Laser 128EX
- Disk Drive (preferably two)
- At least 64K of memory, 128K for color printing
- Monitor or TV
- Dot Matrix Printer – Appendix C for list
- Printer Interface – Appendix D for list

Using L.L.L. with Print Shop

Some graphics, fonts, and borders have been included with L.L.L., but many others are available. L.L.L. is designed to work with "Print Shop" graphics, fonts, and borders. These are found on the "Print Shop" program disk, the Print Shop Companion, and The Print Shop Graphics Libraries. Elements from The Print Shop Companion and The Print Shop Graphics Libraries can be used without modification. Using elements from The Print Shop program disk requires placing them on a standard data disk. For graphics, this can be done with the Graphic Editor on the Print Shop program disk. Fonts and borders can be saved to a standard data disk by using the Font Editor and Border Editor on the Print Shop Companion disk. See Appendix A for more details. Print Shop is a trademark of Broderbund Software.

GS Print Shop

L.L.L. works with multi-color graphics like those found in the GS version of Print Shop. These can be printed in color on a color printer or with gray shades on a B/W printer. L.L.L. does not use multi-color borders.

MiniPix
L.L.L. can use graphics found on the MiniPix program by Beagle Bros Software. MiniPix is a trademark of Beagle Bros.

Newsroom Clip Art

Newsroom Clip Art can be converted to a Print Shop compatible graphic with the PS Lovers's Utility Set (P.L.U.S.), available from the Big Red Computer Club. It may then be used with L.L.L.

Using Labels, Labels, Labels

Making a Backup Copy

L.L.L. is supplied on a ProDOS formatted disk and is not copy protected. You can make archive copies for your own personal use with the ProDOS Filer or System Utilities disk or other disk copying program.

Hard Disk and 3.5" Disk Installation

L.L.L. can be used on a ProDOS compatible hard disk. To install the program on your hard disk, copy all of the files from the L.L.L. program disk to a subdirectory on your hard disk. L.L.L. will not function properly unless all the program files on the L.L.L. disk reside on the same directory.

Starting the Program

Insert the L.L.L. diskette into your disk drive with the label side up. Turn on the computer or otherwise boot the L.L.L. program. This will bring up the LABEL MENU for the program.

Using the Menus

Working with L.L.L. is easy because it is menu driven; that is, your choices appear in lists or menus on the screen. You make your selection by using the arrow keys to highlight your choice and then pressing the RETURN key. Pressing the ESC key returns you to the previous menu.

Remember:

Use the arrow keys to highlight your selection, press the RETURN key to perform the selected function. Press the ESC key to return to the previous menu.

Cancelling Printer Operations

It is possible to cancel all print operations by pressing the ESC key while the printer is working.

Creating Labels

The same procedure is followed for creating each of the standard size labels. Creating a label is a process of choosing a border, graphic(s), a font, and then entering any text to be printed on the label. Users with color printers can also specify different colors for each element of the label.

Choose Size of Label

Begin by highlighting the type of label you want to create from the LABEL MENU and press RETURN. Six standard label sizes are built into L.L.L.:

3-1/2" X 15/16"  
3-1/2" X 1-7/16"  
4" X 15/16"  
5" X 15/16"  
5" X 3-1/2"

Other label sizes can be created by selecting Custom Size which is explained in Appendix B.

The next screen asks if you want to create a label or load a previously saved label. When you load a label, it is automatically converted to the size of the label that was selected from the LABEL MENU. Once a label has been loaded, the PRINT MENU is displayed. The loaded label may then be edited or printed.

Select a Border Type

You are first asked to choose a border or part of a border for your label. You can choose: no border; top only; sides only; top and sides; bottom only; top and bottom; bottom and sides; or full border. Highlight your choice and press RETURN. Choosing no border allows more room on your label for text and graphics.

Select a Disk

When you boot the L.L.L. program, it examines your computer to identify all disk drives connected to it. Each time you load a border, graphic, or font, the available drives are displayed by their slot and drive number. To load an element, place the data disk in a drive and select that slot and drive number from the menu. A list of the borders, graphics, or fonts on the disk in the selected drive is displayed and you can select the element that you want to load. The data disk can be either a DOS 3.3 or ProDOS disk.

Place a disk with the desired border in one of your disk drives and choose the appropriate slot and drive from the menu. All of the borders on the disk are displayed on the screen.

Select a Border

Choose one of the borders from the disk by highlighting it and pressing RETURN. When you press RETURN, the border is loaded from the disk. If the disk has been removed or some type of error occurs while reading the disk, an I/O error message will be displayed. If an error occurs, press ESCAPE, correct the problem and try again.

Select a Color

If you have one of the supported color printers, select the color that you would like your border to be printed in. If you have a single color printer, you can choose any color, but it will have no effect on your printer.

Select a Graphic Type

After selecting a border, the next screen asks you to select what type and how many graphics you want to use on your label. The options are: no graphics; one single-color; one multi-color; two single-color; or three single-color. Highlight your selection and press RETURN. Choosing no graphics leaves more room on your labels for text.

Multi-color Graphics

Multi-color graphics are available only on the GS version of Print Shop. However, they may be used with L.L.L. on any Apple II+ computer.

Select a Disk

Place a disk with the desired graphic in one of your disk drives and highlight the correct slot and drive.

Select Graphics

If you are working with single-color graphics, you can now choose each graphic, a color, and a position for it. If you are using a multi-color graphic, you can now choose one and position it.

Select Position for Graphics

For each graphic selected, you can choose a position to print it on the label.
Select a Text Format

Once all the graphics have been selected, you are asked to select a font format for your label. The choices are: no text, one line of large, two lines of large, all large, or all small. Highlight your choice and press RETURN.

L.L.L. works with two types of text fonts. "Large Text" refers to Print Shop fonts. Depending on the size of the font, and the size of the label, L.L.L. will allow up to five lines of large text. "Small Text" refers to the normal 10 characters per inch font that is produced by your printer. You may have up to 5 lines of small text on your label, depending on the size of the label and the number of large text lines you select.

Select a Disk

If you choose to have large text on your label, you have to load a font from disk. Place the disk with the font you want in one of the disk drives and select the drive and slot on the screen. A list of fonts on the disk is displayed on the screen.

Select a Font

Highlight the font that you want your large text to appear in and press RETURN. The font is then loaded from disk.

Enter Label Text

If you choose to have text on your label, your screen now displays a blinking cursor. You may now type the text that you want to appear on your labels. The program allows you to use the LEFT ARROW or DELETE key to back up and correct mistakes. Press RETURN after each line is entered. Press ESC to go back up to the previous line.

Editing Commands

Pressing Control-E deletes all text on the line that the cursor is currently on. Pressing Control-C allows you to choose a color for the current line. Control-P allows you to position the current line. Lines can be left, center, or right justified. Lines selected as centered or right justified are not displayed that way on the screen; however, they will appear correctly on your printed labels.

Position and Color Indicators

Indicators on the right side of the screen show the current color and position for each line. Position is indicated by an upper case L, C, or R. Color is indicated by the first letter of the chosen color, such as "g" for green. Black is indicated by a blank.

If you choose a large font, the text is displayed in that font. The size of the label and the size of the font determine how many characters you can get on each line of the label. The program does not allow you to type in more characters than will fit on a line.

If you choose one or two lines of large text, there may be room for 4 lines of small text, depending on the label size. Up to 29 characters can be entered on a line.

When you have entered all the text to appear on the label, the PRINT MENU is displayed.

Print Menu

The PRINT MENU allows you to: Preview the Label, Print in a Single-color, Merge Multi-color, Print Multi-color, Merge Single-color, Merge Multi-color, Save Label, Change Printer Setup, or Exit to ProDOS

Preview Label

When you select to preview the label, a graphic representation of the label is displayed on your screen. This should give you a rough idea of what the printed label will look like. The screen display of the label is coarse since the screen's resolution is much lower than the printer's.

Print Single Color

Choose this to print your label on a single color printer to in a single color on a color printer. When you press RETURN, you are asked to select the number of labels you would like to print. Use the LEFT ARROW key to reduce the number and the RIGHT ARROW key to increase it. Press RETURN when you are ready to print. Make sure your printer is on and it is selected (online). Press ESC at any time to stop the printing.

Elements selected to be in color and multi-color graphics are printed using a gray scale when you choose to print them in single-color mode.

Print Multi-color

Choose this option to print labels on a color printer. When you press RETURN, you are asked to select the number of labels you would like to print. Use the LEFT ARROW key to reduce the number and the RIGHT ARROW key to increase it. Press RETURN when you are ready to print. Make sure your printer is on and it is selected (online). Press ESC at any time to stop the printing.

Merge Single-color or Multi-color

The merge option lets you merge one of your designed labels with information from an AppleWorks Data Base (ADB) file. L.L.L. uses the AppleWorks Label Format to print the labels and the Selection Conditions to decide which labels to print. You must set up the Label Format and Selection Conditions ahead of time. When you are setting up your Label Format, remember that L.L.L. can print a maximum of 5 lines per label and 29 characters per line.

Number of Copies

When you choose one of the merge selections from the Print Menu, you are first asked to select the number of copies of each label to print. Use the arrow keys to select the number you want to merge with.

Select Slot and Drive for the ADB File

The next screen asks you to select the slot and drive in which your AppleWorks Database file can be found. Choose the appropriate slot and drive, place the disk in the drive and press RETURN.

Select ADB File

Now the list of all the AppleWorks Data Base files on the disk is displayed. Select the one you want to merge with.

Next, a list of the Label Report Formats for the file are displayed. Choose the format you want to use and press RETURN. All labels meeting the Selection Conditions in the Report Format are then printed along with the graph elements for the labels.

Select Label

Use this option if you have created a label you want to use again or if you want to merge a database with this label. When you select Save Label, you are asked to select a slot and drive for the disk to save the label on. If you are merging for ProDOS, Labels cannot be saved on DOS 3.3 disks. Place your disk in the correct drive and press RETURN. It takes about 18 blocks of disk space to save a label.

The screen now displays any labels which have been previously saved on the disk.
The selection "Enter Name For" is also displayed. Choose this selection when you want to enter a new name to save this label under. You may enter up to nine characters for the name of the label file. Once you have selected a file name or entered a new one, L.L.L. saves the label to disk.

Change Printer Setup

In order for L.L.L. to work with your particular system, you need to specify some information about your disk drive and printer. You can do this by selecting the SETUP option from the PRINT MENU. Once you have gone through the SETUP option, L.L.L. remembers your choices and you only have to use SETUP again if your Apple equipment changes. In the SETUP option, you are asked to enter the following information:

Printer

The SETUP program asks you to identify your printer from a list on the screen. Use the arrow keys to make your selection and then press RETURN. If your printer type is not shown on the screen, check Appendix C for a list of printers which are compatible with L.L.L.

Printer Interface Card

Select your interface card from the list on the screen. See Appendix D for a complete list of the interface cards supported.

Printer Interface in Which Slot

Now you need to select which slot your printer is in. This is usually slot 1.

Exit to ProDos

Selecting this option takes you out of L.L.L. and into the ProDos Program Selector. Your current label will be lost unless you have saved it to disk.

Appendix A

Using Graphics from the Print Shop Disk

Start up your computer with either Print Shop or the Print Shop Companion Program. Select the GRAPHIC EDITOR Program utility from the main menu. Use Control-G to get a graphic from the Print Shop program into the editor. Then use Control-S to save the graphic onto your data disk. The graphic can now be used with L.L.L.

To transfer fonts or borders from the Print Shop program disk to a data disk, you must use the Print Shop Companion program. Select either the FONT EDITOR or the BORDER EDITOR and use the Control-G, Control-S options to transfer the desired files onto your data disk.

Appendix B

Creating Custom Sized Labels

To create custom sized labels in L.L.L., you must specify the size of the label in border elements. Each element of a border is approximately one fifth of an inch wide and 14/72nds of an inch high. The first two screens ask you to enter the width and height of the label in border elements. The last screen asks you to enter an adjustment factor which is the number of 72nds of an inch necessary to line up the next label.

Width

When you choose to create a Custom Size, you are first asked to enter the width of the label in borders. Each border element is approximately 1/5 of an inch wide. Multiply the width in inches times 5 to arrive at the number to enter for the width. So, for a 3" wide label, you would use the arrow keys to change the number to 15.
Most problems with L.L.L. can be traced to the printer or printer interface card. If the printer doesn't do anything or if it prints out garbage, please follow these steps:

Go back to the PRINT MENU and check the printer setup options.

If everything seems in order in the printer setup, try turning your printer off, pausing a few seconds to let it clear, and then turning it back on.

LLL v1.3 update

The version 1.3 update contains a simple database program for entering lists which can be merged with LLL. The database is a BASIC program and can be accessed by selecting Exit to ProDOS from the Print Menu. Type in /LLL when the screen displays ENTER PREFIX. Press RETURN. Then type BASIC.SYSTEM and press RETURN.

Using the LLL Database

A simple database program is included on your LLL program disk. It is designed specifically to be used with LLL. It allows you to enter up to 200 records in a file. Each record consists of 4 lines of text (25 characters each) and a sort key (5 characters).

The Sort Key

The sort key can be used to arrange the database file in any desired order. The most common entry for the sort key will be Zip Codes, but you could use the first five characters of a last name for an alphabetic sort. The sort key will not be printed on any of your labels.

Using a Data Disk

The program first asks for the location of your data disk. You may select drive 1 or 2 by entering the number or you may select a disk or directory by entering a prefix.

Database Functions

The database program is capable of performing the following functions:

A)dd a record
C)hange a record
D)elete a record
S)earch for a record

When you run the program, any of these functions can be selected from the main menu by typing the first letter of the command. A=10

Searching

When changing or deleting a record, you are asked to input the record number. This number changes as you add or delete records from the file. Use the search function to find the record you want to change or delete. The program uses a substring search so you don't need to enter entire name to find a match. A=10

-KND-
Opening a resource file—To open a resource file for editing, select the Open item under the File menu. Select the file you wish to edit. A window will appear on the desktop with the title of the file you just opened. Inside the window are four buttons and four lists.

Resource file information—Clicking on the Info... button in a file window brings up a dialog box displaying the number of resources, number of resource types, and size of the resource fork represented by the window.

Selecting Resources—The first list (on the left) is the list of resource types present in the file. The second list is the list of all resource IDs of the currently selected type (note that when the window is opened this list will be empty because no type is selected). To select a resource, first click on the type of the item in the first list, and then the ID of the item in the second list. Note that every resource ID can be selected by clicking both (same type) by holding down the Apple key while selecting.

Editing Resources—Two types of resource editing are currently supported in LLRE, string and hexadecimal. In other words, each resource can be edited in two ways, as each byte in the resource representing either an ASCII character or a hexadecimal string. Non-text types are automatically edited with LLRE 1.1. These include Pascal and C strings, and TextBox and TextBlock types. To edit a resource in the non-standard way (for example, to edit a Pascal string as a hexadecimal stream), click Inverse Edit instead (or hold down the option key while double-clicking the resource ID). An edit window will appear.

Creating New Resources—A completely new resource of any type and ID can be created by clicking the New... button in a file's window. A dialog box will appear asking for the resource type and ID of the new resource. As defaults for the type and ID, LLRE supplies the currently selected type and an unused resource ID. After selecting the type and ID, click the New Resource button to edit the new resource. To edit the resource in the non-standard way, hold down the Option key while clicking the New Resource button.

Edit Windows—After selecting resource(s) to edit, edit window(s) will appear. The title of each window will be the type and ID of the resource, and the information bar in the window will display the name of the file the resource is from and which type of editing is being done. The main part of the edit window is the large Text Edit box. This is where the editing is done. The resource will be displayed here either as a text string (with each character representing one byte in the resource) or as a string of hexadecimal bytes separated by spaces (Note that there are no carriage returns in the hex stream. LLRE expects only spaces between each byte). If the editing is done as hexadecimal, LLRE will supply guidelines on the top and left sides of the text box to indicate which byte is currently being edited.

Four buttons also exist at the bottom of the window. From left to right, the buttons are: Import...—This allows the user to import the data fork of a file into a resource. Export...—This allows the user to export the data in the resource. Resources already in the destination file are erased. If the resources in a file you are using become corrupted, run this copy. This will create a new, uncorrupted resource map in the destination file. The file should be then replaced.

Add resources One-by-One...—This item copies the resources from one file you select to another destination file you select. This is read and written as one chunk of data, just like a data fork. This is the fastest method to copy the resource fork.

Copy Resources One-by-One...—This item is to be chiefly used to repair resource files. This method is a good deal slower than the previous method. The advantage of this method is that it can help repair a damaged resource fork. This item copies the resource fork from one file you select to replace the resource fork of another (destination) file you select. The resources in the file are read and with one by one copied into the destination file. If the file is erased. If the resources in a file you are using corrupted, run this copy. This will create a new, uncorrupted resource map in the destination file. The file should be then replaced.

Copy Resource Fork...—This item copies the resource fork from one file you select to another destination file you select. This is read and written as one chunk of data, just like a data fork. This is the fastest method to copy the resource fork.

Copy resource(s) to clipboard. Paste copy resource(s) on the private clipboard into the active resource window.

Clear Remove selected resource(s) from the file of the active window.

The Copy Menu—The copy menu contains items related to copying the forks of files. Copy selected resource(s) to the private clipboard.

Copy resource(s) on the private clipboard into the active resource window.

Clear Remove selected resource(s) from the active resource window.

Undo Not Supported Copy selected text to the public (text) clipboard and remove it from the resource.

Cut Copy selected resource(s) to the clipboard.

Copy Copy selected resource(s) to the private clipboard.

Paste Copy resource(s) on the private clipboard into the file of the active window.

Clear Remove selected resource(s) from the file of the active window.

The Edit Menu—The edit menu contains items which affect resource files. The items are: Open...—Allows the user to select a resource file to be opened for editing. One menu item should appear on the menu bar of the window. Inside the window are lists of the resource types and IDs in the file. See the section on resource editing for more information.

Quit-Quits LLRE.

Create Resource file...—Allows the user to select a filename and creates a new, empty, resource file. If that file already exists, a dialog box will be appeared. Create Resource Fork...—Allows the user to select an already existing file which is not extended (it doesn't yet have a resource fork) and creates a resource fork for that file.

Clear Data Fork...—Clear the data fork of a file selected by the user. This call removes the data fork and nothing else.

Clear Resource Fork...—Clear the resource fork of a file selected by the user. This call works only on extended files.

Determining types of editing is being done. The resource will be displayed here either as a text string (with each character representing one byte in the resource) or as a string of hexadecimal characters (LLRE does not have a way to tell how to convert a resource). Consequently, the only way to edit these resources is unconverted. So, be VERY sure you know what you are doing.
when editing a resource requiring a converter. Code resources can be easily created
with LLRE, however, even though they require converters. Create a code resource by
first linking the code as a generic load file and then importing it into a code (or
CDev code) resource. (Look for a demonstration soon on creating CDevs with LLRE).
- Supplying key equivalents under TML Pascal II: TML Pascal II doesn’t handle key
  equivalents for controls correctly. Edit the control template with LLRE to easily
  fix this problem.
- Eliminating recompilation: Instead of recompiling a program after making
  modifications to its resource file, simply copy the resource fork of its resource
  file into the resource fork of the program.
- Easily edit file attributes with the check boxes and radio buttons

In Conclusion
I have made every attempt to make LLRE as complete and error-free as possible. If
you have any complaints, suggestions, or recurring errors, please contact me. Also,
thank you for participating in the shareware distribution system. Please copy this
program and upload it and give it to everyone you know who is interested.

Apple IIgs is a registered trademark of Apple Computer, Inc.
TML Pascal II is a trademark of TML Systems, Inc.
Genesys is a trademark of SSSI, Inc.

Apple II Computer Info

DOCUMENT loan.analyzer

+++ 
ADJUSTABLE LOAN ANALYZER @
by Furry Programmers, Vltd.

Introduction....

Loan Analyzer is a screen based program written to provide basic loan information on
adjustable rate mortgages. It will also provide payment schedules based on the
provided loan information. Loan Analyzer is menu oriented; that is, it will provide
you with your choices in the form of a menu. To make a choice, just press the key of
the letter in parentheses.

---- A COUPLE OF WORDS OF CAUTION ----

Although we have tested Loan Analyzer extensively, both Furry Programmers, Vltd., and
UPTIME Magazine, IN NO WAY GUARANTEE THE ACCURACY OF THESE PROGRAMS, AND DO NOT
ASSUME ANY RESPONSIBILITY FOR ANY DECISIONS MADE ON DATA FROM LOAN ANALYZER. We
suggest that you talk to a loan officer at your bank or savings and loan for the
latest rates, points, plans, and other information that will help you make the right
decision.

We suggest that if you get an adjustable, or variable, rate loan, you obtain one with
a cap on the range on how far the interest rate can climb or fall, and how far it can
be adjusted each time. Also, consider a plan that does NOT allow the principle to
rise, better known as NEGATIVE AMORTIZATION. Loan Analyzer assumes that you have a
loan meeting these requirements.

Using Loan Analyzer....

Before using Loan Analyzer, you should know the loan amount and/or the monthly
payment, the prevailing interest rate, the period of the loan in months and/or years,
the cap values, and the period between adjustments.

TO ENTER OR CHANGE DATA:
1. From the MAIN screen, press C for Change.
2. Press the key corresponding for what you want to enter or change.
3. Enter the new value.
4. Repeat steps 2 & 3 until done.
5. When finished, press return to accept the changes and go to the compute/generate
   screen.

If you need to restore the data to the value prior to being changed, press [ESC] to
abandon the changes and return to the main screen.

TO COMPUTE A VALUE, OR GENERATE A TABLE:
1. From the main screen, press A for accept.
2. Select your choice by entering a number, then press return.
3. Answer the prompts as required.

NOTE: Computing a missing value will store the value computed, while generating
tables does not change any value on the main screen.

Modifying the DEFAULT settings.....

THE DEFAULT SETTINGS FOR THIS PROGRAM ARE IN LINES 110, 120, AND 140.

VARIABLE USE
IR INTEREST RATE IN PERCENT
LA LOAN AMOUNT
PY MONTHLY PAYMENT
Apple II Computer Info

MO  NUMBER OF MONTHS OF LOAN
YR  NUMBER OF YEARS OF LOAN
N   PRINTER DESTINATION SLOT
CU  UPPER CAP FOR INT. RATE
CL  LOWER CAP FOR INT. RATE
CA  ADJUSTMENT CAP FOR RATE
CM  MONTHS BETWEEN RATE ADJ.

Defaults are: IR=13, LA=0, MO=0, YR=30, PY=0, CU=7, CL=7, CA=2, and CM=12

Files Needed:
LOAN ANALYZER  -The main program
--------------------}  -The main program
--------------------}12*  -The main program

Files Needed:
LOAN ANALYZER  -The main program
--------------------}R  -The main program
--------------------}  -The main program

THE COMMAND FOR THE LODE RUNNER EDITOR IS A <CTRL>E. THIS COMMAND WORKS DURING THE DEMO PROGRAM OR AFTER A GAME AND THE LOGO IS ON THE SCREEN.

When you are in the edit feature the following commands work:

*P* - PLAY A SELECTED LEVEL
*I* - INITIALIZE A NEW DATA DISK
*E* - EDIT A LEVEL
*S* - CLEAR HIGH SCORE LIST
*C* - CLEAR A LEVEL
*M* - MOVE A LEVEL

<ESC> CANCELS ANY COMMAND.

If you want to 'E'DIT A LEVEL:

1 - BRICK (DIGGABLE FLOOR)
2 - BLOCK (UNDIGGABLE FLOOR)
3 - LADDER
4 - POLE
5 - FAKE FLOOR (LOOKS WEIRD, BUT LOOKS LIKE 1, WHEN PLAYING THE BOARD)
6 - LADDER THAT APPEARS AFTER ALL BOXES HAVE BEEN GOTTEN, WHEN PLAYING. LOOKS WEIRD ALSO, BUT LOOKS LIKE 3 WHEN PLAYING. MAXIMUM OF 45.
7 - BOX.
8 - ENEMY. MAXIMUM OF FIVE PER LEVEL.
9 - THE PLAYER. MAXIMUM OF ONE PER LEVEL.
0 - ERASES ANYTHING.

Use the i, j, k, m diamond for moving the editing cursor.
CTRL-S SAVES YOUR LEVEL, CTRL-Q GETS YOU OUT OF EDITING MODE.
1) Use your position on the ladders to move the men left and right, dropping each man past and below you through the center channel before moving up to the next level.

1) Trap the men at the bottom center by moving to the bottom of the far left ladder.

2) Run over their heads and get all the chests on the right (the fifth chest from the right has a trap door under it).

3) Dig away all the bricks to the left of the men, letting one man free.

4) Dig a hole to the left of the man and walk over his head while he's in it, and force him to the right by positioning yourself at the right spot on the ladder.

Get the men into strategic "U's" and walk over their heads.

1) Climb the ladder halfway, then lure the men into the trap at the bottom. Move them all the way to the left by descending the left ladder again. Then cross over to the right and repeat Step 2. If you move quickly, you'll fall to the ground with the second chest just before the men reach you.

2)  Dig down the column of bricks next to the ladder slow enough that the top brick has reappeared when the bottom brick has been dug. Quickly run up the ladder to the top of the column and across the steps for the closest of the two lower chests. When you fall to the bottom, quickly run out before the bottom brick of the column reappears.

3) Climb the ladder halfway, then lure the men into the trap at the left. Move them all the way to the left by descending the left ladder again. Then cross over to the right and repeat Step 2. If you move quickly, you'll fall to the ground with the second chest just before the men reach you.

4) Go left and down, moving to the left ladder to keep all 5 men on the right side. Now clear the left side.

1) Go up the ladder toward the left hand corner of the screen. You'll have to duck into one of the diagonal channels and dig to get by one of the men.

2) Pick up all the chests across the top, dropping from diagonal to diagonal by blasting through the bricks.

3) Descend a diagonal to the bottom left corner and make your way back across the bottom in the same manner, picking up the remaining chests.

Another great T-Men file!

1]  Use your position on the ladders to move the men left and right, dropping each man past and below you through the center channel before moving up to the next level.

1]  Trap the men at the bottom center by moving to the bottom of the far left ladder.

2]  Run over their heads and get all the chests on the right (the fifth chest from the right has a trap door under it).

3]  Dig away all the bricks to the left of the men, letting one man free.

4]  Dig a hole to the left of the man and walk over his head while he's in it, and force him to the right by positioning yourself at the right spot on the ladder.

Get the men into strategic "U's" and walk over their heads.

1]  Climb either ladder and position yourself at the top so that the men fall into the "U's".

2]  Using their heads to stand on, dig and release them after getting the chest. They will drop into other "U's" and you can repeat the action.

3]  Collect all remaining chests.
Clear the center arrowhead chests first and trap the men in the area.

1) First, dig a hole in floor above the point of the arrowhead (point X). Collect the chests that appear at the center of the arrowhead.

2) Collect as many chests around the arrowhead by digging from point 'X' and circling back.

3) Go to either the bottom right or left of the triangle of ladders above the arrowhead and dig a hole. Get a man to chase you to the top of the pyramid. At this point dig, trap the man, climb down the first ladder on the other side of the pyramid, and he'll eventually drop into the bottom center.

4) After all men are trapped, collect the chests.

1) Don't fall to the bottom. Step right as you pass the first opening.

2) Go up the first ladder and to the top of the first section. Dig your way to the gold chests in the first section in two passes.

3) Climb up the middle ladders and get the chests.

4) The far right section is a matter of timing. At the bottom right ladder, dig the top brick, hesitate, the next brick under it, hesitate, the next brick...as soon as you see the top brick forming, run across the top right to last right brick, dig, drop through, grab the chest and run through the left hole before the bottom brick forms. Repeat procedure for the left side of the ladder.

1) To get to the second and third boxes on either side of the screen, you must cross over a falling man's head from the ladder.

1) Go to the far right & up the ladder.

2) The first, third and fifth cross on the top row are traps. Get the men to fall in them.

3) Collect the chests that aren't near the men.

4) Collect the rest of the chests.

Apple II Computer Info

3) Continue to manipulate the men from this area as you collect the chests.

4) To get the leftmost man to part with his chest in the right place, draw him to the fifth floor on the right and stand at the left of the third ladder. When he's almost upon you, race up the third ladder and he'll race up the second ladder. Race down, collect the chest & race back up the ladder.

There's no specific strategy for this level except that by keeping the men together you have a better chance of controlling and getting by them.

Get the far right chest left.

1) Collect all chests across the top except the far right one.

2) Let the rightmost man out of the hole that he's fallen into and get any chest that may appear.

3) Manipulate as many men as needed to the bottom left of the board and use their heads to climb the far left ladder.

4) Get the last chest.

1) Collect some chests from the upper right side of the board.

2) Stay high on the board to attract the men. Then, go down and dig from the second floor from the bottom on the far right ladder and down the 'steps of bricks' to the bottom row of ladders...cross to the left side of the board. Run in circles to avoid the men.

3) Get a man to fall into the hole bottom hole in the center 'circle'. Collect the chests in the middle and get the other men to fall in to get them out of the way.

4) Collect the rest of the chests.
1) Use the two upper right-hand corner bricks to trap and kill men until they appear at the right side of the board. Then, move down and draw the men onto the floor.

2) Try to trap the men in the bottom 2 holes of the board as you collect the chests.

3) Dig the middle chunk of bricks to the left of the long middle row.

4) Collect the rest of the chests from the right side of the board, leaving the bottom right chest for last.

5) Fall onto the guard beneath you and while standing on his head, dig away the brick on his left and jump over onto the brick on his right when he starts to move away. When he drops onto the other guard, jump off the block you're standing on. Don't follow the guard, but dig out the rightmost brick instead so you can drop to the bottom and get out the ladder.

6) Climb up the bottom far right ladder and cross over to the left side of the two guards. Dig the brick to the right of the middle bottom ladder. Jump on the man's head, dig right then left, without hesitation and immediately run right. Pick up the chest and exit quickly to the right.

7) Pick up the remaining chests with the exception of the 2 chests in the bottom right-hand corner and then work your way down to the lower right-hand corner last.

Another great T-Men file!

LEVEL 17: SUSPENDED GOLD
LEVEL 18: TRAP FOURTEEN
LEVEL 19: THE THINKER
LEVEL 20: STACK EM UP
LEVEL 21: TWENTY-ONE
LEVEL 22: CRAZE MAZE
LEVEL 23: BEST BUNGELINGS

Keep the men together.

1) First, collect the chests at the top left as you get 3 men on the left side of the board together.

2) When you have all the chests you can get, release one of the men from the mid-right section by drawing him through the trap doors on the 2nd and 3rd floors on the right and have him join the other 3 men.

3) Release the last man the same way and collect the rest of the chests.

LEVEL 24: FISHING
LEVEL 25: HANG ON
LEVEL 26: BUCKETS
LEVEL 27: BUNGELINGS
LEVEL 28: EASY STREET
LEVEL 29: BETS TALE
LEVEL 30: A BIG ONE
LEVEL 31: IT'S ALIVE
LEVEL 32: THE END

Collect the rest of the chests on the left side of the board.

4) To get the chest next to the top middle ladder, climb the ladder and dig the top 2 bricks between the ladder and the gold chest. Don't dig the bottom brick until the top brick starts to form. Then dig the bottom brick, run up the ladder, dig the top brick again, run to the right and drop down onto the chest. You can now dig down and escape onto the bar. Drop through the diggable brick by the ladder onto the next bar below.
2] Collect all accessible chests while working your way to the lower right corner.

3] Collect the chests in the upper right corner.

4] Dig the bricks over and right or the 1st short ladder on the left, 2nd floor (from the bottom) and jump down on the chest from the top of the ladder.

5] To get the chest in the lower left corner, dig the brick at the bottom left of the bottom right ladder, then top 2 bricks on the right of the bottom right ladder, then go back and redig the first brick, then the bottom brick next to the left ladder then the brick above the chest, drop on the chest and leave.

---

### Diagram of center of board.

```plaintext
+---+---+---+---+---+---+---+---+
|   |   |   |   |   |   |   |   |
| #1 | Y=B | 2B |
| #2 |   |   |
| #3 | A=B | BBB |
| #4 |   |   |
| #5 |   |   |
| #6 |   |   |
| #7 |   |   |
| #8 |   |   |
| #9 |   |   |
|10 |   |   |
+---+---+---+---+---+---+---+---+
```

---

1] Move halfway up the long ladder until both men fall between the ears.

2] Dig away bricks in the left ear, trapping the men till they reappear in the upper left corner.

3] First, get the chest from the left eye. Dig away enough bricks to remove the 2 bricks to the left of the eye, which will allow you to drop down to his whisker to escape.

4] To get the chest in the right eye, dig all the bricks across the ear to the left of it and continue down to the nose to escape.

---

### Diagram of the rest of the board.

```plaintext
+---+---+---+---+---+---+---+---+
|   |   |   |   |   |   |   |   |
| #1 |   |   |   |   |   |   |   |
| #2 |   |   |   |   |   |   |   |
| #3 |   |   |   |   |   |   |   |
| #4 |   |   |   |   |   |   |   |
| #5 |   |   |   |   |   |   |   |
| #6 |   |   |   |   |   |   |   |
| #7 |   |   |   |   |   |   |   |
| #8 |   |   |   |   |   |   |   |
| #9 |   |   |   |   |   |   |   |
|10 |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+---+
```

---

1] Destroy the 2 men at the lower left to get time to collect the chests at the lower left corner of the board. Release the first man while hanging from the bars. Then dig holes until he is destroyed. Repeat the process for the 2nd man.

2] Destroy the men, the run to the right of the long middle bar. Fall on a man's head to collect the last chest.

---

Don't let any men with chests fall into the bottom middle holes. Get the center chest last.

1] Get all the available chests except the center chest. Use the men to get the chests at the top of the left and right towers. Be sure to keep track of chest being carried by men.

2] When you're sure you have all the chests, fall onto the center tower and a ladder will appear to give you a way out.
1] Go up the left ladder to the trap under the second bar.

2] Dig left after falling through and continue left down the trap doors. You'll fall right onto the chest.

3] Get the top left chest first. Dig the brick to the right of the short ladder and get the top man to run left into the brick as it reappears.

4] Dig down to the next section and get the far right chest. Dig to the left of the ladder, run to the right ladder and force one man into the reappearing brick.

5] Trap the last 2 men in the pit under the bar being careful that they don't take any chests with them.

6] Dig down to the ladder below and get the chests.

7] Go down to the next level and get the remaining chests.

8] If any chest is picked up by a man, try to get him to drop it for you toward the bottom middle of the board.

9] As the man starts down the second long ladder from the left after you, dig the brick to the right of the first short ladder. Get him to follow you through and exit down the ladder to the left, then back up the long ladder. This gets you past the man.

10] Get all the chests in the left section, taking one at a time, and each time escaping back through the brick left of the top short ladder.

11] Get the chest in the middle section by shooting holes to the ladders below the middle short ladder and always escaping back through your starting point.

12] Get all the chests in the right section and escape.

The only important thing to know about this level is to spend as much of your time as possible on the second row from the top. The men will bring you many of the chests and you can drop down to the ground level to pick up others after you've caught all of the men in the pits.

13] Trap the men in the upper 2 chambers by leading them over the outer edges. Then collect the rest of the chests being careful you can always escape via the center ladders.
Follow the man through the traps using him like an elevator to the first chest on the upper right. Collect the rest of the chests by clever digging.

1) First, get the first left chest in the ledge, using a man's head to step on.
2) Run to the bottom of the far right ladder on the floor and get all the men on the ladder to the left of you. Go to the top of your ladder to force the men to the top of their ladder. Collect as many chests as you can.
3) Use traps between the 2 ladders to get to the bottom of the board, and run quickly to the far left bottom ladder and climb. Use this ladder to force the man left when he climbs out of the hole - he'll then fall into the chamber allowing you to get the chest in the center of the chamber.
4) Get the chest in the rabbit's left nostril, while you lead the men beneath. Keep them together and get past them, wait at the bottom of the far left bottom ladder, drawing them over and, at the last second, climb up and run for their ladder. The men will return to their ladder from below, but too late to interfere with you.
5) To keep them together and get past them, wait at the bottom of the far right ladder, digging the 2 bricks to the left of the ladder as you descend. Then move left and dig away the brick immediately to the right of the gold chest. Race back up the ladder, drop down on the brick to the left of the 9th ladder from the left, dig it and get the chest and exit by digging the brick under it and dropping to the floor.

6) Collect the rest of the chests by repeating step 5.

1) Trap a man in the brick at the bottom right of the long left ladder. Use this ladder to force the man left when he climbs out of the hole - he'll then fall into the chamber allowing you to get the chest in the center of the chamber.
2) Get the chest in the rabbit's left nostril, while you lead the men behind you.
3) Collect the rest of the chests.

1) Lure the man into the left center pit, but don’t get stuck there yourself.
2) Dig a column between first 2 rows of short ladders on the right to get the right bottom chest.
3) Repeat step 2 on the left side. Dig the brick left of the bottom chest. If you move to the short ladder across from it the man will get the chest and when the brick refills, he'll be destroyed along with the chest.

1) Destroy the men repeatedly until they trap themselves in the 3 single holes across the top.

2) Collect the rest of the chests, leaving the bottom left chest for last.
3) When you get the last chest, the men will be released. To escape through the ladder that appears, run over the men's heads, from left to right to short right ladder on the 4th floor.

1) Dig the 4 bricks to the right of the 4th ladder from the left, using timed digging as done in previous levels, to get to the chest beneath.
2) To get to the first chest on the right, start digging at the top of the top right ladder. Dig your way to the chest, leaving an exit path out to the left of the bricks to the right of the 4th ladder from the right.
3) Work your way to the left side of the board by exiting through the brick to the left of the short middle ladder.
4)  Use timed digging on the bricks to the right of the far left ladder to get to the first left chest.
5) Dig the 3 bricks down the left side of the 8th ladder from the left. Run back up the ladder, drop down on the brick to the left of the 9th ladder from the left, dig it and get the chest and exit by digging the brick under it and dropping to the floor.
6) Work your way back to the left side of the board.

7) SURPRISE! The man trapped in the lower left chamber has a chest! You must release him and then trap him in order to get the chest from him.

Stack the men on top of each other in the left and right ledges (second floor from the bottom) so that the top man can get at the seemingly unreachable gold chests on the left and right sides. Repetitive digging is required.

1) Collect the left chest by descending then centermost of the 4 ladders that reach the top of the screen. Then dig away the brick to the left of the ladder's base. Drop in that hole and descend to the ladder beneath it, digging the 2 bricks to the left of the ladder as you descend. Then move left and dig away the brick immediately to the right of the gold chest. Race back up the ladders until you are standing just above and to the left of the first brick you dug. Go left and drop straight down onto the gold chest. Climb back to the top of the board before the bricks fill in.
2) The 2nd gold chest is easy to get to however, getting back to the top of the board is difficult since there's only one way. You'll have to travel the bottom bar to the leftmost ladder, climb up, and then work your way back to the right by digging in order to get out.

P.S. The ladder that appears at the far right after you collect the
second gold chest is a red herring.

You must use timed digging on the row of bricks to the right of the 2nd ladder from the left.

1) Dig the top brick, pause, dig the 2nd brick, pause until the top brick reappears, then dig the 3rd brick. Now run to the top of the ladder and all the way to the right. Dig and drop down onto the chest that is floating in the air, then run left until you have regained the safety of the ladder.

2) Don’t stop for breath. Before the 3rd brick fill in, dig out the 4th. Then go back up the ladder and dig out the 1st and 2nd bricks again. Descend and dig out the 5th brick from the top. When the 4th brick reappears, dig out the 3rd and the 6th brick. Run right (across the top of the 4th brick) and dig out the brick just over the short ladder. Then back up one brick and dig out another brick. Jump down in the hole and, standing on the ladder, dig out the 2 bricks that form a wall to the left of the ladder. Then drop down to the chest below the short ladder and run left. The floating chest is left up to you.

3) Your exit is at the bottom of the bottom of the long ladder. There are 2 clever parts to the right side. In the top part, you’ll need to stand on the head of a falling man to pick up the leftmost chests. The most difficult part is the bottom.

4) **LEVEL 46: MINE IS YOURS**

Use timed digging, first to reach the top chest (digging bricks in the order A,B,C,D,E) then starting over and getting the bottom chest (Dig A,B,C,D,E,F and G). Run up and over brick A, which will have reappeared. Then drop down through brick D and dig N, I and J.

---

APPLE II COMPUTER INFO

This level makes extensive use of a little known capability—it is possible to blast bricks in the normal manner while standing inside a trap door.

1) Move to the left and get the 4 men trapped into holes. Run over their heads and go to the ladder on the left.

2) Dig down to the 4 chests at the bottom left rows.

3) Next, position yourself just to the right of the rightmost man. Dig the 2 bricks to the right of him, work-ing right to left (you’ll have to dig the 2nd brick while standing on his head). Take one step to the left as you finish digging the 2nd brick so you won’t fall when the man starts to move.

4) After he drops into the hole in the next row, jump in after him, run to the right, and repeat the process as you proceed to collect the top and then the bottom chests on the diagonal.

---

**LEVEL 47: TEMPLE OF TOMBS**

---

**LEVEL 48: AZTECA**
ladder and cross over to brick C, where you repeat the process. Once bricks B and D have been removed, you can enter the central room, recover the chest and dig down to the rooms underneath.

2) Many of the other bricks in this level play off the same trick—you stand inside a trap door and dig an adjacent brick.

LEVEL 50: YOU ARE A CHAMP

If you've gotten this far, you're a pretty good Lode Runner player, so you're going to have to figure out this level with the help of just one minor clue...

Here's the hint. Just as level 49 hinged on being able to dig from within a trap door, level 50 hinges on your ability to dig bricks while falling on the head of a man.

Good luck!
"OK" button will save the changes to the disk. Clicking "Cancel" will cancel the operation and the file will not be modified.

Compress sound file allows you to compress a sound file so it takes less disk space. Note that LongPlay can't play compressed sound files, they must be expanded first. After selecting the compress menu item, you will be presented with a dialog box asking what format you want to store the compressed file as. Selecting the "Same as original" button will cause LongPlay to store the compressed file in the format equivalent to the original file. I.e. if the file was originally a raw binary file, it would be stored as a type $CD ACE file. If the file was originally an AE file, it would be stored as a compressed AE file.

The other two buttons are more or less self-explanatory. Another set of buttons let you select the compression ratio. 8:4 compresses a file to half its original size, while 8:3 compresses a file to 3/8ths its original size. The drawback to the higher compression ratio is that files usually come out with a little more static than with the 8:4 compression. After clicking OK, pick the file you want to compress, then type in the name that you wish to store the compressed file as. LongPlay will then proceed to compress the file. If it can't find the correct volume, it will prompt you to insert the disk. At this point, you may either cancel the operation or insert the disk and continue. However, for some strange reason, clicking Cancel once usually doesn't work. Be persistent... click Cancel again and the box should go away.

The Expand sound file item lets you expand a compressed sound file so it can be played by LongPlay. Again, you will be presented with a dialog box asking in which format you want to store the expanded file. Again, "Same as original" stores the expanded file in the original's equivalent. A $CD ACE file will be converted to a raw binary file, while a compressed AE file will be expanded into an uncompressed AE file. After clicking OK, select the file you want to expand and type the name that you want to store the expanded file as. After this, things are about the same as the compress sound file option.

Of course, selecting the Quit item exits the program.

The items in the Edit menu are not used by LongPlay. They are provided so they may be used by NDAs.

Note about the icon file: you need to use an icon editor to set the path name of LongPlay for double clicking on a .Snd file to work.

This program is ShareWare. Please distribute it as widely as possible. Although this program is publicly distributable, the author retains all copyrights to it.

If you like it, please send $5 to:

Dave Huang
3501 Lake Austin Blvd., Lot #64
Austin, TX 78703

If you have any questions, comments, or bug reports, please send them via electronic mail to one of these addresses:

America Online: DrWho29
Internet: daveh@ccwf.cc.utexas.edu
UUCP: ...!ut-emx!ccwf.cc.utexas.edu!daveh

Special thanks to Drew Benson and Andy Kress for beta testing and info on Applied Engineering format files. Cool LongPlay icons by Andy Kress. Pitiful LongPlay small icons by me :-(

================
Revision History
================
WATSON is a powerful assistant to THE INSPECTOR disk and memory utility. Like THE INSPECTOR, WATSON is permanent—either on an EPROM to be simply plugged into socket D0, or on disk ready to be merged with Int Basic for loading on boot. WATSON augments many of THE INSPECTORS commands—making them handier, more automatic, more complete. For instance, you can now increment or decrement buffer locations with a single key-stroke. The disk map now also displays free space remaining on the disk. You can even reconstruct a VTOC automatically.

But WATSON brings along a whole new bag of tricks his very own. A Disassembler that displays ASCII, an instant hex/decimal/signed decimal converter, the ability to EOR the buffer with any value, lock-out or free-up specific sectors on a disk, follow a file sector-by-sector automatically, and much more. Browse through all the new commands in this manual. You can now call for a jump to any of the nine of your own subroutines. If you enjoyed working with the INSPECTOR you'll love WATSON. When you quit WATSON, you can take a single-stroke Screendump along with you back into Basic. Or an automatic inverse display of all control characters. Together, WATSON and THE INSPECTOR give you by far the most complete disk and memory utility for your Apple.

### SYSTEM REQUIREMENTS

**INSPECTOR**

1 DRIVE

**RAM CARD**

**ACCESSING WATSON**

WATSON is always in memory and available for use, WATSON can be used in a number of different APPLE configurations. Since each is slightly different there are a number of distinct procedures to be used depending on the computer configuration you are using. To access WATSON proceed as specified for the Apple configuration which you are using.

#### A. APPLE II STANDARD (INT VERSION)

<table>
<thead>
<tr>
<th>FROM</th>
<th>TO</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTEGER</td>
<td>WATSON</td>
<td>CALL-12288</td>
</tr>
<tr>
<td>MONITOR</td>
<td>WATSON</td>
<td>CTRL-Y</td>
</tr>
<tr>
<td>APPLESOFT</td>
<td>WATSON</td>
<td>$8</td>
</tr>
</tbody>
</table>

#### B. APPLE II+

<table>
<thead>
<tr>
<th>FROM</th>
<th>TO</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTEGER</td>
<td>WATSON</td>
<td>CALL-12288</td>
</tr>
<tr>
<td>MONITOR</td>
<td>WATSON</td>
<td>C081 D00G</td>
</tr>
<tr>
<td>APPLESOFT</td>
<td>WATSON</td>
<td>CALL-151 C081 D00G</td>
</tr>
</tbody>
</table>

**WARNING!!!!!** GOING DIRECTLY FROM APPLESOFT TO INTEGER WILL DESTROY THE APPLESOFT PROGRAM IN MEMORY (HOPE YOU KNEW THAT ALREADY). TO PREVENT THIS GO FROM APPLESOFT TO MONITOR AND THEN WATSON.

<table>
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<td>WATSON</td>
<td>CALL-151 C080 D00G</td>
</tr>
</tbody>
</table>

**SCREEN DISPLAY**

The screen display is the same as the INSPECTOR except for the version #. When first accessed the version number is different from the INSPECTOR's. This makes it easy to tell which program you are using. The second difference will not be seen until the first sector is read from the disk. The version number will be blank, and a 4 digit HEX number will appear in the upper right corner of the display. This number is a checksum for the current buffer. This checksum is dependent not only on values in the buffer, but also on the order of the bytes. This means that if either the values or the order of the bytes is different, the checksum will be different. Using this checksum, it is very easy to compare sectors to see if they are the same.

**COMMANDS**

*(FINALY)*

+ = CONTINUOUS SCAN FORWARD

Causes WATSON to start scanning forward sector by sector. When any key is pressed, scanning will stop.

− = CONTINUOUS SCAN BACKWARD

Same as above except backward.

,(period) = INCREMENT BUFFER

Increments the Buffer location by 1 page in memory. For example, if the buffer is currently set to $0800, pressing this key will change the buffer to $0900.

,(Comma) = DECREMENT BUFFER

Same as above.

CTRL-E = EOR BUFFER

This command will EOR the entire buffer with any entered value. Certain programs encode information by using this method, causing the information to be unreadable. By using this command, these may be decoded. To use the command do the following:

1. Press CTRL-E. The cursor will move to the upper left.
2. Enter value to EOR with and press return.

CTRL-D = DISASSEMBLE WITH ASCII

Disassembles instructions starting at the Buffer Location. The ASCII values of memory will be displayed in the right column. This is very Convenient for looking at data areas in Machine language programs.

1. press "b"
2. select memory location
3. press ctrl-D
4. press any key to stop scrolling
5. press any key to start scrolling
Apple II Computer Info

6. press (RETURN) to exit

CTRL-$ = BUFFER TEST PATTERN

Fills buffer location with the values $00-$FF. Used to display character sets, or testing.

C = CONVERT HEX-DEC & DEC-HEX

1. PRESS "C"

2. ENTER NUMBER TO CONVERT. REMEMBER SIGN ($,-)

3. NUMBER WILL BE DISPLAYED IN THREE FORMS.

4. PRESS RETURN TO EXIT

M = MAP WITH FREE SPACE

This command is in THE INSPECTOR, but has been modified slightly. After pressing "M", a map will be displayed, an "M" will appear in the upper left-hand corner of the map, and the free space on the disk will be displayed at the bottom of the map, in the form of "F=xxx"

CTRL-T = DISPLAY ALL TRACK/SECTOR LISTS

Causes the disk to be scanned, and all sectors which could possibly be Track/Sector Lists will be displayed on a map. This is very convenient when trying to reconstruct a blow VTOC. To use this feature you should follow these steps.....:

1. Set the number of the track and sector you wish to begin scanning from.

2. Press "CTRL-T". The screen will clear below line 3, and a blank map will be displayed, containing a "T" in the upper left-hand corner. As WATSON scans the disk, sectors which may possibly be Track Sector Lists will be displayed on the map.

3. pressing any key will halt the scan.

4. After the last sector is read on the disk, the scan will stop.

CTRL-R = RECONSTRUCT VTOC

Reads the VTOC from a disk, then rebuilds the Track Bit Map from the Catalog Track. This is especially useful when a catalog is reconstructed from a blown disk, or a file is undeleted.

1. Insert the disk that you wish to be reconstructed in the drive 2.

Press "R". The Catalog Track will be read in the map. All files will be displayed as they are relocated 3. after the disk has stopped. The new VTOC may be saved to disk by pressing "W"

NOTE: DISK MUST HAVE A READABLE VTOC. IF NOT COPY ONE FROM ANOTHER DISK.

CTRL-K = KILL DOS ON DISK

Frees tracks 1 and 2.

CTRL-V = VERIFY THAT DISKS ARE ALIKE

This command may be used to compare two or more disks, and display a map of any sectors which are not the same. The first disk that is read will be placed in memory with sector checksums. As further disks are compared, their checksums will be compared to the previous disk, and any differences will be displayed on a map.....
Apple II Computer Info

Well I hope that helps all of you have needed WATSON docs.

-END-

DOCUMENT ls.6.boot.trace

Locksmith 6.0 Automatic Boot Tracer Soft-docs

by

The Ghost

GHOST NOTE: This is exactly from the hard docs of Locksmith 6.0, and I have
done this section first for those of you that can't wait for the full docs
to get started with this feature. I'm not sure whether I will be doing the
complete soft docs or not.

Introduction to ABT

[A] BOOT TRACER

The Automatic Boot Tracer is intended for use by the more experienced Apple
programmer. It is actually a sophisticated debugger which can simulate the
operation of the 6502 in the Apple. Because disk reading is simulated, it
is possible to actually "boot" a disk (whether protected or not) under
control of this debugger, and trace the boot code of the program.

Boot tracing, a normally manual and very tedious technique which is used
by the most sophisticated "hackers", can be performed automatically under
control of the Locksmith Automatic Boot Tracer.

To invoke the boot tracer, key 'A' from the main menu. You must have a RAM
card of at least 16K on your system for ABT to work. If you have an Apple //e
or Apple //c, the "built-in" 16K RAM will work.

Locksmith ABT will prompt you for the slot number of the RAM card. Key in a
digit from 0 to 7.

The ABT will be installed on the RAM card you choose, and the ABT will be
entered.

Note that in this manual, the ABT (automatic boot tracer) is also referred
to as the debugger and the simulator, since it actually simulates the
operation of the 6502, ad can be used as a powerful debugger.

The screen will clear and a line of inverse text will appear on the top line
of the display. The ABT is now operating.

If you press reset at any time, you will be placed in the Apple monitor and
can reboot another disk by entering the slot number followed by control-P.
Be careful not to reboot a disk which will automatically load over the ABT
on the RAM card you selected.

INFORMATION LINE

The top line of the screen which appears in inverse text is a one-line
status display which appears initially as follows:

FA62 CLD          A=00 X=00 Y=00 P=34 S=FD

The first 4 characters are the program counter (FA62 in this example). The
6502 opcode at the program counter is also displayed (CLD in this example).
Next, the values of the A,X, and Y registers are displayed. The "P=" value
is the processor status register contents, and the "S=" value is the stack
pointer.

At this time, press the R key followed by a key from A through X. Notice that
the information line disappeared and moved to another line of the screen. You can put the information line on any line of the screen that is convenient for the software you will be debugging / tracing. If you don't want the information line displayed, you can place it on row Y or Z (which are off the screen).

**IDLE MODE**

The simulator is in "idle" mode at this time. That is, the program to be simulated is not currently running, but is stopped at the address displayed by the program counter.

Press control-C at this time to enable the processing of 65C02 instructions. This is necessary if you are running on an Apple //c or an enhanced Apple //e.

Press the S key to start execution under control of the simulator. The ABT is now running simulated 6502 code. The simulator is now in "running" mode. Note the rapidly changing program counter. The "beep" you hear from the speaker may sound a bit different than the Apple "beep" which you are used to, but that is only because under control of the simulator it is slowed down considerably and sounds lower.

To stop the program being executed, press [control-Z]. You are now again in "idle" mode. Control-Z is the default character to stop execution of the simulated program, but it can be set to a different "stop" key if you need to be able to use control-Z with the software you are tracing. To change the stop key, first start the program being executed and return to "idle" mode by pressing control-Z. Then press control-X followed by any other key, and the other key will be used for the "stop" key.

To reset the "stop" key to control-Z, enter idle mode and press control-X, control-Z.

Enter idle mode. Now press the space bar and watch the information line. The space bar is used in idle mode to single step one instruction. A "+" or "-" will appear after each conditional branch instruction, depending on whether the branch will be taken (+) or will be taken (-).

While in idle mode, enter control-Y. You are placed in the system monitor, and can enter any monitor commands such as "L" (to disassemble 6502 code), and "E" (to enter the memory edit window). After entering the simulator, this memory can be "refreshed", insuring that no memory was inadvertently changed while in the system monitor.

To review the idle mode commands we have already learned:

Space-bar single steps one instruction. It can also be used to "single-cycle" (see below).

R moves the information line to rows A through X.

S starts the simulated program running and enters "running" mode.

Control-Y enters the system monitor. To re-enter the simulator, press control-Y again, followed by the Return key.

Control-X is used to change the program "stop" key, which stops the program and enters idle mode.

Other idle mode commands:

T (trace subroutine) executes the simulator program until a JSR or RTS instruction is fetched.

Control-R causes a "simulated" reset to occur. The program counter is fetched from SFFPC.

Control-I causes a "simulated" IRQ interrupt.

Control-F turns off the "simulated" IRQ pending flag.

Control-N causes a "simulated" NMI interrupt.

Control-Q quits the simulator and returns to the system monitor.

Control-RESET also exits the simulator.

"I" is used to get single-cycle mode. In single-cycle mode, the space bar cycles one 6502 processor cycle at a time, instead of an entire instruction step.

"G" is used to set instruction-step mode. It is valid only when on an instruction boundary (not on a cycle in the middle of an instruction).

"P" turns the "beep" flag on and off. The beep is sounded when idle mode is entered.

"C" turns the "click" flag on and off. The click is sounded for every keystroke when not in "running" mode.

Control-C turns the 65C02 flag on and off. The default value for this switch is "off". If 65C02 instructions are to be simulated, this flag must be on. The Apple //e (enhanced version) and Apple //c both contain 65C02 processors in their resident ROM code. Note that the simulator itself does not use 65C02 instructions. You can therefore run 65C02 instructions on a normal 6502 processor.

Control-K will take the next key pressed and place it in the keyboard character register. When instruction stepping through code that reads the keyboard, this key allows a convenient way to enter a keystroke to the program being traced, without entering the keystroke in "running" mode.

"ESC" is used to enter the simulator control menu. The simulator control menu is used to display and change internal simulator control information.

**SIMULATOR CONTROL WINDOW**

Press the "ESC" key while in idle mode. The simulator control window is displayed, and the cursor appears in the upper left of the window.

Use the RETURN key, and the left and right arrow keys to move the cursor around the simulator control window. These keys only move the cursor and do not change any information in the window. To change data anywhere in the window, simply position the cursor over the value to change and re-enter the desired value. To exit from the simulator control window and return to idle mode, press the ESC key again. If you wish to change only one value in the simulator control window, you may press control-C instead.

Let's look at the control window in detail.

The top line looks very much like the information line in idle mode, except that the program counter appears to be further to the right and no instruction is disassembled on the line. The number on the left of the line is for single-byte reading, single-byte writing, and memory editing. Enter a memory address value followed by 'R' to read, 'W' to write (also specify value to write), and 'E' to edit, using the memory edit window.

To change display modes for the simulator program (text, graphics, hi-res, low-res, page 1, page 2, fullscreen, mixed), key in the address to toggle (6C050-6C05F) and enter 'R'. When tracing a program in graphics mode, it is useful to put the information line on rows U,V,W, or X, and toggle mixed mode graphics. The simulator will display the information line on either text page 1 or 2, whichever is selected by the program being simulated.

Enter an address, followed by 'E' to enter the memory edit window.
While in the memory edit window, the memory is displayed in both hex and ASCII text. The cursor can be moved with the RETURN key and arrow keys. To change data, simply key in a new value in the appropriate address. The ESC key returns to the simulator control window, saving all changes to memory. If the changes made in the memory edit window are not to be made, enter control-C.

The second line of the simulator control window contains:

RU=65  0=I 1=I 2=I 3=I 4=I 5=I 7=I

"RU=65" This value (decimal 101), the "register update" value, represents the number of instructions that are simulated before the registers and program counter are updated on the screen, when in "running" mode. If this number is set small (01 for example), the registers will be updated after every instruction. This however causes the simulator to run less efficiently, because of the overhead involved in updating the information line.

**SLOT SPECIFICATIONS**

The rest of the second line displays the slot numbers and how they are to be used. Because the simulator resides on a RAM board (indicated by 'S' in the slot display, for "SYSTEM"), it must know about all other RAM boards and firmware boards if it is to correctly simulate their operation. Initially, the slots will be set to 'I' (invalid). Any reference by the simulated program to these invalid slots will cause the simulated program to stop and control is passed to idle mode. Valid slot specification values are:

'S' system (simulator) slot
'I' invalid
'D' floppy disk drive
'A' RAM card of 16K or 32K
'B' RAM card of 64K or more
'F' Firmware card or ROM card
'T' transparent

If the specification for a slot is "transparent", any commands for the device in that slot will be given without any checking or conversion by the simulator.

Transparent mode should be used for:

- Any devices such as RAM and ROM cards that bank select memory into the address range D000 to FFFF, which is used by the simulator.
- Any devices such as disk drives which are timing dependent, as the simulator runs much slower than the 6502 in native mode.
- Any devices that may use DMA (direct memory access) to modify memory from addresses $0000 to $07FF, as this memory is used by the simulator with a copy of the user's memory actually residing on the simulator's RAM board.

**ADDRESS COMPARE STOP**

The third line of the simulator control window starting with "PC" is the "PC compare stop" line. Up to four program counter values for "compare stops" can be specified. If the simulated program's PC equals one of these values, the simulator immediately enters idle mode. In addition, one "PC compare stop range" can be specified. To enter program counter stop values or a range, change the number (initially "0") to the number of stop addresses to be entered and then enter the addresses in the space provided.
passing them one at a time to the simulated program requesting them. Each time
the simulated program requests a nibble, the next nibble in the buffer is
returned. The simulated program never has to wait for a nibble by polling
the high-order bit of the disk register. Because of this, framing bit timing
is not reserved. In addition, the track is not synchronized to any other track
upon reading. Floppy disk writing is not supported.

When reading a floppy disk, the simulator maintains the nibbles of the most
current track on the simulator's system RAM card. This track image is valid
until either the slot or drive number is changed or reselected, or the
read/write head is stepped to a different track. Only if the current track
image is invalid will the real floppy disk be read again. Therefore, if
the user performs a "CATALOG" operation while under control of the simulator
and then changes the diskette and performs another "CATALOG" operation, the
catalog information from the first disk will still be displayed because the
catalog (located entirely on track $11) did not cause the head to change
tracks and invalidate the track buffer. To manually invalidate the track
buffer, change the slot specification to 'I' and back to 'D' while in the
simulator control window.

The simulator has code for "sector assist" built-in. This means that when
the simulated program requests a nibble followed by testing for disk register
ready and compare for $D5, the simulator immediately finds the next $D5 in the
track buffer and returns it to the simulated program, instead of requiring
program to ignore each nibble until the value $D5 is found.

The paddle I/O addresses ($C064-$C067 and $C06C-$C06F) are correctly simulated
if the code that accesses the I/O addresses is similar to the monitor routine
at $FB1E (PREAD). If the reference is not similar to the monitor routine, idle
mode will be entered.

- END -
The following parameters apply:

- **allow read and write sector oriented protected disks, and set internal parameters.**
- **In addition to these commands there are several parameters which can be modified to:**
  - **Copy memory to drive 1**
  - **Copy drive 2 to memory**
  - **Copy drive 1 to memory**
  - **Copy drive 2 to memory**
  - **Copy memory to drive 1**
  - **Copy memory to drive 2**
  - **Toggle verify flag after each operation**

**SPACE or RETURN** to start operation

In addition to these commands there are several parameters which can be modified to allow read and write sector oriented protected disks, and set internal parameters.

The following parameters apply:

- **0000=00 Requested output volume # or 0, if same as input volume.**
- **0001=08 Seek Off delay to read. DOS uses FF, the longest value. A delay of 00 is satisfactory and will reduce overall copy time by about 1 second.**
- **0014=80 Seek Off delay to read. Do not change to any number less than 80 or drive may begin writing before the seek mechanism has settled.**
- **0015=80 Seek Off delay for write. Do not change to any number less than 80 or drive may begin writing before the seek mechanism has settled.**
- **0016=08 Number of self-sync before address field, expressed in excess-5 notation.**
  - The default value will write 16 self-sync nibbles and the value of 01 will write 6 self-sync nibbles. Setting this value very low will cause over-writing of the subsequent address field, too high will not allow all 16 sectors to fit on a disk.
- **0017=08 Number of self-sync before data field. (See 0016.)**
- **0018=00 Alternate writing to drive 1 and 2. Setting to FF will cause alternate writing between 2 drives allowing very fast and efficient disk copying and use of memory.**
- **0019=00 Alternate writing to drive 1 and 2. Setting to FF will cause alternate writing between 2 drives allowing very fast and efficient disk copying and use of memory.**
- **0020=00 Clear track status display: Will clear the track status display.**
- **Pressing '/' will manually clear this display.**
- **Pressing 'N' will enter the Disk Editor (formerly Nibble Editor).**
- **Pressing 'B' will invoke the standard default copy method for copying protected disks. This will work with most protected software.**
- **Pressing 'F' will invoke the high-speed copy process. This only works for unprotected software and utilizes as much memory as you have available. The following commands are used in Fast Backup:**
  - **12 Copy drive 1 to drive 2**
  - **21 Copy drive 2 to drive 1**
  - **11 Copy to and from drive 1**
  - **22 Copy to and from drive 2**
  - **1 Read verify drive 1**
  - **2 Read verify drive 2**
  - **10 Copy drive 1 to memory**
  - **20 Copy drive 2 to memory**
  - **01 Copy memory to drive 1**
  - **02 Copy memory to drive 2**
  - **V Toggle verify flag after each operation**

**Control Keys-CTRL-R will read a track into buffer. CTRL-W will write track from buffer to disk. (IF NO ANALYSIS WAS DONE TO TRACK START AND END, LS WILL ATTEMPT TO WRITE ENTIRE BUFFER.)**

The default value will write 16 self-sync nibbles and the value of 01 will write 6 self-sync nibbles. Setting this value very low will cause over-writing of the subsequent address field, too high will not allow all 16 sectors to fit on a disk.

**Clear Track Status Display:**

The track status display is not cleared after each LS function. Pressing '/' will manually clear this display.

**Backup/Copy Disk:**

Pressing 'B' will invoke the standard default copy method for copying protected disks. This will work with most protected software.

Pressing 'F' will invoke the high-speed copy process. This only works for unprotected software and utilizes as much memory as you have available. The following commands are used in Fast Backup:

- **12 Copy drive 1 to drive 2**
- **21 Copy drive 2 to drive 1**
- **11 Copy to and from drive 1**
- **22 Copy to and from drive 2**
- **1 Read verify drive 1**
- **2 Read verify drive 2**
- **10 Copy drive 1 to memory**
- **20 Copy drive 2 to memory**
- **01 Copy memory to drive 1**
- **02 Copy memory to drive 2**
- **V Toggle verify flag after each operation**

**Control Keys-CTRL-R will read a track into buffer. CTRL-W will write track from buffer to disk. (IF NO ANALYSIS WAS DONE TO TRACK START AND END, LS WILL ATTEMPT TO WRITE ENTIRE BUFFER.)**

Control Keys-CTRL-R will read a track into buffer. CTRL-W will write track from buffer to disk. (IF NO ANALYSIS WAS DONE TO TRACK START AND END, LS WILL ATTEMPT TO WRITE ENTIRE BUFFER.) CTRL-V will verify track start. Place cursor over nibble you wish to start verification process. CTRL-I will insert nibbles into the current buffer. CTRL-D will delete nibbles. CTRL-F will find a pattern of nibbles. Pressing RETURN will search for string defined in parameter PATO, 'P' for a length (I-P). CTRL-B moves cursor to track start, CTRL-E to track end. '(' sets track start to current cursor, ')' sets track end. 'S' sets nibble under cursor to self-sync, 'N' sets nibble to normal, 'A' selects change mode. 'H' will display buffer on hi-res screen, 'BG' will print hi-res screen if your printer is capable of graphics output. The printer initialization string is defined in parm OR.CHARS, 'G' from text mode will display a picture of buffer using text characters. A period (.) means all nibbles in string are normal, an inverse ($) means self-sync, (+) means a combination of normal and self-sync. 'P' is the 16 sector address decode command. The first 4 numbers are the buffer address, next is the letter 'V' with a hex number (the volume), a two digit number with (/) another 2 digit number for track/sector. Following that is either '2', 'CS', or '***'. 'A' means either the check sum or trailer are incorrect. 'CS' means data field check sum is incorrect. '***' means data field info is incorrect or the disk is 13 sector. Pressing 'P' prints the current track in the buffer/download. CTRL-S will process the analysis portion of the current track procedure used after reading to analyze the nibble data and set pointers for later writing.

**Frame Bit Analyzer:**

Framing Bit Analyzer:

Framing Bits (sync bits or timing bits) are the zero bits which occur between nibbles of data on the disk. These nibbles are called self-sync bytes. 16 sector disks use 10-bit self sync or 2 framing bits. The analyzer performs statistical analysis using precise timing loops and reports the nibble data. The analyzer is entered by pressing 'F1' from the disk editor and reading in a track.
An example: Get into the disk editor and CTRL-R to read a track of nibbles. Place the start ("pointer to the start of the address field (G5 AA 96). Move the cursor down about 10 lines and set the end pointer ")'. Now move the cursor back up to the DE AA after the start of the address field.

The analyzer uses the data from the start pointer to the nibble immediately before the cursor as a "key". If you placed " before the D5 nibble and the cursor on the DE nibble, the key length would be 508 nibbles.

Enter the analyzer by pressing 'G'. The display shows the data being analyzed on the left with statistics on the right.

The following commands control the framing analyzer:
SPACE temporarily stops so you can examine statistics.
RETURN start again.
< and > allow scrolling.
T switches from nibble to timing stats.

The information on the right of the screen might look like the following:
R=0000
F=07
--- ++
0 02
10 25
22 03
32 00
4 01
5 00 18
6 08 00
7 00 07
8 03

The R= value is the number of reads which occurred. The F= value is the number of reads in which the "key" of the data was found on the track. Because of limited buffer space, if a large data length is specified, it is possible that the buffer may not fully contain the data specified.

The table of numbers represents the count of the differences of the data read with the "ideal" values of 10, 20, 30, etc. These error differences range from -9 to +9, with 0 being ideal. For example, in the table above, the count for +1 is 25 (hex). This means that there are 25 occurrences of nibbles with timing values of one greater than the ideal value (11, 21, 31, etc.). The *?F count of 03 indicates 3 occurrences of timing values exactly halfway between ideal values. This indicates that more examples are needed. The *?T is displayed when the values for the +, 6, 7, and 8 counts are non-zero, and indicates that more examples are needed.

When nibble data is displayed on the left side, the inverse/normal mode of each nibble indicates the number of framing bits after the nibble. Normal text indicates no framing bits. Both digits are inverse if 2 framing bits while only one digit means 1 framing bit. A flashing value is 3 or more framing bits.

If the nibble data has the high order bit turned off, this indicates that at least one read occurred where the data after the key did not match. This could have been caused by a loss of sync while reading or by the key being specified as too short which caused a non-unique part of the track to be analyzed instead of the desired part.

Load RAM Card:
------------------
Pressing 'L' from the main menu will cause tracks $12, $13, and $14 to be read into memory addresses $0000-$FFFF of a RAM card in slot 0 (or the top 16K of a 64K /6 or /6s).

If you have Inspector or Watson you can load it into RAM as follows:
1. Boot Inspector or Watson.
2. Enter Inspector or Watson, insert your LS disk and press the following:
   B D 0 <return>
   T 1.2 <return>
   CTRL-W
3. Then press CTRL-I 15 times.

This will write Inspector or Watson you your LS disk.
Your LS disk normally contains a copy of Integer Basic and the monitor on tracks $13 and $14. Inspector/Watson will go on track $12.

Parameters:

Pressing '*' will allow display and modification of parameters using their LS Programming Language variable names. To display the value of a parameter, enter the keyword "SHOW" followed by the parm name. For example, to display the current value of the parameter SLOT, enter SHOW SLOT. To change the value, enter the parm name and new value, SLOT 4. If you make an error, LS will beep and ignore your request.

The following patch is useful in reading sectors from a disk that reads unreliably. This patch to RWTS will defeat the head recalibration routine after an I/O error and try to read again: BDCC 4C C1 BD. To reset the normal value, use BDCC 10 F3 AD. To restore parms to their original values, just reboot LS.

Backup Using Custom Parameters:
------------------
The text editor function is used to automatically select a parameter file to be used to back up a disk. To enter this function, press 'N' for NEW (clears the buffer followed by 'g' for Backup).

If the parm disk is not in the drive, you will be prompted to insert it. A list of directory entries will be displayed. Move the "light bar" using the arrow keys to the proper selection (or CTRL-W, CTRL-J). CTRL-W and CTRL-F will move by pages. If you know the name, just type the first letter to find the proper selection quickly.

Pressing RETURN will enter your selection.

Loading A Parameter File:
------------------
Pressing 'L' will prompt you to load a parm file from the parm disk. Follow the directions under Backup Using Custom Params.

Saving A Parameter File:
------------------
New - Create Edit Work Area:

'N' will clear the text editor and start a new parm file entry.

Text Editor:
------------------
To enter the text editor, press 'E'. ESC will exit the text editor and return to the edit menu. 'N' clears the text editor for a NEW file.

The text editor is a line numbered editor. All lines entered are given sequential character numbers, which are displayed in inverse on the left of the screen. Line numbers are displayed in hex, and only those referring to a portion of a file with the "*" directive refer to LPL (Locksmith Programming Language).

Lines are displayed one line at a line with 2 positions for the line number and 38 positions for the entry (40 characters). If it is necessary to continue an LPL statement on another line, the minus (-) sign as the last character of the first line is needed.

There are 2 cursors used in the editor. If the line number is flashing, the cursor is on the line. If a single character is flashing, the cursor is within the line at the cursor position. This is important for insert and delete operations. Characters can be inserted at the current cursor position with CTRL-I, CTRL-D deletes characters.

Use 'X' for Syntax Checking after you have entered your text.

RAM Card Utilities:
------------------
RAM card utilities are selected with 'R'. They are self-explanatory and include a helpful RAM card test feature as well as being able to dump the contents of the ram card to and from main memory 16K at a time to locations 2000-4FFF as follows:

2000-2FFF RAM card pages D0-D0 alternate
3000-3FFF * D0-D0
4000-4FFF * E0-E0
5000-5FFF * F0-F0

Scan Disk:
------------------
'Q' will help you to determine what tracks are in use on a disk you are trying to copy. This utility will scan a disk for valid data. The display is hi-res and
runs from bottom to top of the screen. The first time you run the utility, you should use a normal disk and then try scanning from .5 to 22.5 in whole increments. This will show what a normal good disk looks like. The series of dots above each track number are the gaps of self sync bytes between each sector. Normally, on a 16 sector disk there will be 16-17 of these dots. A 13 sector disk will have 13-14 dots. On a 16 sector disk, one of the dots will be a little longer than the others, relating to self sync bytes before track 0. You will notice that the dots will either move up or down as you move from track to track. This is due to the time it takes to move the disk drive head from track to track.

While scanning from .5 to 22.5 in increments of .1 you will see very long white lines with no particular pattern. This means there is no valid data on that track. Some evidence of valid data such as short bursts of dots in cross-talk between adjacent half tracks. Spiral tracking or 1/4 tracking will show as a long band of white with a pattern of black between the white.

Automatic Boot Tracer:

The Automatic Boot Tracer (ABT) is intended for the more experienced Apple programmer, but may be the greatest utility on the LS disk. It essentially simulates the 6502 processor in your Apple in a very slow speed so you can boot trace disks, copy protected or not.

Pressing 'A' invokes the ABT function and requires a RAM card of at least 16K to work. The upper 16K in a /e or /c works fine. LS will prompt you for the slot of your RAM card, normally you select 0. ABT will be installed and then entered. (ABT will sometimes be called the simulator or debugger in this discussion.)

The screen will clear and an inverse line of text will appear on the top of the screen indicating ABT is now operating. Pressing <reset> now will enter the ABT and you can boot a disk with CTRL-P. Unfortunately, a disk that boots into the RAM card area will destroy the simulator function.

Information Line:

The top line in inverse normally starts out as:

FA62 CLD A=00 X=00 Y=00 P=34 S=FDF

The first 4 characters are the program counter address followed by the opcode to be executed. Next are the A, X, Y, and Z registers, the processor status register contents and the value of the stack pointer.

Pressing 'N' will move the address window. This moves the inverse status line to another location on the screen. Y or Z will move the line off the screen.

Idle Mode:

When the simulator is in idle mode at this time. The program is running but all activity has ceased at the address shown.

Press CTRL-C at this time to enable the 65C02 instructions, especially if you have the cursor in the middle of a line. The 'S' key will start execution under control of the simulator. The ABT is now running. The display will rapidly change as the boot is started. The "beep" you hear from the speaker will be slightly different than the normal Apple beep.

To stop the simulator, press CTRL-Z putting you into the idle mode. This is the normal stop key but can be changed if you need CTRL-Z in your program. To change it, stop the program with CTRL-Z, press CTRL-X followed by whatever key you want to assign to the stop function.

Enter the idle mode and press SPACE to single step the program. A "*" or "-" will appear after each conditional branch depending on whether or not the branch will be taken (+) or not (-).

In idle mode, CTRL-Y will place you in the monitor where you can use 'L' to disassemble the code. To reenter the simulator, press CTRL-Y <RETURN>. Before placing you in the monitor, the simulator saved low memory pages 00 to 07 in the RAM card. After reentering the simulator, this memory was refreshed, insuring that no memory was changed.

Other idle mode commands are:
- T - Trace subroutine until a JSR or RTS is fetched.
- CTRL-R - Cause a simulated reset to occur. The program counter is fetched from $FFFF.
- CTRL-I - Causes a simulated IRQ interrupt.
- CTRL-F - Turns off IRQ pending flag.
- CTRL-W - Causes simulated NMI interrupt.

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The third line of the simulator window starting with "PC" is the "PC compare stop" line. Up to 4 program counter values for "compare stop" can be specified. If the simulated program's PC equals one of these values, the simulator immediately enters idle mode. In addition, one compare stop range can be specified. To enter program counter stop values or a range, enter number (initially 0) to the number of stop addresses to be entered and then enter the address. To cancel, reenter 0. The "MR" line is the "memory read address compare stop" line. Again, up to 4 stops and 1 memory range can be set. Whenever the simulated program attempts to read one of these addresses, either by direct addressing, indirect addressing, or stack fetch, the simulator will enter idle.

The "MW" line is the "memory write address compare stop" line. It follows the same conventions as the MR line.

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Program Counter Swap:
The "PCSW" area of the window is the "program counter swap" control area. 4 address pairs can be specified here. If the PC equals the first value of the pair, the PC is immediately set to the second value, and execution continues. This is useful in eliminating slow timing loops, which are unnecessary in the simulator. Initially 3 pairs of PCSW values are given:
- FCB8 FCB3 - nullifies monitor wait routine
- BA00 BA10 - nullifies DOS 3.3 seek delay routine
- BD9E BD9B - nullifies DOS 3.3 motor-on wait routine

Program Counter Trace Table:
The bottom 8 lines of the window contain the PC trace table. The last 64 values of the program counter are kept in a circular fashion so when the simulator is halted, a history of the last 64 instructions can be examined.

Program Halts:
A program running under control of the simulator halts and the simulator enters idle mode whenever one of the following conditions are met:
- The step key is pressed.
- An invalid 6502 or 65C02 opcode is encountered. ??? will be displayed where the opcode should be.
- A JSR or RTS instruction is fetched while running in "T" (trace) mode.
- A read or write to the device select addresses of a slot marked as "I" (invalid) in the slot table.
- A compare stop occurs for PC, MR, or MW while running.

An attempt is made to write to the floppy disk.

An attempt is made to reference certain I/O addresses. Among these are $C060 and $C068 for either read or write.

Internal Operational Notes:
A few notes about the internal operation of the boot tracer/simulator/debugger: Floppy disk reading is simulated by reading an entire track of nibbles and passing them one at a time to the simulated program requesting them. Each time the simulated program requests a nibble, the next nibble in the buffer is returned. The simulated program never has to wait for a nibble by polling the high-order bit of the disk register. Because of this, framing bit timing is not preserved. In addition, the track is not synchronized to any other track upon reading. Floppy disk writing is not supported.

When reading a floppy disk, the simulator maintains the nibbles of the most current track on the simulator's system RAM card. This track image is valid until either the slot or drive number is changed or reselected, or the read/write head is stepped to a different track. Only if the current track image is invalid will the real floppy disk be read again. Therefore, if the user performs a CATALOG operation while under control of the simulator and then changes the disk and performs another CATALOG operation, the catalog information from the first disk will still be displayed because the catalog did not cause the head to change tracks and invalidate the track buffer. To manually invalidate the buffer, change the slot specification to "I" and back to "T" while the simulator is running.

The simulator has code for "sector-assist" built in. This means that when the simulated program requests a nibble followed immediately by testing for disk register ready and continues for 95s, the simulator immediately finds the next 95s in the track buffer and returns it to the simulated program, instead of requiring the program to ignore each nibble until the value 95s is found.

The paddle I/O addresses ($C064-$C067 and $C06C-$C06F) are correctly simulated if the code that accesses the I/O addresses is similar to the monitor routine at $FB1E ($PREAD). If the reference is not similar, idle mode will be entered.

One final note about ABT. It is not fast! A typical disk track took over 40 minutes just to simulate a typical 30 second game boot. However, the results and information gained were outstanding. Be patient!

LOCKSMITH PROGRAMMING LANGUAGE:

Locksmith Programming Language (LPL) is a user tool to specify how LS is to perform certain functions. With it, you can set up certain procedures to backup difficult to copy disks, search for information, repair damaged disks, etc. LPL commands, or statements, are collected into a file that can be entered from the keyboard and saved to a parm disk.

The .I (Include) Command:
Files are saved under their own names. For example, if a file called "BRODBUND" exists on a parm disk and it contains LPL statements you wish to use in the current file, use the following statement in your LPL file:

.I BRODBUND

The .I must appear as the first characters on the line, followed by a space and the name of the file. To include part of a file, specify the starting and ending line numbers:

.I TESTFILE,4-1F

would include only lines 4 through 1F of the TESTFILE. There is no limit to the number of .I statements you can use, except that the total number of lines cannot exceed 999. Each line in an LPL file is given a line number (in hex and inverse). Line numbers are really unimportant except for reference purposes. Lines cannot exceed 38 characters in length. The following is an example of an LPL line:

FIND D5 AA 96

This is an example of a single LPL statement. Multiple statements are allowed separated by a colon (:). Example:

.SLOT 6 : IN.DRIVE 1 : OUT.DRIVE 2

Spaces before and after colons are not necessary. If a line will exceed 38 characters it can be continued on the next line by coding a "-" as the last character on the line:

.DEPOSIT (DF) (DF) (DF) (DF) (DF) -
D5 AA 96 AA AA

You may insert remarks or comments if proceeded by an asterisk (*). Examples:

* SET SLOT NUMBER : SLOT 6
.SLOT 6 : * SET SLOT NUMBER

Both lines are equal, valid statements after a colon will be acted upon.

LPL Statements:
LPL statements consist of "tokens" which can be thought of as words in a sentence. Tokens are separated by blanks. The first token used in a statement determines the type of the statement. A token can represent variable names or parameter names, a constant, or a processing routine name. Statements can be grouped into the following categories:

- Assignment statement
- Processing
- Comment or blank line
Any statement may have a statement label preceding it. Statement labels are optional and are used for branching within the LPL file with the GOTO statement. A statement label begins with the keyword "LABEL", and is followed by a name. Label names can be of any length, and are any sequence of alphanumeric characters or any period, with the first character alphabetic. Examples:

```
LABEL READ.TRACK.AGAIN :
GOTO READ.TRACK.AGAIN
LABEL A2:ERROR:PRT "LENGTH ERROR" GOTO A2.ERROR
```

Types of Constants:
Several types of constants are used in LPL. They are described herewith.

Single byte constant (hex):
```
D5
6
00
```

(PF) single bytes in parentheses indicate self-sync.

Multiple byte constant (hex):
```
(FP) D5 AA 96
00 10 20 30 40 50 60 70 80
```

Double byte constant (hex):
```
1A70
```

Double byte constants usually represent addresses or lengths.

Track value constant (hex):
```
12.5
1A.75
11.0
0.
```

Track value constants contain a decimal point.

Single byte character constant:
```
"X"
'X'
```

'X' Note that either single or double quotes are used.

Multiple byte character constants:
```
"DON'T FORGET TO COVER NOTCH."
```

If a quote is to appear in the constant, use the other quote to delimit the string.

Multiple byte constants can consist of a mix of hex and ASCII:
```
89 'GRD' 8D
```

Special constants:
```
? - represents a "don't care" value when used in a search pattern.
```

Flag constants:
```
YES
NO
ON
OFF
```

These are equivalent to 0-FF, but are preferred because of their readability.

Types of Variables:
Variable names within LPL usually have a specified use for each name, although some general purpose names have been provided for the user. Several types of variable names are provided within LPL:

Single byte variable:
```
SLOT
IN.DRIVE
OUT.DRIVE
```

Multiple byte pattern/string variables:
```
GR.CHARS
PAT1
```

Pattern/string variables are variable length, and have a one byte length as the first byte of a variable. Although pattern/string variables have a variable length, each is allowed a maximum length of 15 (decimal).

Multiple byte variable:
```
RD.NIB.TRANS
SEC.TRANS
SELECT.TAB
```

These variables refer to multiple-byte areas of memory of fixed length, such as lookup tables.

If you have a need to refer to a byte within a multiple byte variable, you can code a plus sign followed by the displacement into the table:
```
NIB.TRANS +2F
```

Double byte pointer variable:
```
START
END
LEN
CURSOR
FTR.W
FTR.X
```

Double byte pointer variables can also represent length.

Track variable:
```
BEGIN.TRK
END.TRK
INCR.TRK
SYNC.TRK
```

Track variables can represent integral track values or 1/4, 1/2, or 3/4 tracks.

Flag variable:
```
SYNC
COUNT
SHOW.ADDR
```

Flag variables are single byte variables that contain a flag of YES/NO, ON/OFF, or FF/0 and act as switches which can be set and tested. Values other than these may have unpredictable results.

The Assignment Statement:
Used to assign a value to a variable. The variable can be assigned the value of a constant or another variable. The variable and the constant to which it is assigned must be of the same type. For example, a pointer variable can only be assigned to another pointer variable. Examples:

```
START CURSOR - Set the variable START (start of track data) to CURSOR (current cursor location).
CURSOR 2040 - Set variable of CURSOR to point to 2040.
SLOT 6 - Set one-byte var SLOT to value of 6.
BEGIN.TRK 12.5 - Set track var BEGIN.TRK to value of 12.5
COUNT YES - Set flag var to flag value of yes.
PAT4 D5 AA 96
PAT4 PAT7 - Both examples are valid.
GR.CHARS 89 'GRD' - Set string var GR.CHARS to 4 byte string consisting of hex 89 (CTRL-I) followed by ASCII "GRD".
DF.HDR3 B4 ; AF.HDR3 DD - Set the third data field header byte to B4 (normally AD) and third address header byte to DD.
```
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- **ERROR '5'** - Causes the character '5' to be placed in the current track of the status display area.
- **PAT4** DD FF
- **PAT5** D5 AA 96
- **CHANGE PAT4 PAT5** - Changes all occurrences of first string to second string for entire range of START to END.
- **ERASE** - Causes track to be erased on the output drive.
- **FORWARD TRK.LEN**
- **BACK TRK.LEN** - Cause CURSOR to be moved forward or back by the length determined by variable TRK.LEN.
- **CODE AD CUR.TRK 0A 0A 0A 0A 60** - CODE processing routine is provided for 6502 M/L programer.
- **PRT "ASCII TEXT TO PRINT"** - The PRT routine prints data on screen. If last byte is blank, no new line is started. Example:

```plaintext
PRT "TRACK INCREMENT IS " : SHOW INCR.TRK
```

Some processing routines function slightly differently depending on whether in "nibble-mode" or "byte-mode". The nibble-mode is used if last read or write is NREAD or NWRITE, then byte-mode is used. The routines which function differently depending on whether in nibble or byte mode are FIND, VER, and CHANGE.

In nibble mode, a zero value in the pattern specified acts as a "don't care" value. It can be either coded as '?' or '0'.

In byte mode (used when reading or writing sectors), the zero value in a pattern is significant. Example:

```plaintext
NREAD : FIND D5 00 96
```

Performs a nibble-read of the current track, and places the CURSOR on the first occurrence of a D5 value, followed by any value, followed by a 96 value.

The following processing routines accept either string vars or multiple byte constants:

- **FIND**
- **VER**
- **REP**
- **DEPOSIT**

The nibble or byte mode can be changed manually by setting the flag variable BYTE.MODE to YES if byte mode is desired, or NO if nibble mode is desired.

**Track Procedures:**

A track procedure is a sequence of LPL statements that are to be executed for each track that is being copied. The track procedure is defined with the BEGIN.PROC and END.PROC statements. The procedure is then later invoked for each track to be processed, by the processing routine which will invoke the track procedure. There is currently only one procedure to invoke this processing, the COPY procedure. For example:

```plaintext
BEGIN.PROC
  ... track procedure A
...
```

LPL processing routines (algorithms in earlier versions of LS) are routines that the user can invoke on demand using LPL. Some of the routines are complex and are driven by many variables, while others are simple and operate using only one or two variables. Some routines use parameters consisting of constants or pointers passed to them and some accept no parameters at all. The valid syntax of each processing routine is described in an addendum, but we will describe some of the routines here and give some examples of their use. The Parm disk has excellent examples of routines.

- **ABORT"DATA NOT FOUND"** - Abort current operation and return to LS main menu.
- **PAUSE"ENTER 1,2 OR 3:"** - After a keypress, the value of the key is placed in the single-byte variable KEY.IN
- **PRT"DISK MUST BE WRITE/ENABLED"** - Prints message on screen. If last character is blank, cursor remains on same line.
- **SHOW SLOT** - Print value of variable named slot. If flag variable SHOW.ADDR is YES or NO, the address of the variable SLOT is also printed.
- **GOTO READ.AGAIN** - Branches to label READ.AGAIN elsewhere in LPL.
- **FIND D5 AA 96** - Search from current cursor position until END pointer, searching for D5 AA 96.
- **FIND PRT** - Same as previous example, except search for the contents of string var PRT.
In this example, the first 2 copy procedures will use track procedure A, the second two will use procedure B.

The LPL statements within the track procedure can be used to process a track in one of two modes. Either in nibble-mode or sector-mode. Nibble processing routines are NREAD, NWRITE, NVERIFY, which process a track in the form of nibbles. Sector-mode processing routines are TREAD, TWRITE, TVERIFY which process a track in the form of 16 separate sectors.

The format of a COPY command is: COPY <begin track> <end track> <track increment>. The values are stored in the variables BEGIN.TRK, END.TRK, and INCR.TRK.

If tracks are to be synchronized or nibble counting is to be used, set track variables SYNC or COUNT to YES. The SYNC and COUNT keywords are not set to YES as in LS version 5.0.

LPL Error Codes:
During execution of the LPL program, some errors may be encountered which cannot be checked for during syntax checking. If an error is found, processing stops and the following message is displayed on the screen:

LPL CODE ABORTED

ERROR CODE xx
where xx is one of the following:
01 GOTO statement encountered without finding the matching LABEL statement.
02 BEGIN.PROC statement encountered while already within a track procedure.
03 END.PROC statement encountered while already outside a track procedure.
04 COPY statement encountered within a track procedure. The COPY statement invokes a track procedure and cannot occur within one.
05 USE.DEFAULT.PROC encountered while within a track procedure.

Data Field Nibble Encoding Table:
The following translate table is used for calculating data field checksums. It is described in the chapter on the disk editor describing the 'D' command.

<table>
<thead>
<tr>
<th>00:96</th>
<th>01:97</th>
<th>02:9A</th>
<th>03:9B</th>
</tr>
</thead>
<tbody>
<tr>
<td>04:9D</td>
<td>05:9E</td>
<td>06:9F</td>
<td>07:A6</td>
</tr>
<tr>
<td>08:A7</td>
<td>09:AB</td>
<td>0A:AC</td>
<td>0B:AD</td>
</tr>
<tr>
<td>0C:AE</td>
<td>0D:AF</td>
<td>0E:B0</td>
<td>0F:B1</td>
</tr>
<tr>
<td>14:B9</td>
<td>15:BA</td>
<td>16:BB</td>
<td>17:BC</td>
</tr>
<tr>
<td>18:BD</td>
<td>19:BE</td>
<td>1A:BF</td>
<td>1B:CB</td>
</tr>
<tr>
<td>1C:CD</td>
<td>1D:CE</td>
<td>1E:CF</td>
<td>1F:D3</td>
</tr>
<tr>
<td>28:DF</td>
<td>29:E5</td>
<td>2A:E6</td>
<td>2B:E7</td>
</tr>
<tr>
<td>2C:E9</td>
<td>2D:EA</td>
<td>2E:EB</td>
<td>2F:EC</td>
</tr>
<tr>
<td>30:ED</td>
<td>31:EE</td>
<td>32:EF</td>
<td>33:F2</td>
</tr>
<tr>
<td>34:F3</td>
<td>35:F4</td>
<td>36:F5</td>
<td>37:F6</td>
</tr>
<tr>
<td>38:F7</td>
<td>39:F9</td>
<td>3A:FA</td>
<td>3B:FB</td>
</tr>
<tr>
<td>3C:FC</td>
<td>3D:FD</td>
<td>3E:FE</td>
<td>3F:FF</td>
</tr>
</tbody>
</table>
Prologue: Imagine you helping Lucifer. But it's for a good cause.

It's a saga of the good guys vs. the bad guys... and the bad guys don't come any worse or badder. Hitler, Mussolini, Reverend Jim and Satan himself. You must foil Hitler's sinister plot to overthrow Lucifer. You aren't doing Lucifer any favors. It's the only way to get the heck out of HELL. You have to go against some of the biggest bullies in history. This is your chance to make 'em pay.

Introduction to Lucifer's Realm

Your hear the doctor telling the nurse "he will die very soon". You go to the wrong place, but amazingly enough, Satan, for the first time since humanity gives you an option to go to Heaven.

If it was easy, Satan would have done it himself, and since eternity is a pretty long time, he knows it will take a long time to complete the adventure.

You should be warned: If it was easy, it wouldn't be any fun. In "Lucifer's Realm", commands don't always work as on earth, also, you must be forewarned that even if Satan allows you to go to Heaven, you must get permission to go.

Moving Around Lucifer's Realm

Remember, you are in hell. "Lucifer's Realm" recognizes two word commands to be input as verb followed by a noun. You must type in the full words, no abbreviations. In Hell, Directions can be different, and the length of the two forks, followed by the data fork is based on MacBinary): the transmitted data starts with a 128-byte header containing the file's directory information. Early Mac communication programs actually transmitted files in three pieces which were glued back together at the receiving end: this works when connected directly to another Mac, but non-Mac host computer systems generally are not prepared to handle such files. So, a standard was developed to allow all the parts of a Mac file to be appended into a single data stream, with imbedded information to allow the original file to be recovered unchanged.

Mac files tend to be pretty large, so it is a common practice to worry about...

MacDown is a utility for converting some downloaded Macintosh files into formats usable on Apple II-series computers.

MacDown 1.0 Copyright 1988 Jason Harper

MacDown is a utility for converting some downloaded Macintosh files into formats usable on Apple II-series computers. It will run on any Apple II that supports ProDOS (in other words, at least 64K memory), but the screen displays will probably not be readable on an Apple [II|+|I|e|, even with a lower-case adapter. The program is freeware, meaning that it is a copyrighted work but I give users the right to freely distribute it and upload it to computer services.
to apply some sort of compression to them. There are two compression methods in current use: PackIt and StuffIt. Such files can be easily identified because their names will end with .PIT or .SIT, respectively. Another advantage of using these schemes is that related files (a program and its documentation, for example) can be packed into one file for transmission: unlike Binary II, the current implementation of MacBinary does not allow for multiple files. StuffIt is the more recent and more efficient of the two formats: unfortunately, its author has not seen fit to release enough information on the format to allow decoders to be developed for other computers. PackIt is, however, publicly defined and MacDown will allow you to decompress such files for use on an Apple II.

Mac file formats.

Mac files are identified by a 4-character filetype code and a 4-character creator code: for example, a MacPaint picture has filetype=PNTG and creator=MPNT. A MacPaint-format picture generated by some other program will still have a filetype of PNTG but will have a different creator. Some common types:

* PNTG: MacPaint picture. MacDown will allow you to view these in HiRes graphics. If you have an Apple Igs, see my SHRConvert utility which will convert these files directly into several Igs SuperHiRes formats.
* TEXT: plain text. Usable with any Apple II program that deals with text, although some Mac characters (accented vowels, for example) will not translate properly.
* APPL: application program. Totally useless on a II.
* PIT: PackIt-format compressed file.
* SIT!: StuffIt-format compressed file: currently unusable. There are numerous other Mac file formats, such as word processor documents, that could be used on an Apple II if someone would write a converter for them (hint hint).

Using MacDown.

MacDown is a ProDOS SYStem program, so you can run it from Basic by typing "-MACDOWN" (without the quotes, of course). The program should be fairly easy to use: it is controlled entirely with the arrow keys (to move the highlighted selection up or down), Return (to accept the current selection), and Escape (to go back to the previous menu). The trickiest part is the file selector routine used in various parts of the program: I'd suggest that you put an unimportant disk in a drive, select 'ProDOS commands' from MacDown's main menu, and play with it for a while. Pay close attention to the [set prefix here] option at the top of each directory listing: you must use that command at some point to select where you want converted Mac files to go. If you're trying to put converted files on a different disk, both disks must be online at the same time: disk swapping is not allowed. All downloaded Mac files should first be processed with the 'Extract MacBinary' command. If the file is PackIt-compressed, you should then use 'De-compress PackIt' on the extracted file. You can then use 'MacPaint => hires' to display any picture files. For each file produced by the conversion process, you will be presented with some info about the file, and given options to save or not save each fork. You generally won't want to save the resource fork of any file, since it is not meaningful on an Apple II. Data forks will be saved with the closest ProDOS equivalent to the original Mac filename: resource forks will be saved with the same name with '.R' appended. If a name conflict arises, you will be given options to cancel, save with a different name ('.N' will be added to the name), rename the existing file ('.O' will be added), or delete the existing file. Note that PackIt files will take a long time to process, even if you aren't saving either fork.
-------

--- MAGIC WINDOW II CONTROL CODES ---
--- ENTERED BY THE KNIGHTS ---
-------

KEY FUNCTIONS:

A  TABULATE KEY
B  TO ENTER CTRL KEY ON SCREEN
C  TO END OF TEXT
D  DELETE CHARACTER
E  TO BEGINNING OF TEXT
F  INSERT CHARACTER
G  GLUE BELOW TEXT AT CURSOR
H  LEFT <-
I  INSERT LINE ABOVE CURSOR
J  JUSTIFY LINE AT CURSOR
  LEFT-MOVES TEXT AT CURSOR TO LEFT
  RIGHT-MOVES TEXT AT CURSOR TO RIGHT
  CENTER-MOVES TEXT AT CURSOR TO CENTER
  EXPAND-EVENLY SPACE TEXT AT CURSOR
  PACK-REMOVE EXCESS SPACES IN TEXT AT
CURSOR
  SKIP-MOVE TO NEXT LINE FOR JUSTIFICATION
K  KILL LINE
L  LEFT OF CURSOR DELETE
M  RETURN TO NEXT LINE
N  NEXT TEXT, DOWN AND RIGHT
O  DELETE LINE
P  PAGE
Q  UP
R  RECALL DELETED TEXT
S  TABULATE RIGHT
T  TEXT INSERT LEFT OF CURSOR
U  RIGHT -->
V  RIGHT AND COPY ABOVE TEXT
W  UP BY 12 LINES
X  DOWN BY 12 LINES
Y  AUXILIARY FUNCTIONS
  EXIT TO EDITOR - RETURNS TO EDITOR
  ASSIGN SEARCH STRING SEARCHES FOR - SPECIFIED CHARACTER
  ASSIGN TITLE LINE - TITLES PAGE
  CLEAR ALL TAB STOPS - CLEAR TAB STOPS
  KEY SET ONE "}\/
  KEY SET TWO "}\/
Z  DOWN
€  SUBSYSTEM MENU
  EDITOR SUBSYSTEM - TO EDITOR
  FORMAT SUBSYSTEM - TO CHANGE FORMAT
  FILER SUBSYSTEM - TO DISK DRIVES
  PRINTER SUBSYSTEM - TO PRINTER
  CONFIGURATION SUBSYSTEM - TO CHANGE CONFIGURATION
  RETURN TO BASIC - END SESSION
^  SET TAB AT CURSOR
}  CLEAR TAB AT CURSOR
-------
APPLE II COMPUTER INFO

DOCUMENT mario.brothers

BY: THE DRAGON LORD

AS YOU ALL KNOW THIS IS THE NEW, AMAZING GAME BY ATARISOFT.

WHEN THE FIRST TITLE PAGE APPEARS USE THESE KEYS:

CONFIGURATION

[S] - TOGGLES SOUND
[K OR J] - FOR KEYBOARD OR JOYSTICK
[1 OR 2] - FOR 1 OR 2 PLAYERS, IF PLAYING 2 PLAYER ONE IS CONTROLLED BY JOYSTICK AND PLAYER 2 IS CONTROLLED BY THE KEY BOARD.
[C] - THE WILL ALLOW YOU TO CHANGE THE CURRENT CONFIGURATION OF THE KEYBOARD.
[< ->] - THE ARROWS WILL CHANGE THE STARTING LEVEL, UP TO 25
[SPACE BAR] - PRESS SPACE WHEN ALL DONE

STARTING OUT

THE OBJECT OF THE GAME IS TO KILL ALL THE MONSTERS BEFORE THEY KILL YOU. SIMPLE ENOUGH. TO KILL A MONSTER HIT THE MONSTER FROM THE BOTTOM, AFTER THEY ARE ON THEIR BACKS RUN OVER THEM. ANOTHER WAY OF KILLING THEM IS TO HIT THE POW IN THE MIDDLE OF THE SCREEN. SOME MONSTERS [THE CRABS] HAVE TO BE HIT TWO TIMES, WHILE OTHERS JUST ONCE.

ENEMIES

TURTLES:

MOVEMENT: SLOW UNTIL ONE LEFT
TYPE OF MOVEMENT: WALKING
# OF HITS TO DIE: ONE

CRABS:

MOVEMENT: MEDIUM UNTIL ONE LEFT
TYPE OF MOVEMENT: WALKING
# OF HITS TO DIE: TWO

FIREFLIES:

MOVEMENT: MEDIUM UNTIL ONE LEFT
TYPE OF MOVEMENT: BOUNCING
# OF HITS TO DIE: ONE

FIREBALL [2 TYPES, BOTH THE SAME]:

MOVEMENT: MEDIUM, UNLESS KILLED ONCE ALREADY.
TYPE OF MOVEMENT: FLOATING IN MID-AIR
# OF HITS TO DIE: ONE

GLACIER:

MOVEMENT: NONE, FORMS ON THE CEILING, THEN DROPS.
TYPE OF MOVEMENT: DROPS PRETTY FAST
# OF HITS TO DIE: CAN KILL WHEN IT IS JUST FORMING BY HITTING IT.

ICEBALL THINGYS:

MOVEMENT: MEDIUM
TYPE OF MOVEMENT: SLIDES ALONG GROUND WHEN IT STOPS IT FREEZES TO THE FLOOR.
# OF HITS TO DIE: ONE

POINT SYSTEM:

KNOCKING MONSTER OVER..........10
RUNNING OVER THE FIRST MONSTER...800
RUNNING OVER THE SECOND MONSTER...1600
RUNNING OVER THE THIRD MONSTER...2400
RUNNING OVER THE FOURTH MONSTER...3200
RUNNING OVER THE SPINNING DISKS...800
KILLING THE ICE BALL THINGY......500
KILLING THE GLACIER..............0
KILLING FIREBALL [THE ORANGE]....1000
[THE BLUE]......200

CONTROLS:

RIGHT: -=>
LEFT: <=-
JUMP: SPACE BAR

THE OBJECT IS TO GET ALL THE SPINNING DISKS BEFORE THE TIMER RUNS OUT, EACH IS WORTH 800 POINTS. IF YOU GET THEM ALL YOU GET AN ADDED 8 THOUSAND BONUS.

EXTRA MEN:

YOU START OUT 5 MEN AND GET ONE MORE AT 20000.
For a one player version of the Battle of Agincourt, just run AGINCOURT.1PLR (it is a SYS16 type file). The file MEDEVL.WAR.2PLR (also a SYS16 type file) is the two player version master program for MEDIEVAL WAR. The file GAMEDATA is a TXT file containing the data for a generic sample version battle for this game. Please rename GAMEDATA to SAMPLE.GAME and then rename either AGINCOURTDATA.2PLR or CRECYTDATA.2PLR to GAMEDATA to play either the two player version of the Battle of Agincourt or a two player version of the Battle of Crecy.

This is now the first real version, one in that it is the first two player version I have released and two in that I think all of the obvious problems have been worked out. I will say from the start that I am not happy with both players having to use the same mouse for input, but until I find a better solution it will have to do (any suggestions are most welcome). This is also my first attempt at a wargame and I need some feedback from other gamers as to what is right and what needs changing. So don't be afraid to send me some criticism, that's why I sent this version. The game also needs some additions, better graphics, easier user interaction, etc. Unfortunately, I don't have a hard drive and only have one 3 1/2 drive (which is supposed to be little to use APW). The program is as large as I can produce with the work-arounds I use. I am planning on getting the Harddrive before I produce the final version (in a few months or so hopefully).

**This info is included for those interested, if you are also curious about Crecy there are many good books on the subject of medieval warfare. Sorry I am too lazy to write about both battles. The battle already named GAMEDATA is just a fictional battle between two evenly matched sides on terrain demonstrating all the types of terrain.**

This was the info included with the one player version.

The battle of Agincourt was chosen because it seemed to be an easy game for a one player version (plus it is a favorite of mine). Here is a little background on the battle (that those who know the history of the Hundred Years War will please forgive the liberties I took with the game, most are due to my lack of finding a way to incorporate the into the game). In 1415, an English armada carrying Henry V and 8000 archers and 2000 men-at-arms toward France. The English landed in Normandy, near to the port of Harfleur. The Kings plan was to take the port and then march on Paris. This plan was changed after a month long siege in which the English won but lost over a third of their men. King Henry decided that attempting Paris was foolish, so he decided to march across northern France to Calais. They of course did as much damage as possible in the process. To make a long story short, after a long and gruelling march the French trapped them into a fight. Much to the frenchmen's misfortune they chose a plowed and muddy field just outside of the town of Agincourt. The field was bounded by woods and the field was sloppy with deep mud. There wasn't nearly enough room on the field to spread out the French men-at-arms and in their heavy armor they were virtually immobile in the mud. Henry V arrayed his men with archers interspersed with men-at-arms and protected by sharp stakes planted in the mud in front. The French arrayed into three major lines, the first and second were men-at-arms on the flanks they had mounted men-at-arms and inbetween were crossbowmen. The back row was mostly mounted men-at-arms. Most of the morning was spent staring at each other across the field until finally King Henry decided that if he didn't do some- thing he and his exhausted would lose by default (the odds were against them, 5000 archers, 1000 men-at-arms against 60,000 Frenchmen). He called an advance and the line advanced to within bow range and the English
longbows began a deadly rain on the French front line. The French attempted to counterpunch with cavalry charges but the French cavalry was destroyed on the stakes. Then the front line of French men-at-arms advanced into the arrows and they were virtually decimated before they even reached the English line. And the English knights destroyed what was left. Those that fled were trampled by the advancing second line which met the same. What was left, other than a few colorful incidents, was for the French to flee the field defeated by the English longbow.

This is hopefully the first in many battles I will upload (as well as a program to produce any game you want). This version is designed for ancient combat, but will produce a modern version soon also. So send suggestions for battles (both modern and ancient). I will try to briefly explain how to play the game, please send me a message with any questions you have.

The screen is divided into three parts: top row - lists each sides morale, score, and the time. The English morale is the leftmost number (50 to start). Next to this is their score. In the middle is the time and to the right of the the time is the French score and morale in that order. All the way over on the right side is a blue square which is the exit button to end the game.

Middle map - The map and units. the following types of terrain are possible (the number following them is the number put into the battle file).

- clear
- 1 upslope east
- 2 upslope west
- 3 upslope n or s
- 9
- hedge
- 3 woods
- 4 water
- 5 ford
- 6
- ditch
- 7 town
- 8

Each area (which is five pixels square) also has an elevation level 0 to 4 (0 lowest), a movement rating 0 to 9 (0 being easiest to move over, the highest movement rating is 5 for cavalry so any rating above that will act as a five rating. later versions of the game will probably rate units for rating types so it may become applicable.), a combat rating from 0 to 9 (0 being worse ground to fight from and 9 the best defensive terrain around. I do not recommend a number higher than 5 or so because a unit should never be invincible). several things to think about are that a unit gets the benefit of the spot under the center of its symbol. The combat section takes many things into account, a unit at a higher elevation has an advantage as well as the type of terrain. In the battle files I have created, for example the hedge terrain type. The Hedge is near the west edge of the map and one side (the red side) will probably use it for defense. So I made the combat rating of all terrain to the west side of the hedge for 15 pixels a higher number. That way when a red unit is sitting right behind the hedge, the hedge will increase their strength as it would in reality. The same is try beside all slopes, the areas at the top have higher combat numbers so a unit at the top will have an advantage and the movement numbers on the slope are higher so moving up the slope is slower (the slowest a unit can move is 1 pixel per turn so a unit moving at 1 will move the same speed over all terrain. You can really see the affects when you send out cavalry at 5. The only terrain affect on archery is elevation (firing down on a unit is a big advantage). For more info read the section on the battle file.

The unit types are - A unit with two lines is men-at-arms (ie infantry). Units with one diagonal line are mounted men-at-arms (ie Cavalry). And units with a dot in them are archers (ie artillery). The units have a dot on the edge (the left edge for the English). To move a unit (the English are the only side you can play right now) you point the mouse arrow at the unit and click. The command region will appear and you can give the unit its orders.

To exit out of command mode and restart the battle (the game is in suspense while you are using the command screen) just click in the lower region not in a button.

Lower command/message region - during play messages will appear in this area. These messages are anything from what a unit is doing to another injury of a leader. When you click on a message number the main command screen will appear. this will be described in detail later. Other screens that can be called up are the unit info screen which tells you strength and morale and other info on the unit and the leader screen which lists leader and their condition. To exit a screen click in the command screen not in a button (there are no buttons on the message, leader, and unit info screens)

COMMANDS - Different commands that can be given are:

- movement - to command a unit to move just click where you want the unit to move and make sure the unit is facing that direction. units will not move any direction except forward. Movement is affected by terrain and other units zones of control.

- facing - turning a unit is done by clicking in one of the triangles on the left side of the command screen. The top triangle will turn the unit counterclockwise and the other triangle clockwise. a unit can't turn when in another units ZOC (zone of control).

- speed - the speed will be shown in the speed box in the lower left side. the maximum for units is: cavalry - 5 infantry - 2 archers - 3

- clicking on the number lowers it by one, and clicking on zero changes it to the fastest speed. A unit with a movement of zero will not move.

- formation - the formation affects speed and combat effectiveness, you can change the formation by clicking on the present formation which is displayed in the box. some of the formations are line, wedge, march. March is best for free movement but terrible for combat. wedge is good for defense but then not as good for offensive. Line is best for attacking but not defending, sometimes because of combat a unit is disorganized and you cannot affect a disorganized unit until its leader gets control of it and gets it organized. this is done automatically, you just have to wait (if the leader is human though the unit will never get organized so just use it as best you can).

- charge/fire - To use this click on the charge/fire button (the button will invert) then click on the unit you want to charge or fire at (then the button will be outlined). Cavalry and infantry can charge, archers fire arrow at it. A cavalry charge can disorganize an enemy unit. A cavalry charge can disorganize an enemy unit. a cavalry charge can disorganize other units ZOC (zone of control). The Hedge is near the west edge of the map and one side (the red side) will probably use it for defense. So I made the combat rating of all terrain to the west side of the hedge for 15 pixels a higher number. That way when a red unit is sitting right behind the hedge, the hedge will increase their strength as it would in reality. The same is try beside all slopes, the areas at the top have higher combat numbers so a unit at the top will have an advantage and the movement numbers on the slope are higher so moving up the slope is slower (the slowest a unit can move is 1 pixel per turn so a unit moving at 1 will move the same speed over all terrain. You can really see the affects when you send out cavalry at 5. The only terrain affect on archery is elevation (firing down on a unit is a big advantage). For more info read the section on the battle file.

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- clicking on the number lowers it by one, and clicking on zero changes it to the fastest speed. A unit with a movement of zero will not move.

- formation - the formation affects speed and combat effectiveness, you can change the formation by clicking on the present formation which is displayed in the box. some of the formations are line, wedge, march. March is best for free movement but terrible for combat. wedge is good for defense but then not as good for offensive. Line is best for attacking but not defending, sometimes because of combat a unit is disorganized and you cannot affect a disorganized unit until its leader gets control of it and gets it organized. this is done automatically, you just have to wait (if the leader is human though the unit will never get organized so just use it as best you can).

- charge/fire - To use this click on the charge/fire button (the button will invert) then click on the unit you want to charge or fire at (then the button will be outlined). Cavalry and infantry can charge, archers fire arrow at it. A cavalry charge can disorganize an enemy unit. A cavalry charge can disorganize other units ZOC (zone of control). The Hedge is near the west edge of the map and one side (the red side) will probably use it for defense. So I made the combat rating of all terrain to the west side of the hedge for 15 pixels a higher number. That way when a red unit is sitting right behind the hedge, the hedge will increase their strength as it would in reality. The same is try beside all slopes, the areas at the top have higher combat numbers so a unit at the top will have an advantage and the movement numbers on the slope are higher so moving up the slope is slower (the slowest a unit can move is 1 pixel per turn so a unit moving at 1 will move the same speed over all terrain. You can really see the affects when you send out cavalry at 5. The only terrain affect on archery is elevation (firing down on a unit is a big advantage). For more info read the section on the battle file.

The unit types are - A unit with two lines is men-at-arms (ie infantry). Units with one diagonal line are mounted men-at-arms (ie Cavalry). And units with a dot in them are archers (ie artillery). The units have a dot on the edge (the left edge for the English). To move a unit (the English are the only side you can play right now) you point the mouse arrow at the unit and click. The command region will appear and you can give the unit its orders.

To exit out of command mode and restart the battle (the game is in suspense while you are using the command screen) just click in the lower region not in a button.
within there range, archers will fire at the enemy unit.

red rectangle - will bring up the unit info screen.

green rectangle - will show the leader screen.

BATTLE FILE - The battle is loaded when you click on the initial screen. The game loads the file GAMEDATA from the directory the game is in. I have uploaded a game already called GAMEDATA, and two historical battles - AGINCOURT.WAR and CHERY.WAR. To use either of these or any file you create just rename it GAMEDATA.

If you would like to create your own battles just create an ascii text file of the format of the ones I uploaded.

section 1 is one line. the line is all numbers these are:
2 digits - the number of red units
2 digits - the number of blue units
2 digits - reds morale at start
2 digits - blues morale at start
1 digit - tens digit of hours at the start of game
1 digit - tens digit of minutes
1 digit - units morale to start (1 to 5)

section 2 is the map. there are four lines per row on the map. since there are thirty rows to the map there will always be 120 lines. there are 66 digits to each line, one for each column on the map. the first line is the type of terrain, the second is the column movement rating, the third line is the combat rating, and the fourth is the terrain level. then you start over again and do the four lines for the next map row.

section 3 is the leader list. each unit starts with five leaders so the number of lines is this section is 5*(number of red units + number of blue units). each line has 2 digits and the leaders name. the first digit is the leaders value (1 to 5). the second digit should always be a 3 because that means the leader is alive and leading the unit. the last is a string. the program reads the string(no quotes necessary) until the first blank space or the end of the line. if you wish blanks in the name put "'s in place of the blanks and the program will replace them with blanks.

section 4 is the list of units. there will be one line for each unit in the game (ie. red units + black units) the red units should all be first and the black units second, other than that the order does not matter. the numbers are:
3 digits - x coordinate (ie side to side) the screen is in 320 mode so anything outside the 0 to 320 range will immediately be destroyed (leaving the map destroys a unit) a units coordinates are for the upper left corner of the unit so if you give it a coordinate of 320 it will actually be drawn of the map.
3 digits - y coordinate (ie. top to bottom) the limits are 10 to 160.
1 digit - unit type (right now there are 3 types possible). 0 - cavalry 1 - infantry 2 - archers
2 digits - units strength (1 to 99)
1 digit - initial facing 1 - north 2 - northeast 3 - east 4 - southeast 5 - south 6 - southwest 7 - west 8 - northwest
1 digit - units initial speed setting (units are not moving at the start but it is annoying to have to change the setting of each one at the start) the maximums are: cavalry - 5 infantry - 2 archers - 3

3 digits - the distance the units bows will reach if they are archers (the 3 digits must still be there even if the unit is not archer type) I have made the scale about 70 for longbows down to 30 for crossbows, but this will depend on the scale of the game you create.
1 digit - units morale to start (1 to 5)
1 digit - not used now - so just put any digit in. it will be used later when I have added AI to the game to play either side and when I have added group commands string - this can be of just about any length, it reads until the first blank so use "'s in place of blanks, the program will remove them. No quotes are needed, just put the string.

section 5 - this section is not used now, it will be used later when I have added group commands and AI to run one of the sides. Just have ten rows with 99 in them(see one of the files included.

I recommend you just copy one of the files and change things, that seems to be the easiest way. Be careful, there are not many checks in the program yet. One digit wrong and the game can bomb(if that happens watch how far the program gets and you can tell which section has the problem. If it draws the map and then crashes before the units are drawn you may be missing a leader line or the number in the first section may have the wrong number of units listed, etc.)

GAME CONSIDERATIONS - All factors are used in figuring results (terrain, state, morale, facing, etc.) Each unit is roughly equivalent in size, however matching archers against men-at-arms is not very smart. A well timed charge can break a lined organization, but poor charges will destroy your cavalry, these and other common sense tactics must be followed. The English won by intelligent use of the longbow, this is a must for a win (but remember that your men are tired and their moral won't holdout for that long). Speaking of moral, it is far and away the most important item in the game. Pay close attention and remember the only way to increase it is by doing some damage to the enemy.
The assembler supports the 4 arithmetic operations + - / and *, It also supports arithmetic and logical operations in expressions.

The type of operand for almost all of Merlin’s pseudo ops and the 6502 and 65C02 microprocessors can be grouped into one of the four categories:

1) Expressions
2) Delimited Strings (d-strings)
3) File names or Path names

ASSEMBLER SYNTAX CONVENTIONS

A line of source code typically looks like:

label  opcode  operand  ; comment

The maximum allowable label length is 13 characters, but more than 8 will produce messy assembly listings. A label must begin with a character at least as large, in ASCII value as the colon and may not contain any characters less in ASCII value than the number zero. Note that periods (.) are not allowed in labels since the period is used to specify the logical OR in expressions.

A line may contain a label by itself. This is equivalent to equating the label to the current value of the address counter.

Source Opcode and Pseudo Opcode Conventions

The assembler examines only the first 3 characters of the opcode (with certain exceptions as macro call and the Sweet 16 POPD). For example you can use PAG instead of FAM (because of the exception, the fourth letter should not be a D).

The assembler listing will not look well with an opcode longer than five characters. Some exceptions such as macro call and the Sweet 16 POPD). For example you can use PAGE instead of FAM. Parentheses are used to retrieve a value from the memory location specified by the value of the expression within the parentheses, much like indirect addressing. This use is restricted to certain pseudo ops, however. For example DO ($300) will instruct the assembler to generate code if the value of memory location $300, at the time of assembly is non-zero.

Parentheses and Precedence in Expressions

Parentheses are not normally allowed in expressions. They will not modify the precedence of expressions evaluations. All arithmetic and logical operations are evaluated left to right.

Parentheses are used to retrieve a value from the memory location specified by the value of the expression within the parentheses, much like indirect addressing. This use is restricted to certain pseudo ops, however. For example DO ($300) will instruct the assembler to generate code if the value of memory location $300, at the time of assembly is non-zero.

Example use of Assembler Expressions

The ability of the assembler to evaluate expressions such as LAB$LAB!−1 is very useful for the following type of code:

Example use of Assembler Expressions

The assembler accepts decimal, hexadecimal and binary. Hex numbers must be preceded by $ and binary by % thus the following four numbers are all = 100 $64 %1100100

As indicated by the last binary number, leading zeros are ignored.

Immediate data vs addresses

In order to instruct the assembler to interpret a number as immediate data the number must be prefixed by # (LDA #$64)

A number not preceded by # is interpreted as an address (LDA $64) Loads the accumulator with number in loc $64

Primitive Expressions

Expressions are built up from primitive expressions by use of arithmetic and logical operations. The primitive expressions are:

1) A label
2) A number (dec, hex or binary)
3) Any ASCII character preceded or enclosed by quotes or single quotes
4) The character * (standing for the present address) All number formats accept 16-bit data and leading zeros are never required. In case 3 the value of the primitive expression is just the ASCII value of the character. The high bit will be on if a " is used, and off if a ' is used.

Arithmetic and Logical Operations in Expressions

The assembler supports the 4 arithmetic operations + - / and *, It also supports the three logical operations: ! (Exclusive OR), . (or), and & (AND).
The assembler will assemble 65C02 source code as well as 65802 source code. The XC pseudo opcode activates these features. This opcode is discussed in the Pseudo ops section.

**ASSEMBLER PSEUDO OPCODE DESCRIPTIONS**

**DIRECTIVES**

- **EQU (=)**
  - Label EQU expression
  - This sets the file type to be used by DSK or SAV. The default is BIN. Valid file types are 0, 6, $F0-$F7, and $FF (no type, BIN, CMD, user defined, SYS)

- **DSK** (assemble directly to disk)
  - DSK filename (or pathname)
  - DSK will direct the assembly directly to disk.

- **EXT** (EXTernal label)
  - Label EXT [Label is external labels name]
  - This pseudo op defines a label as an external label for use by the Linker.

- **PRINT**
  - PRINT EXT [define PRINT as external]
  - This pseudo op will define the label in the label column as an ENTRY label. An entry label is a label that may be referred to as an EXTernal label by another REL code module.

- **DSK** (assemble directly to disk)
  - DSK filename (or pathname)
  - DSK will direct the assembly directly to disk.

- **END** (END of source file)
  - This rarely used opcode instruct the assembler to ignore the rest of the source.

- **DUM** (Dummy END)
  - This ends a dummy section and reestablishes the ORG address to the value it had upon entry to the dummy section.

- **ORG** (set ORigin)
  - ORG expression
  - Establishes the address at which the program is designed to run. It defaults to $8000. If more than one ORG is used the first establishes the Bload address and the second the origin. You cannot use ORG~1 to back up the object pointers as is done in some assemblers. This must be done instead by DS~1.

- **OBJ** (set OBJect)
  - OBJ expression
  - This is accepted only prior to the start of the code, it only sets the division line between the symbol table and object code read in memory (which defaults to $8000). If the REL opcode is used then OBJ is disregarded.

- **PUT** (PUT a text file in assembly)
  - PUT filename
  - PUT reads the named file and inserts it at the location of the opcode. There are two restrictions on a PUT file. One there cannot be MACRO definitions inside a file which is PUT, they must be in the main source or in a USE file. A second a PUT file may not call another PUT file with the PUT opcode. Of course linking can be simulated by having then main program just contain the macro definitions and call in turn all the others with the PUT opcode.

- **USE** (USE a text file as a macro library)
  - USE filename
  - This works like PUT but the file is kept in memory. It is intended for loading a macro library that is USEd by the source file.

- **VAR** (setup VARIABLES)
  - VAR expr;expr;expr
  - VAR 1;.labels [set up VAR's 1, 2 and 3]
  - This is just a convenient way to = the variables 1 - 18. VAR 3;$242;LABEL will set VAR 1 = $242 and VAR 1 = LABEL. This is designed for use just prior to a PUT. If a PUT file use 1 - 18, except in PMC (or >>>) lines for calling macros, there must be a previous declaration of these.

- **SAV** (SAVE object code)
  - SAV filename
  - Will save the current object code. Acts same as the EXEC mode but it can be done several times during assembly. Together the PUT and SAV make it possible to assemble very large files.

  **TYP expression**
  - This sets the file type to be used by DSK or SAV. The default is BIN. Valid file types are 0, 6, $F0-$F7 and $FF (no type, BIN, CMD, user defined, SYS)

  - **DSK** (assemble directly to disk)
    - DSK filename (or pathname)
    - DSK will direct the assembly directly to disk.

  - **END** (END of source file)
    - This rarely used opcode instruct the assembler to ignore the rest of the source.

  - **DUM** (Dummy END)
    - This ends a dummy section and reestablishes the ORG address to the value it had upon entry to the dummy section.

  **Sample usage of DUM and DEND**
  ```
  1  ORG $1000
  2  IOBADRS EQU $B7EB
  3  DUM IOBADRS
  4  IOBTYPE DFB 1
  5  IOBSLOT DFB $60
  6  IOBDRV DFB 1
  7  IOBVOL DFB 0
  8  IOBTRACK DFB 0
  9  IOBSECT DFB 0
  10  IOBBUF DFB 0
  11  IOBCMD DFB 1
  12  IOBERR DFB 0
  13  START LDA #SLOT
  14  STA IOBSLOT
  15  * And so on
  ```

**FORMATTING PSEUDO OPS**

- **LST ON/OFF**
  - LST ON [turn listing on]
  - LST OFF [turn listing off]
  - LST [turn listing on]
  - This controls the assembler listing to be sent to screen (or other output device).
  - If the LST is off the object code will be generated much faster, but this is recommended only for debugged programs. Note: CONTROL D from the keyboard toggles this flag during the second pass.

  **EXP ON/OFF/ONLY (macro EXPand control)**
  - EXP ON [macro expand on]
  - EXP OFF [print only macro call]
  - EXP ONLY [print only generated code]
  - EXP ON will print an entire macro during the assembly. The OFF condition will print only the PMC pseudo-op. EXP defaults to ON. This has no effect on the object
code generated. EXP ONLY will cause expansion of the macro to the listing omitting the call line and end of macro line. (If the macro call line is labeled it is printed). This mode will print out just as if the macro lines were written out in the source.

```
LSTDO OR LSTDO OFF (LIST the DO OFF areas of code)
LSTDO [ LIST THE DO OFF AREAS]
LSTDO OFF [ don't list DO OFF areas)
```

This opcode causes the listing of DO OFF areas of code to be printed in listing or not to be printed.

```
PAU (PAuse)
```

On the second pass this cause assembly to pause until a key is hit. This can also be done from the keyboard by hitting the space bar. This is handy for debugging.

```
PAG
```

This sends a formfeed to the print.

```
AST (send a line of ASTerisks)
```

AST 30 [ send 30 asterisks to listing ]

```
SKF (SKIP lines)
```

This sends expression number of carriage returns to the listing. The number format is the same as in AST.

```
TR ON/OFF (Truncate control)
```

```
TR ON [ limit object code print]
TR OFF [ don't limit object code print]
```

TR ON or TR (alone) limits object code printout to three bytes per source line, even if the line generates more than three. TR OFF resets it to print all object bytes.

```
DAT (DATE stamp assembly listing) (ProDos only)
```

This prints the current date and time on the second pass of the assembler.

```
CYC (calculate and print CYCLE times for code)
```

```
CYC [ print opcode cycles & total]
CYC OFF [ stop cycle time printing]
```

CYC AVE [ print cycles & average]

This opcode will cause a program cycle count to be printed during assembly. A second CYC opcode will cause the accumulated total to go to zero. CYC OFF causes it to stop printing cycles. CYC AVE will average in the cycles that are undertermined due to branches, indexed and indirect addressing. The cycle times will be printer to the right of the comment field and will appear similar to any one of the following:

```
S5', 326
S5', 0326
S5', 0326
```

The first number displayed is the cycle count for the current instructions. The second number displayed is the accumulated total of cycles in decimal.

A single quote after the cycle count indicates a possible added cycle, depending on certain conditions the assembler cannot foresee. If this appears on a branch instruction then it indicates that on cycle should be added if the branch occurs. For non-branch instructions, the single quote indicates that one cycle should be added if a page boundary is crossed.

A double quote after the cycle count indicates that the assembler has determined that a branch would be taken and that the branch would cross a page boundary. In this case the extra cycle is displayed and added to the total.

The CYC opcode will also work for the extra 65C02 opcodes in Merlin. It will not work with for the additional 65C02 opcodes present in the Rockwell 65C02.

```
STRING DATA PSEUDO OPS
```

General notes on String Data and String Delimiters

Different delimiters have effects. Any delimiter less than (in ASCII value) the single quote \" will produce a string with the high bits on, otherwise the high bits will be off.
Apple II Computer Info

This reserves space for string storage data. It zeros out this space if the
expression is positive. DS 10, for example will set aside 10 bytes for storage.

NOTES for REL files and Linker

The \ options are intended for use mainly with REL files and work slightly
different with these files. Any DS\ opcode occurring in a rel file will cause the
linker to load the next file at the first available page boundary.

MISCELLANEOUS PSEUDO OPS

KBD (define label from KeyBoard)
label KBD        [get value of OUTPUT from kbd]
label KBD d-string [prompt with the d-string for the value of OUTPUT]
This allows a label to be equated from the keyboard during assembly. Any
expression may be input, including expressions referencing previously defined labels,
but if input cannot be evaluated.

LUP
LUP expression (LOOP)
\   (end of LUP)
The LUP pseudo opcode is used to repeat portions of source between the LUP and
then \ expression number of times. An example of this is:
LUP 4
ASL
\ and will show that way in the assembly listing with repeated line numbers.
Perhaps the major use of this is for table building. An example
\ A = 0
\ LUP $FF
\ = \ A+1
\ DFB \ A
\ Will assemble the table 1, 2, 3, ..., $FF
\ The maximum LUP value is $8000 and the LUP opcode will simply be ignored if you
\ try to use more than this. NOTE: the above use of incrementing variable in order to
\ build a table will NOT work if used within a macro. Program structures such as this
\ must be included as part of the main program source.

CHK (place Checksum in object code)
This places a checksum byte into object code as the location of the CHK opcode.
This is usually placed at the end of the program and can be used by your program at
time to verify the existence of an accurate image of the program in memory.

ERR (force Error)
ERR $80-($300)   [error if $80 not in $300]
ERR "$-\$4000    [error if PC>$4100]
ERR \$5000      [error if REL code address exceeds $%000]
ERR expression will force an error if the expression has a non zero value and the
message break in line ??? will be printed.

NOTE for REL Files: The ERR|expression syntax gives an error on the second pass
if the address pointer reaches expression or beyond. This is equivalent to ERR "$-
|expression, but if when used with REL files it instructs the linker to check that the
last byte of the current module does not extend to expressions or beyond (expression
must be absolute). If the linker finds that the current module does extend beyond
expression, linking will abort with a message Constraint error

SW (Sweet 16 opcodes)
This enables sweet 16 opcodes.

XC (Extended 65C02 and 65802 opCodes)
\ [enable the 65C02 option]
\ This does not enable the extended BIT opcodes used on the Rockwell 65C02 chip.
There is a macro library file included on the Merlin disk that can be used to
implement these additional code.
This is used to inform Merlin of the intended status of the long status of the 65802 processor. The assembler cannot determine if the processor is in 16 bit memory mode (M status bit=0) or 16 bit index register mode (X status bit =0). The purpose of the MX opcode is to inform the assembler of the current status of these bits.

This opcode must be used when using Merlin's 65802 capabilities to inform the assembler of the proper mode to use in order to insure proper assembly of immediate mode commands.

DO (DO if true)
DO 0  [ turn assembly off]
DO 1  [ turn assembly on]
DO label [ if label<0 then on]
DO 11/12 [ if 11<12 then off]
DO 11-12 [ if 11<12 then off]

This assembly is conditional on whether or not the operand evaluates to zero. If the operand evaluates to zero then assembler will stop generating object code (until it sees another conditional). Except for macro names, it will not recognize any labels in such and area of code. If operand evaluates to a non zero then assembly will proceed as usual.

This is useful for sources to designed to generate slightly different code for different situations. For example in a program with text, you may wish to have one version for Apples with lower case adapters and one for those without. By using conditional assembly modification of such programs becomes much simpler, since you do not have to make the modification in two separate versions of the source code. Every DO should be terminated somewhere later by a FIN and each FIN should be preceded by a DO. An ELSE should occur only inside such a DO/FIN structure. DO/FIN structures may be nested up to eight deep (possibly with some ELSE's between). The comma is not examined, so any character may be used there. For example IF "=" could be used to test if the first character of the variable $1 is a double quote " or not perhaps needed in a macro which could be given either an ASCII or a hex parameter.

FIN (FINish conditional)
This cancels the last DO or IF and continues assembly with the next highest level of conditional assembly, or ON if the FIN concluded the last (outer ) DO or IF.

VAR (USER definable op-code)
VAR expression [example depend on definition]
this does a JSR $9EDA. This location will contain an RTN on boot. To set up a
routine you should BRUN it from the EXEC command after catalog. The following flags
and entry points may be used by your routine:
USRADS = $9EDA must have a JMP to your routine
PUTBYTE = $9E5F see below
EVAL = $9E5F see below
FASNUM = $92 contains assembly pass number
ERRCNT = $9D error count
VALUE = $9B value returned by EVAL
OPNDLEN = $9B contain combined length of operand and comment
NOTFOUND = $9F see discussion of EVAL
WORSP = $280 contains the operand and comment in positive ASCII
Your routine will be called by the VAR opcode with A=0, Y=0 and carry set. To
direct the assembler to put a byte in the object code, You should JSR PUTBYTE with
the byte in A. Put your routine at $300-$3cf or $8a0-$8ff. You must not write to
$900.

CONDITONAL PSEUDO OPS
DO (DO if true)
DO 0  [ turn assembly off]
DO 1  [ turn assembly on]
DO label [ if label<0 then on]
DO 11/12 [ if 11<12 then off]
DO 11-12 [ if 11<12 then off]

This along with ELSE and FIN are conditional assembly ops. IF the operand
evaluates to zero then assembler will stop generating object code (until it sees
another conditional). Except for macro names, it will not recognize any labels in
such and area of code. If operand evaluates to a non zero then assembly will proceed
as usual.

This is useful for sources to designed to generate slightly different code for
different situations. For example in a program with text, you may wish to have one
version for Apples with lower case adapters and one for those without. By using
conditional assembly modification of such programs becomes much simpler, since you do
not have to make the modification in two separate versions of the source code.

Every DO should be terminated somewhere later by a FIN and each FIN should be
preceded by a DO. An ELSE should occur only inside such a DO/FIN structure. DO/FIN
structures may be nested up to eight deep (possibly with some ELSE's between). IF the
DO condition is off (value 0) then assembly will not resume until its

7NOPODD LDX #1
8)JLOOP INX
9 STA DATA,X
10 LDA TBL2,X
11 BNE )JLOOP ;BRANCH TO LINE 8

LOCAL LABELS
A local label is any label beginning with a colon. A local label is attached to
the last global label and can be referred to by any line from the global label to the
last local label. Example of local labels.
1 Start LDX #0
2 LDX #0
3 LDA (JUNK),Y
4 STA (JUNK),Y
5 INY
6 CPY #100
7 BNE )LLOOP
9 LOOP2 LDX #0
10 LDA (STUFF),Y
11 INY
12 CPY #100
13 BNE )LLOOP
14 RTS

Local labels cannot be used inside macros. You cannot label a MAC, ENT or EXT
with a local label and you cannot EQUate a local label. The first label in a program
cannot be a local label.
There are three distinct types of labels used by the assembler. Each of these are identified and treated differently by MERLIN.

Global Labels:  labels not starting with [ ]
Local Labels:  labels beginning with [ ]
Variables:  labels beginning with $  

NOTES:  local labels do not save space in the symbol table, while variables do.
Local labels can be used for forward and backward branching, while variables cannot.

Good programming practice dictates the use of local labels as branch points, variables for passing data.

MACROS

Macros represent a shorthand method of programming that allows multiple lines of code to be generated from a single statement.  Example of the first type in T.MACRO.

<table>
<thead>
<tr>
<th>MACRO DEFINITION</th>
<th>RESULT CODE EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDA #10</td>
<td>TEMP=0x10</td>
</tr>
<tr>
<td>STA [10]</td>
<td></td>
</tr>
</tbody>
</table>

A macro is a user named sequence of assembly language statements, with general purpose operands.  You define the macro in a general way and when you use it via a macro call, you fill in the blanks left when you defined it.  EXAMPLE:

MAC SWAP  ;define a macro named SWAP
LDA [1] ;load accum with variable [1]
<<<  ;this signals the end of the macro
Would assemble as follows if [1]=300 and [2]=400
LDA #300
STA #400

It is very important to realize that anything used in the parameter list will be substituted for the variables.  Forward reference to a macro definition is not possible and will result in a not macro error message.  A macro must be defined before it is called by NAME.  FM or >>>.  The conditionals DO, IF, ELSE and FIN may be used within a macro.  Labels inside macros are updated each time the macro NAME, FM or >>> NAME is encountered.  Error messages will usually indicate the line number of the macro call that was the line inside the macro where the error occurred.

Macros may be nested up to 15 deep.  Macros names may be put in the opcode column, without using PMC or >>>, But the macro name cannot be the same as any regular opcode or pseudo opcode such as LDA, STA, etc.  It cannot begin with the letters DEND or POPD.  The FM or >>> is not subject to this.

Special Variables

Eight variables, name [1] through [8] are predefined and are designed for convenience in Macros.  These are used in a PFM (or >>>) statement.  The instruction

MACRO DEFINITION | RESULT CODE EXAMPLE |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EQU 010</td>
<td>SWAP.6;7;TEMP ; MACRO CALL</td>
</tr>
<tr>
<td>LDA [1]</td>
<td>LDA $010</td>
</tr>
<tr>
<td>STA [2]</td>
<td>STA TEMP</td>
</tr>
</tbody>
</table>

This segment swaps the contents of location $6 with that of $7 using temp as a scratch depository, then swaps the contents of $6 with that of $1000.

If as above some of the special variable are used in the MACRO definition, then values for them must be specified in the PFM (or >>>) statement.  In the assembly listing, the special variables will be replaced by their corresponding expressions.

The number of values must match the number of variables used in the macro definition.  A BAD VARIABLE error will be generated if the number of values is less than the number of variables used.  Macros will accept the following type of macro call:

MAC SWAP  ;define a macro named SWAP
LDA [1] ;load accum with variable [1]
<<<  ;this signals the end of the macro
Would assemble as follows if [1]=300 and [2]=400
LDA #300
STA #400

The linking facilities offer these advantages:

1) Extremely large programs may be assembled in one operation over 41000 bytes long.
2) Large programs may be assembled much more quickly with a corresponding decrease in development time.
3) Libraries of subroutines may be developed and linked to any Merlin program
4) Programs may be quickly re assembled to run at any address

With a linker you can write portions of code that perform specific tasks, say a general disk I/O handler and perform whatever testing and debugging is required.

When the code is correct, it is assembled as a REL file and placed on a disk.

The PUT file or Macro uses library don't serve the same purpose. Using a PUT file to add a general purpose subroutine would result in slower assembly.  Any label definitions contained in the PUT file would be global within the entire program.  With a REL file only labels defined as ENTRY in the REL file (and EXTERNAL in the current file) would be shared by both programs.  There is no chance for duplicate label errors when using the linker.

There are three pseudo opcodes that deal directly with relocatable modules and the linking process.  These are:

REL  -Informs the assembler to generate relocatable files
EXT -Defines a label as external to the current file
ENT -Defines a label in the current file as accessible to other REL files.

There are two other pseudo opcodes that behave differently when used in a REL file, than to a normal file, they are DS and ERR.

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There are two other pseudo opcodes that behave differently when used in a REL file, than to a normal file, they are DS and ERR.
In order to use the Linker, the files to be linked must be specified. The linker uses a file containing the names of the files to be linked for this purpose.

Pseudo Opcodes for Use with Relocatable Code Files

REL
This instructs the assembler to generate a relocatable code file for use with the relocating linker. This must occur prior to definition of any labels. REL files are incompatible with the SAV op and with the EXECC mode object code save command. To get an object file to the disk you Must use the DSK opcode for direct assembly to disk. An ORG at the start of the code is not allowed> Multiplication, division, or logical operations can be applied to absolute expressions but not to relatives one.

Examples of absolute expressions are:
- An EQUate to an explicit address
- Labels defined in DUMMY code sections

Examples of relatives expression not allowed

Ordinary labels
Expressions that utilize the PC, like LABEL=* The starting address of an REL file, supplied by the assembler is $8000, it will be changed by the linker, for this reason no ORG opcode is allowed. There are some restrictions involving use of EXTERNAL labels in operand expressions. No operand can contain more than one external. For operands of the following form: #expression or >expression where the expression contains an external, the value of the expression must be within 7 bytes of the external labels value.

LDA #EXTERNAL+8 [illegal expression]
DFB >EXTERNAL-1 [ legal expression]

Object files generated with the REL opcode are given the file type LNK under ProDos. This is the type that will show if the disk is cataloged by Merlin. This type is file type $F8

EXT
label EXT
This defines the label in the label column as an external label. Any external label must be defined as an ENTRY label in its own REL module, otherwise it will not be reconciled by the linker. The EXTERNAL and ENTRY label concepts are what allows REL modules to communicate and use each other as subroutines

ENT
label ENT
Defines label as an ENTRY label. This label can be referred to as an external label. This allows other REL modules to use the label as if it were part of the current REL module. If a label is meant to be made available to other REL modules it must be defined with the ENT opcode. The example of a segment of a REL module will show the use of this opcode:

21 STA POINTER
22 INC POINTER
23 BNE SWAP
24 JMP CONTINUE
25 SWAP EXT ;MUST BE DEFINED IN THE
26 LDA POINTER ;CODE PORTION OF THE
27 STA PTR ;MODULE AND NOT USED
28 LDA POINTER+1 ;AS AN EQU LABEL
29 STA PTR+1
30 ETC

Note that the label SWAP is associated with the code in line 26 and that the label may be used just like any other label in a program.

DS
[skip to next REL file, fill mem with 0's to next page break
DS V1 [skip to next REL file, fill mem with l's to next page]

When this opcode is found in an REL file it causes the linker to load the next file in the linker name file at the first available page boundary and to fill memory either with zeros or with the value specified by the expression. This opcode should be placed at the end of your source file.

ERR
ERR\$4200 [error if current code passes address $4200]

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It is wise to use a full pathname in operands of the SAV, USES, and PUT opcodes, since otherwise the current path will be the name and that may not be the prefix you want.

Since Merlin runs under its own interpreter rather than the BASIC interpreter, there is no warm re-entry as with the DOS 3.3 version.

The ProDos volume 7/RAM/ is disconnected by Merlin.

Transferring source file from DOS 3.3 to ProDos Merlin Pro
There are two methods of transferring files from the DOS to ProDos. Since ProDos version of Merlin uses text files only, you could load files into the DOS 3.3 version and write them as text files and then transfer them with Apple's CONVERT program.

CONVERT is not a literal transfer, as it will clear the high bits in the file. The ProDos version will set the high bits again, but the tabs in the editor will be fouled up by this procedure. But you can type FIX in the editor and resave the source file to fix this problem. Files intended for PUT or USE should be resaved because otherwise, assembly will be slowed.

Another method is to transfer the files as binary files from DOS 3.3 and use the fact that the ProDos version of Merlin has the ability to load binary files (or any type). After loading a binary source file, it should be deleted and save back (as a TXT file). The load command automatically permits loading og TXT and BIN files. Other types of files can be loaded by changing the byte used to designate source file type which is kept in location $8E8D, this usually holds a 5.

ERROR MESSAGES
BAD OPCODE
Occurs when the opcode is not valid or the opcode in is the label column
BAD ADDRESS MODE
The addressing mode is not a valid 6502 instruction

BAD BRANCH
A branch to an address that is out of range, further than 127 bytes
BAD LABEL
This is usually caused by one of two conditions: Source code too large or symbol table too large.

BAD MACRO
Your program refers to a label that has not been defined. Also occurs if you try to reference a MACRO definition by anything other than PMC or >>>/

BAD PUT
This is caused by a PUT inside a macro or by a PUT inside another PUT file.
BAD INPUT
This results from either no input or an input exceeding 37 characters in answer to the KBD opcodes request for the value of a label.
BAD BREAK
This message is caused by the ERR opcode when the expression in the operand is found to be non-zero.
BAD LABEL
This is caused by an unlabeled EQUs MAC ENT or EXT, a label that is too long or one containing illegal characters.
BAD ORG
Result from an ORG at the start of a REL file
BAD OBJ
An OBJ after code start or OBJ not within $4000 to $BF0
BAD REL
A REL opcode occurs after some labels have been defined.
BAD VARIABLE
This occurs when you do not pass the number of variables to a macro that the macro expects. It can also occur for a syntax error in a string passed to a macro variable, such as a literal without the final quote.

It is wise to use a full pathname in operands of the SAV, USES and PUT opcodes, since otherwise the current path will be the name and that may not be the prefix you want.

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This occurs when you do not pass the number of variables to a macro that the macro expects. It can also occur for a syntax error in a string passed to a macro variable, such as a literal without the final quote.
Illegal Forward Reference
A label equated to a zero page address after it has been used. This also occurs when an unknown label is used for some things that must be able to calculate the value on the first pass. It also occurs if a label is used before it is defined in a DUM section on a zero page.

Two Externals
Two or more externals in an operand expression.

Dictionary Full
Overflow of the relocation dictionary in a MEL file.

256 Externals
The file has more than 256 externals.

Illegal Relative Ads
In real mode a multiplication, division, or logical operation occurs in a relative expression. This also occurs for an operand of the type #EXPR or a DFB #EXPR when the expr contains an external and the offset of the value of the expr from that of the external exceeds 7.

Illegal char in operand
A non-math character occurs in the operand where the assembler is expecting a math operator. This usually occurs in macro calls with improper syntax resulting in the textual substitution.

Illegal file type (ProDos only)
TYP opcode used with an illegal operand. The operand must evaluate to 0,6,F0-F7, or FF.

General note: When an error occurs that aborts assembly, the line containing the error is printed to the screen. This may not have the same form as it has in the source, since it shows any textual substitutions that may have occurred because of macro expansion. If it is in a macro call, the line number will be that of the call line, and not of the line in the macro.

Memory Full Errors
Memory Full In Line: xx Generated during assembly. Cause: too many symbols have been placed in the symbol table, causing it to exceed available space. REMEDY: Make the symbol table larger by setting OBJ to $FF00 and use DSK to assemble directly to disk.

ERR:Memory Full. Generated immediately after you type in one line too many.
CAUSE: The source code is too large. REMEDY: Break source up into smaller sections and bring in when necessary by using PUT pseudo-op.

Error Message: None, but no object code will be generated. Cause: Object code generated from an assembly would have exceeded the available 16K space. REMEDY: Set OBJ to an address less than its $8000 default or use DSK.

Sourceror
1. Brun SOURCEROR from Merlin's EXEC MODE
2. To invoke SOURCEROR type USER1 from the EDIT mode with the screen set to 40 column mode.
3. You will be asked if you want to load an object file to be disassembled. Do so if needed. Type CTRL-S after file name for SWEET !^.
4. Next hit return if program to be disassembled is at its original location, or specify in hex the present location of the code if not in its original location, then you will be asked for its original location.
5. When disassembling, you must use the original address of the program and not the current address if different.
6. When you are done type USER1 from the EDITOR to get rid of SOURCEROR and free up the memory used by the disassembler.

Commands
If you specify a number greater than the present address you are disassembling a new OGU will be created.

L (List)
This disassembles 20 lines of code. 2000LLL will disassemble 60 line of code starting at $2000

If an illegal opcode is encountered, the bell will sound and opcode will be printed as three question marks in flashing format. In the source code itself, unrecognized opcodes are converted to HEX data, but not displayed on the screen.

S (SWEET)
Similar to L but forces disassembly to start in SWEET 16 mode.

N (Normal)
This is the same as L, but forces disassembly to start in normal ^<02 mode.

H (HEX)
This creates the HEX data opcode. It defaults to one byte of data. If you insert a one byte hex number after the h, that number of data bytes will be generated.

T (TEXT)
This attempts to disassemble the data at the current address as an ASCII string. Depending on the form of the data, this will be disassembled under the pseudo-opcode ASCII, DNL, FNL or FLS. The appropriate delimiter is automatically chosen. The disassembly will end when the data encountered is inappropriate, when 62 characters have been treated, or when the high bit of the data changes. In the last condition, the ASCII opcode is automatically changed to DCI. Sometimes the change to DCI is inappropriate. This change can be defeated by using TT instead of T in the command.

W (WORD)
This disassembles the next two bytes at the current location as a DA opcode. Optionally, if the command WW is used, these bytes are disassembled as a DDB opcode. If W or WW is used as the command, the two bytes are disassembled in the form DA LABEL-1. The latter is often the appropriate form when the program uses the address by pushing it on the stack. You may detect this while disassembling or after the program has been disassembled. In the latter case, it may be to your advantage to do the disassembly again with some notes in hand.

/ (cancel)
This cancels the last command

R (Read)
This lets you look at memory in a format that makes embedded text stand out. To look at the data from $1000 to $10PF type 100R. This is total independent of the disassemble address.

Q (Quit)
This ends disassembly and goes to final processing which is automatic.

Dealing with the finished source
You may notice that some DA's would have been more appropriate in the DA LABEL-1 or the DDB LABEL formats. In this and similar cases, it may be best to do the disassembly again with some notes in hand.

The source w. file have all the exterior or otherwise unrecognized labels at the end in a table of equates. You should look at this closely. It should not contain any zero page equates except ones resulting from DA's JMP's or JSR's. This is almost a sure sign of an error in the disassembly.

Changing Sourceror's label table
The label tables used by Sourceror are just assembled Merlin source files. The source file is on the Merlin disk and can be modified directly by the user. It must be assembled and saved under the same name as the previous label files.

Applesoft Listing Information
A fully labeled and comment source listing of Applesoft Basic can be generated by the program SOURCEROR.FP on the opposite side of the ProDos Merlin Diskette.

Warning: SOURCEROR.FP and some temporary work files are deleted when sourceror.fp is brun. For this reason make a backup copy and uses the backup copy.

2. Brun SOURCEROR.FP form Merlin's Disk Command
3. When Sourceror.fp finishes, lload the file APPLESOFT.
4. Type the following to print the listing on your printer:
   PRTR 1 "I8ON" "APPLESOFT LISTING"

   The entire first pass will take 3.5 minutes then a print out to printer will
   begin. It will take 105 pages and an hour and a half to print on a 80 character per
   second printer.

   By using the XREFA utility with the Applesoft source you can produce a listing of
   every subroutine, zero page address and where they are used and called. To do this:
   1 Load the Applesoft file form the SOURCEROR.FP disk
   2 Quit to the EXEC mode and press D for disk
   3 BRUN /MERLIN/UTIL/XREFA
   4 Go to the EDITOR
   5 Issue the following command : USER 3,
   6 Issue the PRTR command : PRTR 1 "I8ON" "APPLESOFT XREF".
   7 Issue the ASM command to start the assembly process.

UTILITIES

FORMATTER
   This is for enhancing the use of Merlin as a general text editor. To use BRUN if
   from the exec mode, then issue the USER command from the editor.
   XFER,XREFA
      These provide means of generating a cross reference listing of all labels used
      within a Merlin assembly
      XFER instructions
      1 Go merlins exec mode and C the disk then BRUN XREF
      2 Type in appropriate USER command at editor
         USER 0 - prints assembly listing and alphabetical cross reference
         USER 1 - print assembly listing and both alphabetical and numerically sorted
         cross reference
         USER 2 - print alphabetical cross reference only,
         USER 3 - Print alphabetical and numerical cross reference
      XREFA
      This is an address cross reference program and is handy when you have lots of PUT
      files

PRINTFILER
   Saves an assembled listing to disk as a sequential disk file.
   Applications
      Incorporating the assembled text file in a document being prepared by a word
      processor.
      Sending the file over a telephone line using a modem.
      Mail the file to someone who wants to work with the complete disassembly without
      having to assemble the program.
DOS 3.3 MERLIN PRO MEMORY MAP

MERLIN Pro ProDos

MAIN MEMORY

$FFFF

AUXILIARY MEMORY

$FFFF

MONITOR

$F800

MERLIN PRO

$D000

I/O LOCATIONS

$D000

I/O LOCATIONS

$C000

Merlin ProDos

OBJECT CODE

interpreter

AND

$AA00

LINKING DICTIONARY

OBJ adrs

$8000

MACROS boundary ignored if

REL used

UNUSED SPACE

VARI

$1000

SOURCE FILE

USER PROGRAMS

$900

$8FF

EDITOR AND

ASSEMBLER

WORKSPACE

$800

TEXT PAGE 1

$800

USED BY 80 COL

$400

MISC VECTORS

$300

I/O INTERFACES

USER ROUTINES

$300

INPUT BUFFER

& MISC

$200

STACK

$100

MERLINS STACK

$0

ZERO PAGE

$0

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2. SOURCEROR

3. GETTING STARTED

4. COMMAND SUMMARY

5. OPEN APPLE COMMANDS (global)

6. EXPANDED EXPLANATION OF SOME COMMANDS

6.1 CUT AND PASTE

7. FIND TEXT and GOTO LABEL (or line number)

8. GLOBAL EXCHANGE

9. REPLACE LINE and DELETE LINE

10. OPEN APPLE UP AND DOWN

11. STATUS

12. CHARACTER INSERT MODE

13. LOWER CASE TOGGLE

14. LINE NUMBER and EOL MARKER

15. GENERAL REMAR

16. MEMORY USAGE

17. INSTALLING ED ON THE FLY

18. THE KEYBOARD MACRO PROGRAMS (EDMAC)

19. OOPS

20. THE ED.16 VERSION

21. LOADING OTHER UTILITIES

22. TECHNICAL INFORMATION

23. IMPORTANT NOTE

24. BASIS 108 VERSION

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26. NEW DISK COMMANDS (ProDOS Version)

27. CATALOG COMMAND

28. INTERPRETER

29. NEW DISK COMMANDS [DOS 3.3 Version]

30. [ProDOS and DOS 3.3 versions]

30.1 Merlin Pro and 'SPEED UP' CARDS
The Merlin Pro ProDOS and DOS 3.3 versions load the standard editor on boot. The Merlin Pro manual refers to this editor and it recommended that you become familiar with its operation.

At some point you may prefer to use the Full Screen Editor instead. Please read the information in this page carefully. It has been provided to help avoid confusion.

The easiest way to identify which editor is in effect is to enter the Editor and press "A" to add a line. If the line number appears in the upper right hand corner of the screen, the Full Screen Editor has been installed.

To have the ProDOS Full Screen Editor installed on boot, you should first make a copy of the Merlin Pro, ProDOS version. In the subdirectory UTIL is a file called FS.ED. RENAME this file to ED and you're all done. For easy reference, write "Full Screen Editor-ProDOS" on the diskette label.

To have DOS 3.3 Full Screen Editor installed on boot, you should first make a copy of the Merlin Pro, DOS 3.3 version. LOAD the HELLO program and add the following line:

```
80 PRINT CHR$(4)"BHUN ED"
```

and then SAVE HELLO. For easy reference, write "Full Screen Editor, DOS 3.3" on the diskette label.

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2. SOURCEOR

Most Merlin Pro utilities such as XREF and PRINTFILER can be in memory at the same time as the Full Screen Editor version. However, on the ProDOS version, the Full Screen Editor uses the same memory area as SOURCEOR. Therefore, you must boot the Standard Editor version of Merlin Pro to use SOURCEOR. This does NOT apply to the DOS 3.3 version.

See the additional notes on using SOURCEOR and SOURCE.FP at the rear of the Full Screen Editor manual.

3. GETTING STARTED

Merlin Pro's Full Screen Editor is very compact and powerful. It is on both the DOS 3.3 version and the ProDOS version, where it is in the UTIL directory.

It is compatible with the //c and //e 80 column cards as well as the Videx Ultraterm and Checkmate Technology Multiview cards (all modes). Its command structure is modeled closely on the Merlin Pro Standard Editor so that you don't have to learn another radically different set of commands.

After it has been loaded, it is accessed from within the editor by typing an "A" command. If there is a source file in memory then the "R" command also sends you to the Full Screen Editor.

If you have one of the new 65802 16-bit microprocessors in your Apple //e or //c then you can make use of the "ED.16" version of the Full Screen Editor. This is faster and has some added capabilities such as the ability to move source files easily and quickly between DOS 3.3 and ProDOS versions.

The 65802 can be plugged right into your Apple //e or //c, replacing the existing 65C02 or 6502. There are no known incompatibilities with this chip, except for those that already exist for the 65C02. The entire 65C02 instruction set is supported, with the exception of the so called Rockwell codes. Those codes only exist on the Rockwell version of the 65C02 and do not exist on the versions used by Apple Computer for the //c or the //e enhancement.

It is strongly suggested that you install the Enhancement Kit in your //e if you don't already have it. This is not strictly required, but the Mousetext Toolkit characters will produce a substantial improvement of appearance.

4. COMMAND SUMMARY

The command structure follows that of the Standard Editor as much as possible. Commands that are "global" in nature use the same command character as the but use the Open Apple (OA) key as prefix instead of the Control key. If you are familiar with Merlin Pro's Standard Editor, or the many editors with similar command structure, these commands will seem very natural.

CONTROL COMMANDS (line oriented and cursor moves)

```
Control B .......... Cursor to beginning of the line
Control D .......... Delete character under the cursor
Control F .......... Find character next in line (recursive)
Control I .......... Toggle character insert mode
Control L .......... Toggle lower case convert mode
Control N .......... Cursor to end of the line
Control Q .......... Delete all characters from cursor to end
Control R .......... Replace original line
Control S .......... Show memory status box
Control W .......... Find next word (alphanumeric)
Control X .......... Cancel global exchange in progress
Control Y .......... Remember current line for recall by OA Y
Cursor keys .......... Move cursor
DELETE .......... Delete character to the left of cursor
ESC .......... Move cursor to the start of next line
RETURN .......... Carriage return and insert new line
TAB .......... Toggle insert mode
```

5. OPEN APPLE COMMANDS (global)

```
OA DELETE .......... Delete previous line (UNDO by OA TAB/OA R)
OA DOMM ARROW .......... Cursor down 10 lines, screen centered
OA ESC .......... Return to the standard editor
OA TAB .......... Insert new line at cursor
OA UP ARROW .......... Cursor up 10 lines, screen centered
OA B .......... Go to the beginning of source, screen centered
OA C .......... Cut to the clipboard, start select if 1st time
OA D .......... Delete current line (UNDO by OA TAB/OA R)
OA F .......... Find text (recursive)
OA I .......... Insert new line at the editor
```
OA L ........... Go to label in label column or line number
OA N ........... Go to the end of source
OA P ........... Paste clipboard at line containing cursor
OA Q ........... Select all text from current line to end
OA R ........... Replace last line deleted with current line
OA W ........... Find word (recursive)
OA X ........... Global exchange (produces dialog box)
OA Y ........... Go to last control Y line, screen centered
OA Z ........... Reprint screen, screen centered
OA A ........... Produce a line of asterisks
OA B ........... Produce a line of dashes
OA C ........... Produce a line of equal signs

6. EXPANDED EXPLANATION OF SOME COMMANDS

6.1 CUT AND PASTE

Open Apple C starts the select mode and selects the line the cursor is on. After this, you can select further lines with the down arrow key. The up arrow key does not cancel select mode, so you can adjust the select range if you go to far. However, the select mode will be canceled if you move the cursor above the first selected line or past the top of the screen. Any other command will cancel the select mode. Selected lines are shown in inverse. When you want to cut, type OA C again. The selected lines will disappear from the screen and are placed on the clipboard.

Open Apple Q selects everything from the current line to the end of the file for cutting. OA C will then cancel the select mode. This provides a simple means of moving the entire file to the clipboard.

Open Apple F pastes the current contents of the clipboard on the screen starting at the line containing the cursor. Only full lines are moved. This does not change the contents of the clipboard, so that this can be used to replicate a range of lines.

7. FIND TEXT and GOTO LABEL (or line number)

The OA F command brings up a box which asks for the find text. It then finds the first occurrence of the text in the entire text file. The text can be anywhere on a line. After the first find, you may find occurrence by typing another OA F. You can edit the line and then type OA F to go to the next occurrence.

The OA B command and the Control-S status command both cancel the find mode, as does failure to find the text below the current line. This continued find mode is indicated by one or more '+' signs preceding the line number at the top right corner of the screen. The continued find starts from the row the current line, so it locates only one occurrence per line.

The OA W command is identical to OA F except that it finds only whole words bounded by non-alphanumeric characters. If you type either OA W or OA F to find the next occurrence, this mode will change accordingly.

The OA L command asks for a label or any text to locate. It finds the first occurrence of that text in the file, but only in the label column. Only the characters typed are compared with the labels, so in some cases you may wish to end your input with a space.

The intended use of this command is to move rapidly to a particular place in the source. You can use 'markers' to enhance the capability of this command. Therefore, if a line starts '* ?', you can specify '* ?' as the find text for this command and it will work.

If you type a number for the label in an OA L command, you will be sent to that line number. This is convenient when editing a source file using the printed listing.

In all cases the containing text is moved to the center of the screen, unless it is within the first 10 lines of the start of the source.

8. GLOBAL EXCHANGE

The OA X command produces a dialog box that asks for the text to change, and the new text to replace it (if you just type RETURN for either of these, the command is aborted). Then the file is searched for the change text. Unlike the FIND command, it looks only for full words. That is, the text found must be bounded by non-alphanumeric characters or it will be ignored.

If text is found with this method, the screen is reprinted with the replacement made and the cursor is placed on the first character of the replacement. Now you must hit a key to continue. Pressing RETURN or any other control character will defeat the change and the routine will look for the next occurrence of the text to change. Pressing the space bar or any other character will accept the change and the routine will continue.

One exception to this is the Control-X key, which will abort the process and return control to you. Another exception is the 'A' key which will cause all changes to be performed. Caution: this can be aborted only by RESET.

You can tell when the routine is finished by the fact that the line number at the top right is missing during the exchange sequence and will return when there are no more matches for the change text, or until you press Control-X.

9. REPLACE LINE and DELETE LINE

The OA D and OA-DEL commands delete a line from source and place it in a special 'undo' buffer, which is independent of the clipboard. The OA R command exchanges the current line with this undo buffer. Thus two successive OA R commands cancel one another out. OA R on an empty line places the undo buffer at that line and clears the undo buffer.

Note that these commands can be used to move a single line to another location. Just place the cursor on the line to be moved and type OA D; then move the cursor to an empty line or anywhere else, Now press either OA-TAB or RETURN to create an empty line, and then type OA R.

OA R can be used by itself to easily interchange two lines. Just place the cursor on the first line, press OA R, move the cursor to the second line, press OA R again, move the cursor back to where the first line was and press OA R for the third and final time.

10. OPEN APPLE UP AND DOWN

The OA DOWN ARROW command moves the cursor to the 10th line below its present position and then reprints the screen so that the cursor will be on the 11th line. If this command is repeated it has the effect of moving the current line to the top of the screen and then moving the cursor to the 11th line on the screen.

Similarly repeating the OA UP ARROW command moves the top line to
the 11th line on the screen and puts the cursor on that line.

11. STATUS
The Control-S command displays a status box showing the number of used and free bytes.

12. CHARACTER INSERT MODE
The character insert mode defaults to ON upon entry. When you change it with the TAB or Control-I key, it remains that way until changed again. Thus, moving from one line to another has no effect on this status.

The status is indicated by the type of cursor displayed. It is an inverse 'I' when insert mode is active, and an inverse space when it is not active. The cursor is an inverse 'F' when you are in find mode.

13. LOWER CASE TOGGLE
Ordinarily, unless the cursor is in a comment or an ASCII string, lower case characters will be converted to upper case characters. This is also defeated when the tabs are zeroed. To override this conversion, or to reinstate it, just use the Control-L command. This conversion is also in effect when you use the OA F or OA L find commands.

14. LINE NUMBER and EOL MARKER
At the upper right hand corner of the screen, the number of the line containing the cursor is printed. Somewhat to the left of this you may see a vertical bar. This bar indicates the position at which an assembly listing will overflow the printer line. You can put characters beyond this mark, since it is for information only. The position of the mark is calculated using your line length parameter in the PARMs file. If this is very large, the mark will not be shown.

15. GENERAL REMARKS
When you move the cursor between lines its horizontal position will jump around. This is because it is based on the actual position in the line and not on the screen position. If the tabs are zeroed you will not notice this, except for the fact that the cursor is never beyond the last character in the line.

The editor works with any 80-column card and supports all modes of the Ultraterm and Multiview cards. Except for minor details, it even works on the 40 column screen. However, only that part of a line that can fit on one screen line is displayed.

The maximum line length is 192 characters. Lines longer than that will be truncated if they are edited.

The editor uses the mouse text characters in some places, but this is just cosmetic. In 40 column mode these will show up as strange characters because Merlin Pro does not use the video firmware in that mode.

You must return to the standard editor (OA ESC) in order to use the ASM command to assemble, or to Quit and access the EXEC mode, the monitor, etc.

If the 'search character' parameter location is in negative ASCII, then when you return to the standard editor, the 'A' and 'E' commands no longer send you to the screen editor. This way you still have use of the standard editor if you desire. The entry to the screen editor is reestablished when you go to EXEC mode and back, or when you assemble a file.

On the other hand, if you defeat the 'Update source (?)' question by putting a zero in this parameter location, then the 'A' and 'E' commands will always send you to the screen editor. The standard editor can be used only for immediate commands. Using any positive byte except zero for this parameter will defeat the 'Update source (?)' question but still allow access to the standard editor.

The editor conflicts with some other utilities in its use of memory such as SOURCECOR. To use these utilities you should remove the editor by running the REMOVE.ED program. This pertains only to the ProDOS version.

Users of the Ultraterm or Multiview cards can set up any mode of the card by typing the appropriate ESCAPE sequence when in the standard editor. This mode will then be automatically supported when you go to the screen editor.

Unlike the standard editor, the Control-Q key does not move to the next line after deletion of characters from the cursor on. This makes it possible to use the Control-R key to undo this command.

An assembly will delete the current clipboard file. RESET will return to the EXEC mode with everything intact.

The editor has keyboard buffering so that keys will still be read during time consuming operations such as reprinting the screen or moving data to and from the clipboard.

16. MEMORY USAGE
The ProDOS version uses 12 pages (3K) from the top of source file memory if you use the KEYMAC it uses and SOOPS. It uses another additional 2 pages. It is protected from overwrite. The DOS 3.3 version uses the other language card and thus does not use any memory ordinarily used by Merlin Pro.

17. INSTALLING ED ON THE FLY
If you have deleted line 80 from the DOS 3.3 HELLO program, and you want to install the Full Screen Editor from within Merlin Pro, press C to Catalog from the EXEC mode, and at the BASIC prompt type BRUN ED. You can also BRUN ED from BASIC after Merlin Pro is in memory.

With the ProDOS Standard Editor version, press D for Disk command from the EXEC mode, and type BRUN/MERLIN/UTIL/F3.ED at the command prompt.

18. THE KEYBOARD MACRO PROGRAMS (EDMAC)
These are versions of the keyboard macro parts of KEYMAC that will support the screen editor. The macros are invoked by pressing the Close Apple key along with other keys. The source files are provided so that you can change the macro definitions if you so desire. To set up the keyboard macros, press C to catalog from the EXEC mode (assuming ED has been loaded), and at the command prompt, type BRUN EDMAC.

19. OOPS
Virtually any command can be undone. The proper undo command is of the same 'type' as the command you want to undo. Line editing commands are undone by Control-R. This includes the OA 8, OA 9, OA -, and OA = commands which are regarded as line editing commands for this purpose.
Line deletion commands OA D and OA DEL are undone by creating an empty line with OA TAB and then OA R. If you forget to create the empty line, type another OA R and then do this.

The OA R command undoes itself. A CUT is undone by a PASTE without moving the cursor off its line.

20. THE ED.16 VERSION

ED.16 is for use with the 65802 or 65826 chip. The speed sensitive parts of the editor make use of the enhanced abilities of these chips. For very large files the difference is substantial. Do not run ED.16 with a 6502 or 65C02. It should have no effect, but this has not been tested.

If you have a 65802 in your Apple, you can use ED.16. Just rename ED.16 so that it becomes 'ED'. If you have a program selector, tell the selector to use 'ED.16' as a 'startup'.

There are extra features in ED.16. The 'A' entry goes to end of source and the 'E' entry with line number goes to that line, unless the line is less than 11. The Control-S status request also shows the length of the clipboard, if any.

There are two more OA commands, OA LEFT ARROW and OA RIGHT ARROW. These move through the text a page at a time. This is roughly equivalent to two successive OA UP or DOWN Arrows.

The Control-O override command enables insertion of control characters in the text file.

The clipboard is this version only can be used to transfer files between ProDOS and DOS 3.3. To do this, place the cursor on the first line and type OA A then OA C which will place the entire file in the clipboard. Then boot up the other version of Merlin Pro and ED.16 and type OA F.

If you use OA F, OA W, or OA X while a range is selected by OA C and Down Arrows, only that range will be searched. Otherwise, the entire file is searched. These commands cancel the select mode. If the OA F paste command is used when a range is selected, the clipboard replaces the text in that range. Note: text deleted in this manner is not recoverable.

Things that will destroy the clipboard:
1. Turning off the computer
2. Writing to /RAM to accommodate patching, should the user want to change this routine.
3. Assembling a file.

Things the clipboard will survive (ED.16 only)
1. A cold boot (Control OA RESET).
2. Running a program that does not use auxiliary memory.
3. RAM format request (but no writing of files).
4. Loading and saving files (all ED versions).

21. LOADING OTHER UTILITIES

You can have another utility such as XREF or SOURCEROR, loaded on boot instead of ED. To do this, change the name 'UTIL/ED' located at $2006 with a leading length byte, in MERLIN.SYSTEM, to the path name of the utility you want executed upon boot. This is for the ProDOS version only.

22. TECHNICAL INFORMATION

The editor has been arranged so that certain parameters can be altered with little effort. At relative byte 3 in the file there is an address which points to the main part of the program, past a relocating header.

This address is referred to as START and is the address in the file when loaded and not necessarily when it is running. At START there is a JMP. After the jump there is an address for use in linking macro programs (see EDMAC source).

At START + 5, there are characters used for the four cursors (Inverse I, F, space, and F; the two F's depend on the state of the insert mode). You can substitute any characters you want here except that you should not use the range $60-$7F.

At START + 9 is the byte $A0 which controls the blink rate. Raising this makes the blinking slower. This is desirable with speedup cards. A value of 0 gives the slowest rate.

At START + 10 a table of command characters used without the OA key. Some commands such as up and down arrow keys are handled separately and are not in these tables. This table ends with a zero. Following this is the table of the key commands used with OA again ending with zero.

23. IMPORTANT NOTE

Do not use KEVMAC (instead of EDMAC) when ED is in memory!

24. BASIS 108 VERSION

On the BASIS 108 only the ED.16 version has been implemented. The Full Screen Editor can be used only if you have a 65802 chip.

The 'Open Apple' commands are implemented by 'shift-control'. Thus shift-control C is the Cut command, etc. On the BASIS there is a limited amount of memory for the clipboard: 16K. If you try to cut more than this you get an "Out of Memory" message. Also, you cannot Cut out of or paste into memory above $8000. Thus some cuts will be disallowed on very large sources. This will also yield the Out of Memory message. Because of this limitation, it is a good idea to avoid such extremely large source files.

There is no version of EDMAC for the BASIS 108.

Following the two key tables is the routine that tests for the control-shift combination. This is followed by 16 zero bytes to accommodate patching, should the user want to change this routine.

The routine should return with the Z-flag set (EQ true) if the shift-control (or its replacement) is pressed. The command key itself is read elsewhere. The X and Y registers must be preserved but the A register does not matter. If this routine is changed the the OA command table may also have to be changed. The routine is located at START + 533 (see technical information) but changes to the editor may shift it slightly.

To have the Standard Editor installed on boot, delete line 61 from the HELLO program (e.g. BRUN ED.16B).

25. ADDENDUM

The following addendum is provided for Merlin Pro users that had a version prior to 2.34

26. NEW DISK COMMANDS (ProDOS Version)
There is an alternate way to set the disk prefix. Press D for disk command, then enter PFX= or PFX=1 to specify slot 6, Drive 1, or PFX=2 for slot 6, Drive 2. You can use the new SLOT command to specify slots other than 6. SLOT is to be used with the PFX= and CATALOG command as described below.

27. CATALOG COMMAND

After using the CATALOG command, if you press =, =1, or =2, Merlin Pro will set the prefix to the volume found in the specified drive and then catalog that volume. If you press OPEN APPLE during a catalog, Merlin Pro lists only the TEXK files present in the specified directory.

If you press OPEN APPLE and CLOSED APPLE at the same time during a catalog, Merlin Pro lists only the BIN files present in the specified directory. These keys must be pressed and held during the entire catalog process.

28. INTERPRETER

If the Merlin Pro ProDOS interpreter cannot find a disk volume required for linking or assembly, it will ask for the correct volume to be inserted. This request can be aborted by pressing Control-C or RESET. This only applies to volumes, not files. If you want a PUT opcode to prompt you to switch disks, you must use the full path name with the PUT opcode.

This feature will not work with the Linker when using one disk drive. If the present prefix does not correspond to any volume online, Merlin Pro will give a VOLUME NOT FOUND error.

The PROGRAM TOO LARGE error message has been changed to MEMORY IN USE. See page 104 in the main Merlin Pro manual.

29. NEW DISK COMMANDS [DOS 3.3 Version]

The DOS 3.3 version does not perform the same volume checking as the ProDOS version. However, it is possible to simulate this with the following code:

LST XXX KBD "INSERT MYFILE DISK AND TYPE 0 <RETURN>" PAUSE

The assembler will stop at KBD on the first pass and assign a 0 value to XXX (any dummy label you desire). Pause forces a pause on the second pass and LST makes sure you see the KBD line. On the second pass, assembly resumes when you press any key (it is not necessary to type 0 and press RETURN.)

30. [ProDOS and DOS 3.3 versions]

30.1 Merlin Pro and 'SPEED UP' CARDS

Merlin Pro will work either in main or auxiliary memory (aux is the default). If you are using the main memory version, you will get about a 1.6 speed improvement with the SpeeDemon card, and about a 2x increase with the Accelerator. This is due to the heavy use of auxiliary memory during assembly. To select the main memory version with DOS 3.3, change the HELLO program to BLOAD MERLIN.X instead of MERLIN.

To select the main memory version with ProDOS, use a SC3 as the fifth byte in the PARM file. The V-bit of that location is used as a flag to instruct the interpreter to make the main memory modifications. A + sign after the MERLIN PRO VERSION 2.xx on the EXEC mode screen indicates the main memory version is active.

31. LINKER

The addresses of all external references are printed whether or not they are resolved. If you use the TRON command prior to the LINK command, only the errors will be printed in the external list (NOT RESOLVED and DUPLICATE errors).

32. LUF

In a LUF, if the @ character appears in the label column, it will be increased by the loop count (thus A, B, C...). Since it is a countdown, these labels go backwards (the last label has the A). Thus it is possible to label items inside a LUF. This works with a maximum LUF length of 26, or you will get a BAD LABEL error and possibly some DUPLICATE LABEL errors.

33. CLOCK

This utility is an interrupt driven software clock for the /c which lacks a clock to do ProDOS time stamping. It uses the VBLINT interrupt provision of the /c. This should be used with caution! If overwritten, anything might happen. Press RESET to turn off interrupts. The source files are provided in the SOURCE directory on the ProDOS version.

34. CONV.LNK.REL [ProDOS only]

This makes Merlin Pro's REL files compatible with Apple's BLOAD and RBOOT programs. It will convert a Merlin Pro LNK file to Apple's REL format (only if there are no externals). You can BRUN it from EXEC mode. If there is a source file in memory, it will just return, so enter NEW first in the editor.

You will be prompted for the path name of the file. The program will do the conversion and set up the converted file for Merlin Pro's object save command. The CONV.LNK.REL utility does not write anything to disk and does not delete or otherwise damage the original file.

35. CLR.HL.BIT [ProDOS only]

This converts a source file in memory to positive Ascii so the file can be sent to other programs that expect data in this form, such as Apple's ProDOS ED/ASM. To use it, just BRUN UTIL/CLR.HL.BIT and the save the source. CAUTION: If you re-enter the Editor, the source will be deleted from memory, since the Editor does not like this format.

36. 65C02 SPECIAL NOTES

To assemble or disassemble 65C02 code with the older /e ROMs, you must first BRUN MCM.65C92. This must be done from BASIC if you are using the DOS 3.3 version. This utility is not needed with the newer /e or /c ROMs.
With both versions, you MUST use the XC opcode (see page 75 for details) as the very first line in your code. This flag tells Merlin Pro you are using 65C02 or 65802 opcodes.

You will have problems if you do not use the standard 65C02 opcodes as specified by GTE, NCR, and Rockwell. In creating the //c Reference manual, Apple apparently did not check with the manufacturers regarding the final set of opcodes. Thus, Apple refers to three non-standard opcodes. For example, to increment the Accumulator, you must use INC with no address argument, not in a Branch on Bit Set (BBS) and Branch on Bit Reset (BBR) are also non-standard opcodes and are not supported by the NCR and GTE chips.

For example, to increment the Accumulator, you must use INC with no address argument, not in a. Branch on Bit Set (BBS) and Branch on Bit Reset (BBR) are also non-standard opcodes and are not supported by the NCR and GTE chips.

37. MANUAL CORRECTIONS and ADDITIONAL INFORMATION

37.1  (Page 109)  37.2.2  (Page 125)
37.1.1  Configuration (ProDOS version)

Configuration data is kept in a file called PARM.S which is loaded when the assembler is run. To change the data in the source file called PARM.S, with the prefix set to /MERLIN/, type \ as the first line in your code. This flag tells Merlin Pro you are using 65C02 or 65802 opcodes.

You will have problems if you do not use the standard 65C02 opcodes as specified by GTE, NCR, and Rockwell. In creating the //c Reference manual, Apple apparently did not check with the manufactures regarding the final set of opcodes. Thus, Apple refers to three non-standard opcodes. For example, to increment the Accumulator, you must use INC with no address argument, not in a Branch on Bit Set (BBS) and Branch on Bit Reset (BBR) are also non-standard opcodes and are not supported by the NCR and GTE chips.

37.2  (page 117)  37.2.4  (Page 135)
37.2.1  SOURCEROR

37.2.1.1  Introduction

SOURCEROR is a sophisticated and easy to use co-resident disassembler designed to create MERLIN source files out of binary programs, usually in a matter of minutes. SOURCEROR disassembles 6502, 64C02, 65802, and Sweet 16 code.

37.2.1.2  Using SOURCEROR

1.  [DOS 3.3]  From the EXEC mode, type C to Catalog Merlin Pro. At the command prompt, type BRUN SOURCEROR.  [ProDOS see note on page 1 of this manual] From the EXEC mode, type D for DISK COMMAND. At the prompt, type BRUN/MERLIN/SOURCEROR.OBJ.

2.  From the EDIT mode, use ESC CTRL-Q (not Escape-4) to set the screen to 40 columns, then typeUSER. If the screen is in 80 columns, the USER command will be ignored.

3.  You will be asked if you want to load an object file to be disassembled. If you have loaded the object file prior to using SOURCEROR, type N.

If yes, type Y and enter the filename. It will load and show the load address and end of program address. Note: If you type CTRL-S after the filename, files using a RAM version of Sweet 16 can be disassembled.

4.  Next, you are asked to press RETURN if the program to be disassembled is at its original (running) location, or you must specify, in hex, the present location of the file to be disassembled. You will then be asked to give the ORIGINAL location of the program.

5.  Finally, the screen displays the disassembly commands. You may begin disassembling now, or use any of the other commands shown. Your first command MUST include a hex address. Thereafter, this is optional.

37.2.1.3  Bird Tracks

Take the situation where you have stored a file that runs at address "X" and because it interferes with Merlin memory usage or whatever, you have stored it with a different loading address "Y." If you then answer yes to the above the program will be loaded at "Y." This will cause the disassembly to be messed up. The way around all this is to either load the file from the command mode or allow Merlin to load the file and accept Merlin's decisions. You then disassemble no more than one "I" of program. QUIT and be returned to the editor where you once more enter Sourceror where you state that the program is already in memory at address "Y." "But it normally resides at address "X."

37.2.2  (Page 125)

4.  Type the following to print the listing to your printer:

PRTR 1 "18ON" APPLESOFT LISTING

ASM

37.2.3  (page 126)

5.  Issue the PRTR command: PRTR 1 "18ON" APPLESOFT XREF

6.  Issue the following command: USER 3

37.2.4  (Page 135)

3.  Enter the Editor and type in the appropriate USER command:

37.2.5 (Page 137: Last sentence in step 3)

In this case enter the following instead if the USER command: PRTR 8 "path name" page header (quotes only for path name).

37.2.6 MERLIN PRO & SOURCEROR FP

1) Make a copy of the Sourceror.FP diskette as per the warning on page 124 in the Merlin Pro manual.

2) Boot the Merlin Pro ProDOS diskette.

3) Insert the Sourceror.FP diskette.

4) Press D for Disk command. At the prompt type:

BRUN/APPLESOFT/SOURCEROR.FP

5) From the main menu, type D to LOAD, then:

/APPLESOFT/APPLESOFT

6) Enter the Editor, and type:

PRTR1*APPLESOFT LISTING

7) Then type:

ASM

N (This is not needed if you have defeated the stupid "Update" prompt.)

8) You'll be prompted as follows:
Apple II Computer Documentation Resources (a2_docs_documentation.msw)

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Print DO OFF areas ? (Y/N)  (You may answer Y or N)

Assemble new ROM version ? (Y/N)  If you answer N, you'll get the
[+] version.
(If you answer Y, you'll be prompted with:)

Assemble //c version ? (Y/N)
(answer Y for the //c & enhanced //e version.)
(Answer N for the original //e version.)

37.2.7 SOURCER.FP & XREF LISTING

1) Boot the Merlin Pro ProDOS diskette.
2) Insert the Sourceror.FP diskette
3) Type L to LOAD, then: /APPLESOFT/APPLESOFT
4) Type Q to quit the Editor, & return to the EXEC mode.
5) Insert the Merlin Pro ProDOS diskette.
6) Press D for Disk command, then type: BRUN/MERLIN/UTIL/XREFA
7) Enter the editor then type: PRTR1**APPLESOFT XREF
8) Then type: USER 3
9) Then type: ASM

N (Not needed if update prompt is defeated)

10) You'll be prompted as follows: Print DO OFF areas ? (Y/N)
    (You may answer Y or N. Be smart, answer Y)

Assemble new ROM version ? (Y/N)  (If you answer N, you'll get the
[+] version) (If you answer Y, you'll be prompted with:)

Assemble /c version ? (Y/N)
(Answer Y for the //c and Enhanced //e version.)
(Answer N for the original //e version)

11) Insert the Sourceror.FP diskette at the prompt:
    Insert /APPLESOFT/APPLESOFT.A.S
12) Press RETURN and you're done.
Metal Paddleball was thought up one day from some Pascal source in a MacIntosh book. I had figured it would be easy enough to write, and no one had ever done anything like this before for the modem, so I decide to write it and put it out as a demo until the final version of Metal is complete and available to the public. This game is relatively short, and looks nice, as well as works nice. Needless to say, it's not perfect, and isn't bugfree, nor is this the final version of the game. The most interesting thing about the game is it's speed. Metal is fast as it is, but the game is well written to take full advantage of the system. Because of the speed of the Metal software, this game is possible. Locally is warps. Check it out on a IIe and a IIGs. You'll find it's very fast and smooth on both. Speed over the modem should be comparable because of the way the new modem drivers are written.

The modem drivers are interrupt-driven as well as have input and output buffers of reasonable size. This allows the modem to send and receive much quicker than the conventional polling method of the Macos/Acos drivers. Even 1200 baud will seem a bit faster. Anyway, this is the first demo version of the game and I hope you enjoy it.

By the way, to play the game, the controls are the HS & SU keys and the space bar.

The Language --

Well folk, the language is improving at a rapid rate. More and more things are being added daily, and more and more bugs&glitches worked out by the day. We have just added another person to the Metal Development Team. Joshua Thompson, the author of the NuPak unpacking software has just jumped in with us and will be helping with ideas and writing the 16bit side of the software. Reminding you that Metal WILL NOT be full 16-bit. It will be predominantly 8-bit with some minor 16-bit features. The most important and versatile of these features is the 16bit Variable Memory Handler. This will allow you to address ALL of your GS's memory for variable space. Imagine the arrays you can have with this thing! However, this does not leave the 8-bits out in the cold. You have a built in 40k or so var memory and there will be 8-bit drivers for those of you with IIe's and extra memory beyond the required 128k.

The current requirements of the system software include:

- An Apple Ile (Enhanced), IIc, IIC+, or IIGs
- At LEAST 128k memory
- A Clock
- A modem of any baud rate
- At least 280k of storage. Metal is big.

Optional: Joystick, More Memory, etc...

The current price of the software is $75.00 which includes a FULLY written BBS and 250-300+ page manual with 1 year of support. This package will, beside the aforementioned items, include plenty of extra examples, lots of machine language externals, information on some of the internal workings of Metal, and information on writing externals, writing modem drivers, and many other things. This is by no means a complete update on everything that has happened and none of the information stated here is guaranteed to be complete or true. I'm telling you folks what I know to understand. Again, be patient. We realize we are late, but financial difficulties have made it hard, and we are doing our best to find AS MANY bugs as we can so that you may not have to through the hell of rewriting your code around the inconsistencies of the language like you had to do with Acos and Macos. We are all trying to make this the best, and most worthwhile 75 dollars you have ever spent on BBS software. I have no idea how much longer it will be before Metal is made available to the general public for purchase, but it will be soon. Thank you for being so supportive.
After booting up your Micro League Baseball diskette, you will be given 2 choices. 1) To start a game or 2) Watch a demo game. A demo game simply shows what the game looks like, but doesn't give any docs.

Once you've started the game, it will give you a screen giving you some idea of what you're supposed to do. Just ignore this, since it may confuse you more, and these docs cover what it tells you to do. What you should be concerned about is what it is asking you at the bottom. It requests whether or not you want a designated hitter. A designated hitter (DH) takes the place of the pitcher when your team is at bat, because most pitchers cannot hit for the life of them. DH's do not play when your team is out in the field. If you do not choose to have a DH, your pitcher will be placed on the batting line-up.

Once you've answered it, you will be given a list of different teams, and are asked to choose a visiting team. Do this by simply pressing the letter corresponding to the team you want. After doing so, it will ask whether you want to control it or have the computer control the team. If you're playing alone, I suggest you pick the computer to control one of the teams, unless you want to play a highly boring game.

Once you've chosen the visiting team, you must do the same thing for the home team. Once you've finished that, you will be given 4 different menus. The 1st one gives you the starting pitcher and the pitching bench for the visiting team. The menu at the bottom should be fairly easy to understand, and you can switch your pitchers around the way you want to.

The 2nd menu is the batting and position line-up for the visiting team. Again, you can follow the menu at the bottom to manipulate the line-up. One point though: most players can play 2 positions. This is designated by a position/position next to the name (ie: SS/3B for short stop and 3rd base.) If you change a position from one player to another, and the new player you are putting into the position has can play one of those positions, it will accept the change. You cannot however, place a who can only play, say 1st base into left field.

The 3rd and 4th menus are the same exact thing for the home team.

After you're done, the field will come on the screen, and the home team will walk and the scoreboards will appear. Once those opening themes are done, you will be given a certain prompt depending on which team you are playing and how many players there are.

If there is only 1 player, you will be given either the OFFENSE or DEFENSE prompt, depending on if you're playing the home or away team. If you are given the DEFENSE prompt, which means you're team is out on the field you can do the following...

--- DEFENSE MENU ---

<table>
<thead>
<tr>
<th>Key</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Change your pitcher</td>
</tr>
<tr>
<td>1</td>
<td>Bunt with man on</td>
</tr>
<tr>
<td>2</td>
<td>Hit &amp; run play</td>
</tr>
<tr>
<td>3</td>
<td>Runners on base attempt to steal</td>
</tr>
<tr>
<td>4</td>
<td>Hit &amp; run play</td>
</tr>
<tr>
<td>5</td>
<td>Change your pitcher</td>
</tr>
<tr>
<td>6</td>
<td>Intentional Walk</td>
</tr>
<tr>
<td>7</td>
<td>Substitue the batter or a runner</td>
</tr>
<tr>
<td>8</td>
<td>Subtract the batter or a runner</td>
</tr>
<tr>
<td>9</td>
<td>Change your position line-up</td>
</tr>
</tbody>
</table>

Keys # 1, 2, 3, 4 I don't think I need to explain. They are the 4 different types of pitches you can throw.

Key #5 throws a pitch out if you think someone on base is going to steal. If you throw a pitchout, and he does try to steal, it gives you a better chance to pick him off.

Key #6 brings your 1st and 3rd basemen in. This gives you a better chance to field a bunt or get a double play if the batter hits a ground ball. After you hit 6, it will ask you what type of pitch you want to throw (either 1, 2, 3, 4)

Key #7 does pretty much the same thing, except your 1st, 2nd, 3rd, and short stop all come in.

Key #8 throws an intentional walk. This is useful if a powerful hitter is up and you want to avoid the chance that he might hit a home run or a good hit.

Key #9 allows you to change pitchers. Your pitcher might get tired sometime in the game, and you may want to put in a relief pitcher.

If you are given the OFFENSE prompt (meaning your team is up at bat) you can do the following...

--- OFFENSE MENU ---

<table>
<thead>
<tr>
<th>Key</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Change your pitcher</td>
</tr>
<tr>
<td>1</td>
<td>Try to hit a power shot</td>
</tr>
<tr>
<td>2</td>
<td>Try to hit a slow mover/blooper</td>
</tr>
<tr>
<td>3</td>
<td>Runners on base attempt to steal</td>
</tr>
<tr>
<td>4</td>
<td>Hit &amp; run play</td>
</tr>
<tr>
<td>5</td>
<td>Bunt with man on</td>
</tr>
<tr>
<td>6</td>
<td>Normal bunt</td>
</tr>
<tr>
<td>7</td>
<td>Change your pitcher</td>
</tr>
<tr>
<td>8</td>
<td>Substitute the batter or a runner</td>
</tr>
<tr>
<td>9</td>
<td>Change your line-up</td>
</tr>
<tr>
<td>10</td>
<td>Normal hit attempt</td>
</tr>
</tbody>
</table>

Key #1 can only be used when you have 1 or more men on base. This tells the batter to go for a long hard hit (Namely, a home run). It doesn't always work though.

Key #2 can only be used when you have 1 or more men on base. This tells the batter to go for a short weak hit which may fall between the infield and out-field, or to hit one slow enough so he can beat out the throw to first. Again, it doesn't always work.

Key #3 tells all players on base to attempt to steal.

Key #4 starts a hit & run play. As soon as the pitcher throws the pitch, the runners run as though they were going to steal. However, the batter attempts to hit the ball no matter where it is. This way, the runners may get more bases than they would have normally. Note: if the batter fails to hit the ball, the game considers the play as though the runners were attempting to steal.
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Key #5 can only be used when you have 1 or more men on base. This is used for a sacrifice bunt. Using this will usually result in the batter getting out, but will move your runners over one base safely.

Key #6 tells the batter to bunt also. However, this bunt gives your batter a better chance of reaching first. However, if you have any runners on, they may get out depending on where the ball was hit.

Key #7 allows you to change your pitcher.

Key #8 allows you to put in a pinch hitter or runner.

Key #9 allows you to change your line-up.

Key #0 is your normal hit key. Use this key for a normal hit (Which can be pretty much anything).

Those are pretty much all the docs. There are a few other notes however.

The computer picks a random ball-strike count. Which means... you don't get 4 6 balls and 3 strikes like in real baseball. The game only allows one ball or...

Before you change sides (after 3 outs) and if you've made a batting or pitching change, the system will ask you to hit a key. I don't know why it does this... but sometimes it will put you back in either the line-up or pitching menu. If you've already made the change, simply hit escape.

There may be a bug in your copy. If you allow a designated hitter, the game may royally screw up your lineup (Like... you may have the same guy playing 5 different positions.) If this happens, you cannot have a designated hitter. Re-boot your game and answer N to the question "Do you want a designated Hitter?".

When you decide to change your pitcher, it's alright to simply take a pitcher off your bench, but he won't be warmed up and he may be hit off of the first couple innings he's in. It's better to put your relief pitcher in the bull pen for a few innings before bringing him in, which warms him up a lot.

** Special Keys **

Hitting an "M" at the OFFENSE or DEFENSE prompts will turn the organ on & off. Hitting an "R" at the OFFENSE or DEFENSE prompts will toggle on & off whether the players run on and off the field when changing sides. When you turn the "Run to Dug out" off, the players change sides instantly, which decreases game time (You don't have to sit and watch them run back and forth...). Anyway... that's pretty much it. Have fun and

PLAY BALL!
MICROWAVE IS LIKE PAC-MAN WITH A FEW DIFFERENCES. YOU START OUT IN A MAZE WITH VARIOUS OBJECTS DROPPED ALL ABOUT YOU. THE OBJECT IS TO PICK UP ALL THE OBJECTS AND GET OUT AT THE OTHER SIDE. HOWEVER IN THIS GAME YOU HAVE A FEW 'FRIENDS' CHASING YOU: LURCH, TRIXIE, BIFF AND TEDDY. LURCH SEEMS TO BE THE FASTEST AND MOST OMNIGIOUS.

AS YOU RUN AROUND THE MAZE ALL YOU NEED TO DO TO GET AN OBJECT IS TO RUN OVER IT. SOMETIMES YOU WILL SEE A GRENADE. YOU CAN'T GET THESE, BUT THEY CAN GET YOU. THEY'RE SAFE WHEN THEY ARE GREEN, BUT ONCE THEY TURN BLUE THE EXPLODE IN ABOUT 1-2 SECONDS. YOU ALSO HAVE A WEAPON. IT'S A MICROWAVE BEAM. WHEN YOU FIRE THIS IT FIRES IN THE DIRECTION OF WHAT YOU WERE TRAVELLING. IT WILL EXTEND AS FAR AS IT CAN. IN A STRAIGHT LINE UNTIL IT RUNS INTO A WALL. IT STAYS ON FOR ABOUT 5 SECONDS. ANY CREATURE CAUGHT IN IT SHRIVELS AND DIES INSTANTLY. SOME MAY RUN INTO IT, BUT THIS DOESN'T HAPPEN OFTEN. THEY ARE REGENERATED IN (ABOUT) 7 SECONDS.

YOU GO THROUGH 4 DIFFERENT MAZES, EACH WITH A FEW MORE OBJECTS THAN THE FIRST. ON THE BOTTOM LEFT OF THE SCREEN IT SAYS 'POWER' AND GIVES A NUMBER. THIS IS THE NUMBER OF MICROWAVES YOU CAN SHOOT. YOU CAN GET ONE MORE SHOT PER MAZE BY RUNNING OVER WHAT LOOKS LIKE A SQUARE. YOU CAN ALSO WALK INTO YOUR MICROWAVE TO HIDE, BUT DON'T STAY IN THERE TOO LONG OR YOUR LIFE-SUPPORT WILL GET LOW THEN CRITICAL THEN FLASHING CRITICAL AT WHICH POINT YOU PROBABLY WILL DIE. ONCE (IF) YOU HAVE GOTTEN THROUGH ALL 4 MAZES IT REPEATS ITSELF ONLY WITH MORE STUFF. I FOUND THIS GAME TO BE EASIEST USING THE KEYBOARD. JUST PRESS 'K' AT THE BEGINNING AND THEN IT'S:

<--- FOR LEFT
---- FOR RIGHT
'A' FOR UP
'Z' FOR DOWN.

AND SPACE BAR FIRES THE MICROWAVE.

<table>
<thead>
<tr>
<th>Place</th>
<th>Coordinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harad Road</td>
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</tr>
<tr>
<td>Nurn</td>
<td>F8</td>
</tr>
<tr>
<td>Barad-Dur</td>
<td>E8</td>
</tr>
<tr>
<td>Mt. Doom</td>
<td>E8</td>
</tr>
<tr>
<td>Carach Angren</td>
<td>E8</td>
</tr>
<tr>
<td>Cirith Ungol</td>
<td>E8</td>
</tr>
<tr>
<td>Minas Morgul</td>
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<tr>
<td>Durthang</td>
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</tr>
<tr>
<td>Dagorlad</td>
<td>D7</td>
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<td>Morannon</td>
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<tr>
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<td>F7</td>
</tr>
<tr>
<td>Linhir</td>
<td>F6</td>
</tr>
<tr>
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<td>E6</td>
</tr>
<tr>
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<td>E5</td>
</tr>
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<td>F5</td>
</tr>
<tr>
<td>Er Rach</td>
<td>E6</td>
</tr>
<tr>
<td>Ethring</td>
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</tr>
<tr>
<td>Lossarnach</td>
<td>E7</td>
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Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 668 of 1262

Apple II Computer Info

DOCUMENT mind.shadow

<table>
<thead>
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<tr>
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</tr>
<tr>
<td>Cair Andros</td>
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</tr>
<tr>
<td>Ogiliath</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Minas Tirith</td>
<td>E7</td>
</tr>
<tr>
<td>South Rhun</td>
<td>D9</td>
</tr>
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<td>North Rhun</td>
<td>C10</td>
</tr>
<tr>
<td>East Emnet</td>
<td>D6</td>
</tr>
<tr>
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<td>C5</td>
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<tr>
<td>Dale</td>
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<tr>
<td>Erebor</td>
<td>B7</td>
</tr>
<tr>
<td>Thrandil's Palace</td>
<td>B7</td>
</tr>
<tr>
<td>Goblin Town</td>
<td>B5</td>
</tr>
<tr>
<td>Mt. Gundabad</td>
<td>A5</td>
</tr>
<tr>
<td>Rivendell</td>
<td>B5</td>
</tr>
<tr>
<td>Ford of Bruinen</td>
<td>B5</td>
</tr>
<tr>
<td>Mount Gram</td>
<td>A5</td>
</tr>
<tr>
<td>The Last Bridge</td>
<td>B5</td>
</tr>
<tr>
<td>Weathertop</td>
<td>B5</td>
</tr>
<tr>
<td>Midgewater Marsh</td>
<td>B5</td>
</tr>
<tr>
<td>Sarn Ford</td>
<td>C4</td>
</tr>
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<tr>
<td>Deadman's Dike</td>
<td>B4</td>
</tr>
<tr>
<td>Stonebown Bridge</td>
<td>B4</td>
</tr>
<tr>
<td>Barrow Downs</td>
<td>C4</td>
</tr>
<tr>
<td>Bombadil's House</td>
<td>C4</td>
</tr>
<tr>
<td>Buckland</td>
<td>C4</td>
</tr>
<tr>
<td>Woodhall</td>
<td>C4</td>
</tr>
<tr>
<td>Green Hills</td>
<td>C4</td>
</tr>
<tr>
<td>Grey Havens</td>
<td>C3</td>
</tr>
<tr>
<td>White Towers</td>
<td>B4</td>
</tr>
<tr>
<td>Belegost</td>
<td>B3</td>
</tr>
<tr>
<td>Forlond</td>
<td>C2</td>
</tr>
<tr>
<td>Michel Delvins</td>
<td>B4</td>
</tr>
<tr>
<td>Tuckborough</td>
<td>C4</td>
</tr>
<tr>
<td>Waymeet</td>
<td>B4</td>
</tr>
<tr>
<td>Hobbiton</td>
<td>B4</td>
</tr>
<tr>
<td>Annunas</td>
<td>B4</td>
</tr>
</tbody>
</table>

FORMATTED FOR 80 COLUMNS

BEFORE STARTING THE ADVENTURE...READ THE LIVING TUTORIAL ON THE DISK AND THAT SHOULD HELP YOU UNDERSTAND HOW THIS ADVENTURE WORKS...........

ALSO- CERTAIN SHIFT KEYS WILL PRINT OUT THINGS AUTOMATICALLY LIKE

SHIFT 1 = SAVE THE GAME
SHIFT 2 = LOAD THE GAME
SHIFT 3 = THE LAST COMMAND OR SET OF COMMANDS REPEATED
SHIFT 4 = HELP ME CONDOR
SHIFT 5 = DROP
SHIFT 6 = GET ALL
SHIFT 7 = QUICKSAVE
SHIFT 8 = QUICKLOAD

THAT'S ALL OF 'EM....YOU CAN ALSO STRING DIRECTIONS BY PUTTING PERIODS IN BETWEEN THEM (N.S.E.W....).

COMMANDS IN BRACKETS [] ARE STRINGED COMMANDS.....

FIRST U START ON THE ISLAND--

GET SHELL, N, GO HUT, GET STRAW, S, E, GET STEEL, E, GET VINE, W, W, DROP ALL,
GET VINE, S, E, TIE VINE TO ROCK, D, W, GET ROCK, DIG, GET MAP, E, U, N, W, GET ALL,
N, N, E, N, E, S, S, E, (WOW! ANOTHER BEACH!), LOOK TRUNK, GET BOTTLE, W, N, N,
W, W, S, W, S, S, [DROP STRAW, MAP], HIT ROCK WITH STEEL, DROP BOTTLE

NOW TO THE INFAMOUS PIRATE SHIP!...

N, N, W, N, S, S, LOOK LIFEBOAT, GET CANVAS, N, N, E, S, W, S, PUNCH MAN, S, GET CLEAVER,
N, N, E, S, S, S, W, CUT CHAIN WITH CLEAVER, [DROP ROCK, STEEL, CLEAVER], E, N, N, E, E
ON TO MERRY OL' ENGLAND!....

E, E, E, SEARCH MAN, GET HAT, N, W, W, S, BUY POLE, N, W, FISH JUNK, GET PAPER, READ
PAPER, E, N, GIVE MONEY, S, E, N, N, E, SAY CHANDRALT, GIVE MONEY, W, S, E,
GIVE HAT, E, LOOK DRINK, CHASE MAN (KICK HIS ASS!!), S, W, GET HAT, W, S, W, N, N,
GO PLANE

NOW LANDING AT LUXEMBOURG....

N, W, LOOK IN HAT, BOOTR 11, SEARCH MAN, [GET ID, NOTE], READ NOTE, DROP NOTE,
E, F, N, W, TALK CLERK, U, N, W, DUCK, GET PARCHMENT, READ PARCHMENT, DROP PARCHMENT,
E, S, D, E, E, S, S, S, S, DIG, GET LEAFLET, READ LEAFLET, DROP LEAFLET, W, N, W, W, W, TALK
MAN, AN11649, OPEN BOX, GET GUN, GIVE BOX, E, N, W, U, N, N, N, E, SHOOT MAN,
GET MESSAGE, READ MESSAGE

THE GRAND FINALE!....(U COULD DO THIS IN THE BEGINNING OF THE GAME
Miner 2049'er : new from livesay computer games. Programmed by mike livesay and I must say that this program is destined to be a winner on the software market. Overall, I rate it a 9.8 the graphics in this game are done very well, and the game itself takes on the form of donkey kong. To my knowledge, the game has 4 levels, but there could be more. The fact that this game has 4 or more different levels makes it superior to the other games released for the apple which also take the form of donkey kong. You complete each level by covering all of the lined ground and eating the apples. Note that the apples also serve as energizers. On level 3, there is an elevator. To activate this, climb in and press 2 to go to floor 2, 3 to go to floor 3 and so on. To descend, simply press the 1 key. 'esc' toggles play and freeze mode. One other thing, the game plays a lot better with a joystick. Unfortunately, the keyboard functions are not incorporated into the program.
early, and the ball veers left. When you release the button, the ball will begin to move.

CHECK IT OUT (the scorecard)

At the end of each hole, the current score for all players appears on the scorecard screen. If you wish to see the score at any other time, press the space bar.

HOT TIPS FROM THE CLUB PRO

----------------------------

Mini-Putt

THE GAME (introduction)

Mini-Putt allows 1 to 4 people to play a round of miniature gold on any of 4 unique courses. This is a fun simulation of a classic game, combining skill with a sense of humor.

CHOOSE YER CLUB (selecting options)

+Move the mouse up or down to highlight Practice a hole, Play a game, or Quit. Press the button to continue. +Move to the desired course and press the button. +In practice mode, select hole to practice, and press the button.

YOUR NAME IN LIGHTS! (name entry screen)

Enter your name (up to 8 letters) and press RETURN. If there are fewer than four players, press RETURN again.

If you achieve a "low" score for any course, you're invited to enter your name on the course's Pro Board. Use the same procedure as above to enter your name.

OFF THE WALL (how to aim your shot)

Use your mouse to position the crosshair where you would like your first putt to go. You may move the crosshair within the play area only. If a hole extends past one screen, move to the edge of the screen, and the next part of the hole appears.

HOW HARD? (powering your shot)

While you're aiming your putt, the distance between the ball and the current cursor position is displayed numerically next to your golfer. You may have to use extra power on holes with slopes and banks, and less power on holes with a clear shot.

FORE! (how to putt)

When you're ready to shoot, press the mouse button. Notice the level rise in the power bar. When the bar reaches the desired distance, press the button again, and the bar moves back down. The mark where you stopped the bar moving indicates the power with which you hit the ball. When the bar reaches the bottom of the power bar, it moves horizontally onto the accuracy bar. In the middle of the accuracy bar is a center line. To make the ball move exactly toward the cursor position you're aiming for, you must press the mouse the instant the indicator reaches this line. If you press the button late (right of the center line), the ball will move to the right of where you aimed. Press too
MINIT MAN is a three-screened game in which you have to load and launch 3 interplanetary missiles before the alien mother ship destroys you. The missiles you must use to destroy the mother ship are on the other side of a gorge with a broken bridge. You have to fly to the government warehouse on the right-hand screen, pick up trusses and beams, one at a time, and fly them back to complete the bridge on the left-hand screen. Meanwhile, you must protect the launch computer in the command building in the center screen from the attacking alien robots. Once you have built the bridge, the train automatically brings a missile to the launching pad on the middle screen. You then land, leave the copter, and proceed down the back-and-forth hallways of the command building and reach the computer which then fires the missiles. You must launch all three missiles in under 5 minutes in order to complete the first level.

To build bridge: once you have a beam or truss picked up from warehouse, fly to bridge, position it EXACTLY and press both fire buttons at the same time.

To kill robots: robots fly down at center screen and enter command building to get launch computer. When they are hit with 3 shots, they turn into a land mine which kills a robot if it is touched. Sometimes a robot will fly to destroy bridge instead of computer, so you must try to protect both screens at the same time. The minit man can fire lazer, jump mines, & duck shots.

To maneuver helicopter: it faces in 5 directions, and it flies fastest in the direction it is facing. To change directions, push button 1 while pointing joystick to desired direction. Fire lazer cannon with button 0.

You lose when: the time on the clock runs out, all 5 minit men die, or a robot gets to the launch computer.

If all this sounds tough, there are some advantages you do have. Your copter flies faster than the robots, you can shoot through the windows in the command building to kill robots easily, and if minit man dies inside the building, he leaves a power pill which makes next minit man faster and clogs robot's lazers.

Miscellaneous: you can enter the command building from either the center or right-hand screen. Also, watch out for robot lazer cannons perched above the bridge on left screen and warehouse on right screen.

This is a difficult game to master, if you can ever master it at all!
The Following Characters are available to join the party:

(0) Previous Character
(1) Fighter with Sword
(2) Wizard
(3) Elf with Bow
(4) Dwarf with Ax
(5) Fighter with Ax
(6) Elf with Sword
(7) Dwarf with Hammer
(8) Fighter with Bow
(9) Cleric

How to move....

Up arrow or Return ------  Moves forward
Down Arrow         ------  Moves down
Left Arrow         ------  Moves left
Right Arrow        ------  Moves right

the ( <-- ,   --> ) keys move characters in 90 degree angles....

DOORS:

Locked- You can BASH or UNLOCK a locked door... when bashing, the party moves forward trying to break the door, afterwards you move thru one square, but have a high probability of setting off a trap. Unlock is simple, press (U) and then choose who you wish to attempt to pick the lock, a robber has the greatest chance of succeeding. Also capable of setting off a trap if fails.

WALLS:

Most say (Solid, or impassible, etc.. ) if they can not be moved thru, but there are secret passages and they can be found anywhere.

GAME COMMANDS WHILE MARCHING:

Movement - (above.^^)

[O] - Order -- Rearranges the order of the party. Hit ESC to abort.

[P] - Protect -- Displays currently active spells covering the entire party.

[R] - Rest -- Rests party overnite in square currently occupied. Rest restores all character's Hit Points and/or Spell Points, unless inhibited by special conditions. Rest requires one food unit from each character's food supply. All protection spells wear off during rest and must be recast upon awakening.

[S] - Search -- Finds treasure or other items hidden in square occupied by party. You should always search after defeating a monster and before moving off the square in which an encounter occurred. However, you do not need to search immediately after combat. You may want to rest, cure wounds, etc. first.

[B] - Bash -- (Explained above ^^^)

---

Might and Magic  by NEW WORLD COMPUTING, Inc.

Complete documentations....

Finally! sorry,... i've been real busy lately..... mm

All text files composed (painstakingly) by Mind Mechanic, and I take full credit for mis-spellings, etc. Please understand....

The Adventure Begins !

---

The Adventure Begins !
[U] - Unlock -- "" ""

[Q] - Quickref -- Displays a brief overview of all party members' Hit Points, Spell points, Armour Class, and Condition. Press ESC to go back to 3-D screen.

[+] - View character statistics:

[C] - Cast -- Casts a non-combat spell, providing character at that level and has the required number of spell points and magical gems.

[D] - Discard -- Permanently removes item from character's backpack.

[E] - Equip -- Shifts item from character's backpack so he can use it. A maximum of 6 items may be equipped. Only one hand/hand weapon, one armour, one shield, one missile weapon can be equipped at a time. A (+) in front of a character's number means that character is able to engage in hand to hand combat. With the exception of archers, characters who engage in hand to hand combat can't use missile weapons.

[G] - Gather -- Transfers all gold, gems and food carried by other party members to that character, up to the maximum amount of each item which the character can carry.

[R] - Remove -- Shifts Item from equipped to the back pack.

[S] - Share -- Evenly distributes all gems, gold or food in the party's possession among all party members.

[T] - Trade -- Transfers an amount of gems, food, or particular item from viewed character to another character.

[U] - Use -- Activates an item that has special powers. Items may or may not be equipped for use.

[V] - Volume -- Turns sound ON/OFF.

------------------------------------------------------------------------

Encounter

Definition - (briefly) / you fight a group of monsters that are either homogenous or mixed. There are hundreds of kinds of monsters at various levels.

If the Monster(s) surpises your party, you go directly into combat. No other options are available.

If your party surpises the monsters, you have the option to advance or not. If you choose to avoid the monsters, nothing furthur occurs. The encounter is over.

If neither party is surprised, you have several encounter options. WAIT! thats coming....

ENCOUNTER COMMANDS:

[A] - Attack -- This takes you to combat.

[B] - Bribe -- Your party may attempt to buy off the monsters with bribes. If the monsters refuse your attempt, combat will begin. If the monsters accept your attempt, a prompt will tell you what they demand (usually all of your gold/food/or gems)

[R] - Retreat -- Your party may attempt to flee fromthe invaders. If retreat succeeds, the encounter is over and you find yourself in the closest safe square.

[S] - Surrender -- (Wimp!) no really, its usefull. Your party can surrender. Giving the monsters whatever they want (Food/Gold/Gems), and you are free. Some monsters take no prisoners and will attack.

COMBAT:

Divided into rounds, A (+) in front of a charcters number means that is able to engage in hand to hand combat. With the exception of archers, and characters who engage in hand to hand combat can't use missile weapons.

Non-Combat Commands

[D] - Delay -- Allows you to set the duration of the on screen messages to any number between 0-9. (0 is the shortest duration, 5 is default)

[P] - Protect -- Allows you to see all currently active spells which cover your entire party.

[Q] - Quickref -- Displays the QUICKREF list of characters.

[+] - Views character -- thats right!

Handicap

The handicap prompt indicates whether monsters or party members have been given a speed handicap for the current round of combat. If the monsters have been given the handicap, a prompt will show MONSTER + the number by which all party members' speed has been increased. If party members have been given the handicap, the prompt will show PARTY+ the number by which all party members' speed has been increased. If neither, prompt will show EVEN.

Battle Options

[A] - Attack -- Character attacks monster in the A position, with whatever weapon he/she has equipped. If monster A dies, all other monsters move up one position.

[F] - Fight -- Character attacks monster in a hand-to-hand battle position, with whatever weapon equipped. A prompt will ask which monster he wishes to fight.

[E] - Exchange -- Character changes battle positions with any other member of the party. Press ESC to abort.

[R] - Retreat -- Character gives a general retreat command for the entire party. Chance of success is slim.

[S] - Shoot -- Character fires missile weapon at monster of choice. Only available when character has missile weapon equipped and is in a non-hand to hand situation.

[C] - Cast -- Character cast a combat spell. Only appears for spell casters.

[U] - Use -- Character activates special power for an item in his possession.

[B] - Block -- Character increases his Armour Class for this round.

For Advanced Players

To speed up combat, hold down CTRL-A together. The character with combat initiative will:

- Attack the monster is position A, if engaged in hand-to-hand combat.
- Shoot the monster in position A, if not in hand-to-hand.
- Block, if neither option is open.
Battle Over

Combat continues until one side is destroyed. If party wins, remember to search.

GAME OVER

If you want to interrupt the game, but save the experience points and other abilities gained by your characters during the most recent game session, you must take your party to the inn in one of the five towns and SIGN IN.

Beginners Guide to Adventure

THE WORLD

The world is divided into five towns, underground caverns and dungeons, open terrain, rivers and seas, and mountainous areas. In general, the more dangerous the area is, the more treasure you can expect to find.

Towns are important because they contain:

- Shops where food, weapons, armour, and other equipment can be purchased.
- Temples where sick or injured character may be healed.
- Training grounds where characters may advance to higher experience levels, provided they have the required experience points.
- Inns where characters must be taken for safe harbour at the end of each game session, if the game information is to be saved.

Underground caverns and dungeons contain multiple levels, with the danger (and possible gains) increasing at each lower level.

Mountains and bodies of water frequently offer only one route of passage, which may be heavily guarded by dangerous monsters.

Avalanches may cause mountain passes to shift, and spring torrents may flood river fords.

SPELLS

Only certain classes of characters may cast spells. There are 94 different spells, divided into CLERICAL and SORCEROR spells, with 7 SPELL LEVELS in each division.

Characters who may cast clerical spells may not cast sorceror spells, and vice versa.

The level of spell which a character may cast is determined by his experience level. When you first begin, concentrate on level one spells, since these are the only ones you may cast.

All spells cost spell points. Higher level spells may also cost a number of magical GEMS. GEMS must be found along the way.

OK... well... this is the end of the docs. Along with this file you should obtain these others...

Might and Magic Clerical Spells
Might and Magic Sorceror Spells
Might and Magic Quick Spell List
Equipment and Backpack Supplies

<table>
<thead>
<tr>
<th>Class</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleric</td>
<td>Staves, 10</td>
</tr>
<tr>
<td>Bard</td>
<td>Harps, 12</td>
</tr>
<tr>
<td>Paladin</td>
<td>Sallets, 20</td>
</tr>
<tr>
<td>Ranger</td>
<td>Bows, 8</td>
</tr>
<tr>
<td>Rogue</td>
<td>Short bow, 10</td>
</tr>
<tr>
<td>Mage</td>
<td>Staves, 20</td>
</tr>
<tr>
<td>Summoner</td>
<td>Staves, 20</td>
</tr>
<tr>
<td>Demon</td>
<td>Sallets, 20</td>
</tr>
<tr>
<td>Summons</td>
<td>Staves, 20</td>
</tr>
<tr>
<td>Sorcerer</td>
<td>Sallets, 20</td>
</tr>
<tr>
<td>Druid</td>
<td>Staves, 20</td>
</tr>
<tr>
<td>Vagabond</td>
<td>Sallets, 20</td>
</tr>
</tbody>
</table>

Alignment and Backpack Supplies

<table>
<thead>
<tr>
<th>Class</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleric</td>
<td>Staves, 10</td>
</tr>
<tr>
<td>Bard</td>
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<tr>
<td>Paladin</td>
<td>Sallets, 20</td>
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<tr>
<td>Druid</td>
<td>Staves, 20</td>
</tr>
<tr>
<td>Vagabond</td>
<td>Sallets, 20</td>
</tr>
</tbody>
</table>

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

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Apple II Computer Info

A9 magic shield  AA dragon shield
A8 rope & hooks  AC torch
AD lantern  AE 10 foot pole
AF garlic  B0 wolfsbane
B1 belladonna  B2 magic herbs
B3 dried beef  B4 robber's tools
B5 bag of silver  B6 amber gem
B7 smelling salt  B8 bag of sand
B9 might potion  BA speed potion
BB sundial  BC curing potion
BD magic potion  BE defense ring
BF bag of garbage  C0 scroll of fire
C1 flying carpet  C2 jade amulet
C3 antidote brew  C4 skill potion
C5 boots of speed  C6 lucky charm
C7 wand of fire  C8 undead amulet
CA silent chime  CA belt of power
CB model boat  CC defense cloak
CD knowledge book  CE ruby idol
CF sorcerer robe  D0 power gauntlet
D1 cleric's beads  D2 horn of death
D3 potion of life  D4 shinny pendant
D5 lightning wand  D6 precision ring
D7 return scroll  D8 teleport helm
D9 youth potion  DA bells of time
DB magic oil  DC magic vest
DD destroyer wand  DE element scarab
DF sun scroll  EO star ruby
E1 star sapphire  E2 wealth chest
E3 gem sack  E4 diamond collar
E5 fire opal  E6 unobtainium
E7 vellum scroll  ER ruby whistle
E9 kings pass  EA merchants pass
EB crystal key  EC coral key
ED bronze key  EE silver key
EF gold key  F0 diamond key
F1 cactus nectar  F2 map of desert
F3 laser blaster  F4 dragons tooth
F5 wyvern eye  F6 medusa head
F7 ring of okrim  F8 b queen idol
F9 w queen idol  FP eye of goros

Well that's about it and remember to leave mail if there is any problems.

The First Cheat made by W.C.C.T.

Don't forget to call the above boards.

Might & Magic Solve coming soon...

-END-
At any time before selecting a class, you can return to the MAIN OPTIONS MENU by pressing ESC.

Assign A Race

After selecting a class, choose the character’s race. Race options will replace class options on the screen.

HUMAN, ELF, DWARF, GNOME, HALF-ORC

To select a race, type the NUMBER next to the desired race.

Select Alignment

After assigning race, select the character's alignment. Your choices are:

GOOD NEUTRAL EVIL

Choose Character's Sex

MALE or FEMALE (tough one)

Name your Character

type (ANY NAME HERE) then press RETURN

Save Your Character

SaveChar (Y/N)?

VIEW ALL CHARACTERS

From the Main Options Menu you can view a list of all characters stored on the disk B copy which you are using. This includes the 6 pre-programmed characters, unless you have deleted any of them.

CREATE NEW CHARACTERS

If you decide to play Might and Magic using the pre-programmed characters provided, you can skip this selection.

Much of the fun of any fantasy game, however, lies in the creation of the characters with whom you go adventuring.

To create a new character, display the Main Options Menu and TYPE C.

Select Class

A character can belong to one of 6 possible classes.

KNIGHT, PALADIN, ARCHER, CLERIC, SORCERER, ROBBER

A character’s class is determined by 7 vital statistics.

INTELLIGENCE, MIGHT, PERSONALITY, ENDURANCE, SPEED, ACCURACY, LUCK

Each statistic is randomly assigned a rating between 3 and 18, with 18 being the highest. To generate a new set of random ratings, press RETURN.

To the right of the statistics are the eligible classes for the ratings given. These are the classes from which you may choose. Notice how the eligible classes change as you generate different sets of statistics ratings.

To choose a class, type the NUMBER next to the desired class.

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CONTROL key and press N. Then type the new name.

**GO TO TOWN**

Each time you play Might and Magic, your party of adventurers sets out from the inn in one of five towns. The town from which you set out is the town containing the characters in your party. All characters, preprogrammed or created, first start out in Town 1, so this is where you begin the game. Later, as your party travels to and lodges in other towns, you will set out from towns 2-5.

From the Main Options Menu, type the NUMBER of the town. The screen will show a list of characters in that town. If there are no characters in the town you have selected, you will see the message: NO AVAILABLE CHARACTERS.

**Set Up Your Party**

To add a character to your party, hold down CONTROL and press the KEY LETTER next to the character's name on the list of available characters. A @ sign will appear to the left of the name.

Do the same process to delete character from party set-up.

Now you are ready to begin adventuring.

Might and Magic Adventure instructions in different documentation file.

---END---

---

<table>
<thead>
<tr>
<th>Level #1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Awaken</td>
<td>1SP</td>
</tr>
<tr>
<td>2- Blind</td>
<td>1SP</td>
</tr>
<tr>
<td>3- First Aid</td>
<td>1SP</td>
</tr>
<tr>
<td>4- Light</td>
<td>1SP</td>
</tr>
<tr>
<td>5- Power Cure</td>
<td>1SP</td>
</tr>
<tr>
<td>6- Protection f/fear</td>
<td>1SP</td>
</tr>
<tr>
<td>7- Turn Undead</td>
<td>1SP</td>
</tr>
<tr>
<td>8- Suggestion</td>
<td>2SP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level #2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Cure wounds</td>
<td>2SP</td>
</tr>
<tr>
<td>2- Heroism</td>
<td>2SP + 1GEM</td>
</tr>
<tr>
<td>3- Pain</td>
<td>2SP</td>
</tr>
<tr>
<td>4- Protection f/cold</td>
<td>2SP</td>
</tr>
<tr>
<td>5- Protection f/fire</td>
<td>2SP</td>
</tr>
<tr>
<td>6- Protection f/poison</td>
<td>2SP</td>
</tr>
<tr>
<td>7- Silence</td>
<td>2SP</td>
</tr>
<tr>
<td>8- Suggestion</td>
<td>2SP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level #3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Create Food</td>
<td>3SP + 1GEM</td>
</tr>
<tr>
<td>2- Cure Blindness</td>
<td>3SP</td>
</tr>
<tr>
<td>3- Cure Paralysis</td>
<td>3SP</td>
</tr>
<tr>
<td>4- Lasting Light</td>
<td>3SP</td>
</tr>
<tr>
<td>5- Produce Flame</td>
<td>3SP</td>
</tr>
<tr>
<td>6- Produce Frost</td>
<td>3SP</td>
</tr>
<tr>
<td>7- Remove Quest</td>
<td>3SP</td>
</tr>
<tr>
<td>8- Walk on Water</td>
<td>3SP + 1GEM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level #4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Cure Disease</td>
<td>4SP</td>
</tr>
<tr>
<td>2- Neutralize Poison</td>
<td>4SP</td>
</tr>
<tr>
<td>3- Protection f/acid</td>
<td>4SP</td>
</tr>
<tr>
<td>4- Protection f/elec.</td>
<td>4SP</td>
</tr>
<tr>
<td>5- Restore Alignment</td>
<td>4SP + 2GEMS</td>
</tr>
<tr>
<td>6- Summon Lightning</td>
<td>4SP</td>
</tr>
<tr>
<td>7- Super heroism</td>
<td>4SP + 2 GEMS</td>
</tr>
<tr>
<td>8- Surface</td>
<td>4SP + 2 GEMS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level #5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Deadly Swarm</td>
<td>5SP</td>
</tr>
<tr>
<td>2- Dispell Magic</td>
<td>5SP</td>
</tr>
<tr>
<td>3- Paralyze</td>
<td>5SP</td>
</tr>
<tr>
<td>4- Remove Condition</td>
<td>5SP + 3 GEMS</td>
</tr>
<tr>
<td>5- Restore Energy</td>
<td>5SP + 3 GEMS</td>
</tr>
</tbody>
</table>
This is a list of all the spells available for Might and Magic, a more descriptive list will be out in a couple of days when I find the time.

-END-
GAME. For the most part, these are classic Apple II keys, but here they are:

Although MMM is played with the mouse, several keys have effect on the game. For the most part, these are classic Apple II keys, but here they are:

Esc pauses game and music. Press any key to continue.
ModemBuffer is copyright 1991 by Jay Krell. All rights reserved. It is free and can be freely distributed, but this file must accompany it.

ModemBuffer is meant for IIgs users whose communications program can't keep up with their modem, particularly modems 9600 bps and faster. It is an init that should be placed in the System/System.Setup folder of your startup disk. It sets up a 64K buffer for the GS modem port. If your communications program doesn't enable buffering, be sure to enable it in the control panel. ModemBuffer.1 uses slot 1 and ModemBuffer.2 uses slot 2. Be sure to use the appropriate one.

This is ModemBuffer version 1.1. It represents a significant improvement over version 1.0. Version 1.0 did not work. Version 1.1 does work. It should work with any communications program that uses the firmware. If a program can't keep up with fast modems, it is likely that it uses the firmware. If ModemBuffer can't allocate memory, you will get an error $201 and will have to reboot; sorry.

Jay Krell
GEnie: J.Krell1
America Online: JayKrell

Thanks to Robert Rosenberg for the idea and testing.

Version history
===============
1.0 - didn't work
1.1 - does work

QuickDocs for MODZap v00.41a. These docs and the MODZap program are copyright (c) 1992 Ian Schmidt and Two Meg Software. All Rights Reserved.

MODZap is the ultimate in MOD players for the Apple IIgs. It offers full support for 15 and 31 instrument MOD files used by the Amiga programs NoiseTracker, ProTracker, and StarTrekker. It plays these files on any speed Apple IIgs using pitchbend and other special effects programs like NoiseTracker IIgs just don't give you. And unlike NoiseTracker, it runs under GS/GS and uses the friendly desktop interface you already know how to use. It's also fully compatible with the new System 6.0 (in fact it works better with 6.0!).

To use MODZap, just run it. Load time should be practically instantaneous since it's a <7K application. Once you have a menu bar up, load a MOD, any MOD, including ones NoiseTracker GS chokes on. As with MODifier, you must guess if the MOD is 31 or 15 instrument. Start by trying 31, as most MODs are of this type. If the program hangs or crashes, try 15 instead.

To play, pull down the Sound menu and select Play MOD. The Not-So-Scrolly Player will appear before your eyes. To end playback, simply press the Open Apple key on your keyboard. The song will repeat forever if you do not stop it.

If you run into any MODs which MODZap does not play correctly, tell me!

Credits
-------
Program, Design, and Concept by Ian Schmidt.
Nagging and Cool Player Screen by James Brookes.
Moral Support from Dave Huang, Tim Meekins, Mike Horwath, Richard Wifall, and of course Yoshi ;-)
Montezuma's Revenge

docs by
The Quzimodo

created for
THE OUTPOST
312/441/6957

This game from Parker Brothers is similar to Aztec but infinitely better. The graphics are great and the game has no apparent flaws except for the boot which goes through 4 bad sectors. Anyway, your Panama Joe has to find jewels in a crypt. The last part of the crypt is full of jewels for the taking until you can't stop falling. You then begin the next level. Press return at the all-text title page, you get a menu:

1 JOYSTICK/keyboard
2 Game Level 1, 2, 3 (starts as 1)
3 Define Keys
*5 Return to Main Menu
*0 Pause
* Function valid only during game play

Its set at Joystick, level 1. If you want to change something, press the number to change. After you're done, press Return and start playing. The pre-set keys for keyboard are:

Left J
Jump K
Up I
Right L
Down M

In the game, there's the game screen and two boxes at the upper right and left corners. The upper right one displays your score. The upper left one displays how many guys you have left (hats), what tools you found and your level.

In each room, there might be any of the following:

LASSER GATES:
If Joe gets caught when one is there, he's dead. They turn on and off very so often.

CONVAYOR BELTS:
These never stop or change direction. They either make Joe slow down or speed up depending on which way he's going.

DISAPPEARING FLOORS:
Certain sections that look different from the rest and blink on and off. Joe can walk on one if its there or else he falls. When Joe falls, he might die, and this is not the only case of him falling.

DOORS:
There are 3 color doors: red, blue and grey. Joe must find the right key to open one. If he opens a door, its 300 points.

FIRE PITS:
If Joe falls in one, he's dead.
Apple II Computer Info

Swords...............................50 points each
Amulets...............................100 points each
Jewels...............................1000 points each
Torches...............................3000 points each
KILLING CREATURE WITH SWORD:
Skulls...............................2000 points each
Spiders...............................3000 points each
ROOM FIXTURES:
Opening a door......................300 points each

MoreInfo(tm)
by Bill Tudor
Version: 1.2
June, 1992

Copyright (c) 1992
All Rights Reserved.

SHAREWARE: MoreInfo is Shareware. This means that if you like this program,
send $10 to the following...
Bill Tudor
3925 Greencastle Rd. Suite #108
Burtonsville, MD 20866

If you do not believe this program is worth $10, well, then send me a note on how I can make the program better.

Thanks very much in advance.

This program may be passed around freely to anyone you like. The complete APW/C source code to version 1.0 is also available. Please include this file with the distribution since MoreInfo does not have a "Help" or "About" button.

....now down to the real stuff........

Introduction

MoreInfo is an Apple IIgs Finder Extension, i.e., it adds to the Apple IIgs System Disk 6.0's Finder (Finder version 6.0) and later versions. What is adds is a "More Info" option to the Finder's "Icon Info" menu item.

The "MoreInfo" window shows you and allows you to change:

- File type
- Aux File Type
- Creation Date
- Modification Date
- Invisible/Visible
- Backup needed/not needed
- Read access
- Write access
- Delete access
- Rename access
- Storage type
- Data fork size
- Data fork blocks
- Resource fork size
- Resource fork blocks

In addition, it also shows you (but you cannot change):

- Full pathname
- Data fork size
- Data fork blocks
- Resource fork size
- Resource fork blocks

This program requires Apple IIgs System Disk 6.0 or later to run.

Installation:

Just copy the file "MoreInfo" to your folder named:
Apple II Computer Info

```
"*:System:System.Setup"
on your boot disk. Now just re-boot.

-OR-

You can alternatively just copy the file "MoreInfo" to a folder named:
"*:System:FinderExtras"
on your boot disk and then just run the Finder!

That's it.

Note:  You place MoreInfo in either System.Setup or FinderExtras folders.  Either place, it works great!

Using the Program:

Run the Finder. Select some icons. Hold down the SHIFT key. Choose "Icon Info" from the Finder's menus.

You will get the MoreInfo window instead of Finder Icon Info windows. Note that without using the SHIFT key you get the normal Finder stuff.

MoreInfo shows you the pathname, type, aux type, creation date, modification date, access, storage type, data size, data blocks, resource fork size, and resource fork blocks for the file. Please note that I have not duplicated most of the stuff you can find using the regular Finder Icon Info command.

The arrows at the lower right allow you to move through all the icons that you have highlighted before invoking MoreInfo.

Please note that you can alter many of the values. Only change the ones where you know what you are doing, then click the "Change" button to make the changes happen. You cannot, for example, simply change a file of type TXT ($04) to type S16 ($B3) and expect the former text file to now be a IIgs Application program as if by magic. In addition, some file systems under GS/OS will not allow all of MoreInfo's features to take effect. As an example, changing just the rename access of an HFS file system file will not work. This is an illegal operation under HFS. Since no one knows what future file systems may be added, MoreInfo will try to do what even you ask it to, and after selecting the "Change" button the file information will be re-read from the disk and the MoreInfo window will be updated so you can see if your change request "stuck".

Filetypes may be entered as hexadecimal numbers or as 3-letter filetype abbreviations (such as SYS, S16, TOL, NDA, CDA, etc). Do not preceed the hexadecimal entries with a "$". Auxilliary file types must be entered as hexadecimal numbers.

Note:  You must click the change button to make changes. Do this before leaving the current display and moving on. Whenever the Change button is enabled, this means that you may have made a change and you should click the change button to make it stick.

After you click "Change", MoreInfo will re-read the information from the disk to see if the changes were allowed. For example, you can _try_ to change the filetype of a folder...it simply won't be allowed.

Revision History:

v1.0  + <Original release>
v1.1  + Boot text string was changed
       + New Date & Time change/display method
       + Fixed a few bugs with the Trash icon display

v1.2  + Various display changes
       + Change button enables/disables
       + Spelling errors, unused resources removed
       + Re-reads info after "Change" clicked
       + Fixed a few bugs with a Volume display
       + No more "whoosh" rectangles
       + Many cosmetic changes
       + Reduced the number of arrow cursor/watch cursor changes
       + Larger pathname popup (now called simply "Path:")
       + Checks for System 6.0 (or later) at installation time
       + Fixed bug with bad filetype entry
       + Icons are now present in the popup menu
       + Slight speed improvement
       + Filenames can be entered in Hexadecimal OR using some 3-letter filetype abbreviations.

Credits:

This program could not possible have been developed as easily without the Orca 2.0 (Byteworks) environment, APW/C (Apple) compiler, Edit-16 text editor (SSSi and yours truly), and Rez (Apple) and Genesys (SSSi) for resource fork creation/editing. Also, the engineers at Apple who developed all this great system software for the GS.

Have Fun!

=end
```
DOCUMENT moriarty

---

MORIARTY

BY: BETS C.

---


MORIARTY VERSION 1.2 INSTRUCTIONS:

MORIARTY, CURRENTLY AT VERSION 1 RELEASE 2, IS A SYSTEM DUMPING UTILITY DESIGNED TO DUMP TO DISK THE LOWER 48K OF AN APPLE 2 EXACTLY AS IT WAS WHEN RESET WAS PRESSED.

MORIARTY CAN BE TRIGGERED BY RESET OR NMI. A 16K RAMCARD IS NECESSARY, AND A FIP-RAM-TO-SLOT SWITCH IS DESIRABLE. I DO NOT KNOW HOW WELL IT WORKS ON A 2K, A FULL SCREEN MENU ALLOWS ACCESS TO THE VARIOUS OPTIONS OF MORIARTY. TWO USER EXITS ARE PROVIDED FOR THE AMBITIOUS.

PHYSICALLY, MORIARTY IS ONE FILE, AND NEEDS NO OTHERS UNLESS YOU RUN IT FROM AN INTEGER MACHINE, IN WHICH CASE HE NEEDS FPBASIC ON THE SAME DISK.

LOGICALLY, HE IS FOUR FILES:

THE SETUP PROGRAM
THE MEMORY FILL PROGRAM
THE REG OR NMI HANDLER
THE SMALL RWTS ITSELF

ALL OF THE MODULES ARE IN ONE BINARY LOAD, AND RELOCATED BY THE SETUP PROGRAM ACCORDING TO THE VALUES SPECIFIED BY THE USER. IN ADDITION, IF YOU PUT THE INSPECTOR AT THE END OF MORIARTY, HE WILL FIND IT AND PUT IT IN THE CORRECT LOCATION SO YOU CAN USE THE INSPECTOR WHEN THE DUMP IS TAKEN.


TIMES PER LOOP:

"MEMORY MAP."

$0B00-18A7: MORIARTY WHEN FIRST LOADED.
$18AA-20A7: INSPECTOR AT LOAD (IF INCLUDED).
$0B00-0B67: MEMORY FILL AND BOOT PROGRAM.
$0990-09FF: ROOM FOR USER EXIT NUMBER ONE.
$0A00-0A3F: ROOM FOR USER EXIT NUMBER TWO.
$2D00-2DS5: SMALL RWTS IN ALTERNATE 4K BANK ON RAMCARD.
$D800-FFFF: THE INSPECTOR, IF INCLUDED, ON THE SAME ALTERNATE BANK."

$0200-8155: PRIMARY AND SECONDARY NIBBLING BUFFERS FOR SMALL RWTS.
$9F00-FFFF: HOLDING AREA FOR LOW STORAGE SAVE HERE WHEN RESET WAS PRESSED.
$FECF-FF25: RESET HANDLER ROUTINE.
$FF2F-FFFD: NMI AND RESET 6502 POINTERS

Apple II Computer Info

Point. Go run the program until you come to the point you want to dump. Enable slot zero and press reset. If you specified autodumping, the disk drive will run until you put a DOS 3.3 disk into it. If you did not, then you will be in the monitor. To get the dump from the monitor, enter $F96 (return). If your moriarty file has the inspector, then CTRL-Y will take you to it. In any case and I0MEM: store log tab, and store $ exp at pdl store $s the machine was when reset was pressed. For those who do not wish to tangle with my code. The first one is called just after the user decides to accept the current setup. Nothing has been touched or moved. The second one is called just before the memory fill, when everything is in place. In both cases, the A-REG and the Y-REG point hi-lo to a data structure known internally as "the block". It is the anchor point for all operations during setup. The first two bytes are a LO-HI pointer to MX, the fastest general purpose move program for the 6502 known to me. Call him with your A-REG and Y-REG pointing hi-lo to a request block in this format Byte 0: $80 (other values reserved, and will return with carry set). Byte 1-2: present address of data. (LO-HI) Byte 3-4: target address of data. Byte 5-6: length of data. All double bytes are LO-HI format. Don't try to use page zero when you call this thing.

Times per loop:

"Memory map."

$0B00-18A7: Moriiaty when first loaded.
$18AA-20A7: Inspector at load (if included).
$0B00-0B67: Memory fill and boot program.
$0990-09FF: Room for user exit number one.
$0A00-0A3F: Room for user exit number two.
$2D00-2DS5: Small RWTS in alternate 4K bank on RAMcard.
$D800-FFFF: The inspector, if included, on the same alternate bank."

$0200-8155: Primary and secondary nibbling buffers for small RWTS.
$9F00-FFFF: Holding area for low storage save here when reset was pressed.
$FECF-FF25: Reset handler routine.
$FF2F-FFFD: NMI and reset 6502 pointers

Once you have filled out the menu, run down to "use this setup" and press "y", in a hummingbird's heartbeat, or dinosaur's if you load FPBASIC. Moriiaty will configure to your specifications. Note that if you are using a 2+ or 2K he will copy applesoft from the ROMs. The next thing you will see is a message indicating complete setup, and telling you to press a key to boot. Disable slot zero access at this point. If you do not have such a switch, then you should have your RAMcard in a nonzero slot.

Put in the disk to boot and press any key. Depending on what you specified as a memory fill value, your screen may fill up at this
<table>
<thead>
<tr>
<th></th>
<th>Released: January 7, 1988</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MouseLINK Version 2.0 fx</strong></td>
<td></td>
</tr>
</tbody>
</table>

Ever since the Release of AppleLINK, people have wanted On-Line mouse control in the *>Private<* BBS world. Well it's here now, and it's hip, it's rad, and it's now. This file contains a small explanation of how to use MouseLINK on your own BBS, and where to see it in action. We believe this will revolutionize the Apple BBSing world.

### For On-Line Mouse Control Call these Terrific Systems:

<table>
<thead>
<tr>
<th>System</th>
<th>Phone</th>
<th>Bauds</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off The Wall //gs</td>
<td>(319) 354-7959</td>
<td>12-9600 bauds</td>
<td>Mercenary &amp; Hack</td>
</tr>
<tr>
<td>Gold Mine GS</td>
<td>(213) 277-8292</td>
<td>24-9600 bauds</td>
<td>Vindicator &amp; Cy</td>
</tr>
<tr>
<td>Pandemonium GS</td>
<td>(416) 273-7619</td>
<td>24-9600 bauds</td>
<td>Apple Clone</td>
</tr>
<tr>
<td>DJ's BBS</td>
<td>(303) 789-0500</td>
<td>03-9600 bauds</td>
<td>Mad Dave</td>
</tr>
<tr>
<td>X.A. Systems</td>
<td>(815) 756-9567</td>
<td>24-9600 bauds</td>
<td>Dr. Ditto</td>
</tr>
</tbody>
</table>

### Known Flaws

- Naturally if you have the Mouse.da activated and you goto a program that uses the mouse, there’s going to be some fighting over control of the mouse, I suggest you turn off the DA whenever you goto a mouse controlled program, since the da, will keep reinitializing the mouse if it detects that another program has modified the mouse clamps.
- You can access this DA thru the control panel just like any other DA, and you can adjust the mouse sensitivity, and whether or not the da is on or off from the main menu. It should be self-explanatory.
- The Top and Bottom of the Text Screen are now Defineable.

#### Apple II Computer Info

**III.** The Border Color of the Boarder is Defineable.

**IV.** The Fore/Back ground colors are Defineable.

**V.** There’s a new detect, so you know the Mouse.da is there.

**VI.** There’s a special, box that will appear in the foreground.

**VII.** There’s a special way to clear the foreground.

**VIII.** You can ask the DA, “Where the hell is that damn Mouse?”

**IX.** There’s a couple Easter Eggs.

**X.** The Top and Bottom of the Text Screen are now Defineable.

**XI.** You may define a scrolling box, top/bottom, left, and right.

### Technical Information

All commands follow a generic protocol, you send certain ctrl-codes to the da, by printing them, and Vuala it does what it’s supposed to most of the time. All commands are preceded by a Ctrl-C (Chr$(3)) followed by the command issued, followed by any parameters the command might have. Here is a general list of items.

- **Set Border Color:** Ctrl+B+Chr$(x). x being as defined as a value of (0-15) which is the color you want to set the boarder too.
- **Set Fore/Back Text Color:** Ctrl-F+Chr$(x*16+y). X defined as a value (0-15) to be the color of the Text, and y being a value (0-15) for the color of the background.
- **Detect MouseLINK:** Ctrl-E. This will return two 3’s. Asc 33’s it will literally return two Chr$(3) equivalents.
- **Set Top/Bottom of Text Box:** Ctrl-T+Chr$(top)+Chr$(bottom). The top and bottom are values from 0 to 23, the default top is 1, and the default bottom is 23, when the status bar is turned on.
- **Change Mouse Cursor:** Ctrl-C+Chr$(x*4+y). Example, if this statement is used the cursor will be an open apple, since it auto-matically makes it a mouse/text char, if you send a normal character. B is the normal pointer, and C is the hour glass.
- **Popout Box:** Ctrl-K+Chr$(y)+<string>. OK, y is a value 0-23 where the box will be placed vertically. The string, is a string up to 70 characters, terminated by a Chr$(13) [Cr]. The string will then be printed centered inside the box at the vertical position. The great thing about it is, it doesn’t have any destructive effect on the text currently on the screen.
- **Erase Foreground Printing:** Ctrl-H. This will erase the Popout box.
- **Define Top/Bottom of Special window:** Ctrl-I+Chr$(top)+Chr$(bottom). See set top/bottom of text window.
- **Define Left/Right of Special windo:** Ctrl-J+Chr$(left)+Chr$(right). Left and right are any value between 0-79.
- **Scroll Up:** Ctrl-Z. Scrolls special window up one line.
- **Scroll Down:** Ctrl-V. Scrolls special window down one line.
- **Where is the Cursor?:** Ctrl-W. Forces the mouse button to be artificially pushed.
Set Mouse Mode: Ctrl-M+chr$(x). x is defined to be a value from 1-3. Mode 1 is the default, and when the mouse button is pushed, a ctrl-`chr$(30) is sent out, followed by the X and Y position of the mouse cursor on the screen. This is standard Datamedia/ProTERM Special Coordinate system, and if you don't know about it that's too bad. When mode 2 is set, the mouse cursor is no longer shown, instead, when the user moves the mouse up, it's just like he/she hit up arrow, same for the other directions. The button will return a chr$(13) in this case. Mode 3 is identical to mode one in all but one respect, it sends a chr$(2) instead of a chr$(30).

shrview
print \\"Please wait...for our SLOW hd, to load the pic... then the transfer\" print *will be cached from Ram."
use "shrsend",i$ return
then under the view label, just like below
view
if not(flag(23)) print *May not view files*:return
print *View Files..."
c=4:d=176:e=26:bz=0:gosub fsel
if (th$="$C0") or (th$="$C1") goto shrview
this is the line I added
if left$(f$,2)="V." print *File may be sent, but not viewed*:return
print \sn$\goto show
----------
End Notes
----------

Well, that's about it from me. I'd like to thank Ron Mercer, without him there wouldn't be a shrsend use command. If you need to know anything else, you can contact me at Off The Wall //gs 319/354-7959.

Thanks for your patience with this endeavor, and from now on, the only thing that will need updated is the da, possibly some use files for SysOps, it's all yet to be seen.
-- Joe Hack
Chapter Six: Controlling the Terminal

Chapter Three: Getting Started

APPLE is released, imitation mouse mode is over. Holding down the OPEN APPLE key and pressing ESC will turn on the imitation mouse substitute, and ESC for [Cancel] or [No]. Pressing OPEN-APPLE-? in a dialog box with...to change it, just click the button on whatever other you want one.

Input box: is a box with a underscore cursor. It is used to allow the user to type in a selection (such as a file name). When several input boxes appear in one dialog box, click the mouse in the one you want to activate it. All editing functions are available in an Input box (see chapter 9).

Scrolling Windows: used to display long lists. Only a set about of the "roll of paper" can be seen at a time. Clicking the down arrow key next to the list scrolls the list down, the up arrow scrolls it up. The small rectangle in the scroll bar area is like a tiny picture frame which moves up and down the list showing approximately where the window is looking on the list. To select an item from the list, either double click the mouse on the item, or click the [OK] button to confirm the selection. To hide a menu, click the close box(a small box with a dot in it).

Pseudo-Mouse: Usually, when a dialog or alert box asks [OK] or [Yes], RETURN will substitute, and ESC for [Cancel] or [No]. Pressing OPEN-APPLE-? in a dialog box with a [help] button is the same as selecting [help] OPEN-APPLE/- is the same as OPEN-APPLE/-? A scrolling window can be positioned using the arrow keys(Up arrow for up etc.) to highlight one entry in the list. To scroll the window bar, use the OPEN-APPLE with the up or down arrow keys. The TAB key can be used to switch from one input box to another. Some items in the menus can be down the list showing how the selection.

Echo: Usually, on-line communications is a two-way street, you send a character to each computer and the other computer echoes the same character back at you. That means that all the characters you see are sent by the other computer. But that is not always the case. Some systems don't send back an echo, and therefore your system must display the characters sent out. On most systems echo is on, therefore, the local echo is off, but if you cannot see what you are typing, your local echo must be turned on. If double characters appear, local echo must be turned off.

Chapter Six: Controlling the Terminal

Super Serial (Card:MT only pays attention to switches setting SW1 number 7 and SW2 numbers 6 and 7, other switches should be set according yo your manual.)

Printer:SW1 number 7 should be ON.
SW2 number 6 and 7 both should be OFF
Modem:SW1 number 6 and 7 should be ON
SW2 #6=ON, #7=OFF
Software:

Chapter Five: Communicating with MT

--- I guess something is missing here ---

MT allows your computer to communicate with other computers working as a remote terminal. This Chapter is provided as any easy, non-technical overview of how computers communicate with eachother.

Bits, Bytes and Characters: Computers operate on a binary counting system. The numbers 0 and 1 represent off and on. A bit(Binary Dig) is either a 0 or 1 byte is a set of bits, typically 8, The eight bits in a byte can be arranged in 256 different ways. Each of these represents a value from 0 to 255. The first 128 of the 256 arrangements represents characters, each separate number, corresponding to a letter, number or symbol. The standard set of the 128 characters is the American Standard Code for Information Interchange (ASCII) and represent the numbers, letters in upper and lower case, punctuation and special control codes.

The Modem: The modem is a contraction of MODulator-DEModulator, it translates the digital bits the computer understands to analog sounds, which are sent over the phone line, and translated back.

Carriers and Breaking: Once two modems are talking to eachother, they send a special signal to each other, called a carrier, the pitch of which is either the Originate or Answer (to tell which computer is sending what info.). When the carrier stops, communication ends, and it usually means that the other modem has hung up. Breaking is a special interruption in the carrier, about 1/3 second long. The break can be used in many different ways, depending on the host computer. Some interpret it as a break signal as in Basic, parameter 1. But it really is 375 ASCII characters.

Data Word Format: refers to how your computer's serial interface interprets bits coming in from the modem. The bits of the information is sent in a stream between computers, but a special format is needed to tell when one character ends and the other begins. Each byte sent over the wire is typically 8 bits long, but some of the characters are...used to tell when the character starts. The following 8 bytes of the character is transmitted. The following 8 bytes are sent out backwards. The 128 characters is represented by the last 7 bits, the 8th used to flush it out to 8. The 8 bits are followed by an optional value called the parity bit. If no odd parity check is used, and the sum of the bits is odd, the parity bit is set to 0. If the sum is not odd, the parity bit is set to 1. If an even parity check is used, the parity bit is set to 1 when the sum is odd. The parity bit occupies the 8th bit in the byte, since ASCII uses only the first 7. The 10th bit, is the stop bit, used to tell when the character stops.

Echo: Usually, on-line communications is a two-way street, you send a character to another computer and that computer echoes the same character back at you. That means that all the characters you see are sent by the other computer. But that is not always the case. Some systems don't send back an echo, and therefore your system must display the characters sent out. On most systems echo is on, therefore, the local echo is off, but if you cannot see what you are typing, your local echo must be turned on. If double characters appear, your local echo must be turned off.

Chapter Three: Getting Started

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Getting Started...the mouse controller card is recommended for slot 4 and the modem in slot 2.
The terminal is where most on-line communications take place, and where the most time will be spent on MT.

The Session Menu: Configuring MT's communications options is done in the Session menu. The menu is divided into two basic parts. The first several items, NEW SESSION, LOAD, WRITE, WRITE SESSION, MACRO EDITOR, SESSION TYPE, DIAL SETTINGS, and ANSWER SETTINGS allow changes made in the terminal mode to be saved to disk in a session file. Adjustments can be made for each on-line system and be recalled later for use. These are discussed in chapter 10. The remaining items can be used to customize MT's terminal for each different call:

System Settings controls various aspects of MT's Terminal Speed adjust the bits per second at which MT sends and receives characters.

Data Word Format selects the way MT interprets data received

Terminal Emulation allows MT to emulate the behavior of several popular computer terminals, and is discussed in Chapter 11

Char Suppression selectively filters control characters received by MT

Here-is is an option which allows MT to automatically send a response each time it receives the special "Here-is" character

System Settings: Pull down the Session Menu and choose System Settings, or press OPEN APPLE-U. Most of the items displayed in this dialog box can be toggled on or off. After the necessary changes are made, click [OK] to put them into effect.

Add Line feeds: This is used when the host computer is not supplying line feeds for your screen or printer. The line feed character usually follows the carriage return. If a line feed does not, all characters received are written over on the same line

Chat: If you are on line with someone, and you cannot see what you are typing, but can see his, choose the Chat option. The chat can also be used to communicate with dumb terminals or on-line printers.

Display Menu Bar: The menu bar on the top of the screen can be turned on or off. When off, the menus can be accessed by moving the mouse to the top of the screen and pressing the mouse button.

Flow Control: refers to MT's ability to control the flow of text coming from the host computer, flow control works by sending the XOFF and XON characters (CONTROL-S and CONTROL-Q) to the host when MT is ready to receive or send more data. Normally, there is no need to turn this off, since most hosts will support it. Also, when this is off, typing CONTROL-S and CONTROL-Q manually can still be done. You can redefine the XON and XOFF characters in the boxes below the option.

Key Click: When this is on, a key will be heard whenever a key is pressed.

Local Echo: See ch. 5

Show Control Chars: ASCII characters 0 through 31 are called control characters and are not displayed like normal characters. When this option is on, a control character received will be shown with a *** in front of it. (i.e. CONTROL-C = C) The only ones not shown are CONTROL-M (carriage return) and CONTROL-W/CONTROL-Q (carriage return with line feed).

Speed: is the communications speed in bits per second. Pull down the Sessions menu and choose Speed. The speed at which communications will be done can be chosen by clicking the mouse.

Data Word Format: refers to the format of the parity and ASCII bits (see ch.5) The first character stands for the word length, the second for (e)ven or (o)dd parity bits and the last for the amount of stop bits.

Character Suppression: directs MT to filter or suppress received control characters as they are received. Listed is a table of ASCII control characters, a check by the suppressed ones. To change the status of one, click the mouse on it.

Here-is: This option directs MT to look for a specific character sent by the host. When this character is received, MT sends a response automatically.

The Review Buffer: is where MT holds the last 8,192 characters (8K) received, when it is full, MT deletes the oldest characters and makes room for the new. The review buffer can be used anytime, on-or-off-line. Just pull down the review menu and choose Review. Use the Scroll Bar to look back through the text. To get out, pull down the Review menu and choose Terminal, press OPEN APPLE-R.

Selecting Text: it's possible to copy portions of the text in thereview menu to MT's Clipboard, the printer or to disk. Move the mouse to the review window, and select a block of text. Pull down the Edit menu and use one of the following options.

Copy to Clipboard: stores a copy of the selected text to the Clipboard.

Copy to Printer: sends a copy of the text to the printer.

Copy to Disk: save the block to disk.

Chapter Seven: Working with files

A file is a collection of information on a disk. The 3 types of files referred to in this manual are:

Text Files: consist of ASCII text, typically containing information made by text editors and word processors, or contain text sent over the modem.

Data Files: contain binary information, such as facts in a database or numbers in a spreadsheet.

Program Files: contain programming instructions and codes, which the program reads from its instructions.

The File Menu: The File menu is where most of MT's file related commands are located. The command areas are the Editor commands, dealing with the MT editor, which are discussed in Ch. 9. Disk Utilities are general disk file commands. Quitting commands, either to quit from MT, or to the Install program.

Disk Utilities: Catalog: to see a list of files on the current directory. At the top of the Catalog dialog box is the name of the current directory, or subdirectory. Below the directory name is a scrolling window listing every file in the directory, in alphabetical order. Following the name of the file is a 3 file type (i.e. BAS for BASIC, TXT for ASCII). The size of the file in blocks (of 512 bytes) is shown after the file type, followed by the date of creation, and the date of last modification. The last number is the size of the file in bytes. Use the [PREFIX] button to catalog another volume.

Volumes: displays information about all the disk volumes in your system. The first item is the name of the volume, followed by its slot and drive. The next item is the total # of blocks on the disk, and the number of blocks used and free.

View a File: displays the contents of a text file. Double click the file name to select it. While viewing it, the space bar or the mouse button will pause and unpaese the scrolling. Press ESC or OPEN APPLE-PERIOD.

Rename a File: will change the name of a file. If a file is locked, the disk error box will appear, the name cannot be changed by MT.

Delete a File: will delete a file from disk. To delete a Subdirectory, choose the name from the scrolling window.

Prefixes: The [PREFIX] button appears in every dialog box dealing with files. When it is pressed, a dialog box will appear. Listed in the scrolling window are the available directories under the current directory. When at the volume directory level, (as shown by one /), the names of each volume are displayed in the window. Click the [-] button to move from a subdirectory up to the parent directory, and the [->] button to move down one level to the subdirectory. If the name of a prefix is entered...
that does not exist, MT creates it for you. Just enter the name of the Subdirectory, and MT will create it and automatically switch to it. All Prefix dialog boxes are operated in the same way, however, changing the prefix for one command does not change it for all. MT has 4 separate prefix groups: The First includes all MT's primary disk and file access commands: VIEW, DELETE, RENAME, CATALOG, OPEN, SAVE AS, SEND FILE PROTOCOL, RECEIVE FILE PROTOCOL, and SEND TEXT FILE.

The second controls Receive to File. The third controls MT's Session commands. The fourth cannot be changed by using a [PREFIX] button, and is where MT looks for it's own program files.

About MouseTalk shows information about the MouseTalk program, including the program drivers and modem selection.

Prefix changes, or logs, to a new sub directory or disk drive. Use the arrows to move up @H or down @U one level in the directory structure. Choose a subdirectory from the window, or type its name in the input box. Click 'Done' once a new subdirectory is selected. Open loads a text (TXT type) file into the Editor. Choose a file from the window, or type its name in the input box. Click 'Prefix' to choose a new disk drive/directory. Click 'OK' once a file is selected. Clear Editor wipes clean the contents of the Editor. If a document in the Editor has not been saved since the last change, Clear Editor asks to verify the clear. The Editor must be clear before a new file can be opened. Close ends the editing session. If the file has been changed since the last save, you will be prompted to proceed with the close or give another chance to save. After Closing, the Editor is emptied. Read inserts a text file into the Editor at the cursor's location. This is similar to Pasting a text, though an entire file is inserted. Save records all changes made in the Editor to the disk file being worked on. Save As saves the contents of the Editor to disk. Choose a file name from the window or type the name of a new file in the input box. Click 'Prefix' to choose a new disk drive/directory. Click 'OK' to save the file. If an existing file name is used, MouseTalk will ask if you wish to re-use or append to the file. Revert To Saved loads the most recently Saved copy of a document back into the Editor. Editor switches from Terminal mode to the MouseTalk Editor. Once in the Editor, this menu item changes to Leave Editor. Leave Editor switches back from the Editor to the Terminal mode. View displays the contents of a text (TXT type) file. Choose a file from the window or type the file's name in the input box. Click 'Prefix' to choose a different disk/directory. Click 'OK' to display the file. While the file is being displayed, press the mouse's button or the spacebar to pause. Delete permanently removes files from disk. Select a file from the window or type its name in the input box. Use 'Prefix' to choose a new disk drive/directory. Once a file is selected, click 'OK' to delete the file. Click 'Cancel' when done. Rename changes the name of a disk file. Only the file's name is changed; its contents remain intact. Choose the name of the file from the window, or type its name in the input box. Click 'Prefix' to log to a new disk drive/ directory. Click 'OK' once a file is selected, then type the new name of the file. Click 'OK' to rename the file or 'Cancel' to quit. Catalog displays a list of all files in the current directory (prefix). Click 'Prefix' to choose a new directory or disk drive. Volumes displays information on all disks in your system.

The prefix you specified does not exist in the current directory. Click 'OK' to create it. Install Program leaves MouseTalk and runs the installation program. Be sure to Save the contents of the Editor before choosing this item. Exit quits MouseTalk, and returns to ProDOS. Be sure to Save the contents of the Editor before quitting. Cut removes selected text and places it in the Clipboard. The text can be recalled using the Paste command. Note that the most recently Cut text replaces the old contents of the Clipboard. Copy duplicates selected text, copying it to the Clipboard. Note that the most recently Copied text replaces the old contents of the Clipboard. Paste inserts text from the Clipboard into the Editor at the cursor location. Clear removes (deletes) selected text. Copy to Printer prints selected text. Make certain the printer is on and ready to print before choosing this option. To stop printing, hold down the @A key and press . (period). Copy to File saves selected text to a file on disk. Choose a file name from the window or type the name of a new file in the input box. Click 'Prefix' to choose a new disk drive/directory. Click 'OK' to save the file. If an existing file name is used, MouseTalk will ask if you wish to re-use or append to the file. Find locates a word or phrase of up to twenty characters typed in the input box. Choose Forward to search after the cursor position, or Backward to search before. Click 'Find' to start the search. Once the text is found, MouseTalk selects (highlights) it. Find Next locates the next occurrence of text entered using the Find command. It's the same as re-using Find and clicking 'Find'. Change Case alters the case of selected text to either all upper, all lower, or mixed case. Fill works only on selected text. A paragraph is considered any group of letters, words and numbers followed by a blank line. Fill puts as many words possible on each line in a paragraph and word-wraps text to the next line. Fill works only on selected text. A paragraph is considered any group of letters, words and numbers followed by a blank line. Clean Up removes all control codes from selected text. After 'Cleaning Up', the text will only contain carriage returns. Show Clipboard displays text held in temporary storage in the MouseTalk Clipboard. Enter a phone number in the input box. Wait time indicates the number of seconds MouseTalk waits for the other modem to answer the phone. Click 'Redial' to redial if no answer is made. Click 'Hang up' to hang up or 'Cancel' to return back on-line. Hang up disconnects (hangs up) the modem. Click 'OK' to hang up or 'Cancel' to return back on-line. Answer instructs MouseTalk to receive incoming calls, answering the phone when it rings. A password is used to prevent unauthorized access to your computer. Do Session loads and executes a pre-written "script" of commands, customized to a particular on-line system. Choose the Session file from the window or enter the
file's name in the input box. Click 'Prefix' to choose a new disk drive/directory. Click 'OK' to load the Session and, if listed, dial the phone number. Redo Session reprints a Session currently in memory. Send From Editor sends the contents of the Editor to another computer, similar to Send From File. Send From File sends a text (TXT type) file to another computer. Choose a file from the window, or type the file's name in the input box. Use 'Prefix' to choose another disk drive/directory. Click 'Modify' to control how the file is sent. Protocol Send sends a file on disk using Christensen protocol for error-free transmission. Choose a file from the window, or type the file's name in the input box. Click 'Prefix' to select another disk drive/directory. Protocol Receive receives a file using Christensen protocol for error-free data transmission. If the name of a file to receive is chosen from the window, you're asked if you wish to replace it. If the name of a new file is typed in the input box, the file is created. Click 'Prefix' to choose a new disk drive/directory. Receive to File saves incoming text to a file on disk. The file is chosen with Set Filename. A check appears by this option if Receive to File is currently active. Receive to Editor copies (appends) incoming text to the MouseTalk Editor. When Receive to Editor is active, a check appears by this option. Receive to Printer copies incoming text to the printer. When Receive to Printer is active, a check appears by this option. Do (macro label) executes a macro element. The element is created in the Macro Editor and can be part of a Session file. The Macro Editor is used to create or modify macros for a particular Session file. Load Session loads a previously saved Session file into memory for modification and editing. Choose a Session file from the window, or type the file's name in the input box. Click 'OK' to load the Session file. Write saves the session in memory to disk. Choose a name for the file using the Write As command, write prompts to save your Session as a Dial or Answer Session. Click 'Write' to save the file or 'Cancel' to make more modifications. Write As saves the session in memory to disk. If a file is chosen from the window, the contents of that file will be replaced. If a file name is entered in the input box, MouseTalk creates a new Session file. Write As prompts to save the Session as a Dial or Answer Session. Click 'Write' to write the file or 'Cancel' to make more modifications. New Session resets all MouseTalk's commands and functions to the same as when the program was started. Speed selects the speed of data transmission in Bits Per Second. Choose a speed by clicking the box next to the desired value. Terminal Emulation allows MouseTalk to mimic the display characteristics of a specific terminal. Choose the name of the terminal to emulate from the window, then click 'OK'. Character Suppression filters characters, specifically control codes, as they are received by MouseTalk. Click the mouse on the character to suppress. A check appears by characters currently suppressed. Click 'OK' when done. Data Word Format selects a specific format for character transmission. Click the box next to the appropriate Data Word Format, then click 'OK'. Here-is sends an "answer back" string to another computer if that computer sends the proper Here-is character. Type the Here-is character into the input box, for example, CONTROL-E. Type the answer back string into the Response input box. Click 'OK'. The Answer mode answers the phone, allowing remote callers access to your computer. Enter an Access Password. Click 'Ok' to enter the Unattended mode and wait for a call. Answerback options are discussed at length in the manual. Accessible prefixes define prefixes, or sub-directories, which are available to the remote caller. Click 'Ok' to grant a caller access to all your disks and directories. Initial Prefix defines which prefix the caller is logged to after entering the correct password. The Initial Prefix should contain the Hello file if one was specified. MouseTalk Installation allows you to reinstall the entire program, or simply change a single item. On the right side of the window are MouseTalk's current settings. Click 'Format' then 'Copy' to create another MouseTalk disk, or just 'Format' to make a data disk. Click 'Choose Computer' to reinstall the entire program. Click an individual item to change only it. Click 'Save' to record the changes, then 'Run' to go back to MouseTalk. Choose Communications Card informs MouseTalk which serial interface card your Apple uses. Select the card from the window. Click the mouse by the slot number of the card. Click 'Ok' when done. Choose Printer Card informs MouseTalk which printer interface card your Apple uses. Select the card from the window. Click the mouse by the slot number of the card. Click 'Ok' when done. Choose External Modem informs MouseTalk which type of external modem you're using. Choose the name of the external modem from the window. Click 'Ok'. Choose Computer informs MouseTalk which type of computer you'll be running the program on. If you have an Apple //c, click the mouse on Apple //c. After choosing your computer, click the 'Ok' button. MouseTalk proceeds with an installation tailored to your particular type of computer. Copy MouseTalk Disk copies all the files and programs needed to run MouseTalk from MouseTalk's prefix to the current prefix (disk drive or directory) specified. The two prefixes must be different for the copy to work. To choose a new destination for the files, click 'Prefix'. The files copied are:

MT.BIOS
MT.INSTALL
MT.HELP
* PRODOS
MT.TERM

* copied only if the destination prefix is a root directory (disk rather than subdirectory.) Format the Disk formats, or initializes, a diskette for storing data. If the diskette already contains data, you will be asked to confirm that you want the old data erased before formatting. Enter the volume name of the new disk in the input box. Click the mouse by the slot and drive number of the drive containing the diskette to be formatted. Click 'Ok' to begin formatting. The Editor is full! Either Close the Editor, saving the contents to disk, or delete some text to allow further editing. The file you're saving is already on disk. Click 'Re-use' to erase the old file and save the new, or 'Append' to place the new file at the end of the old. Something's wrong with the printer. Fix the printer, then click 'Retry' to continue, or click 'Cancel' to stop printing.
Send Break sends a modem break signal to the host computer.

System Settings are miscellaneous communications parameters which can be toggled on or off. To turn an item on, click by that item. Items currently on have a checkmark by them. A new XON or XOFF character can be entered into the appropriate input box.

Session Type chooses whether the current Session is defined as a Dial or Answer Session. To choose either one, click the mouse by Dial or Answer.

To confirm the Session to be saved as a Dial or Answer Session, click 'Save'. To change the Session type, click 'Cancel', then choose Session Type again from the Session Menu.

Enter the name of a file for use with the Receive to File command. After a file is chosen from the window, or the name of a new file entered in the input box, toggle Receive to File on to begin saving incoming text to the file.

Dial Settings is where a phone number for a Session file is entered. Options here are the same as for Dial under the Phone menu, however, the phone number and options become part of a Session file -- the phone number will not be dialed when 'OK' is clicked.

Answer Settings is where information for an Answer Session is entered. Options are the same as for Answer under the Phone menu.

Options controlling how a text file, or text from the Editor are sent are controlled in this dialog box. Enter the type of send, either Line or Character, Interline and Intercharacter delays if necessary, a Line Prompt (handshaking character), and set Add LF to CR and Fix blank lines options. For a detailed description of each item, refer to the MouseTalk Manual.

The Review buffer is where the most recent 8,192 characters received by MouseTalk are stored. To look back at this information, choose Review from the menu, or press F10. To return to the Terminal node, press F10 again, or select Terminal from the Review pull down menu.

Select all selects and highlights all text in the Review buffer, Editor or Macro Editor.

In order to Dial a phone number, MouseTalk will first hang up the phone. If you're sure you want to hang up now, click 'OK'.

d-wraps text to the next line. Fill works only on selected text. A paragraph is considered any group of letters, words and numbers followed by a blank line.

Clean Up removes all control codes from selected text. After 'Cleaning Up', the text will only contain carriage return codes.
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Apple II Computer Info

Z       Zoom                 Zoom EVERYTHING and hit RETURN. Place the inverse bar over COMPOSE and hit RETURN. You will see a blank screen with a box (draw inside the box). To enlarge the box, press B for border. Press the joystick button to place upper right corner. Use the joystick to enlarge the box. Press the joystick button.  

To Draw: Press the space bar to clear any present commands. Press P for Pen plus a color # between 0 and 7:  

0 Black  
1 Green  
2 Purple  
3 White  
4 Black  
5 Orange  
6 Blue  
7 White  

(Note the first black and white are to be used with green and purple, and the second black and white are to be used with orange and blue). Place the joystick at the desired location. Press the joystick button to draw. Alternately, draw using the keyboard. Press control key and E S D X for direction. Press the space bar to clear memory.

To Duplicate Outlined Shapes: Press W for window. Press D for duplicate. Press the joystick button to pick it up and again to deposit the shape in a new location. Press the space bar to outline a new shape. Note: You may develop these shapes as paint brushes.

Movie Maker: Getting started-An introduction.  

To insert color into shape: Press the space bar to clear the current command. Press I for insert, position the joystick, and press the joybutton. To insert a different color, press I for insert and color #0-7. CAUTION: Make certain shapes are closed so that inserted color will remain contained in desired area. Remember to press O to outline new shapes.

To make a sequence: Press the space bar to clear current command. Press A for action. Press the space bar to start and stop. Press P to rewind. Press the space bar to start and stop. Press F and #0-9 to control frame rate. Press the space bar to start and stop. F0 progresses frame by frame. Advance to next frame using the space bar. F1-9 increases speed from slow to fast.

To draw original shapes: Press U for utility. Place the inverse bar over MAIN MENU and hit RETURN. Load COMPOSE by pressing 1 and RETURN. Place the inverse bar over CLEAR MEMORY and hit RETURN. Place the inverse bar over EVERYTHING and hit RETURN. Place the inverse bar over COMPOSE and hit RETURN. You will see a blank screen with a box (draw inside the box). To enlarge the box, press B for border. Press the joystick button to place upper right corner. Use the joystick to enlarge the box. Press the joystick button.

To make a sequence: Press the space bar to clear the current command. Press S1 for the first sequence. Use the joystick to position over the first shape and press the joybutton. Watch help line S1.01, S1.02, etc. Repeat selecting shapes (maximum 16 shapes per sequence).

Press G to goto the beginning. Press P for Pen plus a color # between 0 and 7: Press the space bar to clear any present commands. Press P for Pen plus a color # between 0 and 7:

0 Black  
1 Green  
2 Purple  
3 White  
4 Black  
5 Orange  
6 Blue  
7 White  

(Note the first black and white are to be used with green and purple, and the second black and white are to be used with orange and blue). Place the joystick at the desired location. Press the joystick button to draw. Alternately, draw using the keyboard. Press control key and E S D X for direction. Press the space bar to clear memory.

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Press G to goto the beginning. Press P for Pen plus a color # between 0 and 7:

0 Black  
1 Green  
2 Purple  
3 White  
4 Black  
5 Orange  
6 Blue  
7 White  

(Note the first black and white are to be used with green and purple, and the second black and white are to be used with orange and blue). Place the joystick at the desired location. Press the joystick button to draw. Alternately, draw using the keyboard. Press control key and E S D X for direction. Press the space bar to clear memory.

IMPORTANT: OUTLINE ALL SHAPES BY PRESSING O FOR OUTLINE.
To Create a Background:
Press the space bar to clear the current command. Press ESC twice to
goto the background page. Press ESC to toggle between shape and
background pages (observe S and B upper left corner of the help
line). To draw, use P for pen and a color number between 0 and 7.
Move the joystick. Press the joystick button.

You may pick up a shape from your shape page and bring it to your
background page. Hit the space bar to clear memory. Press ESC to goto
the shape page. Press W for window. Place the box over the desired
shape. Press O for outline, D to duplicate, joystick to pick shape
up, and ESC to bring it to the background page. Press the joystick
to deposit the shape where desired. Press the space bar to clear
memory. Use a shape as a paint bruse. Press E to erase the shape in
the box.

To View Sequence Over Background:
Press A for action. Hit the space bar.
Control movement with the joystick.

These animations can be recorded by using a blank formatted storage
disk and by following simple screen prompts through MENU selection.
You can SMOOTH and PLAYBACK your finished COMPUTER MOVIES (MVM's).
You can develop a sequence and transfer it to videotape. Be creative.

Some notes:
Animation may be up to 338 frames. This will take a longer or shorter
time, depending on the frame rate setting. A 338 frame movie with a
faster frame rate will play more quickly than the same movie with a
lower frame rate.

A longer movie may be made by stringing finished animations back to
back. To do this, use the auto play side of MOVIE MAKER and make a
copy with COPYA. Then delete all the files from this copy except for
CNTOWN.INI and MAINAP, and put your Movie Maker files on this disk
(use FID from your system master disk). NOTE THAT THE FILES:
CNTOWN.INI AND MAINAP MUST REMAIN ON THE DISK. When the disk is
booted, it will automatically play your movies (the MVM files) in the
order you copied them onto the disk.

Also, if you have two (2) drives, leave the Movie Maker disk in drive
1, and have a data disk (formatted) in drive 2. Now change drive
assignment by selecting COMPOSE from the main menu, and then RECORD,
or SMOOTH utility menus. Move the inverse bar to SELECT DRIVE, and
press RETURN.

After you have created a movie, you may save it by getting to the
main menu (use the U command). Then select COMPOSE, and move the
inverse bar to KEEP FILE. Put a blank formatted disk in the proper
drive, and press RETURN. You will be prompted for a filename.

Movie Maker Dox Uploaded by The Mystic
Done

MOVIE MAKER
THE SOUTH POLE...[312] 677-7140
WRITTEN BY THE DISK JOCKEY
REWITTEN FOR THE SOUTH POLE BY SAM HOUSTON

MOVIEMAKER REQUIRES AN APPLE II+ OR IIE OR IIC WITH 64K OF MEMORY AND
2 DRIVES ARE OPTIONAL THE GAME IS 2 DISK SIDES.

I will summarize the list of commands for Movie Maker first, for those
who just want to skim through the docs.

Keyboard assignments for Apple II family:

<table>
<thead>
<tr>
<th>Command</th>
<th>Apple Ile/c</th>
<th>Apple II+</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>Action</td>
<td>Actor</td>
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<tr>
<td>B</td>
<td>Border</td>
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<td>C</td>
<td>Color</td>
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<td>D</td>
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<td>E</td>
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<td>I</td>
<td>Insert color</td>
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<td>J</td>
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<td>Sequence</td>
<td>Sequence</td>
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</tr>
<tr>
<td>U</td>
<td>Utility menu</td>
<td>Utility menu</td>
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Alphabetical command list for Apple Movie Maker:

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
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V       View
W       Window
X       Xtra Function
Y       Yank
Z       Zoom
/       Frame maker
ESC     Shape swap and background pages
Space   Stop and start action; Cancel most drawing command.
Joystick Lift and deposit outlines, shapes and images with joystick; Fix corners for B Command; Stop and start action.
I        Up
J        Left
K        Right
M        Down

to move thru the menus on the Apple II+:

Use the arrow keys on the IIe.

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Movie Maker: Getting started—An introduction.

Boot the program and you will see Movie Maker's main menu. Load RECORD by pressing L, and then RETURN. After a moment the record utility menu will appear.

To manipulate the inverse bar use the arrow keys (for the //sc) or I, J, K, M for a II+. Move the inverse bar to cover GET, and press RETURN, Select Shape, and press RETURN. Type DOG, and hit RETURN. Select Record, and hit RETURN. You will see the DOG shape page.

Press A1 for actor #1. Press S1 for sequence #1. Using your joystick, position the DOG to the desired starting location. Hit the space bar to begin the record mode. Use the joystick to control your DOG's path. You have now created your first animation using up to 338 frames.

Press I for insert, position the DOG to the desired starting location. Hit the space bar to begin the record mode. Use the joystick to control your DOG's path. You have now created your first animation using up to 338 frames.

To see a playback, hit G in order to Goto the beginning. Hit the space bar to see playback. To control Frame Rate or speed of execution, press F and #0-9. F0 advances frame by frame using the space bar. F1-9 increase speed from slow to fast. To rewind press R, and hit the space bar to stop. To playback forward, press F and #0-9 to control the speed.

You May Now Add a Second DOG:

Press G to goto the beginning. Press A2 for Actor #2. Press S1 for Sequence #1. Position your second DOG with your joystick. Hit the space bar to start and stop. You may use up to SIX actors. To view your animation with two DOGs running simultaneously, press G to goto the beginning and hit the space bar to start and stop.

To Draw Original Shapes:

Press U for utility. Place the inverse bar over MAIN MENU and hit RETURN. Load COMPOSE by pressing 1 and RETURN. Place the inverse bar over CLEAR MEMORY and hit RETURN. Place the inverse bar over EVERYTHING and hit RETURN. Place the inverse bar over COMPOSE and hit RETURN. You will see a blank screen with a box (draw inside the box).

To enlarge the box, press B for border. Press the joystick button to place upper right corner. Use the joystick to enlarge the box. Press the joystick button.

To Draw:

Press the space bar to clear any present commands. Press P for Pen plus a color # between 0 and 7:

0 Black
1 Green
2 Purple
3 White
4 Black
5 Orange
6 Blue
7 White

(Note the first black and white are to be used with green and purple, and the second black and white are to be used with orange and blue).

Place the joystick at the desired location. Press the joystick button to draw. Alternately, draw using the keyboard. Press control key and E S D X for direction. Press the space bar to clear any current command. Press B and press the joystick button to define the corners of the border. To erase a shape in a box, press E for erase.

To Insert Color Into Shape:

Press A1 for actor #1. Press S1 for sequence #1. Using your joystick, position the DOG to the desired starting location. Hit the space bar to begin the record mode. Use the joystick to control your DOG's path. You have now created your first animation using up to 338 frames.

To Alter Window Size:

Press the space bar to clear current command. Press B and press the joystick button to define the corners of the border. To erase a shape in a box, press E for erase.

To Insert Color Into Shape:

Press the space bar to clear current command. Press I for insert, position the joystick, and press the joystick button. To insert a different color, press I for insert and color #0-7. CAUTION: Make certain shapes are closed so that inserted color will remain contained in desired area. Remember to press O to outline new shapes.

To Mirror Shapes:

Press the space bar to clear any current command. Press M for Mirror. Press the arrow key to flip in the desired direction. Press O to outline a new shape. Note: You may develop these shapes as paint brushes.

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stop. Press F and 40-9 to control frame rate. Press the space bar to start and stop. P0 progresses frame by frame. Advance to the next frame using the space bar. F1-9 increases speed from slow to fast.

To Create a Background: Press the space bar to clear the current command. Press ESC twice to get to the background page. Press ESC to toggle between shape and background pages (observe S and B in upper left corner of the help line). To draw, use P for pen and a color number between 0 and 7. Move the joystick. Press the joystick button.

You may pick up a shape from your shape page and bring it to your background page. Hit the space bar to clear memory. Press ESC to go to the shape page. Press W for window. Place the box over the desired shape. Press C for outline, D to duplicate, joynbutton to pick shape up, and ESC to bring it to the background page. Press the joynbutton to deposit the shape where desired. Press the space bar to clear memory. Use a shape as a paint brush. Press E to erase the shape in the box.

To View Sequence Over Background: Press G to go to the beginning. Press A for action. Hit the space bar. Control movement with the joystick.

These animations can be recorded by using a blank formatted storage disk and by following simple screen prompts through MENU selection. You can SMOOTH and PLAYBACK your finished COMPUTER MOVIES (MVM's). You can develop a sequence and transfer it to videotape. Be creative.

Some notes:

Animation may be up to 338 frames. This will take a longer or shorter time, depending on the frame rate setting. A 338 frame movie with a faster frame rate will play more quickly than the same movie with a lower frame rate.

A longer movie may be made by stringing finished animations back to back. To do this, use the auto play side of MOVIE MAKER and make a copy with COPYA. Then delete all the files from this copy except for CNTDOWN.INI and MAINAP, and put your Movie Maker files on this disk (use PID from your system master disk). NOTE THAT THE FILES CNTDOWN.INI AND MAINAP MUST REMAIN ON THE DISK. When the disk is booted, it will automatically play your movies (the MVM files) in the order you copied them onto the disk.

Also, if you have two (2) drives, leave the Movie Maker disk in drive 1, and have a data disk (formatted) in drive 2. Now change drive assignment by selecting COMPOSE from the main menu, and then RECORD, or SMOOTH utility menus. Move the inverse bar to SELECT DRIVE, and press RETURN.

After you have created a movie, you may save it by getting to the main menu (use the U command). Then select COMPOSE, and move the inverse bar to KEEP FILE. Put a blank formatted disk in the proper drive, and press RETURN. You will be prompted for a filename.

Mr. Fixit contains several utilities that let you identify and recover "blown" disks without needing an intimate knowledge of Apple DOS.

Scan utility: Identifies flawed track/sectors on disks. Copy utility: Ignores flawed sectors as it copies a diskette. Edit utility: Allows you to change disk sectors & also contains a disassembler. File restoration utility: Allows you to recover deleted files. There's also a Catalog repair utility.

BOOTING AND RUNNING

Boot with a 16K RAM card, Language card, Apple -/e:

Mr. Fixit is loaded into the RAM card if you have a 16K RAM card, a language card or an Apple //e. It won't be necessary to reload after most functions are performed. A 338 frame movie will start and stop. F0 progresses frame by frame. Advance to the next

Boot without 16K RAM, Language card, Apple //e:

Mr. Fixit will be loaded into the program area. After you run a BASIC program or perform a DOS function (if you've overwritten page 3 in RAM), you'll have to reload Mr. Fixit.

DISK SCAN UTILITY

This utility won't scan copy protected disks.

ESC = Abort scan

The scan will start with the first track and sector (T0,S0). As the scan progresses, the current track and sector number will be displayed in hexadecimal on the fifth line along with the status of each sector. If the Scan will report each flawed sector on a separate line. When the scan is completed, you can print the results by typing 'F' when the prompt appears. This will print the result to a standard Apple printer with the card in slot one.

Interpreting the Scan

TRACK/SECTOR nn/n FLAWED BUT READABLE. When you see this message for any track, your disk is still ok, but it would be wise to make a copy of it immediately using the Mr Fixit Copy Utility.

TRACK/SECTOR nn/n UNREADABLE. You will not be able to copy the disk with COPYA.

The Copy Utility will copy the disk, but any unreadable sectors will be filled with hex FF in the copy.
You may choose to use either the Mr. Fixit Copy Utility or the Mr. Fixit Edit Utility to recover a disk with unreadable sectors. The Edit utility will read some flawed sectors into memory, so if you're familiar with what should be on the disk, you may be able to recover everything.

First 3 tracks flawed -- Systems Image Clobbered. An easy fix is to INIT another disk and FID your files to it.

Track 11 Flawed - VTOC Errors. To fix these disks, run the Catalog Repair Utility. Before you start to fix the catalog track, you should make a backup copy of the disk with the Copy Utility.

THE DISK EDIT UTILITY (DEU) -------------------------------
All standard DOS 3.3, Pascal, and CP/M disks can be edited with the utility. Most copy protected disks can't be read with DEU. DEU works with individual sectors. With DEU you can read a sector from the disk, change the sector in memory and then write the changed sector back to a disk. The Edit utility also lets you "dis-assemble" modules into 6502 mnemonics.

Overview of DEU:
1. Diskette Parameters Line - Shows the track, sector, slot and drive.
2. Command Line - Where you enter your commands and change sector data one byte (character) at a time.
3. Sector Display Area - Where you enter your commands and change sector data one byte at a time.
   E = Edit
   ESC = Return to command mode from edit
   H = Help
   M = Return to main menu
   R = Read sector
   CTRL Q = Quit Mr Fixit
   CTRL RESET = Restart DEU
   & <RETURN> = Re-enter DEU from Applesoft
   CTRL Y = Re-enter DEU from monitor
   (These work unless you've overwritten DEU (to page 3 of RAM)

CHANGING DISKETTE PARAMETERS

---

T = change track # (0-22 hex)
S = change sector # (0-0F hex)
D = change drive # (1 or 2)
CTRL S = change sector # (1-7)
ESC = aborts change

OPTIONS AFTER READING A SECTOR

---

1. Change which sector is displayed
2. Change the display to ASCII
3. Print display
4. Dis-assemble the Binary files
5. Edit the sector buffer
6. Write the edited sector buffer to a disk
7. Copy sectors

-> Reads the next sector
<- Reads the previous sector
- Increases the sector # by one without doing a read
+ Increases the sector # by one without doing a read

FLAWED SECTORS - SPECIAL READ (CTRL R)

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-> Reads the next sector
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FLAWED SECTORS - SPECIAL READ (CTRL R)

If a sector can't be read because it's flawed, pressing CTRL-R will tell DEU to read the sector ignoring some of the error checking code (e.g. checksum). If the sector isn't badly flawed it can be read and then written back to the diskette. Sometimes repeated reads of a flawed sector can't get entirely reproducible results. When this happens you must use your own judgement as to what should be written back to the disk. In some cases of badly flawed or copy protected disks the edit may not be able to read a sector and return an error message.

CHANGING THE SECTOR DISPLAY TO ASCII

'A' or CTRL A will toggle the display between ASCII and hex format.
If your Apple can't display lower case characters, the buffer display area may not display the proper ASCII character. Since the Apple can't display inverse lower case characters, erroneous characters may be displayed in the inverse cell. Also, any ASCII character with a value greater than 60 hex will display improperly in the inverse cell.

Inverse Mode for Control Characters. The ASCII format displays control characters in the inverse mode. Negative ASCII (most significant bit = 1) and positive ASCII (most significant bit = 0) characters are not differentiated. This is important since DOS 3.3 TEXT files are stored as negative ASCII characters and CP/M files are stored as positive ASCII characters.

PRINTING THE SECTOR BUFFER (CTRL P)

---

Printing the display screen CTRL P. The screen contents can be printed on any standard printer configured to slot 1 by pressing CTRL P. If the ASCII format is in effect, the control characters will be printed as blanks, because many printers use control characters to perform special functions. Printing can be stopped by pressing the (ESC) key.

The Disk Dis-assembler

---

Pressing the 'L' key dis-assembles the contents of the sector buffer into 6502 mnemonics. A word of caution here.
Since the last one or two bytes of the buffer may contain an incomplete instruction, the last dis-assembled instruction may be incorrect. An error may be present if the last instruction is a two-byte instruction with the last byte 00, or if it is a three byte instruction with the third or second and third bytes 00. The check is to examine the sector buffer for the contents of the last two bytes. The dis-assembler always starts the disassembly with the first byte in the sector buffer. The dis-assemble can be printed on any standard printer configured to slot 1 by pressing CTRL L. Printing can be stopped by pressing the (ESC) key.

EDITING THE BUFFER

---

To edit the sector buffer enter 'E' on the command line followed by the hexadecimal buffer cell # of the byte you want to change. Then press the space bar to enter the editor. The buffer cell # may be omitted in which case 'E' followed by space bar will give you buffer cell #00.
The edit mode is exited by pressing the (ESC) key. The sector display will still be on the screen and you can print it (CTRL P), dis-assemble it (L), copy it (CTRL C), etc.

After entering the edit mode the selected buffer cell is displayed in inverse mode.
of the original disk track (DRIVE 1) to the corresponding track on the

The copy function is available for systems having two drives in

The current buffer cell is changed by entering the new value in hex

The edit mode permits the direct entry of ASCII characters. Enclose

ENTERING ASCII (TEXT) DATA

The ASCII character is placed in the buffer cell by pressing the space

THE DISK COPY UTILITY

The difference between this copy program and DOS COPYA is that this

The Disk Copy Utility works on standard DOS 3.3, CP/M, & PASCAL

FILE RESTORATION UTILITY

The Catalog Repair Utility repairs disks with damaged catalogs to full

Apple II Computer Info
catalog listing. You get these errors because the catalog, which contains the information DOS needs to locate and reserve sectors for each file saved on the disk, doesn't look like DOS expected to look at it.

The first thing to do when a disk is giving I/O ERROR messages or won't CATALOG properly is to use the Disk Copy Utility to make a working copy of the damaged disk. Place the working copy in drive 1 and select the Catalog Repair Utility

First, the repair utility checks the first five bytes of each of the 16 sectors on track 11 hex. These bytes must have certain values on properly formatted sectors. If these bytes have improper values, the repair utility assumes the sector has been clobbered. When sector 0 is clobbered the VTOC is damaged and a message is written to the screen. When any of the remaining sectors are clobbered the directory (or catalog) damaged and this is reported to the screen.

If the VTOC alone is damaged, then a check is made against the directory for saved files, and the VTOC is reconstructed.

If the directory alone is damaged, the disk is searched for track/sector lists. The track/sector lists are checked against the VTOC and the remaining good directory sectors. The lost files are identified and written back to the damaged directory sector.

If the VTOC and directory sectors are damaged, a search for track/sector lists is made. The VTOC is rebuilt to show all sectors used. All the track sectors not identifiable with files on the undamaged directory sectors are written to the remaining directory sectors as saved files.

When the VTOC and catalog are damaged the Catalog Repair Utility attempts to recover all files (including files which may have been deleted and overwritten the damage catalog no longer contains the information necessary to do anything else). Also, when the damage is this bad, some of the file names have been lost. When the file name is lost, the Catalog Repair will give the file a 'dummy' name 'FILE n' where n is just a sequence number. Finally, the file type designation is lost when the name is lost, so the type preceding the name of all FILEn files is only an 'educated guess'.

**FIXING A DISK WITH VTOC AND CATALOG DAMAGE**

1. Get a catalog list with sub-menu 4
2. Use sub-menu 3 to change file types
3. Use sub-menu 2 to rename File n files
4. Working from the new catalog list, decide which files are no longer needed and delete them.

**CATALOG THE DISK:**

Each file with the name FILE n is a file which was "lost." You should replace the File n name with the "lost" name. Before you rename the files, make sure the file types are correct.

Checking the File Type Designation:

The Catalog Repair Utility must look into each file with a FILE n name to determine whether it is an A,I,B or T type file. The correct file type will be assigned in the majority of cases. It's possible, although unlikely, the Catalog Repair Utility can be fooled and assign the wrong file type. It's for this reason that the File Type Change Utility is provided. The utility will prompt you on how to change the file type of a specific file. Keep changing file types until you get your program to run.

The Catalog Repair Utility contains a menu for renaming files. This program is available so you don't have to leave the utility to rename the file. Don't attempt to identify a file by its position in the catalog listing. The Catalog Repair Utility often juggles the order of the catalog listing while it's doing it's magic.
Mr Robot, Datamost's newest release, is one of the more entertaining game since Loderrunner. The game is a cross between Loderrunner, in the way that the player can design his own screens, and Miner 2049'er in every other way.

Controls ---> Joystick, or Keyboard left= <- right= -> up= A down= Z

Scoring
-------
Girder dots --------------------- 10
Horseshoe (small)-------------- 100
Pac-Man ------------------------ 100
Energizer ---------------------- 200
Exploding a bomb --------------- 500
Kill fireball while energized -- 500
Kill fireball w/bomb --------- 30,000

Control characters
------------------
CTRL-F Factory editor
CTRL-G Game mode
CTRL-N Next screen
CTRL-P Toggle Joystick/Keyboard
CTRL-S Sound off/on
CTRL-T Main menu
CTRL-X Reverse X-axis
CTRL-Y Reverse Y-axis
CTRL-Z Switch X & Y axis

The Factory Editor
------------------
> Conveyor belts - move in the direction of > or <
c Small magnets - magnetize you in the direction in which the
is closed
O Blinking dots - Energize you. Allow you to kill fireballs
F Keyboard notes - Toggle sound off/on
= Elevator - raise you up until a girder is encountered - jump to elevate
// Pole - allow you to slide down safely, assuming the drop from the base of
the pole to the girder is not a fatal drop.
X Purple/Blue girders - Teleporters
I I Trampoline - self-explanatory

Other figures which appear to do nothing:

Large magnets
Pac-man shaped ball
Object - Simple enough. Clear girders of all dots.
Neuromancer Quick Reference

GETTING AROUND IN THE REAL WORLD

While walking through Chiba City, you'll see the world one "room" at a time. Many rooms have exits or doorways you can walk through. Exits at the bottom of the main screen are represented by a black line. Some doors may be locked or guarded; in this case it is up to you to find out how to get in.

As you cruise through each room, you'll see and talk to other people. You can control your actions and movement using keyboard commands or a joystick (more commands later).

The screen is divided into three main areas. The largest section shows the room itself. In the bottom left corner are the eight command icons. In the bottom right corner is a special text window used for room descriptions and other short bits of text. When a conversation is in progress, "word balloons" will appear above the speaking characters in the room.

JOYSTICK CONTROL

To toggle the joystick on and off, press "J" while holding down the "open-apple" key. If you have a joystick, you can use it to move a "pointer arrow around the screen. Whenever you want to select anything on the screen -- a command icon, a menu option, some software to download -- you can just point to it with the pointer and press the joystick button.

COMMAND ICONS

You use the command icons to perform actions. You can pick an icon by either pointing to it with the joystick pointer and pressing the joystick button, or pressing the corresponding key on your keyboard.

The command icons are arranged as in the figure to the right. The table below refers to each icon by number, as shown in the figure.

<table>
<thead>
<tr>
<th>KEY</th>
<th>ICON</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M</td>
<td>MODE</td>
</tr>
<tr>
<td>2</td>
<td>I</td>
<td>INVENTORY</td>
</tr>
<tr>
<td>3</td>
<td>P</td>
<td>PAX</td>
</tr>
<tr>
<td>4</td>
<td>T</td>
<td>TALK</td>
</tr>
<tr>
<td>5</td>
<td>S</td>
<td>SKILLS</td>
</tr>
<tr>
<td>6</td>
<td>W</td>
<td>WALK</td>
</tr>
<tr>
<td>7</td>
<td>R</td>
<td>ROM CONSTRUCT</td>
</tr>
<tr>
<td>8</td>
<td>D</td>
<td>DISK</td>
</tr>
</tbody>
</table>

SOUND CONTROL

To toggle the sound effects on and off, press "S" while holding down the "open-apple" key.

Here is a list of the command icons and what they do.

1. M MODE
   - Toggles through these display options:
     - Current amount on credit chip
     - Time
     - Constitution level

2. I INVENTORY
   - Displays what you're currently carrying and lets you operate, discard, or give items, or erase software in a deck.

3. P PAX
   - Access the PAX system if there's a PAX terminal in the room.

4. T TALK
   - Talk with another person in the room.

5. S SKILLS
   - Use a skill you have acquired.

6. W WALK
   - When using a joystick, puts you back in control of your movement after performing some other action. (See Movement Commands)

7. R ROM CONSTRUCT
   - Access your ROM construct abilities (if you have one).

8. D DISK
   - Save your current game position, load an old game, pause the game, start a new game, or quit the game.

MOVEMENT COMMANDS

You can use either the keyboard or a joystick to walk around town.

With the keyboard, you can one step by pressing a direction key once or keep walking by holding a direction key down. The direction keys are shown below. The arrow keys will move you immediately from room to room.

To walk around with a joystick, first select the "Walk" command icon. The joystick pointer will disappear to show that you are walking around. Moving the joystick in the direction you want to go will then make you walk in that direction. When you want to select a different command icon, press the joystick button again to stop walking and get the joystick pointer back.

COMMANDS WITHIN MENUS:

Menus may appear throughout the game when you look at lists of items -- prices in a shop or your inventory list, for example. You can select a menu option with the keyboard, or point to the option with the joystick pointer and press the joystick button. There are several commands commonly used within menus:

<table>
<thead>
<tr>
<th>COMMAND</th>
<th>KEY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXIT</td>
<td>X</td>
<td>Leave the current menu</td>
</tr>
<tr>
<td>WORK</td>
<td>M</td>
<td>View more menu options (if available)</td>
</tr>
</tbody>
</table>

After you select an item in your Inventory menu, you can choose from three special commands:

- OPERATE: G Operate an item.

- GIVE: G Give an item to another person.

- DISCARD: D Discard an item, permanently.

CONVERSATIONS

In Talk mode (type "T" or select the Talk icon), you can carry on conversations with other characters in a room through the use of "word balloons." Word balloons allow you to choose among several responses or questions that are appropriate to the situation in that room. When a word balloon appears over your head, you can see all of your possible responses by pressing the space bar or pulling back on your joystick after each response is displayed. When you decide on the proper response, press return or the button on your joystick. The response you select will be displayed a second time as you "say" it. After you read a word balloon that you or another character has "said," press the space bar or joystick button to continue.

You can leave a conversation your character initiated with the "talk" command by pressing the <ESC> key.

USING THE PAX

When you operate a PAX machine (by selecting the PAX icon or pressing "P") the machine will give you three access codes and ask you for
the verification code.

Take the PAX Verification Code Wheel (or a reasonable facsimile thereof) and align the first access code, found on the outer wheel, with the second access code, located on the inner wheel. Find the window that corresponds to the third access code. Type the number found in the window, then press RETURN. For example, if given the codes Freeside, Comlink, and Holy Joystick, you would line up the words "Freeside" and "Comlink", and then type the number in the Holy Joystick window: S12.

Whenever text is displayed on the PAX or a database, you may press the "+" (plus) key to speed up the text display, or the "-" (minus) key to slow it down.

THE CYBERSPACE DISPLAY

(Cyberspace jacks appear as yellow circles with a red dot in the middle.) The top half of the screen shows the view from your current cyberspace location. The bottom left corner of the screen is occupied by the cyberspace command icons. The bottom right corner of the screen contains your EEG monitor, which gives you a visual representation of your brain wave activity. Just below the EEG there is a gauge of your cyberdecks shielding, and to the right of the EEG is a gauge of ICE shielding for when you're in combat with ICE.

The center of the cyberdeck panel is where information will appear when needed. At the bottom center of the cyberdeck panel, there are four numbers; from left to right, these are the cyberspace zone number you're in, your X and Y coordinates in cyberspace, and the amount of money in your credit chip.

CYBERSPACE ICONS

The cyberspace command icons are arranged as in the figure below.

KEY ICON

1. I INVENTORY
2. S SKILLS
3. R ROM CONSTRUCT
4. D DISK

In cyberspace, the SKILLS, ROM CONSTRUCT, and DISK icons behave just as they do outside of cyberspace. The INVENTORY icon displays a list of software in your deck to operate, rather than a list of your items. Mode, PAX, and WALK icons are unavailable in cyberspace. There are three new controls: The EXIT button ('X' on the keyboard) exits from cyberspace. The ERASE button ('E' on the keyboard) will erase a piece of software from your deck. The "Movement" button, just above the four command icons, is used to control your movement with the joystick. The "Movement" button is similar to the "Walk" button in the real world.

Bases Link code & passwords

<table>
<thead>
<tr>
<th>Bases</th>
<th>Link Code</th>
<th>Password(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheap Hotel</td>
<td>CHEAPO</td>
<td>GUESTS, COCKROACH</td>
</tr>
<tr>
<td>Regular Fellows</td>
<td>REGFELLOW</td>
<td></td>
</tr>
<tr>
<td>Consumer Review</td>
<td>CONSUMREV</td>
<td>REVIEW</td>
</tr>
<tr>
<td>Aseno Computing</td>
<td>ASANOCOMP</td>
<td>VENDORS</td>
</tr>
<tr>
<td>World Chess</td>
<td>WORLDCHESS</td>
<td>MEMBER</td>
</tr>
<tr>
<td>Psycho</td>
<td>PSYCHO</td>
<td>BABYLON</td>
</tr>
<tr>
<td>Hitachi</td>
<td>HITACHI</td>
<td>GENESPLICE,BIOTECH</td>
</tr>
<tr>
<td>Sea Cop</td>
<td>SOFTEN</td>
<td>PERNAFROST</td>
</tr>
<tr>
<td>Runasaka</td>
<td>RUNASAKA</td>
<td>BISOFT, FUNEKI</td>
</tr>
<tr>
<td>Panther Modern</td>
<td>CHAOS</td>
<td>MAINLINE</td>
</tr>
<tr>
<td>Bank of Zurich</td>
<td>BOZOBANK</td>
<td>no password</td>
</tr>
<tr>
<td>NASA</td>
<td>VOYAGER</td>
<td>APOLLO</td>
</tr>
</tbody>
</table>

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 703 of 1262
Here is the post I promised.

Call these places.

**link code** password
regfellow visitor
chaos mainline
freematrix cfm
yakusa yak
loser loser
eastseabod longisland
soften permastorm
hosakacorp fungeki

To Get Cash:
(1) Call hosaka <above> and upload comlink 6.0
(2) Call hosaka and goko new employees. select one. hit edit. put ya name and bama id on there.
(3) Call keiatsu pass supertac and put larry moe on the warrant list his number is 062788138 goko microsofts. enter back room. ask lupus about account bank berne, pass, chip, upgrade, and neuromancer. now goko cheap hotel to call some more boards. call bozobank <use sequencer to get in on the welcome screen type I and hit sequencer>> open an account. call bankgemein pass verboten. do a funds transfer. type the source acc# <the one lupus gave you> link code <bozobank> source acc# <your account at bozobank> and the amount to xfer <30000>.

That should hold you off for cash, now let's explore Cyberspace.

First, get a C space deck. goko asano. say why does edo call you a pig. good. i suggest the ninja 4000 <it's cheap> okay, now goko cheap hotel. use comlink 6.0. select goko Cyberspace. now you are in zone 0 try the following coordnates:

| 208,12 | 224,112 |
| 352,112 | 450,80 |
| 416,64 | 384,32 |
| 480,80 | 352,64 |
| 114,160 |

Ooops, guess some of those <the 352,112 to 352,64>are in zone 2 the gent loser. and that last one is in zone 2 <industrial zone> ------------------ ------------------ ------------------

Oooops, guess some of those <the 352,112 to 352,64>are in zone 2 the gent loser. and that last one is in zone 2 <industrial zone> ------------------ ------------------ ------------------

Now you are in zone 0 try the following coordnates:

| 208,12 | 224,112 |
| 352,112 | 450,80 |
| 416,64 | 384,32 |
| 480,80 | 352,64 |
| 114,160 |

Welp that should hold you neuromanceres off untill monday night, when i return.

Oh yea, one more thing. use skills to kill Al's <those big faces> cya soon!  
- (c) C

### Table 1

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
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**Neuromancer Code Wheel**

First, a short explanation of the evolution of code wheels. The code wheel is a form of protection against piracy of a particular game. They first appeared (to my knowledge) in the Electronic Arts game Amnesia in the form of a "street index". The next appearance was much later, in Legacy of the Ancients, also EA. The third (and most complicated one) was included in Bard's Tale III. And, as you may have guessed, the latest use is in Neuromancer. The first two are in Included disk protection, but the companies seem to be relying on just the code wheel for their protection against piracy, as the last two have had no disk protection whatsoever. The protection comes when, at certain points in the game, you will be given a set of two, three or four (depending on the complexity of the wheel) words or locations or whatever, and, using the code wheel, you must provide the answer, or you will not be able to proceed with that function. Without the wheel and without altering the programming of the disk, you are stuck.

What is a code wheel? It is two or three concentric paper circles, each one smaller than the one beneath it, so that only the outer ring of the larger one(s) shows. It is on the outer ring that one set of words are printed. On the outside edge of the smallest circle can be found the second set of words. One or several small windows are also cut out of the smallest circle (and in the case of three wheels, windows may also be cut out of the middle wheel at random points) so that the requested code numbers or words may be seen through them. If there is more than one window, each window will have its own name printed above or below it. In the most simple application, the use would be something like this: the player is given the conditions of A and B. He would rotate the code wheel until A on the outer circle lines up with B on the inner circle and observe the code through through the window. In the case of multiple windows, he would have been given A, B, and C, rotated as before to line up A and B and look through window C for the answer. Such is the case with Neuromancer.

The code wheel in Neuromancer is used to operate the PAX machine found at various locations throughout the game. You will be given three access codes and asked for a verification code. There are 16 possible A's, B's and C's. The codes are broken down into two tables. The first tables gives A (outer ring) and B (inner ring), to be cross referenced to each other to get a position number. This position number will be cross referenced with C (windows) to give the 3 to 6 digit verification code. The access codes you will be given are listed below with THREE LETTERS IN UPPER CASE (usually the first three, but not always, so I have tried to draw your attention to the ones that do not have the first three in caps). These will correspond to the abbreviations in the tables.  Good luck!

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To install Templates 1.0, copy the Templates file into the
*:System:Desk.acory directory of your GS/OS boot disk, and then reboot.

NOTE: To be able to use Templates 1.0, you MUST have a copy of the
GSBug "GSBug.Templates" file, or you can create your own
following the GSBug.Templates file format. You can acquire
the GSBug.Templates file, as well as GSBug, from APDA.

Templates is FREWARE!

Templates 1.0 is Freeware. Please give copies to your friends, your
club libraries, your favorite bulletin boards, etc. It is included
in this ShareWare Nifty List package for your convenience.

PLEASE pay for Nifty List -- it is an excellent tool for your IIGS
and deserves far more than the meager $15 that Dave asks.

================================================================================

For help on how to use the Template commands, simply try the
\loadtemp command after you load the GSBug.Templates file.

\loadtemp

This command loads a GSBug style template file. You must
first load a template file (obviously) before you can use a template
to view memory. The \loadtemp command uses a default filename of
you wish to load in a different template, you can specify the name,
in quotes, after the \loadtemp command. For example:

\loadtemp "name" will load the default \loadtemp file.

\loadtemp "name" will load the specified template file.

The Templates module gives Nifty List, version 3.0 or better, the
ability to use GSBug style templates. A template is basically a
structured way to view memory. For example, there are all kinds of
parameter blocks for GS/OS sitting around in memory that you could
view with Nifty List's jh command. With, but with the jh command, all
you would see is a big unstructured group of bytes. With a template,
memory is broken down into fields which can be displayed with meaning.

To install Templates 1.0, copy the Templates file into the
*:System:Desk.acory directory of your GS/OS boot disk, and then reboot.
Once a template file has been loaded, it sits around in memory until you feel the need to unload it. Template files take up a lot of memory, so if you have loaded a template file and think you will no longer need to use it, unload it to reclaim some memory. You can always reload the template file later if you need to use the Templates module again.

\tempinfo
---------
If, for some reason, you want to find out some information about the template file that you have loaded, you can use the \tempinfo command to do just that task. The \tempinfo command will show you the pathname of the template file you have loaded as well as some information about the memory that the template file occupies.

\temp
---------
The real work of the Templates module comes from the \temp command. With the \temp command, you can apply a template to a particular area of memory. The \temp command has the syntax of:

\temp "template"

Where addr is the starting memory address to apply the template to and template is the name of the template to overlay on that memory area. For example:

\temp "OpenRecGS"
This takes the template called OpenRecGS and applies it to the memory starting at location 12/54AF.

To see the master GBBug template list, you can issue the command:

\temp "Templates"
You would then see the major template categories. You can then look at the subcategories by issuing yet another \temp command, for example:

\temp "GSOS"

---

End of Templates 1.0 description

---

The module's DAOpen routine returns pointer to the module's info table, which has the following format.

```
; Info Record
InfoRec  dc.w InfoEnd-InfoRec       ;size of this Info record
dc.w 0   ;format (use 0)
dc.w 0   ;patch type (use 0)
dc.l NLService ;address to patch
dc.w 12  ;bytes per cmd in cmdTbl (use 12)
dc.l cmdTbl ;pointer to command table

InfoEnd
```

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The command table looks like this:

* Command Table—for each command in this module:
  * +000:  pointer to command name (Pascal string)
  * +004:  address of command entry point
  * +008:  address of help routine
  * 
  * (The first entry is for the module itself.)

* cmdTbl
  dc.l moduleName,0,HelpModule
dc.l nameOne,cmdOne,helpOne
dc.l nameShPurge,cmdShPurge,helpShPurge
dc.l 0

For each command there's a pointer to the Pascal-string name, a pointer to the command's entry point (which should RTL), and a pointer to the command's Help routine (which should display help and then RTL).

---------

DAAction
---------

Nifty List calls the DAAction routine with A equal to one of the following.  X and Y are undefined.  You should return A=0 (the return value may eventually be used to refuse to shut down, for example, but right now you must always return 0 in A).

A = actBirth
   Called when Nifty List first loads a module

A = actDeath
   Called when Nifty List is about to remove a module

A = actEnterNL
   Called when the user enters the Nifty List command environment

A = actExitNL
   Called when the user leaves the Nifty List command environment

---------

NLService(long,code):long
---------

Nifty List patches over 4 bytes at the address indicated in the module's info record.  The module should JS1 "to" the patched location to call a Nifty List service routine, with parameters on the stack.

Every service takes a four-byte input parameter (although some of the services ignore part or all of this parameter).  Some services also return a four-byte result.

To call a service with no result space:

pha
phx
pea nlXXXXXX
jsl NLService

The service removes the long input and the service code from the stack before returning (just like a toolbox call would).

To call a service that needs result space:

pha
phx

;make room for result

phx
phy

;push 4-byte input

Here is a list of all the services.

* Environment management

0000 nlRecover()
   Does not return.  Enters Nifty List command level but BRKs when you leave.  For debugging when you've crashed and need a special way to go into Nifty List because you were already in a CDA.

0001 nlEnter():result
   Attempts to call Nifty List command level.  Returns 0 if successful.

0002 nlRemoveNL(@WordBuff):Handle
   Data = pointer to 2-byte result buffer (gets ID for UserShutDown),
   Result = handle to feed to RemoveCDA (NIL if can't remove)

0003 nlGetInfo(@buffer)
   Data = pointer to 256-byte buffer to receive table; first word =
   length in bytes, including the length count itself.
   Buffer:
   +000  TableSize   Word
   +002  nlVersion   Long
   +006  nlMemID     Word
   +008  nlBusyFlag  Word
   +010  CompactFlg  Word

0004 nlInstallHook(ref,@hook)
   [not implemented]
   This will allow modules to install routines for NL to call at certain times.

0005 nlRemoveHook(ref,@hook)
   [not implemented]

0006 nlGetDirectory():@dirname
   Returns pointer to class-1 string giving name of directory Nifty List is executing from.  (Don't change the string, just use it.)

0007 nlNewSession(@callbackProc):sessionRef
   Creates a Nifty List session and returns a long value distinguishing the new session from all other sessions.

0008 nlKillSession(sessionRef)
   Destroys a Nifty List session that was created with nlNewSession.

0009 nlSetSession(sessionRef):oldRef
   Makes the specified session the current one, returning the old session reference.  When you're done doing your stuff, call nlSetSession again to restore the old one.

   CallBack(LongIn,code)  (Pascal-style parameters)

   Code:
   0 = cbWrite = output (LongIn points to word-string)
   2 = cbWriteC = output (LongIn points to a C string)
   4 = cbFlush (output all the output, if you've been saving some)
   6 = cbGetKey (store a key at *LongIn (word) or don't--defaults to the "continue" key)
   8 = cbChkAbort (store a 0001 at *LongIn to ask for abort)
Apple II Computer Info

$A = cbAbort (abort, don't return!)
$C = cbGetString (input into GS/GS result buffer at LongIn)

CallBack is called with B and D undefined (must preserve).

000A nlWelcome(0)
Outputs the Nifty List title screen.

000B nlLoadStuff(error)
Forces the data file to get loaded, if it isn't.
Input parameter is 0. Result is error code (0 if no problem).

000C nlGetTextState [NL 3.3]
[For internal use for now.]

000D nlSetTextState [NL 3.3]
[For internal use for now.]

* Information services *

0010 nlGetFirstHandle(Kind):Handle
Kind = 0, 1, or 2
Result = first handle in one of the Memory Manager’s 3 handle chains (0=Used, 1=Purged, 2=Free)

0011 nlGetHandleInfo(@info)
info:
+000 = handle (Long)
+004 = @buffer
What’s returned in buffer:
+000 = count of bytes returned
+002 = at least 20 bytes of stuff—a copy of the *current* format of a Master Pointer record (ptr, attr, id, size, previous, next)

0012 nlLookup(@stuff)
Data = pointer to stuff:
+000: Word Section number to look in (nlSecSysTool, etc)
+002: Long Data to look up
+006: Page @outbuffer (256 bytes)
Returns a pascal string in the output buffer (null string means nothing found)

0013 nlIndLookup(@stuff)
Data = pointer to stuff:
+000: Word Section number to look in (nlSecSysTool, etc)
+002: Long Index (1=first item in section, etc)
+006: Page @outbuffer (256 bytes)
Returned in outbuffer:
+000: Long Value associated with the Index-th piece of data
+004: FPtrstring String associated with the Index-th piece of data (null string if no data found)

0014 nlGetProcAddress(address/4):@procName [NL 3.1]
Data = address.
Result = address of Pascal string name associated with the address, or NIL if none.

0015 nlClassifyAddr(address/4):result [NL 3.3]
Data = address.
Low word of result indicates the owner of the address:
0 = System (for example, ROM or a RAM-based system tool set)
1 = System-owned toolbox patch (within TSx)
2 = non-system-owned RAM address
3 = strange or invalid
High word of result contains a corresponding ASCII character:

0 = blank
1 = "*"
2 = "**"
3 = "***"

* Utility *

0020 nlScanHandles(@parms)
parms:
+000 Word WhichList (0=used handles, 1=purged, 2=free)
+002 PTr BankValue Any pointer to desired bank
+006 PTr theProc Procedure to call for each handle (gets parameter = Handle)

theProc must remove the 4-byte parameter from the stack before returning. When theProc gets control, the Bank register is already set to the bank specified by BankValue (byte +2).

0021 nlDisasm1(@code):@NewAddress (NL 3.2)
Disassembles one line of code at the specified address, and returns a pointer to the byte just following the line disassembled.

0022 nlExecCmdLine(@cmdline):0
Executes a specified command line (pointer to GS/GS string). The return value is reserved & is currently always 0.

0023 nlGetRange(@buffer):NumParms
Returns 2 if the user typed a range before your command; otherwise returns 1.

Fills your 16-byte buffer with the following:
+000 rangeStart
+004 rangeEnd
+008 rawStart
+012 rawEnd

This is for fetching the one or two hex numbers or addresses the user typed 'before' your command. They are already parsed by Nifty List.

Use rangeStart and rangeEnd if you're looking for *addresses*. The bank byte is handled appropriately for you.

Use rawStart and rawEnd if you're looking for *numbers*; no special bank handling is done for these values, so typing a 0 always gets you a 0, not a 0$xx0000.

0024 nlGetAGlobal(ref):value/4
Data = reference number, value = long result

Retrieves a value from a Nifty List global variable (the reference number values are in the equates file).

0025 nlSetAGlobal(@(ref,value))
Data = ptr to a record:
+000 reference word
+002 long value

Stores a value into a Nifty List global variable.
ref = nlgNUM1: the number parsed before your command

0026 nlAbortToCmd(ignored)
Aborts to the Nifty List command line, if possible
[should return error if Nifty List not active—doesn't check yet]
* Input/Output

0030 nlWriteChar(char)
  Outputs a character--control characters are acted on.

0031 nlShowChar(char)
  Outputs a character, but nonprintable characters show up in a harmless way (like as periods).

0032 nlWriteStr(@pascalString)
  Outputs a Pascal string.

0033 nlShowStr(@pascalString)
  Outputs a Pascal string, but nonprintable characters show up in a harmless way.

0034 nlWriteCStr(@cString)
  Outputs a C string.

0035 nlShowCStr(@cString)
  Outputs a C string, but nonprintable characters show up in a harmless way.

0036 nlWriteText(@record)
  record+000 = length of text
  record+002 = pointer to text
  Writes the specified number of characters.

0037 nlShowText(@record) [see above]
  Writes the specified characters, but nonprintable characters show up in a harmless way.

0038 nlWriteByte(byte)
  Outputs a byte in hex (2 characters).

0039 nlWriteWord(word)
  Outputs a word in hex (4 characters).

003A nlWritePtr(long)
  Outputs a pointer (xx/xxxx).

003B nlWriteLong(long)
  Outputs a long in hex (8 characters).

003C nlGetIn(...)
  [not implemented]

003D nlGetChar(dummy):char
  result = character (waits for one to be input)

003E nlCheckKey(dummy):result
  result, low word 0=no key pressed; nonzero=a key was pressed

003F nlCrout(dummy)
  Outputs a carriage return (begins a new line). Does NOT return to the caller if the user hits Apple-period, etc!

0040 nlSpout(dummy)
  Outputs a blank.

0041 nlPause(dummy)
  Lets the user pause the screen, do screen dumps, etc. Normally returns right away. Does not return if the user wants to abort.

0042 nlHandleInfo(handle)
  Displays address and owner information for a handle, in the same format as the "I" command.

0043 nlWriteNoVoice(@cString)
  Displays a C String if and only if the user did not set the "v" flag (avoids annoying decorative displays, like lines of dashes, which may be pronounced "dash, dash, dash, dash...")

0044 nlShowWString(@wString)
  Displays a string that begins with a length word. Nonprintable characters appear in a harmless way.

* Parsing

0050 nlChrGet():char
  Advances to the next character on the command line and returns is.

0051 nlChrGot():char
  Returns the command line character we're already on.

0052 nlEatBlanks():char
  Advances 0 or more times, until we're not sitting at a blank. Returns like nlChrGot.

0054 nlEvalExpr(@buffer):actualSize
  buffer:
  +000  Word     MaxExprSize   maximum size of expr this buffer can hold (must be at least 4)
  +002  Word     ActExprSize   actual size of parsed expression (0 or more bytes, returned)
  +004  n Bytes  Expr          parsed expression (0 or more bytes, returned)

  The nlEvalExpr result is just a copy of the ActExprSize word returned in buffer.

  Note that calling nlEvalExpr is a simple way to let the user type a GS/OS pathname. The expression, starting with the length word, is already a class-one GS/OS string.

* Memory access

0060 nlGetByte(@addr):byte
  Data = addr; value = byte found at that address

0061 nlGetWord(@addr):word
  Data = addr; value = word found at that address

0062 nlGetLong(@addr):long
  Data = addr; value = long found at that address

Reference numbers for globals:
  01 = nlgNUM1  (appropriate for getting an address-type value that NL parsed before calling your command)
  02 = nlgADDR
  03 = nlgInfoTable (address of the table nlGetInfo uses; need to document which fields are ok)

[end of Writing.Modules]
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DISTANCES ARE ALWAYS ROUNDED UP!
EXAMPLE: X

5 ACROSS, 1 DOWN: DISTANCE IS 6 (REALLY, IT IS 5.099)
START

BOOT UP THE DISK WITH AN APPLE ///, USE EMULATION MODE

Each player may have a secret password so secret information will only be given to him. Choose short easily remembered passwords

ABBREVIATIONS

CVN NUCLEAR AIRCRAFT CARRIER
CV AIRCRAFT CARRIER
BB BATTLESHIP
CG GUIDED MISSILE CRUISER
CL LIGHT CRUISER
DDG GUIDED MISSILE DESTROYER
DD DESTROYER
FFG GUIDED MISSILE FRIGATE
FF FRIGATE
SSN/SM SSN NUCLEAR SUBMARINE
SSN NUCLEAR SUBMARINE
SS SUBMARINE
LST LANDING SHIP TANK
LHA HELICOPTER ASSAULT W/LOADING DOCK
LPH HELICOPTER ASSAULT SHIP
LPD LANDING SHIP WITH LOADING DOCK
AP TRANSPORT
AK CARGO SHIP
AO OILER
AE AMMUNITION SHIP
AKR VEHICLE CARGO SHIP
AFS COMBAT STORESHIPS
TF TASK FORCE
CAP COMBAT AIR PATROL
SSM SURFACE TO AIR MISSLE
ASH ANTI SURFACE MISSLE
SAM SURFACE TO AIR MISSLE
AST ANTI SUBMINE TORPEDO

INTRODUCTION


TURNS

EACH TURN IS 12 HOURS YOU MAY:

1) BUILD AND ADJUST FRIENDLY TASK FORCE
2) MOVE TASK FORCES
3) LAUNCH AIR MISSIONS
4) LAUNCH MISSILE ATTACKS
5) RESOLVE COMBAT

(For the purposes of my typing, the words "task force" will hereby be referred to as: TF)

NOTES

WHEN TYPING IN NUMBER INPUTS, HITTING <RETURN> IS REQUIRED
WHEN ANSWERING A YES/NO QUESTION, ONLY Y OR N IS REQUIRED
PRESSINT <CTRL-C) CAUSES THE PROGRAM TO HALT

MAP

THE MAP IS A 40 X 40 SQUARE GRID REPRESENTING THE NORTH ATLANTIC AREA. EACH SQUARE IS 100KM IS DEPTH. GREEN: LAND BLUE: OCEAN WHITE: BASE RED: SOVIET TF BLACK: NATO TF
2 TF'S IN THE SAME GRID MAY BE COMBINED FOLLOWING THIS PROCEDURE:

1) ENTER NUMBER OF GAINING TF AND MERGING TF
2) ALL SHIPS IN MERGING TF WILL BE ADDED TO GAINING TF, AND THE MERGING WILL BE DELETED
3) THE GAINING TF HAS THE LOWER OF THE 2 ENDURANCES
4) SUBMARINES TF'S MAY NOT COMBINE WITH NON SUB TF'S
5) AIRCRAFT CARRIERS MAY NOT MERGE WITH NON COMBAT PATROL
6) TRANSPORTS MAY NOT COMBINE WITH NON TRANSPORT TF'S

DIVIDING TASK FORCE

1) ENTER NUMBER OF TF TO DIVIDE
2) THE SOVIET PLAYER IS ALLOWED: 9. THE NATO PLAYER IS ALLOWED: 11
3) ENTER THE NUMBER OF THE SHIPS THAT YOU WISH TO TRANSFER. THE NEW TF WILL HAVE SAME MISSION AND ENDURANCE AS OLD ONE
4) IF YOU HAVE FEWER THAN THE MAXIMUM TF'S, DIVIDE TF MAY BE USED TO SCUTTLE SHIPS. JUST REPLY WITH "S" AFTER THE SHIP NUMBER

LOADING TRANSPORTS

TROOPS AND SUPPLIES MAY BE LOADED ON A TRANSPORT IF THE SHIPS ARE IN A FRIENDLY PORT

1) USING THE LOAD TRANSPORT COMMAND, ENTER THE PORT CODE. THE COMPUTER WILL LIST ALL ELIGIBLE SHIPS
2) ENTER THE SHIP NUMBER AND THEN WHAT SHOULD BE LOADED. (100 MEN->COMPANY)
3) IF YOU WISH TO UNLOAD, JUST TYPE "U" WHEN IT ASKS FOR THE NUMBER OF MEN/SUPPLIES TO BE LOADED
4) ONLY SUPPLY UNITS MAY BE LOADED ON A SHIP WITH A PREFIX "A" (AP,AK...)

CHECKING PIPELINE

REINFORCEMENTS AND REPAIRED SHIPS ARE SENT TO FRIENDLY PORTS. TO CHECK THESE SHIPS, CHECK THE "PIPELINE."

1) ENTER PORT CODE
2) ENTER SHIP PREFIX (<RETURN> FOR ALL SHIPS)
3) ENTER MAXIMUM DELAY TIME ( <RETURN> FOR ALL SHIPS)
4) THE COMPUTER WILL LIST THE SHIPS
5) FOR SHIPS IN REPAIR, REFIT, OR REINFORCEMENT, THE COMPUTER WILL DISPLAY THE TIME WHEN THEY WILL ARRIVE

SUNK SHIP DISPLAY

THE COMPUTER WILL DISPLAY THE SUNK SHIPS AND THE POINTS AWARDED FROM THEIR SINKING.

AIR GROUP DISPLAY

THE COMPUTER WILL LIST THE NUMBER OF EACH TYPE OF AIRCRAFT ASSIGNED TO EACH CARRIER OR BASE THAT IS ACTIVE.

LIST ACTIVE TF'S

THE COMPUTER LISTS THE TF NUMBER, MISSION, AND ENDURANCE FOR EACH TF

MAP DISPLAY

THE COMPUTER WILL DISPLAY THE MAP AND ALL FRIENDLY TF'S. TYPING A TF NUMBER WILL CAUSE THAT TF TO FLASH.

BASE DISPLAY

THE COMPUTER WILL SHOW: INFANTRY, SUPPLIES, AIRCRAFT AND UTILITY AIRCRAFT AT EACH BASE. (AND MORALE POINTS FOR THE NATO PLAYED).

END GAME

WEAPONS DISPLAY

PROMPTS FOR A SHIPS I.D. NUMBER AND THEN DISPLAYS THE WEAPONS AVAILABLE FOR THAT SHIP.

1: MURMANSK
2: RIGA
16: AMERICA

MAIN GUNS: LARGER AND 150 mm. GOOD FOR SHORE BOMBARDMENT
LIGHT GUNS: 50-149mm. BOMBARDMENT, SHIP COMBAT, OR AIR DEFENSE
MISSILE DEFENSE: RATING OF SHORT RANGE GUNS AND ANTI-MISSILE MISSLES
HELICOPTERS: PATROL/ASW HELICOPTERS CARRIED BY A SHIP
AIR-RECON: RECONNAISSANCE AIRCRAFT CARRIED BY A CARRIER OR BASE.
ONLY SURFACE SEARCH
AIR-EM: ELECTRONIC WARFARE CARRIED BY A BASE OR CARRIER, USED TO DESTROY MISSLES.
AIR-ASW: ANTI-SUB WEAPONS CARRIED FOR USE BY AIRCRAFT
AIR EARLYWARNING: ALLOWS A SHIP/BASE TO SEE AN ATTACK APPROACHING
SSM-SYSTEM: SURFACE TO SURFACE MISSLES (DISPLAY: # IN SALVO,TOTAL CARRIED, RANGE IN KM.)
ASM SYSTEM: LONG RANGE ANTI-SUB WEAPONS
SAM SYSTEM: LONG RANGE SURFACE TO AIR MISSLES
AST SYSTEM: ANTI SUBMARINE TORPEDOES (MK.48, TIGERFISH AND 533'S CAN ALSO BE USED AGAINST SHIPS)
EW STRENGTH: STRENGTH OF ELECTRONIC WARFARE (FOR SUBS, QUIET RATING)
SONAR STRENGTH: RATING FOR SONAR EQUIPMENT
TASK FORCE MOVEMENT

MOVING OF TF'S EXPENDS MOVEMENT POINTS. THE POINTS ARE DETERMINED BY FLEET SPEED.

30 KNOTS OR THE LOWEST SPEED OF THE SLOWEST SHIP, WHICHEVER IS LOWER
MOVEMENT
--------
1. TF RECEIVES 1 MP FOR EACH 2 1/2 KNOTS. (AT LEAST 3 MP'S)
2. 2 MP'S FOR EACH MOVE N,S,E,W
3. 3 MP'S FOR EACH MOVE NW,NE,SW,SE
4. TF WITH FEWER THAN 2 MP'S CAN NOT MOVE, BUT CAN DOCK
5. PRESSING "A" WILL START THE MOVE OVER FOR THAT SHIP ONLY
6. TF'S CAN NOT ENTER LAND

ENTERING HARBOR-UNLOADING
-------------------------
1. TF THAT BEGINS MOVE ON FRIENDLY BASE MAY UNLOAD BY DOCKING. IF YOU BEGIN IN HARBOR AND WISH TO EXIT HARBOR BUT STAY IN SAME SQUARE, HIT "0"
2. EACH SHIP MAY INLOAD 18 COMPANTRIES OR 3 SUPPLIES
3. WHILE IN HARBOR, A TF IS IMMUNE TO SHIPS, SUBS, OR MISSLES
4. WHILE IN HARBOR, A SHIP IS EASIER TO HIT WITH BOMBS.
5. TO UNLOAD TROOP/SUPPLIES AT AN ENEMY BASE, FOLLOW THE ABOVE PROCEDURE BUT THE RATE IS HALVED

MOVEMENT SEQUENCE
-------------------
1. MOVE TF'S BY NUMBER. ONCE A TF HAS BEEN MOVED, IT CAN NOT BE REVERSED
2. PRESSING "S" WILL EXAMINE A TF
3. PRESS "M" FOR EW MODE: TF'S IN EW WILL BE AUTOMATICALLY SEEN, BUT WILL FIND TARGETS EASIER

LAND ATTACKS
============
WHEN SOVIET AND NATO TROOPS OCCUPY ICELAND OR FAROES, LAND ATTACK WILL TAKE PLACE:
5=BANZAI!
(SUPPLIES CONSUMED WILL EQUAL THE LEVEL OF ATTACK)

AIR OPERATIONS
---------------
1. CAP
2. OBSERVE SEARCH RESULTS
3. LAUNCH STRIKES
4. TRANSFER AIRCRAFT
5. LAUNCH SMS/ASW ATTACKS

CAP (Combat Air Patrol)
---
1. AT START OF AIR OPERATIONS, DETERMINE HOW MANY PLANES WILL FLY CAP MISSIONS
2. FIGHTERS FLY: NORMAL CAP, AND LONG RANGE CAP
NORMAL- PROTECT TF OR BASE FROM WHICH IT ORIGINATED
LONG RANGE- PROTECT ANY BASE/TF WITHIN ITS RANGE
(FOR CAP, RANGE=1/2 STRIKE)
3. THERE ARE 2 WAYS TO INTERCEPT AIR TO AIR MISSLE DISFIGHT
(BOTH WILL OCCUR IF CAP INTERCEPTS AIRCRAFT WITH STANDOFF RANGE AS 0)
4. AVERAGE/MAXIMUM INTERCEPTION RANGES

LONG RANGE CAP
MIS. MIS. DOG. DOG.
+EM +EM

TORNADO/ADV 310/440 64/70 145/290 31/62
FALCON/F-16 NM NM 115/230 29/5
 TOMCAT/F-14 450/550 70/75 125/250 30/60
EAGLE/F-15 300/400 63/68 125/250 30/6
HARRIER/AV8 NM NM 65/130 27/54
FIGHTER/Y-36 NM NM 55/110 26/5
FLOGGER/M23 300/400 63/68 125/250 30/60

NORMAL CAP
MIS. MIS. DOG. DOG.
+EM +EM

TORNADO/ADV 110/200 25/50 35/70 25/5
FALCON/F-16 NM NM 35/70 25/50
 TOMCAT/F-14 160/300 27/55 35/70 25/50
EAGLE/F-15 110/200 25/50 35/70 25/50
HARRIER/AV8 NM NM 35/70 25/5
FIGHTER/Y-36 NM NM 35/70 25/50
FLOGGER/M23 110/200 25/50 35/70 25/5

+EM: SUCCESSFUL EARLY WARNING
NM: AIRCRAFT DOESN'T CARRY LONG-RANGE MISSLES

SEARCH MISSIONS
----------------
1. SEARCHES ARE PERFORMED AUTOMATICALLY BY UTILITY AIRCRAFT

SURFACE/SUBMARINE SEARCH RANGES:
HELICOPTER: 4/3 RECONNAISSANCE: 20/0
ASM: 0/6 EARLY WARNING: 8/0

SUBS MAY OBTAIN SONAR CONTACTS ON TF'S NEAR THEM

SEARCH DISPLAY
---------------
THE COMPUTER WILL DISPLAY ALL RESULTS AFTER IT HAS SEARCHED

THE TF'S ID # MAY BE USED TO ATTACK THE TF'S

BASE NUMBERS:
MURMANSK: 1 ICELAND:(S) 6
RIGA: 2 SCAPES FLOW: 17
HAMBURG: 3 FAROES:(N) 18
BERGEN: 4 ICELAND(N): 19
FAROES(S): 5

3. IF YOU ENTER A STANDOFF RANGE GREATER THAN 0, EACH BOMBER WILL CARRY AIR-SURFACE MISSLES
4. WHEN STRING GROUND TARGETS, AND IF FIGHTERS ARE INCLUDED, YOU WILL BE ASKED: BASE ATTACK OR GROUND SUPPORT

5. AIRCRAFT INFORMATION

AIR CRAFT RANGE SYSTEM RANGE
WEAPON SYSTEM

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 712 of 1262
Apple II Computer Info

TORNADO 1200 AMRAAM 150*
FALCON 900 SIDEWIND 10
EAGLE 1000 AMRAAM 150*
TOMCAT 1000 PHOENIX 300*
CORSAIR 600 VALKYRIE 50
INTRUDER 800 HARPOON 110
HARRIER 400 SIDEWIND 10
FORGER 300 APRID 10
FLOGGER 1000 APEX 150*
FENCER 1200 A-7 10
BACKFIRE 2500 A-6 300
BADGER 1800 A-6 300
CUB 2500 NONE ---
STARRIFTER 2500 NONE ---

* 100 ADDED TO RANGE OF LONG RANGE AAM’S FOR INTERCEPTING RANGE

AIRCRAFT TRANSFER

1) ONLY 4 TRANSFERS PER TURN
2) TRANSPORT CRAFT (CUB, STARRIFTER) MAY BE INCLUDED IN THE FIRST 2 MISSIONS IN A.M. TURNS ONLY
3) RANGE IS TRIPLED

(WHEN USING THE TRANSPORT CRAFT, YOU MAY CHOOSE TO SEND TROOPS OR SUPPLIES ALONG WITH THEM)

AIRBORNE ASSAULT

1) ONLY 1 ASSAULT/TURN
2) EACH PLANE WILL ATTEMPT TO DROP 1 COMPANY OF INFANTRY. IF THE PLANE IS DESTROYED, THE COMPANY IS THE COMPANY
3) THE DROPPED INFANTRY WILL AUTOMATICALLY ENGAGE IN A LEVEL 5 ATTACK UPON THEIR DROP

launching ssm/asw

1) TF’S MAY USE SSM/ASW TO ATTACK SUBS OR SURFACE SHIPS SIGHTED DURING THE SEARCH PHASE. TF’S IN HARBOR CAN ONLY BE HIT BY SSM/ASW
2) IF YOU SELECT A SHIP TO FIRE, THE COMPUTER WILL LET YOU DO SO IF YOU ARE IN RANGE. RANGE OF SSM IN SQUARES RANGE OF KM/100
3) IF THE ATTACKING TF IS IN EW MODE, EACH SHIP IN THAT TF WITHOUT SSM, WILL FIRE A SAM INSTEAD
4) IF A SUB TF IS CHOSEN, THERE IS A 50% CHANCE OF A FIRING SAM
5) WHEN A SUB IS IN A SSM/ASW ATTACK, EACH SUB WILL HAVE A 33% CHANCE OF IDENTIFYING TARGETS, HIT UNTIL WHEN ASKED FOR TARGET

COMBAT RESOLUTION

1) AIR STRIKE
2) MISSLE (SSM, ASM, ASW)
3) SURFACE AND SUB COMBAT
4) RETURN AIRCRAFT TO BASES

5) LAND COMBAT
6) REPAIR AND REFIT SHIPS
7) REINFORCEMENTS

AIR STRIKE

1) AIR EARLY-WARNING
2) LONG RANGE AAM COMBAT
3) DOGFIGHT
4) SHIPS FIRE LONG RANGE SAM’S
5) BOMBERS LAUNCH ASM’S
6) FLAK
7) BOMBERS DROP BOMBS

1) EARLY WARNING AIRCRAFT DETECT STRIKES 8 SPACES AWAY.
2) LONG RANGE AAM COMBAT MAY OCCUR IF THE CAP IS EQUIPPED WITH:

PHOENIX, AMRAAM, OR APEX MISSILES

AAM’S FIRED BY STRIKING AIRCRAFT MAY FIND TARGETS WHEREVER THEY ARE.
THE SUCCESS OF EACH AAM FIRED IS REDUCED BY THE EW OF THE CARRIER/BASE
ATTACKED AND THE TARGET AIRCRAFT
FIGHTER AIRCRAFT MUST BE ABLE TO LOCK ON TO TARGETS TO FIRE AT THEM.
THE CHANCE OF A LOCK ON IS DETERMINED BY THE RADAR STRENGTH.
THE CHANCE OF HITTING AN ENEMY PLANE WITH A MISSLE IS AFFECTED BY THE ECM RATING OF THE TARGET:

TORNADO: 3 FALCON: 1 TOMCAT: 3 EAGLE: 3 FLOGGER: 1 CUB: 1
FALCON: 5 FORGER: 0 STARLIFT: 1 FENCER: 1 FORGER: 2 STARLIFT: 1
BACKFIRE: 3 forger: 1 FORGER: 2 FENCER: 1 FORGER: 2 STARLIFT: 1

HIGHER ECM RATING -> LOWER CHANCE OF BEING HIT

3) DOGFIGHT: INDIVIDUAL CAP FIGHTERS WILL CHOOSE A TARGET AND ATTACK IT, IF THE ATTACK FAILS, THE OTHER PLANE MAY ATTACK. THE RATINGS FOR DOGFIGHT ABILITY:

TORNADO: 4 INTRUDER: 1 BACKFIRE: 5 FALCON: 5 HARRIER: 3 BADGER: 1 TOMCAT: 4 FORGER: 2 CUB: 1 EAGLE: 3 FLOGGER: 1 STARLIFT: 1 CORSAIR: 1 FENCER: 1

HIGHER RATING -> CHANCE OF BEING ENGAGED

AAM: SIDEWINDER: +2 POINTS AAM: APRID: +1 POINT

4) SHIPS IN TARGET TF’S MAY FIRE SAM’S IF THERE IS NO STANDOFF RANGE OR THE MISSILE RANGE IS GREATER THAN THE STANDOFF RANGE. NUMBER OF SAM’S FIRED IS DEPENDENT UPON TYPE OF SAM:

STANDARD: 4 SA-N-1: 1 SA-N-6: 3
SEADART: 2 SA-N-J: 2 SA-N-7: 4

AEGIS CRUISERS, TICONDEROGA, AND TORCTOWN MAY FIRE 8 STANDARD SAM’S, THERE IS A 50% CHANCE OF A SHIP NOT FIRING AND SAM’S DURING A STRIKE

5) BOMBERS THAT SURVIVE MAY SHOOT ASM’S

6) IF STANDOFF RANGE IS 0, THE BOMBERS WILL BE ATTACKED BY FLAK.
7) THE CHANCE OF A BOMBER BEING SHOT DOWN BY FLAK = TF FLAK STRENGTH + 
TARGETS MISSILE DEFENSE STRENGTH, DIVIDED BY 500. THE TF FLAK STRENGTH IS 
COMBINED AA RATING OF ALL SHIPS IN THE TF. IF THERE ARE MORE THAN 
12 SHIPS IN A TF, THE RATING IS THE AVERAGE OF THE SHIPS.

8. CHANCE OF BOMB HITTING TARGET IS AFFECTED BY:

A. BOMBER ACCURACY 
B. MAXIMUM SPEED OF TARGET 
C. FLAK INTENSITY 
D. RANGE OF STRIKE 
E. SIZE OF TARGET
F. RADAR ON BOMBER (NIGHT ONLY)

TABLE OF BOMBER ACCURACY/RADAR:

<table>
<thead>
<tr>
<th>BOMBER</th>
<th>ACURACY</th>
</tr>
</thead>
<tbody>
<tr>
<td>TORNADO 14/9</td>
<td>CORSAIR 7/5</td>
</tr>
<tr>
<td>FALCON 6/4</td>
<td>INTRUDE 10/8</td>
</tr>
<tr>
<td>TOMCAT 10/8</td>
<td>HARRIET 6/2</td>
</tr>
<tr>
<td>EAGLE 10/6</td>
<td>FORGER 3/1</td>
</tr>
<tr>
<td>BADGER 3/3</td>
<td></td>
</tr>
</tbody>
</table>

MISSILE RESOLUTION

1. PRIOR TO ATTACKING A SHIP, THE ANTI SHIP MISSILES MAY BE ENGAGED BY 
CAP, SAM’S, LIGHT GUNS, TARGET DEFENSE. SAM’S WILL NOT BE FIRED 
AGAINST SURFACE SKIMMING MISSLES. SAM’S MAY NOT FIRE IF EARLY WARNING 
WAS UNSUCCESSFUL AND TAREF TF IS IN PASSIVE EW-MODE. THERE IS A 
CHANCE THAT A SHIPS WILL SWITCH TO ACTIVE EW-MODE DURING A MISSLE 
ATTACK

2. MISSLES THAT SURVIVE AAM AND SAM ATTACKS WILL BREAK INTO GROUPS OF 
1-7 MISSLES. EACH GROUP WILL SELECT A TARGET

3. MISSLES THAT SURVIVE DEFENSES MAY BE JAMMED. JAMMING POSSIBILITY 
IS AFFECTED BY THE TARGETS EW RATING AND THE MISSLE RATING

4. IF A MISSILE SURVIVES THE ABOVE MENACES, IT MAY MISS OR HIT THE 
TARGET

ACCURACY RATINGS:

<table>
<thead>
<tr>
<th>MISSLE</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>HARPOON 9*</td>
<td>SS-N-7  7*</td>
</tr>
<tr>
<td>TOMAHMK 9*</td>
<td>SS-N-2C 5</td>
</tr>
<tr>
<td>EXOCET 9*</td>
<td>SS-N-3  4</td>
</tr>
<tr>
<td>WALLEYE 7</td>
<td>SS-N-22  7</td>
</tr>
</tbody>
</table>

* SURFACE SKIMMING

5. THE PROBABILITY OF ANTI-SUB MISSLES HITTING THE SUB DEPENDS UPON 
THE SUB’S SPEED, THE SUB’S EW RATING AND MISSLE ACCURACY.

ACCURACY RATINGS:

<table>
<thead>
<tr>
<th>MISSLE</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASROC: 4</td>
<td>FRAS-1: 4</td>
</tr>
<tr>
<td>SS-N-16: 4</td>
<td>IYARA: 3</td>
</tr>
</tbody>
</table>

SURFACE COMBAT

SURFACE COMBAT MAY OCCUR BETWEEN TWO TF’S OCCUPYING THE SAME SPACE WITH 
ENDURANCES OF 9 OR MORE

1. RESOLUTION

A. EACH SOVIET SHIP IN TF PERFORMING A "C" MISSION WILL FIRE AT ONE 
OF THE NATO SHIPS 
B. EACH NATO SHIP WILL FIRE AT A SOVIET SHIP 
C. EACH NATO SHIP IN A "C" MISSION WILL FIRE 
D. EACH SOVIET SHIP WILL FIRE AT NATO TF

2. WHEN ATTACKING, EACH SHIP WILL FIRE TORPEDOES MAIN GUNS LIGHT GUNS 
ONLY SOVIET SHIPS WITH 533mm TORPEDOES CAN FIRE TORPEDOES IN SURFACE 
COMBAT

SUBMARINE COMBAT

1. SUBMARINES PATROL AN AREA TWO SPACES AWAY FROM THE TF LOCATION
2. Each sub in a TF will have a chance of engaging a sub within its patrol area. This chance is dependent on speed, sonar, and EW mode. Subs that have been detected have their own detection chances reduced by 2/3. The chance of engaging an enemy sub is 1/4 that of engaging an enemy sub.

3. The chance of engaging/torpedoing will be reduced by the number of enemy ASW ships in the enemy TF.

4. In an attack, a sub will fire 2 torpedoes. After each attack, there is a 10% chance of a sub running out of torpedoes in which it will have to return to port for a restock.

5. After a sub attacks a TF, the ASW ships in the TF will attempt to fire back.

6. Range/Accuracy of ASW/AST weapons:

<table>
<thead>
<tr>
<th>Weapon</th>
<th>Range/Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASROC</td>
<td>20/4 MK 48</td>
</tr>
<tr>
<td>SUBROC</td>
<td>55/4 Tigercat</td>
</tr>
<tr>
<td>IKARA</td>
<td>20/3 533mm</td>
</tr>
<tr>
<td>FRAS-I</td>
<td>50/3 400mm</td>
</tr>
<tr>
<td>SS-N-14</td>
<td>50/3 MK46</td>
</tr>
<tr>
<td>SS-N-16</td>
<td>75/4</td>
</tr>
</tbody>
</table>

AIRCRAFT RETURNING TO BASE

1. After completion of mission, aircraft will attempt to return to base from which they came.

2. If launched from a carrier which received 26% or greater damage, the aircraft will try to make an emergency landing on another base.

3. Emergency landings will occur automatically if there is a friendly base or carrier within 3 spaces.

INVINCIBLE, ARK ROYAL: HARRIERS ONLY. KIEV, MINSK: FORGERS ONLY.

4. If an emergency landing is required and there are no available bases, the aircraft will ditch in the ocean.

5. Aircraft which engage in CAP, STRIKE, or TRANSFER MISSIONS will suffer 1% losses. Troops and supplies being transported will also suffer 1% damage.

LAND COMBAT

LAND COMBAT WILL OCCUR WHEN THERE ARE BOTH NATO AND SOVIET TROOPS ON ICELAND OR FAROES.

1. Order of land combat => Defender fires and then surviving attackers.

2. The greater the attack level, the greater the casualties on both sides. Attacks made without adequate supplies will suffer double casualties. Defensive fire without required supplies will be only half as effective.

3. If total combat strength of attacker (TCS) is greater than that of the defender, the airfield is taken.

ATTACKING TCS=(INFANTRY COMPANIES+GROUND ATTACK POINTS)*RANDOM NUMBER

DEFENDING TCS=INFANTRY COMPANIES+GROUND SUPPORT

4. And airfield under heavy fire will not be able to conduct operations in the following turn.

GROUND SUPPORT AND BOMBARDMENT

LAND COMBAT MAY BE INFLUENCED BY BOMBERS AND BOMBARDING SHIPS.

1. Bombers flying ground support over Faroes or Iceland will add to land combat strength. TF's with "B" mission will also help if they occupy the Faroes or Iceland square.

2. Battleship main guns are worth 3 points each. Light guns are worth 1/2 point each. Cruiser main guns are worth 1 point each.

3. Ground support points have the following effect:
   A. Each point will suppress one infantry company (usually)
   B. Each point will add 1/2 point of friendly fire (usually)

4. Aircraft's ground support rating is determined by accuracy of bombs, and radar ratings (F.M. turns only). During a bomb, each "<" -> " >" means 2 ground support points have been scored.

REPAIR AND REFIT OF SHIPS

1. Damaged ships which docked are placed in the repair and refit pipeline. Undamaged ships will be placed in the refit pipeline. A base from which they came TF which docks with an endurance greater than 50 will not be required to refit. Repair time is 3 days.

2. Repair times is equal to: 9 x damage points suffered. Damage points suffered is: defense factor or ship x damage percentage. Repair time may be doubled for some ships with smaller ships having a greater chance of lengthened repair time.

REINFORCEMENT ARRIVAL

SHIPS WILL ARRIVE AS SCHEDULED IN PIPELINE. INFANTRY, SUPPLY, AND AIRCRAFT WILL BE REINFORCED AS FOLLOWS:

```
S T T A
I S Y M U U U N
N U 3 2 2 2 1 1
F P 6 3 4 2 6 2
```

(1) 25 30 3 18B 18B 3B 3B 15
(2) 0 30 0 6H 0 6H 6H 0

(B=BERGEN  H=HAMBURG)
(1->MURMANSK  2-> RIGA)

```
C I S A F F F A I
N U D 1 1 1 A A V 4
F P V 6 5 4 7 6 8 1
```

3. America

4. SCAPA FLOW
1. Each turn (during campaign games only) there is a 1/16 chance of these reinforcements arriving.

2. The Soviets will be more likely to receive #1 during first weeks in October than last week in September.

3. The Soviets will automatically receive #1 following any turn in which Fencers+Flogger<100. When this happens, the Soviet will be awarded 25 victory points.

4. NATO will automatically receive #3 following any turn in which Tornadoes+Eagles+Falcons<50. When this happens, the Soviet will be awarded 25 victory points.

5. Only "E" may initiate combat.

6. Surface combat may cause a "B" to abort its mission (causing it to become an "R").

7. Ships receive damage points when they are hit by bombs, torpedoes, missiles, or gunfire. When damage points are greater than defensive factor, the ship will sink. When damage points are greater than 50% of the defensive factor, the ship is crippled.

8. Ship that is hit may suffer additional damage, hence the message, "explosion on board." (This indicates a critical hit.)

9. Crippled ships may accrue additional damage while returning to port. It is possible for a crippled ship to attempt repairs while at sea. It will attempt to repair itself until no longer in critical condition.

10. Carriers with 26% or greater damage may not launch/receive aircraft.

11. U.S.N. carriers with damage between 26% and 35% will attempt repairs until below 26%.

12. Asw/torpedo hits will always sink a submarine.

13. Torpedo hits will always reduce a ship's speed by at least 5 knots.

14. Ship that is hit may suffer additional damage, hence the message, "explosion on board." (This indicates a critical hit.)

15. Crippled ships may accrue additional damage while returning to port. It is possible for a crippled ship to attempt repairs while at sea. It will attempt to repair itself until no longer in critical condition.

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<table>
<thead>
<tr>
<th>Mission</th>
<th>Endurance (Turns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-COMBAT</td>
<td>60</td>
</tr>
<tr>
<td>B-BOMBARDMENT</td>
<td>60</td>
</tr>
<tr>
<td>T-TRANSPORT</td>
<td>60</td>
</tr>
<tr>
<td>E-EVACUATION</td>
<td>60</td>
</tr>
<tr>
<td>U-SUBMARINE</td>
<td>90</td>
</tr>
<tr>
<td>R-RETURN</td>
<td>N/A</td>
</tr>
</tbody>
</table>

1 day = 2 turns

1. Carriers may only perform "C".

2. AP, AK, AC, AE, AKR, and AFS may only perform "T".

3. LST, LHA, LPH and LPD may only perform "T" or "E".

4. SS, SSN, or SSGM may only perform "U".

5. Only "E" may initiate combat.

6. Surface combat may cause a "B" to abort its mission (causing it to become an "R").

7. And "E" may docks at friendly base will automatically load infantry into its LST, LPH, LHA, and LPD type ships. These loaded ships will be changed to "T".

8. Supplies are used for infantry daily living, combat, forming TF's, and air missions.

9. Bases must spend daily supplies to maintain their troops. The daily required amount is the number of infantry companies/100 rounded up.

10. Supplies are consumed in land combat attacker: 1 supply per level defender: one supply unit.

11. The major ports, American Riga, and Murmansk use supplies to form TF's. Each ship requires 1/5 of its DF.

12. A TF returning to a base with and endurance greater than 30 will return its unused fuel to the port.

REQUIRE SUPPLIES

SCORING
------
1. PLAYERS GET VICTORY POINTS (VP) BY SINKING ENEM SHIPS. THE VP'S EQUAL TO DF+CARGO/AIRCRAFT CAPACITY
2. NATO PLAYER RECEIVES 1 POINT 10 VP'S FOR EACH MORALE POINT REMAINING. (CAMPAIGN SCENARIOS ONLY)
3. EITHER PLAYED MAY SCORE 500 VP'S FOR POSSESSIONS OF ICELAND OR FAROES AT END OF GAME.
4. SOVIET PLAYER RECEIVES 1000 VP'S IF NATO MORALE IS 0
5. VICTORY TABLE:
SUBTRACT SOVIET FROM NATO POINTS:

<table>
<thead>
<tr>
<th>SCORE</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000+</td>
<td>NATO DECISIVE</td>
</tr>
<tr>
<td>500-999</td>
<td>NATO SUBSTANTIVE</td>
</tr>
<tr>
<td>100-499</td>
<td>NATO MARGINAL</td>
</tr>
<tr>
<td>(-99)-99</td>
<td>DRAW</td>
</tr>
</tbody>
</table>

FOR SOVIET WIN, JUST CHECK IF IT IS NEGATIVE AND CONSULT ABOVE TABLE

WEATHER
-------
CLEAR, LIGHT OVERCAST, HEAVY OVERCAST, AND STORM

1. THERE IS A RANDOM CHANCE EACH TURN THAT THE WEATHER WILL CHANGE. THE WEATHER ONLY CHANGES IN STEPS OF 1. THERE ALSO IS A RANDOM CHANCE A HEAVY OVERCAST WILL BECOME A STORM. STORMS ARE RARE IN SEPT-OCT AND MORE FREQUENT IN NOV-DEC.
2. WEATHER INFLUENCES THE ABILITY TO SPOT TF'S AT A RANGE OF GREATER THAN 1.5. THE CHANCE OF SPOTTING A TF AT GREATER THAN 1.5 WILL BE REDUCED BY 1/3 DURING LIGHT OVERCAST AND 2/3 DURING HEAVY OVERCAST. STORMS WILL PREVENT ALL AIR AND MISSLE OPERATIONS
3. DURING STORMS, ALL TF'S WILL HAVE THEIR SPEED REDUCED TO 5 KNOTS
4. THE LIGHT BLUE AREA ATOP OF SCREEN IS ICEBERG ZONE. SURFACE TF'S WILL HAVE TO MAKE ONE STOP WHILE ENTERING AND ICEBERG, BUT SUBMARINES ARE UNAFFECTED. THE ZONE PROGRESSES SOUTHWARD AS THE GAME PROGRESSES

AIRBASE CAPACITY
----------------
TABLE OF MAXIMUM AIRCRAFT

<table>
<thead>
<tr>
<th>AIRBASE</th>
<th>CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICELAND:</td>
<td>80</td>
</tr>
<tr>
<td>HAMBURG:</td>
<td>600</td>
</tr>
<tr>
<td>RIGA:</td>
<td>900</td>
</tr>
<tr>
<td>FAROES:</td>
<td>60</td>
</tr>
<tr>
<td>SCAPA FL:</td>
<td>900</td>
</tr>
<tr>
<td>USA:</td>
<td>900</td>
</tr>
<tr>
<td>BERGEN:</td>
<td>500</td>
</tr>
<tr>
<td>MURMANSK:</td>
<td>900</td>
</tr>
</tbody>
</table>

NATO MORALE
------------
NATO MORALE WILL BE REDUCED BY LONG PERIODS OF INADEQUATE SUPPLY

1. LEVEL STARTS AT 100 FOR CAMPAIGN ONE OR 40 FOR CAMPAIGN TWO
2. NATO MORALE WILL BE REDUCED BY ONE FOR EACH TURN SUPPLY'S AT SCAPA FLOW ARE LESS THAN 10 OR TROOP LEVEL IS LESS THAN 20000

3. MORALE POINTS MAY NEVER BE REGAINED.

REPLACING CARGO SHIPS
---------------------
1. DURING THE CAMPAIGN SCENARIOS, ANY AMPHIBIOUS OR CARGO SHIP SINK WILL BE REPLACED BY A CARGO SHIP WHICH WILL BE NUMBERED AND HAVE A CARGO CAPACITY OF 4 AND SPEED OF 20
2. SUNK CARGO/AMPHIBIOUS SHIPS WILL NOT BE LISTED IN THE SUNK SHIP OPTION, BUT WILL COUNT FOR POINTS

AIRFIELD REPAIR
----------------
REPAIR TAKES 1-3 DAYS AFTER CAPTURE UNTIL OPERATIONAL STATUS

CAMPAIGN GAMES
--------------
CAMPAIGN ONE: 252 TURNS
CAMPAIGN TWO: 122 TURNS

MINI-GAME DURATION
------------------
QR.44: 12 TURNS
ICELAND: 20 TURNS

SOLITAIRE PLAY
---------------
WHEN PLAYING SOLITAIRE, THE COMPUTER WILL COMMAND THE SOVIET FORCES

1. THERE ARE FOUR LEVELS OF DIFFICULTY. AT LEVEL 3, THE SOVIETS WILL PERFORM NORMALLY. AS THE LEVEL IS DECREASED, THE SOVIET ACCURACY WILL INCREASE. (BACKWARDS!) THIS LEVEL CAN ALSO BE USED IN A TWO-PLAYER GAME
2. ONE CAN START A SOLITAIRE GAME, SAVE IT, AND RESTART AS TWO-PLAYER
3. ONE MAY CHANGE A TWO-PLAYER TO SOLITAIRE IF ALL SOVIET SHIPS ARE IN-PORT

COMMENTS
--------
THese ARE COMMENTS FROM DIRTY HARRY, NOT FROM THE SSI DOCUMENTATION.
This program is for advanced users only.!

Please Wait! The real documentation is coming soon... (I hope...)
This text file contains just some hints to help you apprehending NoiseTracker.
Don't forget to read this file each time you get a new version of NoiseTracker!
It should describe the important new features, or modifications...

Installation
------------

This program may be copy on your hard disk. Just copy the files NOISE.TRACKER, and NOISE.DATA in the same folder... (If you have created some partitions on your hard disk, choose a folder in a partition recognized by ProDOS 8.)

(Note that old 5'1/4 Disks are not recognized by Noise Tracker GetFile program...)

It uses the Memory Manager to allocate memory (badly, but it uses it!), so you can execute this program from GS/OS. But if you haven't got a lot of memory, I recommend to launch it from a ProDOS 8 disk, because you'll gain about 400/500ko of memory, which is the memory reserved by the GS/OS system.

Also, copy the icon file NT.ICONS in your Icons folder... (Icons courtesy of Michael Guitton), and modify the application path of each icons (using IconEd for example) to allow the system to locate the NoiseTracker program when double-clicking on a music file from the finder. (Since version 0.70, all the files created by NoiseTracker have their auxtype set to $0220.)

(You can skip the loading of the picture and the music by pressing the Open-Apple key while loading.)

How does it work?
------------------

NoiseTracker is a new kind of music software for the IIgs, very different from all the previous ones (Soundsmith, Synthlab, Music Studio...) by the fact that it can use almost as many instruments as you want (up to 64) and you're no more limited by the size of the Ensoniq Ram (64ko) !!!

NoiseTracker uses two kinds of instrument... Those always in the EnsoniqRam, and those which are in the GS-Ram, and which are moved to the Ensoniq when needed... But, luckily, when playing a music, you can hardly notice the difference between these two kinds !!!

Each kind of instrument must be played on its own dedicated tracks... These are Tracks A..G for the instruments in the GS-Ram, and Tracks 01..15 for those in the Ensoniq...

Using the Sound Parms option, you select how many tracks are reserved for the GS-RAM based sounds... (Actually, each track reserves a small part in the Ensoniq Ram which is used for swapping and playing part of the sound...)

(For those interested in the technical part, you can press 'T' at anytime to toggle the display of the Ensoniq DOC registers.)

Loading A Music
NoiseTracker can load a lot of music formats; there are 3 menu options involved for loading a music...

- OPEN MUSIC   (Music Menu)
  Load a NoiseTracker Music Format file (compacted).
  After loading a NT music, the program will ask you if you want to load the
  wavefile associated to this music (same name, with the suffix .W)

  Load a Soundsmith Music format file. The instruments are automatically loaded
  (like in soundsmith) if they're found in the same directory... If not, NT can load
directly the 64ko Wavebank file generated by soundsmith, and get the instrumens
  directly from this file !

  (Beware! This is not the main goal of NoiseTracker to replay soundsmith music... So
  most of the Soundsmith musics will be played normally, but some of them won't !
  (depending on the kind of instruments and the kind of effects used...)).

- OPEN MODULE   (Module Menu)
  Load the NoiseTracker Module Format file... This is the format used by the
  NoiseTracker player to allow you to replay the musics in your own program... (see
  Player Info below...)
  This format includes the tracks used by the musics and also the instruments...

- AMIGA IMPORT (Module Menu)
  This is one of the most powerful option of NoiseTracker... It allows you to
import directly music modules from the Amiga... Just convert the module created on the amiga (by
SoundTracker, NoiseTracker, ProTracker...) to a IIGs (using a Null-Modem cable, or a
modem, or DOSEZOS on the Amiga then APPLEFILEXCHANGE on the Mac, or PC Transporter on
a IIGs to read PC disk format...) and load it with this option (The module name must
begin with the prefix MOD.). Then play it and enjoy! That's all!!!

Composing a Music
-----------------
If you want to create your own music, it's very easy... (just like in Soundsmith!
(Sorry, Noise Tracker is not midi compatible!))

Select the instrument (double clicking in the instrument list, or in the
selection box to enter it through the keyboard, or using directly a non-keypad key
number), then the octave (using the keypad), and the notes (using keys : GHJKL;' and
YUOP[]). If everything OK, you should ear the sound ! (Be careful of the good use of
the Tracks and Instruments or you'll get nothing...Tracks A...G are for RamBased
instruments only, and the others for the ensongiq ones.)

Then depending on the state of the LOCK flag (use TAB to change it, or click on
it), the new note will be or not added to the 'partition'... (This is very useful to
verify any note to be played...)

About the effects, only two are supported by NoiseTracker : V to change the
volume of a sound, and T to change the music tempo.

Playing the music in your own program
-------------------------------------
Since version 0.55, the music player is included on the disk... It exists under
2 formats, a tool (Too120), and a player to be linked... These two players can only
play a music saved under the MODULE format !!! (Current version is 1.2 (90162). Old
version can't replay modules with more than 16 instruments)

See the NTSAMPLE.S and SAMPLE.S16 file to see how to use it... There shouldn't
be any major problem to replay a music by yourself!

Just two points I have to insist on, because they may be the source of major
malfunctioning :

- When making the NTInitMusic call, you must give as parameters the address of
  the music module in ram (X=^@Module,Y=@Module). This address (@Module) must be PAGE
  ALIGNED !!!

- Don't forget to make the call NTUpdateSound very often in your program just
  after have launched the music, because this is that call which will move, when
  needed, the instruments from the G3-RAM to the Ensoniq... (The call can move up to
  7*256 bytes at a time).

  If you forget to make this call, or if your 'calling rate' is too slow, then
  notes on the tracks dedicated to Ram Based sounds (Track A...G) won't be played
  normally !!!

Have Fun with NoiseTracker !
Any Problem? Call 1-900-FTA-RULE ! (Hey?! It's a joke!!!!)
A list of NEW FEATURES for v1.0 follows:

1. NoiseTracker v1.0 now allows you to assign single or both channels in the
   Ensoniq-RAM and also in the GS-RAM.

2. An auto screen saver will activate giving you a black screen with dancing pink
   notes, if you don't do anything with the current screen, after a brief time of non-
   activity on-screen.

3. A new 'NEXT' animation is included, (within the INTROPIC) with an impressive
   bouncing 3-D ball pyramid, during the INTRO portion of NoiseTracker, as the
   INTROMUSIC is playing.

4. This animation will not be observed, if no INTROPIC, INTROMUSIC & INTROMUSIC
   wavefile is included, and you can press any key or click the mouse to enter the
   program.

5. A new circular opening portal-scroll introduces you to the main program
   operational screen.

6. The main programs operational screen has a display box that shows the music title
   that is loaded and/or playing. You can change the color of the screen, by clicking
   the mouse on this display box. The color will change to another, if you click on that
   display box again and so on and so on.

7. Full development credits are viewable, via the 'About Program' option.

8. Freeware info is available, via the Freeware Info option.

9. You can visit the "Underground World", and try your hand at guessing,
   "The Word" or (QUIT) & exit back into NoiseTracker. (See: TIPS & HINTS,
   below for more information on this option). (who knows what "EASTER-EGGS" lurk
   within this option). See Freeware Info option, write the programmer and ask him if
   any more, not given below, might be found and/or activated.

10. New SHR graphic "Original" INTROPIC and INTROMUSIC-INTROMUSIC.W are included.
   PLEASE NOTE: these original 3 files have been replaced on this disk. They can be seen
   and listened to on the original released NoiseTracker v1.0 disk. You should be able to
   obtain the original released disk from (AOL) America-on-line or you can write to me and
   send me a blank 3.5" disk and a self-addressed return postage envelope and I'll send the original v1.0 disk to you. IT IS FREeware!

Key & Mouse Function-Option list
---------------------------------
(to be inserted later)

TIPS & HINTS
-------------
(to be inserted later)

For all the latest, & custom,
one-of-a-kind; VAMPS Songs-musics-instruments-sounds,
wavebanks, samples, special effects, Music NDAs, etc.
for the Apple IIgs programs; Noise Tracker,
NuPak IIgs is an innovative creation in packing utilities. NuPak IIgs offers the ability to pack and unpack not only ShrinkIT(tm) type files, but files in several other formats as well. However, the biggest advantage of NuPak IIgs is the ability to pack files with resource forks. With the onset of GS/GS(tm) 3.0, files containing both resource and data forks will become more prominent. Programs utilizing this format are following a format found in most Macintosh programs. Such programs already exist on the IIgs—most notably the CWEB files found on the IIgs System Disk and this program. Until now, there has not been a way to pack files with resource forks. One had to pack a whole disk in order to send any file with a resource fork—that is, until NuPak IIgs. Now you will be able to pack single files and send them like any other file.

NuPak IIgs is a full fledged 16-bit packing and unpacking program, running under GS/GS, that follows the human interface guidelines. It therefore offers an easy to use substitute for the myriad of archival programs for the Apple II series (as well as for other computers). Although, the main focus of NuPak is on NuFX(tm) archives such as those created by ShrinkIT.

Another ability that makes NuPak unprecedented, is the promise of accessing other operating systems when FSTs become available. It currently supports AppleShare(tm) network file servers. However, what sets NuPak IIgs off from the rest is its ability to unpack Macintosh files compressed with StuffIT(tm), the most widely used Macintosh archival program. This can be done without waiting for Apple's FSTs.

Comments, suggestions, enhancements, and/or bug reports can be sent to the author on America Online(tm), on Internet, or via US Mail. See the end of this file for additional information.

Notes Version 2.0

This is it folks, version 2.0! I decided to jump the major version number because I've added along awaited feature...StuffIT support! This program can now handle Macintosh "StuffIT" archives, with either a 32-byte header from downloading the archives from America Online or a 128-byte Macbinary header (used on BBSes).

Another major development is speed. Version 2.0 has had its decompression routines totally reworked and enhanced. The old slowness of version 1.x is no more.

I have changed the user interface in a few places to be more friendly. The most major change is at points where the user is prompted to enter a device name. All such dialogs have been replaced with a standard dialog window allowing the selection of a device from a displayed list of available devices. This prevents the user from having to memorize the exact names of devices.

I have also added the "View Help File" option. This option brings up a help window containing the quick-help list describing the menu options in minor detail.

Version 2.0 also supports User Preferences and the creation of Binary II files, a very useful option for users of services such as CompuServe and GENie which want Binary II headers on uploaded files.

Ghost of Features Present

Here is a listing of what Version 2.0 can do:

- Extract files from NuFX, Binary II, ACU, BXY, and StuffIT archives.
- Uncompress records in the above archive formats if they are packed with Huffman, Dynamic LWZ, or RLE compression.
- Add messages while adding files to NuFX archives.
- Display messages that are in NuFX archives.
- Actualize whole disks to NuFX archives.
- Work with even more archive types (Arc, Zip, Zoo, etc...).
- A mini-editor for composing quick text messages.

The following features are planned for versions in the near future:

- Actually compress files while adding, using Huffman or Dynamic LWZ.
- Add messages while adding files to NuFX archives.
- Save User Preferences such as compression mode and default pathname for extraction.

Getting Started

This program needs System Disk 5.0.2 or higher to run correctly. If you don't have the necessary system disks, try to download them from America Online or goto your local user group to obtain them. You might also want to see your local dealer and obtain a copy. Most dealers should let you copy it, or you can buy the three-disk set with manuals for around $40.

Start by copying the program to where you want it. It will run on any GS/GS-compatible device, including 3.5" and 5.25" drives, hard drives, and AppleShare file server volumes. You absolutely MUST use the Finder or another GS-based copy program, since the program does have a resource fork and cannot be copied by a ProDOS 8 program.

Please note that the NuPak IIgs program cannot be "locked" or write-protected in any way. This is because NuPak writes back to itself to save the user preferences. If you forget and accidently lock or protect the file, NuPak IIgs will kindly tell you this and exit back to your program launcher.

Quick Help List

After running the program from the Finder(tm) or another program selector, the NuPak IIgs desktop will pop up and the File, Edit, Archive Options, and Special menus will appear.

Note that currently unavailable options are marked with "[ N/A ]".

*** The menu underneath the Apple contains 2 options:

- "About NuPak IIgs" will bring up a series of dialogs showing some info about who contributed to this program, as well as version number you are using.
- "View Help File" opens a window in which you can view the miniature help file. If the help window is already open, this option brings it to the front.

(there are followed by any NDAs you have installed.)

*** The File Menu has several options:
"New" will create a new NuFX archive, allowing you to select its filename and location before it is created. Any current archives are not closed.

"Open" will allow you to select a file, which is then opened as an archive. NuPak will automatically figure out what type of archive it is. If it can't figure out what the file format is, it will tell you so. Any current archives are not closed.

"Save" and "Save As" aren't used and are for future use.

"Close" will close the currently active window, be it an NDA, archive window, or whatever. If it is an archive window, the archive file is closed and any data buffered in memory is flushed to disk.

"Delete" allows you to select a file, which is then deleted. You are asked to confirm before the file is actually destroyed.

"Rename" will let you rename a file you select. You can change the entire path of the file, even move it between directories: The only restriction is that you cannot move it across volumes. You select the file and can then edit its full pathname. The option is abortable.

"Format" lets you format a disk. NuPak will display a list of devices from which you select the device to format. You also enter the volume name to use in formatting the disk. NuPak then tells GS/OS to format the disk.

"Erase" is just like Format, except it simply writes a new volume directory to the disk without reformating it.

"Page Setup" and "Print" do nothing.

"Quit" will quit back to the program selector.

**** The Edit menu has only one option used by NuPak.

"Select All" will automatically highlight all files in the currently open archive with. If there is no archive open, or if the currently highlighted window is not an archive (ie, an NDA is in use), nothing will happen.

**** The Archive Options menu contains four options:

"Extract Records" will extract whatever records you have highlighted in the archive window. You are prompted first for a disk or directory to extract to.

"Add Records" allows you to add files to NuFX archives. You select the file or files to add, and then select message information. The files are then added to the current open archive, using the compression method selected under User Preferences.

"Delete Records" is not functional as of yet and therefore dimmed. In the future it may be possible to delete records within a NuFX archive.

"Rename Records" is not functional as of yet and therefore dimmed. In the future it may be possible to rename records within a NuFX archive.

**** The Special Menu contains four options:

"Set Preferences" will allow you to configure NuPak for your own personal tastes. You can select compression method (for use when adding to archives) and the default pathname for use in extracting. These options are saved and will be set each time you run NuPak Igs. Note that the only compression method currently available is "uncompressed", and all other compression options are dimmed and cannot be selected.

"Make Binary II file" will allow you to make a Binary II file from a specified file. You specify the source file and a destination filename, and a Binary II archive is created using the specified destination filename and containing the selected source file.

"Make AppleSingle File" will allow you to take a selected file (of any type) and make it into an AppleSingle format file [ N/A ].

"Make AppleDouble File" is the same as above, but produces its output in AppleDouble format [ N/A ].

Now that you have a brief knowledge of the menu options, let's talk about some other basic operations.

Working with Archives

After you select an archive with "Open" (or make a new one with "New"), a window will appear on the screen. The title is the filename and is followed by the type of archive, such as "Nuarchive (NuFX)". You can have more than one archive open at once also. If you have multiple archives opened, simply click in the window of the archive you want to select it as the current archive. The current archive always has its window highlighted. Not that there doesn't have to be a current archive; an NDA can be the currently active window instead of an archive window.

Inside the window is a general information line right below the title. It shows the creation and modification dates of the archive, and the number of files in the archive. If the archive doesn't supply one of the dates, that field is dashed out. The other is a list control showing all the files in the archive and some information on each one. Generally it will show filename, filetype, auxtype, date when it was archived, size of the file, compression method, and how much it is compressed in percent. A scrollbar in the window allows you to scroll if there are more than 12 files.

The listing operates like this: if you click on a name, you select it and deselect all others. Dragging the mouse drags the selection bar. If you reach the top or bottom, the listing scrolls automatically. There are, however, two keys that modify the way you select items. Holding SHIFT down will select a "range" of records. For instance, if you clicked the first file, then held down shift and clicked down, all files in between are selected. So you would select seven records with only two clicks. And if you hold down OPEN-APPLE, clicking on a record will select that record but other records will NOT be deselected. The best way to learn this is to try it first hand by opening a big archive if you have one.

Once you select your files, you then select what to do with them. Currently the only thing you can do is "Extract" files from the archive (Open-Apple-E on the keyboard), although in the future you may be able to rename or delete files within the archive. After selecting extract, if any of the records to extract are files, you are asked to select a destination pathname (If you have a default pathname set up in the Preferences [see "Misc Options" section], this will be the initial location pointed to in the window). Choose the volume using the Disk button. This can be any writeable device, be it a floppy, hard disk, or file server volume. Next, use the Open and Close buttons to move into the desired subdirectory. Once double-clicking a directory also opens it. After selecting the destination pathname, you can either click the "Cancel" button to abort extraction, or click the "Extract" button to continue.

When extracting disk records from an archive, NuPak displays a window from which you select the destination device for the disk record. The window contains three controls. The first two are buttons, the default button (selected by clicking it the hidden RETURN is "Continue"). The second is "Cancel", which must be clicked to be selected. The third control is a list of devices from which you select a destination device. Up to five names are displayed at once; if there are more than five, you can scroll the listing to display the extra devices. NuPak automatically makes sure you extract onto a device of the proper type to hold the disk record. If the device cannot accept the record, you are given another chance to select a device.

The program begins the extraction process and a status dialog is placed on the screen which will show the filename being extracted and the status using three "thermometers". The top thermometer is labeled "Data Fork", and fills up red as the data fork of a file (or a disk) is written out. The middle thermometer is labeled "Resource Fork" and fills up with the color blue as the resource fork of a file is...
extracted. Many files do not have resource forks, and disks never do, so you probably will not see it fill very often. The final thermometer is labeled "Message" and it will fill up with the color yellow as each message is loaded into memory for you to look at. Finally, there is a "Cancel" button you can click which will abort extraction, but only between records (you cannot currently abort in the middle of extracting a single file or disk).

Several things can interrupt extraction. Errors that abort extraction include GS/OSS errors (such as volume full or I/O error), unknown thread types in NuFX archives, and Out of Memory errors. If a compression method is encountered that NuPak can't handle, it will ask you what to do. You can either continue and extract the file to disk (so that you may use another program to decompress it), or skip that file. If a file is being extracted already exists, you are given the option to skip that file, extract to a different filename (N/A), or delete the old file. If messages are encountered in a NuPak archive, you are asked at each message if you want to view it, save it to disk, or both. Note that any records that NuPak never attempted to extract (if you abort or if an error aborts the extraction) are not deselected when the extraction process ends.

There are two messages that can be displayed during or after extraction of a record. The first message can appear anytime during decompression, it is a "Data Damaged" message. This means that the data is seriously damaged and NuPak cannot continue uncompressing reliably. This error will abort the extraction process. The second error occurs at the end of extracting a record. It tells you that the "CRC of the data does not match". NuFX archives have several checks for damages, called CRCs. NuPak always calculates CRCs on its own and makes sure they match those stored in the archive. If they don't match, then the data is damaged. This error is not serious enough to abort extraction, and NuPak will continue to the next record. Text files or pictures may be intact enough to warrant keeping, but a program file will very likely not run correctly.

When all records have been extracted, you will see an "Operation Completed" message. You can click the Continue button or just press Return, and you will be returned to the "normal mode" of the program, ready to open new archives, add, or whatever you wish.

Adding to an Archive

NuPak IIGS also offers the ability to add files to NuFX archives. In the future it will also be possible to compress files as they are added, as well as add whole disk to an archive.

Adding is functionally similar to extracting. After opening the NuFX archive to add to, select "Add" (or OA-A from the keyboard). You will be presented with a dialog where you select files to add. The Disk, Open, and Close buttons function normally. To select files to add, use the mouse button and the SHIFT and OPEN-APPLE keys as outlined in the previous sections. When finished selecting, click Accept to continue or Cancel to abort.

After selecting your files to add, you are next asked to select any message types to add. Since this is not yet completed, just click "No" to continue.

From here on the adding process is just like extracting. The status window has three thermometers that fill up as the files are added, and errors behave the same way as in extraction.

StuffIT Support

Version 2.0 of this program offers support for StuffIT archives, which is pretty much the standard for the Macintosh, on HFSs and on America Online.

NuPak IIGS can handle StuffIT archives in two formats. The first is the archive with a 32-byte header. This format is used when downloading the archives from America Online, using the Apple II (or IIGS) version of the program. The other is the archive with a 128-byte Machinary header. You will find archives this way on local HFSs and on other information services. Please note, however, that the format of the archive is transparent to you; the program senses automatically and adjusts itself.

Extracting from StuffIT files is very much like normal extraction procedures with a few minor changes:

- Filenames are converted to ProDOS format IF NEEDED. This means if an HFS disk has an HFS file and it has no filename translation, directories in an archive don't list the contents of the folder, only the folder itself. The folder's size will be the size of all its contents. Extracting the directory extracts everything including as well.
- Filetypes are translated if necessary into ProDOS filetypes. As of this writing, the following HFS filetypes are converted:
  - "TEXT" becomes "TXT"
  - "APPL" becomes "S16"
  - "CDRV" becomes "CDV"
  - "SIT!" becomes "LBR", subtype $0000
  - "FIT!" becomes "LBR", subtype $0000
- All other filetypes are extracted as "BIN" files.
- At this time the date IS NOT PRESERVED during extraction. When you get info on the date format on the Mac I'll fix this.
- If you experience any problems with unStuffing, PLEASE TELL ME! This has never been done on an Apple Iigs (or any other Apple II) before, and I'm not an expert on Stuffit archives.

Miscellaneous Options

Format/Erase:

These two options allow you to format or erase a disk. Formatting physically reformatst a device, while erasing simply erases the main directory and makes the disk look fresh, but doesn't physically reformat (meaning the data is actually still on the disk). Choose the option that works best for your needs. NuPak will display a window (almost exactly like the window when extracting a disk from an archive) with four controls in it. The first two are "Continue" and "Cancel" buttons. They are pretty self-explanatory but you should be aware that hitting RETURN selects "Continue" by default. If you still have a second chance to cancel after that though, so don't get excited if you mess up.

The third control is a list of all available devices on your system, from which you select the device to format/erase. Only five names are displayed at once; additional names can be reached by scrolling the listing with the scrollbar. If there are five or less names, the scrollbar is inactive and doesn't function.

The fourth and final control is an editing line directly below the device name listing. Here, you enter the name to use when formatting or erasing the selected disk. For example, in this box you enter the text "MONDAY" as the disk name, which becomes "MONDAY"/"Untitled", just like in the GS Finder.

Once you have selected a device and entered a volume name, hit RETURN or click "Continue" to go to the GS/OSS format menu. I won't explain the GS/OSS menu, as it's the same thing as what comes up in the Finder when you select Format or Erase. You can also Cancel from here if you change your mind.

Delete/Rename:

These two options allow you to delete or rename any file. For delete, you are prompted to select the file to delete from a list of files. Clicking "Open" or hitting RETURN will continue. You are then asked to confirm the deletion. Here,
hitting RETURN will select "Cancel". If you wish to continue, click the "Delete" button. The file will be deleted if possible.

The rename option works similarly. After selecting the file to rename, you are prompted to enter the new name for the file. The default pathname is the current pathname. Note that you can actually rename a file to a different directory on THE SAME DISK ONLY, as well as just rename the file itself. To rename a file to a different directory, leave the filename itself alone, and just edit the appropriate directory name(s) in the displayed pathname. After you enter the new name, click "Rename" to continue, or press RETURN or click "Cancel" to cancel the option and leave the file alone.

Preferences:

This option (under the Special menu) allows you to set certain defaults which are set every time you run NuPak IIgs. This option displays a dialog, from which you can select compression mode and a default pathname.

To select the compression mode, click on the appropriate *radio button* to select that option. Only one option can be selected at once...selecting a mode deselects all other automatically.

The default pathname is simple to edit. Just type in the full GS/OS pathname of where you will most often put extracted files. Leaving this name blank tells NuPak to not bother with a default pathname. What NuPak does with the default is set the path to your default pathname right before putting up the "Select Pathname" extraction dialog, so that you can just hit "Extract" right away and get going, or select another path. NuPak does not skip the selection so that you can still select a path other than the default pathname.

For saving your preferences, you have three options. Hitting RETURN or clicking "Cancel" aborts the changes you have made and leaves the preferences alone. Clicking "Make Changes Temporary" will change the preferences, but the changes will not be saved back to disk. Use this, for instance, to temporarily use a new default path or a different compression mode. And finally, if you select "Make Changes Permanent", NuPak will not only change the preferences, but will save them back to disk WHEN YOU QUIT THE PROGRAM. If you Ctrl-Reset and reboot out of NuPak without quitting, your preferences are not saved, so be careful!

Make Binary II File:

The final option is Make a Binary II file. Many information services require uploaded files to be in Binary II format.

First, you are prompted for a source file to make the Binary II file with. Select the file from the list and click "Open" to continue or "Cancel" to abort. Second, you are prompted for the filename to use in creating the Binary II file. Select an appropriate directory, type in a filename, and click "Save" to continue or "Cancel" to abort.

NuPak will now make your Binary II file. What happens is the output file is created and a Binary II header written to it. Then the source file is copied byte-for-byte into the output file, creating your Binary II file. As this process continues, you can watch the progress in a window like that used during extraction. A thermometer will fill red as the process continues.

NOTE: You may have heard of "BXY" files. Some services prefer this format of file. A BXY file is simply a Binary II file containing a NuFX archive. To make a BXY file, simply create a Binary II file using a NuFX archive. You can either do this to an existing archive, or create a new one within NuPak, add files to it, save it, and then convert it to BXY.

Conclusion

Now you have mastered NuPak IIgs and you should be ready to use the program the next time you wish to pack or unpack an archive. Keep an eye out for future revisions as they are just around the corner. You may have also noticed new options, yet to be integrated into the program, in the menus. We are adding in these options continuously, with more important options being written first.

It is hoped that NuPak IIgs will bring you hours of packing or unpacking enjoyment. Archive away!!

Where to get ahold of us

You can reach Frontier Technologies in two ways:

America Online: Frontier T
US Mail : Frontier Technologies
P.O. Box 165
Grosse Ile, MI 48138-2009

The author of NuPak IIgs can be reached in either the above ways or at the following additional electronic mail addresses:

America Online: Joshua T6
Internet : joshuat2@nucleus.mi.org

NuPak IIgs is a trademark of Frontier Technologies, ShrinkIT and NuFX are a trademark of Paper Bag Productions, GS/OS, AppleShare, and Macintosh are trademarks of Apple Computer Incorporated, America Online, ACU and AppleLink are a trademark of Quantum Computer Services, Stuffit was developed by Raymond Lau.
Here it is again. You saw the original in the Incider/A+ June 1992 issue, the mouse odometer for the Macintosh. Now, here's the best, the GS version! This is a handy dandy NDA that tracks how far your mouse travels. It measures in pixels, inches, feet, miles, centimeters, meters, and shylars. Best of all, its freeware. If you have any comments, please contact me. I don't care if you call me at 3 in the morning (chances are, I'll probably still be awake, and would welcome the company).

Paul Meyers
910 Century Ave. SE
Palm Bay, FL 32909
(407) 727-3878

OGRE
Player Reference Card
Origin
Systems Inc.
340 Harvey Road, Manchester, N.H. 03103-3317
Apple // version, 64K.

Cleaved/Cracked by: The Talisman/First Class
Supported/Supplied: Dr. Fate & The Doc/EA

TO BEGIN PLAYING OGRE

1. Place the OGRE disk, label side up, in the disk drive and turn on the power.

2. Once past the title page, a dialogue box will prompt for the type of input device: K-keyboard, M-mouse, or J-joystick. The options may vary depending on what input devices are installed. The desired device is selected by pressing the appropriate key. In addition, the joystick can be selected by moving it or pressing its button.

3. OGRE will start in the Field Editor, from where the player can either continue a previously saved game or start a new game.

Making Choices. Choices are made in OGRE through the use of the pointer, a black, triangular object that can be moved around with a mouse, joystick or keyboard. A mouse (if available) or joystick is highly recommended for playing OGRE. OGRE can be played using the keyboard to move the pointer and to simulate 'clicking' or pressing a button, or it can be played entirely with 'pointing', 'clicking' and 'dragging' techniques using a mouse or joystick.

Clicking. Some selections in OGRE are made by first moving the pointer to the desired object or option, then pressing and quickly releasing the button. This is referred to as clicking. When playing with the keyboard, typing RETURN will simulate pressing or releasing the button.

Dragging. Another method of designating choices is by dragging. Dragging is accomplished by placing the pointer over the desired object then pressing and holding the button while moving the pointer to another location. Releasing the button completes the drag. If playing with keyboard control, typing RETURN will simulate holding the button down. When the pointer is in the desired location, typing RETURN again will release the button and complete the drag.

Pulling down the Menu. In the upper right corner of the screen are two menus that can be pulled down. The first is titled 'Menu' and the second is 'OSI'. To pull down either menu place the pointer over the desired title and press and hold the button. The selected menu title will become highlighted and a list of commands will appear beneath the title. Releasing the button without moving the pointer will cause the menu to disappear. The menus can also be pulled down by typing M (on a //e or //c) or SHIFT-M (On a //, //+ or ///).

Choosing Menu Commands. Menu commands are chosen by using the dragging technique. Position the pointer over the selected menu title and pull.
Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 726 of 1262

down the menu by pressing the button. While holding the button down, drag the pointer to the desired menu command. As the pointer moves through the menu, each command is highlighted in turn. When the desired command is highlighted, releasing the button selects it. If you change your mind about choosing a command, move the pointer off the menu, or back up to the title, then release the button. Nothing is chosen unless you release the button while one of the commands is highlighted.

Dimmed Commands. When 'Menu' is pulled down, some of the commands are less distinct than others. These less distinct commands are referred to as dimmed. Dimmed options are ones that cannot be used at that time.

Dialogue Boxes. Whenever additional information is required to complete a command, a dialogue box appears. Dialogue boxes usually have special areas called 'buttons' to click, such as 'OK' or 'Cancel'. Sometimes, they present further options for selection. Dialogue boxes are also used to warn you if you're about to do something that is irreversible. If keyboard control is used, the pointer will automatically move to a dialogue box anytime one appears. Typing O or V will move the pointer to the 'OK' button and typing RETURN will press it. Typing Ctrl-O or Ctrl-V (or button 1 on the joystick) will automatically invoke the 'OK' button.

Control Keys. In most cases, pressing single keys, such as O or V, will move the pointer to a command area (i.e. the 'OK' button, or the 'Menu') without invoking that command. The command must then be invoked by a second keystroke, such as typing RETURN. This two-step process is a safety precaution against accidentally choosing the wrong command. This precaution can, in most cases, be overridden by pressing the CTRL key while simultaneously pressing the desired command key. This will automatically invoke the desired command without requiring the additional keystroke.

LOADING and SAVING GAMES

A previously saved game can be loaded at any time. If a battle is in progress when another game is loaded, the current game will be lost unless it is saved first. To load a game, select "Load a Game" from the Menu.

A dialogue box will appear from which one of five saved games can be selected. Select the desired game and then click 'OK'. The selected game will be loaded in and the battle will proceed from where it was saved.

The current status of a battle can be saved for continued play later by selecting "Save a Game" from the Menu.

A dialogue box will appear, from which one of five games can be selected for saving. Select the desired game and then click 'OK'. The game will be saved and play can continue.

MOVEMENT

<table>
<thead>
<tr>
<th>(I)</th>
<th>(J)</th>
<th>(K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Up Arrow)</td>
<td>&lt;-------------------------------&gt;</td>
<td>(Down Arrow)</td>
</tr>
<tr>
<td>/ \</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>(Left Arrow)</td>
<td>(Right Arrow)</td>
<td>(Down Arrow)</td>
</tr>
</tbody>
</table>

< slow pointer movement > fast pointer movement

The movement keys are active only when the keyboard is selected for input. Apple //, //+, and // use IJKM only. //e and //c use arrows only. All other keyboard shortcuts are active at any time during play, except where noted.

Defender Attributes:

<table>
<thead>
<tr>
<th>Defender</th>
<th>Defense</th>
<th>Attack</th>
<th>Attack</th>
<th>Range</th>
<th>Movement</th>
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</thead>
<tbody>
<tr>
<td>CF</td>
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<td>0</td>
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<td>0</td>
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<td>Heavy Tank</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Missle Tank</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
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<td>6</td>
<td>8</td>
<td>0</td>
<td></td>
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<td>2</td>
<td>2</td>
<td>4</td>
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<td></td>
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<td>INF3</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>INF2</td>
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<td>2</td>
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<td>1</td>
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Ogre Mark III and V Attributes:

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<tr>
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<th>m</th>
<th>v</th>
<th>Strength</th>
<th>Strength</th>
<th>Range</th>
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<tbody>
<tr>
<td>Missles</td>
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<td>6</td>
<td>3</td>
<td>6</td>
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<tr>
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<td>4</td>
<td>4</td>
<td>3</td>
<td></td>
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<tr>
<td>Secondary Bat</td>
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<td>6</td>
<td>3</td>
<td>3</td>
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<td></td>
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<tr>
<td>Antipersonnel</td>
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<td>12</td>
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<td>1</td>
<td>1</td>
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</tr>
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<td>60</td>
<td>1</td>
<td>0</td>
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<td></td>
</tr>
</tbody>
</table>

The Mark V is a larger, more formidable version of the Mark III.

GENERAL

RETURN used to simulate holding and releasing a joystick or mouse button

A Moves pointer to map scrolling arrows
M Moves pointer to menus and pulls one down (//e, //c only)
SHIFT-M Moves pointer to menus and pulls one down (//, //+, ///)
D Toggles Drop/Drag mode (active in Field Editor only)
1-0 Selects piece number 1-0 (active in Field Editor only)
U Moves pointer to Undo button (or Clear button)
Ctrl-U Invokes Undo function (joystick/mouse only)
C Moves pointer to Clear button (or Undo button)
Ctrl-C Invokes Clear function (or Undo function)
F Moves pointer to Fire button
Ctrl-F Invokes Fire function
S Moves pointer to Split button
Ctrl-S Invokes Split function
G Moves pointer to Group button
The screen flickered, moving dots gave way to an image. The huge machine rumbled. Type another key to continue.

The general entered at a run. "Get me a picture!" he ordered. Type Ctrl-R to view the unit's range.

Move the pointer to the desired unit. Kilometers closer, but green sparks were moving out to meet it--the men and machines of the 2033rd.

The orange dot that was the Ogre was six kilometers away. Type Ctrl-S to split the infantry.

The Command Post was well guarded. It should have been. The hastily constructed, unlovely building was the nerve center for Pan-European operations along a 700-kilometer section of front--a front pressing steadily toward the largest Combine manufacturing center on the continent.

There was a young lieutenant watching a computer map of the island. A light was blinking on the river. Orange: Something was moving out there where nothing should move. No heat. A stab at the keyboard called up a representation of the ogre. It was an ogre, strange, and huge. He knew what it really was, he just could not place it...and nothing could attack.

Inside the post, too, the mood was relaxed--except at one monitor station where a young lieutenant watched a computer map of the island. A light was blinking on the river. Orange: Something was moving out there where nothing should move. No heat. A stab at the keyboard called up a representation of the ogre. It was an ogre, strange, and huge. He knew what it really was, he just could not place it...and nothing could attack.

The lieutenant spun a dial, moving a dot of white light across the map and halting it on the orange spot with practiced ease. It hit another key, and an image appeared on the big screen--pitted ground, riverbank...and something else, something rising from the river like the conning tower of an old submarine. But he knew what it really was, he just could not place it...and then it moved. Not straight toward the camera icon, but almost. The lieutenant saw the "conning tower" cut a wake through the rushing water, a swimming animal? A man? Ridiculous.

None were. Whatever was out there was a stranger--and it was actually in the river. A swimming animal? A man? Ridiculous.

The ogre attacking defender:

1. Move the pointer to the desired defender.
2. Press the SPACE BAR, T, or joystick button 1 to invoke the targeting dialogue box. If the defender is within range the dialogue box will appear.
3. Select the desired weapons then type Ctrl-O for 'OK'.
4. Type Ctrl-F to fire.

Splitting Infantry:

1. Move the pointer to the desired infantry.
2. Type E to examine the infantry's statistics. The main purpose in this is to select the infantry without having to type RETURN twice.
3. Type Ctrl-S to split the infantry.

Ranging a unit:

1. Move the pointer to the desired unit.
2. Type E to examine/select the unit.
3. Type Ctrl-R to view the unit's range.
4. Type another key to continue.
"A Mark V," said the general. "They really want us, all right. Who had the watch?"
"I...I did, sir."
"What'd it come from?"
"Sir, the river. I got a movement indication from the center of the river--I saw it come up. Nothing before that. I swear it, sir."

The general started to reply, then checked himself. Suddenly, he stepped to the keyboard. The map reappeared (the orange dot was closer) and shrank. They saw their island from fifty--a hundred--kilometers in the air.

The general traced the river course. "Here...and here. Yes, they could have done it."
"Sir?"
"Underwater. It went into the ocean here. Through the delta--up the river and out. Very clever. I wonder...No, they just outfoxed us. As you were, son."

**********

The Ogre was twenty kilometers away. On the big map, a ring of green around it showed missile tanks ready to move in; more green dots, visibly moving, were GEVs harassing the enemy machine. As they watched, one GEV light went out. Another stopped moving and began to blink plaintively. The Ogres moved toward it.

**********

Twelve minutes since the shooting had started. The Ogre was fifteen kilometers away. Faced by eight missile tanks, it had slipped to the side; three of the tanks were gone, and two others had never gotten in range. But the Ogre had paid! It was moving slowly now. On the big map, three more green dots moved toward it. The heavies were going in.

"Mercier to CP. We've spotted it." The general punched for an image. There it was. Four of the six missile tubes were empty; two of the "small" guns along one side were scrap. Loose tread flapped; damaged motors sparked. Then the screen dimmed as a nuclear warhead hit the Ogre. The image returned. There was a new crater along one of the armored sides--nothing more.

"Get those guns, Commander," the general's voice was calm; Mercier's reply was equally mild. "Try ing, sir. It ducks." Then jubilation.
"Good shot, Fair! You Got it! Hit the misbegotten pile of junk." The big screen was completely dark. It came on again, from a different angle. The Ogre was hurt. One of those big front guns was gone--completely. The other was clearly wrecked.

"Good man, Mercier! Who did that? Commander Fair?...Mercier?...Fair?..."

"This is Kowalski in 319. It got Fair about three times. I can't find Mercier."

On the screen, one heavy tank faced the Ogre. Two GEVs swept in and out. Missile tanks and infantry moved closer--too slowly.

"Here it comes... Kowalski--commander of the last heavy. "You'll have to shoot better than that, you gadget...GOTCHA! Took out its..."

Static. Then a new voice. It sounded quite human. And amused.
"Gotcha."

**********

The Ogre rolled on. It was within howitzer range now, and the big missile cannons were scoring on it. Its missiles were gone, but it still had guns. The infantry had met it--finally--but powered armor not-withstanding, they were dying as fast as they came in.

"It's committed," said a big major, his eyes on the screen. "It can't afford to stop now. The general nodded.
"Get behind it," he said into his mike. "It's after the howitzers. They're killing it."

In the flame-lit darkness, men heard the scrambled transmission. Men, and one other. The Ogre took in the surrounding terrain, considered the location of the Command Post and the howitzers, watched the movement of its enemies, weighed the order it had decoded.

"Behind..." it thought. "They have made a mistake." It chuckled.

**********

It was very close now. Had the Command Post had windows, the men inside could have seen the explosions. The Ogre was moving very slowly now, but two guns still spoke. It no longer dodged; it was a juggernaut, coming straight for its target.

Inside, the general's face was gray. He spoke to no one in particular.
"Smart. That thing is smart." A scream still echoed in the big room--the scream from the last missile tank commander. Out of Ogre's path, safe behind a three-meter ravine, lashing out at the metal giant--and the thing had changed course, ignoring the howitzers, walking over the gully like it wasn't there, crushing the smaller tank. Two GEVs had died a second later; their speed was their best defense and the Ogre had outgunned them.

The side trip had given the howitzers a few more minutes; then they, too, had died.

The screen showed the Ogre grinding on--a shambling monster, barely able to move. "The treads...hit the treads," whispered the general. "Stop that thing." The image changed, and he saw what was left of his force; three GEVs and a handful of infantry.

And the Ogre rolled on...

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[Strategic Suggestions for Alliance Commanders]
Ogrees, though, will cause even heavier losses later on. As a general rule, you will lose the Ogre's speed before you disperse more than 1/3 to 1/2 of the way to your Command Post. To let the Ogre proceed at full speed beyond this point is to invite disaster. As the Ogre and howitzers lock in battle, it is imperative for support forces to prevent the Ogre from dealing a heavy and devastating "cheap shot" attack (the oven damage and disintegrate the Ogre). In this case, the support forces can attempt to destroy your Command Post. In this way, you force the Ogre to expose itself to defensive fire which it cannot easily return. Appropriate targets in this descending order of importance: the Ogre's main battery (if any remain), secondary batteries. While your forces "whittle away" at the Ogre's weapons, it is important to continue your attack against the Ogre's main battery (if any remain), secondary batteries. While your forces "whittle away" at the Ogre's weapons, it is important to continue your attack against the Ogre's weapons: namely, the howitzers. By placing three, four, or more howitzers so that their fields of fire and reinforce each other, you create a "howitzer wall." The Ogre must pass through them. If it hopes to reach your Command Post. The theory is that the Ogre can reach your Command Post only by exposing itself to punishing fire from several sides. Naturally, the Ogre will try to eliminate your howitzers as quickly as possible if your howitzers are correctly placed, though, the Ogre will have to knock out more than howitzer in order to clear a path toward your Command Post. In the time it takes the Ogre to do this, the outlying Howitzers and supporting mobile armor and infantry should have a chance to harass the Ogre, and, it is hoped, bring it to a halt. Three key points determine the success of the Multiple Howitzer Defense:

First, supporting mobile armor and infantry must eliminate many of the Ogre's weapons before the Ogre approaches the howitzer field. If this point is not observed, the Ogre will have a relatively easy job of disrupting your howitzer wall. If the wall collapses too quickly, your Command Post will be destroyed.

Second, proper placement of howitzers is critical. You must be careful to make sure that the howitzer wall surrounds your Command Post with a thick, defensive line. If you happen to get the Ogre's weapons, the Ogre will recognize the imbalance and focus its attack on the overstrained howitzer. When that howitzer falls, your entire defense collapses.

Finally, your reserve support armor and infantry must be prepared to augment (and reinforce) the howitzer's attacks. Ogrees are enormously sturdy vehicles, and it is foolish to believe that howitzers alone can stop them. As the Ogre and howitzers lock in battle, it is imperative for support forces to prevent the Ogre from dealing a heavy and devastating "cheap shot" attack (the oven damage and disintegrate the Ogre). In this case, the support forces can attempt to destroy your Command Post. In this way, you force the Ogre to expose itself to defensive fire which it cannot easily return. Appropriate targets in this descending order of importance: the Ogre's main battery (if any remain), secondary batteries. While your forces "whittle away" at the Ogre's weapons, it is important to continue your attack against the Ogre's weapons: namely, the howitzers. By placing three, four, or more howitzers so that their fields of fire and reinforce each other, you create a "howitzer wall." The Ogre must pass through them. If it hopes to reach your Command Post. The theory is that the Ogre can reach your Command Post only by exposing itself to punishing fire from several sides. Naturally, the Ogre will try to eliminate your howitzers as quickly as possible if your howitzers are correctly placed, though, the Ogre will have to knock out more than howitzer in order to clear a path toward your Command Post. In the time it takes the Ogre to do this, the outlying Howitzers and supporting mobile armor and infantry should have a chance to harass the Ogre, and, it is hoped, bring it to a halt. Three key points determine the success of the Multiple Howitzer Defense:

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prolonged attack from your GEVs and infantry.

Final Phase of Attack: When the Ogre approaches your Command Post, it is time to redirect your focus of fire once again. Whether or not your middle phase attack on the Ogre's weapons was successful, you must now throw all the firepower you can muster against the Ogre's tread sections. Recognize that a disarmed but mobile Ogre is still a formidable weapon. If, at this stage in a battle, you have lost a great number of GEVs, infantry forces become critical. Infantry must present solid resistance to the approaching Ogre, and must press home the attack against its treads. Infantry casualties will likely be very high. A spirit of sacrifice is essential. In fact, if your situation becomes desperate, you may need to sacrifice GEVs or other vehicles by ramming the Ogre (to destroy its few final treads). If you must use (fatal) sacrificial maneuvers, make sure they prevent the Ogre from crushing your Command Post.

Otherwise, we suggest you preserve your armor units in the hope of destroying the Ogre before it can escape.

Comments: the GEV-centered defense is built on three distinct phases:

First, slowing the Ogre somewhat; second, disarming the Ogre almost completely by bringing the Ogre to a complete standstill. It is very important to execute each phase in a crisp, disciplined way. When GEV-centered defenses fail, it is often because the defensive commander fails to pay attention to the basics. For example, the commander fails to slow the Ogre early on, and hence loses too many GEVs to follow through with later phases of his attack. Or the commander continues the middle phases of his attack too long, only to see a disarmed but quite mobile Ogre flatten his Command Post. If you use the GEV-centered defense, do your best to complete each phase of your attack in the proper sequence.

Commanders should be wary of the Ogre's attack algorithms. We have reason to believe the Ogre can recognize a GEV-centered defense, and that it programmed to do all it can to disrupt early phases of the GEVs attack. For example, and Ogre may respond to early GEV attacks by moving laterally or rearward to pursue escaping GEVs. If the Ogre employs these tactics, it is important for you to regroup your forces and proceed with your battle plan. If you let yourself be thrown by unpredictable moves on the Ogre's part, you are apt to lose sight of your combat goals. Steady nerves and sound tactics can help prevent from happening.

On a tactical level, we suggest you pay close attention to the escape paths your GEVs take after they first fire on the Ogre. All too often, commanders take the unsophisticated approach simply of ordering their GEVs to get as far from the Ogre as possible. The problem with this approach is that is also tends to leave small groups of GEVs isolated far from each other. This approach can even leave GEVs trapped behind the Ogre. Beware such "divide and conquer" ploys on the part of the Ogre. When your GEVs escape, they need to think not only of temporary safety, but also of second and third attacks to come.

The GEV-centered defense can be very successful against both the Mk III and Mk V Ogres. Be aware, though, that the defense requires discipline, insight, and a keen sense for split-second timing.

[End Part One]

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The Mixed Defense

The Mixed Defense does not rely on any one class of armor or artillery; instead, it is built around a varied armor force. Like the GEV-centered defense, the Mixed defense calls for initial intercept forces to slow the invading Ogre. Once the Ogre is slowed, though, the Mixed defense adopts an attack strategy of its own. The Mixed defense's flexibility allows it to throw a variety of weapons at the Ogre simultaneously.

Typically, defensive actions start with a group of GEVs attempting to shoot away about one thired of the Ogre's tread sections (the "slow the Ogre" phase of the attack). The first wave(s) of FEVs are backed up by a mixed force of heavy tanks (placed closer to the Combine lines) and missile tanks (placed closer to the CP). This mixed force is very flexible and can attack both the Ogre's weapons systems and its tread sections. Finally, the "front" mixed force is backed by an additional "rear" mixed force, typically formed of missile tanks, missile howitzers, and infantry (some commanders choose additional GEVs in lieu of howitzers). The "rear" mixed force surrounds the Command Post with a protective ring of fire, and does its best to stop and/or disarm the (presumably) badly damaged Ogre as it lumbers toward the Command Post.

The precise strategy of the "rear" mixed force is to some extent determined by the condition of the Ogre as it draws close to the Command Post. If the Ogre has few tread sections remaining, the "rear" force can attack the Ogre's weapons first, and then attack tread sections at the penultimate moment. Most typically, the Ogre arrives with few weapons remaining, but with a sufficient complement of tread sections intact. In this case, the "rear" force throws almost all its firepower at Ogre tread sections, addressing the Ogre's weapons later on.

The Mixed Defense relies on the same principle which makes the GEV defense work; namely, striking the Ogre with a greater level of fire than the Ogre can return. The GEV defense accomplishes this goal by using fragile, fast vehicles which can fire on the Ogre and then escape beyond its range. The Mixed defense accomplishes this goal by using all available units which may vary in defensive firepower and firing range. Just as the GEV defense forces the Ogre to decide which group of GEVs to pursue, the Mixed defense forces the Ogre to decide which types of vehicles to pursue. The main idea is to force the Ogre to make so-called "no-win" decisions, and to hit the Ogre with crippling fire in the process.

Key Points: Many of the comments made about the Howitzer-and GEV-centered defenses apply for the Mixed Defense. We mention a few specific items the Mixed defense commander must watch.

Early Attacking: It is very important to slow the Ogre before it crosses too deeply into the Conflict Zone. The Mixed defense is in some ways more sensitive to this problem than the GEV defense. If the Ogre runs into your "front" mixed force at full speed, there is a real possibility that it will sweep past your heavy tanks and then win the "footrace" to your Command Post. Placement of the "front" mixed force is critical. If the force is placed too far forward (toward Combine lines), your first wave of interceptors will not have enough time to slow the Ogre. If your "front" mixed force is placed too far to the rear (toward your Command Post), you will miss valuable opportunities to make the Ogre pay for every one of its forward movements. Experienced commanders try to arrange the first, second, and third wave forces so that the Ogre is under continuous attack (i.e., there are absolutely
no moments of respite for the Ogre.

Middle Attack: It is important to keep your "front" and "rear" mixed forces truly mixed. While we do not fully understand the Ogre's attack algorithms, we believe the Ogre usually had a harder time dealing with varied types of vehicles as opposed to clusters of identical vehicles (GEVs excepted). The Mixed defense derives much of its flexibility from striking the Ogre simultaneously with short and long range weapons. Don't lose this advantage when you don't have. Be wary of Ogres which seem to break off their attack and instead maneuver diagonally across the Conflict Zone. Experience shows that this is often an Ogre ploy calculated to cover off fire on another part of the broad, deep area which the cybertank can penetrate only by exposing itself to concentrated fire. The theory is that the cybertank will lose all of its weapons but retain some of its mobility (or vice versa) as it struggles to break through the howitzer line. Although the cybertank will eventually knock out the howitzers, it will be so badly damaged in the process that it will become easy prey for Alliance ground forces.

Response Strategy: The cybertank should determine early on if howitzers will play a role in the scenario. If so, the cybertank will have several options. One of the best is to enter the Zone only part way, then to spend time moving laterally, thus drawing out Alliance mobile ground forces. The key here is to deal with mobile armor units while they are outside of the howitzer defense circle (if possible). Once a number of mobile units are eliminated, the howitzers' "ring of fire" becomes much easier to penetrate.

Howitzer-Centered Defense

Basic Characteristics: Howitzer-centered defenses arrange three or more Howitzers as a protective screen shielding an Alliance Command Post, and are arranged in a circle or concentric circles. This overlap creates a fire umbrella that covers a broad, deep area which the cybertank can penetrate only by exposing itself to concentrated fire. The theory is that the cybertank will lose all of its weapons but retain some of its mobility (or vice versa) as it struggles to break through the howitzer line. Although the cybertank will eventually knock out the howitzers, it will be so badly damaged in the process that it will become easy prey for Alliance ground forces.

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GEV-Centered Defense

Basic Characteristics: In a GEV-centered defense, the defending commander may well select GEVs as the only armor units he places in the field. Even if he adds other types of units for balance, GEVs will be the dominant element. A GEV-centered defense is effective for the Ogre because the Ogre's long range weapons are not very accurate. Of the "classic" defense schemes mentioned here, the GEV is probably the easiest for an inexperienced commander to master. This is true mostly because the Mixed defense offers extra flexibility in selecting targets (at the mid-point of an invasion, both Ogre weapons and GEV sections are suitable targets), and because the mixed armed forces tend to help the commander recover from (small) tactical mistakes.

[Strategic Suggestions for Ogre AI Programmers]

Basic Strategy

This manual addresses the particular type of cyber mission where a single Alliance-Ogre attack is the critical issue. The remaining "classic" defense schemes (GEV-Centered Defense, Howitzer-Centered Defense, Mixed Defense) are just an inverse of the argument for the howitzer-centered defense. The GEV defense relies on tightly concentrated fire coming from a small number of stations. The Mixed defense relies on a GEV-Centered Defense defense grid. The Mixed defense grid is a large number of extremely mobile units.

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2 Howitzers, 2 Heavy Tanks, 2 Missile Tanks, and 4 GEVs. The standard defense is very flexible, and enables the Alliance commander to resist the cybertank in several ways. The defense can be optimized to target either cybertank treads or weapons. The standard defense is perhaps the most difficult for the cybertank to "read," since the defense permits Alliance Commanders to mask their intentions until the last moment before their units close on the cybertank. If skillfully managed, a standard defensive force can bring numerous types of weapons to bear on the cybertank simultaneously.

Response Strategy: Our cybertanks do quite well against the standard defensive force provided only part of that force is engaged at any given moment. It is often useful for the cybertank to play a waiting game, using some lateral movement to draw the Alliance's faster units forward. The main idea is to string out Alliance Forces across the length of the Conflict Zone. In this way, the cybertank can tackle separate groups of armor rather than attempting to force its way straight through a highly concentrated group of armor units. As the cybertank encounters small groups of armor, it should, where possible, take the added precaution of "sideslipping" past the edges of the groups. The sideslip maneuver helps keep the cybertank from being trapped, and helps ensure that the cybertank will arrive at the enemy Command Post with adequate mobility and firepower in reserve.

Entry to the Conflict Zone

Alliance commanders almost always locate Command Posts at the rear edge of the Conflict Zone, near the Center. Thus, to minimize travel distance across the Zone, and to permit greater flexibility of movement within the Zone, the cybertank should usually enter from a central location. There are a few exceptions to this rule. Some Alliance Commanders run the standard defense by placing both their Command Post and the bulk of their defensive forces in a rear corner of the Conflict Zone. When facing forces deployed in this way, the cybertank might benefit from entering the Zone at the opposite front corner of the Zone. In this case, an entry from the opposite corner tends to lure Alliance forces away from their strong position near the Command Post.

Use of Missiles

Because missiles are the most powerful and longest range weapons in the cybertank arsenal, many AI programmers instruct cybertanks to hold at least a few missiles in reserve to handle contingencies arising late in the attack. On an intuitive level this strategy makes sense, but recent combat analysis by Combine intelligence indicates that the strategy simply does not work. In far too many cases, missiles are destroyed without ever leaving their launching tubes. Thus, the latest Combine doctrine holds that missiles should be held back only so long as the cybertank's "conventional" guns are able to handle nearby Alliance armor units. In all other cases, the missiles should be treated like any other weapon in the cybertank arsenal, and should be used as needed. This does not mean that missiles should be used haphazardly (e.g., to attack a single squad of infantry). It does mean that missiles can and should be used on a wide range of appropriate targets (e.g., to destroy Command Posts, or to eliminate Howitzers or armor units blocking the cybertanks path). A century ago, the first builders of nuclear weapons said it best: "Use 'em or lose 'em."

Use of Terrain

Since both Mk III and Mk V cybertanks are free to move over all but the most difficult land surfaces, most AI programmers give little attention to terrain (apart from avoiding such obvious hazards as full-size bomb craters and swamps). To be blunt, this is a mistake. While terrain does little to affect the cybertank, it does affect the cybertank's enemies (in particular, very few vehicles can cross huge piles of battlefield rubble the way a cybertank can). In many cases, the cybertank can use rubble or bomb craters to block pursuit from Alliance armor units.

Some AI programmers send cybertanks along the very edges of impassable
The first step in designing the Ogre's Artificial Intelligence (OAI), was to determine just what an Ogre should do. This required much research into how "experts" played the game, in addition to many hours of game play to test various OAI concepts. The single most difficult aspect of designing the OAI was the fact that Ogre is a game based on probabilities. Every time the Ogre fires at a defender there is a chance of hitting, disabling, or missing. Assessing all of these chances for every possible combination of targets the Ogre may have, for every possible move the Ogre can make, evolved into a monumental task.

The Ogre's ultimate goal is to destroy the Command Post (CP) and get away. Its highest priority is to destroy the CP. Its secondary priority is to get away. On its way to the CP, the Ogre will be trying to destroy as many defenders, while sustaining as little damage to itself, as it can. This means the Ogre must not blindly dog a path straight to the CP, or the defense would merely set up a gauntlet that would destroy the Ogre before it could reach the CP.

The Ogre employs two intelligence techniques: strategic and tactical. Ogre Strategy involves long-range targeting of howitzers and the CP and avoiding terrain traps created with the editor. Ogre Tactics involve short-range maneuvers while enroute to the CP, or a sequence of hexes.

At any given time, there is a limited number of hexes the Ogre can't legally move to. Some of these hexes are more advantageous to the Ogre than others. The Ogre's tactical intelligence determines which hex has the highest value.

The factors involved in determining the value of a hex are:

1) The distance of the hex from the current long range target (i.e. Howitzer or CP.)
2) The value of the defenders the Ogre can attack from that hex.
3) The amount of damage the Ogre may suffer in that hex.

The steps in determining the Ogre's best move look something like this:

1) Find a legal path to a target hex.
2) Determine the value of the defenders the Ogre can attack from the target hex (henceforth referred to as "AttackVal").
3) Determine the amount of damage the Ogre may suffer in the target hex (henceforth referred to as "DamageVal").
4) Determine the value of the target hex using its distance from the current long-range target, and the hex's AttackVal and DamageVal.

These steps are performed for every hex the Ogre can reach from any given position. The Ogre then moves to the hex with the highest value.

Each defender is assigned a relative value by which the Ogre assesses their worth. For each hex the Ogre can reach, every defender that can be fired upon from the target is assigned a percent chance of being hit (%HIT). As the Ogre runs, overrun, or hits the various targets, those targets %HIT will be increasing (usually). As soon as the Ogre has completed its simulated attack from the target hex, each piece will have its relative value modified by the Ogre's percent chance to hit it. The summation of the piece's modified relative values will be the target hex's AttackVal.

The same %HIT will be used to modify each piece's ability to damage the Ogre from any given target hex and the summation of these values will be the target hex's DamageVal.

The remainder of this section explains the techniques that are used in determining strategic targeting and in performing the four steps outlined above for computing the next best hex.

Strategic Long-Range Intelligence

Due to the long-range striking power of howitzers, it is necessary for the Ogre to be able to plan an overall strategy concerning howitzers. If it weren't for the howitzers, the Ogre could play a good game without looking more than 1 move ahead (except for being drawn towards the CP). Sometimes it is best to make the CP the only long-range target and disregard any howitzers. Other times it is necessary to target certain howitzers, or a sequence of howitzers, before heading for the CP.

There are two main considerations when planning Ogre strategy strictly around the howitzers and the CP. 1) getting to the CP in the least number of turns, and 2) suffering the fewest number of howitzer hits in the process.

The strategies the Ogre will consider will vary in value based on the defenders howitzer setup. One approach will be to target the CP alone. Another will be to target each howitzer, prior to the CP, in varying orders.

The prime strategy will be the one that gets the Ogre to the CP in the fewest number of turns with the least number of hits.

The final long-range goal the Ogre will consider is leaving the map. This is a goal the Ogre will never consider unless the CP has been destroyed. Once the CP has been destroyed, the Ogre will try to leave the map as quickly as it can.

Tactical Short-Range Intelligence

A finite number of PATHS are available to the Ogre and a complete list of the paths was compiled. The list consisted of 58 paths for any one of the six facings from a source hex.

Selecting a Path

In the path representation, the letter "S" denotes the Source hex (or starting hex), and the letter "T" denotes the Target hex (or destination hex). The arrows show direction of movement. The numbers label each move. The shaded circles represent craters. The example below illustrates using two movements to go a distance of two hexes.

The Ogre will start looking at paths that have a distance of 1 and work up to paths that have a distance equal to its current movement.

Certain paths are designated as RAM paths (RPath). An RPath is a path that does not use the direct route to the target hex. The purpose of an RPath is to attempt to ram a defender (or to overrun infantry) while enroute to the target hex. Illustrated is an RPath that is almost identical to the above path. Both paths have the same source and target hexes. The difference is that upon arriving at the target hex the Ogre expends a third move to potentially ram a defender a second time.

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If no ram, or overrun, has occurred upon reaching the end of an Rpath, then no attempt is made to evaluate the target hex for its AttackVal and DamageVal, since the target hex will already have been evaluated by a previous, more direct path. Actual game play allows a 50% chance of destroying a mobile armor unit with a single ram. For simulation purposes, however, if an active mobile armor unit is rammed, it will be marked as disabled and assigned a 75% HIT. If a disabled, or immobile, unit is rammed it will be assigned a 100% HIT. If an INF 1 is overrun it will be assigned a 100% HIT.

The Ogre must have at least 3 treads to ram a heavy tank and 2 treads to ram all other armor units, except the CP (so it won't immobilize itself).

Evaluating a Hex's Attack Value

The "attack value" of a position to the Ogre is represented by AttackVal. Each defender will have a relative value assigned to it, referred to as AttackVal(defender). These relative values look something like this:

1) CP : 255
2) Howitzer : 200
3) GEV : 100
4) Missile Tank : 100
5) Heavy Tank : 100
6) Infantry 3 : 60
7) Infantry 2 : 40
8) Infantry 1 : 20

AttackVal will be based upon the cumulative AttackVal(defender) for each defender the Ogre can bring weapons against. The Ogre will deploy its weapons against all possible defenders and assess the potential value of those defenders. The weapons are deployed in this order:

1) Antipersonnel (AP)
2) Secondary Batteries (SB)
3) Main Batteries (MB)
4) Missiles (MSL)
5) Heavy Tank
6) Infantry 3
7) Infantry 2
8) Infantry 1

If there are no defenders at exactly 3 hexes away from the Ogre's targetted hex then MBs will be processed before SBs. This is because there is no point in holding the MBs for a target out of reach of the SBs if there aren't any. Each time the AttackVal of a hex is determined, every defender will be initially assigned a 0% chance of being hit (HIT) by the Ogre. As the Ogre simulates a hit against a target, the target's %HIT will be increased. As soon as the Ogre has completed its simulated attack for all weapons, each piece will have its %HIT multiplied by its relative value. The summation of the piece's modified relative values will be the target hex's AttackVal.

In determining a target's %HIT for any given weapon, the ratio of the Ogre weapon's attack strength to the target's defense strength is used. The %HIT values for both enabled and disabled targets for each of the various odds are as follows:

<table>
<thead>
<tr>
<th>Odds</th>
<th>Percent Chance To Hit Enabled Pieces</th>
<th>Percent Chance To Hit Disabled Pieces</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 1-2</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>1-2</td>
<td>25%</td>
<td>33%</td>
</tr>
<tr>
<td>1-1</td>
<td>50%</td>
<td>67%</td>
</tr>
<tr>
<td>2-2</td>
<td>67%</td>
<td>83%</td>
</tr>
<tr>
<td>3-1</td>
<td>83%</td>
<td>100%</td>
</tr>
<tr>
<td>4-1</td>
<td>92%</td>
<td>100%</td>
</tr>
<tr>
<td>better than 4-1</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Infantry 1 targets are counted as disabled pieces.

The Algorithm goes as follows:

* Sort the infantry within 1 hex of the Ogre in descending order of defense points (D).
* Go 1-2 starting at the bottom of the list and working up.
* Go 1-1 starting at top and working down.
* Go 2-1 starting at top and working down, skipping 1s (D=1).
* Go 3-1 starting at top and working down, skipping 1s.
* Go 4-1 starting at top and working down, skipping 1s.
* Go 2-1 starting at top and working down, including 1s.
* Go 3-1 starting at top and working down, including 1s.
* Go 4-1 starting at top and working down, including 1s.
* Put remaining AP on lowest infantry.

The diagram below depicts the Ogre surrounded by 5 infantry units that have a combined defense value (D) of 9. The following example uses the above algorithm to determine the AP values represented in the diagram.

1) Sort them in descending order:
   D = 3 2 2 1 1
2) Deploy at 1-2 from bottom to top:
   A = 1 1 1 1
   It defaults to 1-1 against D=1 since you can't get a 1-2.
3) Deploy at 1-1 from top to bottom:
   A = 1 1 1 1
   1

The last AP was deployed against the first "2" in the list, so the loop is exited.

The AP deployment now equals the values you see in the diagram above.

Once the AP are deployed, they will be used in a simulated attack against the selected targets. The ratio of AP to DP will be used to determine the %HIT used in modifying the AttackVal(defender) and the defender's damage potential is damaged. If, for example, the Ogre deploys 2 AP against an infantry 3, then the ratio will give 1-2 odds which renders a 25% chance to hit the infantry.
2) Secondary Batteries

First, all targets within range (2 hexes) of SBs are listed. Then the cumulative %HIT for those targets is computed. Deploy 1 SB against the defender with the most valuable target with the lowest cumulative %HIT. If there is a tie for the most valuable target, then the defender that is closer to the Ogre's current long-range target has priority. Using the ratio of the attack strength of the SB and the target's defense strength, determine the cumulative %HIT. Use the new %HIT to re-compute the target's value. Repeat the SB deployment until all SBs are used or until all targets have a 100 %HIT.

3) Main Batteries

This is done the same way as the SBs.

4) Missiles

Missiles will be deployed similarly to the main and secondary batteries but with a few modifications. It is desirable that missiles be reserved as long as possible for use against howitzers or the CP. The missiles will, however, be deployed if it appears they may be destroyed. Once all weapons have been deployed, the targeted pieces will have heir relative values modified by their %HIT and the total of these values will be assigned to AttackVal.

Evaluating a Hex's Damage Value

All of the defenders that can strike against the Ogre for a particular move contribute to a hex's DamageVal. It was necessary to establish a meaningful relationship between AttackVal and DamageVal. The first step in doing this was to determine what the Ogre would consider an even trade of damage inflicted for damage received. A constant was arrived at that is multiplied by the total attack points of the defenders that can reach the Ogre in the target hex. The formula to determine DamageVal for a particular hex looks something like this:

\[
\text{DamageVal} = \text{(Defender Attack Points)} \times \text{Damage Constant}
\]

Modifying the Damage Constant makes the Ogre play more aggressively or more cautiously. All defenders are checked to see if they can strike the Ogre on their turn (taking into account the defender's attack range, movement value and terrain). The attack strength of each defender is modified by their %HIT computed by the attack evaluation logic.

TargetVal is the variable that causes the Ogre to move towards the current long-range target (i.e. a howitzer or the CP). There are three situations when considering the Ogre's movement relative to its current target:

1) decreasing its distance (a positive effect)
2) not changing its distance (a negative effect)
3) increasing its distance (a strong negative effect)

When moving towards its current target, the best the Ogre can do is decrease the distance by the amount of its movement value. Anything less than this is suboptimal when considering moves only. If the Ogre can increase its advantage by not moving close to its target as it can in order to destroy a defender(s), then it should do so.

The technique for determining TargetVal is to divide a constant by the Ogre's maximum movement value and multiply the result by the number of hexes that the Ogre moves towards its current target (a positive value) or away from its current target (a negative value).

Several factors may modify the attraction of a target. Some of the factors are:

* Often it is desirable to move away from the current target in order to destroy a relatively defenseless defender(s). Thus, a path that shows a high attack value with little or no damage value is weighed positively, whether it is far away from the current long-range target or not.

* If the Ogre is in a howitzer umbrella, then the Ogre will have a greater tendency to move towards its current long-range target, thus keeping the howitzer from getting too many shots at it.

* If the current long-range target shows at least 50% chance of being destroyed (which is also a sure disable), then the Ogre will be pulled to the next long-range target. This will keep the Ogre from getting closer to the current target than it has to in order to destroy it.

* In order to keep the Ogre from "wimping out" (i.e., running scared), a path that moves away from the current long-range target that shows zero AttackValue, is weighted negatively.

Once all of the factors for a hex have been evaluated, they can be combined to arrive at the overall value for that hex.

\[
\text{HexVal} = \text{AttackVal} - \text{DamageVal} + \text{TargetVal}
\]

The Ogre performs these computations for every legal move it can make from its current location, then selects the hex that has the greatest value.

[End of Ogre Strategy Notes]

Courtesy of L.S.D. Remember-you always have a friend in Texas!

Strategy Notes typed by Sector Seventeen.
THE GAME:

Ogre is a game of mechanized tank warfare set in the 21st century. A cybernetic fighting unit - the Ogre - has been sent to destroy the opponent's strategic Command Post, which both the armor (tank) and armoured (armor) battalion. The Ogre's primary objective is to destroy the Command Post; destruction of all other units is its secondary objective. The armoured battalion has but one objective: Defend the Command Post. To do so, they must destroy the Ogre.

Making Choices: Choices are made in Ogre through the use of the pointer, a black, triangular object that can be moved around with a mouse joystick, or keyboard.

Clicking: Some selections in Ogre are made by first moving the pointer to the desired object or option, then pressing and quickly releasing the button. This is referred to as clicking.

Dragging: Another method of designating choices is by dragging. Dragging is accomplished by placing the pointer over the desired object then pressing and holding the button while moving the pointer to another location. Releasing the button completes the drag.

Pulling Down the Menu: In the upper right corner of the screen are two menus that can be pulled down. The first is titled "Menu" and the second is "OSI". To pull down either menu place the pointer over the desired title and hold the button. The selected menu title will become highlighted and a list of commands will appear beneath the title. Releasing the button without moving the pointer will cause the menu to disappear.

Choosing Menu Commands: Menu commands are chosen by using the dragging technique. Position the pointer over the selected menu title and pull down the menu by pressing the button. While holding the button down, drag the pointer to the desired menu command. As the pointer passes over the menu, each command is highlighted releasing the button selects it. If you change your mind about choosing a command, move the pointer off the menu, or back up to the title, then release the button. Nothing is chosen unless you release the button while one of the commands is highlighted.

Using the Keyboard: A mouse (if available) or joystick is highly recommended for playing Ogre. Ogre can be played using the keyboard to move the pointer and to simulate clicking a button, but it can be played entirely with pointing, clicking, and dragging without reference to the various input devices.

Dimmed Commands: When "Menu" is pulled down, some of the commands are less distinct than others. These less distinct commands are referred to computer-controlled. Although true mechanical intelligence had existed as early as 2010, and fully automated factories and military installations were in wide use by the middle of the century, the cybertanks were the earliest independent mobile units - the first true war "robots".

Once the first cybertanks had proved their worth, development was rapid. The great war machines aroused a terrified sort of fascination. Human warriors devotedly hoped never to confront them, and preferred to keep a respectful distance - like several kilometers - even from friendly ones. They were just too big.

One fact, more than anything, points up the feeling that developed toward the cybertank. Unlike other war vehicles, they were never called "screwed-up units of the speaker's acquaintance" - war. Some others were called "it". And the term "cybertank" was rarely used. People had another name for the big war machines - one drawn from the early Combine units and, before that, from dark myth. They called them Ogres...
as dimmed. Dimmed options are ones that cannot be used at that time.

Dialogue Boxes: Whenever additional info is required to complete a command, a dialogue box appears. Dialogue boxes usually have special areas called buttons to click, such as "ok" or "cancel". They present further options for selection. Dialogue boxes are also used to warn you if you're about to do something that is irreversible. For an example of a dialogue box with general information, select "About Ogre" from the OSI menu. Clicking the "ok" button removes the dialogue box.

THE BATTLEFIELD:

General: The defender's Command Post has been located in the most defensible terrain available - a battered stretch of land 22.5 kilometers wide by 23 kilometers long (14 miles by 20.5 miles). It is bounded on three sides by impassable swamp and on the fourth by a very deep wide river. A map representing the standard battlefield is displayed on your computer screen. The map is divided into hexes, each representing an area 1500 meters (0.93 miles) across.

Viewing the Map: Only half of the map can be viewed at one time. The map can be moved vertically by clicking on one of the arrows positioned at the four corners of the map. At the upper left and lower left corners of the map are arrows with horizontal bars at their tips. These arrows are used to display the top or bottom half of the map. Clicking on arrows in the upper right and lower right corners moves the map up or down one hex at a time.

Craters: The battlefield is scarred with craters from past nuclear detonations. Craters are represented on the map by solid circles.

Rubble: The battlefield is further obstructed by great piles of earth and rubble. These piles of rubble are represented on the map by solid black lines along the edges of hexes. Only the Ogre and infantry are capable of moving across this rubble. Other armor units cannot cross.

Any unit can fire across the rubble.

Areas: The standard battlefield is divided into two basic areas. The majority of the map (the top 16 rows of hexes) is referred to as the "obstructed" area. This is the area containing all of the craters and rubble. The bottom 6 rows of hexes, free of craters and rubble, are referred to as the "clear" area. Both the left-most and right-most column of hexes contain only one crater. These craters are located in the area that can fire across the hexes. Only the Ogre and infantry can fire across these two crater hexes and are referred to as the "crater line". The obstructed area, clear area, and crater line are referred to during the initial deployment of defensive forces.

THE COMBATANTS:

The combatants are rated by Combat Factors. The main combat factors are Attack Strength, Attack Range, and Defense Strength. Attack Strength reflects a weapon's destructive power. The effective distance a weapon can reach is its Attack Range, and a unit's capability to withstand an attack is referred to as its Defense Strength. These factors will be further expanded upon when discussing combat.
range of his missiles. The missile tank's saving grace is that it can fire upon the Ogre from 6 km. (4 hexes) away, allowing it to pound the Ogre while staying out of range of most of the Ogre's weapons.

Howitzer: Att.S. - 6 Att.R. - 8 Def.S. - 1 Movement - 0
The howitzer is the defender's hardest hitting and longest range weapon. A howitzer can reach an Ogre up to 12 km (8 hexes) away. This allows a howitzer to get 2 to 3 shots at an Ogre before the Ogre can get within striking distance. Howitzers are permanently installed and cost twice as much as any other armor unit. The fact that a howitzer annot move is its greatest weakness. In addition, it is all but defenseless. The defenders must try to buy a howitzer time with the mobile armor units so that the howitzer may rezero its weak considerable damage upon the Ogre. Howitzers are therefore sometimes employed to suppress the Ogre's antipersonnel weapons, as well as to being overrun by the Ogre. Many infantrymen swear the supposedly emotionless Ogre derives great pleasure from the feel of battlesuits being crushed beneath its treads.

DEPLOYMENT:
The defending player must deploy forces in anticipation of attack. Battlefield alterations and force deployment are controlled in the field editor. A detailed discussion of the Field Editor can be found in the "Field Editor" section. To quickly get started playing Ogre (oh boy!!), use one of the predesigned fields or battles.

Loading/Saving Fields: There are five predesigned fields from which the player may choose. In addition to the five predesigned fields, the player may save five fields of original design. To load a field, select "Load a Field" from the Menu. A dialogue box will appear from which one of the original or preset fields can be selected for loading. Click on the field of choice and then click "ok". The selected field will be loaded in and displayed.

Loading/Saving Games: A previously saved game can be loaded at any time. If a player is in progress when another game is loaded, the current game will be lost unless it is saved first. To load a game, select "Load a Game" from the Menu. A dialogue box will appear from which one of five saved games can be selected. The selected game will be loaded in and the battle will proceed from where it was saved. The current status of a battle can be saved for continued play later. To save the battle status, select "Save Game" from the Menu. A dialogue box will appear, from which one of five games can be selected for saving. Select the desired game and then click "ok". The selected game will be saved in and the battle will proceed from where it was saved. The current status of a battle can be saved for continued play later. To save the battle status, select "Save Game" from the Menu. A dialogue box will appear, from which one of five games can be selected for saving. Select the desired game and then click "ok". The selected game will be saved in and the battle will proceed from where it was saved. The current status of a battle can be saved for continued play later. To save the battle status, select "Save Game" from the Menu. A dialogue box will appear, from which one of five games can be selected for saving. Select the desired game and then click "ok". The selected game will be saved in and the battle will proceed from where it was saved. The current status of a battle can be saved for continued play later. To save the battle status, select "Save Game" from the Menu. A dialogue box will appear, from which one of five games can be selected for saving. Select the desired game and then click "ok". The selected game will be saved in and the battle will proceed from where it was saved. The current status of a battle can be saved for continued play later. To save the battle status, select "Save Game" from the Menu. A dialogue box will appear, from which one of five games can be selected for saving. Select the desired game and then click "ok". The selected game will be saved in and the battle will proceed from where it was saved.

PLAYING OGRE:
Starting the Game: Once the player chooses the field configuration and weapon deployment, then selecting "Play a Game" from the Menu will start the actual battle. A dialogue box will appear asking which battle option the player desires. There are two battle scenarios: Mark III or Mark V. Either scenario can be played with two players or the computer controlling the Ogre. Select the desired option and click "ok". When starting a new game under the two player option, the player controlling the Ogre must select one of the hexes at the bottom of the map as and entry point for the Ogre. Click "ok" on the dialogue box asking for an entry hex and then select an entry hex by clicking on it. Once it has entered, the Ogre can move two more hexes. Most player options are locked out at this point until entry hex has been selected for the Ogre. The map can be moved in order to scan the battlefield.

Changing Between One and Two Player Games: It is possible to change from a one player game to a two player game and vice versa. To do so, enter the Field Editor by selecting "Edit the Field" from the Menu, during actual game play. Select "Play a Game" from the Menu. When the battle option dialogue box appears, select the desired scenario and click "ok". When the next dialogue box asks to start a new Ogre or continue with the old one, select the "Keep old Ogre" option. This process allows the battle to continue but with someone (or something) else controlling the Ogre. This operates somewhat differently when changing between Mark III and Mark V scenarios. If "Keep old Ogre" is selected, when changing between Mark III and Mark V scenarios then the number of players will change but the original Ogre type will be maintained. If "Start new Ogre" is selected, a new Ogre type will enter at the bottom of the map with full weapons and no damage.

Game Phases: The Phase window near the top of the sidebar displays the current phase of game play. The first phase is the Ogre Entry phase which occurs only at the beginning of a game. During that player's turn, that player may move any or all of his units, and fire with any or all of them. The phase sequence is:
1) Ogre Enters
2) Ogre Moves
3) Ogre Fires (After the Ogre fires, all armor units disabled the previous turn become active again)
4) Defense Moves
5) Defense Fires
6) GEVs complete their movement

The Sidebar: The sidebar is different while playing the game than when in the Field Editor. The area directly beneath the Ogre captive is the phase window, which shows the current phase of the game. Directly below the phase window is the Ogre Post. The Ogre Post shows the Ogre's attributes and conditions of the pieces. Clicking on a piece will display that piece's attributes. In addition, the tactical window is used to display messages in response to any erroneous action performed by the player(s). Beneath the Tactical Display are two command buttons. Just as in the Menu, if a button's text is dimmed, then the button is invalid. The "Play" button is always available (although not always active). During a movement phase, the top buttons are labeled "Undo" and "Group". During an attack phase, the top two buttons are labeled "Clear" and "Fire". The buttons work as follows:

Range Button: The "Range" command is used to view a piece's movement and...
attack range. To view a piece’s range, select the piece by clicking on it, then click the "Range" button. All of the hexes within a piece’s movement value (disregarding having to move around rubble) are turned blue. Any piece that falls within this "umbrella" is highlighted. Clicking anywhere on the screen will remove the umbrella.

Done Button: The "Done" button is used to end a phase. If a player has not moved or fired all of his pieces when the "Done" button is pressed, a dialogue box will require verification from the next player before proceeding to the next game phase.

Undo Button: The "Undo" button allows any piece’s move to be undone, or restarted at any time during the Movement Phase. To undo a move, select the desired piece by clicking on it; then click the "Undo" button. The piece will move back to its original location. The "Undo" button remains dimmed unless a piece that has moved is selected. If the Ogre has rammed or overrun a defender, it can only be undone back to the hex where the ram or overrun occurred.

Clear Button: The "Undo" button changes to the "Clear" button during an attack phase. The "Clear" button is used to deactivate weapons that have been aimed at a target.

Group/Split Button: Explanation of the button is covered in Grouping Infantry and Splitting Infantry in the Movement section.

Fire Button: The "Group/Split" button changes to the "Fire" button during an attack phase. Once weapons have been aimed at a target, clicking the "Fire" button fires them.

MOVEMENT:

Moving a Piece: To move a piece, click on it, and while holding the button down, drag the pointer to another hex and release the button. If an illegal move is attempted (i.e., moving onto a crater, across rubble, off the map, moving a piece that has already moved, or moving a piece farther than it can) you will hear a beep and a message informing you of your error will be in the Tactical Display. Once a piece has moved at all, it appears dimmed (green). This alerts the player that any solid (black) pieces have not moved yet. A piece can move up to its maximum movement value. It is not necessary to move a piece at all if it is already well located.

Ogre Movement: The Ogre’s movement depends on the number of treads it still has intact. A Mark III starts with 45 treads; a Mark V with 60. When the Ogre’s treads are reduced to two thirds their original total (30 for Mark IIIs and 40 for Mark Vs), the Ogre's movement value is reduced from 3 to 2. When the treads are reduced to one third their original total (15 for Mark IIIs and 20 for Mark Vs), the Ogre can move only one hex per turn. When the Ogre’s treads are completely destroyed it can no longer move. It can still attack anything within range.

Selecting the Ogre will display the "Ogre Summary" in the Tactical Display and will show the Ogre’s current movement value as well as the number of treads remaining.

Movement Through Occupied Hexes: In general, only one unit at a time may occupy a hex. Any unit may move through a hex occupied by a friendly unit. When moving onto a hex occupied by a friendly unit, the top piece will be highlighted. Clicking
overruns cannot be undone. Therefore, any time an Ogre moves onto a hex containing infantry, a dialogue box appears requesting verification of the overrun. Clicking "ok" allows the overrun to proceed. Clicking "cancel" will abort the move.

GEV Double Movement:
A GEV may move twice per turn - once (up to four hexes) during the defender's Movement Phase, and again (up to three hexes) during the GEV Movement Phase following the defender's attack phase.

Ending Movement:
To end the Movement Phase, click the "Done" button. If all of a player's pieces have not been moved when the "Done" button is clicked, a dialogue box appears requiring a verification to end the Movement Phase.

One-Player Ogre Movement:
During the Ogre Movement Phase in the one-player game, the pointer will disappear while the Ogre is thinking about where to move. When done, the Ogre automatically moves. If the Ogre rams a piece, there may be another pause while the Ogre considers a different move.

COMBAT:
A Combat Phase occurs after each Movement Phase (except for GEV second-phase movement). During a Combat Phase, the "Undo" and "Group/Split" buttons in the sidebar change to "Clear" and "Fire", respectively. These buttons are dimmed initially, and remain so until weapons have been aimed.

Weaponry:
Missiles are heavy rapid-fire cannon using tactical nuclear shells, capable of firing in any direction. Each unit may apply its attack strength once per turn. Each intact Ogre weapon may apply its attack strength once per turn, with the following exceptions:

Antipersonnel:
The Ogre's antipersonnel weapons are effective only against infantry and the Command Post. No infantry unit may be attacked more than once per turn by antipersonnel weapons. When all antipersonnel weapons are gone, an Ogre can no longer reduce an infantry unit's strength by overrunning it.

Missiles:
Each of the Ogre's missiles are one-shot weapons. Once fired (or destroyed before firing), they are gone.

Ogre Attacks:
An Ogre may attack an enemy unit by dragging from the Ogre's hex to the enemy hex. If the Ogre has any unfired weapons that can reach the enemy, a dialogue box will appear offering the available weapons. Weapons that have been fired, destroyed, or are out of range will be dimmed and cannot be selected. Clicking on the desired weapon highlights it and displays the weapon's attributes in the sidebar. Clicking on the up arrow in the dialogue box will increase the number of the selected weapon to be fired (up to the maximum number of this type weapon available). Clicking the down arrow will decrease the number. At the very bottom of the sidebar is a window displaying the probability of overrunning the selected target. 

Infantry are not rammed by an Ogre, but overrun. If an Ogre moves onto a hex occupied by infantry, that infantry is reduced by one squad. If the Ogre has any antipersonnel weapons left, if the Ogre does not have any antipersonnel weapons, the infantry is not reduced. There are no limits on overruns; the Ogre can overrun for as many moves as it has. In addition, overruns do not cause the Ogre any damage. An infantry unit may move onto a hex occupied by an Ogre without any immediate effect. The infantry will, however, be reduced by one squad at the beginning of the Ogre's Movement Phase, providing the Ogre has any antipersonnel weapons, without the Ogre having to expend movement points to do so. WARNING: Overruns cannot be undone. Therefore, any time an Ogre moves onto a hex containing infantry, a dialogue box appears requesting verification of the overrun. Clicking "ok" allows the overrun to proceed. Clicking "cancel" will abort the move.

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killing the target with the selected weapons. Any number and type of weapons can be fired in combination to increase this chance. The probability of killing will not always be increased by combining weapons. This probability is derived from the ratio of the total Attack Strength of the attacker(s) to the Defense Strength of the target. Sometimes the combined attack strengths are not enough to reach the next highest ratio. The following table contains the probabilities for all possible ratios.

<table>
<thead>
<tr>
<th>Ratio of Attack Strength to Defense Strength</th>
<th>Prob. of Killing an Active Piece</th>
<th>Prob. of Killing a Disabled Piece</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 1 - 2</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>1 - 2</td>
<td>17%</td>
<td>33%</td>
</tr>
<tr>
<td>1 - 1</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>2 - 1</td>
<td>50%</td>
<td>83%</td>
</tr>
<tr>
<td>3 - 1</td>
<td>67%</td>
<td>100%</td>
</tr>
<tr>
<td>4 - 1</td>
<td>83%</td>
<td>100%</td>
</tr>
<tr>
<td>greater than 4 - 1</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

OGRE lets you customize various game features to suit your own taste, and can be used before or during a game. Selecting "Preferences" from the "OSI" menu will display the Preferences dialogue box. This presents you with five options to modify. Clicking on an option will change it. If an option has more than one choice, click on it until the desired choice is displayed.

The Options are:

- **Sound Effects**: The default is "yes" (meaning sound effects will be heard). Turning sound effects off not only makes OGRE play more quietly (in case someone in the house is trying to sleep), but also causes the program to operate a little faster.

- **Reminders**: During play, various dialogue boxes will appear as reminders that you have not performed all of the actions available to you, or that you are about to perform an irreversible action. If, for example, "Done" is clicked during the Defender Move phase and all of the defenders that can move have not done so, then a reminder dialogue box appears. There is a reminder for the end of each game phase as well as reminders for ramming and overrunning. The default for reminders is "yes".

- **Skip Empty Turns**: There are times when there is no possible action during the phase. If, for example, the Ogre has had all of its weapons destroyed, then there is nothing for the Ogre to do during the Ogre Attack Phase. Nonetheless, the Ogre Attack Phase appears and "Done" must be clicked to go on to the next phase. These "empty" turns can be bypassed automatically by setting "Skip Empty Turns" to "Yes". The default for skipping empty turns is "No".

- **Ogre Message Speed**: During the one-player game where the Ogre is controlled by the computer, various messages will appear informing the player as to what the Ogre is doing. The time that these messages remain visible can be modified with "Ogre Message Speed". The choices are "low", "med", and "high". The default is "low". This option appears dimmed during a two player game.

- **Ogre Skill Level**: This option allows the player to modify the level of intelligence with which the Ogre plays during the one player game. The levels are "low", "med", and "high". The default is "low". This option appears dimmed during a two player game.

DETERMINING COMBAT RESULTS AND THE COMBAT RESULT TABLE:

Here is how combat results are determined in the original OGRE as designed by Steve Jackson. The computer version of OGRE computes combat results in the same fashion, but in a manner totally transparent to the player.

In general, each attack is resolved by comparing attack and defense strengths of the units involved, and then rolling a die. Specifically: For each attack, all attack strengths involved are totaled, and then...
compared with the defense strength of the target in ratio form. This ratio is then rounded off in the defender’s favor to one of the ratios shown on the COMBAT RESULTS TABLE. In other words, the target of the attack, be it Ogre or standard unit, gets the benefit of the rounding-off. Examples: 2 attack points against 1 defense point would be a “2 to 1” attack. 2 attack points vs. 2 defense points = 1 to 1; 3 attack points vs. 2 defense points = 1 to 2; 6 attack points vs. 1 defense point = 6 to 1 (treated as 5 to 1; see the Combat Results Table). Once the ratio is determined and rounded off, the attacker rolls the die and consults the proper column of the Combat Results Table to find the result. Results are applied immediately.

<table>
<thead>
<tr>
<th>Die Roll</th>
<th>1-2</th>
<th>1-1</th>
<th>2-1</th>
<th>3-1</th>
<th>4-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>4</td>
<td>d</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>5</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>6</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Attacks at less than 1 to 2 are always ne
Attacks at 5 to 1 or better, are always and automatic x

Explanation of Symbols:
ne: “no effect”, The unit attacked is undamaged.
d: Four Possible results, depending on the unit attacked.
1) An Ogre is undamaged. (This shows as "glanced" in the sidebar)
2) An infantry unit has its strength reduced by 1
3) An armor unit is disabled. the unit can neither move nor fire next turn. An armor unit remains disabled until the end of the enemy’s next Combat Phase.
4) A disabled armor unit is destroyed if it receives a second “d” result while disabled.
x: If the unit attacked is an Ogre, the part of the Ogre that was attacked is destroyed. If the defender is any unit other than an Ogre, it is destroyed.

FIELD EDITOR MESSAGES:
Command Post Already Present: Appears when the player attempts to put more than one Command Post on the field
Crater in the Way: Appears when the player attempts to move the Ogre onto a crater.

Please stay on the Map: Appears when a click occurs anywhere except in a hex.

GAME MESSAGES:
2 units in hex Please move 1: When two defenders are in the same hex, one of them must be moved off before any action may be taken elsewhere. This message appears if any action is attempted with a defender other than the two are residing in the same hex.

Can’t move onto a crater: Appears when attempting to move a piece onto a crater.

Can’t move that far: Appears when attempting to move a piece more than its movement allowance.

Command Post can’t attack: Appears when the player attempts to target the Ogre with the Command Post.

Disabled Can’t attack this turn: Appears when the player attempts to target the Ogre with a disabled piece.

Disabled Can’t move this turn: Appears when the player attempts to move a disabled piece.

Entire squad has aimed or fired: Appears when the player attempts to target the Ogre more frequently than the number of units in the squad.

No attacker: Appears when the player attempts to target opponent by dragging from a hex that doesn't contain a piece.

No clear path: Appears when the player attempts to move a piece from one hex to another, and there is no path of empty hexes short enough to complete the move.

No combined on attacks on treads: Appears when the player attempts to combine pieces in an attack against the Ogres treads

No Target: Appears when the player attempts to target the opponent by dragging from a piece to a hex that doesn't contain an opponent.

No treads left!: Appears when the player attempts to move an Ogre that has no treads.

Not enough treads to ram: Appears when the player attempts to ram that will cost the Ogre more treads than it has remaining.

Ogre can’t enter on a crater: Appears when the player attempts to bring the Ogre onto the field on any row other than the bottom one.

Only two rams per turn: Appears when the Ogre player attempts to ram more than two pieces in one turn.

Piece cannot move: Appears when the player attempts to move the Command Post or howitzer.

Please move a piece: Appears when the player attempts to move a crater, an opponent’s piece, or from a blank hex.

Please stay on the map: Appears when a click occurs anywhere except in the legal area.

Target one unit at a time: Appears when the Ogre attempts to target more than one defending unit at a time.

Target out of attack range: Appears when the Ogre is beyond the range of the attacking piece, or when the ogre attempts to target a piece beyond the range of its available weapons.

This hex is full: Appears when the player attempts to move a defending unit onto a hex that already contains the Ogre and another defending unit.

This unit has moved: Appears when the player attempts to move a piece that has already moved it's full movement allowance.

Unit already aimed this turn: Appears when the player attempts to target the Ogre with a piece that is already aimed at the Ogre.
Unit already fired this turn: Appears when the player attempts to target
the Ogre with a piece that has already fired.

YOU' R RICH...MAYBE. GEOLOGISTS HAVE JUST LOCATED ONE OF THE LARGEST
OIL DEPOSITS IN NORTH AMERICA, ON YOUR LAND! BUT YOU HAVE TO GET IT
OUT OF THE GROUND BEFORE YOU CAN SPEND IT.

THE OTHER OIL BARONS ARE JEALOUS, AND THEY WOULD DO ANYTHING TO
SABOTAGE YOUR OPERATION. THEY HAVE PLANTED OOZIES AND LAND MINES IN
YOUR OIL FIELDS TO WRECK YOUR DRILLING EQUIPMENT

DON'T LET THEM CHEAT YOU OUT OF YOUR
---------------MILLIONS!---------------

CONTROLS:
---------

JOYSTICK-

USE STICK TO DRILL IN ANY DIRECTION.

PRESS FIRE BUTTON TO RETRACT DRILL BIT.

CONTROL KEYS:
--------------

[CONTROL-S] TOGGLE SOUND OFF OR ON
[ESC] PAUSE GAME
[CONTROL-R] RESTART GAME-W/NEW OPTIONS
[SPACE BAR] RESTART GAME-W/SAME
[CONTROL-H] DISPLAY HIGH SCORES PAGE

HOW TO PLAY OIL'S WELL:
-----------------------

YOUR GUSHER CAME IN, BUT THAT HAS NOT MADE YOU A MILLIONAIRE. NOT YET,
ANYWAY. THE COMPETITION IS GIVING YOU TROUBLE.

EVERY TIME YOU START DRILLING, AN OOZIE ATTACKS YOUR PIPE AND EATS
RIGHT THROUGH IT. OR YOUR DRILL BIT SETS OFF AN UNDERGROUND LAND MINE
THAT SOMEONE HAS PLANTED IN YOUR OIL FIELDS. IF YOU CAN'T AVOID THESE
HAZARDS YOU MAY HAVE TO SHUT DOWN!

AS YOU GATHER IN ALL THOSE PRECIOUS OIL PELLETS, WATCH FOR EXTRA-RICH
DEPOSITS OF HIGH GRADE OIL. LAP UP THAT LIQUID GOLD, LIKE GLEAMING
Goblets of golden nectar.

IN THE DEEPEST, DARKEST CAVERNS BELOW YOU WILL FIND AN OCCASIONAL
DEPOSIT OF PETROMIN. WHILE THIS RARE MINERAL IS FLOWING UP YOUR PIPE
IT Creates a force field which slows down those oozies, giving you a
CHANCE TO MINE SOME OF THOSE DEEPLY BURIED OIL PELLETS. BE CAREFUL, THOUGH-THE LAND MINES ARE NOT AFFECTED BY PETROMINS.

AS YOU MINE EACH OF YOUR EIGHT OIL FIELDS, CONSTRUCTION WORKERS ARE BUSY OVERHEAD BUILDING A REFINERY. CLEAR OUT ALL THE FIELDS AND YOU REFINERY WILL BE FINISHED. YOU CAN SELL YOUR REFINED OIL, AND LIVE ON EASY STREET FOR THE REST OF YOUR LIFE!

WHAT ARE YOU WAITING FOR? YOUR FIRST FORTUNE IS ONLY MINUTES AWAY!!!

THE PLAYERS

DRILL BITS
(THAT'S YOU!) YOU GET 3 TO START WITH, AND ANOTHER EVERY 10,000 POINTS. EACH HAS A LIFE SPAN OF 990 TICKS.

LAND MINES
(BOMB-LIKE) YOUR DRILL BIT WILL DETONATE THIS, BUT IT WON'T HURT YOUR PIPE.

OIL PELLETS
(DOTS) Gobble up EVERY ONE >10 POINTS< OF THESE TO ADVANCE TO NEXT FIELD.

PETROMINS
(LOOKS LIKE A SUN) SPECIAL OIL NUGGETS THAT SLOW DOWN THE OOZIES.

OOZIES
(LITTLE SNEAKER MEN!) THESE >20-170 PTS.< THESE WILL DESTROY YOUR PIPE, BUT YOUR DRILL BIT WILL DEVOUR THEM (POINTS INCREASE AS YOU DIG DEEPER)

GOBBLETS
YOUR DRILL BIT CAN MINE >1000 PTS.< THESE SUPER-RICH DEPOSITS; THEY PASS HARMlessly THROUGH YOUR PIPE

THE NEXT THING YOU MUST CHOOSE IS WHAT TIME OF SKILL LEVEL YOU WISH TO PLAY AT. THERE ARE FOUR:

LEVEL 1 (EASIEST) IS PARK & REC
LEVEL 2 (EASY) IS VARSITY
LEVEL 3 (MODERATE) IS COLLEGE
LEVEL 4 (VERY HARD) IS PRO

THE LAST THING YOU HAVE TO CHOOSE IS THE ACTUAL GAME PLAY, WHAT I MEAN IS DO YOU WANT TO START A NEW GAME OR RESUME THE GAME YOU LAST WERE PLAYING OR JUST GO TO A DEMO, USING YOUR CHOICES.

IF YOU DO FOLLOW THE BASKETBALL SCENE YOU WILL SEE FROM THIS GAME THAT MANY OF THE PLAYERS' REGULAR SHOTS IN REAL LIFE ARE USED. FOR INSTANCE IF YOU PLAY PRO, WITH YOU BEING THE BIRD, DR. J BLOCKS YOU LIKE CRAZY WHEN HE'S ON DEFENSE, AND WHEN HE'S ON OFFENSE, HE'S HARD TO BLOCK.

PROPS-

* THE CLOCK - DISPLAYS, OF COURSE, TIME REMAINING IN THE QUARTER, THE NUMBER OF
FOULS YOU HAVE (DISPLAYED AS DOTS UNDERNEATH EACH PLAYER’S NAME); AND THE QUARTER YOU ARE IN.

* THE SHOT CLOCK — THIS DISPLAYS THE AMOUNT OF TIME YOU HAVE LEFT TO SHOOT THE BALL. IF YOU DON’T SHOOT BEFORE TIME IS UP, YOUR OPPONENT GETS THE BALL.

* THE BACKBOARD — YOU KNOW WHAT THIS IS AND SOMETIMES YOU CAN BREAK IT, BUT BETTER NOT, OR YOU’LL GET YELLED AT.

* THERE IS EVEN A REFEREE THAT COMES OUT AND BLOWS A WHISTLE IF YOU FOUL, AND THEN DISPLAYS YOUR FOUL. THEN YOUR OPPONENT USUALLY GETS ONE OR TWO FREE-THROWS.


SPECIAL COMMANDS:

IF YOU WANT TO GET RID OF ALL THAT FATIGUE YOU HAVE, JUST PRESS “T” WHEN YOU HAVE THE BALL AND YOU WILL CALL A TIME OUT, BUT YOU CAN ONLY CALL ONE PER QUARTER, AND YOUR OPPONENT ALSO GETS TO REST DURING THAT TIME OUT, SO HIS FATIGUE GOES DOWN TOO. SO USE IT WISELY.

IF YOU WISH TO CHANGE THE CHOICES YOU MADE AT THE BEGINNING OF THE GAME JUST PRESS (CTRL-R) AND YOU WILL GO BACK TO THE CHOICE PALET. AFTER YOU FINISH, YOU MAY “RESUME GAME”.

IF YOU NEED TO DO SOMETHING, JUST HIT THE <ESC> KEY AND THE GAME WILL PAUSE UNTIL YOU TOUCH THE <SPACE-BAR>.

ANOTHER COMMAND THAT YOU MAY WISH TO USE IS THE <SHIFT-!> COMMAND. IF YOU PRESS THIS YOU WILL PLAY IN SLOW MOTION, TO SWITCH BACK TO NORMAL PLAY, JUST TYPE IT AGAIN.

WHILE PLAYING:

IF YOU GET THE BALL AFTER YOUR OPPONENT MISSED, MAKE SURE YOU COME BACK AND CLEAR THE BALL, OR BRING THE BALL BEHIND THE CENTER LINE, OTHERWISE YOUR POINT (IF YOU MAKE A SHOT) WILL NOT COUNT.

YOU MAY THINK THAT YOU CAN NOT BLOCK YOUR OPPONENT’S SHOTS, WELL, LETS JUST SAY IT’S HARD.

WHILE YOU ARE PLAYING, ON OFFENSE YOU CAN PRESS BUTTON (0) JUST SLIGHTLY AND YOU WILL SPIN TOWARD OR AWAY FROM YOUR OPPONENT. IF YOU PRESS BUTTON (0) HARD OR LONG YOU WILL SHOOT THE BALL. (SPACE BAR FOR KEYBOARD).

ON DEFENSE BUTTON (0) IS USED FOR:

A) JUMPING TO BLOCK A SHOT
B) TRYING TO STEAL THE BALL

WHEN YOU ARE “ON TOP OF” YOUR OPPONENT AND PRESSING THE BUTTON YOU WILL BE TRYING TO STEAL THE BALL, OTHERWISE IF YOU ARE AWAY FROM YOUR OPPONENT AND PRESS BUTTON (0) YOU WILL JUMP UP. (THE MORE FATIGUE YOU HAVE THE LESS YOU CAN JUMP).

IF YOU GET THE BALL IF YOUR OPPONENT MISSES THE SHOT, BUT IT CAN BE DONE, A HINT IS TO TRY AND JUMP BEFORE HE DOES, OR DO IT AS SOON AS YOU THINK HE MIGHT TRY AND SHOOT, OR YOU COULD TRY AND GO BACK FARTHER AND WAIT UNTIL IT GETS NEAR THE BASKET AND TRY TO TIP IT OUT.

MOST PEOPLE ALREADY KNOW THIS, FROM JUST KNOWING HOW TO PLAY BASKETBALL, BUT FOR THOSE OF YOU WHO DON’T, YOU CAN GET THREE POINTS, INSTEAD OF TWO, IF YOU SHOOT THE BALL, AND MAKE IT, FROM THE BIG HALF-CIRCLE ON THE OUTSIDE.

IMPLANTED IN THE GAME IS A MODE CALLED “HOT STREAK”. IF YOUR PLAYER MAKES THREE CONSECUTIVE SHOTS (IN) THE NEXT SHOT WILL AUTOMATICALLY GO IN, FROM WHEREVER YOU ARE. THIS CAN BE HELPFUL IF YOU ARE ONLY BEHIND BY ONE OR TWO POINTS. YOU COULD QUICKLY GO DOWN TO THE WIDE HALF-CIRCLE ON THE OUTSIDE AND SHOOT, AND YOU’D KNOW IT WOULD GO IN. THAT’S IT, HAVE FUN!
1) ACCELEROMETER: an instrument that measures the rate of acceleration changes.
Located on the Bridge control panel by the co-pilot chair.

2) AIRLOCK: a chamber that adjusts air pressure for passage from on-board to
extravehicular environment and vice versa. Located mid-ship on the port side.

3) APOGEE KICK MOTOR: a rocket motor that fires at the apogee of an oval
transfer to launch the craft into a circular geostationary orbit. Located in the Port Engine Room.

4) AVIONICS: the electronics system and instruments that monitor and control
ship functions in flight. Located on bridge.

5) COMPUTER CARD UNIT: storage for individual Universal Activan Data Cards to
control various computer information functions. The cards can easily be
exchanged and updated to the most recent banks. Located in the Main Computer
on the port side before entering the Bridge.

6) CRYSIS PURIFIER: a filter that intensifies cryon particles emitted by the
power cylinder. Located in the Port Engine Room.

7) ENERGY CONVERTER: an "Xchanger" energy converter that uses zellium-based
internal coils to convert various forms of energy created by the power
cylinder into usable light drive energy. Located in the Port Engine Room.

8) EXTRAVEHICULAR HELMET: a self-sealing headgear used in conjunction with
Extravehicular Space Suit and Thermo Gloves for extravehicular activity in
hostile or no-environment situations. Contains light activated face shield and
portable oxygen recirculator.

9) EXTRAVEHICULAR SPACE SUIT: a self-sealing and regulation thermo-spacesuit
used in conjunction with Extravehicular Helmet and Thermo Gloves for hostile
and no-environment extravehicular activity.

10) GYRO-MATIC LEVELER: a system that stabilizes the spacecraft during flight.
Controls stability along linear (roll), planar (pitch) and vector (yaw) axes.
Located in the Bridge control panel.

11) HYDRO-PARTICULATOR: a life-support component that purifies and recycles
condensation from internal atmosphere of the craft into the water system.
Located in the Life-Support Center.

12) KYRLLIAN CHIP: a vital component of the transmission beacon. Located on
the Bridge.

13) LIGHT-ROD: a short-term source of light that absorbs energy from available
light when not in use. Required in the Life-Support Center during flight and
removable for emergencies.

14) MAIN SHIELD UNIT: a portable protective unit that, when installed, creates a
"cushioning" shield around the spacecraft to prevent damage from micro-
meteoroids and other space debris. Installs on the garon ray transfer housing
in the Starboard Engine Room.

15) NAVCHIP: a computer component that contains current interstellar causeway
information and navigational beacon. It controls firing of the external
retro-rockets during flight. Located in the Bridge control panel.

16) OXYGEN RECIRCULATOR: a vital component of the Life-Support Center that
removes condensation and harmful gasses from the internal atmosphere of the
ship. Whater particles are channeled into the hydro-particulator and gasses
are jetisoned into open spaces. Located mid-ship on the starboard side.

17) THERMO GLOVES: self-sealing hand protection used in conjunction with
Extravehicular Helmet and Extravehicular Space Suit for hostile and no-
environment extravehicular activity.

18) TACHYON POWER CYLINDER: a power intensifier that creates a radioactive
zone around the engine core using intense alpha-coronic waves. Supplies limitless engine power and life support capabilities. Located in the Port Engine Room.

CARGO BAY

The Cargo Bay is located in the center of the spacecraft and measures 8 x 7 x 7 fleegs. The entrance to this area of the ship is airlocked since the CARGO BAY doors must sometimes be opened during flight. The Cargo Bay is designed to accommodate most cargo and payload support equipment (i.e.-for specialized atmospheric control). The size and weight of all cargo support equipment must be included with data that is fed into the Main Computer to determine exact payload limit.

PAYLOADS

The Mega Class spacecraft is capable of carrying two types of payload:

1) ATTACHED PAYLOAD: remains in the cargo bay during flight and unloaded only at fixed landing destinations.

2) FREE-FLYING PAYLOAD: is deposited in space through the Cargo Bay airlock during flight. Free-flying payload requires proper orientation training and instruction. It is best to check the payload manufacturer for recommended disembark information.

EMERGENCY LANDING

The Main Computer operates all emergency landing functions. However, in an emergency landing situation, the pilot can engage the Main Computer auto-pilot override system. This enables the pilot to combine Main Computer scanning data with optic visualizer input.

SPECIFICATIONS

Ship Type: Mega Class Tachyon Drive
Model 12,288
Identification Code: XX43579G005.1
Weight (Fueled): 75,000 BS (165,000 LM)
Cargo Capacity: 1,000,000 BS (2,200,000 LM)
Wingspan: 25.73 FG (84.42 T)
Length: 35 FG (114.83 T)

External Hull Composition: Ablative Nuvonic Trainium
Inner Hull Composition: Spanedar Voraxion
Engine Type: Taychon-convert 5000
Engine Thrust: 14,900,000 KN
Maximum Speed: 4.5 LPM
Fuel Capacity: 400,000 Lemperes-

-NOTE: Use ONLY ungarbonized fuel.

---

CARGO BAY

Destination: Observation Labport 5V. ETA: 310 minutes.

Mission Code: TSE957X
Priority: Urgent—red level
Depart: White Bay 2. Maximum speed, immediate upon receipt of this directive.

Destination: Observation Labport 5V, Station 5 Omega Sector 12
Objective: Transport protective compound to Labport

Background: Outside the boundaries of star system 69 Omega is Observation Labport 5V. Subject of this Labport is star 69B and surrounding planets. The third planet of this system (Earth) is inhabited. Earth has no knowledge of or contact with the numerous members of the Intergalactic Society. An interstellar transport carrying power transfusion waste collided with a meteor and its toxic contents have scattered into open space. These contents are being drawn toward star 69B (Sol) and Earth is in the path. The transfusion waste is so deadly that all lifeforms on Earth could be destroyed on contact. Earth is not aware of the problem and does not have the technology to avert a disaster. A protective compound has been synthesized by SES scientists. With seeds of this compound, Labport 5V can produce the chemical and secretly introduce it into Earth's atmosphere. It is imperative that no attempt be made to communicate directly with lifeforms on Earth. Earth is within a restricted travel zone. Sudden contact with other lifeforms could cause irreparable damage to Earth's development.

Comments: The SES has great hopes for the inhabitants of Earth. It is of the utmost importance that we do whatever possible to avert this disaster.

Good Luck,
J. Castor Nebulus
PRESIDENT

JCN:ps

---

SPACED HABITAT SOCIETY
OFFICE OF THE PRESIDENT

J. Castor Nebulus
President

Date: 51.7.290
Time: 06.13.00
Communication: Argo HQ, President
To: Flight Commander Argo Base

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Apple II Computer Documentation Resources (a2_docs_documentation.msw)
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Time: 13.01.22  ABORT EMERGENCY LANDING! Scanners indicate sea composed of highly corrosive materials. Auxiliary emergency landing site located. Prepare for hard landing on beach.


Time: 14.00.12  Scanners indicate buildings due west of beach. Unidentified life forms approaching ship on port side. Life forms not indigenous to Oo-Topos. CAUTION: data analysis suggests Oo-Topos is a likely base for space pirates. Scan..............................ALERT! Breach in outer airlock......

Command:
Presented by BETS C.

An Extraterrestrial Adventure
By Michael Berlyn
Sentient Software

The object of this 142 room text adventure is to rebuild your ship and gather up your scattered cargo. There are about 45 items to find. When you're done, and the items are in the hold type SCORE.

Object List
-----------
Laser
Dart
Needler
Seeds
Tachron Power Cylinder
Gyroscope
Oxygen Recirculator
Seamless box (compass)
Navigation Chip
Repair Manual
Converter
Water System
Goggles
Vibroaxe
Gloves
Pressure Suit
Flask
Cage
Field Nullifier
Light Rod

Translator
Plaque
Small Ring
Library Crystal
Plasma Sphere
Vega Silver
Psi Cube
Elixir Energy
Double Helix Healer
Atom Transmuter
Emerald Flower
Terran Relics
Harmonica
Ruby Seashell
4-D Mirror
Betamax Cassette
Moon Jewel
Rainbow Cloth
Food Packet
6502 Chip
Jade Seahorse

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<table>
<thead>
<tr>
<th>Crime</th>
<th>Out of This World GS Level Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ring</td>
<td>Presented by The Magnet</td>
</tr>
</tbody>
</table>

**International**

- Crime: Presented by The Magnet
- Thanks to Blue Adept & Thrashin
- The Magnetic Field: 708/498-5189

---

CONTROLS:

- LASER: I - UP
- SHIELD: W - UP
- K - RIGHT
- M - DOWN
- J - LEFT
- N - DOWN
- A - LEFT

Here are ALL the level codes for Out of This World GS.....From Level 1-

- LDKD
- HTDC
- CLLD
- FXLC
- KRKX
- XXJ
- LBKG
- KLFB
- TCY
- DDRX
- TBHK
- BRTD
- CKJL
- LPCK
- BFLX
- XJRT
- HRTH
- BHKH
- JCGB
- HHFL
- TFBB
- TXHF
- JHJL

**eof**

Special Thanks to Bill Heineman for Believing in the Apple IIGS
Support Him and Others Like Him by PURCHASING Quality Software!
The Oversampler isn't anything special at all. It's just a small program demonstrating the oversampling technique on the Apple IIGS. The other major feature of Oversampler is the ability to play digitized sound directly from disk without loading them into memory. The advantage is that you can instantly play long long sounds without waiting to load them from disk and you don't need to have 8 MB ram to play sounds of 8 MB - in fact Oversampler only requires 16 KB of free space!

Oversampling

If you own a CD player you may have read in the manual that your CD player uses four or eight times oversampling to improve sound quality. Oversampler is doing the same. With 2-times oversampling the program loads 8 KB of sound into memory, doubles the wave to 16 KB in sound ram by adding an intermediate value between every two values (e.g. 10, 20, 40, 25, 15, ... becomes to 10, 15, 20, 30, 40, 32, 25, 20, 15, ...) and doubles the frequency in order to play the sound at the correct speed. 4-times oversampling quadruples wave size and frequency by inserting 3 intermediate bytes and so on...

40 45
35 30
25 x
20 x
15 x
10 x
50

Using the program

Open first a sound file by selecting 'Open' from the 'File' menu. You can select files of any type but Oversampler treats every file as raw data. Zeros in the data are converted to $01 so you're able to play Macintosh sounds as well. (Otherwise the oscillator would stop when detecting a zero.) A dialog box appears with following options:

Volume:    Set the volume of the selected output channel.
            Explained in section 'Output'

Frequency: With this scroll bar you can set the playback rate. When you open a file the auxtype is taken as default frequency (if 10 < auxtype < 900 else freq = 200.) To get the frequency in Hertz just multiply the shown rate by 51.406.

Echo Delay: Use this scroll bar to set the echo to off (default) or to the delay you desire. A delay of 16 is about 1/3 second (16/60) so the echo source would be approximately 55 m (180 ft) away. Echo and oversampling mode won't work together (yet)! The echoed channel (right) has about 3/4 the volume of the original channel (left).

Output:    Stereo (default): Select this if you own a stereo card. The volume control will affect the oscillators volumes.

Left & Right: Use these options to test you stereo card... (well, actually I don't know why I added these options.)

Internal: If you use your internal speaker or if you have connected your GS to an external speaker via phone plug select 'Internal'. The volume scroll bar will only change the system volume.

Oversampling: Off: (default) No oversampling.
            2-times/ 4-times: Enables the oversampling mode as explained earlier. Please remind that Oversampler internally doubles/ quadruples the frequency rate and disk access will be twice/ four times as fast as at normal playback. Your disk might be too slow then. (-> Play)

Close:      Closes the file. (Shortcut: Command-W)

Play:       Starts playing the sound from disk. Press the ESC key to stop the playback. If your disk device is to slow to keep up with the playback rate you'll get a message. In this case try decreasing the frequency or disabling the oversampling mode. The highest rate for the Apple 3.5" drive is about 375 (with Transwarp and w/o oversampling). My Vulcan - and most harddisks I think - won't have any problems at rates above 900.

Oversampler was written in 100% assembly language on Merlin 16+ (the best programming environment!) Resources were created on Genesys (the best resource editor!).

Write to:

Andre Horstmann       GEnie       A.HORSTMANN
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CR-6300 Zug           Fax         +41-42-22 45 72
Switzerland

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
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1. PRESS <ESC> TO GET TO AND FROM MENU. SELECT A MENU ITEM WITH THE ARROW KEYS. PRESS <RETURN> TO CARRY OUT THE ACTION SELECTED.

2. SELECT THE ITEM "COLOR:" AND PRESS <RETURN>. CHOOSE A COLOR.

3. DRAWING WITH PEN: OFF

PRESS <ESC> TO LEAVE THE MENU. THE PADDLE CONTROLS "PDL(0) AND PDL(1)" MOVE A SPOT ON THE SCREEN. BUTTON 0 MAKES A MARK; BUTTON 1 DRAGS A LINE TO THAT MARK IN THE CHOSEN COLOR. THE OLD ENDING POINT BECOMES THE NEW STARTING POINT.

4. DRAWING WITH PEN: ON PUSH BUTTON 0 TO MAKE A MARK ON THE SCREEN, THEN PRESS <ESC> TO GET TO THE MENU. SELECT THE ITEM "PEN:" WITH THE ARROW KEYS AND PRESS <RETURN>. THE PADDLE CONTROLS NOW WORK LIKE THE KNOBS ON AN "ETCH-A-SKETCH".

5. SPECIAL EFFECTS: FILL

FILL IS USED TO FILL AREAS WITH A SOLID COLOR. USE BUTTON 0 TO SET 4 POINTS IN THE FOLLOWING ORDER:

```
1          2
*        *      
*        *      
3          4
```

THEN PRESS <ESC> TO GET THE MENU, SELECT "SPECIAL EFFECTS", AND PRESS "F" FOR FILL. THE AREA INSIDE THE 4 POINTS WILL BE FILLED WITH THE SELECTED COLOR. OF COURSE, THE POINTS CAN BE ENTERED IN OTHER ORDERS & OTHER THINGS WILL HAPPEN.

6. SPECIAL EFFECTS: CURVES

THIS SPECIAL EFFECT WORKS SOMETHING LIKE A SPIROGRAPH. MARK 2 POINTS WITH BUTTON 0 IN THIS FORMAT:

```
1          2
*        *      
```

C(URVES (CONT)

THESE POINTS DETERMINE THE SIZE AND LOCATION OF THE CURVE. PRESS <ESC> TO GET THE MENU, CHOOSE "SPECIAL EFFECTS", AND PRESS "C" FOR CURVES ENTER VALUES FOR A AND B (THESE DETERMINE THE SHAPE OF THE CURVE). NEGATIVE NUMBERS INVERT THE CURVE. THE CURVE "BOUNCES OFF" THE TOP, BOTTOM, & SIDES OF THE SCREEN. NEXT ANSWER "MODULATE THE CURVE?" WITH Y OR N. MODULATION ALTERS THE BASIC SHAPE. ENTER NUMBERS FOR "% AMPLITUDE" AND "FREQUENCY". USING 3,3 FOR A AND B (WHICH PRODUCE A CIRCLE), TRY:

- AMPLITUDE=20, FREQUENCY=9
- AMPLITUDE=30, FREQUENCY=9
- AMPLITUDE=30, FREQUENCY=-9

OTHER INTERESTING SHAPES ARE PRODUCED BY

- A=4, B=4;
- A=10, B=23;
- A=33, B=33;
- A=12, B=6.

FINALLY, TRY A=-3, B=-3, AMPLITUDE=30, FREQUENCY=3.

SURPRISE!!

**NOTE**

BUTTON 1 CAN BE USED TO BREAK OUT OF EITHER EFFECT AT ANY TIME. IN CASE OF ACCIDENTAL EXIT, RETURN TO BASIC BY ENTERING 3D0G AND <RETURN> IF REQUIRED. THEN TYPE GOTO 1000 AND <RETURN>.
The Password Penetrator Program (PPP) employs the Database Hack technique for password protection. This means that it selects and tries passwords from a list of commonly or probably used passwords. This is the most feasible technique for password hacking from a microcomputer, since sequential or random password hacking techniques would take decades (or centuries or eons...) at even 1200 baud. This program preys upon the common weakness of human/machine system relationships - the people.

Mainframe system programmers face a dilemma in password protection systems. If random passwords are assigned to the users by the system (making it virtually unhackable by the Database technique), the users will inevitably write down their hieroglyphic password, making it vulnerable to casual glances. Hence, this technique is seldom implemented. Another option (the most widely used) is to allow the user to select his/her own password in the hope of avoiding the password-sticker-on-the-monitor syndrome. The users, feeble-memoried humans that they are, will often select passwords that they can easily remember. ah HA!! A weakness! The Password Penetrator allows you to create a database of such commonly used passwords for automated educated guessing. Such passwords often consist of words such as "secret", "love", or "password"; single letters; first names; or initials. All of these are easily supported by the Penetrator. Included with the Penetrator are expandable databases of first names, initials, common account names, and all purpose passwords. Eventually new password allocation systems will be created such as passphrases and pseudo-random phonetic passwords. Under the passphrase system, human stupidity will remain in existence, and the Penetrator will still be useful.

II. Main Menu Options

Here are the explanations of each option on the main menu:

1: LOAD MAINFRAME DATA FILE

This allows you to load a pre-saved datafile containing all the modem/hack parameters for a specific mainframe. It contains the Dialogue which will be explained later. Values loaded from this file will replace the defaults at the various prompts. Note: the password database itself is "NOT" saved in the mainframe data file. The database "NAME", however, along with the number of the last password used in that database are saved in the Mainframe Data File. You are first prompted to select the disk drive from which the file will be loaded, and then to enter the filename. You can press [ESC] to exit the option. Sample Mainframe Data Files included on the Hackamatic disk are: "DEC20", "PDP11", and "DATA GENERAL".

2: SAVE MAINFRAME DATA FILE

This allows you to save a mainframe data file (as you might have guessed.)

3: LOAD PASSWORD DATABASE

This option loads a password database into memory for use by the Penetrator in hacking. The Password Databases supplied on the Hackamatic disk are called "ALL PURPOSE P/W'S", "FIRST NAMES", "INITIALS1", and "INITIALS2".

4: SAVE PASSWORD DATABASE

Allows you to save your own databases, or save changes to previously created password files.

5: EDIT DIALOGUE

The Dialogue is the conversation (so to speak) carried on between the PPP and the mainframe victim...I mean mainframe system...during password hacking. The Dialogue Editor allows you to enter and edit up to 30 lines of dialogue - more than enough for any system. To get a first feel for it, use the LOAD MAINFRAME DATA FILE option to load the Data General file from the Hackamatic disk, then use the EDIT DIALOGUE option to have a look at it. The screen displays a sequence of lines representing the system's prompts and the PPP's responses. A typical dialogue might look like this:

...I HIGHLY RECOMMEND THAT YOU USE YOUR PRINTER ON THIS MEGADOC.

I. Explanation and Introduction

Penetrator allows you to create a database of such commonly used passwords for automated educated guessing. Such passwords often consist of words such as "secret", "love", or "password"; single letters; first names; or initials. All of these are easily supported by the Penetrator. Included with the Penetrator are expandable databases of first names, initials, common account names, and all purpose passwords. Eventually new password allocation systems will be created such as passphrases and pseudo-random phonetic passwords. Under the passphrase system, human stupidity will remain in existence, and the Penetrator will still be useful.

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Enter ctrl-P as the first character in a PPP (not SYS) dialogue line to specify the location of the password from the database. The Penetrator will display the ctrl-P in dialogue listing as "<P/W>", just as it displays an ESCape character as "<IGNORED>".

NOTE: The ctrl-P and ESC characters must be entered as the >FIRST< characters on a Dialogue line in order for them to function as password and ignore flags, respectively. If either a ctrl-P or an ESCape is entered in a dialogue line beyond the first position, it will be taken literally by the Penetrator.

Enter a semicolon [;] as the last character in a PPP (output) dialogue line to suppress the implied carriage return at the end of the line just as in BASIC when using the "INPUT" command. If either a PPP in a PPP line is not a semicolon, the program automatically adds a carriage return after sending the line.

IMPORTANT! You should enter all dialogue UP TO THE POINT at which the PPP should wait for the message sent by the system in response to an incorrect password. DO NOT ENTER THE SYSTEM'S BAD PASSWORD MESSAGE IN THE DIALOGUE! You will enter it after typing the <F>inished command. After you have finished creating your dialogue, you *MUST* exit using the <F>inished command. You will then be be asked to enter a series of other hack parameters.

Immediately after you type <F>, the Penetrator will ask "MAINFRAME RESPONSE TO INVALID PASSWORD". Here you enter the text (or part of it) displayed by the mainframe after it receives a bad password. For the sample system above, you would enter "NICE TRY SUCKWEED" or "NICE TRY" or "SUCKWEED", or something else from the bad password message.

The Penetrator's next question is "BRANCH ON BAD PW TO LINE:". Immediately after the prompt, the current bad password branch line is displayed in parentheses. Use the arrow keys to move the lighbar to the line to which the PPP should branch after receiving the bad password message entered previously. Once the line is highlighted, the sample system above, you would move the cursor to line 3 where the Penetrator waits for the system to display "ENTER USERNAME;", since the system drops back to this prompt after displaying "NICE TRY SUCKWEED."

Next Penetrating question... "# OF PW ATTEMPTS BEFORE RESET?" Here you enter the number of passwords the Penetrator should attempt before bagging it, or resetting. Many mainframe systems, like the sample system above, let you specify a number of passwords before which the system will crash. For the sample system above, you would enter 4, since the system hangs up after 4 botched passwords.

Moving right along..."DELAY BEFORE RESET <0-255 SEC.;

". Some systems, rather than hanging up after a number of password screwups, lock up and ignore input for a period of time. For example, some Data General systems, which say "TOO MANY ATTEMPTS, CONSOLE LOCKING FOR 10 SECONDS."

For such a system, you would enter 10 at the prompt. For the sample system above, you would enter 0, since the system hangs up and the PPP will have to redial anyway.

MAKE UP! YOU AREN'T MEADING THIS FOR YOUR HEALTH. The next prompt is: "RESET TO LINE:". As with the "BRANCH ON BAD PW TO LINE:" prompt, you use the arrow keys to move the lighbar to the line to which the PPP should branch after trying the specified number of passwords and a reset. For the sample system above, you would move the lighbar to line 0, to make the PPP to redial the mainframe. Some other systems, like the type of Data General mainframe described above, do not require redialing. They will often just revert back to their initial activation sequence in which case the reset line in the dialogue would not be line 0.

Once you have selected the reset line, the PPP displays "MAINFRAME RESPONSE TO INVALID PASSWORD LAST ATTEMPT BEFORE RESET." On many mainframe systems, the mainframe's response to the final bad password before reset will be the same as for any bad password. On some systems, however, like the imaginary one described above, the response to the final bad password before reset will differ. For the sample system above, you would enter "SORRY SUCKWEED", "DISCONNECTING" or something else from the mainframe's final message before reset.
Next prompt: "TIME TO WAIT FOR PAD PW MESSAGE: (TIMES APPROXIMATELY 5 SECONDS)." After the Penetrator finishes with the dialogue, it waits to receive the bad password message you entered. If that message is not received in the amount of time you specify at this prompt, the Penetrator assumes it is a good password. At this prompt, enter a value which will produce a delay sufficiently long to receive the bad password message. The actual amount of time delayed by the FPP will be roughly (in seconds) 5 times the number you enter here.

The FPP will then ask you "OUTPUT SPEED <0-255>: ." Since some systems cannot receive data from the FPP at full speed, especially during times of heavy use, the speed at which the Penetrator sends data to the victim (1 mean system) can be varied. Enter a value between 0 and 255, with 255 being the fastest.

The next option is "CASE TOGGLE ON PASSWORDS?". If you answer [Y], the FPP will automatically resend every password in lower case. Normally, the FPP uses only upper case in passwords since many mainframe systems are case-insensitive on passwords.

Go ahead and sleep; this is the last one anyway: "START AT PASSWORD # ". Here you enter the number of the password in the database at which the FPP will start hacking. This is especially useful if you know either the first or last name of the user whose account you are hacking, and would like to try hacking his initials from the INITIALS password databases (supplied on the Hackmanatic disk). If you stopped the FPP on a previous hack before it had reached the end of the password database, the number of next password in the list will be the default.

If you are using a previously created dialogue and accompanying set of hack parameters, then you do not need to use the [F] command and go through all of its options unless you plan to change them. Once you have completed these options, it is safe to hit [ESC] to exit the dialogue editor, rather than typing [F].

Finally, now back to the main menu options... (there are others you know)
6: EDIT PASSWORD DATABASE

The Password Database Editor is essentially the same as the Dialogue Editor, but there are a few minor differences. It allows you to enter and edit a database of up to 500 passwords.

PASSWORD DATABASE EDITOR COMMANDS:
- Use the < and > keys (unshifted) to move one password at a time through the list.
- Use the [I] to insert a password.
- Use the [D] to delete the password in the lightbar.
- Use the [B] to jump to the beginning of the list.
- Use the [N] to jump to the end of the list.
- Use the [C] to clear the database in memory.
- Use the [ESC] to exit the Password Database Editor.
- Use the [E] to edit the password in the lightbar.

Note that in the Password Database Editor all characters placed in passwords are considered alphabetizing the list, but neglected against it so they could be hacked in order of precedence and frequency of use.

7: SET MODEM PARAMETERS

This section is essentially the same as that in the Prefix Prowler and the Code Crusher. There is nothing particularly new or tricky.

The PPP is the currently loaded Mainframe Data File values and resets to the original defaults. If you have loaded a mainframe database, you will be prompted before the memory is cleared.

8: RESTORE DEFAULTS

This option frees the Penetrator to do what it does best. It will not work, however, unless you have entered a dialogue and some passwords. The Hack Screen is similar to those of the Prowler and Crusher. The top window displays commands sent to your modem and the conversation as it occurs between the PPP and the victim (system). When waiting for input from the system being hacked, the Penetrator displays "SYS:" and then displays the characters as they are received from the system (with optional sound effects). The incoming data is displayed in upper case only. From this display you can see exactly what the Penetrator has received, and make corrections to the dialogue if characters are missed during input. Occasionally seemingly strange characters will appear immediately after the "SYS:". These are usually system echoes of the last few letters from the PPP's last output line. The center window displays passwords as they are attempted. A password will flash if the FPP finds it a possible success. The bottom window displays the runtime commands summarized below.

If, after you select the "HACK AT IT" option you get:
1. "PASSWORDS AND/OR DIALOGUE NOT ENTERED," it means that you haven't loaded a password database, or that you haven't entered sufficient Dialogue info through either a datafile or the keyboard.
2. "STARTING PASSWORD POINTER IS GREATER THAN THE NUMBER OF PASSWORDS IN THE CURRENT DATABASE," it means that the starting password number, entered through the Dialogue Editor, was greater than the number of passwords currently in memory. Fix it by entering the Dialogue Editor, pressing [F] to get the hack parameters in the bottom window, and go through all the options until you reach the "START AT PASSWORD #" prompt. Here you can change the value accordingly.
3. "CURRENTLY LOADED PASSWORD DATABASE DOES NOT MATCH LAST-USED DATABASE. CONTINUE ANYWAY?" It means that the password database in memory does not match the name of the last-used password database which was stored in the Mainframe Data File. If you do not care, type [Y] to continue. NOTE however, that the FPP will start at the password in memory with the same number as the last-used password in the last-used database.

PPF RUNTIME COMMANDS
Before the Penetrator starts hacking passwords, it goes through a modem initialization by typing "CONNECT TO MAINFRAME SYSTEM" and sends the necessary dialing commands. During these processes you can press [ESC] to exit and return to the main menu. Once password hacking is in progress, press [ESC] to get the "COMMAND?" prompt (in flashing video at the bottom of the password window). Note that the PPP will not stop to accept commands until it reaches a convenient stopping place. (After it knows whether the password it is currently hacking is good or bad). Patience, it knows you pressed [ESC]. The PPP will beep when it sends the "COMMAND?" prompt. At the prompt you may enter any of the following characters:

[S]: Toggles the sound effects on incoming data on and off.

[G]: Pops up Hires page 2. Due to the length of the Penetrator, the hires screen will always be filled with trash -- loading a picture before running the PPP won't work. Tell your mumy that it is a school project on randomness and that you are trying to generate simulated static. You will notice small distortions in the image as the program hacks. Point out these glitches to your mumy if she is not convinced. Note that the text screen is restored at the "COMMAND?" prompt if you press [ESC] while in graphics mode.

[T] to enter terminal mode. This is somewhat dangerous as it is difficult to get the PPP re-started after exiting terminal mode, and you will probably have to press [RESET] to abort hacking.

[Q] to quit and save Mainframe Data File, if one was used. The Mainframe Data File must be saved if you plan to start later the PPP where it left off.

If the PPP finds a possibly successful password, it will stop and beep the speaker until you press a key. You are then dropped into terminal mode to hack at your leisure. After you exit terminal modem with ctrl-A Q, the PPP will quit and allow you to re-save the Mainframe Data File. You can restart the PPP where it left off, if necessary, with the HACK AT IT option on the main menu.

If the Penetrator stops during hacking because the data it is waiting for has not been received, (due to errors in your Dialogue or other unforeseen difficulties) you can enter the awaited messages from the keyboard. The PPP handles input from the keyboard the same as input from the connected mainframe. If you cannot restart the Penetrator by typing data from the keyboard, you can press RESET to return to the main menu. You can then manually save the Mainframe Data file if needed. This RESET option is most useful for aborting a hack to correct problems in your Dialogue entries.

11: ENTER DOS COMMAND

This option allows you to enter any DOS command, especially CATALOG’S.

12: QUIT

Funny, I seem to have forgotten what this does.

III. Password Penetration tactics:

For best results, use sections of the mainframe’s responses which begin a few characters into the message in the dialogue editor to minimize the possibility of lost characters during hacking. In the example system in the Edit Dialogue explanation above, good dialogue representations of the system’s "SORRY SUCKWEED" message would be "SUCKWEED" or "WEED". The same applies to the "MAINFRAME RESPONSE TO BAD PASSWORD" inputs.

The dialogue line containing the ctrl-P password flag can hold more data, (including the semicolon carriage return suppression flag) provided it comes after the ctrl-P. If you do not know an account or user name, and need one to successfully logon, try using the "ACCOUNT NAMES" password database. Note that this is effective only on (wimp) systems which tell you if your account name is invalid. On not-so-wimp systems like VAXes, the "FIRST NAMES" password database can be effective. I forgot to mention above that the ctrl-P password flag can be entered more than once in the Dialogue. Suppose you just connected to a Data General system and decided to use the name "John" as both the username and the password. It would look something like this:

(You press RETURN here)

Username: JOHN
Password: JOHN

Invalid Username/Password pair

Username: .
Password: .

The corresponding dialogue could look like this:

0 - PPP: [CONNECT TO MAINFRAME SYSTEM]
1 - SYS: <IGNORED>
2 - PPP: <C/R>
3 - SYS: USERNAME:
4 - PPP: <P/W>
5 - SYS: PASSWORD:
6 - PPP: <P/W>

Thus, if you used the FIRST NAMES password database, the PPP would enter a name from the list as both the Username and the Password. Since many people use their first name as both username and password, this can be particularly effective if you cannot get a valid username used on the system.

The "INITIALS1" and "INITIALS2" files contain all possible combinations of two letters except for those extremely unlikely to be used as initials for normal human beings. They are used if you have a valid username which consists of either a first or last name. Suppose you knew that "FRED" was a valid account name, but you had not yet found a password. You could then load the "INITIALS1" password database, hop into the Password Database Editor, and find the number of the "FA" password in the list. You could then select that number in response to the "START AT PASSWORD #" prompt in the Dialogue Editor section of the PPP. This would allow you to attempt all 26 possible two-letter initials combinations starting with the letter F. To use three-letter initials combinations starting with the letter F, you could place the F in the Dialogue on a PPP output line, followed by an ignored SYS line, followed by a ctrl-P password flag in the next PPP line like this:

5 – SYS: ENTER PASSWORD:
6 – PPP: F;
7 – SYS: <IGNORED>
8 – PPP: <P/W>

You would then run the Penetrator through both the entire INITIALS1 and INITIALS2 databases to hack all possible (likely) 3-letter combinations starting with "F". Nice eh? Similarly, suppose you knew that "SMITH" was a valid username, and wanted to try all possible 3-letter initials combinations ending with "S". A section of the dialogue could look like this:

5 – SYS: ENTER PASSWORD:
6 – PPP: <P/W>S

Where line 6 was entered as "ctrl-P S". This example illustrates the capability of the Penetrator to accept more text after the ctrl-P on a password-containing line. With line 6 entered in this way, the Penetrator would send two-letter combinations immediately followed by an "S" like this:

(Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 756 of 1262)
If you feel the need, you can easily create your own password databases using a program or word processor rather than the PPP's Database Editor. The databases are standard ASCII sequential text files containing the number of passwords as the first record, and then that number of passwords each separated by a carriage return. A database containing the passwords "THIS", "IS", "A", and "TEST" would look like this:

```
4
THIS
IS
A
TEST
```

Knowing this format, you could easily create a database of numerical passwords, etc. using a simple BASIC program.

If you are new to hacking, try to find a DEC-20 system to practice on. They are VERY wimpy since a simple "SY" command reveals a list of valid logged-on usernames even before you log on. In addition, DEC's will tell you immediately if an attempted username is invalid.

I hope you find the PPP as quick and versatile as I have. The world is in severe need of more good hackers.

Happy Hacking.

Call El Infierno BBS (312) 623-6761

novelist.
Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 758 of 1262
From the main menu you have six options. View good codes. Delete good codes. Start hacking. View these docs. Reconfigure. And a hidden option, the credit screen.

**VIEW GOOD CODES**

First you must enter the correct prefix. Use the correct ProDOS format. Example: /proterm/ppc.codes

At the input prompt, where you are asked to enter the prefix, press 'esc'ape to return to the main menu.

This allows you to view a list of saved PCP codes you have, and if you wish, print the list out.

**DELETE GOOD CODES**

First enter the correct prefix. Use the correct ProDOS format. Example: /proterm/ppc.codes

At the input prompt, where you are asked to enter the prefix, press 'esc'ape to return to the main menu.

This allows you to delete a list of saved PCP codes you have.

**CREDIT SCREEN**

Press ? to access this. It is a simple explanation of the program and a quick credit for me, the author of the program. Also you may choose CREDITS.

**START HACKING**

<see hacking procedures, roman numeral III>

**VIEW THESE DOCS**

Hell, you got here, you should remember!

When it asks if you wish to print the docs out, you may press 'esc'ape to abort to the main menu.

**RECONFIGURE**

This takes you back, and allows you to change your modem type, modem slot and printer slot.

**PCP SCANNER**

Final addition to the program. Scans out pcp addresses. No documentation, pretty simple to use.

**III. Hacking Procedures**

First the program will load in Modemworks, the correct driver, and Amperworks. Then it will run the PCP Hacker. You must again answer a couple more questions.

**PCP NUMBER [xxx-xxxx]**

Enter the number of your local PCP port in the format shown. If you wish to call a port that is not local. Enter it in as l-(xxx)-xxxx (you'll overrun the brackets - but that doesn't matter).

**STATE AND CITY DESTINATION**

This is the abbreviation of the state and city put together you use to connect. You can get a list of these from your local PCP port by entering at the @ prompt, C PURSUIT - at username and password type guest - then go to the main menu, then go to the downloads. Look through the downloads, and you should stumble across a list. Some popular examples: MMMIN, CALAN, NJNEW, TXDAL, TXHOU, etc. It's usually best to pick a less popular state - for sometimes the PCP ports can get congested and that would ruin your hacking efforts because an error message would be sent back, and the program would be unable to connect.

**SPECIFIED PCP FORMAT**

This next question will allow you to choose whether you wish to hack with a specified pcp format (this is very selective, and allows by far the best accuracy when hacking) or what I call the controlled chaos format. The controlled chaos format basically allows the user to add a suffix and prefix to the id and password, and it allows you to control the length of the id and password, by allowing you to set limits for randomizing the lengths.

Comparison between formats:

- **CONTROLLED CHAOS**: Will allow the randomization of length of the password and id.
- **SPECIFIED PCP FORMAT**: One specified length.
- **CONTROLLED CHAOS**: Will allow a suffix and prefix to be added to both the password and id.
- **SPECIFIED PCP FORMAT**: Allows the pinpointing of exactly what should be a number, letter, copying of other characters, selection from a preassigned list format, and an unknown mark.

**SPECIFIED PCP FORMAT**

If you choose the specified pcp format option, a row of numbers will appear.

```
0000000001111 etc.
1234567890123
```

x

The numbers are to be read from top to bottom. Example: See where the x is? Notice it is under a 2. And notice above the two is a 1. So reading it from top to bottom you get 12. The x is in space 12. This will be used later with the copy function.

**ENTERING THE FORMAT**

You can use any of the following commands.

```
CONTROL-L or \ = Limited Set.
CONTROL-C or \ = Copy.
? = Unknown.
# = Number.
$ = Letter.
, = Separation of Id and Password.
any # or letter = Preassigned Specified Characters.
CONTROL-L or \ (LIMITED SET)
```

This basically allows a random choice from a list that you enter. Let's say you know the first character is always either an A a 6 or a Z. The first thing you would press is CONTROL-L or \\. Down the screen the following will appear: [Set]: at this you would enter the set. A6/2 - making sure to separate each character with a SEMI-COLON. (\). Example

```
APPLE/2
KIM
MARTIN
```
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Apple II Computer Info

00000 etc.
123456789

[Set]: A/6;Z

Now you will be returned to space 02. Now when hacking, the first characters will either be an A, a 6 or a Z, depending on how the randomization turns out.

Example: C D/MMIN/12,A < that first character will either be an A, a 6 or a Z.

NOTE: You can only have one character inbetween the seperating markers. In other words, you can't have "16;20;30" because they would each take up too many spaces, and these are only good for one space.

CHANGING THE RANDOM PROBABILTIES IN A LIMITED SET

The way the set command works is, let's say you entered [Set]: A/6;Z - okay, so then you finish entering everything, and the program calls up Pcp and starts a nice little hacking job. It goes through, printing the characters to the screen, then it comes to the set command. It says "Hmmm, I see there are three characters that aren't semi-colons in that set. So, I'll pick a random number 1-3. Then I'll compare it to the set to come up with a number. Okay, here goes. **** 3 - so we'll use the Z". - get it? Pretty simple.

What you can do to offset the outcome some, is enter more of the desired character. Let's say you know the second character of the id is either a 0 or a 1. You also know the 0 is used more frequently. You would go like this: [Set]: 0;0;0;1 or [Set]: 0;0;1 or [Set]: 0;0;0;1 - or however much you want to offset the balance. In the first set [0;0;0;1] there would be a 3 in 4 chance the 0 would be picked, and a 1 in 4 chance the 1 would get picked. So in the [0;0;1] set, there would be a 2 in 3 chance the 0 would get picked, and a 1 in 3 chance the 1 would get picked. It is very simple.

CONTROL-C or { (COPY)

This function allows you to duplicate another character. Here's an example.

00000000 etc.
123456789

#&##&##

As later you will learn, # picks a random number, & a random letter. So, let's say you know the pcp format is number, letter, number, letter, number, letter, number, and the next character (the 08 character) is the same as the first character (01). So let's say a 9 comes up in 01, then a 9 should be in 08. So all you do is go to 08 and hit { or CONTROL-C.

0000000001
12345678901

#&##&##

[Copy]:

Now, at the [Copy]: prompt, you should enter the space you wish to copy. Since you want the (08) space to be the same as the (01) space, you should enter 01, or just 1.

[Copy]: 1

Now, when the program hacks the 08 space will be the same as the 01 space.

00000000
12345678

Example: C D/MMIN/12,9ZZC4279

Notice the 08 space and 01 space are the same.

(Note, when copying, you must use a number BEFORE the number you are copying. In other words you CAN COPY 01 if you were at 08, but you CAN'T COPY 13. If you wanted 08 and 13 to be the same, you would put the correct sign at 08 (like are 08 and 13 always numbers? then put a $, or letters? put a $) and then when you get to 13 you would do a COPY and then [Copy]: 08.)

7 (UNKNOWN)

The unknown marker is basically for if you don't know if it's a letter or a number. Example:

00000
12345
#$??

CHANGING THE RANDOM PROBABILTIES IN A LIMITED SET

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[Copy]: 1

Now, when the program hacks the 08 space will be the same as the 01 space.

00000000
12345678

Example: C D/MMIN/12,9ZZC4279

That is what you would enter (PLL;###L##,$#3##{).
Here's why:

The id always starts with PLL, so you simply type PLL.

Then next character is either a 0 or a 1, so you would use the LIMITED SET command.  You would hit CONTROL-L (or the l character) and at the [Set]: prompt, you would enter 0 and 1 like this: [Set]: 0;1

NOTE!  YOU MUST REMEMBER TO USE A SEMI-COLON (;) TO SEPERATE THE ITEMS.

IF EXTRA IGNORED? APPEARS - THAT MEANS YOU FORGOT, AND EITHER USED A COMMA OR A COLON (:) TO SEPERATE THE ITEMS WHICH IS A * NO-NO *.

The next three characters are numbers.  So you enter a # for each of them.

Then there is always a L, so you press L.

Then there are always two more numbers, so press a # for each of them.

The password starts with a letter, so enter $.  

The next character is always a number, so enter 1.

The next character is always a 3, so enter 3.

The next two characters are always numbers, so enter a # for each.

The last character is always the same as the first in the password.  So you would use the { or CONTROL-C, the copy command.  At the [Copy]: prompt you would enter 12, since you want the character to be the same as the 12th character.  (Wah!  Lost?  Did the example roll off into the twilight zone?  Should have printed the docs out!).  (Hmm, where have I heard that before?).  

CONTROLLED CHAOS FORMAT

This applies only if you chose not to use the specified pcp format option.

PCP ID TO USE OR RETURN

If you want to hack a specific PCP Id you, lets say, accidently saw after accidently reading someone’s email or something, at this point you would enter the id (like if you only found the id, and not the password).

EXAMPLE:  PLL000000L or PCP1234LLL

If you don’t have a specific ID you want to hack, simply press return.

PCP PASSWORD TO USE OR RETURN

Similar to the PCP ID TO USE input, except in this case, lets say you stumbled accross a PCP password, but not the ID, then you enter the password at this prompt.

If you don’t wish to hack a specific password, press return.

NUMBER OF DIGITS IN PCP ID

This allows you to set how many codes to be found before the program shuts down.

NUMBER OF CODES TO FIND

From [5]  (since you don't include the PCP, since that is a prefix - it’s always the same)

To [5]  (There are only 5 random digits in the id, so you type the same number in the TO box that is in the FROM box).

NUMBER OF TRIES

This allows you to set, lets say 100 tries, and after the program attempts...
100 tries, it will automatically turn itself off.

Output of Valid Codes

You can either select PRINTER, DISK or BOTH.

PRINTER

Prints a found code onto the printer, using the printer slot given when you configured.

DISK

Appends the code onto a file. If you choose this you must choose the prefix and filename to store the file at. Use the correct prodos format. Example: "/PRINTER/PCP.CODES" - the program will print the code and the date.

BOTH

Puts it to both the PRINTER and DISK.

Press a key to start or escape to abort. Your final decision. Go for it, or not?

While it hacks... PRESS CONTROL RESET for an instant abort. This is the only way the modem will shut off immediately.

OTHER

How do you know you have the wrong driver? The program will say "Beginning Hack Procedure..." and freeze up on you. I personally use the "OTHER" driver with my //c, Apple Modem 1200. (Fully Hayes compatible).

At the top of the screen, across from my credit line, it says FOUND: there it will print how many codes have been found.

How the program works - the program enters a code in the correct format. Then it searches for the @ prompt. If it finds the @ prompt, it assumes it is a bad code. If it does not get the @ prompt, it will continue and wait for the prompt for 60 seconds, and if the prompt is still not given, assume that it is a good code.

This is based on how Pcp works.

Example run:

@C D/MNMIN/12, PLL000000L, L0000L
INVALID ID OR BAD PASSWORD

here the program will wait for the @ prompt, and get it, so it will continue
to hack.

@C D/MNMIN/12, PLL000000L, L0000L
CONNECTED /MNMIN/

here, the program will wait 60 seconds, and since no @ prompt appears, it will assume it is a good code, and same the code.

IV. HOW TO USE THIS PROGRAM (AND WHEN)

No one I've ever heard of has gotten busted using PCP. So, let it hack all night. Set it up at about 8pm, and go away, do whatever. And let it hack until 8pm or 10pm the next morning. Remember, the only drawback to hacking PCP accounts is ---- THEY TAKE A LONG TIME TO GET!! Basic estimates into how much time it does take was given to me by an IBM user as one day per code.
PD-Edit Users Guide

By Rosemary Robertson-Smith

I DISCLAIMER

Copyright (c) 1989 Rosemary Robertson-Smith

PD-Edit is Shareware. You may distribute it freely, but to use it legally after a 10-day evaluation period you must send $15 to:

Rosemary Robertson-Smith
Ramtrack Software
72 Bowers St.
Nashua NH 03060
(603) 889-6521

In return, you will receive the latest copy of PD-Edit and a registration number entitling you to technical support from the author. You will also receive the next update free. Your honesty will enable Ramtrack Software to continue distributing quality Shareware products. All comments are welcome.

Please include a brief description of your system when you register.

PD-Edit v1.0

II INTRODUCTION

PD-Edit is a simple screen editor, designed for use by programmers and other users who don’t want to deal with the overhead of word processors. It is command key driven and avoids modes of operation whenever possible.

III GETTING STARTED

PD-Edit is a binary program designed to run under the BASIC.SYSTEM program or any other ProDOS system program that can start a BIN program. Upon startup, it immediately requests a file-name to edit. If no filename is entered, the program will exit.

When running, you may type in characters just as you would any word processor. You are only limited by the memory limitations of the ProDOS operating system.

The binary version of PD-Edit is called PDEDIT.BIN and the Aztec-C Shell version is call PDEDIT.PRG. You may rename the programs to the names of your choice.

IV COMMAND KEYS

Command keys are editing commands that invoke editor features. The following describes each key:

Left-Arrow
Move left one character.

Right-Arrow
Move right one character.

Up-Arrow
Move up one line.

Down-Arrow
Move down one line.

Delete
Delete previous character.

Tab
Insert spaces to next tab stop. Tab stops are user adjustable, but default to 4 character intervals.

Control-E
Toggle edit mode. The two modes are insert and overstrike. The current mode is always displayed in the status line.

Control-T
File statistics. Displays the current line number and total number of lines, including the start and end markers.

Control-Z
Clears buffer.

Escape
Execute special command. Special commands are:

READ [file-name]

WRITE [file-name]

EXIT

QUIT

TABS [Width from 1 to 32]
Open-Apple-I

Insert a new line after the current line.

Open-Apple-K

Start selecting lines for cut. Only whole lines may be cut and pasted.

Open-Apple-L

Toggle macro mode. When macro mode is started, the status line will display the word LEARN. Until the Open-Apple-L command is pressed again, all keystrokes are recorded.

Open-Apple-M

Execute the macro that was most recently recorded by the Open-Apple-L command.

Open-Apple-N

Find next occurrence of search string that was entered using Open-Apple-F.

Open-Apple-P

Paste previously cut lines.

Open-Apple-R

Set a repeat count. A repeat count will cause the next command to be repeated the specified number of times.

Open-Apple-S

Substitute for text. It will request a search string and then a replacement string. You have the option of replacing none, the highlighted characters, or all occurrences of the search string. You may type in any printable or non-printable character for the search.

Open-Apple-T

Move to the top of buffer.

Open-Apple-U

Undelete a line. Undelete only recalls the last deleted line. Two deletes in a row will only permit the undo of the most recent delete.

Open-Apple-W

Move the cursor forward to the first character after the next white-space. If there are no white-space characters on the line, the cursor will be placed at the first non-white-space character in the next line.
Open-Apple-X
Delete current character.

Open-Apple-Z
Refresh screen, placing the current line near the middle of the screen.

V REQUESTING MORE INFORMATION
For certain commands, you will be prompted for more information. The routine that requests the input has the following edit features and restrictions:

- Control-Z will clear the current input buffer.
- Delete will erase the previous character.
- Escape will cancel the input and return to the editing window.
- Cursor key movement is not supported.
- A beep will sound when you reach the maximum number of characters or you attempt to insert an invalid character.
- To insert non-printing characters such as a TAB or FORMFEED, you must hold the Open-Apple key down while pressing the desired key.
- If the input has a default value, the cursor will be placed after the last character in the default.

VI EDITING TIPS
If your line exceeds 80 characters, an exclamation mark will appear at the end of the line. This indicates that there are hidden characters. You can still use all the cursor movement and search commands; however, while accessing characters past the 80th column in a line will keep the cursor at physical column 80.

If you move the cursor down to a line that is actually shorter than the previous line, the cursor will not be placed at the end of the line; instead, it will maintain its horizontal position. If you do not insert any characters, the original end-of-line will not change; however, if you do insert a character, PD-Edit will fill the line with spaces until the end-of-line is at the current cursor position.

Tabs insert spaces and not the ASCII tab character. This costs more memory; however, it makes your text files compatible across many platforms.

VII RUNNING PD-EDIT FROM THE BASIC SYSTEM PROGRAM
The following EXEC file should be created to properly run PD-Edit from Apple BASIC:

```
BRUN EDIT -BASIC.SYSTEM
```

The reason for reloading BASIC after running the PD-Edit is that some global information is overwritten by the editor. This will prevent proper BASIC operation.

VIII EDITING AN APPLE BASIC PROGRAM
To edit an Apple BASIC program, you must first convert the program to a text file by placing the following lines at the beginning of the BASIC program:

```
1 PRINT CHR$(4);"OPEN PROGRAM.BAS"
2 PRINT CHR$(4);"WRITE PROGRAM.BAS"
3 LIST
4 PRINT CHR$(4);"CLOSE PROGRAM.BAS"
```

This will cause a listing of the current program to be placed in the file "PROGRAM.BAS", which can then be edited by PD-Edit.

To convert the text program back to BASIC, issue the following command:

```
EXEC PROGRAM.BAS
```

IX PROGRAM TAMPERING
If you suspect program tampering, or you just want to reassure the integrity of the editor code, there is a checksum program that can be run. Execute the following procedure:

1. Get into Apple BASIC
2. BRUN CHECKSUM
3. It will then prompt you for the editor file name. You must provide the complete ProDOS path.
4. The program will print out 3 numbers.
5. Call the author and request a program checksum validation. You must provide the numbers printed out by CHECKSUM and the PD-Editor version number. The author will confirm whether the program has been modified by an unauthorized user.
X TECHNICAL INFORMATION

PD-Edit has approximately a 17,000 character limit on the size of a file. If you attempt to load a file that is larger than this limit, PD-Edit will truncate it. The 17,000 value may vary due to file attributes. A line in a file requires 9 bytes for overhead, so the amount of memory available to the editor is directly proportional to the number of lines in the file and each line length.

The maximum line size is 250 characters.
The maximum file-name length is 64 characters.
The maximum repeat-count is 5000.
The maximum search/replace string is 32 characters.
The maximum tab width is 32 spaces.
The maximum length of the macro buffer is 255 characters.

PD-Edit is written using the C language and 6502 assembler.

Preliminary Training: If this is your first experience controlling a Hydrofoil, you may want to sit back and watch a demonstration.

Here’s how:

When you have your computer up and running, you will be presented with a selection of assignments. Each assignment is a mission taking you to various sensitive parts of the world. These are described in detail in Part II of this manual. To watch the demo, select MISSION 0 from the list of nine. As you watch, take note of the two 'view modes' (Bridge and Operations Map) and the features you can control from each. You may want to read Part III of this Manual as you watch the demo.

When you feel you are ready to undertake a real mission, press Shift-Q to quit the demo and then select another one. We suggest you start with one of the early missions before attempting the more advanced ones.

Part II: Assignments

Once you have received basic Hydrofoil training, you will be in a position to undertake the following assignments as part of the TAG task force. Of these eight assignments, the first two are part of your advanced training, and provide you with simulated combat experience. We strongly recommend that you gain proficiency in the first two assignments before you proceed to the more advanced missions.

At the end of each assignment you will receive a score and a rank, based on your performance during that mission. Scores are calculated on the basis of five factors, as described below. Note that the actual values will vary from mission to mission, because of the different objectives of each one. For example, in the first assignment (Battle Training), speed and destruction are the most important factors, while survival is not. By contrast, in the fourth mission (A Better Part of Valor), survival is most important, while destruction of enemies is relatively unimportant.

Scores:

1. Main Objective: Full points are awarded if the mission is successfully completed; no points if the main objective was not accomplished. Range: 1000 - 5000 points.
2. Enemies Destroyed: Points are awarded for each enemy destroyed. Range: 50 - 500 points.
3. Enemies Damaged: Points are awarded for each enemy hit but not destroyed. Range: 25 - 250 points.
4. Time Remaining: Points for time remaining are awarded only when the mission is successfully completed before time runs out. Points are for each minute remaining. Range: 1 - 4 points/minute.
5. Survival Bonus: Survival points are awarded when the mission is successfully completed or when time runs out, assuming you haven’t been blown to shit by the enemy. Points are awarded for each of the twelve sections of...
the ship that are capable of sustaining damage (six for the hull and six for the system). Full points are awarded for undamaged sections, half for slight damage (yellow on the damage display), and no points for heavy damage (red on the display). Range 20 – 200

RANKS:

Ranks are based on points earned, with different scales for each mission, depending on their relative difficulty. For example, because the training exercise is the easiest of all the missions, you can only advance to Lieutenant, no matter how high you score [Sucks]. More difficult missions, such as Search For Terrorists, allow you to achieve rank of Captain, while the most difficult ones, such as Supply Convoy, allow you to reach the top rank of Admiral [wow!]. In any case, to achieve the top rank in a assignment you must accomplish the main objective.

The ranks, in ascending order, are as follows:

Deck Mopper
Ensign
Lieutenant
Commander
Captain
Commodore
Rear Admiral
Admiral

The Missions:

1) Battle Training:
Ten enemy ships will be introduced to your training area off Key West, one at a time. These vessels will range from simple patrol boats all the way to powerful Nanuchka II missile corvettes. This exercise is designed to familiarize you with the PHM and its weapon systems.

Objective: Sink all simulated enemy ships.
Rank Attainable: Lieutenant.

Strategy Tips: This is a good learning assignment. Use your gun on the patrol boats, and save your missiles for the bigger ships.

2) Graduation Exercise
In this exercise, all the enemy vessels you seen in the first assignment will be coming at you all at once, doing their best to blow the shit out of you. Sink all the enemy vessels as quickly as possible is more important than surviving undamaged.

Objective: Sink all simulated enemy ships.
Rank Attainable: Lieutenant

Strategy Tips: Get moving right away; you're a sitting duck if you don't. Use you missiles on the more distant ships and your gun on the closer ones. Watch your radar for fast-moving dots approaching your ship. These are enemy missiles. Use chaff to deflect them. (See Part III).

3) Terrorist Attack
Approx. eight hours ago, terrorists attacked a seaside resort, killing dozens of vacationers and wounding hundreds. The terrorists were seen fleeing west in various patrol craft. Witnesses estimate seven to ten vessels of varying types, some suspected to be OSA I missile boats, others small patrol vessels. Your mission is to seek and intercept these vessels, and sink them.

Objective: Sink all simulated ships.
Rank Attainable: Commander

Strategy Tips: The terrorist vessels are to the west of your starting position and moving rapidly north. Try to cut them off, while avoiding their allies coming in from the northeast. Save you missiles for the OSA class ships.

4) A Better Part of Valor
War is brewing in South America. Your PHM is needed there as soon as possible. From your base at Key West, you will need to navigate the dangerous Yucatan Straits between Mexico and Cuba in order to reach southern waters. To accomplish your objective in this assignment, you need only to get PHM to the southern edge of the map. Look out for enemy vessels who will be trying to stop you. Use your SeaSprite helicopter to screen your PHM and help you avoid the enemy, or to help you seek out and destroy the bastards.

Objective: Escape with your Hydrofoil off the south edge of the map with as little damage as possible.
Rank Attainable: Commander.

Strategy Tips: Keep moving at full speed. Engage enemies at extreme range with your missiles if they are in your path.

5) Search for Terrorists
To missile corvettes have unsuccessfully attacked an American base off the southern coast of Sicily. A Sparviero Hydrofoil and an AB 212 helicopter are available to help hunt them down. The mission objective is to sink both attackers (who will be fleeing south) before they escape. They are thought to be fleeing toward Tripoli, and can be distinguished from similar vessels by their course. Although a variety of enemy ships will be patrolling along a line north of Tripoli, remember that the fleeing ships are your main objective!

Objective: Sink the two fleeing Nanuchka II class ships.
Rank Attainable: Commander.

Strategy Tips: Try to avoid the other ships on your way to your objective. Save your missiles for them.

6) Supply Convoy
A South American country has been taken over by a dictator, who has succeeded in turning the Caribbean into a war zone. Your mission is to escort a high-speed cargo ship carrying medical supplies and food to a group of refugees. The dictators forces consist of two varieties of a convertible Vosper-Thornycroft Hydrofoil ship that comes with either missiles and a small caliber gun, or just a 76mm cannon identical to your own.

Objective: Get you convoy ship to the southern part of the eastern edge of the map.
Rank Attainable: Admiral

Strategy Tips: Conserve fuel by keeping your engine setting at 2 or less as much as possible, sprinting ahead at high speed only when you spot enemies or when you fall behind your convoy ship. Keep the convoy moving at full speed toward the south one-third of the edge of the map, an use your helicopters to spot attackers before they can get close. Keep your ship between the attackers and the convoy.

7) Surveillance Mission
It is suspected that the military equipment is being smuggled to the dictator through an outwardly neutral South American country. A cargo ship has been photographed loading up with tanks and aircraft parts in the Baltic, and is believed to be approaching Nicaragua. Seven ships of similar construction carrying farm machinery and building supplies are also entering the area to provide cover for the arms ship. Your mission is to find all eight ships and photograph them at close range so their identities can be established and compared with that of the suspected arms ship. Photography is accomplished automatically by approaching to within 1500 feet of the ship and training your binoculars on it (by choosing it as a target), BUT be careful not to sink them simultaneously. All of these vessels will result in an international incident, and immediately end the mission in failure. Use your two Seahawk helicopters to scout out the cargo ships. Some of the dictators forces are believed to be in
Objective: Find and photograph all eight cargo vessels in the Caribbean without sinking any.

Rank Attainable: Rear Admiral.

Enemy Vessels: Cargo ships, OSA II missile boats.

Strategy Tips: The cargo ships move slowly, but they are scattered all over the sea and will eventually reach a safe port. Move fast, and use your helicopters to find them as soon as possible.

8) Jhiau: Your mission is to escort a supply ship out of the Persian Gulf. The only complication: a war is going on [christ, that's all?], and innocent ships are being fired upon without warning. The supply ship is trying to evacuate western workers from the war zone, but the captain is too frightened to try and escape through the maelstrom of warring factions that fill the Gulf. You will need to make your way through the Straits of Hormuz to Kuwait where you will rendezvous with the supply ship. The supply ship will respond to your controls in the same was an auxiliary helicopter (see Part III).

Strategy Tips: You're on your own for this one...

Part III: Hydrofoil Operation

Introduction:
The Hydrofoil is an all weather, high speed, compact weapons system, making it ideal for strike, patrol and surveillance missions. Because of its fully submerged foils, the Hydrofoil is capable of sustained high-speed runs across harsh seas, with a maneuverability of a 76mm gun, missiles, and chaff for radar deflection.

As Hydrofoil commander, you can switch between the view from the Hydrofoil bridge and a top-down view of the operations map. Each uses its own set of the keyboard and joystick controls. Specific operating instructions are given in the command summary card, included in your information packet. (what a joke)

The View From The Bridge:
The top half of the screen shows the view from bridge. The cross is the aiming cursor, while the blinking little line is the aim correctors light, and the think that line is the binocular view. The bottom half shows the Weapons indicator on the lower left side (where it says gun, chaff, HASM), the middle where the circle is, is the radar screen, and on the right side, the damage indicators appear. The bottom has the time compression on the lower right half of the screen. The Hydrofoils Instruments are composed of:

- Gyrocompass - Indicates Hydrofoil current bearing; north being straight up
- RPM - Indicates Hydrofoils engine speed
- Speed - Indicates Hydrofoil speed in knots
- Radar - Shows all craft within Hydrofoils radar range
- Weapons Status - Indicates which weapons are currently active and the number of rounds remaining
- Fuel - Indicates the amount of fuel remaining
- Warning Indicators - Red warning indicators show a potential problem
- Depth - Indicates danger of running aground. Flashes when heading towards land

Lock - One or more enemy missiles are locked onto you. Fired or are about to be fired upon by enemy ships

Damage - Shows which parts of the ship (yours) are damaged.

Operations Map:
The Operations Map shows the helicopters, convoys, and the Hydrofoil. The circle with one dot is helicopter 1. If it has 3 dots, its helicopter 2, the diamond is a convoy, and the small circle is your ship. You can switch from the view from the bridge to a map of the surrounding area. The map shows the entire area of operations for the current assignment. It shows all the major land masses, the borders of the current assignment, the location of the Hydrofoil, the locations of all the friendly forces and its radar range. In addition, the operations map shows the locations of your helicopters. Control of such helicopters or an escorted convoy is maintained from the Operations Map.

Weapons and Defenses:

- 76mm cannon: its fire rate is 30 rounds per minute, its effective against Aircraft and missiles, its range is about ten miles. Because of the needed time for a shell to travel to its target, the effective range against moving targets is approx. six miles. Thus, even through your fire control radar allows you to lock on to a target, you will need to 'lead' your cannon ahead of moving targets further then one or two miles away.

- Chaff rockets: These allow you to fire exploding rockets filled with aluminum foil into the air. When they explode, the rockets disperse their chaff into the air, attracting the enemy missiles and deflecting them from your ship. Your best strategy on using the chaff rockets is to fire them when you are moving at a right angle to the oncoming missile. Chaff is best fired when the enemy missile is about a mile away.

- Harpoon Missiles: These are the most accurate and most potent weapons. They will hit their target 90 percent of the time, its most effective against Aircraft and missiles, its range is about ten miles. Because of the needed time for a shell to travel to its target, the effective range against moving targets is approx. six miles. Thus, even through your fire control radar allows you to lock on to a target, you will need to 'lead' your cannon ahead of moving targets further then one or two miles away.

- Exocet Missiles: Same as Harpoon Missile.

- Radar: Your radar system's range is about 40 miles, although it is greater from the front or the back of the Hydrofoil. You can take advantage of this by turning the Hydrofoil towards the target. Your Hydrofoil is represented by a flashing 'blip' in the center of the display. If this 'blip' isn't flashing, another ship is very close to you.

- Auxiliary Craft: Some assignments involve the use of search helicopters. In such cases, helicopters are controlled from the Operations Map, same applies to Convoy ships.

- Damage: Your Hydrofoil is capable of operating even if it sustains damage.

- Hull Damage: The Hydrofoil's hull is separated into six watertight compartments. Light damage to any or all of the six compartments does not affect the ship, but serves as a warning that continued hits will cause heavy damage. Heavy damage to a critical number of compartments can sink your Hydrofoil. This critical number varies among the different Hydrofoils, as follows: the PMH can sustain heavy damage to four compartments before sinking, the Israeli Flagstaff II will sink after heavy damage to two compartments.
**System Damage:**
- **76mm Cannon:** Light damage may cause your gun to misfire; heavy damage will disable it completely.
- **Engines:** Light damage decreases your max speed; heavy damage decreases it even more, sometimes to the point of immobility.

**Operating Instructions:**
- You can operate your Hydrofoil either from the Bridge or from the Operations Map. To switch from one to the other, press 'V' on the keyboard. From the Bridge you can maneuver the Hydrofoil, or select, aim, and fire your weapons. You can also adjust your radar scanning range from 2.5 miles to 40 miles. From the Operations Map you can control your aux. vessels, or you can set your Hydrofoil on a course using automatic pilot. Some operations are available in either mode. Thus, from either the Bridge or the Operations Map you can pause and restart proceedings, you can quit and select a new mission, and you can speed up or slow down the passage of time. You can speed time up to 128 times; thus, when you do so, every element is affected equally.

**Bridge:**
- Maneuvering the Hydrofoil: You can maneuver your Hydrofoil with either the keyboard or joystick. Moving the joystick forward speeds up the ship, while pulling it back slows it down. Moving the joystick left or right moves your ship that way. See the command summary card for the keyboard equivalents. Note that the Hydrofoil manually from the Bridge has the effect of disengaging the automatic pilot.

**Aiming and Firing Weapons:** You can also use the joystick to aim and fire your weapons. Pressing the <Spacebar> toggles the joystick between maneuvering the hydrofoil and aiming your weapons. To aim at a target, you first need to select it from among the enemy craft within your radar by pressing T several times until the target is bracketed on your radar screen. At that point the target vessel appears in the binocular view at the top of the screen. To aim your gun, move the aiming cursor so that it is over the target in the binocular view. Move the joystick forward to move the cursor up, and move it back down to bring the cursor down. Moving the joystick left or right moves the cursor left or right. To fire weapon, press the fire button on the joystick or strike <return> on the keyboard. You can correct your aim by using the 'aim corrector': move the aiming cursor toward the aim corrector and fire again. Note that you only need to aim your gun once. Missiles automatically go toward the ship in the binocular view at the time of firing, while chaff affects all incoming missiles depending on their distance from the Hydrofoil. You select an of the available weapons from the keyboard, see your command summary card for details.

**Operations Map**
- **Automatic Pilot:** To set a course for hydrofoil, first make sure that the Hydrofoil is selected by pressing the appropriate key. Next, move the cross hair to your destination point and press a key (1 through 5). Pressing 5 moves the Hydrofoil to its destination at full speed, while 1 moves the Hydrofoil at its slowest speed. If you already have a speed selected, you can press the joystick button to move the Hydrofoil to the new destination at the currently selected speed. Pressing 0 stops the Hydrofoil. When you return to the Bridge, changing direction (w/keyboard or joystick) disengages the automatic pilot and returns you to manual control. You can, however, change the Hydrofoil’s speed from the Bridge by pressing keys 1 through 5 without disengaging the automatic pilot.

**To re-engage automatic pilot, return to the Operations Map, select the Hydrofoil, then press the joystick button or select a speed as before. Your Hydrofoil will then move toward the previously selected destination.Messages on the Bridge and Operations Map indicate current status of the automatic pilot.**

**Controlling Aux. Craft:** When you are in the Operations Map you can control the aux. craft that are available to you. Depending on the assignment, these can include helicopters, or a convoy of ships. To control an aux. craft, first select it by pressing the key for that craft (see command summary card. AGAIN!!! would of been easier to just do the Q-ref card it self) and then move the cross hair to the destination point. Press 1 though 5 to set the aux. craft's speed and start it off towards its destination.

**Aux. Craft in the Operations Map are color-coded:** Helicopters are green, and the convoys are gray. Each aux. craft is also identifiable by its own icon. To display the aux. craft icons, press D, this changes the display from radar circles to the vessel icons. This feature is particularly useful if many enemies are nearby.

**Time Compression:** You can use time compression to speed up events in the Operations Map until you get to the center of the action. You can then slow events back down, or you can leave them speeded up. If you compress time to more than eight times normal, any action from the enemy (such as missile or cannon shot) will automatically slow it back down to eight times. This way you can use time compression to make your assignments more challenging.

**OVERVIEW**

**PHM Command Summary Card (Quick Ref.)**

**PHM Pegasus is a simulation requiring both strategic and tactical ability. The object is to complete each mission by achieving it's main objective in as short a time as possible.**

**Getting Started**

**Let's skip this.**

**Spotter Cards**

**The identification cards in the center of your Manual can help you spot and identify the vessels and aircraft that are active in each mission. Shooting friendly vessels can make you very unpopular with the Commodore (I almost barfed when I saw that word too) so it is particularly important that you identify the vessels in each mission. This way you won't end up shooting the convoy you are trying to rescue. To use the cards, CAREFULLY remove them from the manual by tearing the center perforation, and then tear out each card individually. Before you start an assignment, read the mission description in the Manual and select the card for each vessel in the mission. Keep the cards as handy as you proceed with your assignment, and refer to them when you need help identifying one of the vessels.**

**KEYBOARD COMMAND SUMMARY**

(Note: some of the following commands are accessible through the joystick. Such commands are marked with an asterisk * . See Joystick Control section following.)
The object is to get the flashing squares in a row. You can squash up to 8 baddies in the process.

The keyboard commands are:

A, Z, ->, <-

WHILE FACING BLOCK:

RETURN = BLAST BLOCK
SPACE = MOVE BLOCK

JOYSTICK COMMANDS:

PRESS BUTTON 0 TO START

WHILE FACING BLOCK:

BUTTON 0 = MOVE BLOCK
BUTTON 1 = BLAST BLOCK

CONTROLS:

[ESC] = PAUSE
CTRL V = VOLUME
CTRL R = RESTART
CTRL C = CHANGE CONTROLS

You can use the joystick either to control the hydrofoil or to aim and fire your weapons. From the Bridge, in Movement mode, you can control the hydrofoil’s movement by moving the joystick left or right, and its speed by moving it forward or back. In Weapons mode, use the joystick to move the aiming cursor around the binocular view. Fire your weapons in either mode by pressing the fire button. You can toggle between Movement and Weapons mode by pressing the spacebar. From the Operations Map, use your joystick to set your destination cursor, and the fire button to set off on your course.
Retract refers to the ability to land on a square that has been occupied previously by one of the player's pieces. If you choose "No", once a player lands on a square, it can't be occupied again by either one of the player's or the computer's pieces. These squares will be marked as you go along so you know which ones can't be landed on. If a computer's piece lands on one of these squares, it will make its move again according to its set pattern. A player loses the game by landing on one of these squares. In a two-player game you can use this option to be able to block your opponent's path to the other side of the board. If you choose "Yes", any of the squares may be landed on again by either players' or the computer's pieces.

**MOVES AHEAD: ENTER 1-4**

**COMMANDS**

- **ESC = Restart or exit demo mode**
- **CTRLS = Sound on/off**
- **F = Pause**
- **Space = Continue**

**PLAYERS: ENTER 1 OR 2**

- **I = UP**
- **J = LEFT**
- **K = RIGHT**
- **M = DOWN**

**OPTIONS**

- After you enter your options, press RETURN. If you don't want to change an option, pressing RETURN will enter the option shown.

**MODE: ENTER P OR T (for Practice or Tournament)** In the practice mode, you choose the pieces to play against and their positions on the screen. The computer will ignore the numbers after the Round and Level options.

In Tournament mode, the computer chooses the pieces you play against and their positions.

**ROUND: ENTER 1-9**

- The higher the number you enter, the greater the number of pieces on the board. Round one starts with four pieces. One additional piece is added each round. No more than 25 pieces will be placed on any one board, however. This option isn't valid in practice mode.

**LEVEL: ENTER 1-9**

- The skill level determines the complexity of the playing pieces selected for play in the tournament mode. This option is not valid in practice mode.

**SPEED: ENTER 1-9**

- This is the speed at which the pieces make their moves. 1 is the fastest and 9 is the slowest. Should a player wish to follow the moves in detail, a slower speed should be selected. Once a player has mastered the moves, a faster speed will allow victory to come swiftly!

**RETRACE? ENTER Y OR N (YES OR NO)**

---

Retract refers to the ability to land on a square that has been occupied previously by one of the player's pieces. If you choose "No", once a player lands on a square, it can't be occupied again by either one of the player's or the computer's pieces. These squares will be marked as you go along so you know which ones can't be landed on. If a computer's piece lands on one of these squares, it will make its move again according to its set pattern. A player loses the game by landing on one of these squares. In a two-player game you can use this option to be able to block your opponent's path to the other side of the board. If you choose "Yes", any of the squares may be landed on again by either players' or the computer's pieces.

**MOVES AHEAD: ENTER 1-4**

**COMMANDS**

- **ESC = Restart or exit demo mode**
- **CTRLS = Sound on/off**
- **F = Pause**
- **Space = Continue**

**PLAYERS: ENTER 1 OR 2**

- If you choose 1, your piece just needs to avoid the computer's pieces. Choosing 2 means you have to avoid not only the computer's pieces, but an opponent's as well. In the two-player version, moves may not be deleted. Once entered, they stand.

**GAME ID: XXXX**

With the //E the arrow keys also work

You can't move diagonally. If the player's piece comes in contact with any other piece, the game is over.

Once the player's piece moves, each of the other pieces on the board move. The direction each other piece moves depends on two factors:

1. The type of piece
2. The direction the player's piece moved

If the computer's piece lands on another of its own pieces, it makes its own move again.

**WRAP AROUND**

The computer's pieces can wrap around the screen when making their moves. Your piece will not wrap around. If you enter a move which would take your piece off the edge of the screen, it will count as a move, but your piece will stay in the same place.

The four-digit ID code on the left represents the last game played and the one on the right shows the current game either pending or underway. You may enter 0-9 and A-F as identification codes. Exceptions: you can't use 0000 or have two zeros on either the left or the right. Tournament games can be replayed at a later date if you remember the Round, Level and Game ID code combination. Enter this information in the options.

**TO PRACTICE**

After you have entered your options, press ESC, then choose the ID
numbers of the pieces you want to play against. Press return after choosing the number. See the chart below for the ID #s of the pieces. Use the I,J,K,M keys to position the pieces on the board. Press return when each piece is in the position you want. When you have entered as many pieces as you want (1-25), press ESC to begin and choose a starting location for your piece. Enter 1-8, or "N" for New if you decide you want a different board setup.

In practice mode with only one player and more than one move ahead chosen, the "/" key allows a move (or moves) to be erased. You can't erase the last move, however, since once that is entered, the pieces begin to move. On the Apple //E, the DELETE key also works. During move selection, pressing "?" allows you to review the options you selected. Press any key to return to the game.

TO PLAY IN TOURNAMENT MODE

You must choose at least two moves ahead. After you've entered your options, press ESC. If you want to use a different setup, press N for New. Then choose the square you want your piece to start on. Enter 1-8. To choose your moves, use the I,J,K,M keys. In the two-player mode, players alternate selecting moves. The computer's pieces move according to the chart below.

During move selection, pressing "?" allows the review of the options selected. Press any key to return to the game. If you lose, the game will go back into Demo mode. Press ESC to begin another game, press R to Replay the last game with the same setup or press I to see an instant replay.

<table>
<thead>
<tr>
<th>ID#</th>
<th>PIECE</th>
<th>YOU MOVE</th>
<th>PIECE MOVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LEFT ARROW</td>
<td>UP</td>
<td>LEFT DOWN, DOWN LEFT, RIGHT LEFT</td>
</tr>
<tr>
<td>2</td>
<td>RIGHT ARROW</td>
<td>UP</td>
<td>RIGHT DOWN, DOWN RIGHT, LEFT RIGHT</td>
</tr>
<tr>
<td>3</td>
<td>UP ARROW</td>
<td>UP</td>
<td>UP DOWN, UP RIGHT, RIGHT LEFT</td>
</tr>
<tr>
<td>4</td>
<td>DOWN ARROW</td>
<td>UP</td>
<td>DOWN DOWN, DOWN RIGHT, DOWN LEFT, DOWN</td>
</tr>
<tr>
<td>5</td>
<td>4 ARROWS IN</td>
<td>UP</td>
<td>DOWN DOWN, DOWN RIGHT, DOWN LEFT, RIGHT DOWN</td>
</tr>
<tr>
<td>6</td>
<td>CIRCLE W/ +</td>
<td>UP</td>
<td>1 SQUARE LEFT, DOWN, 1 SQUARE DOWN, 1 SQUARE RIGHT, 1 SQUARE UP, 1 SQUARE LEFT, 1 SQUARE DOWN</td>
</tr>
</tbody>
</table>

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 772 of 1262
OBJECT--- TO KILL THE MIGHTY PENTAPUS

MOVE----- USE THE JOYSTICK

FIRE----- USE BUTTON

LEVELS--- 'K' FOR KIDDY GAME
       '1' FOR LEVEL ONE (EASY)
       '2' FOR LEVEL TWO
       '3' FOR LEVEL THREE (HARD!!)

ALSO TO SHRINK YOUR SQUARE----TOP BUTTON

ESC R---- RESTART GAME

ESC S--- TURN OFF SOUND

ESC C---- CLEAR ALL HIGH SCORES

ESC W---- WRITE CURRENT HIGHS ON DISK

HINTS---- WATCH DEMO MODE TO SEE FIRST 10 ATTACK MODES TO KNOW WHAT
       YOUR UP AGAINST

P.S. WATCH OUT FOR THE SMART BOMBS--- THEY HURT!!!

V. MAGIC

Spells

No.  Pts. Name              Type
1     1   Healing 1         E
2     2      "    2         E
3     3      "    3         E
4     4      "    4         E
5     1   Fireflash 1       C/A
6     2       "     2       C/A
7     3       "     3       C/A
8     4   Fireflash 4       C/A
9     1   Quickness 1       C/P
10    2      "     2         C/P
11    3      "     3         C/P
12    4      "     4         C/P
13    1   Strength 1        C/P
14    2      "     2         C/P
15    3      "     3         C/P
16    4      "     4         C/P
17    1   Protection 1      C/P
18    2      "     2         C/P
19    3      "     3         C/P
20    4      "     4         C/P
21    1   Confusion 1       C/A
22    2      "     2         C/A
23    3      "     3         C/A
24    4      "     4         C/A
25    1   Weakness 1        C/A
26    2      "     2         C/A
27    3      "     3         C/A
28    4      "     4         C/A
29    1   Binding 1         C/A
30    2      "     2         C/A
31    3      "     3         C/A
32    4      "     4         C/A
33    1   Mindblast 1       C/A
34    2      "     2         C/A
<table>
<thead>
<tr>
<th>Class</th>
<th>Level</th>
<th>Attributes Req.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fighter</td>
<td>1-5</td>
<td>STR*2 + DEX</td>
<td></td>
</tr>
<tr>
<td>Monk</td>
<td>1-10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ranger</td>
<td>1-15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Priest</td>
<td>1-20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wizard</td>
<td>1-20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SPELLS AVAILABLE AT DIFFERENT LEVELS BY CLASS**

<table>
<thead>
<tr>
<th>Level</th>
<th>Value</th>
<th>Req.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>3</td>
<td>Charm</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>5</td>
<td>Flamebolt</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>7</td>
<td>Sick</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>9</td>
<td>Teleportation</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>11</td>
<td>Resurrection</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>13</td>
<td>Disciple</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>15</td>
<td>Giant Shield</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>17</td>
<td>Large Shield</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>19</td>
<td>Medium Shield</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>21</td>
<td>Small Shield</td>
</tr>
</tbody>
</table>

**WEAPONS**

<table>
<thead>
<tr>
<th>Value</th>
<th>Req.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
<td>Stick</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>Knife</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>Small Club</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>Small Mace</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>Dagger</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>Staff</td>
</tr>
<tr>
<td>6</td>
<td>14</td>
<td>Axe</td>
</tr>
<tr>
<td>7</td>
<td>16</td>
<td>Axe +1</td>
</tr>
<tr>
<td>8</td>
<td>18</td>
<td>Sword +2</td>
</tr>
<tr>
<td>9</td>
<td>20</td>
<td>Sword +3</td>
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<tr>
<td>10</td>
<td>22</td>
<td>Sword +4</td>
</tr>
<tr>
<td>11</td>
<td>24</td>
<td>Sword +5</td>
</tr>
<tr>
<td>12</td>
<td>26</td>
<td>Sword +6</td>
</tr>
<tr>
<td>13</td>
<td>28</td>
<td>Sword +7</td>
</tr>
<tr>
<td>14</td>
<td>30</td>
<td>Sword +8</td>
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<tr>
<td>15</td>
<td>32</td>
<td>Sword +9</td>
</tr>
<tr>
<td>16</td>
<td>34</td>
<td>Sword +10</td>
</tr>
<tr>
<td>17</td>
<td>36</td>
<td>Sword +11</td>
</tr>
<tr>
<td>18</td>
<td>38</td>
<td>Sword +12</td>
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<tr>
<td>19</td>
<td>40</td>
<td>Sword +13</td>
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<tr>
<td>20</td>
<td>42</td>
<td>Sword +14</td>
</tr>
<tr>
<td>21</td>
<td>44</td>
<td>Sword +15</td>
</tr>
</tbody>
</table>

**SHIELDS AND ARMOR**

<table>
<thead>
<tr>
<th>Point Strength</th>
<th>Point Strength</th>
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</thead>
<tbody>
<tr>
<td>Fighter</td>
<td></td>
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<tr>
<td>Monk</td>
<td></td>
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<tr>
<td>Ranger</td>
<td></td>
</tr>
<tr>
<td>Priest</td>
<td></td>
</tr>
<tr>
<td>Wizard</td>
<td></td>
</tr>
</tbody>
</table>

**A. Potions**

Potions are used to restore hit and magic points.

- Healing 1-3 pts.
- Healing 4-6 pts.
- Healing 7-9 pts.
- Healing 10-12 pts.
Apple II Computer Info

Healing 4- 16 pts. Healing 9- 81 pts.
Healing 5- 25 pts. Healing 10- 100 pts.
Magic 1- 3 pts. Magic 6- 18 pts.
Magic 2- 6 pts. Magic 7- 21 pts.
Magic 4-12 pts. Magic 9- 27 pts.

-END-

Well, here it is Phantom Access. If you have it already, its most likely
Thanks to me, at least indirectly. I got it at a TAP meeting from The Plague
earlier in the year and I have given it to whoever asked me, namely The
Watcher(Cap. Con []) Celtic Phrost and a friend of Celtic's. Since then I've
heard that these people have been giving to other people, they promised not to,
but I suppose I couldn't expect them not to(I did, after all...). Its
been years since all the hoopla really started and the point has become
moot, so I'm releasing it everyone. The old TAP kids don't mind and I might
as well take this advantage to put my name in a nice big font, right?
TAP by the way is disbanded, perhaps there will be an annual get together,
but I doubt it. Most of the stuff said about TAP wasn't true and has come
from me anyway. For instance Chris, in Fall of the Modem World, called
me an idiot and then went on to directly copy my sometimes incorrect or
obselete information from Tap.Interviews II.

Enough about that however. Here is Phantom Access 5.7k, complete with
docs. It's not really that big of a deal as you can see, and the nonsense
about it "not falling into the wrong hands" is just that, nonsense. For years everyone who didn't know what it was wanted it, and people
who did know what it was didn't. For example, Sigmund Fraud turned down
a copy. Anyway, enjoy the program, let the big debate end (but now
I guess you'll all have to debate about just what kind of loser/leech/rodent
would give it out!). Please give to everyone you know. Also, enjoy the
title page I tacked on...(please disregard the insults on it, I meant them
as jokes....)

later
Dead Lord
(>CEO<) - Elite even in death...

Leave me a message on the Dead Lord Machine at:
212-677-2332-voice
212-703-0095-answering machine
The entire Phantom Access series was written as a set of programmable modules, that are easily intergratable with each other, and can accomplish various tasks without the need of supervision.

For example:

1: Hack #: NPA-ANC-XXXX until you have 4 valid codes.
2: Using the 4 valid codes from step 1: Scan the exchange of: NPA-ANC-XXXX
   In this exchange note all systems that connect at 1200bps and identify themselves with /login/ usually indicating a Unix. If task is complete & it is no later than xx;xx;xx;xx go on to step 4.
3: End, write all information to a file, and shut down.
4: Login to TRW using password x & dialup y, if password x no longer works then use password x1, x2, etc, until you hit one that is still valid.
   Once connected pull reports on the people in file z, or if no password still valid; look at time, if it is no later then xx;xx;xx;xx go on to step 6.
5: End, write all information to a file, and shut down.
6: .........etc

In short; a series of programs with the same style of syntax, that write and retrieve information from a set of files whose format is compatible with all of the other programs that work with them. => a primitive Database with 'infinite' capabilities. Using simple commands you could create a custom system for whatever task(s) you wanted.

Phantom Access 5.7K (X = The hardware specific version you are using.) is the code hacker of the series. It is fully 'programmable' in the sense that you can customize existing (example) modules to hack whatever you want them to. Or just as easily create new modules for complex system's.

For example:

1: Call MCI
2: Enter valid code for MCI
3: Call PBX NPA-ANC-XXXX
4: Hack code for PBX
Or:
1: Call MCI
2: Enter valid code for MCI
3: Call Number NPA-ANC-XXXX
4: Trunk it
5: K(p=MF).etc.S(t<TT) 1
6: etc...

Obviously the longer the set of 'blocks' the more time it will take to go through one 'block-set' and repeat the sequence with the code being incremented or whatever it is that you're doing.

One thing to be VERY careful about is the quality of AUDIO on the chain of events. If you're dialing through 6 extenders to a hack a code for a PBX in heathentown Australia, not only will it take a hell of a long time to complete one block-set, but by the time you connect with heathentown's PBX, the Audio is very probably so bad that the Apple-Cat isn't going to detect an error message, or a dialtone for that matter...

Any question's, comment's, or suggestion's, are welcome. If you do not have any other way of contacting me at the present time, I can be reached on the Cat's Cavern, @ 805/492-3150. You are able to login without the use of a secondary pw.

The text file that contains the instructions of what phantom access will do during this hack. Hitting C/R at every input selects the default setting of S6,D1,V000...

(PLEASE NOTE: You will have to patch DOS to make it aware of any hardware device you want to access. <If this is not automatic.> 1e: Slot=7 Volume 58, etc. If you booted into Slot 6, into normal DOS, then as DOS is concerned your Hard Disk doesn't exist and it will just hang.)

After a preliminary memory search (to see what is or isn't already there), it will come up at the central menu. Selecting a '1' from here will jump to the begging of the 'start-hacker' routine, a '2' run's the utility package, & a '3' quits to basic.

Assuming you chose 1 you will now be prompted for a 'sub-module' to load. This is the text file that contains the instructions of what phantom access will do during this hack. Hitting C/R get's you a catalog of the current s,d,v.

After typing in the sub-module name, assuming the module is found on the s,d,v selected, you will be asked whether you want this to be a random or sequential scan at the C[ode] variable.

Start Scan at code: (obvious). If the length of the code you select is longer or shorter then the Code Length specified for this sub-module, it will again prompt you for the code to start at...

Re-Test valid codes: If you select yes it will test each codes that comes up as good 1 more time to make sure that it really is valid.

Date: Enter the appropriate date, in the format shown, this is for the status report at the end of a scan.

Some question to the effect of: 'use occ dialthrough', answering No, will jump to the 'is everything correct' input, immediately go on to starting the scan. If you answer Yes, you will be prompted with the following:

Explanation: If you wish to 'dial-through' or chain codes/systems, you can very easily include this in the 'blockset'. OCC dialthrough is different, it assumes it will be using MCI to dialthrough, so step 1 will be replaced by this. In other words, there is only 1 actual pick-up, every other time it cycles through to the pick-up/hang-up routine, it will 'pound out' instead. This was made for purpose of speeding up 'chaining', having only 1 outgoing call in the entire scan, instead of 3,006+ (or however long you let it run). The 'install max fail
Apple II Computer Info

DOCUMENT pipedream

PROPERTY OF EAST COAST CONNECTION

10/02/90  
10/02/90

... Lucasfilm Games' Pipe Dream ...

Protection Destroyed by:
Joe Hack & The Mercenary

: Official East Coast Connection Release Bases :

The Oblivion ... (516) 922-4312 ... 9600bps / 105 Megs / Exodus Xfers
The Outer Limits ... (718) 492-3054 ... 9600bps / 255 Megs / HowieNet v1.2
Temple of Karnak ... (516) 361-4999 ... 9600bps / 85 Megs / ProTALK

...... Official ECC Members listed in Alphabetical Order ......:

Aiwatts * Commie Scum * The High Priest
Lord Digital * Joe Hack * Mavster * The Mercenary * The Overlord
Ronin * Star Gazer * The Wanderer

* Documentation typed up by Mavster.

** NOTICE ** Not compatible with Transwarp GS
But we are working on a patch!

Can you think under pressure? How about under flooz pressure? You'll find out when you play pipe Dream, the fast-flowing game of speed, strategy, and plumbing. Make your pipeline as long as you can, but always stay ahead of the flow or your score will go down the drain.

Maybe you can imagine yourself as the plumber-in-chief at Acme Chemical Company. OK? Well, Acme has just invented this miracle sewer cleaner called flooz. Problem is, they're making flooz faster than they can pipe it into tank card. Your job is to build an emergency pipeline with spare plumbing parts, and keep Acme from sinking under a sea of sickly green sludge.

Pipe Dream has 36 increasingly cunning levels, with almost infinite variations in each one. There are three playing modes (basic, expert, and two-plumber) and a training mode that's a real plumber's helper. What are you waiting for? Take the plunge!

HOW TO PLAY PIPE DREAM

Pipe Dream starts on a playing field that is empty except for the starting piece. The object is to score as many points as possible by constructing a continuous pipe from the starting piece.

As you play, pipe pieces appear in a dispenser to the left of the playing field. You can place a pipe anywhere you like, whether or not it connects with other pipe sections. In fact, you'll learn to place pieces in a pattern that anticipates connections five or ten moves in advance.

You can't rotate the pipes, nor can you alter the order in which they appear, nor can you skip a pipe and come back to it later. You'll have to play 'em as they come.

You can "bomb" a pipe by placing a new pipe on top of the previously played pipe. The old pipe will explode and the new pipe will appear in its place. There is a short time delay for replacing pipes, and a 50 point penalty.

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You can "bomb" a pipe by placing a new pipe on top of the previously played pipe. The old pipe will explode and the new pipe will appear in its place. There is a short time delay for replacing pipes, and a 50 point penalty.
Once a pipe piece fills with flooz, you can no longer replace it. And, at higher levels, the game field will contain advanced pipe pieces and obstacles. You can’t “bomb” and replace those special pieces that appear at the start of a round.

In order to advance to the next level, you must make the flooz flow through a certain number of pipes. Look at the counter in the upper right corner of the screen. At the start of each round, this counter tells you how many pipes the flooz has to flow through in order to advance to the next level. Then as the flooz flows through the pipeline, the counter decreases, keeping track of how many more pipes the flooz must go through. When the counter reaches zero, you qualify for the next level.

On higher levels, many things change:
- The flooz flows at a faster rate.
- Obstacles appear on the playing field. You can’t place pipes in those squares.
- Bonus pieces may show up. These earn you extra points if the flooz goes through them.
- One-way pieces appear in your pipe dispenser. The flooz can only flow through these in one direction.
- End pieces show up. In addition to achieving the required pipeline length, you must direct the flooz into the end piece in order to advance to the next level.
- Reservoir pieces appear. The flooz takes a little longer to fill these up, so they gain you some valuable time.
- There are sections of the playing field that allow the flooz to exit one side of the screen and reappear on the other side.

On higher levels, the game field will contain advanced pipe pieces and obstacles. You can’t “bomb” and replace those special pieces that appear at the start of a round. Keep placing pipes and adding to the pipeline until the flooz catches up with you or spills off the edge of the playing field. When the flooz reaches the end of your pipeline, the round is over.

Once you’ve placed all the pipe pieces you can (or want to), press the “flow” (F) key (as in “fast flowing flooz”) and the flooz will speed up and end the round quickly. You will score double points for each additional pipe piece the flooz flows through.

ADVANCING TO THE NEXT LEVEL

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can press the "flow" key and score bonus points.

end of file.

FIRST OF ALL, I'D LIKE TO POINT OUT THAT THIS IS ONLY A PRE-RELEASE, DUE TO THE MANY DEMANDS I'VE GOT ABOUT PPP.

THIS MEANS THAT SOME FACILITIES HAVEN'T BEEN INCLUDED IN THIS VERSION, LIKE THE POSSIBILITY TO GET A PRINTOUT ON A PRINTER, EDIT THE CODE (RIGHT NOW YOU HAVE TO DELETE THEN INSERT, BUT IT WORKS ALRIGHT!) AND SOME OTHER MINOR "FAULTS". ALL THESE WILL BE INCLUDED IN THE NEXT VERSION, V2.0, LOOK FOR IT!!

SECOND, THIS IS ONLY A PRELIMINARY DOX, ME THE "PROGRAM COUNTER" WILL JUMP TO "INDEX" UNLESS THE "DELAY1" VALUE REACHES ZERO. WHEN IT DOES, "DELAY1" WILL BE RELOADED AS DESCRIBED ABOVE AND THEN THE NEXT INSTRUCTION WILL BE EXECUTED.

WAIT HAS ONLY ONE PARAMETER, "VALUE". THIS IS THE AMOUNT OF TIME PERIODS YOU WANT THE EXECUTION TO STOP FOR. THAT IS, IF YOU'RE GOING TO HAVE, LET'S SAY, ONLY ONE "FLASH", THEN IT'LL PROBABLY FLASH TO FAST, BUT THEN YOU ADD A WAIT OF 100 (OR SOMETHING) AND YOU'LL FIND THAT IT LOOKS QUITE BETTER ON THE SCREEN!

THE FOLLOWING INSTRUCTIONS;

INC/DEC/EOR/SET/ADD/SUB

ALL MODIFY THE ROUTINE CODE IN SOME WAY. THESE ARE USED WHEN YOU'RE GOING TO MAKE SOME "ADVANCED" EFFECTS.

INC AND DEC, WANTS ONLY ONE VALUE AND THAT'S "INDEX". WHAT THEY WILL TO IS RATHER OBVIOUS, INCREASE AND DECREASE THE VALUE AT "INDEX". IF YOU'RE GOING TO MAKE A BOX SHRINK OR GROW, THESE ARE THE INSTRUCTIONS YOU'LL HAVE TO USE.

EOR AND SET, WILL ASK YOU FOR A VALUE AND FOR THE INDEX. EOR WORKS AS THE ASSEMBLY EQUIVALENT, THAT IS, IT EOR'S THE BYTE AT "INDEX" WITH THE SPECIFIED VALUE AND THEN STORES THE VALUE BACK AT "INDEX".

SET DOES THE SAME, EXCEPT IT DOESN'T EOR THE VALUE, IT JUST PUTS IT THERE. IF YOU'RE GOING TO MAKE THAT SHRINK/GROW TRICK, THEN YOU'LL HAVE TO RESTORE THE SCROLL'S VALUE BEFORE THE ROUTINE IS RERUN, AND THAT'S WHAT YOU USE SET FOR.

ADD AND SUB WORK EXACTLY LIKE EOR, BUT INSTEAD OF EOR:ING THE BYTE THEY ADD/SUB RESPECTIVELY.

AND FINALLY, SOUND, CLICKS THE SPEAKER. IT WORKS EXACTLY LIKE A "$C030" FROM THE MONITOR.

WELL, THIS WAS THE INSTRUCTIONS IN A NUTSHELL. I KNOW I'M NOT THE BEST AT EXPLAINING THINGS, JUST SIT DOWN AND TAKE YOUR TIME AND YOU'LL UNDERSTAND HOW IT WORKS. TRY LOADING THE DEMOS AND LOOK AT THE CODE, IT
SID MEIER'S PIRATES!

PIRATES: "ACTION AND ADVENTURE ON THE SPANISH MAIN"

PIRATE'S FEATURES INCLUDE:
ACTION...SHIP BATTLES, LAND CONQUESTS, FENCING AND SAILING
STRATEGY...PLUNDERING, TRADING, NEGOTIATING AND FORGING ALLIANCES
GOALS...TREASURES, ROMANCE, STATUS, POWER AND PRESTIGE
NEW EXPERIENCES...EXPLORE ACROSS A MAP OF THE ENTIRE CARIBBEAN
EXTENSIVE GRAPHICS...OVER 70 DIFFERENT SCENES AND PICTURES
EXCITEMENT...TRIUMPHS AND TRAGEDIES, VICTORIES AND DEFEATS!

PIRATES BY: MICROPROSE
PIRATES DOCUMENTATION BY: THE PERPLEXER

SAVING THE GAME:
YOU WILL NEED AN EXTRA, BLANK DISK TO SAVE PIRATES! DURING PLAY. TO SAVE THE GAME,
ENTER ANY TOWN AND CHECK INFORMATION. THE LAST INFORMATION OPTION WILL BE SAVE GAME.
SELECT THIS OPTION AND FOLLOW THE INSTRUCTIONS. PIRATES! SAVE-GAME DISK USE SPECIAL
FORMAT. YOU MUST USE THE FORMAT OPTION OFFERED IN SAVE GAME, A NORMALLY FORMATTED
DISK WILL NOT SUITABLE. NOTE: THAT FORMATTING A DISK PREPARES IT FOR SAVING GAMES, BUT
DOESN'T SAVE ANYTHING. HAVING A FORMATTED DISK IS ALSO NECESSARY TO RECORD YOUR FINAL
SCORE ON THE HALL OF FAME IF YOU WISH TO.

STARTING THE GAME:
(THE IS A QUICK START, IF YOU WISH TO LEARN TO PLAY THE GAME FROM EXPERIMENTATION)
NOTE: IF YOU WISH TO UNDERSTAND WHAT IS GOING ON BETTER, CONTINUE TO READ DOCS!

STARTING OPTIONS: BEGIN YOUR 1ST GAME WITH THE FOLLOWING SELECTIONS:
1. WELCOME: START A NEW CAREER
2. SPECIAL HISTORICAL PERIOD?: NO
3. WHAT NATIONALITY ARE YOU?: ENGLISH
4. TYPE YOUR NAME (MAXIMUM: 9 CHARACTERS) AND PRESS 'RETURN'
5. YOU ARE AN: APPRENTICE
6. SPECIAL ABILITY: SKILL AT FENCING
(IF CONFUSED READ ON FOR MORE DETAILS)

IMPORTANT!!!: YOU MUST KNOW WHEN THE TREASURE FLEET OR SILVER TRAIN ARRIVES!
(SO READ ON UNTIL YOU FIND OUT)

IN PORT: EXPLORE THE PORT & OPTIONS AVAILABLE THERE BEFORE LEAVING FOR YOUR
FIRST CRUISE. DON'T, HOWEVER, DIVIDE UP THE PLUNDER YET!!
CRUISING THE SEAS: SEE THE CONTROL SUMMARY FOR MORE INFO. (LURKING NEAR SEA PORTS OFTEN
LEAD TO A PROMISING ENCOUNTER, FRIEND OR FOE)
FINISHING YOUR VOYAGE: RETURN TO PORT AND SELECT 'DIVIDE THE PLUNDER'. AFTER
THAT, SELECT RETIREMENT. THIS ENDS THE GAME AND SHOWS YOUR SCORE. DON'T WORRY YOU CAN
COME BACK FROM RETIREMENT (HEALTH PERMITTING). NOTE: YOU CAN STILL DIVIDE UP PLUNDER
WITHOUT RETIRING DO THIS WHEN YOUR MEN START TO GET ANGRY BUT ONLY IF IT HAS BEEN CLOSE TO A YEAR!
THEY GET ANGRY SOMETIMES BUT YOU CAN GET MORE GOLD TO CAUSE THEM TO BECOME HAPPIER. READ ON FURTHER FOR MORE
INFORMATION!

CONTROL SUMMARY: (VERY ABBREVIATED)

CONTROLLING MENUS:
MOVE CURSOR: PUSH JOYSTICK IN DIRECTION DESIRED
SELECT HIGHLIGHTED OPTION: PRESS JOYSTICK TRIGGER.

TRADING & MOVING GOODS
SELECT TRADE LINE: PUSH JOYSTICK TO POINT TO LINE ON SCREEN
BUY (TAKE) GOODS: FLICK JOYSTICK TO LEFT TO MOVE GOODS TO YOUR PARTY
SELL (LEAVE) GOODS: FLICK JOYSTICK TO RIGHT TO MOVE GOODS AWAY FROM YOUR PARTY
FENCING & SWORDPLAY:
FAST ATTACK: JOYSTICK TO LEFT (HIGH, MIDDLE OR LOW)
POWERSHOT ATTACK: HENRY MORGAN - JOYSTICK TO LEFT (HIGH, MIDDLE OR LOW)
PIRACY (BLOCK ATTACK): JOYSTICK TO CENTER (HIGH, MIDDLE OR LOW)
NOTE: JOYSTICK HEIGHT (UP, LEVEL OR DOWN) DETERMINES HEIGHT OF ATTACK OR PIRACY
TRAVELLING ALONG THE CARIBBEAN:
Leave with PIRACY: JOYSTICK TO RIGHT (HIGH, MIDDLE OR LOW)
SAILING: JOYSTICK LEFT TURNS SHIP LEFT, JOYSTICK RIGHT TURNS SHIP RIGHT
SAILS UP/DOWN: (DOWN ARE BATTLE SAILS) JOYSTICK STRAIGHT UP RAISES ALL SAILS, JOYSTICK DOWN REDUCES SAILS
CANNON FIRE: PRESS TRIGGER TO FIRE BROADSIDE
BOARDING ENEMY SHIPS: MOVE YOUR SHIP INTO THE ENEMY SHIP, A FENCING BATTLE ENDS WHEN YOU ATTACKING A FORT, BEACH YOUR SHIP NEAR THE FORT TO STORM IT.
LAND BATTLES:
MOVE ONE GROUP: PUSH JOYSTICK IN DIRECTION YOU WISH TO MARCH
MOVE ALL GROUPS: HOLD TRIGGER WHILE Pushing JOYSTICK IN DESIRED DIRECTION
FIRE AT ENEMY: DONT MOVE MEN, THEY WILL FIRE AUTOMATICALLY WHEN IN RANGE
NOTE: JOYSTICK BUTTONS DO NOT FIRE A GROUP. GROUPS FIRE AUTOMATICALLY. THE JOYSTICK BUTTON SWITCHES BETWEEN GROUPS, OR TO MOVE ALL GROUPS AT ONCE!
NOTE: THE ABOVE IS A CONDENSED VERSION OF INFORMATION READ ON FOR MORE!!!!
YOUR GOALS:
YOU ARE SEEKING TO MAKE YOUR FORTUNE IN THE WEST INDIES, SO THAT YOU CAN RETIRE TO A LIFE OF WEALTH, EASE, AND HIGH STATUS. THE QUALITY OF YOUR RETIREMENT IS AS IMPORTANT TO YOU AS YOUR FAME, YOUR RANK, YOUR REPUTATION, THE WIFE YOU MARRY (IF ANY), AND WHATEVER ESPECIALLY PLEASING EVENTS BEFALL YOU DURING THE COURSE OF YOUR ADVENTURES.
INITIAL OPPORTUNITIES:
A NEW PLAYER SHOULD START A NEW CAREER!
START A NEW CAREER: BEGINS A COMPLETE ADVENTURE, FROM YOUR FIRST ARRIVAL IN THE NEW WORLD TO YOUR WELL-EARNED RETIREMENT. THIS IS THE 'STANDARD GAME' AND YOU CAN CONTINUE FOR QUITE SOME TIME.
CONTINUE YOUR CAREER: YOU MAY RESUME ANY GAME IN PROGRESS. YOU WILL NEED THE DISK UPON WHICH YOU SAVED THE GAME. DONT INSERT THE SAVE-GAME DISK UNTIL INSTRUCTED TO!
COMMAND A FAMOUS EXPEDITION: IS A SHORT GAME WHERE YOU COMMAND JUST ONE EXPEDITION.
THESE EXPEDITIONS ARE USUALLY LARGE, BUT END WHENEVER YOU DIVIDE UP THE PLUNDER.
FAMOUS EXPEDITIONS ARE NOT FOR A NOVICE--DOING AS WELL AS THE HISTORICAL MODEL CAN BE A VERY CHALLENGING TASK!
FAMOUS EXPEDITIONS: YOU MUST RE-ENACT THE ORIGINAL SKILLFUL LEADERS EXPEDITIONS!
JOHN HAWKINS, 1569: THIS IS A FAIRLY DIFFICULT SITUATION. YOU HAVE A L.G. POWERFUL SQUADRON BUT ARE IN TOTALLY SPANISH CARIBBEAN. THE ONLY FRIENDLY PORTS ARE IN TOTALLY SPANISH CARIBBEAN. ANOTHER CHANGE IS THE PREDOMINANCE OF THE DUTCH BECAUSE OF SPAIN'S GREAT POWER, THIS IS AN EXTREMELY CHALLENGING ERA, AND SHOULDNT BE ATTEMPTED BY NOVICES!
FRANCIS DRAKE, 1573: THIS IS A VERY DIFFICULT SITUATION. LIKE HAWKINS, YOU ARE IN TOTALLY SPANISH CARIBBEAN, BUT NOW YOU HAVE A SMALL FORCE. IN REALITY, AFTER A FEW YEARS, DRAKE'S BOLDNESS & BRAVADO MADE HIM SUCCESSFUL.
PIET HEYN, 1628: THIS IS A FAIRLY EASY SITUATION. YOU HAVE A BALANCED TASK FORCE, AND ARE ADMIRABLY POSITIONED TO INTERCEPT SPANISH TREASURE GALLEONS OFF THE HAVANA OR IN THE FLORIDA CHANNEL. EQUALLING HEYN'S FLEET OF AMBUSHING THE ENTIRE TRADE WILL TAKE A COMBINATION OF GOOD LUCK AND PERSISTANCE AT THE RIGHT PLACE AND TIME.
L'OOLLONAI, 1866: THIS IS AN EASY SITUATION. YOU HAVE MANY POTENTIALLY FRIENDLY PORTS AND MILITARILY WEAK SPANIARDS. HOWEVER, DUPLICATING L'OOLLONAI'S ACHIEVEMENT OF CONQUERING AND PILLAGING THE ENTIRE MARACAYA REGION MAY PROVE TAXING.
HENRY MORGAN, 1671: THIS IS A VERY EASY SITUATION. YOU HAVE OVERWELMING FORCES, THE SPANIARDS ARE AT THEIR LOWEST MILITARILY. IT DOESN'T TAKE MUCH BOLDNESS TO DUPLICATE DE POINTIS' ACHIEVEMENT AND SACK OF CARTAGENA.
BONAPARTE DE POINTIS, 1697: THIS IS ANOTHER EXTREMELY EASY SITUATION. YOU HAVE POWERFUL FORCES, WHILE THE SPANIARDS ARE AT THEIR LOWEST MILITARILY. IT DOESN'T TAKE MUCH BOLDNESS TO DUPLICATE DE POINTIS' ACHIEVEMENT AND SACK OF CARTAGENA.
SELECTING AN HISTORICAL TIME PERIOD:
(A NOVICE PLAYER SHOULD ANSWER 'NO THANKS' THIS GIVE YOU THE EASIEST ERA)
THE SILVER EMPIRE: (1560)
IN THIS ERA THE SPANISH EMPIRE IS AT ITS PEAK. ALL THE COLONIES (EXCEPT ONE) ARE SPANISH, ALL THE MAJOR PORTS & TRADE ARE CONTROLLED BY SPAIN! HOWEVER, SPAINSGAINS HAVE BEEN SO GREAT OTHER EUROPEANS ARE ATTRACTED TO STEAL AND PLUNDER WHATEVER SPAIN CAN'T PROTECT. BECAUSE OF SPAIN'S GREAT POWER, THIS IS AN EXTREMELY CHALLENGING ERA, AND SHOULDNT BE ATTEMPTED BY NOVICES.
REPUBLICAN & REVOLUTIONS: (1650)
THIS ERA IS SIMILAR TO THE SILVER EMPIRE, BUT SPAIN IS SOMEWHAT WEAKER. A FEW ABORTIVE NON-SPANISH COLONIAL VENTURES HAVE BEGUN, BUT THE CARIBBEAN REMAINS ESSENTIALLY SPANISH. ANOTHER CHANGE IS THE PREDOMINANCE OF THE DUTCH SMUGGLING TRADE. THIS SHOULDN'T BE TRIED BY NOVICES!
THE NEW COLONISTS: (1620)
THIS ERA SEES THE FIRST SUCCESSFUL COLONIES FOUND BY THE ENEMIES OF SPAIN, WHILE THE SPANISH POWER CONTINUES TO DECLINE. WITH THE NEW COLONIES, PROSPECTS FOR PIRACY AND PRIVATEERING ARE IMPROVED. LIFE IS FAIRLY CHALLENGING FOR WOULD-BE PIRATES AND PRIVATEERS.
WAR FOR PROFIT: (1640)
THIS ERA IS THE HEYDAY FOR SMALL, INDEPENDENT BUCKANEERS. THE SPANISH MILITARY AND ECONOMY ARE AT THEIR NADIR, WHILE NEW EUROPEAN COLONIES ARE BLOOMING THROUGHOUT THE ANTILLES. THIS PERIOD IS A GOLDEN AGE (LITERALLY!) FOR THE INDEPENDENT AND RESPECTFUL privateers. IT'S AN ENJOYABLE ERA FOR PLAYERS OF ALL SKILL LEVELS.
THE BUCANEER HEROES: (1650)
THESE DECADES ARE THE PEAK OF SWASHBUCKLING ADVENTURE IN THE CARIBBEAN. SPANISH WEALTH IS REAPPEARING, BUT A WOKE. EUROPEAN COLONIES AND PORTS ABOUND, FORTUNEHUNTING SAILORS CROWD THE TAVERNS, SEARCHING FOR LUCY CAPTAINS. THIS IS FOR ALL LEVELS!
THE PIRATE'S SUNSET: (1680)
THIS ERA IS THE LAST FOR THE CARIBBEAN PIRATE ADVENTURING. EUROPEAN NATIONS NOWTAKE SERIOUSLY EVENTS IN THE CARIBBEAN. NAVY WARSHIPS ARE ON PATROL, LETTERS OF MARQUE ARE HARD TO GET, AND GOVERNERS ARE LESS TOLERANT. ENJOY THIS ERA WHILE YOU CAN, FOR ITS THE END OF AN AGE. THIS IS TOUGH FOR NOVICES BUT CHALLENGING FOR OTHERS.
SELECTING NATIONALITIES:
(A NEW PLAYER SHOULD SELECT ENGLISH BUCKANEER...) THE RULES YOU CHOOSE DETERMINES WHERE YOU START, WHAT SHIP'S YOU HAVE, THE SIZE OF YOUR CREW, YOUR INITIAL WEALTH AND REPUTATION, ETC... YOUR INITIAL NATIONALITY DOESN'T REQUIRE YOU TO SUPPORT THE NATION ( YOU CAN BE DUTCH, AND ATTACK DUTCH SHIPS...ETC...) YOUR ACTS SPEAK FOR YOU!! IF YOU DEEPLY PLEASE A NATION, A GOVERNER MAY REWARD YOU. IF YOU ANGER A NATION, A GOVERNER CAN ORDER HIS HARBOR PORTS TO FIRE ON YOU!!!
ENGLISH: THIS NATION SUPPORTS PRIVATEERS IN THE 16TH CENTURY, AND JUST AS GENEROUSLY SUPPORTED PRIVATE COLONIZATION VENTURES IN THE NEXT CENTURY.
FRENCH: IS SECOND FOR PIRATES, ALTHOUGH THIS NATION PROVIDES LESS SUPPORT TO ITS SONS OVERALL. IT GIVES THEM MORE INDEPENDENCE, MORE FREEDOM OF ACTION. FURTHERMORE, THE GROWING 17TH CENTURY FRENCH COLONIES ON WESTERN HISPANIOLA AND TORTUGA ARE IDEAL PIRATE BASES.
DUTCH: EXCEPT IN 1620′S, THE DUTCH SAIL AS TRADERS TO THE CARIBBEAN, NOT AS WARRIORS. OF COURSE, ONCE IN THE CARIBBEAN, MORE THAN A FEW SUPPLEMENTED THEIR TRADING WITH MORE VIOLENT AND PROFITABLE PURSUIT. AS A RULE, DUTCH TRADERS TRY TO STAY CLEAR OF THE FRENCH & ENGLISH, ALTHOUGH THIS Wasn'T ALWAYS POSSIBLE SPANISH IS THE MOST CHALLENGING. AS A SPANISH RENEGADE YOU START IN A WEAK POSITION, ALTHOUGH IN 1680 YOU CAN PLAY THE INTERESTING ROLE OF A COSTA GUARDA-- THE SPANISH CARIBBEAN GUARDIAN... AGAINST ACTING LIKE PIRATES THEMSELVES! IN EITHER EVENT, SPANISH ORIGIN IS A PEASANT CHANGE AND REFRESHINGLY CHALLENGE.
DIFFICULTY LEVEL:
(NEW PLAYERS SHOULD BE APPRENTICES)
APPLETIVE: GIVES PLAYER MAXIMUM "AID" FROM EXPERT SUBORDINATE OFFICERS ON BOARD THE SHIP. THIS MAKES PLAY EASIER, BUT HOWEVER THE PARTY'S LOOT IS DIVIDED, ALL THESE EXPERTS TAKE RATHER LARGE SHARES, LEAVING LITTLE FOR YOU!

JOUNGMEAN: MILDLY EASY, THE PLAYER'S SUBORDINATES ARE LESS EXPERT (ALTHOUGH STILL QUITE GOOD), BUT YOUR SHARE OF THE LOOT IS LARGER!

ADVENTURER: MILDLY DIFFICULT. YOUR SUBORDINATES ARE MEDICORE, BUT YOUR SHAREOF THE LOOT IS VERY GOOD!

SNAWWHUSKLER: EXTREMELY DIFFICULT! YOUR SUBORDINATES ARE 'DRUNKEN GUTTER SWINE' OF PRECIOUS LITTLE VALUE. OF COURSE, YOUR SHARE OF THE LOOT IS THE LARGEST POSSIBLE!

SPECIAL ABILITIES:

SKILL AT FENCING: GIVES YOU WELL-TRAINED REFLEXES THAT MAKE ENEMY ACTIONS SEEM SLOGGISH IN COMPARISON.

SKILL AT NAVIGATION: MAKES TRAVEL ON THE HIGH SEAS, FASTER AND EASIER!

SKILL AT GUNTHER: AID YOU DURING NAVAL BATTLES, MAKING YOUR BROADSIDES MORE LIKELY TO LAND ON TARGET. USEFUL FOR ALL LEVELS.

WIT AND CHARM: IS USEFUL WHEN DEALING WITH GOVERNORS AND OTHERS OF HIGH STATIONS

YOUR STALWART CREW AGAINST THE ENEMY. AS YOU DUEL THE ENEMY LEADER, YOUR CREWMEN ARE ALSO FIGHTING.

YOUR HIT AGAINST THE ENEMY LEADER, AND HIS AGAINST YOU, CHANGE THE MORALE OF EACH SIDE IN BATTLE. MORALE LEVELS RUN FROM WILD (THE BEST) DOWNWARD TO INJURIES. AS A RESULT YOUR CAREER LASTS LONGER. (GREAT IF YOU WANT TO DO MORE IN YOUR NORMALLY SHORT CAREER)

WHEN DOES THE TREASURE FLEET AND SILVER TRAIN ARRIVE AT CERTAIN TIMES????

MAKE SURE YOU PRINT IN THE EXACT DATES WHICH ARE LISTED BELOW WHEN ASKED THE APPROPRIATE QUESTION!

WHEN THEY ALL PANIC!

THE PRINCIPLES OF FENCING:

TO ATTACK: PUSH JOYSTICK LEFT, TOWARD THE ENEMY, PUSH HIGH FOR A HIGH ATTACK, HORIZONTAL FOR A MID-LEVEL ATTACK, LOW FOR A LOW ATTACK. HOLD DOWN THE TRIGGER BEFOREHAND DURING THE ATTACK FOR A SLOWER BUT MORE POWERFUL SLASHER ATTACK.

TO FERRY-DONT PUSH LEFT OR RIGHT. JUST PUSH UP TO FERRY HIGH ATTACKS, LEAVE CENTERED FOR MID-LEVEL PARRIES AND PUSH DOWN TO FERRY LOW ATTACKS.

TO RETREAT: PUSH JOYSTICK RIGHT AWAY FROM ENEMY. YOU PARRY WHILE RETREATING, AND LIKE NORMAL PARIES, THESE CAN BE HIGH, MID, OR LOW, DEPENDING ON JOYSTICK LEVEL.

THE Cutlass: IS A SHORT, HEAVY, CURVED CLEAVER WITH A MEAN EDGE BUT SHORT REACH. CUTLASS HITS CAN BE DEVASTATING (TWICE AS DAMAGING AS A RAPIER) MAKING IT A POPULAR WEAPON AMONG UNTUTORED FIGHTERS. THE LONGSWORD: IS A CLASSIC WEAPON OF MEDIUM LENGTH. ITS ATTACKS DO MORE THAN A RAPIER BUT LESS THAN A LONGSWORD.

THE PRINCIPLES OF FENCING:

THE RAPIER IS A THIN, FLEXIBLE WEAPON WITH A SHARP POINT. IT CAN BE MANEUVERED EASILY AND THRUST INTO A TARGET WITH ACCURACY. IT HAS A LONGER REACH THAN ANY OF THE OTHER WEAPONS BUT CAUSES LESS DAMGE.

THE CUTLASS: IS A SHORT, HEAVY, CURVED CLEAVER WITH A MEAN EDGE BUT SHORT REACH. CUTLASS HITS CAN BE DEVASTATING (TWICE AS DAMAGING AS A RAPIER) MAKING IT A POPULAR WEAPON AMONG UNTUTORED FIGHTERS.

THE LONGSWORD: IS A CLASSIC WEAPON OF MEDIUM LENGTH. ITS ATTACKS DO MORE THAN A RAPIER BUT LESS THAN A LONGSWORD.

THE PRINCIPLES OF FENCING:

A HIT OCCURS WHENEVER AN ATTACK CONNECTS SHOWN BY A FLASH OF BLOOD (RED) EACH HIT WEAKENSENEMY AND LOWERS HIS FOLLOWERS MORALES... EVENTUALLY CAUSING VICTORY WHEN THEY ALL PANIC!

RETREAT: MOVE OFF THE RIGHT OF THE SCREEN, YOUR SAVED BUT LOSE YOUR REP!

PANIC AND SURRENDER: WHENEVER A LEADER IN PANIC IS HIT THIS OCCURS, ALSO IN LG BATTLES WHEN A LEADER'S FORCES ARE REDUCED TO ONLY ONE MAN, AND THEN HE'S HIT!

LEADERSHIP IN BATTLE: CAUSES OUTCOME OF BATTLES

ONLY A FEW OF YOUR BATTLES ARE MAN TO MAN DUELS. MOST OF THE TIME YOU'RE LEADING YOUR STALWART CREW AGAINST THE ENEMY. AS YOU DUEL THE ENEMY LEADER, YOUR CREWMEN ARE ALSO FIGHTING.

MORALE: YOUR HITS AGAINST THE ENEMY LEADER, AND HIS AGAINST YOU, CHANGE THE MORALES OF EACH SIDE IN BATTLE. MORALE LEVELS RUN FROM MILD (THE BEST) DOWNWARD TO STRONG, FIRM, ANGRY, SHAKEN, AND FINALLY PANIC.

INFORMATION:

PARTY STATUS: SHOWS MENS MORALE (HAPPY, PLEASED, UNHAPPY, ANGRY) WHEN THEY ARE ANGRY MUTINY CAN Erupt. IF YOU OUT OF FOOD EXPECT DEPCTIONS.

PERSONAL STATUS: SHOWS YOUR STANDING WITH EACH NATION, AND PERSONAL DETAILS ABOUT YOUR AGE, HEALTH, WEALTH AND REP. IF YOUR HEALTH IS POOR YOU WILL BE FORCED TO RETIRE SOON!

SHIPS LOG: RECUPYOUR ACTIVITIES!
MAPS: IS A FILE OF YOUR MAP FRAGMENTS, TO FIND BURIED TREASURE OR YOUR LONG LOST SISTERS WHEREABOUTS, YOU MUST FIND THE REMAINING FRAGMENTS TO SEARCH FOR THE DESIRED GOAL. WHEN YOU DO FIND YOUR SISTER YOU WILL START LOOKING FOR THE INFAMOUS INCA TREASURE!!! YOU MUST DUEL CERTAIN SPANISH SWINES TO GRT THE MAPS NEEDED, ALTHOUGH YOU CAN BUY FOR 500GP TREASURE MAPS AND THE REMAINING PIECES IN DIFFERENT TAVERNS AT DIFFERENT PORTS. WHEN YOU THINK YOU KNOW EXACTLY WHERE THE TREASURE OR SISTER IS GO TO THE ABANDONED ISLAND OR WHATEVER (THERE DOESNT HAVE TO BE A TOWN THERE) AND GO TO INFO. AND SEARCH!

CITIES: PROVIDES NECESSARY INFO. ON ALL THE CITIES, SOMETIMES YOU WILL NEED TO BUY INFO. ABOUT A PARTICULAR CITY IF YOU HAVE NO INFO. ON FILE FROM A TRAVELLER IN THE TAVERN, OR YOU CAN PERSONALLY TRAVEL THERE.

TAKE A SUN SIGHT: ALLOWS YOU TO SPEND THE DAY PLOTTING YOUR POSITION W/ THE ASTROLABE.

SEARCH: FOR SISTER OR TREASURE ON SPECIFIC ISLAND YOU ARE AT.

SAVE GAME: ONLY IN TOWNS TO SAVE GAME AND CONCLUDE AT A LATER TIME!

GETTING AROUND TOWN:

VISIT GOVERNOR: HE TELLS YOU HIS NATIONS WARS WITH AND ARE ALLIED WITH. YOU MAY SNEAK HIS DAUGHTER (PREETY ONES ARE HARD TO MARRY) I USUALLY TRY AND BE DUTCH AND MARRY AN UGLY GIRL WHO EACH TIME I VISIT TELL ME WHERE THE TREASURE FILET AND SILVER TRAIN ARE AT, CURACO IS CLOSE TO WHERE THEY USUALLY ARE. ALSO, IF YOU FIGHT SOME OF THAT CERTAIN GOVERNERS ENEMIES HE WILL REWARD YOU MONEY, LAND AND HIGHER LEVELS OF RANK.

VISIT A TAVERN: FOR LATEST NEWS AND INFO. ALSO FOR MORE MEN! OR A TREASURE MAP!

VISIT A MERCHANT: FOR REPAIRS, SELLING OF SHIPS OR BUYING AND SELLING OF GOODS.

NOTE: HAVING DAMAGED SHIPS SLOW YOU DOWN ALSO YOU CAN ONLY CARRY UP TO 255 OF GOODS AND SUGAR AND AROUND 170 FOOD NO MATTER HOW MANY SHIPS YOU OWN!

DIVIDE UP PLUNDER: TO END GAME OR START WITA FRESH AND HAPPY CREW!

TAKING OVER ENEMY TOWNS AND REPLACING GOVERNERS!

DO THIS BY HAVING OVER 300 MEN AND ATTACK ANY ENEMY PORT BY LAND IF YOU HAVE MORE MEN THAN THEY DO YOU AUTOMATICALLY SCALE THE WALLS AND ALL YOU NEED TO DO IS KILL THE ENEMY LEADER THEN CHANGE GOVERNOR TO WHATEVER NATIONALITY YOU WANT!

WRITTEN ON: 3-8-27  THIS TOOK ME: OVER 3HRS STRAIGHT TO DO SO ENJOY!!

LEAVE ALL INFORMATION AS FOUND IN THIS SEQ. FILE!

WRITTEN BY: THE PERPLEXER (MARYLAND #1)
Touching dangerous creatures or falling unintentionally loses points.

*Apple II Computer Documentation Resources (a2_docs_documentation.msw)

**DOCUMENT ple**

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P.L.E DOCUMENTATION
ENTERED BY JUDIE MAC

LOADING/RUNNING P.L.EDITOR

IF YOU OWN AN APPLE II PLUS SYSTEM THAT DOES NOT HAVE AN INTEGER BASIC
FIRMWARE CARD, THE PROGRAM LINE EDITOR WILL NOT BE RUN WHEN THE
SUPPLIED DISK IS BOOTED. THIS IS BECAUSE THE GREETING PROGRAM IS AN
INTEGER BASIC PROGRAM. SO, THE FOLLOWING STEPS MUST BE TAKEN IN ORDER
TO ALLOW THE PROGRAM LINE EDITOR DISK TO BOOT PROPERLY IN APPLESOFT.

1. REMOVE THE WRITE PROTECT TABS FROM THE EDGE OF THE INCLUDED DISK.
2. INSERT AND BOOT THE DISK.
3. UNLOCK PROGRAM LINE EDITOR
4. UNLOCK PLE.FP
5. RENAME PROGRAM LINE EDITOR, PLE.INT
6. RENAME PLE.FP.PROGRAM LINE EDITOR
7. LOCK PROGRAM LINE EDITOR
8. LOCK PLE.INT
9. REPLACE THE WRITE PROTECT TAB.
10. REBOOT THE DISK

AFTER THIS IS DONE, JUST BOOT THE DISK NORMALLY. SOON, A DISK CATALOG
WILL APPEAR, LETTING YOU KNOW THE PLE IS UP AND RUNNING.

WHEN THE PLE HAS BEEN RUN, YOU SHOULDN'T NOTICE ANYTHING UNUSUAL ABOUT
THE OPERATION OF YOUR APPLE. IN FACT, EVERYTHING IS THE SAME, EXCEPT
FOR ALL OF THE NEW COMMANDS AND FEATURES DESCRIBED IN THE FOLLOWING
PAGES.

**NOTE:**
WHEN THE PLE IS UP AND RUNNING, DOS WILL SET HI-MEM:1536 BYTES LOWER
THAN NORMAL FOR YOUR SYSTEM.

PAGE 1

THERE ARE TWO NEW COMMANDS ADDED TO BASIC THAT ALLOW YOU TO EDIT
EITHER A PROGRAM LINE OR THE LAST LINE OF CHARACTERS TYPED AT THE
KEYBOARD. THESE ARE CTRL-E (EDIT) AND CTRL-W

ENTERING EDIT MODE:
CTRL-E AND CTRL-W

THIS IS THE COMMAND USED WHEN YOU WANT TO EDIT A LINE IN YOUR
PROGRAM. TO TYPE CTRL-E, JUST PRESS THE CTRL KEY AND HOLD IT DOWN
WHILE YOU HIT THE E KEY. AFTER THE WORD "EDIT" APPEARS, TYPE THE LINE
NUMBER OF THE LINE YOU WANT TO EDIT. THE LINE WILL APPEAR, WITH THE
CURSOR AT THE BEGINNING OF THE FIRST STATEMENT IN THE LINE. THE LINE
EDITOR REMEMBERS THE NUMBER OF THE LAST LINE EDITED, SO, IF YOU WANT
TO EDIT THE SAME LINE AGAIN LATER, SIMPLY TYPE CTRL-E AND A PERIOD
Here are a few things to watch for when using CTRL-E to enter edit mode:

1. CTRL-E MUST BE THE FIRST CHARACTER TYPED ON A LINE.
2. DON'T TRY TO EDIT LINE 0 OF AN APPLESOF PROGRAM.
3. CTRL-E IS DISABLED DURING INPUTS AND MONITOR.
4. BACKSPACING INTO THE WORD EDIT BEFORE TYPING THE LINE NUMBER MAY DISABLE CTRL-X (RESTART) IN EDIT MODE.
5. IF YOU INADVERTENTLY TYPE THE ESCAPE KEY BEFORE TYPING CTRL-E, THE WARNING BELLS WILL SOUND AND YOU WILL NOT ENTER EDIT MODE. IF A LINE NUMBER IS TYPED AFTER THE WARNING BELL, HITTING RETURN MAY DELETE THE LINE.
6. IF A LINE IS LONGER THAN THE MAXIMUM BASIC LINE LENGTH (128 FOR INTEGER BASIC, 239 FOR APPLESOF), IT WILL BE AUTO-PACKED, REMOVING ALL EXTRANEOUS SPACES FROM THE LINE.

CTRL-W

THIS IS THE COMMAND TO USE WHEN YOU HAVE TYPED A LINE IN INTEGER BASIC AND RECEIVED A ***SYNTAX ERROR MESSAGE, JUST TYPE CTRL-W AND THE LINE WILL INSTANTLY REAPPEAR. CTRL-W WORKS DURING INPUTS, AND IT WILL RECOVER AND RE-EXECUTE IMMEDIATE COMMANDS. THIS COMMAND CAN ALSO BE USED TO RECOVER LINES CANCELED WITH CTRL-X. CTRL-W ACTUALLY WORKS TWO WAYS, DEPENDING ON WHEN IT IS TYPED. IF IT IS TYPED AS THE FIRST CHARACTER ON A LINE, IT WILL CAUSE THE LAST LINE TYPED FROM THE KEYBOARD TO REAPPEAR. IF IT IS TYPED WHILE ENTERING A LINE, CTRL-W RETYPES THE LINE AND ENTERS EDIT MODE.

HERE ARE SOME THINGS TO BE CAREFUL OF WHEN USING CTRL-W:

1. CTRL-W DOES NOT WORK WHEN ENTERED AS THE FIRST CHARACTER OF AN APPLESOF LINE.
2. VERY LONG LINES MAY BE AUTO-PACKED, REMOVING ALL EXTRANEOUS SPACES.

EDIT MODE: CONTROL COMMANDS

ALL OF THE FOLLOWING COMMANDS ARE AVAILABLE ONLY AFTER ENTERING EDIT MODE AS DESCRIBED. CONTROL CHARACTERS IN THE EDITED LINE ARE DISPLAYED IN INVERSE VIDEO DURING EDIT MODE. A WARNING BELL WILL SOUND IF YOUR LINE HAS REACHED THE MAXIMUM BASIC LINE LENGTH (128 FOR INTEGER BASIC, 239 LINES FOR APPLESOF).

NOTICE THE FIRST CHARACTER OF EACH COMMAND'S NAME IS THE SAME AS (OR SOUNDS LIKE) THE COMMAND ITSELF. THIS IS AN EASY WAY TO REMEMBER THESE COMMANDS.

EDIT MODE COMMANDS

CTRL-I

INSERT - THIS COMMAND allows you to insert character into the line. NON-CONTROL CHARACTERS TYPED AFTER A CTRL-I WILL BE INSERTED IN FRONT OF THE CURSOR, AND THE REST OF THE LINE WILL SPREAD TO MAKE ROOM. ALL FOLLOWING CHARACTERS TYPED WILL BE INSERTED UNTIL A CONTROL CHARACTER IS TYPED (SUCH AS <-,->, OR ANOTHER EDIT MODE COMMAND). TO INSERT CONTROL CHARACTERS, SEE OVERRIDE.

CTRL-D


CTRL-F

FIND - FOLLOWED BY A Character TYPED N TIMES, FIND WILL MOVE THE CURSOR TO THE NTH OCCURRENCE OF THE CHARACTER IN THE LINE. FOR EXAMPLE, TO POSITION THE CURSOR ON THE THIRD COLON (;) IN A LINE, TYPE CTRL-F ;;. NOTICE THAT YOU ONLY NEED TYPE CTRL-F ONCE. TYPE ANY OTHER CHARACTER TO TERMINATE FIND.

CTRL-Z

ZAP - THIS FUNCTION DELETES ALL CHARACTERS UP TO A SPECIFIC CHARACTER. A CTRL-Z FOLLOWED BY A CHARACTER TYPED N TIMES WILL DELETE ALL CHARACTERS UP TO THE NTH OCCURRENCE OF THAT CHARACTER (MUCH LIKE FIND). FOR EXAMPLE, TO DELETE THREE STATEMENTS FROM A LINE, TYPE CTRL-Z :::. TYPE ANY OTHER CHARACTER TO TERMINATE ZAP. IF YOU ZAP A LITTLE TOO FAR, YOU CAN RESTORE THE ORIGINAL LINE WITH RESTART.

CTRL-O

OVERRIDE - THIS COMMAND FUNCTIONS EXACTLY LIKE THE INSERT COMMAND EXCEPT THAT THE FIRST CHARACTER INSERTED MAY BE A CONTROL CHARACTER. AFTER THE FIRST CHARACTER HAS BEEN INSERTED, OVERRIDE BEHAVES EXACTLY LIKE INSERT THAT IS, INSERTION IS TERMINATED WITH A CONTROL CHARACTER. INSERTED CONTROL CHARACTERS ARE DISPLAYED IN INVERSE VIDEO IN EDIT MODE. YOU CAN USE OVERRIDE TO INSERT CTRL-D'S INTO PRINT STATEMENTS FOR DOS COMMANDS. YOU MIGHT ALSO WANT TO EXPERIMENT WITH OTHER CONTROL CHARACTERS SUCH AS THE FOUR PROGRAMMABLE CURSOR CHARACTERS (CTRL-H, I, J, K), BACKSPACES, AND CARRIAGE RETURNS.

CTRL-R

RESTART- THE RESTART COMMAND IS USED TO RE-EDIT THE ORIGINAL LINE, REGARDLESS OF ANY CHANGES OR DELETIONS YOU MIGHT HAVE MADE (A LIFE SAVER). RESTART DOES NOT WORK IF YOU ENTERED EDIT MODE WITH A CTRL-W.

CTRL-P

PACK - THE PACK COMMAND allows you to remove extraneous spaces in edited lines that would otherwise cause a *** TOO LONG ERROR. CTRL-P WILL RETYPE A LINE WITH ALL SPACES REMOVED EXCEPT THOSE WITHIN QUOTES. PACK CAN ALSO BE USED WHEN YOU HEAR THE BELL WARNING YOU THAT YOUR LINE IS TOO LONG. TO PROTECT REMARK LINES FROM BEING PACKED, ENTER A QUOTE AS THE FIRST CHARACTER OF THE REMARK.

CTRL-C

CONVERT - THE CONVERT COMMAND IS USED TO QUICKLY CONVERT UPPER CASE TEXT TO LOWER CASE, OR VICE VERSA. CTRL-C CONVERTS THE CHARACTER UNDER THE CURSOR TO THE CURRENT CASE SET BY THE CTRL-A/CTRL-S UPPERMOST LEFT LOCK, AND ADVANCES THE CURSOR.

CTRL-B

BEGIN - THIS COMMAND MOVES THE CURSOR TO THE BEGINNING OF THE LINE. IT IS USEFUL FOR REPOSITIONING THE CURSOR BEFORE USING THE FIND COMMAND, AND FOR REMEMBERING LINES.

CTRL-N


CTRL-M

RETURN - TYPING A CARRIAGE RETURN WILL EXIT EDIT MODE AND SAVE THE LINE EXACTLY AS IT APPEARS ON THE SCREEN THIS IS THE USUAL WAY OF LEAVING EDIT MODE.

CTRL-X

CANCEL - CTRL-X IS USED TO CANCEL THE LINE BEING EDITED, AND EXIT EDIT...
MODE. A LINE CANCELLED WITH CTRL-X CAN BE RECOVERED WITH CTRL-W.

THE BACKWARD AND FORWARD ARROW KEYS WORK JUST AS THEY NORMALLY DO, MOVING THE CURSOR BACKWARD OR FORWARD ONE SPACE. THESE ARE ALSO INVOKED WITH CTRL-H AND CTRL-U, RESPECTIVELY.

CTRL-A, CTRL-S
THE UPPER AND LOWER CASE SHIFT LOCK KEYS ALSO WORK IN EDIT MODE, CTRL-A IS UPPER SHIFT LOCK, AND CTRL-S IS THE LOWER SHIFT LOCK. (SEE CONVERT)

STOP LIST ESC OR
CTRL-S
TEMPORARILY STOP, I.E. PROGRAM LISTINGS OR CATALOG, HIT CTRL-S OR ESC. EXIT COMMAND, HIT ANY KEY.

CANCEL LIST
CTRL-C
TO TERMINATE LISTING ENTIRELY AND RETURN TO BASIC

FLUSH LIST
CTRL-N
TO QUICKLY SKIP THROUGH LONG LISTINGS. TO RESUME OUTPUT TO SCREEN

NOTICE: ESC AND CTRL-S:
DURING INPUT BE CAREFUL. THE ABOVE COMMANDS S, C, F, ESC, WORK ONLY WHEN CHARACTERS ARE ACTUALLY BEING PRINTED ON THE SCREEN.

CURSOR CONTROL
CTRL-H - LEFT
CTRL-I - RIGHT
CTRL-J - DOWN
CTRL-K - UP

THES CHARACTER ALLOW YOU TO CONTROL THE POSITION OF THE CURSOR FROM WITHIN PRINT, REM, OR INPUT STATEMENTS.

EXAMPLE:
A PRINT STATEMENT WITH AN ASTERISK FOLLOWED BY FIVE CTRL-K'S AND ANOTHER ASTERISK WILL PRINT AN ASTERISK ONE SPACE AHEAD AND FOUR LINES ABOVE THE OTHER.

ESCAPE FUNCTIONS

NOTE:
THE ESCAPE FUNCTIONS ARE NOT AVAILABLE DURING EDIT MODE!

ESC Q, A-G
THESE ARE NORMAL APPLE ESCAPE COMMANDS. THEY WORK AS IS IN MANUAL.

ESC P
TYING ESC-P/ SAME AS ESC SHIFT-P, EXCEPT DON'T USE SHIFT KEY.

ESC I, HJ, K, M
SIMULATE AUTOSTART ROM ESCAPE EDITING. SAME AS ESC A, B, C, D.

ESC T
THIS TYPES TEXT AND RETURN, AND THEN POKE -16300,0 RETURN, WHICH RETURNS YOU TO TEXT PAGE 1.

ESC L
TYPE LIST AND A CARRIAGE RETURN.

ESC O AUTOMATICALLY TYPES CALL-936

ESC 1,2 ESC 1 WILL CATALOG THE DISK IN DRIVE 1

ESC 2 WILL CATALOG THE DISK IN DRIVE 2

ESC / USE IN PLACE OF WORD PRINT

ESC: THIS DOES A CALL-151 NOTE THAT A ':' IS A LOWER CASE '*' THE MONITOR PROMPT CHARACTER. WHEN EXECUTED ALL THAT IS SEEN IS 'MON'

ESC <-> PERFORMS EIGHT <-> AND ->. TYPING ESC ->->->-> WILL COPY AN ENTIRE LINE FROM THE APPLE SCREEN WHILE ESC <-> WILL FAST BACKSPACE SIXTEEN TIMES.

ESC Q
THIS FUNCTION WILL BRING THE VALUE OF THE CONTENTS OF ANY TWO MEMORY LOCATIONS. TO USE, YOU MUST FIRST SET THE VARIABLE A EQUAL TO THE ADDRESS OF THE LOCATION OF THE TWO-BYTE NUMBER. (THIS IS DONE BY TYING A=N, WHERE N IS AN INTEGER) NEXT JUST TYPE ESC Q. THIS FUNCTION IS ROUGHLY EQUIVALENT TO PRINT PEEK (A) + PEEK (A+1) * 256, EXCEPT THAT VALUES GREATER THAN 32767 ARE PRINTED AS NEGATIVE NUMBERS. IN INTEGER BASIC SETTING A=74 WILL PRINT THE CURRENT VALUE OF LOMEM: AND A=76 WILL PRINT THE ADDRESS OF HIMEM: IN APPLESOFT USE A=105 AND A=73 RESPECTIVELY, TO PRINT THE VALUE OF LOMEM: AND HIMEM: THIS FUNCTION IS NOT PRINTED ON THE SCREEN DURING EXECUTION.

ESC W
WILL CALCULATE THE START ADDRESS AND LENGTH OF THE MOST RECENTLY LOADED DISK FILE ON 48K SYSTEM. YOU MUST CHANGE THE CONSTANTS WITHIN THE FUNCTION WITH THE ESC CREATE PROGRAMS FOR USE WITH OTHER SIZE SYSTEMS.

ESC !-% -ESC SHIFT 1 THRU ESC SHIFT 5
ESC I, HJ, K, M
HIT THE ESC KEY AFTER THE LISTING HAS STOPPED. THE NEXT KEY WILL BE SIMULATE AUTOSTART ROM ESCAPE EDITING. SAME AS ESC A, B, C, D. PROCESSED AS AN ESCAPE FUNCTION AND THUS YOU WILL NOT ENTER EDIT MODE.

ESC T
THIS TYPES TEXT AND RETURN, AND THEN POKE -16300,0 RETURN, WHICH RETURNS YOU TO TEXT PAGE 1.

ESC L
TYPE LIST AND A CARRIAGE RETURN.

ESC O AUTOMATICALLY TYPES CALL-936

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GREETING PROGRAMS:
A. LOAD PLE
B. DEL 10,30
C. ENTER YOUR PROGRAM.

INTEGER: THE LAST STATEMENTS EXECUTED IN YOUR PROGRAM MUST GOSUB 32767: PRINT "<CTRL-D>INT"
APPLESOFT: THE LAST STATEMENT EXECUTED MUST BE GOSUB 63999: PRINT "<CTRL-D>FP"

BECAUSE THE FINAL INT AND FP IMMEDIATELY TERMINATES THE PROGRAM AND CLEARS PROGRAM MEMORY, IT IS NOT POSSIBLE TO RUN ANOTHER PROGRAM FROM YOUR GREETING PROGRAM. BRUN CATALOG AND EXEC ETC., ARE ALLOWED

D. INSERT YOUR OWN DISK.
E. SAVE HELLO.

IT IS POSSIBLE TO INIT A NEW DISK WITH A PLE GREETING PROGRAM.

ENTERING BASIC FROM APPLE MONITOR
TO RETURN TO BASIC AFTER HITTING RESET OR CALL-151, TYPE CTRL-Y AND HIT RETURN. IF YOU USE 30DG TO RE-ENTER BASIC THE PLE WILL BE DISABLED UNTIL BASIC IS REENTERED WITH CTRL-Y. IF YOU HAVE AUTOSTART ROM, HITTING RESET WILL ALWAYS RETURN YOU TO BASIC WITH THE EDITOR UP AND RUNNING.

THE PLE IS MUCH CONNECTED TO THE APPLE LIKE A PRINTER OR OTHER PERIPHERAL. THEREFORE WHEN YOU USE PR# IN# THE PLE IS TEMPORARILY DISABLED AND MUST BE RECONNECTED. IN APPLESOFT CALL-1013 OR SIMPLY AN "P" IN YOUR PROGRAM OR FROM THE KEYBOARD. INTEGER DOESN'T HAVE A STATEMENT YOU MUST USE CALL-1013 TO RECONNECT THE PLE.

MEMORY CONFLICTS; TO TRANSFER TO ANOTHER DISK
A. LOAD REMOVE PLE
B. SAVE REMOVE PLE,A$300,L$3A

personality. Select HUMAN if you want to play; select TIMID if you want a wimpy computer opponent; select AVG for a level-headed computer opponent; and select BOLD for a gutsy computer opponent.

The AUTO-CLICK check box allows you to speed up the game slightly. If this box is blank, the computer will pause after each package opens and ask you to "please click" the mouse. If this box contains an X, these pauses will be eliminated. Click in the box to change its setting.

Click on the DON'T button when everything is set to your satisfaction. Open-Apple-S will also select SETUP.

BEGIN GAME allows you to start a new game once you have finished SETUP. This will only be available after a game is finished, or after you have aborted a game. Open-Apple-B will also select BEGIN GAME; and ask you to end a game in progress. The computer will plead for you to reconsider; click YES if you're sure. Open-Apple-A will also select ABORT GAME.

QUIT ends the program. Open-Apple-Q will also select QUIT.

THE GOAL MENU allows you to select the winning score. A check mark shows the current choice. During a game, you will be able to see (but not change) the goal by selecting this menu.

THE SCREEN
Player names and scores appear in the upper right. Human players appear in blue; computer players of all types appear in gray. The player who gets the next choice is marked with a highlighted name and a rectangle marked UP. If you escape or are locked out, a rectangle marked OUT will appear by your name.

Helpful messages appear in the upper left. The packages appear on the shelves in the lower left; select one by clicking on it. The door in the lower right shows the current amount of treasure found, as well as how much you'll get if you escaped right then. To escape the room, click on the door handle.

THE SURPRISES:
BAD NEWS: Yep, this clown is made of plastique. Say goodbye. (ROOM.)

THE CAGE OF THE JAILER: The door becomes magically locked. The other surprise package holds the key. Nobody can escape until the key is found -- or the bomb is found.

BOMB DUPLICATOR: One of the treasures is magically transformed into a bomb.

Now you have two to worry about...

TIME WARP: All packages are mixed and refilled. Anyone who escaped, though, stays out -- tough luck for them.

SCARED SILLY: You are frightened out of the room, and in your terror you forget to take your share of money with you. You get nothing this round.

MAGIC MIRROR: The current pot is doubled.

WHIRLWIND: Half the pot disappears in a magical vortex.

THE SILVER BOOT: The person finding this surprise gets to kick out one opponent (select them by clicking on their name). The person booted out gets their share of treasure.

BOMB DUPLICATOR: One of the treasures is magically transformed into a bomb.

Now you have two to worry about...

TIME WARP: All packages are mixed and refilled. Anyone who escaped, though, stays out -- tough luck for them.

SCARED SILLY: You are frightened out of the room, and in your terror you forget to take your share of money with you. You get nothing this round.

MAGIC MIRROR: The current pot is doubled.

WHIRLWIND: Half the pot disappears in a magical vortex.

THE SILVER BOOT: The person finding this surprise gets to kick out one opponent (select them by clicking on their name). The person booted out gets their share of treasure.

ENDING THE GAME
When one player reaches the Goal score, he/she/it becomes the leader and is locked out of the next room. The other players get one room to pass or tie the leader. At the end of that round, if someone has escaped with a higher score than the leader, THAT person becomes the leader and another "Last Room" begins. To win the game, you must remain the leader through one full round.

3. You can estimate your risk by keeping track of the size of each treasure. Every round starts off with one bomb, two surprises, and one "artifact". The breakdown of other treasures is based on the number of players. In a 2-player game it is 2 small, 2 medium, and 1 large; with 3 players, it is 4 small, 3 medium and 1 large; and with 4 players, the breakdown is 6 small, 4 medium and 2 large. The small treasures are worth $100-$300; the mediums $500 -$1000; the larges $2500-$5000; and the artifacts, $7500-$15000.

TECHNICAL NOTES
PLUNDER! was designed while Karl Kerchief and I were jogging one day -- we were searching desperately for distractions from the pain. It is based on a quote by Martin Gardner, which goes something like this: "You face a thousand boxes. All but one contain a dollar bill; one contains a nuclear warhead that explodes on opening. How many boxes will you open?"

The artifacts are tribute to some of my favorites in the game world. The Scrabble Sapphire, of course, honors the classic Selchow & Righter game. The Brunswick Pearl looks sorts like a bowling ball (I hope). The Golden Cubes add excitement to most games. The Crown of Sackson commemorates American game inventor Sid Sackson. The Ravensburger Ruby is for European game producer Otto Maier Verlag Ravensburg.

The sounds for PLUNDER! were dressed up using Sound Shop, a utility included with Roger Wagner's Hyperstudio. The graphics were painted with Activision's Paintworks Gold and Electronic Arts' DELUXE PAINT II. The programming was done using Byte Works' ORCA Pascal. The entire project took the evenings of two weeks. The program itself is only 32K of the file; the remainder is in the "resource fork". For the programmers out there, there are four custom resource types:

$0BA6 = digitized waveforms in pure, unlabelled form
$0BA7 = index of LocInfo for graphics resources
$2BA6 = digitized waveforms in pure, unlabelled form
$3BA6 = an array of size/speed/volume/data for the $2BA6 resources

If you're interested, the number $8BA6 was used because the hex digits correspond to position of my initials (KJF) in the alphabet. Brunhilda the Big-Boned is available for singing engagements at birthday parties and weddings. Contact the author for booking arrangements.

Enjoy. --Ken Franklin
24 May 1990
Welcome to the official ADVANCED DUNGEONS & DRAGONS computer product, Pool Of Radiance, a FORGOTTEN REALMS fantasy role-playing epic. This adventure game is based on the rules and background created by TSR, Inc. with a storyline created especially for this game. The Pool Of Radiance adventure begins in the ruined city of Phlan on the northern shore of the Moonsea, where adventurers from the civilized nations are trying to rebuild this once-proud city. Your adventurers start out as beginning characters at the first level of experience and can advance to higher levels as they help bring back Phlan to its former glory.

WHAT COMES WITH THIS GAME:
In addition to the game disks, you should find four other items in your game.

THE RULE BOOK
This is what you are reading. If you have game play questions during the course of the game, refer to this book.

THE ADVENTURER'S JOURNAL
This contains background and introduction to the Forgotten Realms and the scenarios, plus maps, rumors, and stories that may be true or false. It also contains Appendices, tables and reference information, to help speed game play. You will confirm the true rumors and expose the false ones during the game.

THE QUICK START CARD
This explains how to start the game, make menu choices, and indicate items using your computer. It also lets you get right into the game without having to read through the rules.

THE TRANSLATION WHEEL (SPHINX NOTE: Wheel not included)
As your characters progress through the Forgotten Realms, they will occasionally find Dethke (Dwarvish) and Espruar (Elvish) runes. The wheel is a method of translating those runes into English words so you can understand them. The Translation Wheel has four parts:

Espruar (Elvish) Runes. Around the outside rim are the elvish runes. Dethke (Dwarvish) Runes. Just inside the elvish runes are the dwarvish runes.

Three Paths. Spiraling out from the inside are three parts identified graphically as:

-.....
-___
-__

Six Rings. Six numbered rings, each with three holes showing letters, are located inside of the dwarvish runes.

USING THE WHEEL
You can get many kinds of information from the wheel:

Five or Six Letter Code Words. The computer displays 2 runes and a path. Match up the two runes and read the letters from rings 2 through 6. If the first character is a number, ignore it and read the letters from rings 2 through 6.

Three Letter Code Words. The computer displays 2 runes and a ring number. Match up the two names and read the letters on that ring clockwise from the ..... Path.

Translate Dethke (Espruar) to English or Dwarvish (Dethke). The computer displays a list of Elvish runes. Match the Translate Espruar Tab to each Elvish Rune, one at a time. Read the English letter in Ring 1 of the ..... Path. Read the Dwarvish rune at the Translate Dethke Tab.

Translate Dwarvish (Dethke) to English or Elvish (Espruar). The computer displays a list of Dwarvish runes. Match the Translate Dethke Tab to each Dwarvish Rune, one at a time. Read the English letter in Ring 1 of the ..... Path. Read the Elvish Rune at the Translate Espruar Tab. Some Dethke runes have more than one translation; try each when translating words.

GETTING STARTED QUICKLY:

You can get right into playing Pool Of Radiance by using the instructions on your Quick Start Card and using the characters provided. If you have any questions as you play, refer back to these rules for a complete description.

READING THE RULE BOOK:

This book is divided into sections describing how to manipulate the game by using the menus on the screen. The menus are lists of commands that you choose according to the instructions on your Quick Reference Card.

Central to the game is the concept of the 'active character.' The active character is highlighted on the character display. Any command that affects a single character affects the active character. Commands that affect the whole party do not require an active character.

In combat the active character is picked automatically according to the characters initiative. From other menus the active character may be changed before choosing any commands.

All commands are menu based. If a command affects the whole party, indicate the command as listed in your Quick Reference Card. If the command affects one character, indicate the character and then the command.

Example: To look at a character's items, indicate the character, choose View, and then choose items. The computer displays a list of the character's items and the items' readied status for combat. Menu items using your computer. It also lets you get right into the game by using the menus on the screen. The menus are lists of commands that you choose according to the instructions on your Quick Reference Card.

When space permits, each horizontal menu is preceded by the menu title. This is set off by a colon and is not an option on the menu. Menus are shown with their title and each command in the rules. As an example, the Encamp Menu contains commands for Save, View, Magic, Rest, Alter, Pool, and Exit. It is shown as:

Encamp Menu:

ENCAMP: SAVE VIEW MAGIC REST ALTER EXIT

Unless otherwise specified the Exit command on any menu returns you to the next higher level menu. On many computers the Escape key acts as an Exit command from any menu.

CHARACTERS AND THE PARTY

WHAT ARE CHARACTERS?
You create characters to accomplish quests in the Forgotten Realms. Characters are differentiated by their Race, Ability Scores, and Class. Several characters are needed to accomplish the missions presented here. These characters make up a Party. For maximum flexibility, you should have a balanced party with characters of different classes and

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
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races.

THE SIX PLAYER RACES IN Pool Of Radiance

Dwarf. This is a cunning race of sturdy workers and craftsmen. They have no magic of their own, but are resistant to magic. Dwarves can advance up to 9th level as fighters, and any level as thieves. They can be fighters and thieves at the same time. Dwarves can see in the dark using infravision.

Elf. This is a long-lived race. As tall as humans but slimmer, they can be fighters, magic-users, thieves, fighter/magic-users, fighter/thieves, magic-user/thieves, and fighter/thieves. They can advance up to 7th level as fighters and 11th level as magic-users, and any level as thieves. Elves also have a better chance of finding hidden objects and can see in the dark using infravision.

Gnome. Members of this race are shorter and slimmer than their cousins the dwarves. They can go up to 6th level as fighters, and any level as thieves. They can be fighter/thieves.

Half-Elf. These hybrids have many of the virtues of both humans and elves. Like elves, they can be more than one class at once, though they can advance only to 8th level as magic-users and 8th level as fighters. Like humans, half-elves can be clerics, and unlike humans, combine that class with other classes.

Halfling. These folk are about half the size of a human, hence their name. They have little ability with magic, but are resistant to its influences. They can be fighters, thieves, and fighter/thieves. They are limited to becoming 6th level fighters but have no limits as thieves.

Humans. This is the most common player-race in the Forgotten Realms. They have unlimited progression as fighters, magic-users, clerics, and thieves.

ABILITY SCORES

The computer randomly generates the ability scores that every adventurer has. There are six ability scores; all have some effect on the play of the character. Ability scores are based on a range from 3 (low) to 18 (high). Each Character Class (see below) has a Prime Requisite ability score. A Prime Requisite of 15 or more increases the amount of Experience (see below) the character gets from adventures.

Strength (Str). This is the means of how much a character can carry and how much damage he can do in a fight. The Prime Requisite for fighters is strength. Fighters with an 18 strength also have a percent value from 1 to 100 (listed as 01-00), denoting the highest possible natural character strength.

Intelligence (Int). This is the measure of how much a character can ultimately memorize. The Prime Requisite for magic-users is intelligence.

Wisdom (Wis). This is the measure of a character's ability to understand the ways of the world and interact with it. The Prime Requisite for clerics is wisdom.

Dexterity (Dex). This is the measure of a character's ability to do more than one thing at a time and his XP are divided up among his classes.

Constitution (Con). This is the measure of the overall health of a character. It influences both Hit Points (see below) and the character's chance of surviving the effects of a raise-dead spell.

Charisma (Cha). This is the measure of how well the character interacts with other characters. It is sometimes a factor when the character has an encounter with Non-Player Characters, usually called NPCs.

Each character also has two other important values: Hit Points and Experience Points.

Hit Points (HP). This characteristic is derived from a character's constitution (he gains a bonus to his Hit Points per level if his constitution is over 14), his level, and his character class (see below). Every time a character is hit in combat, he loses HP. A character with many HP can survive far longer in combat than one with few HP. When a character reaches 0 HP he is Unconscious and may be Dead. He takes damage depending on how much damage he has taken and the hit points he has remaining after hit points bonus he has taken. He can only regain HP when he is unconscious and he can only regain HP from Hit Points bonus.

Experience Points (XP). As a character has adventures, kills monsters, and accumulates treasure, he gains Experience Points. When he has enough XP he can increase in level, becoming more proficient in his class. The computer keeps track of XP. Every character starts at first level with 0 XP.

CHARACTER CLASSES

An adventurer must be at least one of the following character classes. A human adventurer can only be one class, non-humans can combine classes. A character with combined classes has more playing options, but he advances more slowly in his profession because he is doing more than one thing at a time and his XP are divided up among his classes.

Cleric. The cleric is a holy crusader who fights for the causes of his religion. Due to religious restrictions, he cannot use a cutting weapon that draws blood, such as a sword or an arrow, but can use any form of armor, and use crushing weapons, such as a mace. He casts holy spells that can heal and support his friends and also uses his natural holy power to drive away undead. Some magic items are actually holy objects that only a cleric can use. A cleric gains 1-8 HP with every advance in level to 9th level, plus any constitution bonus. From 10th level on, he adds 2 HP per level, without constitution bonus.

Fighter. The fighter can use any form of armor or weapon including magic ones, but most other magical items, and all magical spells, are beyond his ability. A fighter gains 1-10 HP plus his XP bonus with each advance in level through 9th level. With the 10th level, he gains 3 HP per level without constitution bonus.

Magic-User. The magic-user is potentially the most powerful of all the classes. Doing more than one thing at a time and his XP are divided up among his classes.

Thief. This is the thief of the sagas, who uses trickery and misdirection instead of brute force to win his objective. This is the only profession in which demi-humans may climb as far as any human. Indeed, halflings and elves are especially adept in this craft. To be a proficient thief, a character must have a high dexterity.

Thieves must stick to leather-based armor and have a restricted list of weapons. A thief gains 1-6 HP with every advance in level, plus constitution bonus, through 10th level. They gain 2 HP, without constitution bonus, per level thereafter.
Multiple Classes. Non-human races can sometimes be a combination of classes. When a character is more than one class, his HP per level are averaged among the classes involved. However, his experience is split between the two classes even when he cannot further advance in one of them. He gains all the benefits of both classes in regard to weapons and equipment.

ALIGNMENTS
Alignment is the philosophy a character lives by. While the actions of a character are under your control, the character's alignment can affect how NPCs in the game view him. The computer provides all the possible Alignments for a character and you can choose any of those you wish.

Lawful Good. Followers of this alignment strictly interpret law and order, but they use these principles to bring all the benefits to the society.

Lawful Neutral. Followers of this alignment view regulation as all-important, taking a middle road between good and evil.

Lawful Evil. Followers of this alignment believe in the rulership of the strong and the enslavement of the weak.

Neutral Good. The follower of this alignment believes there must be some regulation in combination with freedoms if the best is to be brought to the world.

True Neutral. A follower of this alignment believes that everything must be kept in balance—law and chaos, and good and evil—to maintain world harmony.

Neutral Evil. The follower of this alignment considers law and chaos to be minor considerations as long as evil is brought to the world.

Chaotic Good. Followers of this alignment value randomness and freedom, but also value life and individual welfare.

Chaotic Neutral. Followers of this alignment value randomness and disorder over either evil or good.

Chaotic Evil. The Chaotic Evil character disdains laws and order, kindness and good deeds. He seeks positions of power, glory, and prestige in a system ruled by his own whims.

STARTING EQUIPMENT
Each character is assumed to have starting equipment including clothes, boots, backpack, money pouch, food, water, tinderbox, and flint and steel. The character's on-screen list of items only includes important items such as weapons, armor and magic items.

PLAYING THE GAME
To play Pool of Radiance you need a party of characters. You can use the party of characters provided or you can create your own.

CREATING A PARTY OF CHARACTERS:
A party is a group of characters you have generated and saved to the save game disk for use in missions. You may have up to 6 Player Characters (called PCs or characters) in your party at a time. You can control up to 8 characters in a game, but the remaining two slots are left open for NPCs your characters may hire or meet along the way.

When starting a game, the first screen you see is one with positions for the vital information about the characters in the party and a menu with all the ways of putting together an adventuring party. This is the Party Creation Menu.
You can give NPCs treasure, which may help their morale, but you can also spell, or some other form of total destruction. He cannot be raised to. The character has been destroyed by dragon flame, a disintegrate spell. The computer commands NPCs in battle. They have morale. If things get too bad, they may flee. You can give NPCs treasure, which may help their morale, but you cannot trade their items to other characters. If they die, however, you can use the Trade Items function to take their items.

**LOYALTY**

NPCs can also be traitors insinuated into your party, depending on the way the adventure goes. They can spy on you and give information to your enemies, and even turn on you in battle. NPCs can be a big help, but don't trust them in every situation.

**VIEWING A CHARACTER**

The character screen displays the character's name, race, and age. It also displays his alignment, character class, and ability score. The current wealth of the character is also shown. Initially, the computer generates a random number between 30 and 180 in gold pieces, which the character can use in buying his equipment. Later, the character accumulates wealth through his adventuring; there are several entries on the screen showing the copper pieces (cp), silver pieces (sp), electrum pieces (ep), gold pieces (gp), platinum pieces (pp), gems, and jewelry. The value of coins are listed in the Appendices, the value of gems and jewelry vary and are found when they are appraised.

The screen also shows the character's current level, his earned XP, and his current HP. If the HP are highlighted, the character has taken damage, that has not been healed. The number shown is his current HP, not his normal HP. Once the character has healed all the damage, the number reverts to normal.

The Armor Class is shown as AC; the lower the AC number, the better the armor. Then it shows the character’s Ready weapon and what armor he is wearing. This is followed by the character’s To Hit AC 0 (THAC0). The lower the character's THAC0, the better fighter he is. This is followed by the damage the character does, which depends on his strength and the weapon he has ready.

The last entry is the Character Status. This is an indication of the current health of the character. The Character Status can be:

- **OK**
  - The character has positive HP and can move and fight normally.
- **DYING**
  - The character will die in a short period of time unless the character is bandaged or healing magic is applied. If the character is bandaged his status changes to Unconscious. Healing magic will make him OK again. In the course of a combat, a character who is Dying has a chance of becoming Dead unless he is bandaged (see Combat). A character who survives a combat in Dying status is automatically assumed to have his wounds bandaged after combat and becomes Unconscious.
- **DEAD**
  - The character has died. He will be brought with the party (assume he is set down during any combat) and can possibly be resurrected with a raise dead spell from an NPC cleric. The character’s actual chance of being raised when the spell is used depends on his constitution.
- **FLD**
  - The character fled from the previous battle. After a battle is over, he can rejoin the party as if nothing had happened, and regain his previous status.
- **GONE**
  - The character has been destroyed by dragon flame, a disintegrate spell, or some other form of total destruction. He cannot be raised from the dead by the raise dead spell.
from the Dead.

VIEW OPTIONS
To inspect the active character choose the View command. This brings up the View Menu:

View Menu
VIEW: ITEMS SPELLS TRADE DROP EXIT

ITEMS
Using this command allows you to see what items the character is carrying. The character's items and their combat ready status are displayed. An item that is not Ready cannot be used. Not all commands in the Item Menu are always available.

Item Menu
READY USE TRADE DROP HALVE JOIN SELL ID EXIT

Ready. If you want to ready or unready an item, you can use the Ready command to change the status of the weapon, armor, or other item. A character has several restrictions on what he can use. Basically, he cannot use more than two hand-held items at once. Thus, he cannot have ready a sword, a shield, and a bow at the same time. Arrows are assumed to be in a quiver and can be Readied at all times, though they cannot be used unless a bow is Readied as well.

Use. This command means the character is going to use an item. In Combat, you will be asked to indicate the target (see Combat for targeting) and proceed back to the Combat Menu.

Trade. If you use this command, the screen switches to the Party Screen and asks which character you are trading with. Indicate the character and the screen switches back to the Items Screen. Indicate which item (you can trade multiple items in one transaction) is to go to the other character and the item disappears from the trading character's list and reappears on the item list of the receiving character. Remember that an NPC, does not give up an item once he has it, unless he is dead.

Drop. If this command is used on an item, the item is gone. It cannot be retrieved. Do not use this if you want to give the item to someone else, that's what the Trade command is for.

Halve. Multiple items such as arrows are often combined onto one line, such as 42 Arrows. Halve creates two lines, each with half the number of items; such as two lines each with 21 Arrows. Only items like arrows, that are shown as several items on one line, can be halved.

Join. This is the opposite of Halve. If you have several lines of arrows or a similar item on the Items screen, you can use this command on one line and all similar lines are joined with it. The number of items shown is the total of the numbers in all the former lines. No more than 250 of an item can be joined on one line. NOTE: The Ready status (Yes or No) of the item depends on the line that all the others are joined with.

Sell. This command is described under the Shop Menu.

ID. This command is described under the Shop Menu.

Spells. This is a listing of what spells a magic-user or cleric has memorized and is ready to cast (see Magic Menu).

TRADE This command is used when you want to transfer money from one character to another. Indicate which character you are trading with, and then indicate which coins and how much are to go to the other character. The coins disappear from the trading character's list and reappear on the money record of the receiving character.

DROP If this command is used on money, the money is gone. It cannot be retrieved.

After you create your party, you appear in the civilized section of Phlan. The party is ready to begin adventuring.

MISSIONS: Phlan is a very dangerous place. The civilized nations are only now gaining a foothold. You can either wander around town and run across dangerous situations, or report to the City Council of Phlan. They will assign the party missions and give rewards when the missions are completed. Initial missions are local in nature, later ones are more ambitious to match both your increased expertise and their union of you. Phlan is split into two sections; the civilized section is controlled by the settlers and the uncivilized section is controlled by monsters. After you clear all the monsters from a block, settlers move in and it becomes civilized.

POINTS OF VIEW:
As you move around the town and the wilderness, there are three different points of view: 3-D, Area, and Wilderness.

3-D This appears with the Adventure Menu any time you are in town, underground, or in any other built-up area. It shows a view of the surrounding area as seen by the party. It only shows one direction at a time, so you must rotate the party using the directional controls (see Adventure Menu) to see in each direction. At the same time, the screen shows what compass direction the party is facing and the coordinates of their location in their current block.

AREA This option is given in the Adventure Menu when the 3-D view is shown on the screen. This view shows the position of the party and an overhead view of the surrounding area. It can only be obtained in a 3-D view, it does not appear in the Wilderness. There is no real detail, just the position of all major obstructions such as walls, trees, water, etc. A cursor shows the position of the party.

WILDERNESS This screen shows when the party is traveling in the Wilderness. It displays an image of the party moving through a map-like wilderness. It shows the area around the party for 2 moves in each direction. If there is an encounter in the wilderness, an image of the encountered monster appears next to the icon showing the location of the party. You will be given all the usual options for the encounter (see Encounters).

BLOCKS Most adventures take place in one or more blocks of 16 squares by 16 squares. The party moves from block to block by moving into a long corridor with a low ceiling. Stairs and caves with low ceilings may also move the party from one block to another.

TYPE AND THE PARTY From the moment the party begins its adventures in Phlan, the clock is ticking. The longer it takes a party to complete a mission, the harder it becomes.

MOVING AROUND: The first thing a new party must do is equip itself from the Shops. Then it has to get to the scene of its adventures. There are two ways of doing this.
TOUR TRAVEL
You can walk the party to in-town missions, having encounters along
the way.

WILDERNESS TRAVEL
Some missions involve locations away from Phlan. The party travels in
then Wilderness Point of View until they reach the location of the
mission. The computer keeps track of the time traveled.

CIVILIZATION:
The civilized section of Phlan contains a number of locations of
interest to the party. In the civilized section the party can find out
information, train, rest and heal, and buy and sell equipment.
THE CITY COUNCIL
This is where the characters meet the Council and receive missions
and news.
THE DOCKS
The party may catch a boat at the docks to take them to otherwise
inaccessible blocks and into the wilderness.
THE INNS
These give a safe haven in which to Rest. (using the Encamp Menu). Each stay at an Inn costs money, but once you begin your stay you can
rest as long as you like.
THE TAVERNS
These are rowdy places full of gossip, stories, and information.
THE TRAINING HALL
This is where the characters can receive training from NPCs of
higher level and add starting PCs. This displays the Party Creation
Menu so that you can use the Train Character command.
THE SHOPS
Here the characters can buy their initial equipment and later sell
some of their treasure and upgrade their equipment. When you enter a
Shop, you are presented with the Shop Menu.

Shop Menu
BUY VIEW TAKE POOL SHARE APPRAISE EXIT
Buy. If you use this command, the computer displays a list of items
available and their cost. If you try to buy something you do not have
the money for, the computer tells you so. If you try to buy something
that will overload you, the computer tells you that too.
View. This is the same screen as shown for this command in other
menus with the addition of the Appraise command in the View Menu, and
the Sell and ID commands in the Items Menu.
Sell. Use the cursor to highlight any item you want to sell. The
Shop will make an offer and you can either sell or not. If you decide
to sell, the screen asks you one more time to be sure, then the item is
gone.
The shops in Phlan are very busy; no item sold to a merchant remains
for long. If you sell and item, it won't be there when you go back.
ID. This command is used to get a magical evaluation of a magic
item. The shop charges you for the service of identifying the magic on
an item.
Take. If you have left money through the Pool or Drop commands, you
can use this command to pick it up again. Indicate that you want to
take money and who will take it. The computer then displays each type
of coin available and how many of the coins take all the character
takes. One character can take all of the coins if he has the strength
to do so, or you can allow each character to take a share.

If you try to pick up more than the character can carry, the screen
displays a message saying 'The character is overloaded' and will not
let any more coins be put on the character. Remember, carrying lots of
coingage slows a character down in combat.

Pool. This command makes all the party members drop all of their
money into one pool of money. All purchases made at the shop come out of
this central pool. Anything left over can be picked up again using the Take Menu.
Share. This command picks up all the money in the pool, divides it
into shares, and distributes it among the characters.

Appraise. This is used in Shops to get an appraisal of any gems and
jewelry the character has. The computer asks what gems and jewelry are
to be appraised, and offers a price on the indicated gem or jewelry.
Once you have received a price, you may take it and the item is sold.
The money is immediately put in your money record. If you do not want
to sell immediately (gems and jewelry are a lot easier to carry then
coins), the gems and jewelry become items and go from the money record
on the Character Screen to the Items list, and can be sold off of that
list like any other item.

THE TEMPLES
The temple will cast clerical healing spells for a price. When you
enter the temple, the Temple Menu is presented. Except for Heal, the
commands on the Temple Menu are the same as those on the Shop Menu.

Temple Menu
HEAL VIEW TAKE POOL SHARE APPRAISE EXIT
Heal. This command displays a list of the healing spells the clerics
will cast. Indicate the spell you want cast. The computer displays the
cost and asks you to confirm that you still want them to cast the
spell. The cost of a spell may vary depending on the recipient and
circumstances.

ADVENTURE MENU
The Adventure Menu allows access to all of the main functions in the
Pool Of Radiance. This menu shows either the current 3-D picture of the
area in front of the party and the status of the party (if in a town
adventure), or the area around the party (if in the wilderness). If any
party members are injured, their hit point numbers (showing how many
they have now) are highlighted for easy recognition. There are several
commands available to you from this menu.

Adventure Menu
MOVE VIEW CAST AREA ENCAMP SEARCH LOOK
MOVE: This is the command to move the party. How the party moves is shown
on the Quick Reference Card provided with the game for your computer.
In 3-D travel, the Party can move forward, move backwards, turn
right, or turn left. Normally, each movement forward or back puts the
party into another square and takes one minute of game time. Turning
keeps the party in the same square and takes no game time. If the party
has Search on, moving one square takes 10 minutes.
In the Wilderness, the party can move in any of eight directions.
Moving one square takes a half a day of game time. Search mode has no
effect in the wilderness.
**VIEW:**
This displays the Character Screen, as described in Viewing a Character.

**CAST:** This command sends you to the Cast Menu so your active character can throw a magic spell. See the section on Magic for a description of how to cast spells and their effect.

**AREA:**
This shows an overhead view of the area around the party. If the party is lost or in unfamiliar territory this command may not be available.

**ENCAMP:**
This command sends you to the Encamp Menu. This is a very important part of the game, and is described in detail in its own section.

**SEARCH:**
A party can move in Search Mode, which takes 10 minutes of game time per move. This allows the party to carefully search the area they are passing, but also gives wandering monsters a greater chance to find them. You only need to hit the Search command once to start the party moving at Search speed, then hit the command again later to reset them to normal movement. You do not need to hit Search for every move. In Search you are assumed to be checking for secret doors, mapping, moving as silently as possible, hiding in any available shadows, and generally being as careful as possible.

If you never go to Search mode, you will run into fewer wandering monsters (because you are moving faster) but have much less chance of finding concealed treasures or traps before they are sprung.

**LOOK:**
This command is used to look at a square more closely, as if your party moved into the square again. If the party is moving at normal rate, then a Look command treats that particular square as if the party moved into it in Search mode.

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**ENCAMP**
This command is used in several menus to take time off and try to rebuild characters and the party. It is used to handle day-to-day functions such as saving the game, resting to heal, or memorize spells (described under Magic Menu), and changing game items such as game speed or party order.

**SAVE:**
This command saves the characters and game as they are. Check the Quick Reference Card for any system specific details of how to save your game.

**VIEW:**
This displays the View Menu, as described under Viewing a Character. In camp, this does not display the Sell Item or ID commands.

**MAGIC:**
Magic is a very important part of Pool Of Radiance, and is described later under its own heading. Magical Spells can only be memorized while the party is in camp.

**REST:**
One of the most important aspects of the Encamp Menu is the chance to rest. Characters catch their normal sleep without having to go to camp. However, to memorize spells or heal naturally, specific rest time is necessary.

For every 24 uninterrupted hours of resting in camp, every wounded character regains one hit point above and beyond any recovery gained from healing magics. The initial resting time is established by anyone who is memorizing spells. The screen will show the days, hours, and minutes necessary for the spell-using members of the party to memorize (or pray for) the spells they want to memorize. Memorizing any spells at all takes a minimum of four hours. Third level spells take a minimum of six hours. See the Magic Menu for further description of memorizing spells.

REST can be interrupted by any random encounter. Only take long rests in safe places, such as inns, hideouts, or secure buildings.

**REST Menu:**
REST INCREASE DECREASE EXIT

**INCREASE**
Once you have determined the full time you want the party to rest, this command starts them Resting.

**DECREASE**
This command decreases the time to be spent in camp. This may mean that characters do not memorize all the spells they want or that characters may not recover all their hit points, but sometimes time constraints are part of the adventure, and the party cannot spend all the time it wants resting.
ALTER: work.

This command is used to change the basic makeup of both the party and the characters who are part of it. You are given the following menu:

Alter Menu:
ALTER: ORDER DROP SPEED ICON PICS EXIT

ORDER
This command allows you to reorganize your characters for combat. You can place characters in the first or second rank. The first four characters are in the first rank, where they will meet enemies hand-to-hand, the rest are in the second rank, where they can use spells and missile weapons.

The computer asks who takes position number 1, etc. and reforms the group, with position #1 on top, when all the choices are made. Position of NPCs can be changed with this command.

DROP
This command allows you to permanently drop a character or NPC from the party. Once dropped, the character is gone from the party and his current version will not be saved if you then use the Save command to save the game.

SPEED
This command controls the speed of messages presented on the screen. If you are having trouble reading messages before they disappear, use the Slower command. If messages seem to take forever to get off the screen, use the Faster command. Note that once you have used this command, it affects all subsequent messages, and you may have to re-use the command if later messages are too fast or too slow.

SPEED Menu:
SPEED: SLOWER FASTER EXIT

ICON
When a character is created, he is given a combat icon. When the party is in Combat, each party member's icon designates his position and general facing on the screen.

The Icon command is used to change the character's icon. You can customize this icon to represent the character's favorite weapons, armor, and colors. You may want to do this when the character picks up a new weapon.

Icon Menu:
ICON: PARTS COLOR SIZE EXIT

Parts: You can alter the weapon (which controls the rest of the body shape) or the head of the icon. You are shown both the Ready Icon character and the character's Action Icon (which shows the character attacking).

When you are done choosing the weapon and head, you can reject the new form or accept it. The screen shows you and the new and old versions of the Ready and Action Icons.

Parts Menu:
PARTS: WEAPON HEAD EXIT

Color. You use Color to alter the color of virtually every part of the Icon, as shown on the screen. Some of the areas you can alter on the Icons do not correspond to the terms given in the menu. For instance, changing the shield color for a character with a bow or crossbow actually changes the color of the arrows or quarrels. Play with the Icons commands until you get a feel for how these variables work.

Color Menu:
WEAPON BODY CAP HAIR SHIELD ARM LEG EXIT

Size. Large size Icons are usually used for humans, elves, and half-elves. Small size Icons are usually used for dwarves, gnomes, and halflings.

Size Menu:
SIZE: LARGE/SMALL EXIT

Exit. When you are done, use this command. The computer will ask you to confirm any changes to your icons. Make your choice and the computer returns to the Alter Menu.

PICS
This command governs when character and encounter pictures will be displayed.

Pics Menu:
PICS: CHARACTERS ON/OFF MONSTERS ON/OFF EXIT

CHARACTERS On/Off. This command governs the portraits displayed with the character statistics when you use the View command. Characters On shows the pictures when you view a character; Characters Off hides the pictures. Having the characters hidden slightly speeds up the game since the computer does not have to take the time to load or draw the portrait each time.

MONSTERS On/Off. This command governs the pictures that appear during encounters. Monsters On shows the animated picture when the monsters get to the closest range in an encounter; Monsters Off hides the animated pictures.

ENCOUNTERS

When a party comes across NPCs of any kind, there is an encounter. The computer provides a quick glimpse of who the party has encountered, then asks what you want to do.

The computer determines whether both parties see each other, the NPCs surprise the party, or the party surprises the NPCs.

If the party surprised the NPCs, the party can attack immediately, getting a free round to attack in which the NPCs cannot retaliate. This opportunity must be taken at once or surprised is lost.

If hostile NPCs surprise the party, the party can attack immediately and get a series of attacks in without retaliation by the party.

If the NPCs do not surprise the party, the computer offers these commands.

Encounter Menu:
ENCOUNTER: COMBAT WAIT FLEE ADVANCE/PARLAY

COMBAT: The party attacks the NPC's. Who goes first is decided on the basis of initiative, which is explained in the Combat section.

WAIT: This command allows the NPCs to decide what to do. They may wait, combat, flee, advance (if more than a square away) or parlay (if in the same square).

FLEE:
If you see NPCs you think your party cannot fight successfully, use this command to run away. If successful, you may flee wildly, risking getting lost. If unsuccessful (because the NPCs can move faster than you do) you go to combat.

**ADVANCE**:
If the NPCs are far away use this command to approach them. Once the NPCs are adjacent to the party the Advance command will be replaced with the Parlay command.

**PARLAY**:
Use this command to speak with NPCs that are adjacent to the party. Characters should use this command to speak for the character who you think will make the best impression on the NPCs. Then, choose one of the five possible attitudes for dealing with the NPCs.

- **Parlay Menu**:
  - **PARLAY: NAUGHTY SLY MEEK NICE ABUSIVE**

**HAUGHTY**
You try to demonstrate your superiority to the inferior creatures you are making real. Some encounters only respect an air of superiority and are impressed enough to cooperate; this is also a good way to make them resentful and attack.

**MEEK**
You try to get information out of the NPCs without them realizing you are doing so. Some NPCs will realize you are trying to get something out of them and will become hostile.

**NICE**
You try to be friendly in hopes the NPCs are friendly to you. Some NPCs do not choose to be friendly to anyone.

**ABUSIVE**
You try to browbeat information out of the NPCs. It is best not to do this unless you have the power to back up your threat. The computer assumes you are as effective as possible in the attitude you call for.

**COMBAT**

In many adventures the party will have to fight to defeat the enemy. In combat the computer determines which characters (both player characters and NPCs) have initiative (i.e., which goes first) and depicts that person and his nearby compatriots. If you disengage an enemy, he gets a free attack at your back, as do others you move by.

**ADVANCE**: In a combat, the first and second attackers strike at the defender's front. The third attacker strikes at the defender's rear, unless all the attackers are adjacent. The fourth and any additional attackers strike at the defender's rear. The defender's AC is substantially reduced against rear attacks.

A thief forms the only exception to the automatic facing rules. If the thief attacks from exactly opposite the first attacker, he can backstab. A backstab has a better chance of hitting the defender, and does additional damage when it does hit.

**USING MISSILE WEAPONS**:
- A character may not use a missile weapon if he has an opponent next to him. If he has no opponent next to him, he can fire a missile at anyone in his line of sight. The Next and Prev commands will only aim at targets in the attacker's line of sight.

**EXECUTING COMBAT**:
When a combat begins, the screen shows the area around the character with the highest initiative. The entire party may not be on the same screen, the hit points of the characters may not be on the same screen, and one can rarely see all of the monsters at one time. The computer indicates the active character and lists his name, current condition, armor class, and current ready weapon. Characters and NPCs move according to each character's dexterity and a random number generated by the computer. This is called an Initiative Number and changes with every combat round. Usually higher dexterity characters move before lower dexterity characters.

You may use the following commands to handle your side of the battle. If a character cannot use a command (such as Turn for a non-cleric or Cast for a fighter or thief) it does not appear.

**The Combat Menu**:

- **MOVE**: to move a character and to attack. You attack by moving the character into an enemy's square. You can even attack party members, but the computer gives you a chance to abort such an attack. You may not make multiple attacks in one turn.
- **VIEW**: characters may have multiple attacks in one turn. Bow get two attacks per turn. High level fighters get two attacks every other turn. All of a character's attacks are taken against his first target. If the first target goes down with the first attack, you may aim the remaining attack at another enemy.

Fighters may make a special form of multiple attacks called a sweep. A sweep may attack several weak targets with a single blow each. Refer to your Quick Start Card to find out how to move the character with your particular computer. The number of spaces a character can move is reduced by the weight carried. A character weighted down with coins or extra armor and weapons cannot move as fast as he could without the items. Bulky armor can also reduce movement. A character who is faster than any enemy can run away from the right, eventually running from the battlefield. A character who is as fast as the fastest monster, only has a 50% chance of getting away.
This command is used when a character has finished his turn. has the strength to do so, or you can allow each character to take an action. One character can take all of the coins if he wishes, or none. You indicate how many of each coin there are. You indicate how many of the coins the character will take. The computer looks at all possible targets, including other party members; don't shoot without looking. (However, the computer confirms your order first, before shooting at a teammate.)

Aim. This command allows the user to aim an attack using the following options.

Aim Menu:

AIM: NEXT PREV MANUAL TARGET EXIT

Next. Use this command to look at all possible targets, starting with the one closest then going to the next closest. The computer looks at all possible targets, including other party members; don't shoot without looking. (However, the computer confirms your order first, before shooting at a teammate.)

Prev (Previous). This is the opposite of the Next command. Use this command to look at the possible targets starting with the one farthest away and working back toward your character. Usually this is a good way to find a good target without working your way through all of your PCs first.

Manual. This command lets you aim anywhere on the map. It is especially useful for finding opposing leaders and targeting spells with area effects.

Target. If your character has a ready ranged weapon, or an item prepared with the Use command, this command shoots at the target you select.

Use. This command allows the user to use any non-weapon item. The command brings up the same screen and menu as the Items command under the View menu.

Cast. This is only available to magic-users and clerics when they still have spells available. Using this command brings up the Cast options of the Magic Menu (see that description of the Magic Rules). If hit recently, the character's concentration may be broken and you won't be given the Cast option.

Turn. Clerics can sometimes destroy undead monsters or turn them away from the party. This has no effect on any other form of monster. See the Appendices for a cleric's minimum level to affect various forms of undead.

Quick. This command allows the character to use any non-weapon item. The command brings up the same screen and menu as the Items command under the View menu.

Done Menu:

GUARD DELAY QUIT BANDAGE SPEED EXIT

Guard. The character can adopt this tactic and simply wait to meet any attacker. This means that he attacks the first foe that moves adjacent to him before the foe attacks him.

Delay. This command lets you delay this character's action by reducing his initiative number by 1. If he is the only one to be at the next lowest number, it is his action again. He can continue to delay his actions until all others have had their action for that round and then he must take an action or lose it.

Quit. You can signify you are finished with this character by using this command.

Bandage. This command only appears if a member of the party is injured. The character for whom the command appears can use this command to bandage the party member and keep him from dying.

Speed. This command is described under the Alter command of the Encamp Menu.

If the party flees:

As long as any party member survives to the very end of the combat, the bodies of unconscious or dead party members are assumed to be with the party. If the party flees from combat all unconscious and dead party members are permanently lost.

If the party dies:

If all the party members are slain you will have to go back to your last Saved Game and try again from that point.

After combat:

When combat is over, the screen will show some congratulatory message, then present a menu of commands. If a command does not apply to this after-combat situation, it will not appear.

Treasure Menu:

VIEW TAKE POOL SHARE DETECT EXIT

View. This command lets you inspect a Character. At this time you can use the Drop commands in both the Items menu and in the Character Screen menu.

Take. This command is used to pick up treasure.

Take Menu:

Take: Items Money Exit

Items. Use this command to produce a list of items carried by the monsters you have overcome. If more than one had a missile weapon, all of their remaining missiles are lumped into one line (if there are more than 100, 99 are on one line, and the rest on another line). Frequently, the weapons and armor used by monsters are substandard and not worth picking up as treasure, so they are not listed.

If one character tries to pick up too many items, the computer will say he is overloaded and will not allow the acquisition.

Money. The computer displays each type of coin available and how many of each coin there are. You indicate how many of the coins the active character takes. One character can take all of the coins if he has the strength to do so, or you can allow each character to take a
share.

If you try to pick up more than the character can carry, the screen displays a message saying, “The character is overloaded,” and will not let any more coins be put on the character. Remember, carrying lots of coinage slows a character down in combat.

POOL
This command makes all the party members drop all of their money into one pool of money. It becomes part of the treasure and the party members can use the Take Menu to reapportion their funds.

SHARE
This command picks up all the money in the treasure, divides it into shares, and distributes it among the characters.

DETECT
This command casts a detect magic from the current active character.

EXIT
This command lets you leave the scene of the battle. If there are still items that can be picked up, the machine will remind you that there is still treasure left. You can go back to the Treasure Menu or leave the treasure and go to the Adventure Menu.

MAGIC
Magic is integral to Pool Of Radiance. Both magic-users and clerics can use magical spells.

HOW MAGIC WORKS:
A spell can exist in one of three forms: In Memory, In Spell Book, and On a Scroll.

IN MEMORY
A magic-user or cleric who has a spell in Memory is said to have memorized the spell. He can cast the spell as shown in the Cast command description.

IN SPELL BOOK
Magic-users write their spells into a Spell Book. They can only write those spells into the book of which they have the ability to cast. The books are compendiums of spells among which they choose the ones they want to memorize. Clerics do not keep a spell book, they simply pray each day to get their spells.

ON A SCROLL
A spell written on an enchanted scroll can be read by a cleric or magic-user, depending on the kind of spells on the scroll. A magic-user must cast the spell read magic to understand the spells a scroll contains. Once he has done that, he can read the spell aloud at any time to cast it. A cleric does not need a read magic spell to read a clerical spell on a scroll, but only a cleric can read the spell. Once any kind of spell has been cast or scribed from a scroll, the spell disappears.

A magic-user may scribe the scroll spell into his spell books for future memorization. This erases the spell from the scroll. Spellcasters can get a list of their memorized spells from the Cast option of the Magic Menu or from the Spells option of the View Menu. They can get a list of their spells on scrolls from the Scribe option of the Magic Menu. If all you want is a list of available spells, be sure to exit before you actually cast or scribe the spell.

The Magic Menu:

CAST MEMORIZE SCRIBE DISPLAY REST EXIT

Cast. Use these commands to cast spells. In combat the spellcaster is the current active character. In camp the spellcaster is the current active character.

Cast Menu:

CAST NEXT PREV EXIT

The Cast Menu appears in both the Magic Menu, and the Combat Menu. It shows all the spells available to the active character. Find the page with the spell you want to cast. Select the Cast command. Then select the spell to cast it. If necessary, indicate the target of the spell. If you do not find the spell you want, you can Exit. In combat, the character can take another option. Otherwise the character returns to the Magic Menu.

Once cast, a spell is gone and until it is memorized again.

Memorize. For a character to learn a spell, use this command, which only appears in the Encamp Menu. The computer displays a page from the active character's spell book (or a list of possible clerical spells) and you are offered the following commands. Remember that if a magic-user or cleric has the ability to learn more than one spell at a level, he can learn the same spell more than once.

Memorize Menu:

MEMORIZE NEXT PREV EXIT

Find the page with the spell you want to memorize. Select the memorize command. Then select the spell to memorize it. The 'pages' here are the pages of the magic spell book, rather than just the list of already memorized spells.

Picking a spell to memorize does not mean that the spell is memorized. Learning a spell takes 15 minutes (game time) per level of spell, plus a period of relaxation before starting to memorize one or more spells. See the Rest command in the Magic Menu.

Only one spell may be learned at a time, though the spellcaster need only relax once before learning several spells. The learning time must be uninterrupted. You have to go to the Rest command and spend the time to memorize the spell. If you have only been in camp long enough to memorize some spells, those are learned and the others lost. The spells are memorized in the order you pick them.

A magic-user decides to memorize 2 uses of magic missile (a first level spell) and 1 use of invisibility (a second level spell). This is a total of 1 hour of time for memorization, plus 4 hours relaxation time. If the party is attacked before the first 4 hours are up, no spells are learned. If the party is attacked after 4 hours and 15 minutes in camp, the magic-user has learned 1 magic missile spell. After 4 hours and 30 minutes he has learned both magic missile spells, and after 5 hours he has learned the invisibility spell as well.

A spell must be memorized for the magic-user to have picked all the spells for one character, you Exit the menu. The computer displays the spells you have chosen and asks you to confirm the choices. If you confirm the choice, you go back to the Magic Menu and can select spells for the next character who needs to memorize them. If you cancel the choice, all the choices are ignored and you must re-select all the character's spells.

Scribe. Use this command to inscribe spells the character finds on a scroll into his spell book.

Scribe Menu:

SCRIBE NEXT PREV EXIT

The computer displays all the spells on scrolls that the magic-user has cast read magic on. Find the page with the spell you wish to scribe. Select the Scribe command. Then select the spell to scribe it from his spell book into your spellbook. If a spell is of too high a level for the character to scribe, the computer tells you so. Scribing the spell erases it from the scroll. Scribing takes the same time as
Memorizing a spell, and is unsuccessful if the total time is not taken.

Display. Use this command to find out what magic spells are currently working on the party in camp. This serves as a reminder of obvious spells working on the entire party, such as bless or light, and on individual members of the party, such as protection from evil or invisibility. This also reveals subtle curses (though not the nature of the curse) on the party or individuals in the party.

Rest. To memorize spells, one must Rest. This takes you to the Rest Menu described in the Encamp Menu description. Spells are not memorized until the character has rested the necessary time.

The Exit command in this use of the Rest Menu returns you to the Magic Menu, not the Encamp Menu.

SPELLS AVAILABLE

A beginning magic-user is given four first-level spells when he learns to cast magic on his own. These are shown in the spell book for the magic-user. Each time the magic-user gains a level of experience, he gains one spell, even though the rise in level may give him the ability to learn more than one new spell at a time. To gain further spells, he must find scrolls in treasures and copy spells he is capable of casting into his spell book, using the Scribe command in the Magic Menu.

CLERICAL MAGIC

Clerical magic is very similar to magic-user magic, but a cleric needs no spell books. All spells possible to his level are always available to a cleric, he need only memorize them. Just what spells are available depend solely on the level of the cleric.

Therefore, when a cleric finds scrolls with clerical spells on them, he can simply use them straight off the scroll, since they are not something he needs to Scribe into a spell book.

SAVING THROWS

Magic is a chancy business. Many spells do not necessarily affect their targets. This is simulated with saving throws. In Pool Of Radiance the saving throw is the chance that the spell has no effect or a lesser effect on the character it is cast on. As a character gains levels, his saving throws improve, and the chance that magic affects him is decreased. The final results of any spell are shown on the computer screen.

Magic-users have better saving throws against cast magic or magic from items, clerics have better saving throws against death and poison, and dwarves and halflings have better saving throws versus any form of magic.

THE SPELLS

Some spells are quick and can be cast in combat, and some take an extra long time to cast. Those that take extra time can only be cast when using the Magic Menu from the Encamp Menu.

TIME AND MAGIC

The duration of magic spells is important. A spell's duration is either: instantaneous, as with most damage spells; measured in rounds, as with most other combat spells; measured in turns, as with many detection and protective spells; or permanent.

When planning use of spells to use in movement (such as a find traps), remember that one round equals one minute of game time and one turn equals 10 minutes of game time.

THE SPELL LIST

The spells available for characters in the Pool Of Radiance are:

FIRST LEVEL CLERICAL SPELLS

Bless. This spell can only be used in camp or combat, and it only affects those characters not in melee. It gives a bonus of one to their THAC0 for six rounds and raises the morale of friendly NPCs by 1. Use it in camp only if you know you are going into combat immediately afterward.

Curse. This reversal of bless affects enemies not in melee and modifies their THAC0 and their morale by 1. Usable only in combat and lasts 6 rounds.

Cure Light Wounds. This can be used any time. The caster must be next to the target. It heals 1-8 points of damage.

Cause Light Wounds. This combat-only spell causes 1-8 points of damage to one adjacent target touched by the caster.

Detect Magic. This is similar to detect evil but only lasts 1 turn. It detects the presence of magic in a 1 square by 3 square area, but gives no details on the type of magic.

Protection from Evil. This spell can be used in combat or in camp when you expect to go into combat shortly. It adds 2 to the AC of the character against evil attackers. Any saving throws caused by attacks of such monsters are at +2. This spell lasts 3 rounds per level. The caster must touch the target (which can be himself).

Protection from Good. This is essentially the same as protection from evil, but it protects against the attacks of good creatures.

Resist Cold. This spell protects the recipient against cold, providing absolute protection against cold up to 0 Fahrenheit and an additional saving throw against cold-based attacks. The duration is 1 turn per level of the caster, and the caster must touch the target.

SECOND LEVEL CLERICAL SPELLS

Find Traps. This must be cast in camp. It makes any traps in the direction the character if facing visible to the character. The spell lasts for 3 turns.

Hold Person. This combat only spell holds immobile from 1-3 (cleric's choice) creatures of roughly human shape and size. The duration is 4 rounds plus 1 round per level.

Resist Fire. This is identical to resist cold, but it works against heat and heat attacks.

Silence 15' Radius. This is a combat spell. It silences any spell casting or discussion in the radius. If cast on a person, the radius follows him around for the duration of the spell unless he makes a saving throw. If cast on an area, the spell affects everything in that area for the duration of 2 rounds per level of the caster.

Slow Poison. This spell can be used in camp or combat. It revives a poisoned person for 1 hour per level of the caster. The target of the spell then dies unless a neutralize poison (a high-level spell only used by NPCs) is cast on him.

Snake Charm. This spell can be cast in combat only. It influences as many hit points of snakes as the cleric has hit points. The snakes cease all activity for 5-8 rounds.

Spiritual Hammer. This is a combat spell which creates a temporary magic item, automatically Headed. It can strike at any range and does normal hammer damage. It strikes monsters that only magical weapons can affect. This lasts for 1 round per level of caster.

THIRD LEVEL CLERICAL SPELLS

Animate Dead. This spell can be used in combat or camp. It turns a
dead human person into a zombie to help the spellcaster. In combat, the zombie fights for the spellcaster, though controlled by the computer. This spell is permanent until the zombie is destroyed. If created to work with the party, a zombie becomes an NPC and there must be room for him in the party (remember, the limit is 8 characters) or he cannot be taken along.

Cure Blindness. This touch-only spell is used in combat or camp to cure the blinding effects of the cause blindness spell.

Cure Disease. This spell can be used in camp only. It cures the diseases caused by mummies and the cause disease spell.

Cure Disease. This is a combat spell with a touch range. There is a saving throw. If a character is afflicted with a disease, over time he loses HP and Strength Points until he is down to 10 percent of his normal values. This disease is cured by a cure disease or dispel magic spell.

Dispel Magic. This spell can be used either in combat or camp. In combat, it affects every magic spell and item in an area. In camp it affects every person and item you select. There is a percentage chance of success with this spell depending on the level of the caster and level of the originator of the spell to be dispelled. If successful, the target magic is permanently eradicated.

Frayer. This is a combat spell that lowers all THAC0s and saving throws for friendly combatants by 1 and raises them by 1 for all unfriendly combatants. It has a 60 degree radius and lasts 1 round for each level of the character.

Remove Curse. This can be used in camp or combat and allows the target to be rid of a curse (as from a curse or bestow curse spell) or put down a cursed object. The range is touch.

Bestow Curse. This spell has a duration of 1 turn per level and is used in camp. It has variable effects determined by the computer.

FIRST LEVEL MAGIC-USER SPELLS

 Burning Hands. This touch-range combat spell causes fire damage of 1 point per level of the caster. There is no saving throw.

Charm Person. This spell makes a humanoid creature the caster’s friend and ally. Any action of the caster will be seen in the most favorable light possible. The target gets a saving throw when the spell is thrown and again days or weeks later, depending on its Intelligence. You can never be sure the effect is permanent. For the moment, the charmed creature can become an NPC (if there is room in the party roster) under the command of the caster.

 Detect Magic. This spell is the same as the clerical spell its duration is 2 rounds per level of caster.

 Enlarge. This spell can be used in camp or combat and lasts for 1 turn per level of the caster. The living target increases in size by 20% per level of the caster. It makes the humanoid target into an ogre or giant in size and strength for combat purposes. A target can only be under the effect of 1 enlarge spell at a time. Unwilling targets get a saving throw against this effect.

 Reduce. This is the opposite of enlarge, and can be used to negate enlarge. Unwilling targets get a saving throw against its effect. If the saving throw is unsuccessful, the target is reduced in size and loses effective strength and movement.

 Friends. This combat only spell affects everyone in a sphere that increases with the level of the magic-user. Everyone within that sphere failing a saving throw thinks the caster has 2-8 more points of Charisma. Those who make their saving throw think he has 1-4 less points of Charisma. The effects last 1 round per level of caster.

 Magic Missile. This is a combat spell that does 2-5 points of damage to the target, no saving throw. For every 2 levels, the magic-user gets 1 missile, so magic-users of the 3rd and 4th levels get 2 missiles, and those of the 5th and 6th levels get 3 missiles. All must be fired at once.

Protection from Evil. Like the clerical spell of the same name, but it lasts for 2 rounds per level of caster.

 Protection from Good. Like the clerical spell of the same name but it lasts for 2 rounds per level of caster.

 Read Magic. This is only used in camp and allows the user to read any magical (not clerical) writing. It lasts for 2 rounds per level of caster. Once you use this spell to read a scroll you can cast the spells off of the scroll.

 Shield. This spell is a combat spell that improves the targets armor class and saving throw, and negates the effect of the magic missile. The spell lasts for 5 rounds per level of caster.

 Shocking Grasp. This combat spell does 1-8, +1 point per level of caster, electrical damage to a target the caster touches.

Sleep. This spell puts up to 16 targets to sleep for 5 rounds per level of caster. The least powerful targets are affected first, and the bigger the monster, the fewer of them are affected. Monsters above a certain power are not affected at all. No saving throw.

SECOND LEVEL MAGIC-USER SPELLS

 Detect Invisibility. This can be used in camp or combat and lasts for 5 rounds per level of caster. This has a range of 20 feet per level of caster.

 Invisibility. This makes the target (touch range) invisible to normal and infravision until he ends the effect or attacks someone.

 Knock. This spell is used to open locked doors or chests. It can be used in camp or while moving.

 Mirror Image. This combat spell creates 1-4 illusory duplicates of the magic-user. If a duplicate is attacked, it disappears. The spell lasts 2 rounds per level of caster.

 Ray of Enfeeblement. This combat spell has a saving throw. If the target does not make the saving throw, he is weakened (he does less damage for 1 round per level of caster).

 Stinking Cloud. This affects a 2 square by 2 square area. Anyone in the cloud gets a saving throw. If unsuccessful, he is helpless for 2-5 turns. He can move out of the cloud, but he is still helpless. If he makes the saving throw, he is helpless only as long as he is in the cloud and for 1 round afterwards. The cloud lasts 1 round per level of caster.

 Strength. This spell is only used in camp. It raises the strength of the target by a variable amount depending on the class of the target. The duration is 6 turns per level of caster.
THIRD LEVEL MAGIC-USER SPELLS

Blink. After casting this spell, the caster can seldom be targeted because he is blinking in and out of the area. The spell lasts for 1 round per level of caster.

Dispel Magic. This is just like the clerical spell of the same name.

Fireball. This area effect spell does 1-6 points of fire damage per level of caster to each target in the area. A successful saving throw cuts the damage in half. Indoors, a fireball has a 2 square radius. Outdoors, a fireball has a 3 square radius.

Haste. This combat spell affects 1 person per level of caster. Everyone affected moves twice as far and attacks twice with melee and missile weapons, but they do not throw any additional spells per round. It lasts for 3 rounds plus 1 round per level of caster.

Hold Person. This is like the clerical spell, but 1-4 people can be affected. The duration is 2 rounds per level of caster.

Invisibility, 10' Radius. This is like invisibility but affects everyone within 10 feet of the caster when it is cast. Everyone affected stays invisible, and comes out of it normally, but if the caster ends his invisibility, it ends for everyone.

Lightning Bolt. This affects everyone in its path. It does 1-6 damage points per level of caster, a successful saving throw cuts this damage in half. A lightning bolt is 4 or 8 squares long in a line away from the caster. The bolt will rebound off walls to reach its full length.

Protection From Evil, 10' Radius. This is just like protection from evil, but it affects everyone within 1 square of the target as long as they stay there.

Protection From Good, 10' Radius. This is just like protection from good, but it affects everyone within 1 square of the target as long as they stay there.

Protection From Normal Missiles. This keeps the target (touch range) from being harmed by non-magical missiles for 1 turn per level of caster.

Slow. This combat spell affects 1 person per level of caster. Unwilling targets get a saving throw. Targets move at 1/2 their normal distance each round, and their number of attacks per round is halved. If they only have 1 attack, then they have 1 attack per every other round. This can be used to negate haste. Its duration is 3 rounds plus 1 round per level of caster.

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<th>RACE</th>
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- = cannot be this class  U = unlimited level in this class
The final sections in the journal include reference material for the Quest of the Pool of Radiance. It is said that the pool glows with its own energy. Those that have come upon the pool have noticed a faint light emanating from it. This light is not like the light of the sun; it is a soft, white glow that seems to emanate from the pool itself. It is said that those who entered the pool have emerged with new powers and abilities.

The council is looking for soldiers and rogues, mages and clerics, heroes of all kinds, to come to New Phlan. The wealth and land of an ancient city await those willing to reach out and take it.

GLORY!

Legends will be written about the heroic struggle to free New Phlan! Ships to New Phlan depart twice monthly. When you arrive, see the New Phlan City Council for the latest news and information.

MAKE YOUR FORTUNE IN NEW PHLAN!

WHAT IS THE ADVENTURER'S JOURNAL ALL ABOUT?

The Adventurers Journal is your guide to POOL OF RADIANCE. It includes fliers, maps, and information that your adventurers would know before beginning their quest. It also includes information that your adventurers will discover during their quest.

The journal is divided into several sections. The cover shows a recruiting announcement that tempted your adventurers to come to New Phlan. The next sections are a history of Phlan and a bestiary of the monsters in and around Phlan. This is information your adventurers should already know, so read it carefully. The answer to Phlan's current plight may lie in its history.

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THE ANCIENT CITY OF PHLAN

Phlan was the first great city of the Moonsea, reaching its peak some thousand years ago. In those days, the Moonsea bordered on the Dragon Sea, named for the large numbers of great Wyrms that inhabited the deeps. The river Phlan was a trading post, an outpost on the north shore of the Moonsea, set up to facilitate trade between the Elves of Myth Drannor and the elves and humans of the Quivering Forest. This river was called the Quivering Forest, north of the city. This copse was mildly enchanted, hastening the growing season to its original form, becoming a light woods within two years, and a deep shadow-filled forest by the end of a man's life. To most inhabitants of the lands of the Inner Sea, the Moonsea and its cities represent the border between civilization and barbarism. The Moonsea sits like a great plug straddling the territory between the Mountains of Vaasa and the Nomad Steppes, protecting the southern territories from the incursions of savage Northerners. To the south of the Moonsea lie the civilized lands of Cormyr and Sembia. To the north lay hundreds of square miles of cold and unforgiving waste. Even when the southern kingdoms are themselves besieged by orcish hordes, dragons, and fell monsters, they take comfort in the fact that, "It's worse around the Moonsea."

The Moonsbe Reaches are defined by sages as being those lands bordering on the Moonsea and its major contributing rivers. These major rivers are the Tesh, flowing past the shadowed battlegrounds of Zentil Keep; the Myrflow, a cold stream flowing from the east; the Dushtamper, also called the Evenflow, beginning deep in the heart of the Elven Court and flowing north; and the Barren River which flows out of the Dragonspine Mountains and into Phlan. The River Lis carries the waters from the Moonsea south to the Inner Sea.

The Moonsbe itself is an odd combination of abyssal deep spots, ship-ripping shoals, and rich fresh-water reefs. Despite this, travel across the Moonsea is generally safer than making the journey on land, so that most of the major merchant activity is by water. In times of war, the elves are said to carry the battle to the shores of the Moonsea, upending the waterways, and retaking the city block by block from the evil hordes.

THE MOONSEA REACHES

Adventurers Journal

FREE NEW PHLAN!

The new Phlan City Council is leading the fight to free their captive city. Heroes are retaking the city block by block from the evil hordes.

RICHES & FAME!

The council is looking for soldiers and rogues, mages and clerics, heroes of all kinds, to come to New Phlan. The wealth and land of an ancient city await those willing to reach out and take it.

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holds them in a rapture. Legends say that the Pool’s power created the  The newcomers built on the ruins of the old city, often not checking
the Forest of the Forests and caused the Sorrerres’s Isle to appear to what was there. Graybeard’s Isle is to appear.
up the seafaring spirits of the old. The Pool is said to bring great power to the worthy, and death most  The Pool is said to bring great power to the worthy, and death most
horrible to the unworthy. Some tales say that the individual should  horrible to the unworthy. Some tales say that the individual should
drink from it, or throw coins in it, or receipt coins in it and watch. There are  drink from it, or throw coins in it, or receipt coins in it and watch. There are
numerous folk tales of the wise fool stumbling upon the Pool, and  numerous folk tales of the wise fool stumbling upon the Pool, and
gaining wondrous power or meeting a gory end. The abilities of the Pool  gaining wondrous power or meeting a gory end. The abilities of the Pool change according to the needs of the tale-spinner. In any event, a
change according to the needs of the tale-spinner. In any event, a trader or adventurer who encounters a sudden windfall or great riches  trader or adventurer who encounters a sudden windfall or great riches
is said to have to have to  will become gray and ordinary, losing power to the Keepers and the
natives of other Moonsea cities seeking to make or expand their magic,  natives of other Moonsea cities seeking to make or expand their magic, true or imagined, that had reestablished Phlan passed. The city
true or imagined, that had reestablished Phlan passed. The city
well had recovered, and large numbers of immigrants arrived. Some were as great as before, nor the fruit from the orchards as sweet. Whatever
some were as great as before, nor the fruit from the orchards as sweet. Whatever
By 750 DR the temple complex has been finished. In its day, it was  By 750 DR the temple complex has been finished. In its day, it was
The Famine of the Red Plants passed after three seasons, and an  The Famine of the Red Plants passed after three seasons, and an
The Famine of the Red Plants passed after three seasons, and an
as his home. Alonius, in turn, was given a wide area in the recovered  as his home. Alonius, in turn, was given a wide area in the recovered
regions of Phlan as a temple to Tyr, the god of justice. became a haunted, abandoned ruin within a decade. became a haunted, abandoned ruin within a decade. became a haunted, abandoned ruin within a decade.
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GREATHAMMER AND THE FIRST REBIRTH OF PHILAN

Phlan remained relatively uninhabited for the next 500 years. The  Phlan remained relatively uninhabited for the next 500 years. The
Phlan remained relatively uninhabited for the next 500 years. The
city's position at the mouth of the Stojanow made it a useful meet-  city's position at the mouth of the Stojanow made it a useful meet-
plains for merchants. Twice during this period, traders. Twice during this period, traders. Twice during this period,
traders. Twice during this period, traders. Twice during this period,
the city was sacked by pirates. Following this attack, buccaneers  the city was sacked by pirates. Following this attack, buccaneers
never regained their power in the  never regained their power in the
More than a century into the civilizations of man moved further north, the greater  More than a century into the civilizations of man moved further north, the greater
beasts retreated, and many cities were founded on the shores of the Moonsea. Yet the beasts did not retreat. Dragons nested in the  beasts retreated, and many cities were founded on the shores of the Moonsea. Yet the beasts did not retreat. Dragons nested in the
Dragonspines Mountains, ogres raided from Phlan to re-establish the city of the Dragonspine Mountains, ogres raided from Phlan to re-establish the city of
Hillsfar retained its elven ties and flourished even as Phlan slowly  Hillsfar retained its elven ties and flourished even as Phlan slowly
depopulating. Some say he became a lich himself, using the methods  depopulating. Some say he became a lich himself, using the methods
the Pool was so rich because of the proximity of the enchanted Quivering Forest. Others attribute to the wizardry of Rimon. Still others credit the  the Pool was so rich because of the proximity of the enchanted Quivering Forest. Others attribute to the wizardry of Rimon. Still others credit the
the Princes and Princesses of Phlan. They reacted to the plague  the Princes and Princesses of Phlan. They reacted to the plague
infesting the grain by first ignoring it, then setting up committees, and  infesting the grain by first ignoring it, then setting up committees, and
the Valjevo Dynasty, journeyed to Phlan to re-establish the city as can be  the Valjevo Dynasty, journeyed to Phlan to re-establish the city as can be
elderly, disappeared from his rocky abode. Whatever became of Rimon is  elderly, disappeared from his rocky abode. Whatever became of Rimon is

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DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 804 of 1262
That should have been the end of Phlan's story, but it is not so. Once was and could yet be again. The reemergence of Phlan was marked by the rebuilding of a wooden roof or a faded fresco overlooking an adventurer's taproom. The farmlands of the Stojanow River Valley were laid waste and became known as the Barren. The rich inhabitants placed a terrible curse upon the Keep to prevent anyone from taking it. Forest. A substantial city-guard patrols the openings in the walls at the mouth of the Barren River. It is said that Ferran of stone quarried from the ruins and trees lumbered from the Quivering Forest. The human territories of Phlan are nestled behind a strong stockade as a middleman between the new powerful Northern tribes and the established nations of the South. For a short time, about a hundred years ago, the awkwardness of being seemed to be halted and the city was on its way to becoming a prosperous trading town once more.

Yet dark things continued to lurk on the borders of Phlan. Sorcerer's Island was said to be inhabited again by Yarash, an evil mage who was said to be seeking Kimon's power, the Arch-Lich's magic, the Pool of Radiance, or all three. The greatly diminished Dwarven Nations of Dragonspine reported great hordes of orcs and ogres attacking their citadels, and their barge trade came to a complete halt. Small towns and hamlets were raided and burned with increasing regularity, sending refugees to Phlan seeking passage to safer lands. The Quivering Forest was burned in a massive fire that dominated the sky for an entire month. Strange, monstrous creatures containing controllable creature were battled with horrifying precision toward the city.

The Council debated, argued, and debated again while the hordes drew nearer, much as the last Valjevo Princes did in their long-ago folly. Finally, they chose to fight, but were overwhelmed by the forces of orc and dragon. Phlan burned and fell to the forces of evil, who looted and pillaged that which remained. The last remnants of the Council stood their guard, trying to evacuate as many citizens as possible. Of the council members, the last Priest of Tyr, Ferran Martinez, held the last garrison, Sokol Keep, which stood at the mouth of the Barren River. It is said that Ferran planted the symbol of the city guard upon the keep to prevent anyone from capturing it. In the end, even the waters of the Stojanow river turned poisonous and murky, and the river took its present name, the Barren. The rich farmlands of the Stojanow River Valley were laid waste and become known as the Scoured Lands.

The reemergence of Phlan. That should have been the end of Phlan's story, but it is not so. Men remember the tales of Valjevo, who brought the first city of Phlan back from its ruins. Adventurers, smugglers, and small traders visited the region and brought back tales of Phlan under control of its evil masters. Many of the buildings were burned, but many others were spared. The town, rebuilt, was dedicated to some darker, more evil god. Zhentarim spies and agents of dark Vaasan nobles met and planned in Phlan, and the riches of the ages still survived for those who looked.

In time, more modest men returned to Phlan to rebuild her. A story of opportunity rose from the Valjevo family and their allies. These men intended to engage in the same profession as those before them, for Phlan still occupied a prime position for trading on the Moonsea. Yet, the city candidates' clays were clean, and the competing city-states pacified, Phlan was likely to stay in impoverished ruins.

Two years ago, in the Year of the Worm, two things happened that would mean a change of Phlan's future. First was the Flight of the Dragons that surged through the northern regions of the Lands of the Inner Sea. Due to a cause unknown, great wyrm's came down from the far north destroying all in their path. These are not the rare, opportunistic dragons seeking alliance with humanoid tribes, but rather huge waves of angry scaled monsters, bringing destruction where they travel. Many of the Moonsea and Daletowns suffered great destruction in the battles that followed. Yuulash was utterly ruined by the attack, and Hillsfar was greatly damaged. The most telling blow was delivered by the body of a great dragon that fell into the Hillsfar harbor, blocking that entrance for a month.

Much of the Phlan was also smashed into a smoking ruin by these beasts. Strangely, it was in the favor of those men who lived there. Most of the damage was taken in the already-ruined section of the city, when warlords began to serve small and rich. The chaos among the dragons broke their power, creating a vacuum in the control of the city and giving the men of Phlan a chance to re-establish themselves and their homes. Yet this would not occur without leaders, and the reappearance of the Council of Phlan was the second great thing to occur in the city. The Council, as described, was the last Council of the last Council, still survived all the turmoil that had occurred, and many families wished to return to the land. These leaders were no great mages or wondrous fighters, but traders, merchants, and clerics. Their leaders, who remain to this day, were the shrewd and powerful trader Ulrich Eberhard, the retired mercenary captain Werner von Unglingen, and the Bishop of Braccio of Tyr. They have been joined by their junior member, Porphyrys of the ancient House Cadorna. Together the council has proposed exactly that which Valjevo accomplished so long ago, the north, by the city from its enemies. The promise of great treasure and the myth of the Pool of Radiance provided adventurers with an irresistible draw. The Council publicly offered riches and paid things every imaginable adventurer a chance to look.

The city of Phlan, built on ruins upon ruins, is a city at war. It is divided between the human forces of the Council, and those evil forces. Men seek gold, and the city is divided in their every thought.

The human territories of Phlan are nestled behind a strong stockade of stone quarried from the ruins and trees lumbered from the Quivering Forest. The city-guards now patrol the city at all times, always ready to repel any attacks by the evil city's inhabitants.

The buildings of rebuilt Phlan are sturdy and utilitarian, with little of the splendor of the ancient past. The city's past shine through in an ancient column now used to support a stable's wooden roof or a faded fresco overlooking an adventurer's taproom. The past is always with the inhabitants of Phlan, reminding them of what once was and could yet be again.

THE FALL OF PHLAN

The last 300 years of Phlan have been a continual retreat from the greatness that once was. Smaller rural towns were abandoned in the face of increasing evil to the north. Sorcerer's Isle was said to be inhabited again by Yarash, an evil mage who was said to be seeking Kimon's power, the Arch-Lich's magic, the Pool of Radiance, or all three. The greatly diminished Dwarven Nations of Dragonspine reported great hordes of orcs and ogres attacking their citadels, and their barge trade came to a complete halt. Small towns and hamlets were raided and burned with increasing regularity, sending refugees to Phlan seeking passage to safer lands. The Quivering Forest was burned in a massive fire that dominated the sky for an entire month. Strange, monstrous creatures containing controllable creature were battled with horrifying precision toward the city.

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The natives of Phlan are a mixed group, including descendents of the families of Valjevo’s day and returnees who seek to reclaim lands and treasure lost to the dragon horde fifty years ago. The city is also filled with adventurers seeking new fortunes and traders hoping to reestablish the old trading lines.

Orcs and other generally evil humanoids are viewed with alarm within the city, though evil humans come and go unmolested with the ships. It is said that spies from other cities of the Moonsea make regular calls with the ships, overseeing the progress of the Council in re-establishing the city. If the Council is too successful, some say, then sabotage may be in order to prevent Phlan from returning to its former power.

The lands beyond the civilized stockade are wild ruins controlled by whatever local faction or tribe holds that piece of land. Control lasts only as long as the reach of claw or sword. Petty bands of orcs, goblins, and men vie for power, some led by more sinister monsters.

Much of Phlan’s ruined greatness can be found in the Old City. The main sights include: the forgotten riches of the wealthy old noble’s houses; Podol Plaza, the center of the old trading district; and the Old Temple, now dedicated to the dark god Bane. Valjevo Castle has been refortified and is being used as a headquarters for one faction leader or another.

Phlan remains now, as it has ever been, a city with the greatest of potential. In the cycles of its rise and fall, legends have arisen before. In engineering New Phlan’s renaissance, new legends are sure to emerge.

THE PHLAN AREA BESTIARY

This is a list of some of the monsters found in and around Phlan and the north shore of the Moonsea. Most monsters can strike fear into the hearts of men, but some are more powerful than others. The monster’s reputation is reflected in its monster level, listed as a Roman numeral after its name. Level I monsters are less powerful than a well-equipped beginning fighter. A Level VIII monster may be more powerful than several heroes.

Anhkeheg (VI): Large burrowing insects with great mandibles. These creatures have been known to spit a powerful acid.

Basilisk (VII): A giant eight-legged lizard. One of the most dangerous creatures in the realms because their gaze can turn creatures to stone!

Bugbear (IV): Hideous giant sized goblins who stand over seven feet in height. Bugbears look clumsy but are strong, quick fighters with great stealth.

Centaur (IV): These good creatures are half men and half horse. They are capable fighters and can be valuable allies.

Displacer Beast (VI): These creatures are large, black puma-like creatures with two tentacles sprouting from their backs. These creatures can appear several feet from their actual location.

Drider (VI): These creatures resemble a cross between a drow elf and a giant spider. They are powerful spell casters.

Efretti (VII): These large powerful jinn are from the elemental plane of fire. They are very arrogant and will only serve a powerful master.

Ettin (VII): These creatures look like giant two-headed orcs. They have great strength and usually wield two spiked clubs that inflict terrible damage in combat.

Fire Giant (VIII): These evil giants have flaming red hair and are immune to all fire. They usually attack with giant two-handed swords.

Giant Frog (III): These are giant carnivorous frogs. They are fast, dangerous predators who may be poisonous.

Giant Lizard (IV): These are the giant cousins to the common lizard.

Giant Mantis (VII): These are the giant version of the common mantis. These creatures are fast, strong, and have good armor.

Giant Scorpion (VI): These are the giant version of the common scorpion. Its poisonous tail can kill a man.

Giant Snake (V): These are giant poisonous snakes.

Ghoul (III): These are evil undead whose touch may paralyze a man in combat. They feed on corpses and attack all living creatures on sight.

Gnoll (II): These creatures are hyena-headed humanoids who stand over seven feet tall.

Goblin (I): These are small humanoids common in the Realms.

Hill Giant (VII): These are one of the smaller, more stupid giants, but they are still tough opponents. They usually carry large clubs.

Hippogriff (III): These magnificent creatures have the forelimbs and head of an eagle and the body and hind legs of a horse.

Hobgoblin (II): These are human-sized, intelligent relatives of the goblin.

Kobold (I): These are small, cowardly humanoids who delight in killing and torture.

Lizardman (III): These are lizard-like humanoids. They are omnivorous but they have a particular fancy for human flesh.

Medusa (IV): These are hideous women with snakes for hair. They can turn a man to stone with their gaze.

Minotaur (VI): These are strong bull-headed humanoids. They are cruel man eaters, commonly found in mazes.

Mummy (VII): These are powerful undead with great strength. The mere sight of one has been known to paralyze a man in combat. The touch of the mummy causes a strange rotting disease.

Nymph (V): These are extremely beautiful creatures that appear as ever-young females. They usually inhabit wild lakes and streams.

Ogre (IV): These are large, foul-tempered, ugly humanoids. They are strong fighters.

Orc (I): These are evil, pig-faced humanoids.

Phase Spider (VI): These are giant poisonous spiders with the ability to phase in and out of this dimension. Usually they only 'phase in' to attack, then 'phase out' again.

Quickling (IV): These are small, fast-moving creatures. Because of their great speed they are invisible when they move.

Skeleton (I): These are the least of the undead. These animated skeletons are usually controlled by some evil force.

Spectre (VII): These are one of the most powerful of the undead. Their touch can drain the life out of men.
Stirge (II): These are small, blood-sucking birds.

Thri-kreen (VI): These are intelligent, carnivorous insect-men who live in burrows. They have four arms and a poisonous bite that paralyzes their foes.

Tiger (V): These are noble beasts who are both strong and silent. Though their normal prey are animals, they have been known to become "man-eaters."

Troll (VI): These are large, strong, ugly humanoid. They know no fear and can regenerate wounds.

Vampire (VIII): These are one of the most dreaded undead in the Realms. They can drain life levels, are strong fighters, and are sometimes powerful magic users.

Wardog (III): These are large, strong dogs, trained to kill. Orcs, goblins, and other humanoids are known to use them.

Wight (VI): Evil, undead humans whose touch can drain the life out of a man.

Wild Boar (IV): These creatures are the wild relatives of the pig.

Wraith (VI): These creatures are non-corporeal undead. Their touch can drain the life out of a man.

Wyvern (VII): These creatures are distant relatives of dragons. They attack by biting and using the poisonous sting in their tail.

Zombie (IV): Magically animated corpses controlled by an evil force. Zombies always fight back until destroyed or turned.

THE PROCLAMATIONS OF THE CITY COUNCIL OF NEW PHLAN

These messages are posted on the wall of the City Hall. They represent messages that the City Council wants to relate to the citizens and adventurers in New Phlan. When you go to City Hall the guard will refer to the posted proclamations by number. Each proclamation begins with:

From the City Council of New Phlan to all brave and hearty adventurers:

PROCLAMATION LXIX
Be it known that the council is interested in reclaiming the remaining blocks of the city of New Phlan. To reclaim said blocks they must be first cleared of monsters, vermin, and other uncivilized inhabitants. To this end the council is offering a reward to any person or group who is responsible for clearing any block of the old city.

PROCLAMATION LXIV
Be it known that the council is interested in acquiring information as to the disposal of various formerly-living entities rumored to be hanging about in the vicinity of Valhigen Graveyard. A reward is offered to any person who shall travel to said graveyard and return an eye-witness account.

PROCLAMATION LXXVII
Be it known that the council is offering a reward to any person or persons who can provide information as to the disposition of several council agents who have been sent to investigate the unseemly happenings in the vicinity of Valhigen Graveyard.

PROCLAMATION CI
Be it known that the council, knowing that commerce is the life's blood of New Phlan, has decreed that Sokal Keep is to be cleared of all unlawful inhabitants. A reward is offered to the person or persons who successfully carry out this commission. All interested in applying for said commission shall present themselves to the clerk of the council.

PROCLAMATION CIX
Be it known that the council is offering an inducement to any individual who shall serve in the rescue force for the mercenary band of Taimaiga-the-Invincible which has disappeared inside Valhigen Graveyard.

PROCLAMATION CX
Be it known that the council is seeking a stalwart band to undertake a mission of particular sensitivity. Any brave and clever band of adventure seekers who are not adverse to earning a large reward should present themselves to the council clerk for a special commission.

PROCLAMATION CXXI
Be it known that the council is offering a special reward for the safe return of the heir to the House of Bivant. Said minor was carried off during a buccaneer attack on the merchant ship in which he was sailing. Apply to the council clerk for the council's commission and additional information as to the abduction.

PROCLAMATION CXXV
Be it known that the council has decreed that the threat of the pirates who plague eastern shipping to New Phlan will be eliminated. The council offers a generous reward for the exact location of the pirates stronghold in the Twilight Marsh. An even greater reward is offered for the elimination of the pirates as a threat to shipping. Apply to the council clerk for a commission.

PROCLAMATION CXXVII
Be it known that the council is offering a reward for all books and tomes containing information about the fall of Phlan. The amount of said reward to be dependent upon the value of the information provided.

PROCLAMATION CXXX
Be it known that the council has decreed that the foul poisoning of the river formerly known as Stojanow is to be brought to an end. Accordingly, a reward is offered to any group which shall travel up the river currently known as Barren, locate the source of its poisoning, and eliminate said source. A commission may be obtained from the council clerk.

PROCLAMATION CXXXI
Be it known that the council has decreed that the threat of the man-eaters of Taimaiga-the-Invincible which has disappeared inside Valhigen Graveyard.

PROCLAMATION CXXXII
Be it known that the council has decreed that Sokal Keep is to be cleared of all unlawful inhabitants. A reward is offered to the person or persons who successfully carry out this commission. All interested in applying for said commission shall present themselves to the clerk of the council.

PROCLAMATION CXXXIII
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PROCLAMATION CLII
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PROCLAMATION CLIII
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PROCLAMATION CLIV
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Be it known that the council is interested in obtaining information concerning bands of insect men known to plague the grassy planes to the west of New Phlan. Said insect men are a hazard to transportation to and from Zhentil Keep. A reward is offered to any person or persons who return with complete information on the disposition, intentions of the insect men. Apply to the council clerk for a commission.

PROCLAMATION CCX
Be it known that the council is interested in obtaining information about the disposition of various hobgoblins believed to be gathering in support of forces bent upon the destruction of our fair city. A generous reward is offered to any who shall scout out the doings of these foul creatures and report such to the council. A larger reward is offered if the marshalling of said hobgoblins can be prevented. A commission may be obtained from the council clerk.

PROCLAMATION CCXI
Be it known that the council is interested in clearing obstacles to establishing a trade route to the east. Said obstacles currently include an infestation of lizard men in the swamps to the east. A reward is offered to any who can locate the source of the infestation and remove the lizard men as an obstacle to trade. A commission may be obtained from the council clerk.

PROCLAMATION CCXIV
Be it known that the council is interested in obtaining information about the disposition of various kobolds currently believed to be gathering in support of forces aimed on the destruction of our fair city. A generous reward is offered to any who shall scout out the doings of these foul creatures and report such to the council. A larger reward is offered if the marshalling of said kobolds can be prevented. A commission may be obtained from the council clerk.

PROCLAMATION CCXIX
Be it known that the council is interested in obtaining information about the disposition of a large nomad band currently believed scouting the approaches to our fair city. A generous reward is offered to any who can prevent said nomads from joining with the force now gathering to attack New Phlan. A commission may be obtained from the council clerk.

JOURNAL ENTRY 1:
An old leather-bound book, written with a small, firm hand.

"I am Yarash the Sorcerer!"

JOURNAL ENTRY 2:
A roughly drawn cloth map.

"The hordes came again last night. Their coordination was frightening. Under the cover of darkness, goblins and kobolds pushed bundles of sticks to within bow range. These bundles formed a wall that protected the small ones from our archers. Once the wall was erected our archers took up safe positions there and begin pelting the castle walls with arrows.

"We tried shooting flaming arrows at the wall of sticks to set it afire. Monsters are normally afraid of fire. But these monsters showed no fear. They simply scooped dirt on the flames to put them out. Before all the fires were out they had resumed firing at us. Surely, some unnatural force must have been at work to weld these quarrelsome beasts into an organized fighting force.

"I do not know if we can combat the monsters onslaught much longer. We lost 12 more men last night. The monsters seem to have an unlimited number of reinforcements. The Last Priest of Tyr, Ferran Martinez, says he has a way to protect the keep, but he says that it's so terrible that it may only be used as a last resort. Unless we receive reinforcements shortly, Ferran Martinez is our only hope."

JOURNAL ENTRY 3:
A roughly drawn cloth map.

Mountains

Target

Mountains

JOURNAL ENTRY 4:
A roughly drawn cloth map.

Mountains

Target

Mountains
“Several pieces of paper with highly organized writing. Zhentil Keep we will be able to control all of the northern shows of so shall they do for years to come.” representatives to deliver your part of the bargain to the city praise the spirit of a glowing spring. This they have done for ages and you to uphold your end. Use this protected pouch and our yearly, during Ches, they make a trip into its heart. There they go to “Now that we have delivered our part of the bargain we will expect this place, shunned by the Riders. They speak little of this land. But, alliance. this place is known as the Tortured Land. It is said to be an evil have asked for. This should settle our differences and cement our final concessions to your demands. We have given you everything you “Ten days ride north of the Varm is a barren and dead country called "A rugged popular account of the northern lands. the City Council of New Phlan.

JOURNAL ENTRY 5:
A small piece of parchment folded into the spine of a family's holy book. "The family treasures are buried in the tunnels beneath Auto's Well. Climb down the well and search for a secret passage. In the passage there is a dangerous trap. Search the walls until you find the lever to disarm the trap. Then proceed through the passage into an adjacent chamber. The treasures are buried in the southwest corner."

JOURNAL ENTRY 6:
A quickly scratched note. "Show the Boss's Seal to the thri-kreen guards. Be careful, they are wary of outsiders. Keep your hands away from your weapons no matter what they do. "With the seal you should gain safe passage in to see the Queen. She will give you the artifacts in exchange for the seal and the treaty. Do not do anything to get her mad, the bugs would just as soon kill you as look at you. Once you have the artifacts, get out of the stinking burg and get back to the castle."

JOURNAL ENTRY 7:
A tightly bound scroll, seemingly immune to the ravages of time. "Fountains and pools hold great power that can only be reached by performing proper ceremonies. Most sure of these is immersion, for in this way the bather surrenders himself to the spirit of the water. That spirit, or some portion of it, enters into the bather, whereby he gains great powers. Now to the weak willed whose spirits are sure to be consumed by spirits that put even the strong at great risk. Yurax holds that the Falls of Ixce are greatest of all these. Morden writes that the Pool of Radiance is greater still."

Later in the book. places of magical power are not necessarily tied to one physical location. Power often moves from plane to plane along the path of least resistance. The termination of the path determines the place's location on this plane. Volatile upheavals between the planes may lead to a change in the path of least resistance. This can change where the path terminates on this plane, thus moving the place of power. "Some who wield strong supernatural forces can bend the path like an engineer damming a river. When the path is bent, it can terminate in a new location, moving the place of power on this plane. If the supernatural force that bent the path is removed, the path will snap back to its original form and the place of power will return to its original location. Such disruption can have violent and unpredictable results. "Thus, inter-planar upheavals and directed supernatural forces may hold the answer to the seemingly ever-changing location of places of power, such as the Pool of Radiance."

JOURNAL ENTRY 8:
A mangled page of fine paper with entries written in a very find hand. "He is livid about the undead coming out of Valhingen Graveyard. Three times he has sent assault groups, three times none have returned. He dares not send any of the priests of Bane to clear the graveyard. He assumes that if a priest could wrest control of the undead from their current master, that the priest would then become a threat to His power. "I suggested that if we could neutralize the power that leads the undead, that we could then use the undead as a tool. He thought on this and then ordered me to find out who or what is in control in Valhingen Graveyard. Preliminary investigation shows that the graveyard is controlled by a being of great power, perhaps a vampire or a demon. I shall expend a few scouts and low level priests to find out more information."

JOURNAL ENTRY 10:
A crude map scratched onto an old piece of parchment.

X = BAD THINGS

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JOURNAL ENTRY 11:
A mangled page of fine paper with entries written in a very find hand. "If you are looking for the seal of the Bane, follow this road. Search the ruins of a recently reclaimed building."

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 809 of 1262
the Moonsea."

Signed

Porphyrus Cadorna

City Council
New Phlan

JOURNAL ENTRY 14:
Several pieces of paper with highly organized writing.

Fact: Porphyrus Cadorna is the last known surviving member of the Cadorna Clan.

Strong Rumor: rising star in city politics and on the City Council.

Rumor: very charming, has many admirers, but no known mate.

Rumor: vindictive, likes to get his own way and remembers when he is (in his mind) double crossed.

Fact: has contacted thieves to have them gain him information on the Pool of Radiance.

Fact: has hired a number of mercenaries through the thieves (we received our normal cut).

Vague Rumor: is using mercenaries to find Pool of Radiance.

JOURNAL ENTRY 15:
A clean map drawn with exact lines.

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JOURNAL ENTRY 16:
Told in a proud, haughty voice.

"I am a princess of a tribe of nomads to the northwest. My father is an old fool. He wanted me to marry King Al Rasid, to cement an alliance. I had more important things to do, than be tied down to an aging monarch. When I marry, it shall be to someone who has the same taste of adventure and the same skill with a sword.

"Well, Father was insistent and his subjects supported him, so I left to seek my fortune. Kobolds has been raiding our tents upon occasion, so I headed this way. If I could end the threat, then I'd have more leverage with my tribe. However, two nights ago, I was ambushed by these worms -- knocked out and bound up. I finally got myself untied a little while ago and was working my way out of these caves, when you showed up." 

JOURNAL ENTRY 17:
A quick note on an often used piece of paper.

"I must find some hardy allies in case this monster from Phlan sends his troops to attack my island. I need a small, intelligent party who can move through the civilized areas without notice, but who have the skill to traverse the uncivilized areas and the wilderness. I must watch the next groups to come to the lake and see if any would make proper allies."

JOURNAL ENTRY 18:
A ratty piece of parchment with large writing on one side.

"Hold the Sokal Keep on Thorn Island at all costs. If attacked, sacrifice your troops as necessary to hold out until relieved.

"In your deployment set two squads of kobolds to patrol Thorn Island at all times. At least 2 squads of archers are to be deployed on the walls at all times. Let the pack of wardogs loose to cover the island several times a day at random intervals. Set pairs of kobolds as observers in hidden locations around the island.

If Thorn Island is invaded immediately dispatch a message back to the castle. We will send over however many reinforcements are necessary to hold the island."

JOURNAL ENTRY 19:
A black bound tome written in a strange halting hand.

"...and settled foremost in the hall of Minor Courtiers were the lesser powers: Maram of the Great Spear; Haask, Voice of Hargut; Tyrannthraxus the Flamed One; Borem of the Lake of Boiling Mud and Cannod the Unseen. These too fell down and became servants of the great lord Bane."

JOURNAL ENTRY 20:
Told in a pained voice.

"We just got the cut through to the beastie's fair when I injured my leg. King decided there wasn't much use fer me anymore. Made me a proposition though. Said if I went into the lair and brought out the treasure, he'd feed me till I stopped breathin'. Best deal I had, so they tossed me down here. Not bein' a fool, I lit out for the deepest hidey-hole. Thankfully the beastie was asleep. I can still move real quiet when I must.

"Anyway, if there hasn't been much of an alarm, then drunken Ferd must be on watch at the rock. He's the king's son, so he ain't here with me -- worthless sot. If he's there, he's got less brains than a femmed rat, just act officious and he'll take ya ta the king.

Wouldn't mind hearin' of that tyrant's demise. Ya see seem just the types ta do it too."

JOURNAL ENTRY 21:
A crumbling old book; one of a massive series.

"At this time there ruling the Twisted Ones was a powerful general named Tyrannthraxus. He strode before his armies cloaked in flame and led the Riders out of the Waste. At his hand the kingdom of Barze was conquered. Turning south he led his army to conquer the Horreb and the Vane. Tyrannthraxus was a cruel man and leveled all that he had taken, murdering the princes of these lands. But the flayed man consumed him, destroying his body. Freed of its shell, it flew among the men of his army, lighting on each and claiming it. It was then when Bane took and imprisoned Tyrannthraxus in a vial of water which shone like the light of day. This he sank in the watery depths of Lake Longreach, defeating the armies Tyrannthraxus had raised."

JOURNAL ENTRY 22:
A new folded cloth map drawn in waterproof ink.

| Forest | : | Swamp |
|--------| : |----- |
| Cave  : | : | Hills |
|--------| : |----- |
| Forest : | : | Forest : | : |
| : | Target : | : |
| : | Water     | Water |

NOTE: Dotted lines are for the river.

JOURNAL ENTRY 23:
Several pieces of paper with highly organized writing.
Fact: Ulrich Eberhard is old, hard headed in every sense of the word, leader of the initial expedition to retrace Phlan. If it truly a sahuagin you could end up with 10,000 gold pieces. But beware, I will know any forgeries, and I will punish any attempt at deception.

"So, capture a live sahuagin, bring him to Lake Kuto, and walk away a rich man!"

Signed
Yarash the Sorcerer

JOURNAL ENTRY 28:
A crude map burnt into an animal skin.

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JOURNAL ENTRY 29:
A clean map with exact lines.

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"Bring your specimen to the shore of Lake Kuto and build a fire as a signal. Your specimen will be measured. If it is truly a sahuagin you could end up with 10,000 gold pieces. But beware, I will know any forgeries, and I will punish any attempt at deception.

"So. capture a live sahuagin, bring him to Lake Kuto, and walk away a rich man!"

Signed
Yarash the Sorcerer

JOURNAL ENTRY 30:
Carefully prepared notes.

Note 1: "Tyranthraxus is definitely a product of immersion in the Pool of Radiance. His extraordinary brilliance, vigor, charisma, and power of command must be a direct result of exposure to the effects of the Pool."

Note 2: "The Pool of Radiance may grant special magical abilities. Tyranthraxus exhibits a fiery aura, obviously magical. He also seems to have extraordinary means of obtaining information. Special magical powers granted by the pool would explain both the aura and the extra information gathering capability."

Note 3: "Tyranthraxus tells stories about moving down from the north. Though he never mentions the Pool, I gather that it is northwest of the Dragonspine Mountains. Strangely, he occasionally lets slip that he is never far from the Pool, but that must be a parenthetical reference."

JOURNAL ENTRY 31:
Told in quiet, hissing speech.
"Thank you for saving my children from the Mutilator Yarash. In return I will aid you in what I can, though that may not be great.

"I have lost much of my following to young Bryth who listens to the false promises of Tyranthraxus... that if he brings troops to invade Phlan, he will rule the riverbanks.

So, Bryth and his followers have been proving themselves in raids upon the kobold caves to the southwest and the hobgoblin caves to the south.
"For some time my followers have been disappearing. But, when you freed my children from the clutches of the evil Yarash my status was increased. Drythh kept quiet for a time, but once again the young warriors listen to him and not to me."

JOURNAL ENTRY 32: An announcement on rugged paper written in large clear symbols. "Be it announced that Mace, the former cleric of our lord Bane, is hereby ejected from the church. His crimes include refusal to follow temple dictates, unauthorized performance of major miracles, and the great heresy of placing other gods above our almighty lord Bane. All loyal followers of lord Bane must report Mace's presence on sight. He is to be captured, brought before a loyal tribunal for fair and just judgment, and then burned at the stake."

JOURNAL ENTRY 33: An official looking notice. "Yarash, the time has come for you to add your power to the growing legions of my followers. Come and supplicant yourself to me and I will reward you as an important officer in my magical forces. You will serve as the advisor to the cohort of soldiers to be based at Sorcerer's Island. Resist and you shall be crushed before my almighty power. I expect your positive reply within the week."

Signed,
The Boss

JOURNAL ENTRY 34: Told in halting speech. "Thank you for freeing us: Yarash has been experimenting on our people, changing them in horrible ways. Every night we carry off another lizard man with his chest burst open or his head mangied. Yarash say he make us like Sa-Hag-An. He always say that he make us stronger, better hunters. But all he make us is dead. We were not allowed to speak when Yarash was around. These marks were passed down to us and remind us of home. They represent the friend word used between lizard men of different tribes. If you meet lizard men on the outside, this word may help you."

"The lizard men carefully scratches marks into the dirt. You recognize the marks as two runes and a path symbol."

JOURNAL ENTRY 35: Carefully prepared notes. "We were not allowed to speak when Yarash was around. These marks were passed down to us and remind us of home. They represent the friend word used between lizard men of different tribes. If you meet lizard men on the outside, this word may help you."

The Boss

JOURNAL ENTRY 36: Carefully prepared notes. "Why should my leader use a false name? He hides his identity from himself as Maram. Maram, he of the great spear, is also a servant of the world, so that they do not research his past and discover his weaknesses. Anyone who attacked him, thinking to utilize the weaknesses of Tyranthraxus, would be destroyed by the different powers of Maram of the Great Spear."

"My research into Tyranthraxus is now useless. I must scour my records for details concerning Maram of the Great Spear. I have much work to do."

JOURNAL ENTRY 37: A massive atlas drawn by the great mathematician Tomarus.

THE MOONSEA

THE GREAT

GLISTER

(NOMAD STEPPE)

GREY LAND

OF THAR

VAASA

DRAGONSPIKE MINS

STOJANOW

THE RIVER

RIVER PHLAN MELVAUNT

TESS

M

ZRENTIL KEEP

O

ONS

A

IRONFANS

KEEP

YULASH

HILLSFAR

ELVENTREE

ELMWOOD

THE

ELVEN COURT

WYRMFLOW

RIVER DUATHAMPER

RIVER LIS

TO CORMYR

TO SEMBIA

AREA NEAR PHLAN

DRAGONSPIKE MINS.

LAKE

KUTO :

:

QUIVERING

STOJANOW :

FOREST

RIVER :

THE TWINIGHT

......

RIVER

PHAEN :

STORMY

TWILIGHT

BAY

MARSH

MOONSEA

-----------------------------

---

PHLAN

STOJANOW

VALJEVO

RIVER

CASTLE

VALHINGEN

GRAVEYARD

KOVEL

MANSION

STOJANOW

TEMPLE

GATE

OF

WEALTHY

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 812 of 1262
Together, Aramalg and Sarasim penetrated the graveyard to an evil only venture to the surface to guard our lands and to find food less fought her power. "We retreated underground, into caverns by our own mandibles. We Sarasim used her holy power to dissipate and turn the undead that told us that the flesh creatures would multiply and that our only hope not return. balls of fire and clouds of stink, and so were no longer weak. Our gods of Taimalg and his mercenary band, who assaulted the graveyard and did metal shells, and so were no longer soft. And then they came hurling of the Valhingen Graveyard with a holy vengeance. They came in search riding swift beasts, and so were no longer slow. Then they came in
Sarasim of Teshwave, the high priestess of Sune, attacked the denziens them as slow, soft, weak, but tasty, prey. But the prey soon came A loosely wrapped scroll. to their feeble squeaks and grunts.

TYPIST NOTE: Not included due to illustrations. "When flesh things began to multiply, we did not look on them as
A journal entry on a standard paper found on the body of a dead trader.

JOURNAL ENTRY 38:
Several pieces of paper with highly organized writing.
Fact: Werner Von Urslingen is a retired captain turned business man.

Strong Rumor: mostly interested in the military aspects of the reconquest of Philan.
Rumor: has strong contacts with other mercenaries and some ruffians in town; none of our information confirm such contact.

Vague Rumor: Von Urslingen’s unit was wiped out by enemy magic users; he was the only survivor; he retired and now secretly hates magic users. "A rambling note on an often used piece of paper. "Both kobolds and hobooblins exist in large numbers to the east, Experiments show neither makes good breeding material."

JOURNAL ENTRY 41:
A clean map drawn with exact lines.

TyPiST NOTE: This map intentionally left out by me.

JOURNAL ENTRY 42:
A sketch drawing.

TyPiST NOTE: Not included due to illustrations.

JOURNAL ENTRY 43:
A loosely wrapped scroll.
"Aramalg-the-Good, paladin and brother of Taimalg-the-Invincible, and Sarasim of Teshwave, the high priestess of Sune, attacked the denziens of the Valhingen Graveyard with a holy vengeance. They came in search of Taimalg and his mercenary band, who assaulted the graveyard and did not return.

"Sarasim used her holy power to dissipate and turn the undead that confronted them. Aramalg wielded his vorpal sword and slew the few that fought her power.

Together, Aramalg and Sarasim penetrated the graveyard to an evil marble crypt. They found and splintered an empty coffin, blessing the remain and sprinkled it with holy water. Then they confronted the owner of the coffin, a creature of great evil and the leader of the undead in Valhingen, an ancient vampire. The three began a furious melee.

"The vampire was swayed by Aramalg and Sarasim's power, but would not be turned. The vampire shouted, 'I have defeated Taimalg and his warriors, I will defeat the brother of Taimalg as well!'

"The vampire summoned an army of rats and tried to charm Sarasim to his side, but to no avail. Sarasim resisted his charm and Aramalg charged through the massed vermin. The vampire fell before the might blows of Aramalg’s holy sword and Sarasim's enchanted mace.

"Defeated, the ancient vampire dissolved into gas and fled to his coffin. Finding the coffin destroyed he returned to solid form and screamed. Seizing the moment Aramalg grabbed the vampire and held him with all of his strength. Sarasim ran up and drove an oaken stake through the vampire’s heart.

"Aramalg and Sarasim performed the proper rituals to banish the vampire forever. Then, wounded, Aramalg and Sarasim left Valhingen Graveyard. It was beyond their power to completely cleanse the evil place, but they had extracted proper vengeance for the death of Taimalg and his troops."

JOURNAL ENTRY 44:
A cleanly written note on standard paper found on the body of a dead trader.

Aleram, "Hello my good friend. I hope you and your brood are well. I am tired of trekking through unspeakable swamps and over unclimbable mountains to take my meager wares to ungrateful customers. "Only one event has saved this year’s sales. I found a castle full of happy folk, who were very good customers. They bought all of our goods and news from the outside world. And well they should be, their castle was in the middle of a small forest, and the forest was in the middle of a swamp! "These people seemed to know nothing of recent events. They still spoke of Philan as if it were in its full flower. And they paid in old Philan Gold Sovereigns, double the weight of the newer gold coins! "Though they were out of date, they were very friendly and prosperous. I saw more than one gem glitter in the sun, and several swords showed a flash that made me think they were magic. I also saw a few that were willing to dodge the vermin of the swamp I would add this castle to your trading route. Speed to your horse, strength to your arm, and skill to your trading."

Your Friend,
Burach

JOURNAL ENTRY 45:
Told in perfect, stylized common.
"Generations ago, flesh things were fewer and we hard-shelled beings ruled the shores of Lazara, what flesh things call the Moonsea. We gathered much gold and platinum, plus many gems for decoration and to appease our own gods. We are quite adept at finding such trinkets as we make our home by burrowing with our own mandibles. We know the earth like none other can.

"When flesh things began to multiply, we did not look on them as intelligent. They could not decipher our glorious language of sounds and movement and we could not fathom intelligent communication limited to their feeble squeaks and grunts.

"As we assumed the flesh creatures were unintelligent we looked on them as slow, weak, but tasty. As they were not our own kind, we assumed they were no longer soft. And then they came hurling balls of fire and clouds of stink, and so were no longer weak. Our gods told us that the flesh creatures would multiply and that our only hope was to reassert our dominant role."

"We retreated underground, into caverns by our own mandibles. We only venture to the surface to guard our lands and to find food less
powerful than yourselves. We have kept the location of our nest secret for many generations. "But now you have come. You have defeated our warriors, evaded our traps. We admit your power. We have nothing further to gain by combat. If you will leave us in peace you may take the gold and gems that were sacred to our gods, we have been abandoned by them. If you will not leave us in peace then we must fight to the last. What is your decision?"

"If you or your troops make any move toward Sorcerer's Island I shall send an army of my unstoppable aquatic creations down the Barren River and sink your precious castle. Until now you have been beneath my notice. If you value your empire, let us keep it that way."

Signed
Yarash, the Sorcerer

JOURNAL ENTRY 46:
Told as jaunty, after dinner conversation.
"This is an old story that I first heard while serving at the Citadel of The Raven. Dirg was the usual barbarian hero -- the type able to snap five men's backs with his bare hands, wrestle and tame the cloud horses, pierce a man with a javelin from many miles away, and other equally preposterous things.
"The story goes that Dirg and his band of men found a pool of unfrozen water while wandering in the snowy wastes. Dirg's little pet lizard Jezma got too close to the pool and discovered that not only was the water not frozen, it was boiling hot; so hot that it cooked the skin right off of Jezma.
"Dirg was so angered he thrust his spear into the pool and roiled the waters. The demon of fire that inhabited the pool was disturbed and roared out of the pool to do battle. The demon leapt from man to man, consuming them in a single touch.
"But the demon of fire could not defeat Dirg. Neither could Dirg find a weapon strong enough to withstand the creature's fire. After battling for an entire day, Dirg finally called upon his totem god for aid. With this magical aid, Dirg was able to trap the flaming demon in a triangle of power where supposedly he is even to this day."

JOURNAL ENTRY 47:
A small wrinkled parchment with roughly scratched notes.
"Hobgoblins transferred out of Valjevo Castle. Now replaced by giants and trolls. Sounds very tough.
"Stojanow Gate guarded by bugbears and ettins. Heard ettins didn't like light. Must be charmed or controlled. Sounds tough!
"Some smugglers sneak supplies through Stojanow Gate to The Boss. Must check it out.
"Overheard hobgoblins say a dragon scared them into leaving a nice lair in the mountains out east. Couldn't happen to a nicer bunch of creeps."

JOURNAL ENTRY 48:
Several pieces of paper with highly organized writing.
Strong Rumor: The Boss is a dragon or is a human who can take the form of a dragon.
Vague Rumor: The Boss is a metallic dragon. Not considered likely as metallic dragons are 'good'.
Fact: The Boss holds audiences in Valjevo Castle. Castle is guarded by groups of big stupid monsters, with occasional smart human leaders.
Rumor: The Boss doesn't spend full time at Valjevo Castle.
Fact: maze inside castle wall; passwords are needed to get past castle gates.
Rumor: The Boss has been sending out messengers to the tribes of monsters in the area to recruit new units.
Vague Rumor: The Boss is recruiting new units in preparation for an assault to retake the civilized sections of Phlan."

JOURNAL ENTRY 49:
A letter on clean white paper in a strong hand.
To:
The Boss
Valjevo Castle, Phlan
Sir,
I categorically reject your demand that I submit my island and my powers to your control. I am a free man and I will remain free. No petty tyrant can order about a true mage.
JOURNAL ENTRY 50:
An official looking notice.
"Assemble a group of at least 30 of your followers. Meet up with a hobgoblin assault force at the small docks to the west of town. You and your group will be under the command of the hobgoblin leader. Follow his orders. Upon completion of the mission you will be rewarded with food, treasure, and many slaves." Signed, The Boss

JOURNAL ENTRY 51:
Several pieces of paper with highly organized writing.
Fact: Bishop Braccio is the highest ranking religious leader in Phlan. Runs small temple in civilized section of city.
Vague Rumor: Braccio is under fire to 'do something' about the undead problem. So long as the undead were causing the monsters more trouble than the settlers, he had other, more pressing, problems.
Strong Rumor: Braccio is under fire to 'do something' about the undead problem. So long as the undead were causing the monsters more trouble than the settlers, he had other, more pressing, problems.
Rumor: Braccio is opposed to the temple tendency to sell clerical 'miracles'; he understands that the temple needs funds. Braccio would rather perform such 'miracles' in exchange for good works done in the name of the church, not just for money or items of power.

JOURNAL ENTRY 52:
Delivered in chillingly clear tones.
"Hear us in our hour of need!" the nomad witchdoctor cries. "This night we fight a great battle. By the breaking of dawn either our enemies will be dead or we will have been destroyed.
"Accept the sacrifice of these outsiders and give us the strength to defeat the hordes of our enemies. Fill our limbs with your fury, and fill our minds with your fury. Let us vanquish our enemies just as we vanquish these invaders who have come among us."

JOURNAL ENTRY 53:
A crumpled discarded piece of paper, full of rub outs and scratch overs.
Priests: 1
Acolytes: 4
Ogres: 1
Hobgoblins: 40
Orcs: 90
Goblin Slaves: 20

JOURNAL ENTRY 54:
A page from an unknown diary.
*They stole my map to the Pool. Somehow they knew when I was coming and exactly what to look for. They didn't even bother to kill me; they said I wasn't worth killing. They just crippled my legs, took the map, and rode away laughing.*

*After the attack and the rigors of my trek all I remember is that the Pool is in the Dragonspine, north and west of Sorcerer's Island. It shiners just like they said it would. You can feel the power flowing out of it. Kings and generals have searched for the Pool, and I had a map that led right to it.*

"If I ever get back the use of my legs I'll go after them. I'll get back my map. I'll get to the Pool. And this time I'll bathe in its power. Then I'll teach them. I'll teach them all."

JOURNAL ENTRY 55:
Delivered as you sit around the campfire.
"You must beware of the many dangers in this region. Several days walk to the west there is the pyramid of evil. It has been long avoided by all sensible men. To the southeast is a lair of many ferocious hobgoblins. The areas to the southwest, are inhabited by evil men - buccaneers, marauders, and soldiers of an evil empire far to the west. And all good folks avoid the swamps to the east. Nothing but danger grows in the swamps."

JOURNAL ENTRY 56:
An unsent note written on sturdy parchment.
"An active dragon has made its home in the Dragonspine Mountains to the northwest. Keep search parties away from the area so as not to catch the dragon's attention."

JOURNAL ENTRY 57:
A ratty piece of parchment with large writing on one side.
"Our spies in the city inform us that a party of invaders will travel to Sokal Keep to free it. To combat these invaders, assemble a force of no less than three squads. Travel by boat from the small docks at the west of town to Sokal Keep. Find the adventurers in or around Sokal Keep. Kill them before they can return to the city council with information about the true situation at the keep. Return with the invader's heads as proof of completion of your mission. Upon completion you will be rewarded with food, treasure, and many slaves."
Signed, The Boss

JOURNAL ENTRY 58:
A tattered piece of parchment.

MOUNTAINS  SORCERER'S  FOREST
ISLAND  :  FOREST
GRASS LAND  :  FOREST
WATER  :  PHILAN

TAVERN TALES
The taverns of New Phlan are filled with scoundrels, con-men, adn adventurers - every one a liar and a gossip. The following tavern tales represent such rumors and lies.

When you are in a tavern, you may be referred to a particular tale by number. Find and read that tale. If you really think of your adventurers as rumor mongers, read all the tales. Some of these tales are true, some are based on truth, and some have never been corrupted by a hint of truth. Even when a tavern tale is referred to by number, it might be false.

TALE 1: Far to the northeast, in the midst of a vast swamp, lie the uninhabited ruins of a powerful wizard's castle.

TALE 2: A drunk bard sits in a corner of the tavern spinning a seemingly endless tale, but no one is listening.
TALE 3: Wells throughout the city often provide access to hidden dens and underground passages.

TALE 4: An anglish lord commandeers one corner of the bar to lecture on the ultimate range of his adventurers. The crowd ignores him.

TALE 5: To the east of Phlan lies a gleaming castle of gold that shifts its location from time to time.

TALE 6: A weird looking wizard, dressed all in black, sits alone and mumbles into his beer. "I'll return next time and show them all!"

TALE 7: Great treasures are to be found on the banks of the Barren River as one ventures northward.

TALE 8: The graveyard is controlled by a very powerful and clever undead creature.

TALE 9: A puzzled patron with a limited vocabulary questions everyone he comes across about how to complete a manuscript dated 1977 GUE. Unfortunately, no one can help him.

TALE 10: To the west lives a tribe of insect-men who worship normal men and give valuable gifts to all who visit them.

TALE 11: The Dragonspine Mountains are inhabited by a race of evil dragons who lure travelers to their lairs and slay them.

TALE 12: A bedraggled adventurer decries, "There was a man called turtle, walls that aren't there, living daggers; I never did figure out what was going on!"

TALE 13: A master thief has set up a hidden training ground deep in the old city, right under the noses of monsters.

TALE 14: Ogres who live to the east of Phlan are holding captive a princess for whom a huge reward has been offered.

TALE 15: The merchants of Zhentil Keep are setting up a trading base far to the west of Phlan. They're hiring caravan guards for good wages.

TALE 16: Buccaneers operate a slave auction out of a hidden camp near Stormy Bay.

TALE 17: An old sage sits in a corner with a dark wizard. "You're right," laughs the sage, "they'll do anything I tell them to, no matter how silly or phantastic."

TALE 18: Off to the east of Phlan roams a tribe of marauding nomads. They have been pillaging villages in the plains with the help of a powerful artifact they have discovered.

TALE 19: Mighty tribes of wild dwarves, thousands of them, roam the Dragonspine Mountains, destroying villagers and killing travelers.

TALE 20: "I was totally confused; it was like being lost in the darkness," sighed the overwrought adventurer. "Rabbits, hats, bowling balls? Where in the realms was I?"

TALE 21: The monsters in Phlan are led by one of the generals who sacked the city a generation ago. The general has used great magic to make himself immortal.

TALE 22: A vast fortress of kobolds dominates the western tip of the great swamp. These normally weak creatures grow to great size and have extraordinary powers here.

TALE 23: An ancient Silver Dragon still lives up in the Dragonspine Mountains. The dragon is not evil and will help travelers who battle evil.

APPENDICES

MONEY CONVERSIONS

<table>
<thead>
<tr>
<th>COIN TYPE</th>
<th>GOLD EQUIVALENT</th>
</tr>
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<tbody>
<tr>
<td>Copper</td>
<td>200 cp = 1 gp</td>
</tr>
<tr>
<td>Silver</td>
<td>20 sp = 1 gp</td>
</tr>
<tr>
<td>Electrum</td>
<td>2 ep = 1 gp</td>
</tr>
<tr>
<td>Gold</td>
<td>1 gp = 1 gp</td>
</tr>
<tr>
<td>Platinum</td>
<td>1/5 pp = 1 gp</td>
</tr>
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SPELL LIST

This is a listing of spells available to player character clerics and magic-users as they gain in level.

FIRST LEVEL CLERICAL SPELLS
- Bless/Curse
- Cure Light Wounds/Cause Light Wounds
- Detect Magic
- Protection from Evil/Protection from Good

SECOND LEVEL CLERICAL SPELLS
- Find Traps
- Hold Person
- Resist Fire
- Silence 15’ Radius
- Slow Poison
- Snake Charm
- Spiritual Hammer

THIRD LEVEL CLERICAL SPELLS
- Animate Dead
- Cure Blindness/Cause Blindness
- Cure Disease/Cause Disease
- Dispel Magic
- Prayer
- Remove Curse/Bestow Curse

FIRST LEVEL MAGIC-USER SPELLS
- Burning Hands
- Charm Person
- Detect Magic
- Enlarge/Reduce
- Friends
- Magic Missile
- Protection from Evil/Protection from Good
- Read Magic
- Shield
- Shocking Grasp
- Sleep

SECOND LEVEL MAGIC-USER SPELLS
- Detect Invisibility
- Invisibility
- Knock
- Mirror Image
- Ray of Enfeeblement
- Stinking Cloud
- Strength

THIRD LEVEL MAGIC-USER SPELLS
- Blink
- Dispel Magic
- Fireball
# Apple II Computer Documentation Resources

## Apple II Computer Info

<table>
<thead>
<tr>
<th>Haste</th>
<th>6</th>
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<tbody>
<tr>
<td>Hold Person</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Invisibility, 10' Radius</td>
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<td></td>
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<tr>
<td>Lightning Bolt</td>
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<td></td>
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<tr>
<td>Protection from Evil, 10' Radius/Protection from Good, 10' Radius</td>
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<tr>
<td>Protection from Normal Missiles</td>
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<tr>
<td>Slow</td>
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**ARMOR LIST**

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<tbody>
<tr>
<td>Armor Type</td>
<td>in gp.</td>
<td>AC</td>
<td>Movement*</td>
</tr>
<tr>
<td>None</td>
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<tr>
<td>Shield, Small#</td>
<td>50 9</td>
<td>12 squares</td>
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<tr>
<td>Leather</td>
<td>150</td>
<td>8</td>
<td>9 squares</td>
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<tr>
<td>Padded</td>
<td>100</td>
<td>8</td>
<td>9 squares</td>
</tr>
<tr>
<td>Studded</td>
<td>200</td>
<td>7</td>
<td>9 squares</td>
</tr>
<tr>
<td>Ring</td>
<td>250</td>
<td>7</td>
<td>9 squares</td>
</tr>
<tr>
<td>Scale</td>
<td>400</td>
<td>6</td>
<td>6 squares</td>
</tr>
<tr>
<td>Chain</td>
<td>300</td>
<td>5</td>
<td>9 squares</td>
</tr>
<tr>
<td>Splint</td>
<td>400</td>
<td>4</td>
<td>6 squares</td>
</tr>
<tr>
<td>Plate</td>
<td>450</td>
<td>3</td>
<td>6 squares</td>
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</table>

*A character carrying many objects, including lots of coins, can be further limited in movement to a minimum of 3 squares per turn.

# A Shield subtracts 1 AC from any armor it's used with.

**TABLE OF EXPERIENCE PER LEVEL**

The following shows the amount of experience a character must earn to gain a level in his character class. All experience earned by multiple-class characters is divided by the number of classes. When a character has earned a gain in level for one class but not another, the Show command shows his highest level. Thus, a character who is a fighter-thief and has earned 1,800 experience points in each class (a total of 3,600 XP), will be shown to be 2nd level because he has earned that level as a thief, though not as a fighter. His fighting abilities are still based on his being a 1st level fighter.

### CLERIC:

<table>
<thead>
<tr>
<th>Level</th>
<th>Experience</th>
<th>Spells*</th>
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<tr>
<td>1</td>
<td>0-1,500</td>
<td>1 2 3</td>
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<tr>
<td>2</td>
<td>1,501-3,000</td>
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<td>3,001-6,000</td>
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<td>4</td>
<td>6,001-13,000</td>
<td>3 3 2</td>
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<tr>
<td>5</td>
<td>13,001-27,500</td>
<td>3 3 2</td>
</tr>
<tr>
<td>6</td>
<td>27,501-55,000</td>
<td>3 3 2</td>
</tr>
</tbody>
</table>

*Clerics get additional Spells by level if they have a Wisdom of 13 or greater.

### FIGHTER:

<table>
<thead>
<tr>
<th>Level</th>
<th>Experience</th>
<th>Spells</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>0-2,000</td>
<td>1 2 3</td>
</tr>
<tr>
<td>2</td>
<td>2,001-4,000</td>
<td>2 2 2</td>
</tr>
<tr>
<td>3</td>
<td>4,001-8,000</td>
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<td>4</td>
<td>8,001-18,000</td>
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<td>18,001-35,000</td>
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<td>7</td>
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<td>8</td>
<td>125,001-250,000</td>
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### MAGIC-USER:

<table>
<thead>
<tr>
<th>Level</th>
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<tbody>
<tr>
<td>1</td>
<td>0-2,500</td>
<td>1 2 3</td>
</tr>
<tr>
<td>2</td>
<td>2,501-5,000</td>
<td>2 2 2</td>
</tr>
<tr>
<td>3</td>
<td>5,001-10,000</td>
<td>3 3 2</td>
</tr>
<tr>
<td>4</td>
<td>10,001-22,500</td>
<td>3 3 2</td>
</tr>
<tr>
<td>5</td>
<td>22,501-40,000</td>
<td>4 2 1</td>
</tr>
</tbody>
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### THIEF:

<table>
<thead>
<tr>
<th>Level</th>
<th>Experience</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>0-1,250</td>
</tr>
<tr>
<td>2</td>
<td>1,251-2,500</td>
</tr>
<tr>
<td>3</td>
<td>2,501-5,000</td>
</tr>
<tr>
<td>4</td>
<td>5,001-10,000</td>
</tr>
<tr>
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<td>42,501-70,000</td>
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<tr>
<td>8</td>
<td>70,001-110,000</td>
</tr>
<tr>
<td>9</td>
<td>110,001-160,000</td>
</tr>
</tbody>
</table>

### CLERICS vs. UNDEAD

A good or evil cleric (not a neutral one) has a certain influence on undead. He extends this influence by using the Turn command in the Combat Menu. His level determines how many undead and what kind he can influence. Evil clerics can make undead either neutral or friendly to the party. Good clerics can drive the undead away and may be able to destroy them if the cleric is of a high enough level and the undead are of a low-enough level.

The following is a list of undead in increasing order of power and what minimum level of cleric a character has to be to have any influence over them. Low level clerics generally have a chance, not a certainty, of affecting undead.

<table>
<thead>
<tr>
<th>Undead Type</th>
<th>Level of Cleric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skeleton</td>
<td>1st</td>
</tr>
<tr>
<td>Zombie</td>
<td>1st</td>
</tr>
<tr>
<td>Ghoul</td>
<td>1st</td>
</tr>
<tr>
<td>Wight</td>
<td>3rd</td>
</tr>
<tr>
<td>Mummy</td>
<td>4th</td>
</tr>
<tr>
<td>Spectre</td>
<td>5th</td>
</tr>
<tr>
<td>Vampire</td>
<td>6th</td>
</tr>
</tbody>
</table>

### GLOSSARY OF AD&D GAME TERMS AND COMPUTER TERMS

**ABILITY SCORES.** These are numbers that describe the attributes of the characters. There are six ability scores: Strength, Intelligence, Wisdom, Dexterity, Constitution, and Charisma. For the most part, the range of numbers runs from 3 to 18, the higher the better.

**ADVENTURER.** This is a term for one of the characters you play in this game.

**ALIGNMENT.** This is the basic philosophy of a character. See Alignment in the What are Characters? section of the rule book.

**CHARACTER.** This is another name for one of the persons you play in the game. A party consists of several characters.

**COMMAND.** A one or two word option in a menu. Activating the command allows you either to view another menu or have your characters perform an action.

**ENCOUNTER.** This is what happens when a party meets a monster. You are given a menu of choices of how you want to handle the situation.

**ENTER.** The act of giving a command to the computer. How this is done varies depending on the computer.

**EXPERIENCE POINTS (XP).** Every encounter the characters have yields experience points for every character depending on how successful the encounter was for the party. A character who gains enough XP can...
SPELL. This is a magic incantation that can alter the nature of

composite long bow* 1-6 1-6 2 f

party are PCs. composite long bow* 1-6 1-6 2 f

who is controlled by the player. The characters in your adventuring

voulge+ 2-8 2-8 2 f

PLAYER CHARACTER (PC). This is a member of a player character race

two-handed sword 1-10 3-18 2 f

are given. A party can be reformed for each adventure, and even altered

spear 1-6 1-8 1 f

hostile. Some may be helpful. That's what the Parlay command in the

part of your party, it's a monster. Monsters are not necessarily

morning star 2-8 2-7 1 f,th

MONSTER. This term actually includes human and other player races as

long sword 1-8 1-12 1 f

DUNGEON LEVEL. This is a measure of how far down in the earth a
dungeon is. For the most part, the further down one is, the more
fierce the monsters. Thus, a high-level dungeon refers either to how
depth it goes or the relative toughness of the monsters.

MONSTER LEVEL. This is a measure of how powerful monsters are. The
higher the level, the more powerful the monster.

SPELL LEVEL. Spells come in degrees of difficulty. The higher the
level of the spell, the higher the difficulty. Only very experienced
magic-users and clerics can learn high level spells.

MAGIC. This term covers spellcasting, enchanted items, and any other
application of the supernatural.

MELEE COMBAT. This is hand-to-hand combat with weapons such as
swords, spears, and fists.

MISSILE COMBAT. This is ranged combat with weapons such as bows and
arrows, crossbows and quarrels, and slings and slingstones.

MONSTER. This term actually includes human and other player races as
well as such creatures as ogres and dragons. In general, if it isn't
part of your party, it's a monster. Monsters are not necessarily
hostile. Some may be helpful. That's what the Parlay command in the
Encounter Menu is for.

NON-PLAYER CHARACTER (NPC). This is a member of a player character
race who is not controlled by the player. Some NPCs can be brought into
a party.

PARTY. The group of adventurers you form to perform the missions you
are given. A party can be reformed for each adventure, and even altered
during the course of an adventure.

PLAYER CHARACTER (PC). This is a member of a player character race
who is controlled by the player. The characters in your adventuring
party are PCs.

SPELL. This is a magic incantation that can alter the nature of

reality. Both magic-users and clerics can cast spells after memorizing
them. If the spell is cast, it is gone from the user's mind and must be
re-memorized.

SPELL BOOK. The book a magic-user carries his spells in. If he
doesn't have a magic book, he has no spells to memorize.

ARMOR AND WEAPONS PERMITTED BY CHARACTER CLASS

Class Armor Shield Weapons
cleric any any club, flail, hammer, mace, staff
fighter any any dagger, dart, staff
magic-user none none club, dagger, dart, sling, one

WEAPON LIST

Name Damage vs. Damage vs. Number
Man Sized Man Sized Hands Class

axe, rand 1-6 1-4 1 f
bardiche+ 2-8 3-12 2 f
bastard sword 2-8 2-16 2 f
battleaxe+ 1-6 1-8 1 f
bec de corbin+ 1-6 1-6 2 f
bill-guisarme+ 2-8 1-10 2 f
bo stick 1-6 1-3 2 f
broadsword 2-6 2-7 1 f,th
club 1-6 1-3 1 f
cl,th

dagger 1-4 1-3 1 f
cl,th

dart 1-3 1-2 1 f
cl,th

fauchard+ 1-6 1-8 2 f
fauchard-fork+ 1-8 1-10 2 f
flail 2-7 2-6 1 f,cl
fork, military+ 1-6 2-8 2 f

glaive+ 1-6 1-10 2 f
glaive, guisarme+ 2-8 2-12 2 f
guisarme+ 1-6 2 f
guisarme-voulge+ 2-8 2-8 2 f
halberd+ 1-10 2-12 2 f
lucern hammer+ 2-8 1-6 2 f
hammer 2-5 1-4 1 f,cl
javelin 1-6 1-6 1 f
jo stick 1-6 1-4 1 f
long sword 1-8 1-12 1 f,th
mace 2-7 1-6 1 f,cl
morning star 2-8 2-7 1 f
partisan+ 1-6 2-7 2 f
pick, military 2-5 1-4 1 f
pike, awl+ 2-6 1-12 1 f
quarterstaff 1-6 1-6 2 f
cl,th

ransier+ 2-8 2-8 2 f
scimitar 1-8 1-8 1 f,th
short sword 1-6 1-8 1 f,th
spear 1-6 1-8 1 f
stiletto+ 2-7 2-12 2 f
trident 2-7 3-12 1 f

2-handed sword 1-10 3-18 2 f
voulge+ 2-8 2-8 2 f
composite long bow 1-6 1-6 2 f

composite short bow 1-6 1-6 2 f

long bow* 1-6 1-6 2 f

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 818 of 1262
Introduction:

Pool of Radiance is Strategic Simulations Inc.'s first Advanced Dungeons & Dragons Computer Role-Playing Epic set in the Forgotten Realms game world. Pool of Radiance is a huge game, with over two dozen different individual missions and adventures. It is designed to mirror the kind of connected adventures that form the basis of the AD&D role-playing game.

Pool of Radiance does not rely on obtuse puzzles or unfathomable word games to create challenges. Instead, Pool of Radiance relies on challenges that arise from within the scope of the adventure. Each adventure centers around solving a mystery, defeating an enemy force, or discovering the true allegiance of the mysterious groups you meet.

You are sure to have questions as you adventure through Pool of Radiance. First, read the rule book and Adventurers Journal that come with the game. These books will answer most of the questions that come up. Second, you can refer to this clue book for answers. Third, you can look into the many AD&D books for background on the game. The AD&D Players Handbook and the AD&D Dungeon Masters Guide provide the basis for the rules in Pool of Radiance. The Forgotten Realms Campaign Set and Ruins of Adventure module provided the background material for the storyline. These sources should tell you all you need to know about Pool of Radiance.

Keep your current objective in mind while you play through each mission in Pool of Radiance. Each mission has a specific goal that is given in the city council proclamation and in the council clerk’s description of each mission. In some missions you simply have to hack your way through everything in front of you. In other missions you must simply survive. Stay true to your objective as each mission unfolds.

Finally, remember the overall goal of your quest, the liberation of Phlan from its evil oppressor. It is not necessary to clear every block, defeat every evil, or even complete every mission to free Phlan. As soon as the Boss That controls Phlan is defeated, the undirected monsters that were under his control will fall like wheat to the scythe. Always remember that the defeat of the Boss is your final goal. Good Luck!

SELECTING HEROES

With differing ability scores, classes, class combinations, and races you can create many different kinds of characters in Pool of Radiance. You can win the game with almost any combination of characters, but some will make it easier than others.

You will need a party with a balance of fighting ability, clerical spell use, and magic-user spell use. You will also want a character with thieving abilities in your party and at least one character with an extraordinary strength.

You will need to balance each characters race against the class of...
characters you need. Human characters can excel at any single character class, but mixed class characters can benefit from the use of mixed classes in any game. Non-human characters have a maximum possible level in each class except thieves). Because of these limits human characters will always achieve higher level than non-human characters after sufficient adventuring. So, non-human characters should play to their strong points and be mixed class and let humans be the single class characters.

Human fighters can be the best fighter in the game because of their high maximum strength and unlimited maximum level. Non-human characters can help with the fighting as mixed class fighter/thief, fighter/magic-user, or fighter/magic-user cleric. Dwarves and half-elves make the best fighter/thieves because of their high helper abilities to your party, humans and half-elves. Human clerics can reach the maximum 8th level allowed in Pool of Radiance. At 6th level a cleric is much more powerful against undead than at lower levels, he can even destroy skeletons and zombies, rather than just turn them. Half-elf clerics can only reach 5th level, so they are most useful as mixed class cleric/magic-users and fighter/cleric/magic-users.

Magic-user spells provide much of the offensive punch of your party. Charming person, magic missile, sleep, stinking cloud, fireball, invisibility 10', true seeing, and lightning bolt are all powerful spells in Pool of Radiance. But, magic-users are very vulnerable in combat; they have few HP and can wear no armor. But, both elves and half-elves can be magic-users, both can become mixed class to gain the benefits of more HP and Heavy armor. In general, your magic-using characters should be elf or half-elf fighter/magic-users, or half-elf cleric/magic-users or fighter/magic-users.

Thieves have the fastest advancement of any class. They also have special abilities that allow them to open locks, find and remove traps, climb walls, and backstab. Unfortunately, thieves are almost as vulnerable to magic-users in combat, they have only a few HP and the heaviest armor they can wear is leather. Luckily, all races have unlimited advancement as thieves, and all the non-human races can be mixed class fighter/thieves. Dwarves and half-elves make the best fighter/thieves because of their high maximum strength and their high maximum strength and their high maximum fighter level.

Some kinds of characters are at a disadvantage because of their ability score or max level limits. Female characters are at a disadvantage as a fighter or fighter mixed class character because of their reduced maximum strength. Fighters need an intelligence of at least 16 to get their experience bonus. Clerics need a wisdom of 17 or better to get the maximum number of spells. All characters need to have at least one dexterity of 14 to get their maximum number of spells. After sorting and removing those who cannot move, the party must be a +1 AC for each point of dexterity over 14, with 14 or 15 THAC0 for each point of dexterity over 14. After sorting, characters need a constitution of 16 or better, and fighter types need a constitution of 18, to get the maximum bonus to their HP. The party's spokesman needs a charisma of 18 to get the maximum reaction bonus.

The characters in a party do not need such amazing scores to win the game. In fact, any well played party should be smart enough to gauge the power of the party and it often modifies the number of monsters in an encounter to give the party a good fight regardless of their power. Beginning characters with very high ability scores look to the computer like high level Adventurers. This may put them at a disadvantage because the party does not have the HP, spells or the magic treasure of high level adventurers.

A balanced party needs at least four characters with good fighting capabilities, at least two characters that can throw clerical spells, at least two characters who are equipped with bows, and at least on character who has fighting abilities. As this is more than six characters, some of the characters will have to have multiple capabilities. Once you have these bases covered, mix and match the party's capabilities to match your style of play.

DEFINITIONS AND CONCEPTS

Here are some important concepts that you will need to understand to play Pool of Radiance to the fullest capacity.

Block: A 16 square by 16 square area that is displayed from a 3D point of view. Unless the party is lost, or it is impossible to find one's way, the X and Y coordinates are available in Pool of Radiance. The party is at the point 0,0 is in the northwest corner; 15,15 is in the southeast corner.

Commissions: The city council awards commissions as a way to direct characters towards awaiting adventures. The party does not have to accept a commission. As they may inform the party of a mission, if they undertake it. In fact, if the party completes a mission while exploring on their own they may also get the reward, even though they have never formally received word of the commission.

Drain and Restoration: Powerful undead such as wights, wraiths, and vampires can drain levels from a character when they hit in combat. The character loses his level or levels along with the additional HP, improved THAC0, and the other advantages of level. His XP will be reduced to the minimum for his new level. A cleric can cast a restoration spell of a scroll to restore one drained level. The character will regain his HP, THAC0, and other advantages of his level. But, his XP will be raised only to the minimum for his restored level.

Maps: Page 25 and 26 of the Adventurers Journal contain three accurate maps of the city of Phlan, the area near Phlan, and the Moonsea. The city map shows the locations of the different blocks within the city. The area near Phlan map shows the extent of the wilderness in Pool of Radiance. The Moonsea map shows where Pool of Radiance occurs in relation to other areas in the Forgotten Realms game world. Other AD&D computer products may be set in the area. If it is so set, the computer to roll a set of 1d20. Each character can select the party's minimum for his restored level.

Memorizing Spells: In Pool of Radiance, spell casters must memorize their spells before they can cast them. Each character can only have a small number of spells memorized at any time. The number of spells a character can memorize at one time is based on the character's level and is shown in the
To memorize spells, send the party to camp. Highlight the first character you want to memorize spells. Access the magic menu and then the memorize command. The characters list of available spells is shown. Use the next and prev commands to find the page with the spell you want to memorize. Choose the memorize command. Highlight the spell you want to memorize and press the Return or the joystick button to pick it. The computer displays the number of remaining spells your character can memorize by level.

Choose spells until you have indicated the spells you want your character to memorize, or your character can memorize no more spells. Choose exit from the list and from the memorize menu. The computer displays the list of spells you have chosen. Confirm that this is the list of spells you want your character to memorize. Repeat this process for all of your spell casters.

Once you have picked all the spells your characters want, it is time to rest and actually memorize the spells. Choose the rest command. Note the time already listed on the clock. This is the minimum time necessary to memorize all the spells you have picked. Choose the rest command from the rest menu. The computer will display each spell as it is memorized.

If your characters rest is interrupted, they may not memorize all of their chosen spells. If the characters rest is not interrupted then they will have all their chosen spells memorized and be ready to adventure.

Quick Combat: If you don't want to deal with combat, you may turn on Quick Combat and let the computer run things for you. You may put any character into Quick Combat. You may put all characters into Quick Combat by typing Q during any characters turn. You may take manual control of all characters by typing the character while one of your characters is moving on the screen. You may set characters to cast spells by typing M during any characters turn. You may type M to stop a character from casting. When you type M the computer displays MAGIC ON You may turn off spell casting by typing M again. Then the computer displays MAGIC OFF. With MAGIC ON, the computer will pick spells for player characters in Quick combat. With MAGIC OFF, player characters will not throw spells in Quick combat.

You have some tactical control over characters in Quick Combat. Characters with readied arrows and a bow will stand and fire arrows until the enemy comes adjacent. Characters without readied arrows will charge toward the enemy. Characters will attempt to readied magic items.

Your character's choice of spells is also important if you use Magic On in Quick Combat. Avoid spells with large areas; the computer normally aborts an offensive spell if the computer sees an ally in the target area. Offensive spells such as magic missile, hold person, and stinking cloud are useful because there are no effective target or have a small area of effect. Lesser area spells, such as sleep or fireball, are very useful under manual control, but may often be aborted in Quick Combat. Healing and detect spells have little use in Quick Combat, though bless and prayer are sometimes useful.

If you do not want to bother with a fight and want combat over as soon as possible, access a characters second menu and choose the speed command. Set the speed to J. Decide how each character will fight by reading or unreading their arrows and magic items. Then type Q to set all characters in Quick Combat. If a fight is particularly difficult you may want to type M to turn 'Magic On'. Then, sit back and watch the computer do all the work for you.

The computer is not as good a tactician as you are. You may be able to direct your characters to win a fight that they would lose in Quick Combat. But as your characters get tougher you can use Quick Combat with less risk. But, if your characters begin to lose too badly, be ready to hit the spacebar and take control back. In the end, you may have to save the day.

RANDOM ENCOUNTERS: Often monsters roam around the blocks where the missions take place. These monsters do not have a fixed location or time, but may occur in many different places. Often a player must defeat a number of these random encounters, as well as all the fixed encounters, to clear a block.

SET ENCOUNTERS: A set encounter is an encounter in a fixed location and/or time. Most set encounters are keyed to the maps in each adventure description. TEMPLES: Temples provide a number of services that the party cannot get anywhere else. If a character has died due to wounds, the temple can raise dead. If a character has been turned to stone, the temple can turn him back to flesh. If a character has been killed by poison, the temple can neutralize poison to remove the poison from the system and then raise him from the dead. If the party has a third level cleric, they can use the slow poison spell to make the poisoned character 'alive' when he goes into the temple. Then the temple need only to throw a neutralize poison to bring the character back. If the party's characters have lost HP it is cheaper to go to an inn and rest for many days than to have the temple throw cure spells.

THIEVING ABILITIES: Characters who are thieves or mixed class thieves have a number of special abilities including the chance to: pick locks, climb walls, find traps and disarm traps, and the ability to backstab for multiple damage. But, a mixed class character to exercise his thief's abilities he must not be wearing any armor heavier than leather. Remember, before the fighter/thief can backstab, or pick a lock, he must unready his heavy armor.

COMBAT: Your characters will be fighting alot in Pool of Radiance. Monsters and Human enemies abound. Learning to fight well, and to fight smart will make the game go faster and make it much more enjoyable. There can be alot of details to successful combat, but most of them are common sense and will become second nature after a few fights.

To fight effectively you must understand your own group's capabilities. Does your group have ranged weapons? Does your group have mass attack magic spells such as sleep or fireball? How heavily armored is the front line of your party? If your character is the fairest of your group? Is your group composed of low or high encounter level monsters? All of these details change which tactics your party can apply effectively.

You should also understand your enemy's capabilities. The basic information about ranged weapons, mass attack spells, heavy armor, and speed still apply. Monsters also often have unusual capabilities that you'll want to be aware of.

Finally, you need to understand the terrain where you are fighting. Are you inside a building where space is limited or are you in an open field with unlimited room to maneuver? Are there choke points, such as doorways, that your enemies will attack or that you can use to an enemy's attack is attacking, or that you can anchor your flanks on?

Taking full advantage of terrain will multiply your fighting strength.

Whether you outnumber the enemy or he outnumbered you will decide your opening tactics. If you outnumber the enemy, move up your toughest fighters and pin them in place. Then move other troops around the enemy's flanks to get attacks from behind. A shot from behind can hurt even to most unstoppable NPCs. If you are at least as good a fighter as the enemy they can only gang up on one character. Concentrate your attacks by having a single character attack some of the enemy and have many characters gang up on the remainder to eliminate them as
quickly as possible.

If the enemy has as many or more troops than you have, then make the shortest possible line without giving the enemy a way around your flank; doorways and advantageous are good defensive locations. Don't just attack the enemy in front of you, mass as many attacks against each target as possible to get quick kills. If your tactics are successful, you will soon outnumber the enemy and you can surround and move in for the kill.

An important tactical consideration is whether one side and/or the other has ranged weapons such as bows, crossbows, slings, and ranged attack magic. If neither side has significant ranged weapons, your side should quickly move to the most advantageous terrain and prepare to meet the enemy. If only you have ranged weapons then try to begin the battle at the longest possible range. Keep a front line of clerics and fighters without bows to protect your archers as long as possible. Magic-users with flasks of oil have a short range, and are only useful once both sides are in contact.

If both sides have ranged weapons then the enemy archers and spell casters should be your primary targets. An enemy who is turning your flank or who can get back shots on your front line is also a good target. Don't shoot at enemy front line fighters unless you are trying to disengage your front line to maneuver or retreat.

If only the enemy has ranged weapons the close as soon as possible. Once you get adjacent to an enemy, it's much harder for him to use his bow or magic against you. Try to use terrain to block the enemy archer's line of sight and limit his targets to your troops with the heaviest armor.

Magic has the capability to change defeat into victory into defeat. Tactically, some enemy's will also try to use terrain to block their flank. These spells can turn the tide of battle in an instant.

More often than not, you will have magic and your enemies will not. If you have magic-users or magic items guard them with your life. Magic-users are very fragile in combat; they wear little armor and don't stand up well to being hit. Keep them behind the lines and safe, even if they have thrown all of their spells for this battle. The magic-user you save this battle may save you next battle.

Magic need not kill the enemy to be useful in combat. Sleep, hold person, and clerical spells and magic items act very much like bows or thrown weapons. The more devastating spells are the ones that can incapacitate an entire group of troops in an instant. These mass attack spells are the archers, hold person, stinking cloud, magic missile, and fireball. These spells can turn the tide of battle in an instant.

Tactically, some spells and magic items act very much like bows or thrown weapons. The more devastating spells are the ones that can incapacitate an entire group of troops in an instant. These mass attack spells are the archers, hold person, stinking cloud, magic missile, and fireball. These spells can turn the tide of battle in an instant.

If the enemy has mass attack magic, you may have to modify your tactics. Offensively, try to keep your troops spread out; most mass attack magic operates over a limited radius. Keep some fighters un-engaged in reserve, so that they can run up and fill any holes in the front lines caused by an enemy magic attack. Be careful not to concentrate important targets like magic users or archers behind your own lines; such concentration invites attack.

Offensively, you should concentrate magic spells and bow fire on enemy magic-users. Even if a bow shot doesn't kill a magic-user, it can disrupt his ability to cast a spell. Magic Missile is very good for this because it always delivers two points of damage and can be an enemy magic-user with no time to cast for the rest of the turn. Proper use of magic, both offensively and defensively, is often to the key of your victory and the enemy's defeat.
The first part of any successful retreat is disembrogement. Flankers, archers, spell casters, and reserves can normally disembrog a from the enemy simply by moving away. But the front line has a more difficult problem.

To disembroge the front line, concentrate your attacks on a few units to create holes in the enemy front line. When your front line troops each have a few enemies still engaged, turn and begin the retreat. Retreat as far as you can to protected positions that minimize the enemies abilities to flank you. Stay on guard so you can strike at the enemy if they pursue. Do not retreat the flankers, archers, and spell casters so fast that they cannot support the retreating fighters. If the enemy is swift and aggressive, you may have to repeat this maneuver several times to completely disengage.

If the enemy is faster then the character, then that character will not be allowed to exit the combat area. A character can often increase his movement by unloading his heavy armor. When your movement is equal to the enemy's, you have an even chance to exit the combat area. If your movement exceeds the enemy's, you can automatically exit the combat area.

The worst time to decide to retreat is after some of your characters have fallen. Even if your retreat is successful, the troops that have fallen are lost forever. Even worse is cleanly retreating almost all of your heroes, only to see the final character pinned by the enemy and overwhelmed. Do everything in your power to avoid such a situation.

---When all else is said and done here are some rules to live by...

- Keep a straight line: Your forces are the least vulnerable and provide each other the most support when they are in a straight line.
- Anchor your Flanks on terrain features: Keep the enemy from flanking or overwhelming your troops by anchoring your flanks on impassable terrain.
- Put your most Heavily Armored troops in the front line: Front line troops take the greatest number of attacks from the enemy. Heavy armor will increase their chance of survival.
- Thieves sound only backstab when you outnumber the enemy. Thieves trying to backstab must be behind enemy lines. Their light armor makes them vulnerable. Onit send the thieves around the flanks to backstab when the enemy is outnumbered so that he can't concentrate attacks on the thieves.
- Spell Casters are High Priority Targets: Enemy spell casters have the greatest capability to quickly turn the tide of battle against you. Target them with archers, friendly spell casters, and flankers.
- Don't Panic: Even when the situation seems impossible, trust in your troops. The enemy is probably not as powerful as it seems. Many things can happen to turn the tide of battle your way. The enemy morale may break, you may make a lucky shot, or the enemy may be weaker than you realize. Keep fighting and stay alive.

--------------------------------------------------------------------------

SPELLS

In Pool of Radiance, the efficent use of spells, both in combat and in camp, makes the game much easier. Some spells are useful in ways that are not obvious from their description. Here are some 'tricks' to the efficient use of some of the spells.

- Unless otherwise specified, all spells have saving throws. In general, damage spells do half damage if the target makes its save; non-damage spells have no effect if the target makes its save.
- Clerics get more spells per level than magic-users. Detect Magic, Protection from evil (good), hold person, and Dispel Magic are available to both clerics and magic-users. So, if you want these spells in your party your clerics should take them in instead of your magic-users.
- Offensive spells are of two types, damage causing spells that cause hit points, and restraining spells that makes a target helpless. A single melee or missile attack can kill, once a target is helpless. The best offensive spells are:
  - Hold Person: The most powerful clerical offensive spell. You can aim at three/clerical or four/magic-user targets and make them helpless...
  - Charm Person: This spell makes one target fight on your side in the battle. When the charmed enemy changes form the party turns on him so he absorbs some enemy fire. If you attack a charmed enemy then NPC's in your party will turn on you if you are attacking an ally, after all. If the charmed enemy is not killed in the fight then you didn't get his treasure.

Magic Missile: Useful because it is low level, because the target gets no saving throw, and because it is fast and cannot be interrupted. This is a good spell to throw at spell casters before they have cast a spell and at undead, who ignore many other attacks. It is also useful if you fight under computer control because it has no chance to catch heroes in an area damage spell.

Sleep: The magic-users most powerful low level spell. Sleep can make a whole horde of low level monsters helpless, and it has no saving throw. But it is useless against larger monsters such as Trolls. Remember that sleep has a comparatively short range, and that its variable effect can sleep your heroes if you target the spell too close to your own front lines. Once your heroes reach 5th level, they are immune to sleep and you can throw sleep spells with great abandon.

Stinking Cloud: A powerful spell that makes targets in a 2 square by 2 square area helpless. Its very short range, but exact area of effect, make it useful only after the enemy has closed to melee your front lines.

Fireball: The classic attack spell. In a closed area < when the combat map includes walls, fireballs have a 3 square radius and affects almost every character on the screen. In an open area, fireballs have a 2 square radius. Try to get as many as the fireball as possible, and be sure to keep your characters out of the radius of effect.

Lightning Bolt: This is often considered the poor cousin to the fireball, because it does the same damage but in a more limited area (<1 line). But lightning bolt is best when you have to fight in a closed area. Properly used, you can throw a lightning bolt in a melee, or stop the charging against every character on the screen. In an open area, lightning bolts have a 2 square radius, and still hurt your enemies. Also, if the enemy is near a wall you can throw the bolt to attack the target, bounce off the wall, and then attack the target a second time. Remember that a lightning bolt always rebounds toward the caster; it does not follow the angle of the wall.

Some spells are useful in preparing for combat. If you know your party is in for a tough fight, you can prepare before combat. Encamp immediately before triggering the combat. Throw as many preparatory spells as you have ready on your characters, then immediately return to the Adventure menu and advance directly into the combat. If you can't prepare before combat, many of these spells will be effective when you throw them in the first round of combat. Many of these spells can be reversed and thrown on the enemy to make him more vulnerable to your attacks. The best preparatory spells are:

- Bless: this spell affects all heroes in a 5*5 area that are not adjacent to the enemy. Bless is especially useful later in the game against monsters with very low AC's.

- Protection from Evil: this spell only protects one person, but it improves your AC and saving throws by 2 against attacks from evil monsters.
- Prayer: This spell is great because it can be thrown in combat and it provides a 2 point bonus to AC for all your heroes.
improves your TAC0, Damage, and Saving Throws by 1, while hurting your enemies values by a like amount. It can also be thrown after combat has commenced.

Enlarge: This spell makes a weak character strong, though it doesn't help a character who is already strong. A first level magic-user makes his target's effective strength 18. Each additional level adds one column to the characters effective strength, until at 6th level the target has an effective strength of 18(00).

Strength: This spell adds 1-8 points to a characters effective strength, depending on his class. For every point of strength over 18, 10% is added to his exceptional strength percentage.

Some spells are handy to have memorized for use out of combat, these include:

Cure Light Wounds: This spell is everyone's best friend. Use it after each battle to make sure that everyone gets back to their full HP. You can also use cures during combat to keep a character from going down. Also, if a character is wounded at the beginning of a wave of combat, you can 'Continue Combat' and cure characters to get them ready for the next encounter.

Detect Magic: Use this spell in the Treasure Menu to pick out the magic items from the trash.

Dispel Magic: Use this spell to remove locking spells on doors. Remember that your clerics can memorize this spell too.

Knock: Use this spell to open locked doors and chests.

Invisibility 10' Radius: Use this spell while moving through dangerous territory. This keeps the enemy from finding your party until one of characters attacks in combat. Use your enemies confusion to get all your characters in position for 'backstab', bouncing lightning bolts, shots, and sweep attacks. Then have all your characters choose delay, let the enemy take his turn and guard, and then have all your characters attack at once.

Some spells should only be memorized when your party needs them; these spells include: slow poison, cure disease, remove curse, and read magic.....

--------------------------------------------------------------------------

Some commands toggle the program between two states. When you select one of these commands, the name on the screen changes to reflect the new state of the program. For example, if you select the Characters Off command in the Pics menu, it will change to Characters On. From then on the character's portrait picture is not displayed when you view the character.

HOW TO MOVE AROUND: In 3D travel the party can move forward, turn right or left, or move backwards. In the wilderness or in combat you can move in any of eight directions. You may use the joystick or keyboard interchangeable to move in any mode. If you have a problem in making a diagonal move with a joystick in combat or the wilderness, use the 2, 4, 6, or 8 keys instead.

JOYSTICK MOVEMENT:

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 824 of 1262
TIPS ON SUCCESSFUL EARLY ADVENTURING: If you build your own party you will need equipment before your adventure into the slums. A shop selling arms and armor is located at 8, 11. Fool your money. Buy fighters banded mail, a shield, and a broad sword. Buy clerics banded mail, a shield, and a flail. Buy thieves leather armour, a broad sword, and a sling. Buy your magic users a staff and a couple of darts. You may want to buy your fighters short bows and some arrows or a two handed sword instead of a shield. Make sure you have at least 10 gold left over to pay for your lodging. Use the View, Items, and Ready commands to prepare all your characters' equipment for battle. Once you have bought everything you need, use the Take command and have one character pick up all the money.

Go to the inn at 4, 12, pay the money, and memorize spells. Clerics should memorize cure light wounds spells. Magic users should memorize sleep spells. Rest to memorize spells.

Keep Search "off" while you move through the slums, you don't want to attract monster encounters. After you clear the monsters from a room you can put Search "on" and check for treasure. Try the Area command to get a birds-eye view of the slums. The slums are 16 squares by 16 squares. In many parts of the slums it is unsafe to rest. But after you clear the monsters from some rooms, the rooms become safe to rest in. Clear out your first safe room in the building at 13, 1. Here your party can rest to regain hit points and memorize spells. Adventure deeper into the slums, clearing other safe rooms where your party can rest. Whenever your party is low on sleep and cure spells or hit points, return to the nearest safe room to rest up.

Once your characters have enough experience points and money, they should return to the civilized area and train in the training grounds. Before you train, go into a shop and make sure each character is carrying at least 1000 gp. Remember to Share your money after you Pool it to buy items. If you find a particularly difficult location to clear, go to the training hall in the civilized area and hire a NPC to help. Once your party clears the slums they should go to the city council and get their reward. Then take a boat to Sokal Keep and clear it.

After you successfully complete each mission, return to the city council for your reward and news of any other commissions available. Once the council clerk has read you a commission, it's yours! Carefully note the messages, proclamations, journal entries, and other clues you get for the best chance to solve the mysteries of Phlan. Good luck!

RULES ERRATA: Wilderness encounters replace your party's icon, they do not appear adjacent to it. Charmed characters will not join your party, but they will fight on your side for one battle. Evil clerics Turn undead, they do not charm them onto your side.

DIFFERENCES IN APPLE ][ VERSION: The Apple ][ version of Pool of Radiance is slightly different than the rules. These differences include:

- Pressing the <ESC> key is the same as choosing the Exit command in a menu.
- While moving in combat, the <ESC> key will "take back" your current move, but it will not erase any damage taken during the move.

The Monster Portrait On/Off isn't used on the Apple ][ version.

The "<" and ">" keys can be used for menu cursor up and down.

There is no Exit to DOS on the Party Creation Menu. Turn your computer off and then on to run other programs. A character's portrait picture is only shown in the civilized area. Some items can only be Readied in combat or in camp. If you try to ready these items in other places, the computer responds "NOT HERE."

The following commands can be given at the Combat menu or while a party character is moving under computer control. Press the key to execute the command.

C : Sets all characters to computer control.

<Space> : Resets all characters to manual control.

M : Toggles magic on or off for characters set to Quick. Characters set to Quick will always use Readied Magic Items. Characters with Readied arrows will use bows if no enemy is adjacent.
Apple II Computer Info

Second Level Magic-User Spells

- Detect Invisibility
- Invisibility
- Knock
- Mirror Image
- Ray of Enfeeblement
- Stinking Cloud
- Strength

Third Level Magic-User Spells

- Blink
- Dispel Magic
- Fireball
- Haste
- Hold Person
- Invisibility, 10' Radius
- Lightning Bolt
- Protection from Evil, 10' Radius/Protection from Good, 10' Radius
- Protection from Normal Missiles
- Slow

ARMOR LIST

| Armor Type   | Weight in gp | Max Movement-
|--------------|--------------|----------------
| None         | 0            | 10             |
| Shield, Small | 50           | 9              |
| Leather      | 150          | 12 squares     |
| Padded       | 100          | 9 squares      |
| Studded      | 200          | 9 squares      |
| Ring         | 250          | 9 squares      |
| Scale        | 400          | 6 squares      |
| Chain        | 300          | 5 squares      |
| Splint       | 400          | 6 squares      |
| Banded       | 350          | 9 squares      |
| Plate        | 450          | 3 squares      |

* - A character carrying many objects including lots of coins, can be further limited in movement to a minimum of 3 squares per turn.

# - A Shield subtracts 1 AC from any armor it's used with.

TABLE OF EXPERIENCE PER LEVEL

The following shows the amount of experience a character must earn to gain a level in his character class. All experience earned by multiple-class characters is divided by the number of classes. When a character has earned a gain in level for one class but not another, the Show command shows the highest level. Thus, a character, who is a fighter-thief and has earned 1,800 experience points in each class (a total of 3,600 XP), will be shown to be 2nd level because he has earned that level as a thief, though not as a fighter. His fighting abilities are still based on his being a 1st level fighter.

Cleric:

<table>
<thead>
<tr>
<th>Level Experience</th>
<th>Spells-* Level Experience</th>
<th>Spells-*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0 1,500</td>
<td>1 - -</td>
</tr>
<tr>
<td>2</td>
<td>1,501 - 3,000</td>
<td>2 - -</td>
</tr>
<tr>
<td>3</td>
<td>3,001 - 6,000</td>
<td>2 1 -</td>
</tr>
<tr>
<td>4</td>
<td>6,001 - 13,000</td>
<td>3 2 -</td>
</tr>
<tr>
<td>5</td>
<td>13,001 - 27,500</td>
<td>3 3 1</td>
</tr>
<tr>
<td>6</td>
<td>27,501 - 55,000</td>
<td>3 3 2</td>
</tr>
</tbody>
</table>

* - Clerics get additional Spells by Level if they have a Wisdom of 13 or greater.

Framer:
Difficulty Levels of Undead:

<table>
<thead>
<tr>
<th>Undead Type</th>
<th>Level</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skeleton</td>
<td>1st</td>
<td>0 - 2,500</td>
</tr>
<tr>
<td>Zombie</td>
<td>1st</td>
<td>2,501 - 5,000</td>
</tr>
<tr>
<td>Ghouli</td>
<td>1st</td>
<td>5,001 - 10,000</td>
</tr>
<tr>
<td>Wight</td>
<td>1st</td>
<td>10,001 - 20,000</td>
</tr>
<tr>
<td>Mummy</td>
<td>3rd</td>
<td>20,001 - 42,500</td>
</tr>
<tr>
<td>Spectre</td>
<td>5th</td>
<td>42,501 - 70,000</td>
</tr>
<tr>
<td>Vampire</td>
<td>6th</td>
<td>70,001 - 110,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>110,001 - 160,000</td>
</tr>
</tbody>
</table>

**Clerics vs. Undead**

A good or evil cleric (not a neutral one) has a certain influence on undead. He extends this influence by using the Turn command in the Combat Menu. His level determines how many undead and what kind he can influence. Evil clerics can make undead either neutral of friendly to the party. Good clerics can drive the undead away and may be able to destroy them if the cleric is of a high enough level and the undead are of a low-enough level.

The following is a list of undead in increasing order of power and what minimum level of cleric a character has to be to have any influence over them. Low-level clerics generally have a chance, not a certainty, of affecting undead.

**Minimum Undead Type Level of Cleric**

<table>
<thead>
<tr>
<th>Undead Type</th>
<th>Level</th>
<th>Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skeleton</td>
<td>1st</td>
<td>0 - 2,500</td>
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<tr>
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<td>Ghouli</td>
<td>1st</td>
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<tr>
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</tr>
<tr>
<td>Mummy</td>
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</tr>
<tr>
<td>Vampire</td>
<td>6th</td>
<td>70,001 - 110,000</td>
</tr>
</tbody>
</table>

**Glossary of AD&D Game Terms and Computer Terms**

**Ability Scores:** These are numbers that describe the attributes of the characters. There are six ability scores: Strength, Intelligence, Wisdom, Dexterity, Constitution, and Charisma. For the most part, the range of numbers runs from 3 to 18, the higher the better.

**Alignment:** This is a term for one of the characters you play in this game.

**Basic Philosophy:** This is the basic philosophy of a character.

**Character:** This is another name for one of the persons you play in the game. A party consists of several characters.

**Command:** A one or two word option in a menu. Activating that command allows you to either to view another menu or have your characters perform an action.

**Encounter:** This is what happens when a party meets a monster. You are given a menu of choices of how you want to handle the situation.

**Enter:** The act of giving a command to the computer. How this is done varies depending on the computer.

**Experience Points (XP):** Every encounter the characters have yields experience points for each character depending on how successful the encounter was for the party. A character who gains enough XP can advance a level if he has enough gold for training.

**Facing:** In combat, a character faces a certain direction. An attack from the direction he is not facing has a greater chance of doing damage. A character will always face an opponent if he only has one opponent.

**Hit Points (HP):** This is a measure of how healthy a character is. Damage from weapons subtracts hit points from the character’s total. When he has lost all of his hit points, he is unconscious and dying. If his wounds are bound by another party member, he is simply unconscious.

**Icon:** This is the small picture of a monster or a character seen in the initial stages of an encounter and during combat. Character icons can be altered using the Alter command in the Camp Menu.

**Initiative:** This is a semi-random determination of which character in a combat acts first. The characters with higher dexterityes have a better chance for a higher initiative.

**Level:** This describes the power of a number of different items. The power of characters, dungeons, monsters, and spells are all described with levels.

**Monster Level:** This is a determination of how much experience a character has. The higher the level, the more experience and important the character is. High-level spellcasters can cast high level spells.

**Dungeon Level:** This is a measure of how far in the earth a dungeon is. For the most part, the further down one is, the more ferocious the monsters. Thus, a high-level dungeon refers either to how deep it goes of the relative toughness of the monsters.

**Spell Level:** Spells come in degrees of difficulty. The higher the level of the spell, the higher the difficulty. Only very experienced magic-users and clerics can learn high level spells.

**Magic:** This term covers spellcasting, enchanted items, and any other application of the supernatural.

**Melee Combat:** This is hand-to-hand combat with weapons such as swords, spears, and fists.

**Missile Combat:** This is ranged combat with weapons such as bows and arrows, crossbows and quarrels, and slings and slingstones.

**Monster:** This term actually includes human and other player races as well as such creatures as ogres and dragons. In general, if it isn’t part of your party, it’s a monster. Monsters are not necessarily hostile. Some may be helpful. Thats what the Parlay command in the Encounter Menu is for.
**WEAPON LIST**

<table>
<thead>
<tr>
<th>Name</th>
<th>Man Sized</th>
<th>Damage vs. Than Mans Sized</th>
<th>Number of Hands</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axe, Hand</td>
<td>1-6</td>
<td>1-4</td>
<td>2</td>
<td>f</td>
</tr>
<tr>
<td>Bardiche +</td>
<td>2-8</td>
<td>3-12</td>
<td>2</td>
<td>f</td>
</tr>
<tr>
<td>Bastard Sword</td>
<td>2-16</td>
<td>2-16</td>
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<td>f</td>
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<tr>
<td>Battleaxe</td>
<td>1-8</td>
<td>1-8</td>
<td>1</td>
<td>f</td>
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<tr>
<td>Bec de Corbin +</td>
<td>1-8</td>
<td>1-6</td>
<td>2</td>
<td>f</td>
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<tr>
<td>Bill-Guisarme +</td>
<td>2-8</td>
<td>1-10</td>
<td>2</td>
<td>f</td>
</tr>
<tr>
<td>Bo Stick</td>
<td>1-6</td>
<td>1-3</td>
<td>2</td>
<td>f</td>
</tr>
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<td>Broad Sword</td>
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<td>2-7</td>
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<td>Fauchard +</td>
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<tr>
<td>Fauchard-Fork +</td>
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<td>1-10</td>
<td>2</td>
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<td>2</td>
<td>f</td>
</tr>
<tr>
<td>Glaive +</td>
<td>1-6</td>
<td>1-10</td>
<td>2</td>
<td>f</td>
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<td>Glaive, Guisarme +</td>
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<tr>
<td>Luckern Hammer +</td>
<td>2-8</td>
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<td>f</td>
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<td>Jo Stick</td>
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<td>1-12</td>
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<td>Scimitar</td>
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Pool of Radiance Weapons List

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<thead>
<tr>
<th>ARMOR AND WEAPONS PERMITTED BY CHARACTER CLASS</th>
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<td>Armor</td>
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</tr>
<tr>
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<tr>
<td>Fighter.................</td>
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<tr>
<td>Magic-User.............</td>
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**WEAPON LIST**

<table>
<thead>
<tr>
<th>Damage vs. man sized</th>
<th>Damage vs. larger than man</th>
<th>Number of Hands</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axe, Hand</td>
<td>1-6</td>
<td>1-4</td>
<td>1</td>
</tr>
<tr>
<td>Bastard Sword</td>
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<td>1</td>
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<td>Bec de Corbin+</td>
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<td>1-6</td>
<td>1</td>
</tr>
<tr>
<td>Bill-Guisarme+</td>
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<td>1-10</td>
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</tr>
<tr>
<td>Bo Stick</td>
<td>1-6</td>
<td>1-3</td>
<td>2</td>
</tr>
<tr>
<td>Broad Sword</td>
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<td>Club</td>
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<td>1-3</td>
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<tr>
<td>Dart</td>
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<td>1-2</td>
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<td>1-3</td>
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<tr>
<td>Fauchard-Fork+</td>
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<td>Fork, Military+</td>
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<td>2-8</td>
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<tr>
<td>Glaive+</td>
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<td>2-12</td>
<td>2</td>
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<td>Guisarme-Voulge+</td>
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<td>Halberd+</td>
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<td>2</td>
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<tr>
<td>Lucern Hammer+</td>
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<tr>
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<td>1-4</td>
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<td>Long Sword</td>
<td>1-8</td>
<td>1-12</td>
<td>1</td>
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<td>Mace</td>
<td>2-7</td>
<td>1-6</td>
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<td>Morning Star</td>
<td>2-8</td>
<td>2-7</td>
<td>1</td>
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<tr>
<td>Partisan+</td>
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<tr>
<td>Pike, Awl+</td>
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<td>Quarterstaff</td>
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<td>1-6</td>
<td>1</td>
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<td>Ranseur</td>
<td>2-8</td>
<td>2-8</td>
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<tr>
<td>Scimitar</td>
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<td>1-8</td>
<td>1</td>
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<tr>
<td>Short Sword</td>
<td>1-6</td>
<td>1-8</td>
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<tr>
<td>Spear</td>
<td>1-6</td>
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<td>1</td>
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<td>Spetum+</td>
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<td>2-12</td>
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<tr>
<td>Trident</td>
<td>2-7</td>
<td>3-12</td>
<td>1</td>
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<tr>
<td>Two-Handed Sword</td>
<td>1-10</td>
<td>3-18</td>
<td>2</td>
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<tr>
<td>Voulge+</td>
<td>2-8</td>
<td>2-8</td>
<td>2</td>
</tr>
<tr>
<td>Composite Long Bow*</td>
<td>1-6</td>
<td>1-6</td>
<td>2</td>
</tr>
<tr>
<td>Composite Shrt Bow*</td>
<td>1-6</td>
<td>1-6</td>
<td>2</td>
</tr>
</tbody>
</table>

f=fighter, cl=cleric, th=thief, mu=magic-user

If printing out, you may want to double space it for easier reading.

-Merlin
You've probably used your Apple GS computer for a lot of different things. For work or homework. For organizing home business information. For games. Maybe even for creating other types of letters or cards. But you've probably never used your micro to create anything as wacky (and fun!) as the kinds of things you'll create with POSTCARDS.

POSTCARDS gives you everything you need to create your own original, far-out postcards. For starters, you get the craziest assortment of creative clipart ever compiled. There's a bikini-clad warthog. A platypus. A UFO. The Mona Lisa. Insects of all sizes and scariness. And scads more. Then, you get a wide array of postcard backgrounds. Like a beach, farm, desert, cityscape, and even a moonscape. So you can mix and match the most ridiculously unique combinations.

Put a one-eyed, three-antenned alien at a busy downtown penguin crossing. Or show a giant tarantula crawling out from behind an erupting volcano. There are thousands of possible possibilities.

Plus, POSTCARDS comes with catchy captions as well as clipart alphabets, for your own writing. It only takes about five minutes to make your first postcard.

SIX EASY STEPS TO MAKING A POSTCARD

Utilizing a GS paint program, like PaintWorks Plus, it's as easy as cut, paste, and print.

1. PICK OUT THE SCENE. Open the SCENE1 file and, using the SAVE AS command, give it a new name, like BIRTHDAY, and save it on your work disk. Then CLOSE the file.

2. PICK OUT THE ART. Open the PEOPLE2 file. Use the lasso with the COPY command to select the guy in the Hawaiian shirt, or any other image, to put on your postcard. Then CLOSE the file.

3. PLACE THE ART. Open your BIRTHDAY (or whatever name you used) file. Using the PASTE command, position your guy in the Hawaiian shirt in the bottom right hand corner of the beach. Then CLOSE and SAVE your file.

4. PICK OUT A MESSAGE. Open the LETTERS file. Use the lasso with the COPY command to select "HAPPY BIRTHDAY" and place it on your postcard as described in steps 2 and 3 above.

5. PRINT. Just click on your PRINT command.

6. CUT AND GLUE TO CARD STOCK. Loosely cut out your postcard and glue it to a standard US Postcard. Blank stock can be purchased from Activision.

POSTCARDS - Reference Card

Here's a list of the clip art on the POSTCARDS disk, along with the file name and number where you'll find each image.

<table>
<thead>
<tr>
<th>SCENE</th>
<th>FILE NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctic</td>
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<tr>
<td>Beach</td>
<td>1</td>
</tr>
<tr>
<td>Cityscape</td>
<td>2</td>
</tr>
<tr>
<td>Country Road</td>
<td>2</td>
</tr>
</tbody>
</table>

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
# Apple II Computer Info

<table>
<thead>
<tr>
<th>Food</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potato</td>
<td>1</td>
</tr>
<tr>
<td>Rose</td>
<td>1</td>
</tr>
<tr>
<td>Salt &amp; Pepper</td>
<td>1</td>
</tr>
<tr>
<td>Teapot</td>
<td>1</td>
</tr>
<tr>
<td>Toaster</td>
<td>1</td>
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</table>

## TRANSPORTATION FILE

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airplane</td>
<td>1</td>
</tr>
<tr>
<td>Balloon (hot air)</td>
<td>1</td>
</tr>
<tr>
<td>Blimp</td>
<td>1</td>
</tr>
<tr>
<td>Dog Sled</td>
<td>1</td>
</tr>
<tr>
<td>Flying Saucer</td>
<td>1</td>
</tr>
<tr>
<td>More Skiers</td>
<td>1</td>
</tr>
<tr>
<td>Parachutist</td>
<td>1</td>
</tr>
<tr>
<td>Rocket Ship</td>
<td>1</td>
</tr>
<tr>
<td>Trucks</td>
<td>1</td>
</tr>
</tbody>
</table>

## PEOPLE FILE

<table>
<thead>
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<th>Person</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Abraham Lincoln</td>
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</tr>
<tr>
<td>Alien</td>
<td>1</td>
</tr>
<tr>
<td>American Gothic Couple</td>
<td>1</td>
</tr>
<tr>
<td>Astronaut</td>
<td>1</td>
</tr>
<tr>
<td>Baby</td>
<td>1</td>
</tr>
<tr>
<td>Ballerina</td>
<td>1</td>
</tr>
<tr>
<td>Bathing Beauty</td>
<td>1</td>
</tr>
<tr>
<td>Beach Couple</td>
<td>1</td>
</tr>
<tr>
<td>Business-kind-of-guy</td>
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</tr>
<tr>
<td>Crawling Westerner</td>
<td>1</td>
</tr>
<tr>
<td>Elderly Monarch</td>
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<tr>
<td>Eskimo</td>
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<td>Fat Beach Person</td>
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<tr>
<td>Freud, Sigmund</td>
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<tr>
<td>Hula Dancer</td>
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<tr>
<td>Indians</td>
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<tr>
<td>Jungle Men</td>
<td>1</td>
</tr>
<tr>
<td>Mother-in-law</td>
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<tr>
<td>Mountie</td>
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<tr>
<td>Napoleon</td>
<td>1</td>
</tr>
<tr>
<td>Panicked Crowd</td>
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<tr>
<td>Part-kind-of-guy</td>
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<td>Prophet</td>
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<tr>
<td>Robot</td>
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<tr>
<td>Romantic Couple</td>
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<tr>
<td>Skier</td>
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</tr>
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<td>Sportsman</td>
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<tr>
<td>Tourist</td>
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## ANIMALS FILE

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<td>Alligators</td>
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</tr>
<tr>
<td>Ants</td>
<td>1</td>
</tr>
<tr>
<td>Armadillo</td>
<td>1</td>
</tr>
<tr>
<td>Bear</td>
<td>1</td>
</tr>
<tr>
<td>Bug</td>
<td>1</td>
</tr>
<tr>
<td>Bull</td>
<td>1</td>
</tr>
<tr>
<td>Cats</td>
<td>1</td>
</tr>
<tr>
<td>Cow</td>
<td>1</td>
</tr>
<tr>
<td>Crab</td>
<td>1</td>
</tr>
<tr>
<td>Cricket</td>
<td>1</td>
</tr>
<tr>
<td>Dinosaur</td>
<td>1</td>
</tr>
<tr>
<td>Dodo</td>
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</tr>
<tr>
<td>Dogs</td>
<td>1</td>
</tr>
<tr>
<td>Duck</td>
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</tr>
</tbody>
</table>

---

END
The Prefix Prowler is a wardialer with many useful features. It gives you full control over dialing speed and connect parameters, so the program can be custom-fit to any prefix in any phone system.

After the initial niceties, the program displays "The Prefix Prowler" on the top line of the screen. Immediately under this is displayed "Load Data File".

Throughout all of the programs, this screen heading format is used. By looking at the top few screen lines, you can immediately tell which program and sub area you are in. The Prowler then waits for you to select the disk drive from which your datafile will be accessed. Use the arrow keys and RETURN to select the drive, or press [ESC] to exit the Prowler and return to the Hackamatic menu. After you have selected the drive, you are prompted for the filename. If you press RETURN without entering a filename, the Prowler assumes you mean no datafile will be used. If you enter a filename, the Prowler will attempt to read it from the selected disk drive. If the file does not exist, you will be asked if you want it created.

You are then asked a wad of boring questions such as:

"STARTING NUMBER".... "ENDING NUMBER" (Guess what these are...)
"INCREMENT OR [RANDOM]" (Type either the numerical wardialing number increment, or enter "R" (no quotes) for Random Dialing.)

...We interrupt this discussion for a word from our author...

The Random Dialing option is useful for wardialing touchy prefixes. (Police numbers, military bases, phoneco test prefixes, etc.) I once knew a (somewhat short) pirate who left his wardialer running on the prefix of a large broadcasting corporation one night. He awoke the next day only to find that every dialing attempt had bombed due to 'no dial tone'. He checked his tone, and found it completely dead. Somehow he contacted the phone company and asked the reason for its untimely demise. They explained that it had been disconnected for a 'security violation' or something of that sort. The phone pigs (commonly known as "phigs") said that they had received a complaint from an operator at the broadcasting corp. during the night. She said she noticed the fones ringing through the building and suspected a computer break-in attempt. (She'd seen "WarGames" too many times, no doubt.) The pirate managed to pull a bluff story of computer illiteracy and convinced them that he had been trying to call a friend with his new modem and had left it unattended. He said he (read the following out loud with nose firmly plugged for proper effect) ‘had no idea how it possibly went out of control dialing all those numbers." Luckily the phigs were comparably stupid, and he got his tone reconnected.

...now back to our program...

If you select Random dialing, the Prowler asks for "RANDOM DIALING BLOCK LENGTH". To dial randomly, you must avoid skipping any numbers, the Prowler dials the numbers in random "blocks" of varying size; i.e. if you select a block length of 20, the Prowler would shuffle the next 20 numbers, dial them randomly, and then move on to the next block of 20 numbers. A random block of 99 would be even less detectable, but impractical unless you really planned to call 99. With Random Dialing, the default STARTING NUMBER takes the value of the first number in the current block. So if you have been hacking a prefix randomly and load the info from a datafile into the Prowler, the default at the "STARTING NUMBER" prompt will be the first number in the current block - NOT NECESSARILY THE NEXT NUMBER TO DIAL!

Finally the Prowler asks you if you still believe all that you entered, "CORRECT?" If you type 'Y', you will be placed back at the initial "SLOT OF MODEM" prompt.

The next screen opens with "TIME TO WAIT FOR CARRIER". If you need to, you can press [ESC] to back up to the previous screen. Otherwise enter a value from 1 to 255 seconds. The default value of 20 is equivalent to about 2 standard rings. Next is "TOUCH TONE SPACING". Enter a value between 30 and 255. This value represents the duration and spacing of the dialing tones in milliseconds. Value below 50 cause the modem to dial so quickly that error numbers are skipped due to busy signals (on the Promodem), and those marked with an inverse 'N' were skipped with the 'N' command explained below:

Next question: "WARDIALING AREA CODE". (If you are not using an alternate long dist. service, (but remember real men don't use AT&T) enter a '1' before the area code. The area code is the one in which your wardialing prefix lies. If you plan to prowl a local prefix, hit RETURN alone to specify no area code.)
Apple II Computer Info

R:  Redial current number (useful if your modem lacks automatic busy signal
    redialing)
Q:  Quit and save datafile (if one is used)
G:  Pop up Graphics Page 2. Useful if mommy walks in to see if you are learning
    anything with your expensive toy.
T:  Text screen (use to get back to the text display after the 'G' command)
I:  Signal the Prowler that the current number has answered with a carrier and flag
    it as a successful connect.

An army helmet for your telephone is suggested, but not required.

Happy Warring.
automatically,

AUTOMAN

---

President Elect is a comprehensive simulation of presidential
campaigning from labor day to the election night. Game functions are
rooted as closely as possible to real life; to campaign players must
plan and execute strategies to their own choosing success is a
function of these strategies the inherent strengths and
weaknesses of the candidates, chance events, and
pre-campaign situation.

The first question asked is:

1] Start a New Game
2] Continue Old Game
3] Demo of Graphics
4] Computer Demo of Game

If you have selected a new game, you must construct your own scenario.
The importance of this segment cannot be overstressed, as the
variables you enter have a direct and powerful influence on the course
of the game. To construct a scenario, answer each question as
requested on the screen and refer to the game manual when necessary.

Following are a few notes on setting up a scenario:

1] Election years are different in two ways. First, the number of
    popular and electoral votes conform to history, adjusted in the case
    of popular votes by likely voter turnout. Ex. Florida had 10 electoral
    votes in 1960 now it has 23 in 1984, due to population shifts. Second,
    each state is biased to a different degree for one party or another.
    Ex. Massachusetts is more liberal than Utah. The bias changes from
election to election.

2] Historical scenarios are just that - the historical candidates and
    conditions are entered automatically. A historical scenario gives
    you the ability to change conditions and candidates, even to the point
    of constructing a fictitious candidate. This allows YOU to run for
    President.

3] Candidates can be selected irrespective to their party to actual
time frame, however unrealistic George McGovern running as a
Republican in 1894 may seem.

4] How the State of the Union affects the campaign depends upon who is
    the incumbent, how the state of the union was when the incumbent party
    took office, and how good or bad current conditions are.

The computer can manage all, some, or none of the candidates. It
will make the game decisions a humana must w/o cheating. If you want all
the candidates to be run by the computer, then you can run the game on
"Autopilot". The campaigning segment will take 45-60 minutes w/o any player input required. You regain control when the election returns begin.

[> The Game <]

The campaign is nine weeks [turns] long. Each week players receive a poll that shows the national popular vote with a 2% error margin [on rare occasions the error may be greater]. The individual states have a 4% margin of error. For a state to be considered likely to vote for a candidate the polls must show the candidate leading by over 4%. For a state to be considered solidly in support of a candidate the candidate must be leading by over 8%. During the campaign the candidates try to improve their positions through the expenditure of campaign funds on overhead, advertising, campaign stops, and foreign travel.

[Overhead]
Overhead is unavoidable, for major candidates overhead starts are $500 units a week and increases by $100 units each week. It does not contribute directly to swaying votes, but is essential is running a campaign. Overhead is variable for Third-Party-Candidates.

[Advertising]
There are three kinds of advertising, each serving a different purpose.
1) National advertising covers the entire nation. Dollar-for-dollar it sways the most net votes; however, it is not focused and is not the most effective way to swing particular states.
2) Regional advertising is more effective in swaying states, but only in the area chosen.
3) Individual state advertising is excellent for swaying large states where the voting is close, but it is a very expensive way to buy votes. To select a state, enter its two-letter postal code shown on the map.

[Campaign Stops]
Each candidate may make appearances in the states/regions of his choice. Costs are incurred when entering a region, when entering a given state, and for each stop made. Fatigue effects occur after a given number of stops and no more given stops may be schedule for a dingle week. Stops have diminishing marginal effectiveness in a given week, but have a gradually increasing effectiveness each week [Ex. 2 stops in 3 weeks is more effective than 6 stops in 1 one week, but is also more expensive]

[Foreign Visit]
In the first week only, all candidates decide whether or not to take a trip, and if so who will go, where they will go, when, and for how long. Trips are pure gamble; sometimes they help, somtimes they hurt.

All players receive an intelligence report at the end of the campaign phase, showing estimate of each candidates’s dollar expenditures in each state. Also shown are the number of stops made by each candidate in each state.

Each week the players are offered the opportunity to debate, If they are willing. Agreement come only through the mutual consent among potential debaters on who will debate and how many question will be asked.

At the end of each week, strengths are adjusted based on the decisions of the candidates and the events that have transpired. Each new week begins with a new poll.

[> Election Night <]

After the ninth week, result of the election are given and a winner is declared. The election night may be stimulated in real time [4-6 hours] or votes may be tailed in less than 15 seconds. The players are given the opportunity to decide how to resolve the election night.
Again. To block your opponent's strike: Push the joystick up just as your opponent is striking. It may take some practice to get

----------

Opponent.

If you use a joystick, it should be the self-centering kind. The joystick buttons can be used interchangeably.

When you boot the disk, the program automatically calibrates itself to match your particular joystick. During play, if your joystick starts to behave strangely, you can recalibrate it by pressing CONTROL-J. If this doesn't fix the problem, try adjusting the joystick's trim controls, and pressing control-J again.
Apple II Computer Info

To stop fighting: Push the joystick down. Once you have put away your sword, you are free to run, jump and climb as usual. Be careful, though—when you are off guard, a single sword blow can kill you. To draw your sword again, press a joystick button.

The row of red bullets in the lower left corner of the screen indicates your current strength. Every time you get hurt, you lose one unit of strength. When the last of your strength disappears, you die.

You start the game with three units of strength. (Later on, you may be able to increase your strength beyond this limit.)

Things that cost you one unit of strength include a blow by a guard's sword, two-story falls, and having a section of the floor collapse on your head. Other, more serious accidents can kill you outright.

An opponent's strength is indicated by a row of blue bullets in the lower right corner of the screen. To kill an opponent, you need to take away all his strength units.

---

Keyboard Control

In keyboard mode, use the following keys in place of the joystick:

<table>
<thead>
<tr>
<th>Movement</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>J</td>
</tr>
<tr>
<td>Right</td>
<td>L</td>
</tr>
<tr>
<td>Up</td>
<td>I</td>
</tr>
<tr>
<td>Down</td>
<td>K</td>
</tr>
<tr>
<td>Jump Left</td>
<td>U</td>
</tr>
<tr>
<td>Jump Right</td>
<td>O</td>
</tr>
</tbody>
</table>

Action button: Open-Apple or Closed-Apple

---

Hints

* To get the maximum distance from a standing jump across a chasm, use careful steps to move right up to the edge of the pit before you jump.

* If you jump a chasm but fall short, you may still be able to grab on to the opposite ledge by pushing a button. Remember, when you let go of the button, you let go of the ledge.

* Every time you block an opponent's sword strike, the force of the blow pushes you back slightly. If you adopt a defensive strategy, you will find yourself steadily losing ground. Try following up a successful block with a strike.

* Test for loose floor sections by jumping up and down.

* You can knock out a loose floor section by standing directly beneath it and jumping up. Try not to be there when it lands.

* There are two kinds of pressure-activated floor plates. One kind raises gates, the other lowers them. With experience, you can learn to distinguish them from ordinary floor sections and from each other.

* Learn to recognize different kinds of potions by sight.

* You can cross a bed of spikes safely by taking careful steps.

* A two-story drop will hurt you. A three-story drop will kill you.

* You never know what you'll find in a dungeon. Don't be afraid to explore, and to experiment. After all, you've got nothing to lose except your life, the Princess, and the entire Kingdom.

---

Death and Continuation

When you die, the message "PRESS BUTTON TO CONTINUE" will appear on the screen. Press a joystick button to return to the beginning of the current level.

If you don't press a button, the message will remain on the screen for about 20 seconds, then start to flash in warning, accompanied by a chime. After ten chimes, the game will end and you will be returned to the title sequence.

If you get yourself into a situation where you can find no way out, press CONTROL-A to restart the level.

You can continue the game as many times as you want without penalty. Remember, though, the sands in the hourglass are draining away....

To see how much time is left, press the SPACE BAR.

---

Disk Access

At the end of Level 2, the message "TURN THE DISK OVER" will appear. When you see this message, take the PRINCE OF PERSIA disk out of the drive and put it in the Apple II disk drive.
back in with the back side facing up. Close the drive door, and press a joystick button or any key to continue the game.

You will not need to turn the disk over until you end the game and return to the title sequence.

----------------

Saving Your Game
----------------

Once you have reached Level 3, you will have the option of saving your game to disk and continuing it later. To save your current game, press CONTROL-L at any time during play. The program will briefly access the drive, then continue with the game.

The next time you boot the PRINCE of PERSIA disk, instead of pressing a joystick button or any key to start a new game, press CONTROL-L. The game will resume from the beginning of the level you were on when you last saved it.

----------------

Special Keys
------------

Esc.................Freeze frame. Press again for single frame advance.

Control-J............Selects joystick control. Also recalibrates the program to match your joystick. Make sure that when you press this key, the joystick is in its center (release) position.

Control-K............Selects keyboard control.

Control-R............Ends the game and returns you to the title sequence.

Control-A............Restarts play from the beginning of the current level.

Control-S............Turns off all sound. Press again to turn the sound back on.

Control-N............Turns off the music. Press again to turn the music back on.

Control-G............Saves the current game to disk.

Control-L............Resumes the last saved game. (Press during the title sequence.)

Control-X............Flips the horizontal axis of your joystick.

Control-Y............Flips the vertical axis of your joystick.

Space Bar...............Press to see how much time is left.

About the Author
----------------

Jordan Wechner, 25, is the author of the award-winning computer game Karateka. Hailed by Games magazine as "a software landmark," Karateka broke new ground in the use of cinematic techniques to tell a story within a computer game, and has sold over 400,000 copies worldwide.

To achieve the extraordinary realism of the animation in PRINCE of PERSIA, Jordan studied hours of live-action footage, including swordfighting sequences from classic Hollywood swashbuckling films of the Thirties. Two years in the making, PRINCE of PERSIA is the culmination of a lifelong fascination with animation, and ten years of hacking on the Apple II.

A native New Yorker and a 1985 graduate of Yale University, Jordan now lives in San Francisco.

----------------

About the Music
---------------

The Music for PRINCE of PERSIA uses a "leitmotiv" approach in which each theme is associated with a specific character or idea. The basic themes are: Prince, Princess, Jaffar, Danger, Sword, Shadow, Death, Time, and Magic.

----------------

Krack Notes from The Ramsacker
-----------------------------

Due to "Prince of Persia" being an 18 sector ware, a 3rd disk was necessary to accommodate the extra two sectors on each track. An 18 sector ware is not actually 18 DOS 3.3 sectors, but rather the equivalent of 18 sectors of data written in a unique format. It does not use standard DOS 3.3 address and data marks, and uses a totally rewritten DOS altogether to allow more data to be squeezed onto each track.

On the 3rd disk, the area of the disk being used for extra sector storage is: Track $1A, Sectors $B-$0 thru Track $22. The rest of the disk can be used for DOS 3.3 file storage as it contains a catalog on track $11. It does not have a bootable DOS although E-Z VIEW is installed on track $00 for textfile viewing. The original release of the third disk contains the Prince of Persia dox, E-Z VIEW dox, and "Karateka Music and Sound Effects" (just for the hell of it).

Apon boot-up, you should have the 3rd disk in drive 2 as the program begins accessing the second drive immediately after the krack page. It was not possible to fit the extra sectors onto just one disk, nor was it possible to pre-load the extra sectors into RAM because the game uses every inch of memory, main and auxiliary (which is the reason the game run so smoothly).

Secret Keys
-----------

While searching through memory in my kracking quest, I came across some strange code that turned out to be a check for a series of keys. I discovered that if you hold down both Apple keys (or Apple and Option on the //gs) and press one of the following keys during boot-up, you will get a keen treat. Here is a summary of what each secret key does (I won’t tell you exactly what they do so that it will be as much a pleasant surprise for you as it was for me).

(remember to hold down both Apple keys for each key)

DELETE - Press the arrow keys (works only on the //gs)
RETURN - Neat-o
! - Message from authors (press any key after this one for something else)
@ - Pretty cool
* - Move your joystick around for this one

Also, use a sector editor to view Track $00, Sector 5F for a quaint message. Them folks at Broderbund sure know how to please. Get ready for one kick-ass game.

--------------------

Call these Byte Bastard Systems
-----------------------------

Byte Bastards BBS ... (201) 697-7001 12/2400 baud 10 megs (40 megs soon)
The Chessboard ...... (201) 515-8557 12/24/9600 baud 60 megs GS/Amiga
Ocean Side Bar ...... (609) 429-8487 2400 baud 20 megs ProNABBS

--- Coming soon ---
Ok, to start off with this is one EXCELLENT program, and all you need is an APPLE II+/IIe/IIc with at least 48k of memory or APPLE III in emulation mode. Optional equipment is as follows. Joystick, Koala pad and color ribbons and paper. To start just put boot up the disk and you come to a menu. You can use either the joystick, cursor keys or the Koala pad to move to the proper program. Obviously if this is your first time you will choose SETUP. Now tell it what type of printer you have, what slot and type of printer interface and how many drives you have. You can use Print Shop with only one drive, but once you start making your own designs you will need two. At this point, to test your printer setup, make sure your printer is ready and type return. You should see 'WELCOME TO THE PRINT SHOP' print out. If it does we're ready to go!! Oh, one last thing, to use the KOALA PAD plug it in BEFORE you boot up. Also the buttons may be used as RETURN and ESCAPE.

Greeting Card

To make a Greeting card highlight it on the menu and press return. You have a choice of 'Ready Made' or 'Design your Own' if you choose design your own, just follow the step by step instructions. First you'll design the FRONT then the INSIDE. You'll be asked to choose a border, graphic, graphic size, graphic layout, font. There are 3 graphic sizes; small, medium and large. The staggered graphic layout will evenly space 13 (small) or 5 (med) sized graphics. The tiled layout will place small graphics side by side on the whole page. Note that the CUSTOM, TILED or STAGGERED layout can't be used with the large graphic. The Custom layout lets you choose how many SMALL or MEDIUM graphics will be printed. Use the arrow keys or koala pad to the different positions and hit return to select. When done just move to the DONE box and hit return. Choose a FONT and we will type a message. You will now see a box. On the right the 'C' means centered. By pressing "F" you can change it to FLUSH Left/Right. On the left side you will see small boxes. You can change the Font being printed to be SOLID (preset) OUTLINE or 3-D. By pressing "S" it will change this. You can also set the print to be larger or smaller by pressing "S". You will not be able to JUDGE the outcome until AFTER your done. When done just hit return and now you'll go to the INSIDE card design. This is done exactly the same way. When done with the inside you will be at the print menu. Just position your paper at the perforations and go! The system will pause with 'THINKING' on the screen and then print. Congratulations on your first card! One last note, using graphics #51-60 in the TILE mode will print nice backgrounds.

SIGN

The SIGN mode will let you print full page signs. These can be of any graphic supplied or one of your own, that you designed with the Graphics Editor. The procedure is the same as for the front page of the GREETING CARD.

LETTERHEAD
In LETTERHEAD we design the top first. Choose a graphic or no graphic. If you choose graphic you will now see a way to position them. The options are shown as you move the highlighter up and down. Select one and you will now have to choose the FONT. This is the name as for the GREETING CARD with the exception of not being able to alter the size. Just type in your message. You can use ^F/P as before also. If you want your address printed the line will wrap around the screen but will be printed on one line if your message is to long. If you don't want your address just hit return. For that extra touch you can have a horizontal line your name from the rest of the page. Choosing a graphic for the bottom is the same as the top. When you have finished the design go to the print menu and VIOLA! Nice eh? You can also print multiple copies to use for your word processing needs.

BANNER
Highlight 'BANNER' then return. Choose a FONT that you want, return and now choose either solid or outline printing. Type your message on the two lines. If your message doesn't fit, you'll have to edit your message. Only one line can go on the banner even though you type your message on two. You can also 'CHAIN' two banners or graphic pictures. By doing this you can get different fonts or graphics on one banner. The graphic choices are done the same as in the GREETING CARD. Choose the positions of the graphics and just print.

SCREEN MAGIC
Screen Magic is a very powerful SCREEN PRINTING program. It will print different shades of grey as well as printing the whole screen. The menu has five choices. They are: See Kalaidescopes, Draw text on screen, Get screen, Save Screen and Print screen. Let's highlight KALAIDESCOPIES first and then go onto the others. Kalaidescopes will let you see 12 different screens. By pressing RETURN you can advance to the next one. Hitting ESCAPE will freeze the present screen. When you hit ESCAPE the screen will be put into memory and you will go back to the menu. Kalidescope 2 will start out like 1 but has only one starting point and return will not work. Hitting ESCAPE will though and also put the screen in memory. Note that you can only have one screen in memory at a time. DRAW ON TEXT will let you do just that with the screen in memory. Just choose a FONT and type. The number of lines and characters differs with the font size. Also ^F will toggle between solid and outline as 3-D is not available. Now center your text. It can be done from top to bottom if desires. If you want to get a different screen that you previously saved, type in the name and drive #. Hit return for a catalog of RETRIEVABLE screens. Only screens created with the screen editor are valid. Save screen is just that. It will ask you if you want init disk. If you don't have a initied disk get a SCRATCH and just follow the directions. Print screen will print the screen in memory. You can choose between normal or reverse. Reverse meaning that all the BLACK areas of your screen will be printed. You will also be asked if you want a border around the screen. This is a single black line and is not like on the GREETING CARD. The print menu is like the others with the exception of 'PRINT TOP HALF OR BOTTOM HALF'. This is if you want to fold the paper in 1/2, as the PRINT SHOP works only on 8 1/2 x 11 paper.

GRAPHIC EDITOR
Last but not least is the Graphic Editor. This will let you edit ANY an ALL graphics CREATED or USED by the PRINT SHOP. The menu to the right of the drawing screen is really self explanatory (so is the whole program so why this big text file??) but, the one thing you should know about is the ^D- device. This is NOT for a drive selection!!! This will let you reactivate the KOALA PAD if it was not on the system when you booted up. The buttons on the joystick and koala pad act as 'D' for draw and 'E' for erase. NOTES: before you can edit the original PRINT SHOP graphics the must be save to another disk. As I stated before ONLY graphics created with PRINT SHOP can be used.
The page numbers given here have no basis in reality. They just show the relationship, size wise, of the various sections.

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Appendix D Listings........................................33
Printrix is a typesetting system which allows you to control the arrangement of text on the paper, and the fonts used. You may also insert graphics into the text.

Printrix functions by taking a text file which you have already created, applying the format or page design to that text file, and printing the result. The text file is created with a word processor. The page design is called a "layout file," and is created with Printrix. There are three components to a layout file: text format, font library format, and graphics format.

Printrix is a ProDOS program. The Printrix system provides ProDOS fonts and 25 clip-art graphics for you to use. You must provide the text files and any additional graphics. Text files from AppleWorks, AppleWriter, Word Juggler, and WordPerfect may be used directly. Other text files may be used if they are saved in standard ASCII ProDOS format. If your text file is saved in DOS 3.3 format, you must convert it to ProDOS or re-enter it using a ProDOS word processing program. If you are a Fontrix user (Fontrix is the sister program to Printrix), you probably have Fontrix fonts and graphics in DOS 3.3 format.

These may be converted to ProDOS format following the instructions in Appendix A.

The Printrix program contains two disks, and uses both sides of each disk. The first disk is the Program Disk. Its flip side is the Printrix Configuration Disk. The second disk contains fonts on both sides. These disks are named /PRINTRIX, /CONFIGURE, /FONT1, and /FONT2.

/PRINTRIX contains the Printrix program and lessons files. /CONFIGURE contains the configuration utility, a Graffile conversion utility, and 25 clip-art graphics. The font disks contain 43 fonts for use with Printrix. See Appendix A for information on the Graffile conversion utility, Appendix C for a listing of fonts, and Appendix D for a listing of clip-art graphics.

The disks are not copy protected. Please make back-up copies of all four sides, using four separate disks for convenience. Then label the working disks in a safe place. See your Apple Systems Manual for copying information.

Working Disks

The Printrix program contains two disks, and uses both sides of each disk. The first disk is the Program Disk. Its flip side is the Printrix Configuration Disk. The second disk contains fonts on both sides. These disks are named /PRINTRIX, /CONFIGURE, /FONT1, and /FONT2.

The Printrix program contains two disks, and uses both sides of each disk. The first disk is the Program Disk. Its flip side is the Printrix Configuration Disk. The second disk contains fonts on both sides. These disks are named /PRINTRIX, /CONFIGURE, /FONT1, and /FONT2.

Hard Disk

You may use Printrix from a hard disk. We recommend that you create a subdirectory named /TEMP. Copy all four Printrix original disks to this subdirectory, then rename the subdirectory to /PRINTRIX. Then, when you use Printrix, set the prefix to /my hard drive/PRINTRIX, and all fonts, layout files, and graphics will be loaded automatically.

As you develop a library of files, you may want to separate layout files and text files according to their application.

3.5 Inch Disks

You may copy all four Printrix original disks to a 3.5 inch disk, using the copying program from your Apple Systems Utilities. We suggest that you name the disk /PRINTRIX.

Chapter 2 - Lessons

"Configuration" means telling Printrix about your system. It needs to know what computer you're using, how it's connected to the printer (interface card and slot, printer port or modem port and baud rate), what word processor, and what printer.

The Printrix Program Disk is preconfigured for the Apple Imagewriter and an ASCII Soft word processor. The lessons have been designed for this configuration, and the lessons text files are in ASCII Soft word processor form. If you plan to work through the lessons, change the printer configuration if necessary, but reenter ASCII Soft as the word processor.

Then, when you're ready to typeset your own text files, reconfigure your word processor.

1. The first question on screen asks which Apple computer you are using: Apple //e, //c, or IIGs. Enter the appropriate number, and press RETURN.
   a. If you answered //e or IIGs, the next question concerns interface cards. Enter the numbers which corresponds to the manufacturer and type of interface card you are using, then enter the slot/port number. Press RETURN after each input.
   b. If you answered //c, the next question concerns ports. You may be printing through the printer port, or modem port Type A or Type B. Enter the appropriate information. If you're using a modem port, respond to the question on baud rates. Press RETURN after each input.

2. The next series of questions identifies your printer by manufacturer and model number. Enter the correct codes, pressing RETURN after each.

3. Finally, enter the number corresponding to the word processor you use, and press RETURN.

Printrix now displays all configuration information on screen. If you wish to change any entries, press R and the configuration menus will return. If the settings are correct, replace the Configuration Disk with the Printrix Program Disk, and press RETURN. The configuration file will be copied to the Program Disk.

Thereafter, you will need the Configuration Disk only when you need to change the configuration settings. To reconfigure, insert the Configuration Disk in Drive 1, boot the system, and go through the same sequence, entering the new information.

To run Printrix from this point, insert the Program Disk in Drive 1. You may either press Open-Apple CTRL RESET, which boots the system and loads Printrix automatically, or you may set the prefix to the Printrix disk by entering PREFIX/PRINTRIX and pressing RETURN, then entering -PRINTRIX. Either method is fine.

Hard Disk, 3.5 Inch Disk

To configure Printrix from hard disk or 3.5 inch disk, set the prefix to /discname/PRINTRIX, type -CONFIGURE, and respond to the on-screen questions as described above. When the screen prompts you to insert your /PRINTRIX disk, press RETURN, since you're already working from that disk. (Or, if you're working from another disk which contains the /PRINTRIX subdirectory, enter the pathname in response to the screen prompt.) Then, to run Printrix, enter -PRINTRIX and press RETURN.
This chapter contains two lessons which introduce you to the Printrix menus, the Printrix embedded commands, creating and saving layout files, and moving files through the system.

Lesson One is a simple business letter, containing some of the more common formatting commands. We recommend that all Printrix users work through this lesson.

Lesson Two contains four special applications: mailing labels, tables, graphics insertion, and printing in columns. Select the applications you need from this lesson, as you need them.

LESSON ONE - Business Letter  

In this lesson, you will learn how to use a standard layout file and a few embedded commands to produce a typical business letter. Formatting features include margin changes, font changes, boldface, italics, and tabs.

To Begin:
To begin this lesson, you should already have ready Chapter 1 and configured Printrix for your printer. We suggest that you also read through Chapter 3 for a quick overview of Printrix.

Assumptions:
We're assuming that you are using an ImageWriter, or printer of similar resolution (with print densities between 120-200 dots per inch). The fonts used in this lesson have been chosen accordingly. If your printer is either above or below this range, the print will be a little large or a little small, respectively. Either ignore it for the time being, or load new fonts in the appropriate sizes. See Chapter 6 for instructions on loading fonts, and Appendix C for information on the fonts available.

The sample text files have been created in ASCII Soft, so use the text files we've provided, with Printrix configured for ASCII Soft. Then, when you're ready to typeset your own text files, you'll reconfigure Printrix for your word processor.

The lessons are written for people running from a floppy disk. If you're using a hard disk, the prefix will be /diskname/PRINTRIX for all fonts and layout files.

Step One: Prepare the Text file
Load your word processor and input the text to be typeset. (Since this is a lesson, we've already created a text file for you. It's on the Printrix Program Disk, under the filename TXT.LETTER.) We've deliberately included several common formatting commands to show you how they're used.

Text file:
```
TABJune 15, 1987
Andrew Andrews, President
Primo Professionals
1494 High Street
Tampa, FL

Dear Mr. Andrews:

"I couldn't resist writing to let you know that Ace Associates will soon be taking over your business.

"ML"="MR"="TAB" we've got this "F1=Yhot new software program" that allows us to typeset all our letters, invoices, literature, anything, "FW=1"="YWITHOUT"="FW=0" going to a typesetter, and "FW=1"="WITHOUT"="FW=0" paying through the teeth, and "FW=1"="WITHOUT"="FW=0" waiting. We just do it ourselves, here on our Apple II and our office printer."

"TABSO -- we're saving lots of money, lots of time, and "F=2"LOOKING GOOD!""

"TABbeen nice knowin' ya.
Ta ta,

Lucius "Lucky" Long
V.P. Capitalism
```

Step Two: Load a Layout File
Insert the Printrix program disk in Drive 1 and press Open-Apple CTRL RESET. You'll see the Main Menu appear on screen. (See Fig. 1 - Main Menu). From the Main Menu, press L to enter the Layout Document work area. (See Fig. 2 - Layout Document Menu.) Press L again to load a layout file.

We've created a layout file for you named LAY.LETTER. It's on the Program Disk, so enter /PRINTRIX for the prefix, and LAY.LETTER for the filename, and confirm. The fonts are on the same disk, and they will be loaded automatically.

Take a look at this layout file. Press T to examine the text settings. (See Figure 3 - Text Format Menu.) Note that we'll be typesetting on 8.5 x 11 paper, with a top margin of 1.5 inches, side and bottom margins of 1 inch. The justification is set to Fill. Font 1 is active. No page numbers, one copy of the letter. The tabs are set to .5 inches and 4 inches. Then press ESCAPE to return to the Layout Document Menu.

Now press F to look at the font library. (See Fig. 4 - Font Library Menu.) There are two fonts loaded: 1 and 2. Font 1 is active (note the asterisk), so typesetting will begin with that font. (This duplicates the Active Font information on the Text Format Menu.)

This is your opportunity to load new fonts, if you like. You may also examine the font options by pressing C, but don't change any settings right now. You may also look at the Graphic Format Menu by pressing G from the Layout Document Menu.

Now, press ESCAPE from the Layout Document Menu to return to the Main Menu.

PRINTRIX 1.00

Printer:                                Slot:
Interface Card:                        
Word Processor:                       

MENU
<P> Print a Document
<L> Layout Document
<ESC> Exit Printrix System

ENTER CHOICE:

Figure 1. Printrix Main Menu

LAYOUT DOCUMENT

Layout File:
Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 843 of 1262

Apple II Computer Info

Text Format

Font Library Format

Graphic Format

Load New Layout File

Save this Layout File to Disk

Exit this Menu

ENTER CHOICE

-----------------------------------------------------------------------------

Figure 2. Layout Document Menu

-----------------------------------------------------------------------------

Figure 3. Text Format Menu

-----------------------------------------------------------------------------

Figure 4. Font Library Format Menu

Step Three: Print a Document

Press P from the Main Menu. The text file to be printed, TXT.LETTER, is on the Program Disk, so enter /PRINTRIX and TXT.LETTER to the on-screen questions, and confirm the choice.

The Print Document Menu appears on the screen, giving you a final chance to change the text settings or to return to the Layout Document Menu. This menu is a duplicate of the Text Format Menu, except for the print options at the bottom. Make sure your printer is on-line, and press RETURN to begin typesetting.

That's it - your letter is ready to mail.

Explanation of the Embedded Commands

Take a look at the typset letter, and notice the effects of the embedded commands. Following is a brief explanation of each:

```
^TAB       Jumps typesetting to the next tabstop
^ML=+1     Adds one inch to the current left margin value
^MR=+1     Adds one inch to the current right margin value
^Fi=Y      Turns Italics on
^FI=N      Turns Italics off
^FH=1      Sets horizontal boldface to 1
^FH=0      Sets horizontal boldface to 0
^ML=-1     Subtracts one inch from the current left margin value
^MR=-1     Subtracts one inch from the current right margin value
^F=2       Switches to Font 2
^F=1       Switches to Font 1
```

It may have looked complicated, but now you see how simple it is. You may use all, any, or none of these commands, as you like. For details on each command, see Chapter Seven.

LESSON TWO - Special Applications

In this lesson, you will learn how to set up layout files and text files for mailing labels, for tables, for printing a graphic with your letter, and for printing in newspaper-style columns (only possible with selected printers).

We assume that you've already worked through Lesson One and are comfortable with its contents. The assumptions about your printer are still in effect.

Mailing Labels

The following combination of text file and layout file allows you to print names and addresses on mailing labels which measure 3.5 inches horizontally and 1 inch vertically. These labels are arranged vertically (a long strip of labels). The 1 inch vertical measurement is the distance from the top of one label to the top of the next.

Step One: Create the Text file

The following text file, TXT.MLABEL, is on the Program Disk.

```
Text file:

James Jones
1235 Peachtree Avenue
Atlanta, VA 23535

Amy Anderson
394 Harrison Way
Santa Ana, Ca 07836

William Wilson
74614 Paseo Doble
Houston, TX 73573....and so on
```

Step Two: Design and Save the Layout File

The "NP" command at the beginning of each new line causes Printrix to jump to the top of the next page (defined by the layout files as the top of the next label).

The Print Document Menu appears on the screen, giving you a final chance to change the text settings or to return to the Layout Document Menu. This menu is a duplicate of the Text Format Menu, except for the print options at the bottom. Make sure your printer is on-line, and press RETURN to begin
Apple II Computer Info

(3.5 in. x 1 in., HxV). The margins also have to be changed; set each margin to .1 inch. Everything else on this menu is fine as it is, so press ESCAPE to return to the Main Menu.

If you want to change fonts, press F to enter the Font Library and load as in Lesson One.

Again, no graphics, so skip the Graphics Format Menu.

Back at the Layout Document Menu, press S to save the layout file. Save it to the Program Disk under the filename LAY.MLABEL by entering /PRINTRIX and LAY.MLABEL. Now press ESCAPE to return to the Main Menu.

Step Three: Print

---

Return to the Main Menu, load your printer with regular paper, enter the Print Document area, specify TXT.MLABEL, and print.

If you want to change fonts, press F to enter the Font Library and load as in cells to overlap when printed. (The -g value is arrived at by experimentation: different fonts and different printers require different settings. As a rule of thumb, start with a figure that is the horizontal cell size divided by three, then make that cell negative).

Again, there are no graphics, so return to the Layout Document Menu to save this layout file under the filename LAY.TABLE.

Step Three: Print

---

Return to the Main Menu, load your printer with mailing labels of the appropriate size. If you don't have any, just print on regular paper and use your imagination. From the Main Menu, press P, specify TXT.MLABEL, and print.

That's it.

Tables

---

Tables, or columns of numbers, are frequently part of a report. They are not difficult, but they do require some special fonts and tab commands.

Most of the Printrix fonts are set to proportional spacing, which looks good for text but makes it impossible to line up columns. The following layout file has a font specially adapted to table printing.

Step 1: Create the Text file

We've put the following text file on the Program Disk under the filename TXT.TABLE.

Text file:

---

"F=1January"P=3"TAB$ 4926.96"TAB$2633.33"TAB$ 1039.52
"F=1February"P=3"TAB$26047.58"TAB$ 3463.85
"F=1March"P=3"TAB$ 2350.36"TAB$1357.07"TAB$34764.47

Font 3 is defined by the text file for use with columns. The tab commands jump the typesetting to the correct columns; spaces are used within the figures to align the decimal points.

Step 2: Create and Save the Layout File

---

Begin by Loading LAY.LETTER as before.

The text settings are fine, so we'll go straight to the Font Library by pressing F.

Load Font 1 into Position 3, through the following procedure.

1. Press 3 to make Position 3 active.
2. Press L to load a font into that position.
3. The font we'll use is SET.CASLON25, on /PRINTRIX, so enter that information.

Now, we need to adapt this font. Press C to change font parameters. The Change Font Parameters menu appears on screen (See Fig. 5).

1. Set the font to non-proportional spacing by pressing P.
2. Set the spacebar width to equal the horizontal cell size. Look at the top of the screen for that value, then press W and enter the number (here, it's 26).

3. Set the character spacing gap to -9. This causes the character cells to overlap when printed. (The -g value is arrived at by experimentation: different fonts and different printers require different settings. As a rule of thumb, start with a figure that is the horizontal cell size divided by three, then make that cell negative).

Again, there are no graphics, so return to the Layout Document Menu to save this layout file under the filename LAY.TABLE.

Step Three: Print

---

Return to the Main Menu, load your printer with regular paper, enter the Print Document area, specify TXT.TABLE, and print.

CHANGE FONT PARAMETERS

---

<table>
<thead>
<tr>
<th>Font Name</th>
<th>Cell Size</th>
<th>P</th>
<th>Proportional</th>
<th>L</th>
<th>Linefeed Gap</th>
<th>B</th>
<th>Baseline</th>
<th>I</th>
<th>Italics</th>
<th>X</th>
<th>Horizontal Magnification</th>
<th>Y</th>
<th>Vertical Magnification</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET.CASLON25</td>
<td>26 x 25</td>
<td></td>
<td>Yes</td>
<td></td>
<td>4</td>
<td></td>
<td>10</td>
<td>No</td>
<td></td>
<td></td>
<td>1</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

ENTER CHOICE:

---

Figure 5. Change Font Parameters Menu

GRAPHIC FORMAT:

---

嗔 | Horizontal Magnification : 1
<Y> Vertical Magnification : 1
<NO> Negative Image : No
<NP> Horizontal Placement (L.C.R.) : Center
<CP> Color Printing : No
<CF> Fit Text to Graphic (B.F.O.) : Break
<CS> Separate from Text (inches) : 0.25

<ESC> Exit this Menu

ENTER CHOICE:

---

Figure 6. Graphic Format Menu

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Graphics Insertion

This ability to insert graphics into your document can be used in many ways: printing a letterhead with the letter, printing a logo on a card or letter, adding a chart or illustration to a report, or just adding some design interest to a letter, invitation, or greeting card.

To insert a graphic, you must have already created the graphic in one of the three formats Printrix accepts: Fontrix Graffile, single hi-res screen graphic, or "Print Shop style" clip art graphic. For this lesson, we've provided a single-screen graphic (created by Fontrix), named PIC.DRAGON on /PRINTRIX. The
Exit the Graphics Menu and press F to enter the Font Library Menu. The text file uses three fonts. Look at the text file to see which fonts are used where. Then, load fonts accordingly. Load SET.OLDENG30 into Position 1, SET.HELVET30 into Position 2, and SET.CASLON25 into Position 3. All of these fonts are on the /PRINTRIX disk. When you've loaded SET.CASLON25, press C to change its parameters, and set italics to Yes (just a design whimsy).

Return to the Layout Document Menu and save this layout file under the filename LAY.INVITE.

Step Three: Print
----------------
Return to the Main Menu, and press P to Print a Document. Specify TXT.INVITE on /PRINTRIX, press RETURN, and print.

Two-Column Printing
---------------------
On certain printers with reverse linefeed capabilities, such as the Imagewriter, Printrix can typeset in two newspaper-style columns. This means that text runs down the first column, then back to the top of the second column.

You may control columns from the menu or with embedded commands. An embedded command to end two-column printing takes effect on the next printed page. An embedded command to begin two-column printing takes effect on the current printing line or the following line, depending on the placement of the command.

This example shows the interaction of menu and embedded commands to center a headline across a page, then begin two-column printing.

Step One: Create the Text file
--------------------------------
The following text file is located on /PRINTRIX under the name TXT.ARTICLE.

Text file:
"C=Y";F=1

"NP"The message had been typeset with Printrix, a new typesetting program which offers unparalleled clarity and diversity in fonts and page design. Said one of the teenagers, "As soon as we saw the graphic excellence of the message, we knew we had to act." So they contacted the local Coast Guard.

The rescue was quick and efficient. Five yachtsmen were brought in from their stranded yacht the next day, treated for minor health problems, and released. According to Wendell Walker, the yacht's owner and captain, "I don't know what we'd have done if we hadn't had the resources to attract someone's attention. Not just any written message is effective these days – we used Printrix to make sure.

The columns command is positioned first on the printing line. The NP command in this text file moves the typesetting to the top of the next column.

Step Two: Design the Layout File
----------------------------------
- The following text file is located on /PRINTRIX under the name TXT.ARTICLE.

Text file:
"C=Y";F=1
Load LAY.LETTER, and set right and left margins to 1.5 inches. Use any fonts you like for the headline (Font 1) and the body (Font 2). Leave Two Column Print Set to No, so that the headline will be centered across the entire page.

If you have one of these printers (Apple DMP, ImageWriter, ImageWriter II; C. Itoh 8510, 8510 SCP; Fujitsu DL2400, DL2600; NEC 8023, 8025, CP-7, P5, P5XL, P6, P7; Texas Instruments 855, 857, 865; Toshiba 1340, 1351, P351, P351C), Printrix automatically utilizes a reverse linefeed capacity to return to the top of the page between columns.

If your printer was not listed above, you must return to the top of the page manually. To prepare for this, set Wait at End of Page to Yes.

Step Three: Print

From the Print Document Menu, specify TXT.ARTICLE, and print.

If Wait at End of Page is set to No, you're done. If Wait at End of Page is set to Yes, the printer will pause at the bottom of the first column. At this point, turn the printer off-line, roll the paper back, turn it on-line, and press the spacebar to resume printing.

CHAPTER 3: CONCEPTS

This chapter is designed to give you a global, intuitive understanding of Printrix as a typesetting tool. We recommend that all users read this material early in their acquaintance with Printrix.

Covered in this chapter are the raw materials used by Printrix, the operations performed on them by Printrix, and the ways the user may control these operations. We also explain key terms and concepts.

Printrix

Printrix is a typesetting program, which means that it offers you a variety of font, graphic, and page design possibilities. The fonts and page designs are applied to existing word processor text files. The process of selecting fonts and manipulating page design is called formatting.

Why use Printrix? Without Printrix, you are limited to the fonts built into your printer. These "native" fonts vary in quality, and are limited to the page design capacities of your word processor. Word processors vary greatly in the complexity and control they offer users. Printrix supplements the simple word processing programs and complements the more advanced. Finally, Printrix allows you to insert graphics into your text file during printing, thus eliminating the need for manual paste-up.

When typesetting with Printrix, the user provides the text file and any graphics to be used. Printrix provides the fonts and formatting controls. You may change the fonts and formatting through the Printrix layout file or with embedded commands.

Text files

Printrix accepts text files form AppleWorks, AppleWriter, and Word Juggler. No special save process is required.

Printrix also accepts ASCII text files. Some, but not all, word processors have a special save procedure to convert their native text files into standard ASCII. See your word processor's manual for information. (ASCII stands for American Standard Code for Information Exchange. Each letter, numeral, punctuation symbol, space, etc., has a corresponding number. Information is stored and manipulated in the form of the ASCII equivalents, rather than in its original form.)

Embedded Commands

The embedded commands are part of the text file, entered by the user through the word processor. If the text file was created by a supported word processor, Printrix reads both the word processor's standard embedded commands for page design, and special Printrix-style embedded commands which supplement the word processor's capabilities.

If the text file was created by an unsupported word processor and converted to standard ASCII, there are no word processor embedded commands. All formatting must be done through Printrix-style commands or through the layout file. Embedded commands take effect within a document at the time Printrix reads them. They give "local" control of formatting.

Layout Files

The layout file consists of a set of Printrix menus grouped together to control all aspects of formatting. Three main menus control text, graphics, and fonts. A layout file may be designed by the user for specific documents, and saved to disk for reuse at any time, with the same or different text files. Commands from a layout file affect the entire document, unless an embedded command changes the setting or a new layout file is loaded. layout files offer "global" control of formatting.

Fonts

Fonts, like type, are complete sets of letters, numerals, and punctuation of a particular design.

Printrix's fonts exist as files on disk. These font files were created using Printrix's sister program, Fontrix. Font files are loaded from disk into your computer's memory in order to be used for typesetting. Printrix can use a maximum of four fonts in typesetting any one line. An unlimited number of fonts may be used in a document.

The Printrix fonts are "bit-mapped," meaning that they are formed by arrangements of dots in a rectangular grid. When Printrix reads a text file, it automatically converts the numerical code for each character in the text file into the corresponding bit-map. The individual bit-maps are composed into lines of type. Each line of type is then sent to your printer as a unit.

Graphics

Computer graphics are files on disk which contain illustrations, charts, graphics, art, or other images stored in a bit-mapped format. Printrix accepts and prints three types of graphics: the standard single hi-res screen, the Fontrix Graffile, and the four-sector Print Shop compatible graphic.

A Graffile is a graphic image of varying size, created by Fontrix. It may contain fonts and other images in any combination.

A single hi-res screen can be created by Fontrix or by a number of Apple graphics programs.

A four-sector clip art graphic can be created by Print Shop or by a number of Apple graphics programs which are compatible with Print Shop.

Output to the Printer

Since the Printrix fonts are bit-mapped, or arrangements of dots, they are printed in graphics mode. This means that the information sent to your printer is a stream of dots. The capacity to insert graphics into text is a consequence of this feature.

The alternative to printing in graphics mode is printing in text mode. This means that the information sent to your printer is the ASCII code for the character in the text file. The printer then converts the code into the corresponding character in the printer's native fonts. Word processors utilize text mode. This requires them to depend on the native fonts of the printer, and prevents their merging of text and graphics.
Consequences of Graphics Mode

As mentioned above, printing in graphics mode allows Printrix to merge graphics into the text, since the text is also graphic.

Printing in graphics mode also allows much more flexibility in page design, linefeed advance, and font choice.

Graphics mode and text mode vary in printing speed: text mode is almost always faster since less information is being sent to the printer.

Finally, printing in graphics mode means that the size and proportion of the output is dependent on your printer's resolution and aspect ratio.

Printer Resolution

Printer resolution, or print density, refers to the number of printer dots per inch. Resolution is measured for both horizontal and vertical dimensions.

Most printers offer several choices of resolution. Low-resolution printers may print 60-100 dots per inch; medium-resolution printers may print 120-180 dots per inch; high-resolution printers print 300 or more dots per inch. In general, the higher your printer's resolution, the better the quality of print from Printrix.

Since Printrix fonts exist as bit-maps, with horizontal and vertical dimensions measured in dots, a given font will produce output of different sizes when printed on printers of different resolutions. High-resolution printers will produce smaller output; low-resolution printers will produce larger output. Printer resolution should be taken into consideration when selecting fonts.

Aspect Ratio

Aspect ratio is the relationship of horizontal resolution to vertical resolution (width to height). Some printers have a "square" aspect ratio, in which the horizontal and vertical values are equal. Other printers have a "non-square" aspect ratio, in which the horizontal and vertical values are significantly different.

If you create a square on screen, with each side measuring 100 dots, a printer with a square aspect ratio will print a square, 100 dots per side. A printer with a non-square aspect ratio will print a rectangle, also measuring 100 dots per side. The proportions of the rectangle depend on the printer's aspect ratio.

This same principle applies to graphics and to the Printrix fonts. Depending on your printer, a given font may appear elongated, compressed, or normal when printed. Again, aspect ratio should be considered when selecting fonts.

You may like the effect of aspect ratio on the appearance of your output and choose to accept it. Alternatively, you may use the magnification commands to counteract the effects of aspect ratio. When magnifying a font, be sure that the original font is small enough so that when you magnify it, the result is the size desired.

The Apple ImageWriter has two print modes. The first has a non-square aspect ratio, 161x72 dpi, and produces tall narrow print. The second, quad density, has a near-square aspect ratio, 160x144 dpi, and produces print of normal proportions.

CHAPTER 4 - CONVENTIONS

This chapter covers the conventions used by Printrix. These conventions include syntax for both menu input and embedded commands. Covered here are filenames, file locations, use of the wildcard, letter values, number values, and relative vs. absolute values. The exact form or code used for input is called "syntax."

Menu Input

Printrix menus call for different types of responses: filenames and locations, letter values, and numerical values. In some cases, Printrix already suggests responses to the menu options. You may accept the default responses by pressing RETURN, or you may change the responses as follows.

Filenames

Filenames are entered in the form they exist on disk. A filename may have a maximum of fifteen characters, must be with a letter, and may contain letters, numbers, and periods.

For convenience and clarity inside Printrix, we have used standard naming conventions to separate the file categories. All font names are in the form SET.name; all layout file names are in the form LAY.name.

You may continue this convention if you like, and we suggest that you do. However, Printrix will try to load any file you specify into any part of the program. If you try to load a font as a layout file, or vice versa, Printrix will display a "File Type Mismatch" message.

An additional message: when saving layout files, use names which indicate the text files they are used for. You may find yourself creating files in pairs: one text file and one layout file.

File Locations

Files are located in your system on disks, either floppy or rigid. The disks are identified by name.

Additionally, a disk may be subdivided into subdirectories, or paths, which organize data storage and facilitate its use. These paths are also identified by name.

Therefore, in order to direct Printrix to a file, you must know the name of the disk and any subdirectories which apply. This location information is referred to as the pathname, or "prefix."

Prefix information is entered into Printrix, with the filename, in the following format:

/prefix/filename

This may, in use, appear as:

/diskname/path/filename

or:

/diskname/filename

Wildcards may not be used for pathname information.

The four Printrix disks are named /PRINTRIX, /CONFIGURE, /FONTS1, and /FONTS2. None of them contain subdirectories. When you boot Printrix, the prefix is automatically set to /PRINTRIX. You may load and save layout files to this
disk automatically as long as there is room on the disk. To load files, and to locate graphics and text files, you must enter the appropriate prefix.

**Letter Values**

Letter values, such as L, R, and C (for Left, Right, and Center) are entered by pressing the letter corresponding to the parameter, such as N for Horizontal Placement. The letter value on screen will change to one of the other options. Continue pressing H until the desired option appears.

**Numerical Values**

Numerical values, in response to menu options, are entered as absolute values, meaning that the number on screen is based on the zero point for that parameter. In some cases, the value may be negative (e.g. character spacing gap may be set to -8).

**Wildcards Use**

Wildcards are a method for scanning a list of files and selecting the one you want. If you enter a wildcard in response to a Printrix menu, Printrix will display on screen a list of all the files that match the wildcard, in the specified location, and allow you to answer Yes or No to each file. Wildcards may be used only in response to menu questions.

The wildcard used by Printrix is the asterisk (*). The asterisk replaces any character or string of characters. Therefore, if you were trying to load a layout file, you could enter

```
LAY.*
```

and all files on that disk which begin with LAY.* would be displayed on screen, one at a time. You have the Yes/No option after each file.

If you enter *, all files on the disk will be displayed. If you enter JOHN*, all files which begin with JOHN will be displayed.

Wildcards may be used only for filenames. They may not be used for pathnames.

**Embedded Command Syntax**

Embedded commands may be used for formatting or for graphics insertion. The commands are typed directly into the text file, in the forms given in the reference section. All embedded commands begin with a carat (^), followed by one to three letters which identify the parameter. In some cases, the command continues with an equals sign (=) and then adds the value, which may be a number or a letter. Letters in embedded commands match the letters used in the menus, for easy remembering.

**Filename and File Location**

Printrix contains two embedded commands, the graphic print command and the load layout file command, which require you to enter filename and file location in the text file.

Filename and file location are input as they are for menus, with the addition of quotation marks to set the prefix and filename off from the rest of the text file. Wildcards may not be used with embedded commands.

**Example:**

```
As shown in ^GPG=/prefix/gfl.topo"the illustration
```

If the prefix is absent from the text file, or if its location information is incorrect, Printrix will pause during printing and display a message asking you

to enter the correct location of the file. You may search as many locations as necessary, or you may omit the graphic and continue printing. However, you may not change the name of the graphic while printing.

**Letter Values**

Embedded commands which require letter values are entered into the text file by typing the embedded command and the desired value.

Examples: "GH=C, "GH=C, "J=F"

**Numerical Values**

Embedded commands which require numerical values are entered into the text file by typing the embedded command and the desired values. The range of accepted values and the form for entering them varies according to the parameter. For each parameter, acceptable values and forms are specified in the reference chapter.

**Positive and Negative Values**

In some cases, the numerical value must be positive. For example, linefeed gap may be set to 0 or any positive integer, but cannot be less than 0.

In some cases the numerical value may range from negative to positive, such as with the character spacing gap.

When using a parameter which accepts negative values, the minus sign (-) always means a negative value, NOT a relative value.

**Relative and Absolute Values**

In some cases, the numerical value is absolute only. For instance, you may set a page number to any positive integer, but you must specify the integer directly.

In some cases, numerical values may be entered as either relative or absolute values. There are two ways of defining a numerical parameter (such as margins, linefeed gap, etc.). Absolute values are calculated from a constant point, such as the edge of the paper. Relative values are calculated from the previous value of the same parameter.

Relative values are entered as numbers with plus (+) or minus (-) sign. Absolute values are entered as numbers, WITHOUT a plus or minus sign. If you are using a parameter which expects relative values, the minus sign (-) always means "subtract from previous value," NOT a negative value of the parameter.

Examples:

`ML=1` sets the left margin one inch from the edge of the paper (absolute value).

`ML=+1` adds one inch to the current left margin value (relative value). If the left margin had been 1.5 inches, the new setting is 2.5 inches.

`FL=6` sets the linefeed gap to six dots (absolute value).

`FL=6` subtracts six dots from the linefeed gap of the current font (relative value). If that value had been 10, the new setting is 4.

Relative values are convenient for two main reasons:

**Experimentation.** If you are trying out several possible formats, you can use relative values within the text file, and change the starting values by menu
command. This means that you will not have to re-open the text file to change settings.

Convenience. If you forget the original value of a parameter, but you know how much you want to change it, you may use relative values and save yourself the trouble of looking up the original value.

Isolating Command Values from Text

If you use embedded commands, you may occasionally find that the numbers which are part of the command are adjacent to numbers which are part of the text file to be printed.

Example: Our new telephone number is "F=(2)383-4862.

AppleWorks interprets the entire string of numbers as a font number. When it can't find a font numbered 2383, it continues printing in the previous font and ignores the numbers. The result is the absence of those numbers from the printed text.

To avoid this, enclose the numerical part of the command in parentheses:

Example: Our new telephone number is "F=(2)383-4862."

If the command contains an = or - sign, enclose it in parentheses as well:

Example: "ML=(.5)2001 has become a film classic."

CHAPTER 5 - WORD PROCESSORS

Printrix interprets the entire string of numbers as a font number. When it can't find a font numbered 2383, it continues printing in the previous font and ignores the numbers. The result is the absence of those numbers from the printed text.

To avoid this, enclose the numerical part of the command in parentheses:

Example: Our new telephone number is "F=(2)383-4862."

If the command contains an = or - sign, enclose it in parentheses as well:

Example: "ML=(.5)2001 has become a film classic."

Formatting refers to the process of inserting special codes into the text file to control its printing. These codes do everything from sending carriage returns and form feeds to the printer to changing fonts.

All word processors insert some commands into the text file. Some codes are standard across word processors, while others vary greatly. A text file which contains only standard codes is called "unformatted," and is able to be read and processed by a variety of programs. A text file which contains nonstandard codes can usually be read and processed only by the word processing program used to create it, and other programs which contain special adaptations for those unique codes.

Printrix will accept any unformatted text file, and formatted text files from certain word processors: AppleWorks, AppleWriter, Word Juggler, and WordPerfect.

ASCII Text files

These files contain only carriage return/linefeed commands. Some word processors can convert native text files into ASCII files by stripping out the nonstandard commands. If you use an unsupported word processor, see its manual for an ASCII conversion process. If this is possible in your word processor, you may type text files for typesetting through Printrix.

You must find out through experimentation whether your ASCII file is Hard or Soft Return. These two types of files differ in the type of carriage return commands they contain.

Hard Return

ASCII Hard Return files contain carriage return commands ONLY at the ends of paragraphs. When viewed on screen, the line of text extends off the screen to the right. Word wrap is not in effect.

To use these files with Printrix, merely add any formatting commands that you like, make sure that you're configured to ASCII Hard, and print.

Soft Return

ASCII Soft Return files contain two types of carriage returns. Hard returns are placed at the ends of paragraphs, and soft returns are placed between lines of a paragraph, where the word processor has wrapped the text. Most or all of a paragraph may be seen on screen at once.

Since Printrix will re-wrap the text depending on the font and margin settings, the soft returns in the text file must be converted to spaces so that typesetting may continue on the current line.

Printrix performs this conversion automatically. However, the hard carriage returns must be kept operative, to allow you to begin a new paragraph, force a new line, etc.

Because the same code may be used for both hard and soft carriage returns, Printrix has a special convention for distinguishing between them. Any single carriage return is interpreted as a soft return and converted to a space, allowing typesetting to continue on THE SAME LINE. Any PAIR of carriage returns is interpreted as one hard return, and forces typesetting to continue ON THE NEXT LINE.

Accordingly, to use ASCII Soft Return files with Printrix, move through the text file and add carriage return as necessary. For example, if you want to double-space between paragraphs, the text file must contain four carriage returns in that location. If you want to single-space the lines of an address, there must be two carriage returns between each line. Be sure that the carriage returns actually occur in pairs, with no intervening spaces or other invisible characters.

Finally, add any Printrix formatting commands that you like, make sure that you're configured for ASCII Soft, and print.

AppleWorks

Printrix can read AppleWorks files, interpret some of the embedded commands, and filter out the rest.

If your AppleWorks files contain formatting commands, refer to the chart in Chapter 5 to see if those commands are supported. If they are, you may print the text file without alterations. If they are not, you must insert the equivalent Printrix commands. You may also add other Printrix commands to expand the formatting possibilities. Then, make sure that you're configured for AppleWorks, and print.

AppleWriter

Printrix has a special AppleWriter adaptation which automatically ignores the AppleWriter codes. Therefore, you may use native AppleWriter text files. To
prepare them for typesetting, just add any Printrix commands that you like, make sure that you're configured for WordPerfect, and print.

Word Juggler

Printrix has a special adaptation for Word Juggler files, which interprets and carries out some of the common formatting commands and ignores the rest. This means that you may use the native text files from Word Juggler.

If these files contain formatting commands, refer to the chart in Chapter 5 to see whether or not the specific command is supported by Printrix. If it is, no action is required. If it is not, insert the equivalent Printrix command. You may also insert other Printrix commands, to expand the formatting and typesetting possibilities. Make sure that you're configured for Word Juggler, and print.

WordPerfect

Printrix also has a special adaptation for WordPerfect files, interpreting and carrying out some of the common formatting commands and ignoring the rest. This means that you may use the native text files from WordPerfect.

If these files contain formatting commands, refer to the chart in Chapter 5 to see whether or not the specific command is supported by Printrix. If it is, no action is required. If it is not, insert the equivalent Printrix command. You may also insert other Printrix commands, to expand the formatting and typesetting possibilities. Make sure that you're configured for WordPerfect, and print.

<table>
<thead>
<tr>
<th></th>
<th>AppleWorks</th>
<th>AppleWriter</th>
<th>Word Juggler</th>
<th>WordPerfect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boldface</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underline</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Justification</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Right</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Center</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Fill</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>New Page</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Tab</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Word Processor Commands Supported by Printrix

An "X" in a cell indicates that the word processor's embedded command for this function is automatically supported by Printrix. If a cell is blank, the word processor's embedded command is not supported, and you must use the Printrix form of the command. For example, to utilize tab characters in AppleWorks, AppleWriter, and Word Juggler, insert "TAB" in your text file. If you're using WordPerfect, the tab key is sufficient.

CHAPTER 6 - PRINTRIX MENUS

Printing in Printrix is controlled by a combination of menu commands, seen on-screen in Printrix, and embedded commands, inserted into your text file from your word processor. The embedded commands are covered in detail in Chapter Seven. This chapter introduces you to the Printrix menus - their interaction within Printrix, how they control your location within the program's work areas, and the individual commands which are contained in each menu.

First Time in Printrix

To enter Printrix for the first time, boot the Printrix Program Disk by inserting it into Drive 1 and pressing Open-Apple CTRL RESET. Then press ESCAPE, insert the Printrix Configuration Disk and follow the configuration procedure described in Chapter 1.

Thereafter, when you load Printrix, you will enter at the Main Menu. To do this, boot the Printrix Program Disk by inserting it into Drive 1 and pressing Open-Apple CTRL RESET, or set the prefix to /diskname/PRINTRIX and enter --PRINTRIX.

Printrix Main Menu

When you enter Printrix, a layout file name LAY.PRINTRIX is automatically loaded. The screen displays the process, and may ask you for assistance in locating the fonts. Printrix then moves to the Main Menu. See illustration in lesson two.

The Main Menu is a crossroads between the two work areas of the program: printing and page design. You choose your first task from this menu. After you've finished that task, return to the Main Menu to move to another work area or to exit. (There's one exception: for speed and convenience, you may move directly between the Print Document Menu and the Layout Document Menu.)

To move to a work area from the Main Menu, enter the corresponding letter. To return to the Main Menu from any of its three branches, press ESCAPE. If you are several branches down in one of the work areas, you may need to press ESCAPE several times. To exit Printrix from the Main Menu, press ESCAPE.

See lesson two, figure 1, to see the format of the Printrix Main Menu.

Layout Document Menu

Pressing L from the Main Menu brings up a set of menus which allow you to load an existing layout file from disk, to save the current layout file settings to disk, and to design the printed page, including text, graphics, and fonts.

To load an existing layout file, press L from the Layout Document Menu, and enter the prefix and filename of the desired layout file.

If you wish to save the current page and font settings as a layout file, press S from the Layout Document Menu. Enter the prefix and filename. You may write over the current layout file by saving the new file to the same location under the same filename, or you may create a new layout file by entering a different location or a different filename. The layout file will contain all settings from the Text Format Menu, the Graphics Format Menu, the Font Library, and the font parameters.
To enter the Font Library, the Text Format Menu, or the Graphics Format Menu, press the corresponding letter from the Layout Document Menu. When you have completed your work in the Layout Document Menu, press ESCAPE. Printrix will return you to your previous location (the Main Menu or the Print Document Menu).

See Lesson Two, Figure 2, to view the format of the Printrix Layout Document Menu.

Text Format Menu
------------------
Pressing R from the Layout Document Menu brings up a new menu, the Text Format Menu, which lists all options for controlling the placement of text on the page, and related commands. Included are such parameters as form size, margins, text justification, page numbers, numbers of copies, etc.

You may accept the default values, or change as many as you like by pressing the letter which corresponds to the parameter to be changed. If the parameter calls for a numerical or text value, enter the value desired. If the parameter offers a set of delimited options, pressing its menu letter will automatically display all options for controlling the text placement. (For example, press J for Justification. F will change to L, to R, to C, and back to F, as you continue pressing J. When all parameters are set as desired, press ESCAPE to return to the Layout Document Menu.

See Lesson two, Figure 3, to view the format of the Printrix Text Format Menu.

Graphics Format Menu
----------------------
Pressing G from the Layout Document Menu brings up the Graphics Format Menu, which displays all options for controlling the printing and placement of graphics in the document. Included are such parameters as magnification, horizontal positioning, and relationship of text to graphics.

You may accept the default values, or change as many as you like by pressing the letter which corresponds to the parameter to be changed, and either entering the desired value or continuing to press the menu letter until the desired value appears on screen. When all parameters are set as desired, press ESCAPE to return to the Layout Document Menu.

See Lesson two, Figure 6, to view the format of the Printrix Graphic Format Menu.

Font Library Format Menu
------------------------
Pressing F from the Layout Document Menu brings up a sequence of three menus. The first menu displays the fonts that currently are loaded for use in typesetting. Each font is assigned a number. These numbers are used to identify fonts for manipulation by menu and by embedded command. An asterisk by the number indicates the current active font.

If you wish to load one or more new fonts, select the number into which the new font will be loaded by pressing the corresponding number key. Then press L from the list of commands displayed at the bottom of the screen. A question appears on the screen, asking you to identify the desired new font by prefix and filename. Enter the necessary information, pressing RETURN after each entry. Press RETURN alone to accept the default values. Repeat this process for any other new fonts.

If you wish to delete one of the fonts currently loaded, select the corresponding number, and press D to empty that position. If you wish to change the parameters of one of the current fonts, select that font, then press C. A new menu will appear on screen, listing all possibilities for font manipulation. Change as many as you like, and press ESCAPE to return to the previous menu.

A final option from the Font Library Menu allows you to reload a group of fonts from a specified area. See Chapter Seven for details on this function.

When all fonts and font parameters are set as desired, press ESCAPE to return to the Layout Document Menu.

See Lesson two to view the format of the Printrix Font Library Format Menu.

Print Document Menu
---------------------
Pressing P from the Main Menu brings up a sequence of two menus. The first menu allows you to specify the text file to be printed, with the prefix information necessary to locate the file on disk.

The second menu displays the current printing parameters, as determined by the layout file in use. The settings include margins, form size, justification, color, page numbers, etc. You may accept the parameters as they stand, or change any or all of them. See Chapter Seven for details on each parameter.

This screen is a duplicate of the Text Format Menu. Any changes here will be reflected there, and vice versa. If you want to change any font or graphics parameters, or if you want to save any changes made to the page design from the Print Document Menu, you must enter the corresponding menu from the Layout Document Menu.

For convenience, you may move directly from the Print Document Menu to the Layout Document Menu, without returning to the Main Menu. Press L, as displayed on screen. When you have finished your work in the Layout Document Menu, press ESCAPE. If you entered the Layout Document Menu from the Print Document Menu, you will return to it. If you entered from the Main Menu, Printrix will return you there.

When all parameters are set as desired, press RETURN to accept them and begin the printing process. When printing is complete, Printrix will return to the Main Menu. You may halt printing at any time by pressing ESCAPE. Printrix kills the print job and returns to the Main Menu.

CHAPTER 7 - REFERENCE
This chapter gives detailed information on Printrix commands, including menu commands and embedded commands.

This chapter is organized into four sections: layout file parameters, text format parameters, font library parameters, and graphics format parameters.

The function of each command is defined. Then, all acceptable options or settings for the commands are given, along with the correct form of response. Any special considerations are included. These may include the command's interaction with other commands and by external factors such as the effect of the command's operation. When necessary, examples are given for the best use of commands.

Finally, some commands may be used for particular typesetting effects. These special uses are defined and demonstrated.

Save Layout File
------------------
This option creates a disk file that records the current setting of all printing parameters from the Text Format Menu, the Font Library Menu, and the Graphic Format Menu. This includes all font settings from the Change Font Parameters Menu such as italics, boldface, etc.

Once you've saved a layout file, you may load it again at any time, for use with the same text file or with a different one. The layout file will restore the previously saved values of the printing parameters, overriding the values it finds in memory, or in the font files.

NOTE: If you want to change the name of a layout file, do not use the ProDOS
"Rename" function. Instead, load the layout file into Printrix, then save it again under the new name.

Location:
Layout Document Menu (menu command only)

Procedure:
1. Set the printing parameters to the desired values, using the Text Format Menu, the Font Library Menu, and the Graphics Format Menu. Then return to the Layout Document Menu.
2. Choose option S.
3. In response to Printrix's screen prompts, enter the prefix and filename specifying the disk where the file will be located, and the name of the new file. Use the LAY.filename form for layout files.

If you accept the default filename, the new layout file will be written over the old file. If you want to keep old files, enter a new filename.

Create a "Default" Layout

When Printrix is booted, it automatically looks for and loads a layout file names LAY.PRINTRIX. If you use Printrix for one application a majority of the time, you'll probably have a standard layout file. You can load those values automatically, every time you load Printrix, by naming this layout file LAY.PRINTRIX.

Load a Layout File.
-------------------------------------------------
This menu option lets you recall a layout file that has been previously saved to disk. Loading a layout file will restore the printing parameters to the values current at the time of saving.

A layout file also reloads the fonts, in the same order as they were saved, so that they may be referred to by the same numbers. Their individual parameters are also restored to the values specified by the layout file.

You may load as many layout files as you wish within a document. When the document has finished printing, Printrix automatically reloads the original layout file, which it had previously saved to disk in a temporary file called LAY.TEMP.

Location:
Layout Document Menu
Embedded Command
^LL="/prefix/filename"

Procedure - Menu Command
1. From the Layout Document Menu, choose option L.
2. Respond to the program's screen prompts by entering the drive and prefix where the desired layout file is located.

Printrix now searches that location for the specified file. If it finds the file, an on-screen message asks you to confirm. If it cannot find the file, an on-screen message asks for further instructions.
3. Answer Y, and Printrix asks for the directory in which the layout's fonts may be found and loads the layout. Or answer N, and Printrix continues to search.

Procedure

At the desired point in the text file, insert the load layout command:

^LL="/prefix/filename"

You may include or omit the location. If the location is included, Printrix searches that area. When it finds the specified file, that set of parameters and fonts is loaded. If the file is not found in that location, or if you do not specify that location, Printrix will pause typesetting and display a question on screen requesting the necessary information.

In Use

Loading a layout file by embedded commands will cause Printrix to begin a new line of print. Therefore, we recommend that you position the command at the beginning or end of a paragraph, or between paragraphs.

Font Files
----------
When you save a layout file, Printrix stores information obtained from the Font Library about the fonts' parameters and order. The actual font files are not saved to disk with the layout file.

When you load a layout file, you should have the necessary font files available for Printrix to access. It is more convenient, although not necessary, to have all fonts together on one disk or one path. If the fonts are in different locations, switching between fonts by embedded command will cause Printrix to pause typesetting and request you to input the location for the new font.

TEXT FORMAT PARAMETERS
------------------------
Form Size
This parameter defines the absolute horizontal and vertical dimensions (in inches) of the form you're printing on.

The printing window, the space on which you may print, is a smaller rectangle within the form size. The printing window is defined by the margin settings.

Range:
---------------------
Horizontal: .01 to 14.00 inches
Vertical: .01 to 99.99 inches

NOTE: On some laser printers, the vertical size of the printing window is limited by the printer's graphic buffer. See Appendix B for specific information on your laser printer.

Location:
Print Document Menu (menu command only)

Top of Form
----------
Printrix uses the vertical form size parameter to gauge the location of top-of-form. Therefore, if you're printing a multi-page document or multiple copies, especially on small forms such as mailing labels, be sure your vertical form size is accurate. Measure from the top of one form to the top of the next. (For mailing labels, measure from the top of one label to the top of the next, including the space between labels in the measurement.)

Margins
-------
A margin is a blank space at the top, bottom, left, or right of the form. Margins are measured from the edge of the form inward, in hundredths of an inch. You may define each margin separately.

The inner rectangle formed by the four margins is the printing window, or space
on which you may typeset. If you're printing on standard 8.5x11 inch paper, a
left margin of 1 inch and a right margin of 1.5 inches results in a line length
of 6 inches. A top margin of 1.5 inches and a bottom margin of .75 inches
allows you to print on 8.75 vertical inches of paper. The printing window,
then, is 6x8.75.
Range:
0.00* to max

max = form size minus opposite margin value
(In other words, the left and right margins together cannot exceed the
horizontal form size: the top and bottom margins together cannot exceed the
vertical form size.)

* EXCEPTION:

Some printers are not capable of printing all the way across a page. If you
try to set the left or right margin to a value which exceeds your printer's
horizontal printing capacity, Printrix will automatically reset that margin to
your printer's best value. If both right and left margins are out of bounds,
Printrix will adjust both margins to center the printing window on the page.

Location:
Print Document Menu
Embedded Command
Embedded Command
Left Margin ^ML=n
Right Margin ^MR=n
Top Margin ^MT=n
Bottom Margin ^MB=n

n is a number within the accepted range

Timing:
Embedded commands to change margins take effect at different times, depending
on their positions. A command to change the left or right margin will take
effect on the current line IF nothing has yet been printed on that line. If
the command is found while Printrix is in the middle of a line, the margin
commands will take effect on the following line.

Embedded commands to change the top and bottom margins take effect on
the following page, no matter where they occur on the printed page.

Relative Values Apply:
When you change margins using the embedded commands, you may set the new values
either by absolute distance from the edges of the form, or by relative distance
from the previous margin values.

Absolute margin values are calculated in the same way that the menu command
margin values are. Do not use a + or - symbol when using absolute margin values.

Relative margin values are added to or subtracted from the previous value of
the margin. Relative values are indicated by using a + or - in the command.
Relative values are convenient when you've forgotten the starting value of the
margin, or when you want to change starting values from the menu, but keep the relationship between the margins the same.

Examples:
^ML=1^MR=1This paragraph will have left and right margins of one inch, for all
lines in the paragraph.
This paragraph ^ML=5^MR will have the preset margin values on the first line. All
following lines will be indented .5 inches on the left, to produce a "hanging paragraph."

prints as:
This paragraph will have the preset margin values on the first line All
following lines will be indented .5 inches on the left, to produce a "hanging paragraph."

In Use:

When a paragraph is printed through Printrix, the arrangement of words on a
line depends on the current font and the current margins. In most cases, the
arrangement will be different from the arrangement of that same paragraph in
your word processor.

When printing a graphic, the horizontal placement (left, right, or center) is
calculated from the current margins. If the graphic is too large to fit within
the current margins, it will be cropped at the right and/or bottom edge to fit.
If a margin change command is found while Printrix is printing a graphic, the
new margin will take effect AFTER the graphic has finished printing.

Tabstop Settings/Tab Characters

Tabs in Printrix are controlled by two parameters: tab characters and tabstop
settings. Tabstop settings are positions on the printing line, set by either
menu or embedded command. Tab characters are commands embedded in the text
file which cause Printrix to jump to the next tabstop and begin printing from
that position.

Tabstop Settings

You may set up to eight tabstops per line. Tabstops are measured from the
current left margin, in hundredths of an inch. If the left margin changes, the
tabstops remain the same with respect to the left margin, and change with
respect to the left edge of the paper.

You may enter the tabstops in any order. Printrix automatically rearranges
them in order of increasing distance from the left margin.

Range:
0.00 inches to max
max = length of printing line (horizontal form size minus the left and right
margins)

Location:
Print Document Menu
Embedded Command
Embedded Command
Tabstop Clear ^TC
Tabstop Set ^TS=n

n is a number within the accepted range

Tab Characters

Tab characters are used to indent paragraphs or align text to a preset tabstop
position. When Printrix reads a tab character in the text file, it jumps to
the next available tabstop position.

To enter a tab character in your text file, either press the tab key or type
"TAB. Some word processors don't utilize standard tab characters, so these
require the "TAB command. See Chapter Five for information on your word
processor.

Relative Values Apply:
When using the embedded command to set tabstops, you may use either absolute or
relative measurements.

Absolute tabstop values are added to the left margin value in order to
determine their position on the page. They do not contain + or - signs.

Relative tabstop values are added to or subtracted from the current position on
the printing line. Relative value commands contain a + or - sign.

In Use:
In most practical settings, you'll avoid confusion by first clearing all old tabstop settings before issuing new ones. Use the ^TC for this purpose. Then use the ^TS command to set new positions, one position at a time. You may enter up to eight. Printrix will ignore all tabstop settings to the right of the eighth position.

Example:
^TC^TS=.5^TS-1.5^TABThis paragraph will be indented .5 inches on its first line. The word "paragraph" will be positioned 1.5 inches from the left margin.

prints as:

This paragraph will be indented .5 inches on its first line. The word "paragraph" will be positioned 1.5 inches from the left margin.

Oops!

If your text file contains a tab character which falls to the right of the rightmost tabstop on the line, Printrix is unable to position it correctly, and will begin a new line instead. If this occurs, either remove the tab character from the text file, or set a new tabstop.

JUSTIFICATION

Justification is the horizontal arrangement of words on the printing line. Printrix offers four justification styles:

Left: lines of text have even left edges and ragged right edges.
Right: lines of text have ragged left edges and even right edges.
Center: lines of text are centered between the current left and right margins.
Fill: lines of text have even left and right margins. Printrix uses "microjustification," adding space between words and between letters as needed, for the best visual effect.

Location:
Print Document Menu
Embedded Command
Left ^=J=L
Right ^=J=R
Center ^=J=C
Fill ^=J=F

Timing:
Embedded commands to change justification take effect on the current printing line. If the line contains more than one justification command, and there are no tab characters in the line, the last justification command takes precedence.

Correct: ^=J=CThe Gettysburg Address
^J=FPFourscore and seven years ago....

Incorrect: ^=J=CThe Gettysburg Address^J=F
Fourscore and seven years ago....

ACTIVE FONT

Printrix keeps track of four fonts for use during a single typesetting line. Of these four fonts, one is "active" at any given time. The "active" font is the font currently in use, either being acted upon through menus or being used for typesetting.

Printrix uses the number keys to control the active font. You may change active fonts from the menu or from embedded command.

Range: 1-4

Location:
Print Document Menu
Font Library Menu
Embedded Command
^Q=n
n is a number between 1 and 4

Timing:
An embedded command to change fonts takes effect immediately, even within a word. All text following the command will be typeset in the new font until another font change command is found. You may change fonts within your document as often as you like.

All font enhancement commands apply only to the current active font.

In Use:
Printrix begins typesetting a document in the active font specified from menu. This font will remain active until an embedded font change command is found.

If your document begins with or contains several blank lines, the vertical gap on paper depends on the current active font.

LINEFEED ADVANCE

This parameter allows you to select single, double, or triple-spacing between lines of text.

When lines are single-spaced, the distance from the baseline of one line to the baseline of the next is equal to the vertical cell size of the largest font on the line plus that font's linefeed gap. Double-spacing and triple-spacing are twice and three times that distance.

The linefeed advance command affects all fonts and all text in the document.

Range: S, D, or T

Location:
Print Document Menu (menu command only)

Fine-Tuning

If you want more precise control over distance between lines than you can achieve with Linefeed Advance, use the Linefeed Gap command. This is a font parameter, which can be changed for each individual font, and allows you to specify distances measured in dots.

QUALITY OF PRINT

This command allows you to control the blackness of print. Single-strike mode, in which the printhead makes one pass over the line of print, is lightest. The maximum setting is 5, which causes the printhead to make five passes of the line of print, striking every dot five times.

Range: 1 - 5

Location:
Text Format Menu
Embedded Command
^Q=n
n is a number within the accepted range

In Use:
Quality of print affects all print on a line, both text and graphics.
Since print quality operates on a printing line, it can change only between lines. When an embedded command to change print quality is found, the actual change takes place on the current line, affecting even previous text on that line. You may want to place the print quality command only at the beginning of a paragraph or on a line by itself.

PAGE NUMBERING; POSITION; START
-----------------------------------
This group of commands controls the automatic printing of page numbers on each page of your document.

The first command turns page numbers on or off. The second command, Position, selects top or bottom of the page. The third command, Start, allows you to begin numbering, with any positive integer. All page numbers are printed in the font loaded into Position 1.

Ranges:  Yes/No; Top/Bottom; 0 – 999

Location:  
Print Document Menu
Embedded Command
^PG=Y or ^PG=N (print page numbers)
none (top/bottom)
^PN=n (start number)
n is a number within the accepted range

In Use:
Embedded commands to change the start number take effect on the next page number. If page numbers are set to print at the top of the page, any changes will take place on the page following the command. If the page numbers are set to print at the bottom of the page, any changes will take place on the current page.

NOTE:  Printrix cannot print page numbers past 999. The page following 999 will be numbered 0.

NEW PAGE
--------
This command instructs Printrix to begin a new page immediately. Typesetting breaks off at the point where the new page command is found, and resumes at the top of the following page, in single-column printing, or at the top of the next column, in two-column printing.

Location:  
Embedded Command Only
New Page ^NP

In Use:
If the new page command happens to coincide with the automatic page break at the bottom margin, Printrix will skip a page before resuming printing. If this occurs, remove the new page command or any adjacent carriage returns, or adjust the bottom margin.

TWO COLUMN PRINTING
----------------------
This command allows you to print in newspaper-style columns. Printrix prints the first column, then uses the reverse linefeed capability of the printer to return to the top of that page and print the second column.

Range:  Yes/No

Location:  
Text Format Menu
Embedded Command
^C=Y or ^C=N

In Use:
Within the printing window defined by the margin settings, Printrix automatically calculates column width and gutter space (the space left blank between the columns).

When you are printing in two columns, the ^NP command immediately breaks the current column and moves printing to the top of the next column, whether that is on the same page or the following page.

If you use the embedded command to be in two-column printing (^C=Y), Printrix stops the current printing line immediately, moves to the next line, and resumes printing on that line, in two columns. We suggest you insert this command at the beginning or end of a paragraph or on a line by itself.

If you use the embedded command to end two-column printing (^C=N), Printrix finishes the current page in two-column mode, then begins the next page without columns. You may want to use this command in conjunction with the ^NP command.

Check Your Printer
-------------------
If you have one of these printers (Apple DMP, ImageWriter, ImageWriter II; C. Itoh 8510, 8510 SCP; Fujitsu DL2400, DL2600; NEC 8023, 8025, CF-6, CF-7, P5, P5XL, P6, P7; Texas Instruments 855, 857, 865; Toshiba 1340, 1351, P351, P351C), Printrix automatically utilizes a reverse linefeed capacity to return to the top of the page between columns.

If your printer was not listed above, you must return to the top of the page manually. To do this, set Wait at End of Page to Yes. Then, when the printer pauses, turn it off-line, roll the paper back, turn it on-line, and press the spacebar to resume printing.

Wait at End of Page
-------------------
This command pauses Printrix between every page of typesetting, allowing you to change paper stock, adjust the paper position, etc. You may not change the Printrix settings or the text file during these pauses.

Range:  Yes/No

Location:  
Print Document Menu (menu command only)

Special Use:  Two-Column Printing
------------------------
This command may be used to allow two-column printing on printers which don't have reverse linefeed capabilities. Set Wait to Yes and Two-Column Printing to Yes. When the printer pauses at the bottom of the first column, manually roll the paper back to the top of that page, and press the space bar to resume printing.

**NUMBER OF COPIES**

This command allows you to print multiple copies of a document.

Range: 1 - 999

**PRINT LITERAL CHARACTER**

This command is used to print a Printrix embedded command as part of your document. Use it to tell the program to print, rather than interpret, a command.

Range: one character, the carat (^)

**UNDERLINING**

Two embedded commands work together to produce underlining in your documents. The first turns underlining on, the second turns underlining off. All text, numerals, punctuation, spaces, and tabs between the commands will be underlined.

Procedure:
1. Select the active font location by pressing a number key.
2. Press L.
3. Enter the prefix and filename which locate and identify the font you want to load. Press RETURN. Printrix looks at the specified area. If it finds a file of the specified name, it will display the file and ask for confirmation.

**SELECT ACTIVE FONT**

Use the number keys, 1 through 4, to select an active font from the group of fonts in the current layout file. Here, the active font is the font or font location which you wish to operate on.

On the screen, an asterisk denotes the currently selected active font.

**DELETE FONT FROM MEMORY**

This Font Library option deletes the active font from the current layout file. Use it to make room for loading other fonts. Delete Active Font does not disturb any font files on disk, or change the layout file on disk unless you resave it without the deleted font.
Location: 
Font Library Menu (menu command only) 

Procedure: 
1. Select the active font location by pressing a number key.
2. Press D.

Reload Font Library
----------------------- 
This option lets you load an entire new library of fonts in one fell swoop. Printrix will load into the current layout file the first four fonts it finds in a specified prefix, until it runs out of memory space. The fonts are loaded in the order they are found on disk, with the font parameters which are saved with the font. The layout file's font specifications are overwritten. However, this font information will not be saved with the layout file for reuse UNLESS you perform the Save Layout File operation.

Location: 
Font Library Menu (menu command only) 

Procedure: 
1. Press R.
2. Enter the prefix where the desired fonts are located, and press RETURN.

The screen will display the font loading process.

Font Sub-Directories
-----------------------
If you have a certain group of fonts that you generally use for one application, and another group that gets used for a different application, etc., you may find it convenient to keep the fonts on separate disks or on separate paths. You can then use the Reload command to load an entire group of fonts quickly.

Change Font Parameters:
This command causes Printrix to display a new menu, from which you may change the printing parameters of the active font.

Location: 
Font Library Menu (menu command only) 

Embedded Commands Override
-----------------------
Each of the nine font parameters has a corresponding embedded command which may be inserted in your text file. The menu parameters define the starting form of the font; embedded commands change the font for special purposes within the text file. Within one printing job, the embedded commands control the font appearance. After the document has finished printing, the fonts are reset to their original parameters for new print jobs.

Font Name and Cell Size
-----------------------
These two parameters may not be altered, either from the menu or from text file. They are displayed on the Change Font Parameters menu for information purposes.

The font name identifies the current font. It is the filename with which the font was saved to disk in Printrix. To change a font name, load the font in the Fonetrix Font Editor, change its name, and resave it. The ProDOS renaming function is not effective.

Cell size refers to the font character frames - imaginary rectangles which contain the characters. The cell size is the same for all characters of the font, even though the characters within each cell may be of different heights and widths. The cell dimensions are measured in dots.

Character Spacing Gap
-----------------------
This parameter is measured in dots (pixels). This space is inserted between the character cells, whether the font is set for proportional or nonproportional printing.

Range: 
-99 to 99

NOTE: In this case, the - symbol means a negative value. It does NOT mean that the new character spacing gap is relative to the previous value. Do NOT use a + symbol for positive values of the character spacing gap.

Location: 
Change Font Parameters Menu 
Embedded Command
"FS=n"

n is a value within the accepted range

Special Uses: Kerning, Nonproportional Printing

The ability to set the spacing gap to a negative value is useful for nonproportional printing, as explained in that section, and in Lesson Two.

The ability to change the spacing gap in either direction allows you to fine-tune your printing. This is especially important with large fonts, and in headlines or captions. The most frequent application is kerning.

Kerning refers to adjusting the spacing gap between particular pairs of letters to keep the overall appearance of the text even.

In the following example, the kerned text was created by adjusting the character spacing gap between the letters T/o, F/a, V/A, T/A, A/G, L/Y, and Y/C. After each adjustment, the character spacing gap must be reset to its original value for the other letters in the word.
Apple II Computer Info

Unkerned:      Town, Fame, ADVANTAGE, LYCEUM
Kerned        Town, Fame, ADVANTAGE, LYCEUM

(You'll have to try this to get the full effect. AppleWorks isn't that flexible!)

Text file:

T^FS=-2o^FS=1w^FS=4n
P^FS=-1a^FS=4me
AD^FS=4A^FS=4N^FS=2A^FS=-1G^FS=rE
L^FS=-4^FS=-1C^FS=4EUM

Linefeed Gap

This parameter is used to set the amount of space between lines. It is measured in dots (pixels). When there is more than one font on a line, the linefeed gap of the largest font is used for the entire line.

Range:         0-99
Location:
Change Font Parameters Menu
Embedded Command
^FS=n

n is a value within the accepted range

Relative Values Apply

You may define the embedded command for linefeed gap in either absolute or relative values. Absolute values are entered WITHOUT + or - symbols, and they determine the number of dots between the bottom of one line and the top of the next.

Relative values are entered WITH a + or - symbol. The value is then added to or subtracted from the previous linefeed gap value.

In Use:
The linefeed gap parameter may be used for fine-tuning the space between lines, or "leading." However, the command applies only to one font at a time (the active font), so be sure to change the linefeed gap values for as many fonts as needed for your format requirements.

If you want to double- or triple-space an entire document, you may either change the linefeed gaps of all fonts, or use the linefeed advance parameter (discussed earlier in this chapter). However, if you want to use a combination of single-, double- and/or triple-spacing, use the linefeed gap commands.

Spacebar Width

This parameter defines the amount of space left blank between words. It is measured in dots.

Range:         0-99
Location:
Change Font Parameters Menu
Embedded Command
^FW=n

n is a value within the accepted range

Relative Values Apply

When using the embedded form of the spacebar width command, you may define the width in either absolute or relative values. Absolute values are entered WITHOUT + or - symbols, and determine the number of dots between the last character of the previous word and the first character of the following word.

Relative values are entered WITH a + or - symbol. The value is then added to or subtracted from the previous spacebar width value.

In Use: Tables/Vertical Alignment

When printing columns of numbers or characters, the font in use must be set for nonproportional spacing, a negative character spacing gap, and a spacebar width equal to the horizontal cell size. For a more complete discussion, see Lesson Two.

Baseline

The baseline is an imaginary horizontal line which positions the font upon the page. Letters such as "g" and "y" rest their bodies upon the baseline, while their descenders rest below it. When you change fonts, each font is aligned on the same baseline for continuity across the page (the common baseline).

Changing a font's baseline value will move the font vertically with respect to the common baseline. If you increase a font's baseline value, characters will be printed above the common baseline. If you decrease the font's baseline value, it will be printed below the common baseline.

The baseline value is measured in dots. The top row of dots in a character cell is zero, and the bottom row is the vertical cell size of that font.

Range:         0-99
Location:
Change Font Parameters Menu
Embedded Command
^FB=n

n is a value within the accepted range

Relative Values Apply

When using the embedded form of the baseline command, you may enter the baseline in either absolute or relative values. Absolute values are entered WITHOUT + or - symbols. An absolute value counts dots down from the top of the character cell to position the baseline.

Relative baseline values are entered WITH a + or - symbol. The value is added to or subtracted from the previous value.

Special Uses: Superscript/Subscript

You may use the baseline parameter to cause characters to float above or hang below the common baseline or a line of text for performing special effects, or tasks like super- or subscripting. You may also want to change to a smaller font at the same time.

Examples:

E = MC^FB=(+10)2

prints as:

E = MC2

If your baseline command moves a font up or down more than half of the current linefeed gap, Printrix will increase the space between the lines to accommodate the repositioning.

Italics

This parameter allows you to italicize (slant to the right) the active font.

Range:         Yes/No
Location:
Change Font Parameters Menu

Embedded Command:

"FI=Y" or "FI=N"

Horizontal Boldface

This parameter allows you to increase the weight of vertical lines in the active font.

Range: 0 - 4

Location:

Change Font Parameters Menu

Embedded Command

"FH=n"

n is a value within the accepted range

Relative Values Apply

When you use the embedded form of the boldface command, you may enter either an absolute or a relative value.

Absolute values determine the amount of weight added to the font. They are entered WITHOUT a + or - symbol.

Relative values are added to or subtracted from the previous boldface value. They are entered WITH a + or - symbol.

Font Magnification

The horizontal and vertical magnification parameters may be used together or separately to increase the printed size of a font. The horizontal magnification factor increases a font's width; the vertical magnification factor increases its height. You may double, triple, quadruple, etc., a font; you may not decrease it or enlarge it by a noninteger factor such as 1.5 or 2.75.

Range: 1 - 99

Location:

Change Font Parameters Menu

Embedded Command

"FX=x" (horizontal magnification factor)

"FY=y" (vertical magnification factor)

x and y are values within the accepted range

Relative Values Apply

You may use either absolute or relative values with the embedded form of the magnification command. Absolute values are entered WITHOUT + or - symbols, and determine the size of the font directly.

Relative values are entered WITH a + or - sign, and are added to or subtracted from the previous magnification value. In other words, if a font's current horizontal magnification value is 2, and your text file contains the command "FX=+2", the result will be a font printing at four times the original width.

In Use:

With magnification factors of 1, Printrix prints one dot at the printer for each dot in the original font. With a magnification factor of 2, Printrix prints two dots at the printer for each dot in the original font. If you use large magnification values, the resolution (its smoothness) of the font when printed will decrease.

You may use magnification to produce the extended and compressed versions of existing fonts. You may also use magnification to compensate for non-square aspect ratios of printers. (See Chapter Three for a discussion of aspect ratio in relation to graphics printing.)

Font Color

This parameter allows you to change the printing color of a font, if you have a color printer. There are fifteen color options, each designated by a number.

1 - Black
2 - Blue
3 - Blue-Black
4 - Red
5 - Red-Black
6 - Purple
7 - Purple-Black
8 - Yellow
9 - Yellow-Black
10 - Green
11 - Green-Black
12 - Orange
13 - Orange-Black
14 - Brown
15 - Brown-Black

Range: 1 - 15

Location:

Change Font Parameters Menu

Embedded Command

"FC=n"

n is a number within the accepted range

Examples:

The following embedded command would print a single hi-res screen named pic.halleys which is currently on disk.

"GPS="/diskname/pic.halleys"
The following embedded command would print a Graffile named gfl.skyscape, which is stored in a subdirectory named Graffile.

```
^GPG="/diskname/graffile/gfl.skyscape"
```

The following embedded command would print a clip-art graphic called art.santa. Since no location is given, Printrix will first search its default directory, then ask you for directions.

```
^GPA="art.santa"
```

Timing: A graphic called by these commands will begin printing on the line immediately following the current printing line, if there is room remaining on the page. If the graphic call is encountered near the bottom of the page with insufficient space remaining before the bottom margin, Printrix will hold the graphic until the next page.

If you call a graphic while another graphic is printing (if the second call comes too soon in the text file), the second command will be ignored.

### Watch Your Margins

If you try to print a graphic that is larger than the printing window (the rectangle defined by the four margins), Printrix will automatically move the graphic to the left margin, then crop it on the right and/or bottom edges to fit the available space. To prevent this, reset your margins to accommodate the graphic size before calling the graphic. If you call a graphic before inserting the margin change command, the new margin values will be put on hold until the graphic has finished printing.

### GRAPHIC MAGNIFICATION

Two commands control graphic magnification – one for the horizontal dimension and one for the vertical dimension. You may set them to the same or different values, as you choose.

To print a graphic in its original size, use the default magnification values of 1 and 1. To double its size, set both dimensions to 2. Only integer values may be used (in other words, Printrix will not accept a magnification value of 1.5).

A graphic magnification setting will apply to all graphics in the text file, unless changed by a subsequent embedded command.

Remember that the size of the graphic when printed depends not only on the original size of the graphic but also on the resolution of your printer.

**Range:** 1 - 99

**Location:** Graphic Format Menu

**Embedded Command**

```
^GXX=x (horizontal magnification factor)
^GYY=y (vertical magnification factor)
```

x and y are values within the accepted range.

Note: As you move from magnification factors of 1x1 to factors of 2x2, you are essentially causing the printer to print a 2x2 block of dots for every dot in the original graphic. This increases the size of the print-out, and also decreases the apparent resolution of the graphic – diagonal lines and curves will exhibit the "stairstep" or "jaggy" effect. Therefore, magnify only when necessary.

### Special Uses: Correcting for Non-Square Aspect Ratios

Many printers have different print densities for the horizontal and vertical dimensions. The relationship of horizontal to vertical resolution is called aspect ratio. When printing graphics, this results in distortion of the graphic – stretching in one direction or the other. Circles on screen are printed as ellipses, etc. You may use the magnification commands to correct for non-square aspect ratios by setting the horizontal and vertical dimension accordingly.

For example, many Epson printers have a horizontal resolution of 120 dpi (dots per inch) and a vertical resolution of 75 dpi. Unmagnified, a graphic will print tall and thin. To correct, set the horizontal magnification factor to 3 and the vertical to 2. This results in a horizontal resolution of 40 dpi and a vertical resolution of 37 dpi, accurate enough for most purposes. Of course, the graphic now has increased in size and decreased in resolution, so weigh all these factors against each other and design the page or the graphic accordingly.

### Negative Image

This parameter allows you to print a graphic as a negative image of itself. Like a photographic negative, dark and light areas of the picture are reversed. If the graphic is in color, pairs of colors will be reversed.

**Range:** Yes/No

**Location:** Graphic Format Menu

**Embedded Command**

```
^GN=Y or ^GN=N
```

Caution: If you have a dot matrix printer, be careful about printing large areas in solid black – you may overload the printhead element and shorten the life of your printer. If you have an inkjet or laser printer, don't worry.

### Horizontal Placement

This parameter allows you to position a graphic against the left margin, against the right margin, or centered between the margins.

**Range:** L, R, or C

**Location:** Graphic Format Menu

**Embedded Command**

```
^GH=L, ^GH=R, or ^GH=C
```

### Relationship to Text

The relationship of text to graphics is controlled by two parameters, Horizontal Placement and Fit Text to Graphic, described later in this section. If a graphic is positioned left or right, you may command the text to "flow" around the graphic – "graphic run-around." Lines of text are full length above and below the graphic, and are shortened beside the graphic to fill the space between the graphic and the opposite margin. If a graphic is centered, no run-around is possible, and text will break above and below the graphic.

### Graphic Color Printing

This parameter allows you to enable or suppress color printing of graphics.

**Range:** Yes/No

**Location:** Graphic Format Menu

**Embedded Command**

```
^GC=Y or ^GC=N
```

Fit Text to Graphic
This parameter allows you to select between three arrangements of text around an inserted graphic: Break, Flow, and Overlay.

Break: holds text typesetting while the graphic is being printed. When the graphic has finished, typesetting resumes.

Flow: performs a "graphic run-around" in which any remaining space to the side of the graphic is filled with short lines of text. Flow is operative ONLY when the graphic is positioned left or right. If the graphic is centered, you must choose either Break or Overlay. If you forget and set the parameter to Flow, Printrix will ignore the command and execute a Break. (Left, right, and center are controlled by the Horizontal Placement parameter, discussed earlier in this section.)

Overlay: allows you to print text directly on a graphic.

Separate from Text
------------------
This parameter controls the amount of space left blank between a graphic and the surrounding text. Included are the areas above, below, and to either side of the graphic. These areas are sometimes called "gutter space."

Range: 0.00 to max

max = length of printing line, or distance between the left and right text margins

Location:
- Graphic Format Menu (menu command only)

APPENDIX A: FILE CONVERSION
----------------------------
All files used by Printrix must be in ProDOS format. This includes text files, fonts, and graphics. Your text files and graphics may already be in ProDOS format. However, if you want to use Fontrix Graffiles, fonts from the Fontpaks, or any DOS 3.3 text files and graphics, you must convert those graphics according to the following procedure.

ProDOS Conversion: Text files and Single-Screen Graphics
Apple provides two utilities to perform the DOS 3.3-ProDOS conversion. They are located on the ProDOS System Utilities Disks. CONVERT comes with the older Apple II computers. CHANGE DISK'S FORMAT comes with the Apple //c and newer Apple II computers.

To use either program, follow the procedures described in your Apple manual.

ProDOS Conversion: Graffiles
Fontrix Graffiles require special conversion procedures. A conversion utility is provided for you on the /CONFIGURE disk.

To convert a Fontrix Graffile to ProDOS format, set the prefix to /CONFIGURE and insert the /CONFIGURE disk (or, if you're running from hard disk, set the prefix to the appropriate subdirectory). Then input -PX.CONVERT. A menu appears, from which you may specify the source disk and file, catalog the contents of a disk, and begin the conversion. An on-screen counter keeps track of the conversion process.

ProDOS Conversion: Fonts
----------------------------
All Printrix fonts were created by Printrix's sister program, Fontrix, in DOS 3.3 format. The fonts contained on the Printrix disks /FONTS1 and /FONTS2 have already been converted for use with Printrix.

However, if you own Fontpaks, which were created using Fontrix, or if you have created Fontrix fonts for your own use, these fonts must be converted before you may use them with Printrix.

The font conversion is a two-step process. First, the file structure must be changed to ProDOS. Second, three font parameters must be added to the font file.

To convert the file format to ProDOS, follow the procedure described earlier for conversion of text files and single-screen graphics.

Then, set the prefix to /CONFIGURE disk and insert the /CONFIGURE disk (or, if you're running from hard disk, set the prefix to the appropriate subdirectory). Type -FONT.SETUP. Enter the prefix and filename of the font you're converting. Printrix now goes to a look-up table to read the font size. From this it calculates the three parameters of spacebar width, character spacing gap, and baseline. The results are displayed on screen. You may change any of these values, or accept Printrix's suggestions. Press RETURN to save the font with the new parameters.

Feel free to experiment with these settings. You may find it convenient to set up particular fonts to use in super/subscripting (change the baseline value), or nonproportional printing (change the spacebar width and character spacing gap).

APPENDIX B: Printers
If you read Chapter 3, you know that Printrix prints in graphics mode, which makes the size and proportion of the print dependent on the printer's graphics resolution and aspect ratio.

Consult the technical manual for your printer to determine the dip switch settings and resolution (dots per inch) of your printer.

APPENDIX C: FONTS
Printrix comes with 43 fonts, which are contained on the Printrix disks, for your use. They are ready to be loaded and used. Additional fonts are available on Fontpaks.

APPENDIX D: ART.GRAPHICS
A number of four-sector graphics are contained on the Printrix Configuration Disk. They may be used with the Printrix ^GPA command.
DOCUMENT printrix.quick

Printrix Textfile Command Quick Reference

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<td>Graphic magnify horiz.</td>
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<td>relative pixels</td>
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<td>Font Color</td>
<td>*FC=</td>
<td>l=cn=n;15</td>
<td>absolute</td>
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<td>Font Width of letter</td>
<td>*FW=</td>
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<td>*Fx=</td>
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<td>Font Mag. vert.</td>
<td>*Fy=</td>
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<td>Font Italicaize</td>
<td>*I=</td>
<td>a=y or N</td>
<td></td>
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<td>Font Space between text letters</td>
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<td>-99=cn=n;99</td>
<td>absolute pixels</td>
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<td>Font Width of spacebar</td>
<td>*FP=</td>
<td>0=cn=n;99</td>
<td>relative pixels</td>
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<td>Font Linefeed gap</td>
<td>*FL=</td>
<td>0=cn=n;99</td>
<td>relative pixels</td>
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<td>a=y or N</td>
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<td>Tab Clear all tabs</td>
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DOCUMENT printrix.tutor

Printrix Tutor II
original article by Bill Fortenberry
Apple Fontrix/Printrix Club Newsletter
August 1987*

CONFIGURATION Some people have had trouble configuring Printrix. Configuration is necessary so Printrix will know what printer and word processor you are using. Here is how to configure Printrix. On versions 1.00-1.01, when you first boot Printrix, press the ESC key as soon as the disk starts to spin. After a while you should see a flashing cursor and the P prompt. Put the configuration disk in the drive and type PREFIX/CONFIGURE (CR) AND THEN RUN CONFIGURE (CR).

If you are using a version over 1.01 then you would boot the program disk, put in the configuration disk and type [C].

The first screen asks for you keyboard type. Type "I" if you have a IIE, "2" if you have a IIC, or a "3" if you have a GS. Next you are asked for the manufacturer of your printer interface card. Find the manufacturer on the list and the type number to the left of their name. Now you will see a list of printer interfaces made by that manufacturer. Select the one you want by number. Then specify what slot the card is in. Normally the slot is one. If you are using the GS printer port, the slot is one. Now you will get a list of printer manufacturers. Find the manufacturer of your printer and select it by typing the number to the left of the name. Next you get a list of their printers. Find yours and select it by number. Some printers may offer more than one printing resolution. If yours does, pick the one you want to use. If one of the options for your printer is followed by (Quad Density), I would recommend you use that option. Quad density will be covered in an upcoming newsletter in more detail, but "in a nut shell" it gives you better printouts.

With a few printers, the resolution is so high that Printrix doesn't have enough storage space to use it all. If you see a number, in parenthesis next to your printer, such as *(5.3 max)*, it means your documents can only be 5.3 inches wide.

Now comes your word processor. Printrix supports native files from AppleWorks, Apple Writer, Word Juggler and Word Perfect. If you don't use one of these word processors, you will see a recap of everything you typed the number to the left of the printer card. Find the manufacturer on the list and type the number to the left of the name. Now you get a list of their printers. Find yours and select it by number. Type the number to the left of the name. Next you will see a list of printer interfaces made by that manufacturer. Select the one you want by number. Next you get a list of their printers. Find yours and select it by number. Some printers may offer more than one printing resolution. If yours does, pick the one you want to use. If one of the options for your printer is followed by (Quad Density), I would recommend you use that option. Quad density will be covered in an upcoming newsletter in more detail, but "in a nut shell" it gives you better printouts.

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When you format a ProDOS disk with the system utilities you are asked for a volume name. The volume name is the first step in the pathname. The newly formatted disk is called a volume and it is given the name you supplied. This volume also has a main directory. A volume directory is a special type of file. It contains the information ProDOS needs to find other files on that volume. You can see some of that information by cataloging the volume with the system utilities. There can only be 51 entries in a volume directory. The volume name can be pretty much anything within some limits. The name cannot be longer than 15 characters. The first character must be a letter. After the first character you can use any combination of letters, numbers and periods. Normally a volume name will reflect the contents of the volume and a slash (/) will precede the volume name. For example, the volume Printrix is supplied on is named /PRINTRIX.

At this point you can start storing your programs in the main directory. But if you have a 3.5 disk, or a hard disk, the directory can fill up fast. What’s needed is a way to group files together in logical groups. ProDOS provides this function through subdirectories. Subdirectories are the intermediate steps in the pathname. The subdirectory is a fully functioning directory. But it is subordinate to the volume directory. A subdirectory can contain other subdirectories. It's entirely possible to have a directory made up of only subdirectories. Again, a subdirectory can be named anything, but usually describes its contents.

Finally is the filename. The filename is subject to the same naming rules as volumes and subdirectories and is the final step in the pathname. Printrix limits the entire pathname and filename to 79 characters, including all slashes. If you’re starting to get confused, think of a big oak tree. The volume name is the trunk of the tree. Each branch is a subdirectory. A branch may have another branch growing out of it, which could also have a branch growing out of it, etc. The leaves are the filenames. A large tree can have a lot of branches and leaves.

Let’s say you have Printrix set up on an 800k disk. The volume name is /PRINTRIX. There are two subdirectories called FONTS and CLIP.ART. All the fonts are stored in the FONTS subdirectory. The pathname for SET.CASLON25 would be /PRINTRIX/FONTS/SET.CASLON25. Notice the slashes. The pathname always starts with a slash and slashes separate the volume name, subdirectory names and the filename.

If you have a lot of subdirectories, pathnames can get long, and typing them can be tedious. To get around this ProDOS supplies the prefix. The prefix is a pathname that is always placed on front of the filename to make the complete pathname. Using the example from the last paragraph we could set the prefix to /PRINTRIX/FONTS/. Then we could get to caslon.25 by typing set.caslon.25. To get to a file in another directory, we would have to change the prefix.

To help manage prefixes, there is a bonus program on the Printrix configuration disk. To use it, boot Printrix and press ESC immediately. When you see the | and flashing cursor insert the configuration disk and type LOAD/CONFIGURE/DEFAULT.PATHS [CR] and then put in the program disk and type PREFIX.PRINTRIX [CR]. When the cursor is again ready, type RUN [CR]. "*default.Paths" doesn't mince words, the prompts are short and to the point. When you see LAYOUT and a question mark, type the prefix for the location of your layout files. Don't forget the starting slash. At the next question mark, enter the location of your fonts. Finally enter the location of your text files. Before pressing RETURN insert the program disk, Printrix will use these prefixes as defaults, but you can always override these prefixes from within Printrix.

EDITING KEYS Printrix has some editing functions that are available anytime you are asked for a prefix or filename. Here’s a short summary of the editing keys:

When typing path and filenames you are always inserting characters. Any characters to the right of the cursor will slide right to make room for the new characters. If the cursor is on the first character of a line, the first character pressed (other than a special control, tab, or open-apple character) will erase the line.

7 - The question mark will scan all your disk drives and show you the volume names mounted in those drives.

<- -> The arrow keys move the cursor to the right or left.

OA-Y - T Holding down the open-apple key and pressing Y deletes the characters from the cursor to the end of the line. Characters to the left remain intact.

DELETE - The delete key deletes characters to the left of the cursor, one at a time. Characters to the right slide of the left to fill the gap.

OA-DELETE - Holding down the open-apple key and pressing DELETE removes the character under the cursor. The characters to the right slide of the left.

TAB - The TAB key jumps to the next slash. This makes it easy to add a subdirectory to a path. Sometimes it is faster to tab to the end of a line and type new information, or delete characters with the [DELETE] key and type new characters as needed.

Control A - Holding down the control key and pressing A will move the cursor one past the end of the line.

Control Z - Holding down the control key and pressing Z will move the cursor to the start of the line.

Control X - Holding down the control key and pressing X will home the cursor and delete the line.

Next month in Printrix tutor we’ll get back to covering the Printrix menus. See you next month.

*Apple Fontrix/Printrix Club
P.O. Box 29657
Thornton, CO 80229-0857

August 1987

-END-

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If a Prodos compatible clock is detected in the system the time is displayed in 12-hour format at the menus.

If no clock is available the ability to set the system DATE is provided so the user can at least date stamp his output files.

Basic system is protected by PROARC, therefore all normal Prodos commands are available to the user within PROARC.

Floppy drives MUST be running out of Slot 6. Drive 1 or 2 may be selected for DISK archival/unarchival.

All file accesses follow the normal Prodos file hierarchy.

Program exits through Prodos's normal Quit code.

Please distribute this program as freely and fluently as possible. Let's campaign for widespread Prodos-based BBS's.

Thank's,
The Freebooter

Software Encryption Analysts of South Texas

These resultant files can then be placed on a mass-storage device for archival purposes or uploaded to your favorite BBS for disk/files transfers. The degree of compression realized from archiving a disk or file will vary according to the source data. In case of disk archival, the output disk file can be minimized if the source disk is not too fragmented. Fragmentation results from repeated file deletions and allocations. The user can "defragment" a normal DOS 3.3 or ProDOS disk by copying all the files off to a freshly formatted disk. The resulting defragmented disk is then archived by PROARC to achieve minimal output file size. Certain file types will realize significant file size reductions when archiving them, especially text files. In any case, any file size reductions will affect transfer times in BBS uploads/downloads.

The user can then "de-archive" these resultant files back to their original forms. When converting a DISK file back to a floppy, a low-level format is automatically performed on the output disk. In the case of an archived file, the original file's attributes are internally saved so the unarchived file will be identical to the original file.

Minimum system:

Any Apple II series computer with at least 64k and one 5.25 floppy drive.

Some other features:

PROARC is a ProDOS based utility designed to provide the user the ability to "archive" his 5.25 disks and files. When archiving disk data, the resultant output file will be of the following format:

Filetype = $F7 Filename format = XXXX.DSK

When archiving a file, the resultant output file will be of the following format:

Filetype = $F8 Filename format = XXXX.ARC

This output filename (XXXX) may contain up to 11 characters, not counting the 4 character filename extension (.DSK/.ARC). The extension may be entered manually by the user or the program will automatically append the proper extension for him.

The ProDos ARCHival Utility for 5.25 floppy disks and Files.
Programmed by The Freebooter
Software Encryption Analysts of South Texas

PROARC V1.0

5/29/87

Description:

PROARC is a ProDos based utility designed to provide the user the ability to "archive" his 5.25 disks and a ProDos file in a compressed format. A secondary function gives the user the ability to read an input ProDos file and generate a corresponding compressed output file. When archiving disk data, the resultant output file will be of the following format:

Filetype = $F7 Filename format = XXXX.DSK

When archiving a file, the resultant output file will be of the following format:

Filetype = $F8 Filename format = XXXX.ARC

This output filename (XXXX) may contain up to 11 characters, not counting the 4 character filename extension (.DSK/.ARC). The extension may be entered manually by the user or the program will automatically append the proper extension for him.
The Darwin model says that the origin of life was an accidental freak of nature. But once life was established, species propagate according to physical and natural laws, with the fittest surviving. In the game, four seed cells appear at random locations in the colony. They propagate until one species is annihilated. There is no input at all from the players. Sounds fascinating, doesn't it?

The Creation model holds that there was in fact some kind of purpose to the origin of life, but life is still bound by laws of nature that we maybe can understand but certainly can't change. First, elect to have two players, or one player against the computer. The first player always plays red; the computer or second player plays blue. In the game, the player or players are asked to place four seed cells, two of each species, by clicking on empty cells in the playing area. Then you sit back and watch to see how wisely you chose as they spread out over the colony until, again, one species is annihilated. The nice thing is that you can go check the turkey, take a shower, whatever, and not lose any playing time!

The Divine Intervention model maintains that God's will dictates not only the origin of life, but also every major event in our collective lifetimes.
gation reverses. No original individuals (or newly created individuals in the Divine Intervention model) can be placed into this column.

* When a new individual is created in the Divine Intervention model, it assumes the same life span, fertility span, and direction of propagation as the highest level of mutation yet to have appeared for that species.
"hacker" types who will want to dig through every bit of the source code so I won't delve into the inner workings!

I'll just insert that it is an easy-to-use, fully configurable BBS without too many hassles! It comes with its own configuration program, so you don't have to become too deep a hacker!

** NOTE **

If you have previously run ProTALK, the only thing you need to run is the file CONVERT.S. If you have any questions, feel free to contact me, there are only 15 or so of you so it should not be much of a problem. Read the documentation however for technical aspects of ProTALK not yet revealed!

So you've decided to actually boot up/run ProTALK, eh? Good for you! The installation is quite simple. First, you must own a hard drive, or some other mass storage device. Second, you must configure your hard drive as such for optimal performance. Note the drivespecifier, where VOLUME stands for /YOUR VOLUME NAME/ (eg, HARD1, CMS, etc, etc)

A:/VOLUME/BBS
===> will contain ACOS, ACOS.OBJ, and all the .S (segment) files
B:/VOLUME/DATA
===> not used by ProTALK
C:/VOLUME/DATA
===> not used by ProTALK
D:/VOLUME/DATA
===> not used by ProTALK
E:/VOLUME/DATA
===> not used by ProTALK
F:/VOLUME/BOARD
===> Where Message Base Files are stored
G:/VOLUME/MAIL
===> Mail/networking Storage areas
H:/RAM
===> temporary FAST-ACCESS data area
I:/VOLUME/DATA
===> not used by ProTALK
J:/VOLUME/DATA
===> not used by ProTALK
K:/VOLUME/DATA
===> not used by ProTALK
L:/VOLUME/ACOS
===> SuperTAC data files

A: is where all the .S files will go, and also your copy of ACOS and ACOS.OBJ will go. This is where you will always boot up your BBS.

B: is where all the data files go. These include any help files you make, and all the menus and data files generated by ProTALK.

F: is where all the message base files (b1,b2,b3,etc) are stored.

G: is where your mail files and networking temporary files are stored.

H: is a area used by ProTALK for fast-access data storage/recall. It's crucial this area be on some sort of ram drive, as if it wasn't the BBS could slow down heavily.

L: is where SuperTAC stores all its data files. Read the documentation packaged with SuperTAC for more information.

If you currently run a BBS, please skip to part V.

**NOTE** You must follow these directions if this is your first time running a ACOS board, or if you do not wish to convert GBBS user files, message bases, etc.

Part III  ---> Installation

First, create the directories as specified in Part III. Now, you must get hold a copy of a master GBBS disk. Now boot up the GBBS disk, and install GBBS onto your hard drive. Now, go in with a copy utility such as ProSEL (tm) or Copy II+ (tm) and copy ACOS and ACOS.OBJ to the A: drivespecifier as mentioned in the above pathname map. Copy the rest of the /GBBS.PRO subdirectory onto your B: drivespecifier. Copy over B1 to your F: drivespecifier.

Now unpack ProTALK.BQY and copy over all the segments (.S files) to the A: drivespecifier. On A: there should only be ACOS, ACOS.OBJ, and the segments.

Unpack ProTALK2.BQY and copy over the help files and menus to your B: drivespecifier.

Now reboot the GBBS MASTER DISK, and answer "Y" when it asks if you wish to configure your BBS from scratch. It'll ask for the pathname of your ACOS file. Enter /VOLUME/bbs, =not= the /GBBS.PRO subdirectory but the subdirectory where ProTALK segments are contained!

Reconfigure all the drivespecifiers to meet the pathname standards, and make sure you make H: as /RAM.

Now, finally, boot up the ACOS on the /VOLUME/bbs drive. Enter for a starting segment "GEN.CONFIG".

After this segment has compiled, you must answer "Y" to "Configure BBS from scratch?".

Follow the onscreen prompts, and your BBS is now ready to run! You may wish to add boards of course, use the "E" command in system segment...

Part V  ---> Transferring GBBS to ProTALK

Ok, this is for all you SysOps who currently run GBBS Pro v1.3 and wish to convert to ProTALK. If you are starting from scratch or do not wish to convert your BBS, please read PART IV.

The VERY, VERY, VERY first thing to do is => BACK UP YOUR HARD DRIVE <= I cannot guarantee something unexpected will happen, and if it does, you will lose your old BBS and be stuck with nothing! So back that sucker up first!

Ok, now that it's all backed up, delete ALL your segments. I would suggest also following the guidelines in the DRIVESEP MAP in Part III, but its up to you. Go into your GBBS Master CONFIG area, and reconfig H: as /RAM.

Now unpack ProTALK.BQY and ProTALK2.BQY into your BBS subdirectory(s). Boot up ACOS. Enter "GEN.CONFIG" as the starting program.

Wait until the segment compiles, and answer "N" to "Configure BBS From Scratch?"

Follow the online prompts, and you should be ready to go! Read Part VI however for modifications that you will have to do...

Part VI  ---> Modifications Needed.

There are many modifications that will be required to get ProTALK to custom-fit your needs. There is about 15 minutes of work to get it up and running correctly however after configuring it all. You must
merely load each segment, and do a FIND/REPLACE the following...

**THE APPLE REBEL BBS** = YOUR BOARD NAME
**THE REBEL** = YOUR HANDLE/NAME
**SLEDGE** = YOUR COSYSOPS NAME
916/457-0624 = YOUR BOARDs NUMBER

There are about 7 segments that must be modified, however, it would be wise to check every segment. The fastest way is to use a Apple IIgs, Diversi-Key, and the ProTERM editor, you merely make four macro's that just automatically find/replace the above.

At any rate, after these modifications, you merely load up ACOS, hit <RETURN> at the SEGMENT TO LOAD: prompt, and after compiling, and a wait, you should see the logon screen. DO NOT WORRY if you get a message stating "SCANNING VOLUME [xx]", or if you get a BAD DRIVE SPECIFIER after SCANNING VOLUME [xx], it just means that the BBS is making a master directory automatically and could not find one of the drivespec automatically, it will hang for about 3 minutes and reset itself with ease.

Now, you must go manually compile each segment so your users don't have to wait while they're online (you are, after all, a nice sysop!). After testing out various features, and doing whatever pleases you, go to the system segment. You may have to run the NEW MESSAGE FIX, the command is “F” from the SYSTEM LEVEL. The reason is that not all are the number of new messages converted due to quirks in ACOS and compression routines. Logon as a few users and see if the number of new messages is correct. This is only applicable if you converted your old GBBS board of course!

Now you must go in, create boards, edit boards, and change any menu's you see fit. eg, you are just making cosmetic changes before you open up for the general public!

The hardest part comes now. Boot up the idle-time-screen, turn off the monitor, and go watch TV or excercise. After all, 24 hours in front of a CRT screen is dangerous!

--- Segment Descriptions

Herein is a list of all segments and short descriptions of each...

LOGON.SEG.S = Non Proterm logon, also boots up the board and is a very important and heavily used segment...

LOGON2.SEG.S = ProTERM Logon segment, is basically the same thing as LOGON.SEG.S but is very glittry!

MAIN.SEG.S = Main subroutine of the BBS, its basically the shell where users execute the main commands

MAIN2.SEG.S = ProTERM version of MAIN.SEG.S, glittery as usual

MSG.SEG.S = Message base for Non-ProTERM users

MSG2.SEG.S = Message base for ProTERM Users

MSG3.SEG.S = Aux segment for MSG2.SEG.S, contains routines that would not fit!

SYSTEM.SEG.S = System level, for SysOps only! Contains run-time commands that help you run your BBS...

SYSTEM2.SEG.S = Exact replicate of SYSTEM.SEG.S, kept in case you wish to make a glittery version

MAIL.S = Mail segment
MAIL2.S = Same thing as MAIL.S, just kept in case you wish to make a glittery version
SUPERTAC.S = File transfer Segment, PROTERM Version
STAC2.S = Non-ProTERM Version of SuperTAC
STAC.AUX2.S = Contains File Transfer routines of SuperTAC, PT Spec
SUPERTAC.AUX.S = Contains various routines for SuperTAC, PT Spec
STAC.AUX.S = Various routines, Non-ProTERM version
SUPERTAC.SYS.S = SuperTAC System Level Segment
NEW.USER.S = Non-ProTERM Version of segment that handles new users
NEW.USER2.S = ProTERM version of segment that handles new users
GET.STATS.S = Converts old users to new upon their logon
CHECK.BYE.S = Segment that basically checks whether the user really wants to terminate or not in ProTERM Spec
TERMINATE.S = Segment that handles termination on ProTERM Spec
VOTE.S = Vote Segment
VOTE2.S = Held in case you want to make a glittery version
STATS.EDITOR.S = Segment that holds routines in case the user wants to reconfigure certain statistics
STATS2.EDITOR.S = Same as STATS.EDITOR.S but glittery
HOME.S = Segment that contains routines for clearing the screen in ProTERM Special
EDITOR.S = Segment that contains the editor used by most of the BBS
EDITOR2.S = Segment that contains the editor used by the message base
UP.S = Segment that allows SysOps to upload to A: - L: drivespecifiers
NEW.MSG.FIX.S = Called by System Segment whenever a SysOp wants to reset the number of new messages
BOARD.EDIT.S = Segment that is called by the System Level when a sysop wishes to edit a message base
VAR.EDITOR.S = Segment that allows global var changes, called by System Level
GEN.CONFIG.S = Configures the BBS for the first time
NET.CONFIG.S = Contains the Config for the NetWork

Well, there you have it...a list of the segments in ProTALK v2.1!
Here are the bytes, flags, variables, and nibbles used by ProTALK v2.1...

Flags

0 - Unvalidated User
1 - Validated User
2 - Message Base Access
3 - SuperTAC access

- 10 Pieces of Bulk Mail sendable in EMAIL

- 50 Pieces of Bulk Mail sendable in EMAIL

- SuperTAC Entry/Privileged User status on Messages

- Download Access in SuperTAC

- Copy-Incoming Access in SuperTAC

- Copy-Outgoing Access in SuperTAC

- View Files Access in SuperTAC

- Upload Access in SuperTAC

- Elite in SuperTAC

- Super Elite in SuperTAC

- Super-Super Elite in SuperTAC

- SuperTAC File Manager

- Elite Scum status on Messages

- Demigod status on Messages, Unlimited Pieces of Bulk Mail Sendable

- SYSPROFs/COYSYPROFs only

Bytes

0 - Nulls used
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

- Low Byte of New Message Counter

- High Byte of New Message Counter

- Time Spent Online (minutes)

- Low bytes of Bytes Posted

- High bytes of Bytes Posted

- Low bytes of Bytes Posted

- High bytes of BytesPosted

- SuperTAC Protocol

---

Variables

---

** these variables are user specific

BP = Bulletins Posted
TC = Times Called
CL = Time Allowed Daily TOTAL (in minutes)
PV = UNUSED
UL = Uploads
DL = Downloads
U1 = High Byte Blocks Uploaded
U2 = Low Byte Blocks Uploaded
D1 = High Byte Blocks Downloaded
D2 = Low Byte Blocks Downloaded
U3 = UNUSED
D3 = UNUSED
PT = UNUSED (may be used for a point system)
DO = Days Online
AY = Whether the user needs to be converted (NEVER change)
LR = Last Message Read

S1$ = Birthday
S2$ = First Name
S3$ = Computer
S4$ = Sex
S5$ = Group
S6$ = UNUSED
S7$ = UNUSED
S8$ = UNUSED
S9$ = UNUSED

*** These variables are globally applied

AB = Number of boards online
DU = Days BBS has been online
SU = System Uploads
SD = System Downloads
First off, I modified SuperTAC to allow one more level. I describe the entire setup as...

Flag(20) = User has access to all public volumes
Flag(25) = User has access to privileged volumes
Flag(26) = User has access to elite volumes (does NOT show up in logs)
Flag(27) = User has access to another level of elite volumes (again, does NOT show up in download/upload logs)
Flag(28) = User is a board manager

I have set it up so that Public Domain utilities are set up for flag(20), then files for trade between higher level users are (25), and then files I have written are for flag(26), and finally ProTALK SysOps get flag(27).

Second off, if you have any trouble modifying ProTALK, getting it up and running, =ONLY= contact me on The Apple Rebel BBS. Sorry, but I do not want to waste long distance phone bills answering any more questions on how to get ProTALK up. I will gladly answer questions of any kind on the BBS though, so feel free to get an account.

The number again is posted at the end of this file.

Thirdly, ProTALK locks out 300 baud users, if you do wish to retain them, remove the line:
if info(2)=1 gosub lockout
from LOGON.SEG.S.

Lastly, you may be interested in the way ProTALK keeps the users time statistics in order. It has two sets, one to count how much time is allowed per CALL, and one to set how much time is allowed per DAY. There is no calls/day limit, just time limits.

CT = Number of minutes allowed DAILY
nibble(s) = Number of minutes allowed per CALL (option #F on Sys Edit)

A good setting is 40 minutes per CALL, and 1 hour per DAY.

ProTALK contains two main external routines, they are named X.WAIT and X.CALL respectively. Both are available in the general public, and the documentation is available. VOTE is a complete vote module, it requires very little work, once you boot it up (by either having the force vote option, or entering "V" at the main prompts) you are prompted with a SYSTEM MENU, enter "G" for GENERATE FILES, it'll automatically generate the files, and now you can proceed normally, by letting your users add questions or adding a few questions yourself.

There is a file called PROSCRN included with ProTALK. I did =NOT= write it, so don't give me undue credit for this great mod. It allows sysops to view ProTERM Special locally, to use it, copy it over to the prefix where your ACOS.OBJ is, boot up AppleSoft ProDOS Basic, and then enter the following commands:

BLOAD ACOS.OBJ,AS2000,LS5200,TBIN
BLOAD PROSCRN
BSAVE ACOS.OBJ,AS2000,LS5200,TBIN

Simple enough?

The Message base does not use the standard "F"orward and "R"everse read format, instead you just use "R"ead Messages, selecting "F"orward or "R"everse from there. If you wish to "R"ead Reverse, but not from the last message, merely "S"kip messages once you begin reading. This was done to preserve code space, as the segments are quite large and I did not wish to create another HSOS.SEG.S!

The Message Base has an added option, if you use a "#" as the first letter in a message base, the board becomes a "Anonymous" type of board. What does the anonymous mode mean? It allows the user to enter a message under any name he/she choose's! This only is available on boards that have a "#" as the first letter in their name, eg: "WHO'S WHO" is a prime example that exists on the Apple Rebel BBS. SysOps are left a little note at the bottom of the message stating:

[N]ote: Supposedly from -----

the ---- stands for the name the user chose to assume, eg, they could use "SYSOP" or whatnot. This could be a light-hearted, fun modification or it could start some serious quarrels. Be very careful with this mod!

SuperTAC only uses one data file, L:STAC.DATA (L: can be replaced by whatever drivespecifier you use). It contains the following lines...

X1, Y1, X2, Y2, X3, Y3, X4, Y4, X5, Y5, X6, Y6
A5, B5, C5
W1, W2, W3
Z1, Z2, Z3

**NOTE**

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Apple II Computer Info
The segment BOARD.EDIT.S allows you to edit your boards without having to boot up your GBBS Config program. I did not write this program; I merely modified it to keep it compatible with GBBS, it may have bugs for all I know, it does work fine when editing message bases however, and that is all I recommend you use it for.

If you have remote sysops who would like to download segments or such from your A:–L: drivespecifier, get them into your system level, and use the “Segment Work. You will be able to upload, download, and catalog any of the drivespecifiers, the protocol is set to Batch Ymodem automatically.

Next, for those SysOps who currently run games, I would be VERRRRRRRRRRRRRY careful with them, some of them will definitely conflict with ProTALK. I have included TURBO.RUN.BQY in its own game module for your users entertainment, I did not write this fine segment, I am merely distributing it.

Also, there is a segment called DIAL.S. It is a beta-test dialing segment I wrote when testing X.CALL, just use it for the heck of it, it doesn't really serve any purpose, it will call out fine, but when you are online things look very strange, with carriage returns not being served properly. My aim was not to write a terminal program, just to test out X.CALL.

There is a segment called VAR.EDITOR.S included with ProTALK v2.1. It lets you to globally effect changes. It is called by typing "V" from the system level, you then select FLAG, BYTE, NIBBLE, or VARIABLE. You can change any of the variables that is specific for each user (a list is presented somewhere above) except AY, since this variable should never be changed.

You merely enter the flag/nibble/byte-variable to globally change, enter the new value, and then enter the starting user number and ending user number. The system will work for awhile, and the variable will have been globally changed!

The system also prints the time in the idle time state, if you have any problems with the board with X.WAIT, please contact me and we can work out something.

X.WAIT also kicks into a slow-wait routine sometimes, you will see the screen print something along the lines of...

RETURNING TO IDLE TIME STATE IN

and the 60 will vary from 1-60. Don't worry, this is a function I had to insert to keep the integrity of the board. It will return to the idle state within 1 minute.

SuperTAC allows multiple drivespecifiers to be online, to accomplish this three segments must be changed. They are:

SUPERTAC.S
STAC2.S
AUTODIR.S

At the beginning of each segment, you will find a line something along the line of...

V16=":L";V26="*:FV=0

To use 2 drives/volumes, change FV to the highest volume of the first drive, and V26="K" or whatever other drivespecifier you wish. An example is:

/CMS/TRANSFER/AE/VOL.1

<= These are your L: drive specifiers

2 <= previously defined

3 <=

4 <=

/CMS.2/TRANSFER/AE/VOL.5

<= These are the transfer volumes on

---> Wrapping it Up...

Well, I guess you've got ProTALK up now, eh? I wish the best of luck for you, and I sincerely hope you join in the network. Its SysOps who do that make it all worth it, and keep my faith in the Apple II Community alive. Feel free to drop me a note on the Apple Rebel BBS anytime, I'm available on other BBSs but more and more infrequently with other programming projects.

Lastly, I ask you to PLEASE register with the Apple Rebel BBS, I sincerely want to keep track of who's running this sucker. It may be nice to keep a running list or whatnot.

Thank you all for your time, and may God be with you, and your system, which will definitely need him...

:-)

Parik Rao
**This is the last release until V2.0 (ML)**

**THIS IS THE LAST RELEASE UNTIL V2.0 (ML)**

**(unless I find some massive bugs that need to be fixed)**

---

**Updates**

**v1.3:**

- A LOAD FEATURE HAS NOW BEEN ADDED. Yes, the highly requested command.

**v1.2a:**

- The Spinning Cursor has been sped up a bit. (Open Apple-C). v1.4c:

- There was a slight problem with the Repeat Character command. (If you exceed the max length of 126 then what was sent to the buffer was really fucked).

- Positioning bug in the Repeat Character command was fixed

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**v1.2:**

- A Spinning Cursor option was added (Open Apple-C). v1.4c:

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**v1.4:**

- Slight problem that MY program isn't exactly 100% compatible with CONTROL-Z

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**v1.4a:**

- The KeyClick option wasn't accessible by you (cuz I fucked up). Now it can be (plus it Clicks so YOU can hear it!)

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**v1.4b:**

- Well.. After alot of testing, I've found that my program is about 98% compatible. I say this because, whenever I write a file and view it the files are fine, except on a few occasions. All I can say is the guy that wrote ProTERM Special is really fucked.

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**v1.4c:**

- Some small screen margin bugs were fixed

- The SAVE BUFFER feature was saving one additional byte that would throw off a text editor, and could possible screw up your file.

- This was fixed.

- I added a small text files that is a type of "credit" file that I would appreciate if you would load into memory before you start writing a new file, this way I will know what files were written with my editor, and I can see if they are working properly. Plus it will help others, who would like to write ProTERM Special text files, to know what to look for (program wise).

- A help option was added by the request of Tempus Thales

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**v1.1:**

- There was a MASSIVE error in the *buffer*, (would crash if you entered in more than 5000 bytes). This has been fixed (took me long enough)

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**v1.0:**

- The The KeyClick option wasn't accessable by you (cuz I fucked up).  Now CONTROL-X

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Call: The Mist // 216/974-1153 70megs, 9600bps (YES IT'S BACK!)

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**DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 872 of 1262**
Welcome to NetWorks, a networking environment for ProTALK! NetWorks supports the following features...

- Networking Message Bases
- Networking Mail
- Security Modes
- Checking Modes
- Macro Functions (v1.1)
- Configurable Networking Message Bases
- Many, many, many more features!

NetWorks is constantly expanding, I am already planning regional centers if the needs demand, which would mean the NetWork Bases would expand and you could find possibly a closer NetWork Base or be a NetWork Base yourself!

NetWorks is simple to configure, you must first call The Apple Rebel BBS and receive a password and message number. Please leave mail to user #4 once you have been validated on The Apple Rebel BBS stating you would like to participate in the network, with a voice number I can reach you at. I will discuss terms of service (no costs), and give you a network password, message number, and board names in the network, you may of course choose which ones you desire.

After these two things have been received, run the program NET.CONFIG from the SYSTEM LEVEL (B)ridge Segments, and answer all online prompts to the best of your abilities. When it is finished configuring, hit CONTROL_RESET and reboot the board. Networking is now installed, it is all automatic and you don't need to do much!

Notice how I said MUCH. There is one thing you will be required to do. That is forward any mail sent to you. The problems I discovered was that I could not obviously maintain a global NetWork user listing, as replicates would start to appear! Instead, the name of the user is entered. The Networked mail is sent, if that user does NOT exist on your board, the mail is sent to you. The mistake may be due to a typo. If the user still does not exist on your board, merely delete the message. Otherwise you will have to forward your mail towards the correct user.

You are also strongly urged (eg, required) to call the Apple Rebel BBS for updates to the segment. For the next few weeks, updates will be quite regular, as there may be bugs, or enhancements to be made (such as a full macro-type language to allow scripts), and this is the only BBS these will become available.

Thanks for participating in the network, and I hope your users enjoy it!

IMPORTANT UPDATE

NetWorks has now evolved, I am currently writing a daisy chain/tree structure network, at the suggestion and with the help of Ram Chip. There will be an update to the network, only available at the Apple Rebel BBS. If you wish this update, please call the Apple Rebel BBS @ 916/457-0624. Thanks for your support....
Well, that's that. Now, for a few bug reports.

I've been told by Mr. Atoz that the Zmodem send is STILL fucked up. I haven't had too much trouble... except on his board and on Talisman. I have used Zmodem DOWNLOAD successfully, and Mr. Atoz, with his technical point of view, says it functions flawlessly. Let's give a hand to InSync for FINALLY getting it right... at least 50% anyway.

Now, when I first saw that online cost function, I thought it was really cool. Yah, ReadyLink had it, but ReadyLink sucks. Well, it's a 50-50 bumper here. The thing works fine once you are OFFLINE. However, if you are ONLINE, and chose, in the individual board entry, to have that function on while you are online, the program will crash BIG TIME. My screen went into crazy 640 graphics mode and it looked like it jumped into 50 Hz. If anyone tries this out and DOESN'T have it happen, let me know. I'd like to know how you get around it. Anyway, the least they could have done was to do the damn thing RIGHT... like set up parms for "First minute" and "each additional minute". You know how fucked up the phone company bills. Not important to most, though. Just a personal gripe of mine.

I had lots of trouble with 2.2 crashing during disk swapping (mostly after I installed my Zip). I've noticed that Proterm 3.0 handles this problem better, but I still can't get away from that occasional crash.

Watch out. For some reason, the PT3.CODE4 file loves to get corrupted. That's the one with all the emulation names. Why? Dunno... I've been trying to figure that out. If you find out, lemme know.

There is a bug with inverse characters in scrollback. Call up a board like the Magnetic Field (708-498-5189) and look at the main menu in scrollback. You'll see what I mean.

Miscellaneous info: For batch transfers, simply highlight the file(s) and hit the spacebar (like in ShrinkIt). The files will have a checkmark next to them. Same thing with cyclical or rotary dialing. Just hit the spacebar next to the system name. That hasn't changed from 2.2.

Another gripe: the ANSI BBS emulation sucks big time. They could have done better.

Macro stuff: new delimiter is " (quotes) instead of / (slash). It's about time. Old logon macros should still work, but best to switch them over manually.

Check out the new transfer segments. I think these are much better than the old ones. Another cool thing is that after the transfer, you can see the results, including CPS. Proterm has grown up a bit.

Overall, I'd say the program is a pretty good improvement. However, all this fucking mousetext in the editor is enough to make someone sick. Hopefully, they'll release some additional emulations as they said they would. That would be interesting to see. AND they need a new ANSI BBS emulation. Ack.

If I think of anything else (not likely in my current state) that needs to be said, I'll type it up and append it or just send around volume two or whatever.

PS: how many of you think that 2.2 was less cumbersome and a little quicker? Hmmm... maybe 3.0 just needs some getting used to.

Call these boards... before they go down.

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 874 of 1262
THE FIVE STEPS TO DESKTOP PUBLISHING
More information for PUBLISH IT!

Written by the JAZZMAN.

There are several preliminary steps in creating any document for the first time. The file should be named, and a number of program settings should be checked. Fortunately, none of these steps requires you to memorize anything. Each step is on a pull-down menu, and the help menu can lead the way if you get stuck.

THE HELP MENU

When you choose one of the options from the help menu, an informational Dialog Box appears. Click on OK to return to your document.

ACTIVE MENU OPTIONS

There is a strong interaction between the Toolbox and the menus in Publish it! When you first enter the screen Work Area and the arrow is selected as a default, the EDIT, FONT and FORMAT menus are dimmed, showing that they are inactive and not available for use. Pull down one of these menu and you'll see that the menu items are also dimmed.

Items within the active menus are also effected by the tool you've chosen. If you pull down the FILE, PAGE and OBJECTS menus, you can see the highlighted commands and functions which are available as well as those which cannot be selected at this time.

When a menu is selected, you should also notice that some items have keyboard equivalents ("Quick Keys") listed to the right of the function name. Once you've learned Publish it!, you can save time by using the Quick Keys. They are Quick Keys for a number of menu functions. At the beginning though, the program is easier to learn by using the pull down menus.

As you experiment with the powerful features of Publish It!, the program will be your best teacher. The process will soon become intuitive.

SELECTING YOUR DATA DRIVE

Choose Select Data Drive ... from the File menu to tell Publish it! where your data drive is located. Your choice will depend on your hardware and configuration of your system. Notice that you can use PRODOS pathnames.

SAVING YOUR SETTINGS

This option saves your default settings for any option that was active at the time you chose SAVE SETTINGS, including settings for your data drive, the page size, line, pen and fill choices. IT DOES NOT SAVE YOUR DOCUMENT...

OPENING A NEW FILE

Publish it! provides a default document name of "Untitled". If you wish to name your document before starting it, or you wish to abandon the current document you are working on, choose the New File... option from the File Menu. A box will appear with a blank line for the file name. Type a short word (not more than 15 characters) which quickly describes the theme of your document. Use letters, numbers and the period, but must begin with a letter.

To return to your document, click on OK.

SAVING FILES

The Save File option saves your document under the current file name. If you save frequently, another way to do it is to press O-Apple-S, the save file Quick Key. On single drive systems, you will be prompted to insert your data disk. If you want to use a different name, choose the Save File As... option.

SAVING A FILE WITH A NEW FILE NAME

This option allows you to save the current document under a new name. Choose Save File As... from the File menu. The ability to save a document to a different file name can be useful in a number of ways. For example, if you want to save a layout to use in designing other documents, you can save your current document under more than one name so that you can preserve the current document and still have copies available for use in creating other layouts. You can also save the document in various stages of development under different names.

A dialog box will appear with the current file name, to change, type in a new name. To save the file and return to your current document, click on OK.

DELETING FILES

To permanently remove a file from your data disk, choose Delete File... from the File menu. You can only delete one file at a time. A dialog box will appear with a list of file names. Select the one you want to delete and click on delete. A second dialog box will appear asking you to confirm your decision.

CHECKING AVAILABLE MEMORY

From time to time you will want to check the memory available for your document. Pull down the Apple menu and select Status... for information on your computers current memory availability and information on how many objects you have remaining to use (the maximum allowed is 65). If you run out of memory, the program will notify you. To return to your document, click on OK.

Now lets start to produce a document...

While it is possible to start your document anywhere, with design, art work or words, and to move back and forth among these three parts of your documents whenever you wish, I will present these ideas starting with the page layout, continuing with the text possibilities, then graphics and finishing with the printing.

Objects are such an important part of the program that they bear some discussion. With the Toolbox, you can create six types of objects: they are:

- Graphic frames [x]
- Text columns [T]
- Horizontal or vertical lines [ l-]
- Rectangles [ ]
- Round-cornered rectangles [ ]
- Circles [O]

(Note: these symbols are not perfect, but as close as I can produce.)

Only one tool can be selected at a time. Select the tool by clicking on it. Tools are deselected automatically when you choose another. Selecting one of the tools will activate some menus and menu options and deactivates others.

To create an object, first click on the desired tool and then move to the spot on the page where you want to place the upper left hand corner of the object. Press the mouse button and drag to where you want the lower right corner, then release the button. Several objects drawn on a single page may overlap each other. Each object is actually on a single plane, with the most recently created on the top.

DESIGN GUIDES

To make designing your pages easier, we provide a guide system that helps...
position your objects quickly and accurately on the page. Although these guide appear on the screen, they will not be printed on your document. A check mark next to Snap To Guides, indicates this option is active. Snap To Guides works when creating text, columns and graphics, not when moving or resizing. If you overlap a guide when drawing it, Your object will snap to the outer edge of those guides.

To use this feature, select the page guides you want to use with the Select Guides option. The page can be divided into rectangular regions composed of 1 (1x1), 4 (2x2), 9 (3x3), 16 (4x4) equal parts or no guides if you do not want guides to appear on your display. The guides you choose will remain in effect until you change them or until you quit Publish It!. To save a guide setting as a default, set your guides and then choose Save Settings from the O-Apple menu.

You may change or remove guides at any time. If the Snap To Guides are on, when you create a text column, graphic or graph frame, it will automatically be aligned with the nearest page guide.

SHOWING THE COLUMN OUTLINES

This option from the SPECIAL menu allows you to turn the display of text column outlines on and off. It does not effect the text within the defined areas or the text columns themselves or printing, since column outlines are never printed. Choosing Show Column Outlines from the SPECIAL menu toggles this option on and off. A check mark next to Show Column Outlines indicates that the option is active.

SELECTING OBJECTS

AN OBJECT MUST BE SELECTED BEFORE IT CAN BE MANIPULATED. Click on the desired object with the arrow. (or pointer). Selecting a new object deselects any other object on the page. A newly created object is selected until you click on another object, to select it. To deselect an object without selecting another, Click in a blank section of the work area. When an object is selected, it may be dragged by the lower right handle to resize it. Objects may overlap each other on the page. You may also change the order in which the objects are stacked by selecting objects with the arrow and choosing either Move To Front or Move To Back from the objects menu.

WARNING.......If the object you are moving to the back (bottom) is smaller than the other objects, it may be hidden by other objects.

GROUPING OBJECTS

You can drag several objects around by using the grouping feature. Using the arrow, drag the arrow pointer from a point above and left of the target objects to a point below and right. Be sure to start dragging from a point that has no objects. As you drag, you will see the outline of a box being drawn, almost as if you were creating another object. When you release the mouse button, the box will disappear, and every object that was inside the box will become selected. You may now drag any one of these selected objects and all the rest will follow. Other functions for grouped objects are, delete, change fill patterns and change line weights.

NOTE...some object menu items are not available for groups. They will appear dimmed.

SPECIFYING OBJECTS

Objects can be moved or resized with the arrow. For more precise work, you can choose Show Specifications... from the OBJECT menu. With this option you can determine and modify the exact size of a selected object.

Specifications sheets vary with the type of object selected, but all have Left Start and Top Start coordinates.

What the Dialog Box displays:

LEFT START...
Shows where the objects left edge starts relative to the left edge of the page in a measurement determined by the UNIT MEASURE option in the SPECIAL menu.

TOP START...
Shows where the selected objects top edge starts relative to the top edge of the page.

WIDTH...
How wide the selected object is.

HEIGHT...
How high the selected object is.

You may resize and reposition the selected objects with precision by changing any or all of the four selections in the Dialog Box. For some objects, not all four will be available. For example, There is no width option shown for a vertical line, because width is determined by the line weight selected when the line is drawn.

Click on the box with the value you want to modify and type in the change. When you finish, click on OK. The selected object will be adjusted according to your changes.

COPYING, CUTTING AND PASTING

When working at the object level with the pointer (arrow) tool, if you want to duplicate an object, use the arrow to select the object, then choose Copy (O-Apple-C) from the objects menu to copy the object to the programs internal clipboard. The object will not disappear from the screen, but a duplicate will be held in a buffer (clipboard) until you are ready to use it. Choose PASTE from the objects menu, or G-Apple-V. A copy of your graphic will appear in the center of your screen. Use the arrow to drag it to a new position. Once an object has been copied to the clipboard, the original object can be moved or deleted without effecting the size or position of the copy in the clipboard. cutting an object works the same as copying except the original is removed from the screen.

DELETING OBJECTS

You can remove objects using one of two methods. The DELETE key or the CUT method. To delete an object using the DELETE key, select it with the arrow, then press DELETE. The object is permanently erased from the screen.

The CUT option on the OBJECTS menu also deletes objects. Unlike the above method, cut objects are placed in the clipboard and can later be recalled with the Paste option, providing nothing else has been cut or copied to the clipboard. The clipboard can only hold one object at a time; cutting or copying will replace any previously cut or copied objects.

SETTING THE PAGE SIZE

Before you start your layout, you must tell the computer which page size you want to use. Select the SET PAGE SIZE option on the PAGE menu.

Selecting this option allows you to choose your page size from four U.S. and international standard page sizes. The choices are: U.S.LETTER, U.S.LEGAL, A4
LETTER and B5 LETTER. These last two are approximately 8 1/4 x 11 2/3 inches and 7x10 inches respectively.

The two choices under each of these are for the width of paper your printer uses. Only wide carriage printers can handle a full 8 1/2 inch line width. DO NOT SELECT 8 1/2 inch IF YOU HAVE A STANDARD SIZE PRINTER.

A Dialog Box will appear with four clearly defined page sizes. Select the page size for the paper you have loaded in your printer (or a page size you plan to use for this document or publication). Click on the page size you want to use, then click on OK. What do you do if the page size you want is not listed? For example, you want to layout a business card or an 11x7 flyer. For the smaller page sizes, use the on-screen rulers to inscribe that your design stays within the size you want for your business card. When the page is printed, you will only use the section of the page you want.

For a larger page, like an 11x7 sheet, you could work with two 8 1/2 x 11" pages and paste them next to each other.

**SELECTING PAGES**

You select pages by clicking on the left arrow and right arrow in the lower left corner of the display. The current page number is shown after the document title.

**ADDING AND DELETING PAGES**

To add pages to a document, choose the Insert Page option on the Page menu. Selecting this option will cause a new page to be inserted before your current page. The page you are working on and all subsequent pages will be renumbered.

To append pages at the end of the document, click on the left arrow until you reach the last page. If you click on the left arrow again, you will be asked if you want to add a page. Click on OK to do so.

To delete a page, select the Delete Page option on the Page menu. Selecting this option will delete the current page. All subsequent pages will be renumbered and moved up one page in your document. You will be given a chance to reverse your decision to delete a page. If you decide not to delete the page, click on CANCEL or press RETURN.

**NOTE...**Delete Page erases text columns and reflows your text through the remaining chain. Text will not be lost, if any linked columns remain. Text that is not part of a chain on another page will be lost.

**VIEWING PAGES**

Publish It! lets you work on a document in four different views. To change to a different view, choose a size from the SPECIAL menu. You will be able to edit text, define graphics, or use the arrow to move and resize objects in any view as shown later.

1. With the SHOW FULL SIZE option, you can see text and graphic elements on the display in the size they will appear on your print-out. However, you can only view a portion of the page at a time.

2. The SHOW HALF SIZE option shows the page at about half the size that it will print out. You will view the page in full width, but will be able to view only a portion of the length.

3. SHOW DOUBLE SIZE is like a close-up. Use for fine tuning your text or graphic elements. Use the scroll arrows and scroll boxes on the sides of the screen's work area to move the page up, down and from side to side so you can view different sections of it. As you move, the rulers on the top and sides will reflect your location on the page.

4. Use the SIZE TO FIT option if you would like to view the whole page at once. You may not see the text clearly because of its reduced size, but you can see what your layout looks like. Your page will appear on the left half of the screen.

In all views except Full Size, imported bit maps (graphics) will be represented as grey shaded boxes. When in FULL SIZE, the picture itself will be visible.

**WARNING....**You cannot print anything you place outside the page area in the SIZE TO FIT view. If you can use that area to try out ideas and then move them to the left half of the screen. Anything on the right side will be saved, even though it will not be printed.

**WHITE SPACE**

When laying out your page, keep in mind that the absence of objects is important too. The space left over after you have everything in place, in fact, becomes as much a part of the page as the elements you inserted. This is called white space. Used properly, it adds pleasing contrast to the art and text on the page. So, when you're reviewing your page layout, take a moment to review the size of the margins, the amount of space between the lines of text, the amount of space around the art work, and the distances between the headlines and the body copy. White space adds to a crisp, clean looking page. Avoid, however what is called negative white space, that is, white space surrounded by art or text. This white space is considered undesirable because it resembles a doughnut hole on a page.

**AESTHETIC CONSIDERATIONS**

All page layouts should consider the audience. Obviously, the audience for an advertising flyer is not expecting something that looks like a wedding invitation. A greater proportion of black to white may be perfectly acceptable in an ad, but very unacceptable in a poetic greeting card. As you design each document, try to put yourself in the readers shoes. If you're writing for senior citizens, for example maybe you don't want 9-point text. Perhaps 12-point is a better choice.

**CHOOSING MEASURING UNITS**

Choosing measurement units for the on-screen rulers is as simple as choosing Select Unit Measure from the Special menu. With this option, you are free to choose the unit of measure with which you want to work. Inches, Centimeters, or Picas ( 6 Picas = 1 inch).

**NOTE....**In publish It!, picas will be both the horizontal and vertical unit of measurement, even though the type fonts will be measured in points. A point is 1/12th of a pica (1/72 of an inch).

The default settings are in inches. The units of measure chosen here affect the on-screen rulers and other measurements, especially in the FORMAT, PAGE and OBJECTS menus.

**SETTING THE ON-SCREEN RULERS**

Rulers help place items and size them on the page with reasonable precision. Two indicators, one on each ruler, show the position of the mouse pointer at any time. As you scroll the page, the rulers change to reflect the current position.

The Show Rulers option toggles the horizontal and vertical rulers on and off. Rulers are very helpful when laying out a page, but as you work on text, you may want the extra screen space that is made available by turning off the rulers.

Now that you understand the concepts of objects, let's talk about specific ways you can use them, beginning with your text.

**CREATING TEXT COLUMNS**
Move the pointer to [T] in the tool box and click on the Text tool. Notice how this tool is now highlighted and arrow is deselected. You are ready to create a text column.

Simply move the mouse into the work area. As long as the [T] tool is active, every drag in the work area will start a new column.

A text column is a defined region on the screen which resembles an empty box or frame. If you insert text into the column outlines, the column will expand to fit the text automatically.

Release the mouse button when the column is the right size. If a guide is visible and SNAP TO GUIDES are selected, your text column will snap to the nearest guide.

Text may be entered from the keyboard or imported from another file to a particular text column or to a specified series of columns. To enter text, select the [T] tool and click on the Text tool. Notice how this tool is now highlighted and arrow is deselected. You are ready to create a text column.

The text insertion point will appear and you can begin typing. As you type, the text insertion point will follow your cursor. You can move the text insertion point to a tab location, press the TAB key on your keyboard. To move the text insertion point to a tab location, press the TAB key on your keyboard.

THE TEXT TOOL AND ENTERING TEXT

There are two ways to enter text: either use its built-in word-processor or import text from your own word processor or other programs. Before you can enter any text, you need to create a text column as explained before. To enter text, select the I-BEAM tool and click on the I-BEAM pointer on the next column in which you want to work. The text insertion point will appear and you can begin typing. As you type, words wrap automatically at the end of the line. Text will fill the column and any overflowed (extra) text will be indicated by a double width border at the bottom of the text column.

The appearance of your text input depends on the font you're using and on the size of your screen objects. The default font is Deerfield 12 point. Text layout within the column depends on the settings for FORMAT and PAGE.

SETTING TABS

To set tabs on your page, select the TABS... option on the PAGE menu. A Dialog box will appear. Click on the first input box and type in the tab setting you want. You do not have to enter the tabs in order. They will be put in order for you. You can set up to six tab stops per page. Tabs are measured in inches, centimeters, or picas, as set in the特种 tool. The window scrolls automatically.

To import text, select [I], and click on the text column you want the file to be placed in. Choose Import Text File from the File menu (or Import Appleworks File or Import Bank Street Writer file).

A Dialog box will appear with a list of file names. Select the one you want. To import the file and return to your document, click on OK. REMEMBER...you can double click on file names to open them.

The files do not have to be just word processing files. If they are ASCII files, you can import data base and spreadsheets too.

When importing files, the program only looks for the files on the disk drive currently selected as the data disk drive. Make sure you have the correct disk in the drive.

NOTE...The Import Text File option will be dim and unavailable on the menu, unless you have clicked on the [I] in your text column to create an insertion point.

Importing Appleworks files this way will preserve underline, bold, superscript and subscript text. Bank Street Writer files cannot be distinguished from picture or other program files, so be careful when selecting the file name.

Other formatting options, such as tabs indent and margins must be assigned in Publish It!

LINKING TEXT COLUMNS

In publish It!, Text columns are usually independent objects. To support articles that span several columns (and even pages), the program lets you link text columns together in a chain. If text in a linked column is edited the entire chain is automatically updated. For example, if you enter text in the first of two linked columns, text overflows automatically into the second column. If you resize the text column, the program dynamically reflores the text to fit the new column size. Use the Link Tool to link text columns by clicking on each column in the sequence you want your text to flow. If the text columns are on different pages, flip the pages with the left-right arrows between clicks of the linking tool. When you finish creating the chain, click on the linking tool again to complete the link. When you enter or import text, it will automatically flow through the text columns in the order in which you have linked.

To relink a series of columns, click on the linking tool and then click on the new series of columns starting with the original column.

UNLINKING COLUMNS

To unlink columns, double click on the column you want unlinked. For example, you have linked three columns -1, 2, and 3. Double click on column 2, and the text will disappear from it. Columns 1 and 3 are still linked and 3 will contain the text that was previously in 2. When you have unlinked a column, click on the linking tool in the tool box to complete the process.

INSERTING COLUMNS

If you insert columns into an existing chain, use the linking tool to link them. Click on a column in the chain and then click on the new text columns. When you're finished, click on the linking tool in the tool box to complete linking process. If you cut or copy and paste linked text columns from another page or document, you must use the linking tool to relink the text columns.

DELETING COLUMNS

Columns are objects, so they may be cut, copied or deleted as instructed earlier. However, the text within a column is treated separately. If you delete the middle column of a three column page, the text within that column would reflow to the third column (assuming they were linked). If you try to delete a...
RULES OF LINKING

There are some rules to linking that you must observe:

1. Selecting the linking tool (looks like one page on top of another), you will see a small hook on the bottom of the linking tool. The first click of linking tool establishes the start of a chain (or insertion into a chain) and moves the hook to the top of the linking box. Subsequent clicks on different columns create the links. Clicking on linking tool in the tool box ends the chain.

2. Columns selected with the pointer can be deleted by the delete key, but the text remains and is distributed to other columns, if any remain in the chain. If no columns remain, the text in the deleted column is lost. A Dialog box will appear giving you a chance to change your mind.

3. Columns selected with the pointer are removed completely from a chain by CUT.

4. Paste does not insert a column into a chain. Use the linking tool to link columns.

5. A column can only belong to one chain at a time.

6. Double clicking with the linking tool unlinks a text column from a chain.

Linking is not permitted to a previous page.

EDITING YOUR TEXT

Editing text is the same as in any word processor. Following is a discussion on how to delete, cut, copy and paste text.

Deleting Text.....

First be sure the I-Beam is selected from the tool box. To delete a section of text from within a text column, highlight the text by dragging, then press the delete key or choose CUT from the EDIT menu (O-Apple-X). Delete erases text permanently. CUT moves text to the clipboard where it can later be recovered with Paste. The text to be cut can be as little as one character or as long as about 1000 characters.

Cutting and Pasting Text.....

Highlight the text you wish to move. Pull down the Edit menu and choose CUT or C-Apple-X. The selected text will disappear from the screen and be stored on the clipboard. Choose a new insertion point with the I-Beam and select Paste from the Edit menu (O-Apple-V). Paste retrieves the text from the clipboard and places it at the new insertion point. You may continue to paste the cut text as many times as you want until you cut or copy again.

Copying and Pasting Text.....

Use COPY to place selected text in the internal clipboard while leaving it on the screen. To copy, highlight a text range and choose COPY from the Edit menu, or use O-Apple-C. The selected text will not disappear from the screen (but will be held in the clipboard until you are ready to use it). Point and click at the position you want to place it (on the same or another page). Choose Paste from the Edit menu or O-Apple-V. You can repeat this last two steps if you want to insert the selected text in more than one location.

Finding Text.....

Publish It can search your text for a particular character, word or phrase (numbers too) and, if you want, replace it with something else. These features are found in the Edit menu labeled FIND..., FIND NEXT, REPLACE... and REPLACE and FIND.

To find a particular word or phrase, move the I-Beam to the first character in the text column you want to search. Click on the text insertion point to tell Publish It where you want to start searching. Select the Find option on the EDIT menu and type the text you are searching for in the Dialog box. Then click on OK. If the search was successful, the character, word or phrase will be high lighted on the screen, and a text insertion point will appear at the end of the highlighted text. Once a character, word or phrase has been entered in the Dialog box of the Find command, a successful search can be found in the same page by using the FIND NEXT option. To repeat the search, select FIND NEXT or press O-Apple-F.

NOTE... You must use Find before you can use FIND NEXT.

If the search was unsuccessful or no more occurrences are found, an Alert box will tell you so.

Replacing Text.....

To replace a text string in your document, use REPLACE from the EDIT menu. This command enables you to find a character, word or phrase and replace it with another. It is especially useful when editing large amounts of text within Publish It. Since the program remembers the last used find and replace string, you can easily change either string in the Dialog box. To use this option, move the I-Beam to the first character in the text column you want to search. Click and a text insertion point will appear. Choose REPLACE from the EDIT menu. A dialog box will appear. Click on the top box and type in the character, word or phrase, you want to find. Move to the next box, click (or use the TAB key), and type in the replacement text. Click on FIND. You'll be informed if the string is not found.

Once a character, word or phrase to find, and a replacement has been defined in the Dialog box under REPLACE, you can repeat the sequence throughout the entire page. Choose REPLACE and FIND from the EDIT menu (O-Apple-R). Use O-Apple-F to find the next occurrence without replacing.

Sticky Spaces.....

If you have a phrase or name that you don't want to split between two lines, use the Sticky Space option. Bill Johnson, Sticky Spaces and Search & Replace, for example, could all use sticky spaces. When Publish It wraps words from one line to another and a sticky space has been entered, it will treat the group of words as one. If the group is too long to fit at the end of a line, Publish It moves the whole group together to the next line. To use Sticky Space, put the I-Beam between two words and press O-Apple-Spacebar. Repeat as often as necessary.

Soft Hyphens.....

If a word is broken at a point you don't like, you can change it. Click on the word at the point you would insert a hyphen should the word need to be broken. Press O-Apple-Dash (-). As the text flows, if that word is broken, Publish It will insert a Hyphen at that point. Later, as you make changes in text and the column rewraps, that hyphen will disappear if the word no longer needs to be broken and reappear later if needed. You can place as many soft hyphens in a word as necessary.

Number Spaces.....

When creating tables of numbers in the program, you will find that all digits introduce uneven spacing, since spaces are considered alphabetic characters. To solve this dilemma, we have included the Sticky Space characters. To insert a Sticky Space, put the I-Beam at the point you wish to insert a space. Then click on the Sticky Space option. Bill Johnson, Sticky Spaces and Search & Replace, for instance, could all use Sticky Spaces. When Publish It wraps words from one line to another and a Sticky Space has been entered, it will treat the group of words as one. If the group is too long to fit at the end of a line, Publish It moves the whole group together to the next line. To use Sticky Space, put the I-Beam between two words and press O-Apple-Spacebar. Repeat as often as necessary.

Automatic Runaround.....

If you have completed columns of text and then decide to drop in an object, Publish It automatically flows text around the new object.

Text Formatting

You can set the justification, spacing and margin/indents for all the text on
Click the I-BEAM on the paragraph with the words you want to work with and then select the Spacing option on the FORMAT menu. When the dialog box appears, click on the word spacing entry box and enter the new spacing you would like to use.

Line Spacing.....

Lines of text are also spaced vertically within a paragraph. To change the spacing between lines (also referred to as leading), select your paragraph and choose Spacing from the FORMAT menu. When the Dialogue box appears, enter the desired spacing in points. The value you specify represents the distance, in points, added between the lines of text.

Paragraph Spacing.....

Paragraph spacing is the amount of spacing between paragraphs. Normally, spacing between paragraphs is the same as between lines. Paragraph spacing is changed by selecting a range of paragraphs, choosing Spacing from the FORMAT menu, and typing a new value in the dialog box, followed by clicking on OK. The program then adds the point value as extra space before the paragraph. Click on OK to return to your document.

Margins and Indents.....

Choose Margins/Indents to set or change your left or right margins and paragraph indents. Use the I-BEAM to select a paragraph, then select Margins/Indents option on the FORMAT menu. A dialog box will appear. Enter the left, first line and right margins, then click on OK. To make your paragraphs hanging, that is, with the first line set out from the remainder, set the left margin indent to a value more than 0 and click on Hanging. Use the right margin specification to tell the computer the distance from the right edge of the text column to the right edge of the text. Set both left and right margins for a paragraph, as for long quotations. The first line is for typical, non-block style paragraph indentation.

Kerning.....

Spacing between letter pairs is controlled by the defined width of each character. In certain cases you may wish to change the spacing on a character-by-character basis. With Publish IT you can reposition individual characters, moving them closer together using KERN from the FORMAT menu. A typical situation where a change in character spacing is warranted, is with certain combinations of letters like AV, that show too much space between them. To move the letters AV together, place the I-BEAM between the two letters you want to kern and click. The text insertion point will appear between the letters. Choose KERN from the FORMAT menu and a dialog box will appear. Type in the number of points you want to remove in the selected space. When you click on OK, the spacing between the letters is reduced by that number of points. The larger the number, the closer together the two letters move. (you must repeat this sequence each time you want to reduce the space between letter pairs).

NOTE.....Sometimes text on the screen may appear to need kerning because of the on screen representation of the text does not exactly match what will be printed out. We suggest that you do a test print-out before deciding to kern.

To increase space between two characters, Place an extra space between them and then kern.

Fonts, Faces and Special Effects.....

Text font, size and style are chosen from the font menu. As with other text options, these are assigned by selecting a text range and then choosing the appropriate menu options. Publish IT! automatically chooses Deerfield 12-point as the start-up text font. To change to a new font, select block of text, or just click on I-BEAM and then select Select Font from the font menu, or O-Apple-W. A scrolling dialog box will appear with all the available fonts and sizes. Click on the font size you want to use. Then click on OPEN. The text you have selected will convert to this font and size.

Style (special effects) options are selected from the font menu also. Style choices include Plain, Bold, Italics, Underline, Outline, Shadow, Superscript and Subscript. If you establish a new text type, it is a new text type however selecting a block of characters, the text insertion point takes on the chosen text type, so any characters typed from that point on will be in the new type.
To quickly cycle through the different type options, pull down the font menu and you will see these options:

SELECT FONT... (O-Apple-N)
SELECT TYPE FACE... (O-Apple-T)

Highlight a block of text and then press O-Apple-T or select the Next Type Face option from the font menu. The block you have marked will automatically change to the next type face available in the same size. If you press O-Apple-T again, it will change again. Keep pressing and it will cycle through to the original type face again.

Press O-Apple-N or select Next Size option to cycle through the available type sizes for the current font. This is a convenient way to view alternatives right on the computer display.

Plain Text.....

Use this option to return to the basic (plain) style of a type face if you have been using, for example, Bold or Italics. Select a range of text, then choose Plain from the Font menu, or O-Apple-P. This will erase all the attributes (bold, italics, etc.) of the selected text.

Bold Face.....

Choose Bold for a more dramatic (thicker) style of type face. Select a range of text, then choose Bold from the Font menu, or O-Apple-B.

Italics.....

Select Italics to make a word or phrase stand out (slanted) from the rest of the text. Select a range of text then choose Italics from the Font menu, or O-Apple-I.

Underlining Text.....

Choose underline as another way to make a word or phrase stand out from the rest of the text. Select a range of text, then choose Underline from the Font menu, or O-Apple-U.

Outlined Faced Lettering.....

Outline is a Graphic style of a font. Each letter looks like a frame. It should be used sparingly for such things as announcements, invitations or brochures. Select a range of text, then choose Outline from the Font menu.

Shadow Faced Lettering.....

Like Outline, shadow should be used sparingly for special effects. To use this option, select a range of text, then choose Shadow from the Font menu.

Superscript.....

Superscript and subscript are used mostly in technical publications (i.e. footnotes in a mathematical, medical article). Choose Superscript to set text a half line above the other text. Select a range of text, then choose Superscript from the Font menu, or O-Apple-A.

Subscript.....

Same as Superscript, except sets type a half line below the other text. Select a range of text, then choose Subscript from the Font menu, or O-Apple-L.

Combining Styles of a Type Face....

You can combine all styles of a type face (bold, italics, underline etc.) except Superscript and Subscript for special effects or emphasis. To combine styles:

1. Select a range of text, then choose the first style (i.e. Bold) from the Font menu to select and you are returned to the screens work area.

2. Pull down the Font menu. You will see a check mark next to Bold, which indicates it has been selected.

3. Select the next style and you are returned to the screens work area.

4. Repeat steps 2 and 3 as many times as you want. If you click on a style again, the check mark will disappear, and that style will no longer be active. You will be in the combined style until you select another style or face.

Creating your Graphics.....

There are two ways to include graphics in your publications.

1. Create graphics with the drawing tools included in the program. These tools can be used to draw simple objects such as lines, circles, boxes, etc. You can also use these tools to highlight elements of your page display.

2. Import graphics from other sources. Publish It! recognizes standard Apple high res graphics. Dazzle Draw, MousePaint, Computer Eyes from Digital Vision can also produce this type of graphic.

Another way to include graphics in your publications that will be professionally printed, is to leave a "Hole" on your page and insert the graphic before it is reproduced.

Graphic Objects.......

You can add lines, rectangles, circles and round cornered rectangles to your pages using a variety of line types, widths and patterns. Publish It provides four graphic object tools: line, rectangle, round-cornered rectangle, and circle. Use [ ] to create either horizontal or vertical lines (rules) by dragging up or down, left or right. Select [ ] to create a square or rectangle with right angle corners. Select [ ] to create a square or rectangle with rounded corners. Select [ ] to create circles. All these types of objects may be moved, overlayed, underlayed, resized or deleted by using the arrow (pointer). You can create interesting visual effects by experimenting with the pen patterns for borders and fill patterns.

A moving rectangle indicates the size of the object being drawn. If the cross hair pointer leaves the window area, the window scrolls automatically. You can also use guides and the Snap to Guides option.

Line Weights and Pen Patterns.......

The program provides a large assortment of widths and styles for borders and lines. You can choose from six solid line widths and 24 pen patterns, including eight user defined pen patterns. Change the width or style of a selected line with Set Line Width, or the outline, of a filled box or circle with Set Pen Pattern on the Objects menu. To change a line weight or pen pattern, select the object by clicking on it with the pointer and, selecting this option from the Objects menu. You can also use guides and the Snap to Guides option.

Selecting Fill Patterns.....

The program features 24 fill patterns that can be used for the interiors of graphic objects and offers the ability to create your own pattern with Define Pattern. To choose a fill pattern, select a graphic object, then select the Set Fill Pattern option on the Objects menu. A selected pattern fills the interior of any selected object. The selected pattern becomes the default until you change it. To change a fill pattern, select the object, then select this option. Click on the fill pattern you want. Then, click on O-Apple.

Defining a New Pattern.....

Design your own or modify any one of up to eight existing patterns. Selecting this option will bring up a Dialog box with eight pen or fill patterns which you can define. Click on a pattern and select it. The currently chosen pattern is shown in a close-up cell at the right. The Work Area is at the bottom left. Clicking on a cell in the 8 X 8 matrix shown in the dialog box, will toggle it black or white. Choose Define Pattern from the Special menu. All dialog box will appear. Click on a pattern to select it. To design your own pattern, a work area is provided at the bottom left of the dialog box. Your new design will be stored...
on disk when you click on OK.

Importing Art work

Publish It! lets you add graphic elements to your documents, lending them a professional appearance. Before you can insert pictures on a page, you must create graphic frames to house the art work. Graphic frames are created with the graphic frame tool [X] from the tool box. Position the [X] in the area where you want to insert the picture and drag it across the page to define the size of the graphic frame. If you have the Snap To Guides on, the block will snap to the nearest grid boundaries automatically. Graphic frames appear as shaded boxes on the screen. This provides a visual way of distinguishing the from text columns. Graphic frames are objects. They can be moved, resized, cut, copied, pasted and deleted like any other object.

NOTE....You cannot create a graphic frame that is larger than the importing screen---about 4 2/3\" X 2 2/3\".

Publish It can directly access Dazzle Draw, MousePaint, and Beagle Graphics files or any other pictures in Apple standard high res or double high res format.

To Import Art work.....

1. Insert the disk containing the art file into the drive you have designated for data.
2. Select a graphic frame by clicking on it with the pointer and choose Import Picture from the File menu.
3. A dialog box appears, listing all the picture files on the data drive. If necessary, scroll the list to locate the picture you wish to import. Click on the file name, then click on OK. The picture will appear in full size on the display.
4. A box is shown along with the picture to indicate the size of the graphic frame in your document. Drag this cropping box until it is around the part of the picture you want. You may change the size of the cropping box with the O-Apple key and the arrow keys. You may also use the arrow keys to move the box. When you are satisfied, press return.

You will return to your document with the picture in the graphic frame you have selected.

NOTE.......You will only be able to view the picture in the Show Full Size display. When you are in other viewing modes, bit maps are represented with a shaded box. The art work you cropped will print out completely, and be the proper size. If you import a small piece of a bit mapped picture, and subsequently enlarge the graphic frame, the extra area is shown as gray shading, because the area shown outside the crop box, is discarded when you return to your document. If you find you need a part of the bit map that fell outside the crop box, you should resize the frame and import the picture again.

Adding the Finishing Touches.....

The difference between an OKAY looking document and a GREAT looking document is the instructions. Everything you need to know has been covered here.

Printing Your Documents.....

Printers are an integral part of your desktop publishing system. Most dot matrix printers produce output at a resolution of 120 dots-per-inch horizontally by 72 vertically, well suited for inter-office memos, newsletters, and other documents you'll produce with this program. You should find this print resolution easy to read and suitable for most of your publishing needs. For extra contrast, you can choose the Double Strike option from the Print dialog box (on the File menu) when its time to print.

To print your document on a laser printer, you will need to use Timeworks Publish It Laser Pack. Instructions are included with this program.

The Page Numbering Tool....

Selecting [\#] from the tool box enables you to create a page number up to 100, for the page you are currently working on. Just click on [\#], then click anywhere on your document. An object containing a "\#" will be created. This object cannot be resized, but can be repositioned.

After you have defined the page number, you may change it by clicking on the pointer to reposition it. The page will be given a sequential number during printing. To change the font, select the page number object [\#] on your page and change the font size using Select Font from the Font menu.

How To Print.....

To print a document, choose Print from the File menu. A dialog box will appear. Normally you'll want to print all the pages of a document, but a number of possible choices are available:

ALL---All the pages of the current document are printed.
FROM/TO---Lets you pick a range of pages you want to print. Click on the radio button, then type in the numbers of the first and last pages you want printed.
COPIES---If you want more than one copy, type the number you want.
START PAGE #s at PAGE---If you have page numbers, enter the page number from which you want to start printing. This is useful when printing multi-page documents that are stored in several different disk files.
DOUBLE STRIKE---Select this if you want your copies to appear darker.
PAUSE FOR PAGE---Choose this option to make the printer stop at the end of each page to allow you to hand feed another sheet.

The OK and CANCEL buttons let you begin printing or cancel. Printing can be canceled or momentarily suspended at any time by pressing the appropriate key shown in the dialog box that appears while the program is printing the document.

Exiting Publish It!

Use Quit to exit Publish It! Just choose Quit from the File menu or O-Apple-Q. A dialog box will appear and ask for confirmation. To exit the program, click on OK. If you have a program selector installed (such as ProSel or Catalyst), Quit will return you to your selector.

Appendix....There are a few more chapters in the manual, but these appear to be the same as the Mini-manual which was up-loaded earlier. There are some pictures in the manual which I cannot reproduce for you so, I tried to explain it all with words. I am sure you can learn to run the program very expertly from the instructions. To load the program on a hard drive, load all the files from the program disk as you normally would. Include all the font files and art files, then set it up in your program selector. (such as ProSel, or the one that you have installed yourself. Be patient with the program, and read all the instructions. Everything you need to know has been covered here.

-END-
This month's puzzle is an expanded version of a classic. With lower levels being very easy and the upper levels offering a major challenge, this is sure to keep you going for a while!

After the opening screen, you will be prompted for the size of your puzzle. Start easy, choose a 3 x 3 grid. The puzzle will randomize itself before your eyes, press [RETURN] to stop it.

The object of the game is to get all the numbered tiles re-arranged to their starting positions, i.e. sorted numerically like so:

```
^-------^
!* 1 2 3 *!
!* 4 5 6 *!
!* 7 8 *!
^-------^
```

To accomplish this, simply press the appropriate direction key (I, J, K, M, or the arrow keys) to move the tile of your choice into the empty location (where "9" would be in the example above). Only the legal moves are shown on the screen, to help remind you of your choices. The game checks for the correct solution after each move, and will acknowledge your accomplishment when you solve the puzzle, as well as reporting how many tries it took you.

If you get tired of playing a game, press the [ESC] key to exit. You will be given the choice of playing another game or exiting to the UPTIME menu.

**HINTS**

When first starting, try the 3 x 3 grid until you get the hang of it. Then experiment. Strange arrangements (7 x 4 for example) will play much differently than the classic arrangements.

If you really want to impress someone with your 'skill', press [RETURN] immediately after pressing the second number key of your choice matrix (it's most impressive with the 8 x 8 matrix). This will stop the randomization process after only one tile has been moved, and thus you can solve any puzzle in only ONE move!!!

```
^-------^
!* 1 2 3 *!
!* 4 5 6 *!
!* 7 8 *!
^-------^
```

Please Note:

At least 768k, but preferably 1 megabyte, of free memory is required if you want to load QIX from the Finder. One megabyte of expansion memory is required to run QIX under Finder 5.0.2

If your GS has less free memory than required, you will only be able to boot directly from the supplied disk.

If you want to boot directly from the QIX disk, with the disk in the drive, reset the computer in the usual manner and the game will load automatically.

**GAME CONTROLS**

This game is played with a joystick or keyboard.

* IMPORTANT * Plug the joystick into the appropriate port before turning on the power.

After the game has loaded:
Press any key to display the input device screen.
Press "J" to select the joystick.  
Press "K" to select the keyboard.  

JOYSTICK

The joystick must be calibrated to ensure accurate game play. When the calibration screen appears, please follow the on-screen instructions carefully.

When the player selection screen appears:
- Move the joystick up or down to select a ONE-player game, TWO-player game, or a ONE-player PRACTICE game.
- Press the fire button to begin play.

During game play:
- Move your STIX up/down/left/right with the joystick.
- Press and hold down the FIRE button to begin a SLOW draw.
- Releasing the FIRE button starts a FAST draw.

KEYBOARD

When the player selection screen appears:
- Use the UP/DOWN arrow keys to select a ONE-player game, TWO-player game, or a ONE-player PRACTICE game.

During game play:
- Press the 2 key to move the STIX up.
- Press the 3 key to move the STIX left.
- Press the 6 key to move the STIX right.
- Press the 8 key to move the STIX down.

You can also use the I/J/K/M keys to move the STIX.

Press and hold down the OPTION key to begin a SLOW draw.
- Releasing the OPTION key starts a FAST draw.

You can also use the OPEN APPLE key to begin a SLOW draw.

VALID KEYS during game play:
- Control + R   Restarts game.
- Control + Q   Reboots the game. If the game was launched from Finder, this option will return you to Finder.
- Press ESC to PAUSE the game; press the FIRE button or OPTION key to resume play.

HOW TO PLAY

The QIX is an evil and terrifying computer virus. Nobody knows where it comes from (yeah, right!). Your mission: immunize the system against this insidious infection! But the QIX is intelligent; it learns from its mistakes. It also breeds lethal subviruses that can quickly spread and infect your system.

Each player starts with three lives. Fill in sections of computer memory without becoming infected. A level is completed when the required section of memory is immunized against the QIX. For example, you must immunize 65 percent of level one to proceed to level two. The percentage increases as your progress.

A life is lost if the QIX touches an incomplete line, or if the marker is attacked by a FUSE, SPARX, or SPRITZ.

STATUS AND SCORING

The status panel on the right side of the screen shows the current number of lives, required claim, completed claim, and current level. The SPARX timer is located above the game screen. It begins to shrink during play. Two SPARX are created each time the line disappears. On higher levels, the SPARX will follow you up your line once the alarm rings.

Player scores are located at the top of the screen. Points are awarded for filled section of memory. A SLOW draw earns twice as many points as a FAST draw. A player earns 1,000 bonus points for each percent over the required claim.

Trapping a SPRITZ virus inside a filled section is worth 500 points. All FAST fills will now generate SLOW points until you die. Splitting two QIX from each other multiplies the point value for each new FAST and SLOW fill. An extra life is awarded every 50,000 points.

HIGH SCORE SCREEN

Enter your name in the QIX Hall of Fame by using the keyboard to enter your initials. Press RETURN to return to the title screen.

STEREO CARDS

This game supports several stereo cards, such as the SUPERSONIC(tm) from MDIdea. When this type of card is installed, QIX provides rich stereo sound for your listening enjoyment.

HINTS AND TIPS:
- QIX has no time limit; plan your strategies carefully.
- Build walls to guide the QIX into a position where you can trap it.
- Try and split a pair of moving QIX as often as you can; your score will multiply.
- Keep moving; the SPARX are always looking for you.

end of file.
Questron // Full docs.

Typed By The Psycho

Your Quest: (As told by Merson, The Great Wizard)

*Though you have completed your quest to save the land of Questron from the crazed magician Mantor and his Evil Book of Magic, the book itself still exists. The book is so evil that it cannot be destroyed by normal means. Its very presence, anywhere in our continuum, poses the threat of corruption and doom to all civilizations. You must journey back in time to ensure that this abomination is never created.*

*I will send you back through time and space to Landor, where Mantor has enticed six mad sorcerers to create the Evil Book of Magic. I have bent my power to allow communication with Landor through the "Hall of Visions". An important early step in your quest is to search out the hall so that I can lend you my guidance. Through the hall I have learned a few scraps of information concerning the situation on that troubled world. Within these parchments I pass information on to you.*

*You have never existed on Landor, so there you will not have the title and standing you have earned on Questron. My transportation spell is limited to sending only you and a few items. You shall take along the Evil Book of Magic, for we would trust no other to guard it, and the glittering gold key. Beyond these items I can send you only the barest of equipment. Also, the temporal transition will cause the loss of some of your Questron-renowned power.*

*When you get to Landor you must quickly gain equipment to improve your chances of survival. Talk to many, for you will have much to learn about the land and its situation. Regain your fighting prowess and equipment as soon as possible, for Landor is at least as dangerous as Questron. Learn how to survive in cities, as well as the wilderness. Visit the cathedrals and learn their secrets. Venture carefully into the castles. And be ready for the dangers of the tombs and dungeons. To stop the six mad sorcerers you will have to brave the perils of all these locations.*

*Your victories on Questron prove you are the only one we can send on mission. You are our last, best hope of destroying the Evil Book of Magic. Go now; the future of all people rides with you into the depths of the past.*

Theory and Practice Of Time Travel

(As told Morle the Magician in his text "Magic for the Masses")

Moving through space you accept without question. Moving through time you find impossible to believe. This is understandable, but foolish. To a wizard, time and space are but different sides of the same coin. Just because your experience forces you to see events occurring from past to future, do not befooled into believing the grand plan operates in that way.

Among wizards, time travel is a common phenomenon. Yet it is often misunderstood. The fabric of time is self-repairing. Going back in time to prevent an event can do nothing to alter the years between the event and the moment you move back through time. Only the future after your departure will be altered. The past is but an elusive shadow - only the future can truly be changed.

The Six Mad Sorcerers (As chronicled by Lady Myrando, Historian to His Majesty, King Kelfar of The Realm of the Sorcerers.)

For decades the Council of Seven Sorcerers jointly ruled The realm of Sorcerers, for no mortal king could challenge their magic and no king was allowed to be a
wielder of spells. In the beginning the council’s rulings were fair, but harsh. But longer they rule unopposed, the more despotic their decisions became.

As the council rulings became more self-serving and forced greater and greater cruelty upon people, one member of the council was revolted by the misuse of power. Kelfar was a junior member of the council, but he understood that the council members’ vanity and suspicions were their weaknesses. He secretly gained the confidence of the common people, and dug to discover every vulnerability of the other six members of the council.

When Kelfar was finally prepared, and the rest of the council was in total disarray over a minuscule dispute, he renounced his sorcerers ways and took up sword to become one with his followers. With the common people behind him and the scattered despots at their weakest, Kelfar struck down the power of the council members and banished them as one from the civilized areas of the realm. His joy claimed him His Majesty, King Kelfar, Lord of The Ream of the Sorcerers!

His Majesty's rule was wise and fair, but his mercy in banishing, and not eliminating, his former comrades has cost the realm dearly. For in banishing them as one, His Majesty has provided the sorcerers with a common purpose. The sorcerers have hidden themselves somewhere in the realm and even now work to being down His Majesty's rule.

The Evil Book of Magic

Sire,

My Sorcerers eyes and ears have been very active searching out the activities of the Six Mad Sorcerers. We know some thing of their plans, but of late their mystic defenses have become much stronger. The plague of monsters that has nearly over-run the realm is but a by product of the hideous creatures they create to protect themselves.

What I have learned is that The Six labor as on to create a great magic tome. They continue to siper of an Evil Book of Magic and of an other-dimensiona1 leader who binds the group together. The name Mantor is spoken when the group believes it is alone. The Six fear Mantor, and his power, but they see him as the means to gain their revenge upon you. I fear they are nearing completion of whatever vile project they attempt.

Given your political position as the leader of your people (and the renunciation of your sorcerers powers) and my creeping infirmity, neither of us is properly equipped to challenge the six Mad Sorcerers and their other-worldly leader.

None of our own knights have been successful in finding, let alone circumventing, their monstrous power. I fear, your majesty, that without a hero of mystical proportions, your reign, and our realm are doomed. Heroes have come unto the land before, and we must pray that one comes to us again.

Monsters

Traveling Creatures
---
Sovan Priest - The Members of this ancient religious order are always willing to help out fellow travellers, for but a small contribution. These tall, robed figures are not well trained in the art of battle, but are as adept in dodging physical attacks as they are at dodging theological attacks. when provoked. Use large weapons

Gypsy Imp - Although it will act as if it’s your friend, the Gypsy Imp’s true character can be seen by looking at it. It is short, hoofed, devil-like creature who will sell you anything for the right price, but beware, the knife he sells you may be used to stab you in the back.

Hull Bore - The Hull Bore is also known as the "Unicorn Sea Serpent". This creature punches holes in your vessel.

Begggar - One must feel pity for wandering destitute soul. Through their many travels, Beggars have gained a rich knowledge in the ways of Landor. It has been proven time and time again that helping the poor can have its just rewards.

Troll - The sight of the Troll is as horrid as its stench. It stands over 9’ tall and has putrid greenish-colored skin. Trolls keen sense of smell as well as an ability to see in the dark. It is told that some trolls will interact with adventures, but will attack when provoked.

Spicer - Not much is known about this creature, no one has survived to tell.

Ocean Dwellers
---
Wave Slapper - The Wave Slapper is best disguised on a stormy day when the sea is turbulent. Long, light maneuverable blade is best to fight these creatures.

Mutant Carp - This fish looks like a deformed, overgrown carp. It has four long tentacles which protrude against this abomination.

Spencer - Not much is known about this creature, no one has survived to tell.

Grassland Creatures -
---
Mavin, Snooper Slink, Slasher Boar, Antisaur, Grub Snufer, Vipod, Ramdart

Forest Creatures -
---
Swine Swallow, Boll Rot, Tangler, Hornet Cloud, Baboon

Swamp Dwellers -
---
Ball Slime, Carrion Creeper, Jelly Nymph, Giant Cockroach, Stink Worm

Mountain Creatures -
---
Brawn Warrior - The Brawn Warrior's primary love, next to making money is a good battle. Crazed with a lust for victory, these fighters will attack until killed.

Spiker, Venom Ant

Grassland Creatures -
---
Hurler, Ice Urchin, Cloud Creeper, Spiker, Venom Ant

Spencer - Not much is known about this creature, no one has survived to tell.

---
All Rights Reserved. Use of this Software is governed by terms and conditions located within the documentation and/or software product. Redistribution of this software in whole or in part is not permitted without prior written approval from Bluebird Software.
Game speed - this affects how long messages are on the screen.

Magic missile: this is a single target damage spell.

Dungeons, or once the guards are trying to kill you.

Exit - leave an area without having to walk out. Doesn't work in tombs, highly intelligent character can use Magic well.

Dismount - get off of your transportation. end game - quit playing or save your character to disk. Note: you can only end a game outside.

Climb - move up and down in dungeons on ropes, ladders, and such.

Arm - grab a weapon from your inventory. A weapon won't help you in combat until you are armed.

Board - mount transportation. You can also board transportation by walking into it.

Climb - move up and down in dungeons on ropes, ladders, and such.

Dismount - get off of your transportation. end game - quit playing or save your character to disk. Note: you can only end a game outside.

Exit - leave an area without having to walk out. Doesn't work in tombs, dungeons, or once the guards are trying to kill you.

Fight - attack creatures with your armed weapon.

Game speed - this affects how long messages are on the screen.

Inventory - view your inventory list. Objects you are wearing or armed are highlighted.

Load game - reload a saved game

Loot - grab or steal items from people, chests, etc.

Magic - use a magic spell. Certain spells only work in some areas.

Speak - converse with others nearby. In some cases it is better to speak than fight.

Use item - use an item from your inventory. Some items only work in the right place or time.

Wear - wear your armor. Armor doesn't provide protection until you wear it.

Examine - examine the world around you for useful information. For example, you use "examine" in the dungeons To search for and avoid traps.

C. Combat:

The wise player learns to pick and choose his battles. While you will have to fight to win the game, it is wise to attack potential friends. There are times when cutting and running is better then standing and dying. Your success in combat depends on your attributes (strength, stamina, and Agility), the weapons you're armed with, the armor you're wearing, and the strengths and weaknesses of the creature you are fighting. During battle you decide which direction to Attack (if necessary) and then you see if you how much damage you do. You also see the monster you're fighting, how often they hit and how much damage they do.

Your character:

A. Attributes and status

Your characters status is listed on the screen in the following values:

- hp or hit points: this represents how much damage you can Take before you are killed. If your hit point reaches zero, You die.

- Food: this is the number of days of food you have.

- Gold: this represents how much money you have to buy things With. You can also have money in the bank that is not shown Here. If you take an inventory of your characters possessions you Will also see your characters attributes and other status Information. The status values include:

- Level: this name represents how far along you are in your Quest. You begin as a plebe.

- Time: this measures how long since the beginning of the Quest. As it gets later your enemies get more powerful and The politics of landor begin to change.

The characters attributes represent how fit he is in a number of areas. The attributes include:

- Charisma: this helps you bargain for better prices on goods.

- Strength: this helps determine your ability to land blows And to avoid the return blows of your opponents.

- Intelligence: this helps determine how reliable your magic Spells are. Only a highly intelligent character can use Magic well.

B. Magic

You can buy 4 different kinds of spells. You pay for each Use of a spell individually. The spells are:

- Magic missile: this is a single target damage spell.
Apple II Computer Info

Fireball: this is a more powerful single target damage Spell.

Sonic whine: this is the spell that attacks all adjacent Enemies.

Time spells: this spell slows the enemies sense of time to "Freeze" them.

C. Your inventory

All of your equipment is divided into three categories: Weapons, armor, and items. Weapons add to the damage you do and occasionally have other uses. Use the "arm" command to get a weapon from your inventory or change weapons. Use the "fight" command to strike at an opponent. Armor reduces the damage you’ll take from opponents’ blows. Use the "wear" command to get armor from your inventory or change armor. Items include everything else you carry. The "use item" Command activates an item if the item is useful in your current situation. When you begin, your choices of arms and armor are very limited. As you become more powerful you will have the chance to obtain better arms and armor. In general, the more expensive the item the better it is. You can also accumulate many valuable items necessary to complete your quest.

Landor

A. Creatures

Over 60 different creatures inhabit landor. Each type of creature looks different, reacts differently, and is best attacked with certain weapons. Some should never be attacked at all! By listening to rumors, reading the questron ii History booklet and through bloody experience you’ll learn how to deal with each different type of creature.

B. Outdoors

Outdoor adventure is shown on a vast scrolling overhead map. While outside you’ll notice different types of terrain, as well as different symbols of towns, buildings, and other places of importance. Be sure to check out any symbols on the map by moving onto them. This allows you to visit places and board transportation. You can also learn about the terrain types by “examining” them as you walk through. Each type of terrain has its own characteristics and unique monsters.

C. Towns, cathedrals, and castles:

While outdoors, any town, cathedral, or castle can be entered by walking onto its symbol on the outdoor map. When you enter, the scale will expand and you’ll be able to walk from room to room and building to building.

Towns offer a place to rest, gamble, buy goods, rob stores and otherwise partake in the joys of civilization. Your tongue will be useful as your sword as you seek out rumors, gossip, and other information of import.

Cathedrals are magical places controlled by holy ones. Nothing is obvious in a cathedral; there are both traps and rewards. But you will have to discover their secrets to complete your glorious quest.

Castles are important centers of government in Landor. Here you can find important people, information, and items to help you on your quest.

D. Tombs are secret labyrinths of corridors and rooms, filled with danger, treasure, and magic. You’ll have to find the Tombs and brave their depths to gain information and power.

Dungeons are evil places, shown in three dimensional perspective. You will need to be very powerful to survive the rigors of the dungeons. The deeper one delves into the dungeon, the more powerful the monsters and traps become, but, the greater the rewards you’ll find in chests, vases, coffins, and other magical devices.

When you first enter a dungeon, take a moment to become familiar with the three dimensional view. When you turn left or right you don’t actually move, you just change your facing. If you stand next to an object and turn you’ll always keep the object in front of you as you “Circle” it.

A legendary scroll can help you navigate in the dungeons. The scroll remembers every step you take to create a “map” as you stalk the halls. The map disappears after you leave the dungeon.
DOCUMENT quick.draw.1

\< QUICK-DRAW ADVENTURE MAPPER >

Softdocs written by: --> Sherlock Apple
Program cracked by: --> Sherlock Apple & Silicon Scorpion

NOTICE OF COPYRIGHT LAWS:

"IF YOU BUY A LICENSE, YOU CAN LEGALLY MAKE A COPY OF QUICK-DRAW ADVENTURE MAPPER WITHOUT GUILT, SHAME, BEING CALLED A PIRATE, OR THE FEAR OF THE F.B.I. BREAKING DOWN YOUR DOOR AT 2 AM."

*A license is obtained by purchasing Quick-Draw Adventure Mapper or by paying $14.95 (Visa/check/MC/MO) to:

TELLUS SYSTEMS INC.
P.O. BOX 96588
HOUSTON, TX. 77213
[713] 455-2191

Please enclose your name and address and state that the money is for a Quick-Draw Adventure Mapper license."

PS: Other sysops are welcome to use this file on their boards providing they don't change anything.

INTRODUCTION:

After a fun-filled day of adventuring, Quick-Draw Adventure Mapper accepts your hard earned data and makes a high-resolution map on your printer. This map is the starting point for your next outing. Your Quick-Draw map grows along with your knowledge of your adventure.

The Quick-Draw Adventure Mapper is a companion to any adventure game. It supports the following features:

1. Prints a high-res map showing all rooms and their connections.
2. Draws each room showing the room title, the room #, or, both.
3. Shows which room connections are "one-way".
4. Adds new rooms and information at any time.
5. Stores the mapping data for 4 adventures.

LOADING THE PROGRAM:

Place the diskette in drive 1 and turn the computer on. The first time it is loaded, Quick-Draw Adventure Mapper will automatically run the configuration program which will allow you to change several default settings and to specify your printer and interface.

From then on, when QDAM is booted, it will begin with your selections. If you wish to change them in the future, or if someone else configured your copy, hit <ESC> immediately after booting. This will run the configuration program.

CONFIGURING THE SYSTEM:

During configuration, QDAM will ask you 7 questions, as follows:

[3] The slot your printer's interface is in.
[4] If your interface uses a second slot, the number it is in.

After a fun-filled day of adventuring, Quick-Draw Adventure Mapper accepts your hard earned data and makes a high-resolution map on your printer. This map is the starting point for your next outing. Your Quick-Draw map grows along with your knowledge of your adventure.

Quick-Draw map grows along with your knowledge of your adventure.

QDAM accepts commands from the menu on the bottom line of the screen. Typing the first letter in the command's name is all that is required to specify that command. Many of the commands will bring up more detailed menus.

MENUS:

QDAM accepts commands from the menu on the bottom line of the screen. Typing the first letter in the command’s name is all that is required to specify that command. Many of the commands will bring up more detailed menus.
ROOM PLACEMENT:  
QDAM uses a grid that is 19 rooms across by 13 rooms down for a total of 247 rooms per map. Rooms can be positioned anywhere on that map. 

Infocom games, considered the most advanced have the following #'s of rooms in their 13 adventurers:

- [01] Zork I      110  
- [02] Zork II     086  
- [03] Zork ///    089  
- [04] Enchanter   074  
- [05] Sorcerer    084  
- [06] Starcross   086  
- [07] Suspended   063  
- [08] Planetfall  105  
- [09] Deadline    051  
- [10] Witness     031  

NOTE: This list does not include SeaStalker or Cutthroats. The numbers here may also be deceiving. The # here are the # of internal rooms in the programming, many of which, in some cases, can not be entered by the player.

As you can see by the above list, 247 rooms is plenty for almost all adventuring needs.

MOVING THE CURSOR:  

The room selection cursor is positioned in the upper left corner when the program is first booted. The cursor can be moved anywhere on the upper portion of the screen. The table below shows the keys that move the cursor:

U  I  O
J  *  K
N  M

The arrow keys may also be used on a //e.

ADD:  
The ADD command places a room at the current cursor position. As soon as you press the "A" key, the screen should flip to the room information entry display. The ADD command automatically moves you to this new screen and menu since you will usually want to enter room information as soon as you add the room. For now, press the L key to LEAVE and go back to the previous menu.

There are 3 things you should now notice:

1. There is a colored box in the center of the screen, representing the room you just added.
2. The "SELECTED" area displays blanks instead of the flashing message: "*  *  * EMPTY *  *  *". It is really displaying the title of that room, but since we haven't entered a title yet, there are only blanks there. The "ROOM" number shows "1".
3. The menu is now different. The ADD command is now gone, and in its place are DELETE, EDIT, and VIEW.

Since there is a room at the current cursor position, we can't add one. We can DELETE it, EDIT its information, or VIEW its information.

Move the room cursor again. As you move the cursor, the "SELECTED" indicator will change between the empty indicator and the room's title. The menu will change depending whether the current cursor position is on a room or not.

Room numbers are automatically assigned as the rooms are entered. The lowest available number is always used.

EXTRAS:  
The XTRAS command calls up another menu containing special features that will be explained later.

VIEW:  
The VIEW command displays all of the information entered about the currently selected room.

EDIT:  
The EDIT command displays the same information as the ADD command and allows you to change any or all of it.

LEAVE:  
The ADD, EDIT, or VIEW commands all bring up new menus. All of these new menus have a LEAVE command, which returns you to the previous menu.

TEXT EDITING:  
Most of the information entered into QDAM consists of text such as:
- Room titles
- Items found in rooms
- Pathways or connections between rooms
- Comments about a room
- File titles for saving your information

The text editing commands are explained below. In the following section, you will have many opportunities to practice them.

BASIC CONCEPTS:  
Text editing is always performed within a rectangular area of the screen, whose position is dependent on the information being supplied. This area can consist of a portion of a single line or encompass several lines on the screen. When multiple lines are involved, a word
that is too long to fit in the remainder of the line is automatically moved down to the next line.

EDITING COMMANDS:
-------------

Only upper case characters can be accepted. Newly typed characters replace those that previously occupied their positions. Some special command characters are recognized:

RETURN:
- Signals the completion of all editing. The contents of the current editing area accepted as displayed.

ESC:
- Initiates a mode that allows the cursor to be moved within the current editing area. In this move, the "I" key will move the cursor up one line (or the beginning of the current editing area), the "U" moves the cursor down one line (or to the end of the editing area) and the "J" and "K" keys move the cursor one space left or right, respectively. Any other key exits this mode.

Arrow keys:
- Moves the cursor one character in the direction of the arrow.

Control-D:
- Deletes the character at the current cursor position. All text to the right of the cursor is shifted one space to the left. If you delete all the characters in the text area, it will be treated as if you deleted the item. Apple 2e users can use the DELETE key and it will function the same as Control-D.

Control-I:
- Inserts characters at the current cursor position. All characters to the right of and including the cursor are shifted one character to the right. The new character is placed to the left of the cursor.

Control-R:
- Restarts the editing session with the original text. This allows you to recover what you started with if you make extensive editing errors.

Control-N:
- Blanks the current editing area. If you want to replace everything in the editing area, it's easier to start with a clean screen.

Control-B:
- Moves the cursor to the first character in the area currently being edited.

Control-E:
- Moves the cursor to the last character in the area currently being edited.

If you are not familiar with entering control characters, it's really very easy. To type the CTRL-D command, hold the CTRL key down while pressing the "D" key.

When you add or edit a room, you get the same display. For each room, you can enter:
- Title of the room
- Items found in room
- Comments
- Pathways to other rooms

The first three are covered in this section. The next section discusses pathways.

-------------

TITLE:
-----

The TITLE command allows the 18 character room title to be modified. When a room is added, the title is initially blank. Practice using all of the text commands now.

After entering the title, press the "L" key to return to the highest level menu to verify that the title you entered is displayed as the selected room.

-------------

COMMENTS:
-----

The COMMENTS command allows the comments area of the screen to be edited. Notice that the comments area is located in a multiple line text editing area. Enter some comments and observe how the words are placed in the area.

-------------

ITEMS:
-----

Up to eight items per room can be entered. Each item name can be 11 characters long. The ITEMS command calls up one of three new menus:

- If the items area is blank:
  ADD LEAVE
- If there is at least one item, but less than eight:
  ADD EDIT DELETE LEAVE
- If there are eight items:
  EDIT DELETE LEAVE

The ADD command adds a new item to the end of the list. The arrow keys are used to position to a particular item. The DELETE command deletes the currently selected item. The EDIT command allows the currently selected item to be modified.

Practice adding, editing, and deleting items.
The PATHWAYS command provides the mechanism to define the connections between the rooms in your adventure. Up to eight connections can be defined between rooms. The PATHWAYS command calls up one of the same three menus as the ITEMS command. The reasons for calling a particular menu and the basic function of the ADD, DELETE, and LEAVE commands are the same as the ITEMS command. The only real difference is the information to be recorded.

CONNECTING ROOMS:

After you have defined the connection, you will return to the room editing display. The second line from the bottom will display the question:

\[\text{\textbf{REVERSE PATHWAY?}}\]

If you hit "RETURN", a single direction pathway will be established from the current room to the selected room. If you want to define a two-way path later, position to the other room and define another one way path back to the room you are now editing. If, in response to the question, you type in a pathway, a two-way path will be defined.

For example, you can enter a path from room 1 east to room 2. If you type "WEST" when asked for a reverse pathway, then a path exists from room 2 west to room 1. It should be emphasized that establishing a path with a reverse path, is exactly equivalent to establishing two one-way paths between rooms.

PATHWAYS TO NOWHERE:

If you do not know where a particular exit goes, you can enter a "?" as the room number. The room title will be shown as question marks and exit indicators will be printed on the map for each pathway to nowhere. You can enter the correct destination later, as you get further along on your adventure.

PATHWAY ABBREVIATIONS:

The more common pathway directions receive special handling. They can be entered as abbreviations but will be automatically expanded to their full form for presentation.

The pathway entries that are recognized are:

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH</td>
<td>N</td>
</tr>
<tr>
<td>SOUTH</td>
<td>S</td>
</tr>
<tr>
<td>EAST</td>
<td>E</td>
</tr>
<tr>
<td>WEST</td>
<td>W</td>
</tr>
<tr>
<td>UP</td>
<td>U</td>
</tr>
<tr>
<td>DOWN</td>
<td>D</td>
</tr>
<tr>
<td>NORTHWEST</td>
<td>NW</td>
</tr>
<tr>
<td>NORTHWEST</td>
<td>NW</td>
</tr>
<tr>
<td>SOUTHEAST</td>
<td>SE</td>
</tr>
<tr>
<td>SOUTHWEST</td>
<td>SW</td>
</tr>
</tbody>
</table>

Enter some of the abbreviations above as pathways to observe their automatic expansion into their full form.

REVERSE PATHWAYS:

So far, you have established a single direction pathway from the room you're editing to the room you've selected. Since most connections run both ways, when a room is initially added, you are given the opportunity to establish the other connection. This feature is not implemented for the edit command.

After you have defined the connection, you will return to the room editing display. The second line from the bottom will display the question:

REVERSE PATHWAY?

If you hit "RETURN", a single direction pathway will be established from the current room to the selected room. If you want to define a two-way path later, position to the other room and define another one way path back to the room you are now editing. If, in response to the question, you type in a pathway, a two-way path will be defined.

For example, you can enter a path from room 1 east to room 2. If you type "WEST" when asked for a reverse pathway, then a path exists from room 2 west to room 1. It should be emphasized that establishing a path with a reverse path, is exactly equivalent to establishing two one-way paths between rooms.
Quick-Draw Adventure Mapper uses data disks that are the same disk format as DOS 3.3, but organized differently. This means that:

1. Any disk initialized with standard DOS 3.3 can be used as a data disk.
2. Any data previously on the disk will be lost when used with Quick-Draw Adventure Mapper.
3. There are no files on the disk that can be recognized by any file oriented utility. Therefore, a program like APPLE's FID will not operate on the data disks.
4. Any program (such as APPLE's COPYA) that copies the entire disk can be used to back-up your data disks.

When you select the XTRAS command from the highest level menu, you will be presented with the following options:

DISK PRINT MOVE BOOT NEW RAM LEAVE
Select DISK and the screen should display a new menu:

FILES SLOT/DRIVE INIT CATALOG LEAVE
The various menu commands are explained below.

----------- SLOT/DRIVE:
-----------
Press the "S" key and you can change slot and drive numbers that all other commands will operate from. The default is set to the drive that you booted Quick-Draw Mapper from.

----- INIT:
-----
If you don't have an initialized disk, this is the command for you. This command produces fully compatible DOS 3.3 disks. Until you save Quick-Draw Adventure Mapper files on it, the disk is the same as that produced by APPLE DOS's INIT command.

---------- CATALOG:
----------
A single Quick-Draw Adventure Mapper disk can hold four different data sets. This command will read the disk in the current slot and drive and display the titles of the four files. Missing files are displayed as blanks. The titles are displayed under the "FILE TITLE" heading on the screen.

----- FILES:
-----
A disk catalog is performed and a new menu is called up with the following functions:

SAVE RESTORE PURGE LEAVE
When you press the "S" key to begin the SAVE command, the disk's catalog will be displayed and a flashing indicator will be placed in the left most column of the title display area. You can use the arrow keys to position the indicator.

If the position you selected already has a file title, your current data will be stored in that position under the same name. If the position is blank, a cursor will appear next to the indicator and you will have to enter a file title. Make the title descriptive, since it will be used when the maps and information summaries are printed.

The RESTORE command lets you select a file to bring back into memory. If you pick an empty file, the current memory is preserved.

The PURGE command erases a file on the disk, so that you can use the space to save a different adventure under a new title.

-----------
/ Section 7 /
-----------

PRINTING MAPS AND SUMMARIES:

Selecting the PRINT command from the XTRAS menu will call up a new menu:

ALL MAP SUMMARY CHANGED OPTIONS LEAVE
Use these commands to print maps and summaries of your adventure:

ALL: Prints a map and summary of the current adventure. MAP Prints the map only.
SUMMARY: Prints the summary only.
CHANGED: Prints the summary only for the rooms that have been added or changed since the last boot, NEW command, or RESTORE command.
OPTIONS: Sets options that control the appearance of the printed map.

MAP OPTIONS:

Selecting the OPTIONS command from the PRINT menu calls up still another menu:

NUMS TITLES BOTH SHOW OMIT 1 2 LEAVE
These commands control the map printing options and can be set in the configuration program:
NUMS: Only the room numbers are printed
TITLES: Only the titles are printed
BOTH: Both the room numbers and the titles are printed
SHOW: The entry/exit path indicators, explained below, are shown on the map.
The entry/exit indicators are removed from the map.

1.
Prints the map in single density graphics.

2.
Prints the map in double density graphics (not available on all printers).

The entry/exit indicators let you see which paths enter and exit a room. A path leaving a room has a small line drawn perpendicular to it on the outside of the box representing the room. The line is drawn inside the box if the path enters the room. If a path enters and exits a room, BOTH lines are drawn.

You should print out maps using the various combinations to determine your own individual preference.

/----------/ / Section 8 /
/___________/
---------------

REARRANGING ROOMS:

From the XTRAS menu, the MOVE command will display the current adventure map on the screen and present one of the following menus:

PICKUP INSERT DELETE LEAVE

-or-

INSERT DELETE LEAVE

The first menu is presented when the cursor is positioned on an existing room. The second menu, without the PICKUP command is used when the cursor is positioned to an empty spot.

------
PICKUP:
------
The room located at the current cursor position changes color. Move the cursor to the new location for that room. When you press the "RETURN" key, the room at the old position will disappear, and reappear at the current location of the cursor. Obviously, you cannot move a room to a location that is currently occupied by another room.

----------
INSERT AND DELETE:
----------

These commands allow you to move many rooms at one time. Selecting one of them indicates whether you want to insert or delete space and brings up the following menu:

ROW COLUMN HORZ. VERTICAL LEAVE

These commands will move the existing rooms as explained below. None of the commands will allow you to shift rooms off of the map. You should practice the room moving commands until you are comfortable using them.

---------
INSERT DETAILS:
QuickLaunch was written by Steve Stephenson and is fully copyrighted by Seven Hills Software Corporation, 1991-1992. Seven Hills Software has allowed Apple to include QuickLaunch on the Apple IIGS System Software V.6.0 Golden Master CD to help show off some of the potential power of Finder extensions under System 6.0.

QuickLaunch allows users to add the names of their favorite applications to the "Extras" menu of the System 6.0 Finder. Those applications can then be launched simply by selecting them from the "Extras" menu!

More information on how to use QuickLaunch can be found by installing it (copy it into your boot disk's "System:System.Setup" folder and reboot) and then selecting "QuickLaunch List..." from the "Extras" menu in the Finder. QuickLaunch has a complete online help system built into it (nice touch, Steve!). Please take a few minutes to read the help given under the topic of "General".

Enjoy!

Seven Hills Software

4/92

Quit-To

Quit-To is a "program switcher" for the Apple IIGS. It is a Classic Desk Accessory which allows you to jump directly from any application (either ProDOS 8 or GS/OS) to any other application (ProDOS 8 or GS/OS) without going back to the Finder (or other launcher). That is, it lets you "quit to" another application, rather than quitting to the Finder and launching the new application there. Actually, if you do much switching between applications, this will save you a lot of time. Quit-To is the first and ONLY universal program switcher for the IIGS; Quit-To works with virtually ALL ProDOS 8 and GS/OS programs. Other IIGS program switchers only work from within GS/OS desktop applications.

Quit-To is free software. You are welcome to keep it, use it, and to distribute it freely to anyone. Don't expect much in the way of user support, however. No further updates to Quit-To are planned.

New Stuff

For those familiar with earlier versions of Quit-To, here is a list of the features added since version 1.0:

1.1: Applesoft BASIC programs can now be selected for launching.
2.0: Works from within GS/OS applications as well as ProDOS 8. Run-List Sort option added. System 6 supported (but not required). Other technical changes.
2.01: Reports error if attempt is made to quit to an application in the Run-List and that application has been moved, renamed or deleted. New information in docs.
2.02: First-letter keypress file selection now cycles around to the start of the list. The number of volumes Quit-To can display is no longer limited to seven.

Using Quit-To

As with all CDA's, Quit-To is installed by copying it to your SYSTEM/DESK.ACCS folder, and rebooting. Quit-To requires that you boot your system with GS/OS; you can't use the utility "PRCDA" to install Quit-To on a ProDOS-booted system. (Note to beginners: to access the CDAs installed in your system, press OpenApple, <control> and <esc> simultaneously.)

Quit-To gives you two different methods for selecting the program that will be launched when you quit from your current program. I'll refer to these as Selector mode and Run-List mode. When you use Quit-To for the first time, you will be in Selector mode. I'll explain this mode first, and Run-List mode later.

When you choose Quit-To from the CDA menu, you will see a title screen with a file-selection dialog box. This dialog box is used to select the application which you would like to go to when you quit from the program you are currently using. As the prompt "buttons" note, this dialog uses the standard key-commands for text based file selectors: The arrow keys move the highlight bar, <esc> closes the current folder, <return> opens a highlighted folder, <tab> allows you to select a different disk, and OpenApple-period cancels the selection, exiting you from Quit-To. Only SYS (ProDOS application), BAS (Applesoft BASIC programs), S16 (GS/OS application) and DIR (folder) files are shown in the file dialog's list. Press <return> with the application you want highlighted, and you will be returned to the IIGS' CDA menu. Exit from this menu to return to the program you were using, and go on about your business. Everything will appear to be the same.

However, when you quit from that application (exactly HOW you quit depends on the application, of course), Quit-To will do its thing. Instead of going back to your launcher, you will go directly to the application you selected in Quit-To. When you quit from THIS program, you will go back to your launcher as usual, unless you use Quit-To a second time to select yet another application.

Run-List Mode
It's likely that you have a few favorite applications that you use most of the time. With Quit-To’s Run-List feature, you can create and access a list of these favorite programs. Rather than navigating through disks and folders to locate the application you want to quit to, you can simply select that application’s title from the Run-List.

In both Selector mode and Run-List mode, you can move the highlight bar through the list of files quickly by pressing OpenApple together with the UpArrow or DownArrow keys. If you press a letter key (without OpenApple), the highlight bar will move up or down in the list, and the change will be permanent. This option is noted in Quit-To’s screen with a prompt for “Sort:” followed by the SolidApple-UpArrow and SolidApple-DownArrow symbols. (For historical reasons, the Option key is commonly signified by the SolidApple symbol.)

InSelector mode and Run-List mode, you can move the highlight bar through the list of files quickly by pressing OpenApple together with the UpArrow or DownArrow keys. If you press a letter key (without OpenApple), the highlight bar will move up or down in the list, and the change will be permanent. This option is noted in Quit-To’s screen with a prompt for “Sort:” followed by the SolidApple-UpArrow and SolidApple-DownArrow symbols. (For historical reasons, the Option key is commonly signified by the SolidApple symbol.)

Once you have the Run-List configured with your favorite applications, you will probably want to use this mode most of the time. Quit-To will continue to open with either Selector or Run-List mode active until you specifically select the other with OpenApple-S or OpenApple-R.

Miscellaneous

In both Selector mode and Run-List mode, you can move the highlight bar through the list of files quickly by pressing OpenApple together with the UpArrow or DownArrow keys. If you press a letter key (without OpenApple), the highlight bar will move up or down in the list, and the change will be permanent. This option is noted in Quit-To’s screen with a prompt for “Sort:” followed by the SolidApple-UpArrow and SolidApple-DownArrow symbols. (For historical reasons, the Option key is commonly signified by the SolidApple symbol.)

After using Quit-To to select an application to be quitted to, you might change your mind and decide you want to quit back to your launcher after all. There is a simple solution. Just call up Quit-To again, and then press OpenApple-period. This will tell Quit-To not to interfere with your quit.

The current version of Quit-To allows you to select and quit to applications that are on ProDOS-formatted volumes only. Macintosh HFS volumes and AppleShare volumes are currently not supported. Also, Quit-To only supports prefixes up to 64 characters long.

ProDOS 8 quirks

There are a couple of very minor quirks to the way Quit-To behaves when you use it from within a ProDOS 8 application. These are due to limitations of ProDOS 8 itself:

1) Quit-To supports disk-swapping, so you can be running a program that is on one disk in a drive, and select a program to quit to by swapping that program's disk into the same drive. The only case in which this won't work is if you are running a ProDOS 8 program that has an open file on the disk you're swapping out. If this is the case, the new disk you swap in won't appear in Quit-To’s “Volumes” list. This is due to the way ProDOS 8 handles open files. Most programs don’t keep files open for any length of time, so this shouldn’t be a problem.

2) Occasionally, you may call up Quit-To and see the message: "ProDOS is busy right now; press a key to exit, and try again in a moment." If this happens, it's typically because you are in a program that has a frequently-updated time display. Usually, you can "get through" to Quit-To by just trying again, but sometimes you may have to go to another part of the application you are using for Quit-To to work. For example, I've found that calling Quit-To while the main menu of the 8-bit ShrinkIt is on screen almost always produces a "ProDOS busy", but going to any of ShrinkIt’s sub-menus fixes this.

Incompatibilities, etc.

When an application has bugs, or behaves in some non-standard manner, this can sometimes cause problems for Quit-To. The following are some of the compatibility problems I’ve discovered or heard of since Quit-To’s release:

Cool Cursor ("CCCP"), published by GS+ magazine, versions 1.0 and 1.01 cause system crashes on some systems when Quit-To is used to switch between applications. My tests indicate this is caused by a bug in Cool Cursor.

With some systems there is an intermittent problem when switching from AppleWorks 3.0 to Copy II Plus 9.0 or 9.1. Because PublishIt 4 (and perhaps other versions) doesn't properly dispose of the memory it allocates, a system crash or other error may occur if you use Quit-To to switch from PublishIt 4 to AppleWorks 3.0.

I hope that Quit-To adds to the value and usefulness of your IIgs for years to come. If you have any problems or comments, please get in touch through one of these addresses:

Karl Bunker
59 Parkman St.
Brookline, MA 02146

GEnie: K.BUNKER
America Online: KarlBunker
CIS: 71540,1767

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Rails West! Simulation Game Short Rules

Docs Written by: The Kid
Edited by: Wile Coyote

Note: These are the "Short Rules" provided by Strategic Simulations. It is the bare bones necessary to play the game. To really understand the game and get some hints about strategy you will need the longer docs. These will be provided in a separate file.

(A color monitor is highly advisable.)

Number of Players: 1-8, up to 4 can be controlled by the computer

Length of Game: Long Scenario lasts 31 turns (1870-1900) Short Scenario lasts either 6 turns (1890-95) or 11 (1890-1900)

Object of Game: Accumulate cash, stocks, and bonds and control viable transcontinental railroads. A transcontinental runs between one or more of he western terminals (Seattle, Portland, San Francisco, LA, or Mojave) and one or more eastern terminal (St. L MISSING TEXT

The Map: There are 33 cities connected by 68 potential/actual rail lines. Potential lines are white. Other colors represent efficiency levels. Violet=low, Orange=medium, Green=high.

Phases of a Turn

1) Operations: Various economic indicators are calculated at this point. Interest on call loans is collected, bad call loans are called, some randomly selected loans are called and companies are declared bankrupt as necessary. Action points are deter

2) Computer/Player Phase: With difficulty set at 1 or 2, the computer goes first. Difficulty set at 3, first move is randomly selected and on

3) Computer Action Phase: Computer-run player moves displayed, hitting

SPACE BAR will pause it (slight delay in reacting to it).

Player Action Phase

There are two menus (Player Action Menu and RR ACTION Menu, reached by selecting RR ACTION). Most actions cost 1 action point. Free actions are: Read Map, Read Account, RR Statistics, and Read Account (on RR ACTION menu). A bankrupt player or one with no

Player Actions

BUY/SELL SECURITIES: Made in blocks of 1000 shares or bonds. Any purchase or sale results in the shock price being recalculated, bond prices are not affected.

SELL STOCK: The public never buys stock at less than 3 and buys only as much as it already owns, a minimum of 1000-4000 shares.

BUY STOCK: A player must buy with cash. The public never offers all its stock, it offers fewer (Minimum: 1000 shares) higher priced shares and more lower priced shares.

SELL BONDS: The public won't buy bonds selling for less than 101.

APPLY FOR LOAN: The maximum loan equals the net worth in cash and securities minus previous loans.

START NEW RAILROAD: If less than 20 exist, players may start a new RR corporation, acquiring control and 100,000 shares of stock for a minimum payment of $300,000. The new RR must charter a line during the turn or be eliminated.

READ ACCOUNT: Your cash balance, call loans, numbers of stocks and bonds

CONTROL RAILROAD: Player must own at least 10% of the RR's shares and more than any other player trying to gain control.

RECALL RR LOAN: Player recalls all or part of any loan. To repay, the RR must have the cash and not owe interest on its bonds.

REPAY LOAN: Obvious

READ MAP: " "

RR STATISTICS: " "

RR ACTION: Can only be taken for a RR you control.

Railroad Actions

SELL/BUY STOCK/BONDS: Same as for Player companies except: 1) A RR may buy/sell from player's company or the market, 2) the cash a RR gets goes to paying off call loans, and 3) RRs are not allowed to own securities from other RRs.

REPAY BANK LOAN: Repays call loans that result from building or from raising efficiency.

RESIGN CONTROL: Do so to save action points.

READ ACCOUNT: See how much cash the RR has, how much it owes in call loans, how many unissued stocks and bonds it has. Bankruptcy is shown in negative bank balances.

CHARTER LINE: A RR must charter (cost: $300,000) a line segment before it can build on it. May only have one unfinished line at a time. The new line must connect to an existing one, if one exists. It must be completed within a time limit (with exceptions)

RAISE EFFICIENCY: The RR does not need cash but must not be bankrupt or owe bond interest to do this. The new color is drawn, several financial operations occur.

BUILD NEW LINES: RR must have an uncompleted chartered line and can only do this once per turn on any line. Do not need cash but must not be bankrupt or owe bond interest. Cost is based on economic level with a premium for more than 15 dots (and a maximum

CHANGE DIVIDEND: Set rate between 0 and 25.

PAY INTEREST: If the RR passed up paying its bond interest at some point, it may pay 1 year's back interest. May be performed more than once (to pay off older interest). Must have enough cash.

FLOAT SECURITIES: RR may float its own securities through an investment banker. The banker may offer free stock to encourage purchases. Banker's charge=10%. These bonds are not subject to the same market forces as stocks.
Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 898 of 1262

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INTRODUCTION

As NATO and Warsaw Pact tanks battled for control of the West German plain, an elite Soviet para assault regiment, flying at night from airfields in Soviet Central Asia, siezed the strategic Saudi Arabian airfield at Dhahran. Soon huge Antonov.22 transport planes were landing at Haaran, unloading T-72 tanks, BMP infantry combat vehicles, artillery, and BM-21 "Katyusha" rocket launchers. By morning, a large part of a motor rifle division, veterans of desert combat in Afghanistan, was on the ground. By the end of the day, the most important Persian Gulf oilfields were in the Soviet hands.

Within hours, C-141 Starlifters carrying the paratroops of the United States rapid deployment force took off from their airfields in Egypt. In the United States, C-5 Galaxies began taking on cargoes of armored personnel carriers and self-propelled guns. In the Indian Ocean, a U.S. Navy task force, carrying RDF armor and helicopters, set a course for the Persian Gulf.

RDF 1985, the second of when Superpowers collide scenarios, is a battalion-level simulation of the resulting battle. The rules are essentially the same as those in Germany 1985. This booklet describes the exceptions and the special conditions of desert combat that only apply to RDF 1985.

PLAYING THE FIRST GAME:

*You will now begin a solitaire game, in which you are the American commander, and the computer plays the Soviet commander.*

When the game options display appearars, hit 3 twice to reduce the strength of the Russian force and to expose all of the Soviet units to view. The Russian units are already in place.

Press the spacebar, and the game will begin with an American airdrop onto the desert.
1.1 THE MAP

Each hexagon of the 39 x 28 hex map represents 2.5 miles. On your screen, you will see one-twelfth of the total battle field. A number or a letter will tell which sector you are seeing. At the beginning of the game, all oilfields, villages, towns and airfields are Russian owned. If an American unit moves into them, they will be American owned, and the symbol will change. They can change ownership any number of times during a game. For their importance, see RDF victory conditions (11.0).

1.2 MOVING THE CURSOR

To move the blinking cursor around the map, type the command keys pictured in the diagram below:

```
   1
/ 6 \ 2
/ 5 \  A 3
```

1.3 MOVING UNITS

Press escape to move the cursor to the first unit and to enter its movement phase, and then use the command keys to move that unit. When you've used up the movement allowance of that unit, the cursor will find the next movable unit. When you have moved all of your units, the cursor will blink. Press control and e, and then e to end your turn.

1.4 THE SOVIET MOVE

The computer will move all of the Soviet units. During the Soviet move, you can stop the computer by typing escape. While the move is paused, you can use any of the special keys (12.0). To resume the Soviet move, press any key. When the Soviet move is finished, the cursor will begin to blink, indicating that the first four-hour turn is over. Press escape to move your first unit again.

2.0 MOVEMENT

2.1 THE MOVEMENT DISPLAY

The RDF movement display shows the word smoke; if it is highlighted, the moving unit is in a smoke filled hex. MM (mine) and NC (nuclear contamination) are not shown, since they play no part in this scenario.

2.2 AIR CAVALRY

Air cavalry uses one movement point (MP) per hex. In addition to this, air cavalry units will use:

2 extra MP's to enter a smoke-filled hex

1 extra MP for each sighting enemy unit (SEU)

(2 if the air unit is in trans mode)

1 extra MP if the enemy has air superiority, and the air cavalry is in the trans mode.

Air cavalry units cannot enter enemy-owned oilfield, village, town or airfield hexes.

2.3 UNITS IN TRANSPORT MODE

* Can only travel through town, village and airfield hexes, or along the roads.

* Cannot enter enemy-owned oilfields, towns, villages and airfields.

2.4 BRIDGING

Due to an exceptional lack of water in Saudi Arabia's rivers, no bridging is necessary in this scenario. Engineer units have no special functions.

2.5 TERRAIN

The effects of different types of terrain upon movement are detailed in the terrain effects table in the appendix.

3.0 MODES

3.1 SPECIAL MODE RULES

Engineer units are allowed to re-organize. No unit can enter river mode.

4.0 THE ORDER PHASE

Naval units cannot use strategic movement. They can only be moved with the move ment keys.

5.0 AIR POWER

5.1 THE AIR POWER DISPLAY

Hit ctrl a at any time to see an air power display like this:

```
NATO:3:RUSSIAN:1: :ALC:KEYS (A)IR SUPERIORITY:SPARE.9:0 :0-9 TACTICAL
1:6 :
```

This sample, the highlighted side, NATO, has three-to-one air superiority during this turn. The NATO player may allocate up to 9 spare points toward air superiorities by typing any number up to 9. The NATO player may call in up to 6 tactical air strikes during this turn.

5.2 CALLING AIR STRIKES

If its side has air superiority, and the air power display shows available tactical air strikes, any unit can call for a supporting strike by:

* Typing (o) for its order phase

* Typing (s) for support fire

If a player does not have air superiority, he cannot call for tactical air strikes during that turn. If the U.S. player has air superiority, he will have between 2 and 7 available air strikes. A Russian player with air superiority will have between 0-5 strikes.

5.3 AIR SUPERIORITY

* The U.S. player has air superiority during the first 2 turns.

* The Russian player starts the scenario with no spare air points, and he receives fewer points than the U.S. player each turn. It will take 5 or 6 turns before he has enough to challenge the U.S. player.

6.0 COMBAT

6.1 ARTILLERY DAMAGE

Para units, like BMP, tank, and APC units, suffer greater damage from artillery if they are in trans, attack or reor mode.
6.2 RETREATING UNITS
NAVAL UNITS THAT ARE FORCED TO RETREAT AFTER COMBAT WILL SUFFER INCREASED LOSSES INSTEAD.

7.0 REORGANIZATION
--------------- IN ADDITION TO THE NORMAL RULES THE U.S. PLAYER MAY USE A FRIENDLY AIRFIELD INSTEAD OF ITS HQ (WHICHEVER IS CLOSER) FOR RE-ORGANIZATION PURPOSES.

8.0 HIDDEN UNITS
--------------------- PARA UNITS WILL BE EXPOSED DURING THE TURN THEY LAND. EVEN IF THE HIDDEN GAME OPTION HAS BEEN CHOSEN. THEY MAY BE HIDDEN IN LATER TURNS.

9.0 MINES AND NUCLEAR CONTAMINATION
------------------------------------ MINES AND NUCLEAR CONTAMINATION PLAY NO PART IN THIS SCENARIO.

10.0 REINFORCEMENTS
--------------------- BOTH SIDES ARE SCHEDULED TO RECEIVE REINFORCEMENTS DURING THE TURNS SHOWN ON THE RDF DATA CARD.
RUSSIAN REINFORCEMENTS ARRIVE AT THE HEXES SHOWN ON THE DATA CARD.
* PARA UNITS ARRIVE WITHIN 3 HEXES IF THE DROP ZONES SELECTED BY THE COMPUTER, OR BY THE NATO PLAYER, HAS USED THE DROP ZONE PLACEMENT OPTION. (13.3).
* PARA UNITS CANNOT LAND ON ENEMY-OWNED HEXES, OR ON THE WESTERN THIRD OF THE MAP (SECTORS 1, 4, 7 OR A).

10.1 NAVAL UNITS
* NAVAL UNITS ARE MOVED THE SAME WAY AS CONVENTIONAL UNITS, WITH THE ORDER KEYS.
* AT SEA, NAVAL UNITS CANNOT ENGAGE IN COMBAT, CHANGE MODE. USE THE ORDER PHASE OR SUPPLY SUPPORTING FIRE.

10.2 LANDING NAVAL UNITS TO LAND, A NAVAL UNIT MUST END ITS MOVEMENT PHASE ADJACENT TO THE COAST WHERE IT INTENDS TO LAND. ANY UNIT WHICH MOVES AT SEA CANNOT LAND UNTIL THE NEXT MOVE. AT THE BEGINNING OF THE NEXT MOVE, THE UNIT WILL BE ABLE TO MOVE ASHORE.

* NAVAL UNITS CANNOT LAND ON ENEMY OCCUPIED HEXES OR ENEMY-OWNED TOWN OR VILLAGE HEXES.

10.3 NAVAL UNITS ON SHORE
ONCE ASHORE, NAVAL UNITS CONVERT INTO CONVENTIONAL UNITS, WITH A REDUCED MOVEMENT ALLOWANCE FOR THE FIRST TURN. UPON LANDING UNITS CHANGE AUTOMATICALLY TO NORM MODE. (ARTILLERY CHANGES TO FIRE).

11.0 VICTORY CONDITIONS
----------- THE GAME WILL END AFTER 21, 22, OR 23 TURNS, AT THE DISCRETION OF THE COMPUTER. THE COMPUTER WILL THEN COMPARE EACH PLAYER'S POINT TOTAL AND DECLARE A WINNER. POINTS ARE AWARDED AS FOLLOWS:
1 POINT FOR EACH ENEMY UNIT ELIMINATED (ENEMY UNITS WHICH EXIT THE BOARD DO NOT COUNT)
2 POINTS FOR EACH TOWN OR VILLAGE OWNED A PLAYER WITH 10 OR MORE POINTS THAN HIS OPPONENT HAS WON A DECISIVE VICTORY.

12.0 SPECIAL KEYS
------------------ THE SPECIAL KEYS CAN BE USED DURING YOUR OWN TURN WHEN THE CURSOR IS FLASHING, OR, BY PRESSING ESCAPE DURING THE COMPUTER'S MOVE.
* IF THE HIDDEN OPTION WAS CHOSEN WHEN YOU SET UP THE GAME, YOU CANNOT USE THE D (HIGHLIGHT DIVISION) OR THE F (STRATEGIC MAP) KEYS DURING THE COMPUTER'S MOVE.

13.0 GAME OPTIONS
----------------- A GAME MAY BE SAVED AT ANY TIME ON A SECOND DISK BY HITTING CONTROL B AND FOLLOWING INSTRUCTIONS. RDF GAMES MAY BE SAVED ON THE SAME DISK AS GERMANY 1985 OR OTHER SCENARIOS.

13.1 SAVING THE GAME
A GAME MAY BE RESTARTED AT ANY TIME ON A SECOND DISK BY HITTING CONTROL B AND FOLLOWING INSTRUCTIONS. RDF GAMES MAY BE RESTARTED ON THE SAME DISK AS GERMANY 1985 OR OTHER SCENARIOS.

13.2 RESTARTING A GAME
A GAME MAY BE RESTARTED AT ANY TIME ON A SECOND DISK. HIT THE NUMBER OF THAT GAME OPTION AND FOLLOW INSTRUCTIONS. THE NAMES OF GAMES AVAILABLE FOR PLAY WILL BE SHOWN NORMALLY. HIGHLIGHTED NAMES SHOW GAMES THAT BELONG TO OTHER SCENARIOS, WHICH CANNOT BE PLAYED WITH THE RDF DISK.


14.0 STRATEGY AND TACTICS

WHEN PLAYING AGAINST THE COMPUTER, REMEMBER THAT THE COMPUTER SIDE ALWAYS HAS ENHANCED AIRPOWER AND GREATER ABILITY TO REORGANIZE, TO
It is advisable to avoid a battle of attrition or hurried, uncoordinated offensives, and to concentrate on sharp, well-supported attacks to compensate for its lack of flexibility.

In effect, when you play against the computer, you are playing against a well-equipped and well-trained enemy, with little imagination and a tendency to go strictly by the book, a type of soldier plentiful in both the U.S. and Red Army.

Appendix:

### Terrain Effects Table

<table>
<thead>
<tr>
<th>Terrain</th>
<th>MPS</th>
<th>Sighting Distance</th>
<th>Combat Bonus</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. Rough</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Rough</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Oasis</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sabkha</td>
<td>4</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Village</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Town</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Oilfield</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Desert</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Sea</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

### Type vs. Type Battle

<table>
<thead>
<tr>
<th>US Para vs. Tank BMP ARTLY KATSH ENG</th>
<th>2</th>
<th>2</th>
<th>4</th>
<th>4</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russian vs. U.S. Para</td>
<td>-3</td>
<td>-2</td>
<td>-10</td>
<td>-10</td>
<td>-2</td>
</tr>
<tr>
<td>Tank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMP</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ARTLY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KATSH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### Reinforcement Schedule:

<table>
<thead>
<tr>
<th>USA</th>
<th>USSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT START</td>
<td>TURN 9</td>
</tr>
<tr>
<td>AIR DROP#1 3INF</td>
<td>AIRFIELD 4(1) APC</td>
</tr>
<tr>
<td>AIR DROP#2 3INF</td>
<td>1 SPG</td>
</tr>
<tr>
<td>TURN 2</td>
<td>1 ENGIN</td>
</tr>
<tr>
<td>3 AC</td>
<td>1 ENGIN</td>
</tr>
<tr>
<td>TURN 3</td>
<td>1 ENGIN</td>
</tr>
<tr>
<td>3 AC</td>
<td>1 ENGIN</td>
</tr>
<tr>
<td>TURN 4</td>
<td>1 ENGIN</td>
</tr>
<tr>
<td>AIR DROP#5 2(1) INF</td>
<td>TURN 13</td>
</tr>
</tbody>
</table>
The new GS/OS Driver I have written for the RAM Disk is designed to be a companion to RAM Disk Manager, however it will run just as well without the RAM CDA installed. On my computer I get nearly 3x the speed out of my RAM Disk.

What you have is a DEMO of the GS/OS driver. The "real thing" is part of the ROM package but you get it only after paying for RDM. $10 isn't too much to ask for such a useful utility. See the CDA documentation for information on how to pay for RDM.

This DEMO is just like the "real thing" except in one respect: You cannot write to the RAM Disk. This is just enough to tease you, and make you want to send me money. The fully functional driver is available immediately. With this demo you can play around with benchmarking programs and try things while at the same time it is counterproductive to try to use this for normal work. Use a ProDOS 8 program to copy files onto the RAM Disk and test it under GS/OS. Or whatever makes you happy.

One last thing. The driver is NOT being distributed under the shareware concept. It is available ONLY to registered users of RAM Disk Manager, with the exception of this demo. Remember, a measly $10 gets you both the CDA with the P8 driver and the GS/OS driver.

INSTALLATION: Put it in your DRIVERS directory. You're done. When the demo gets on your nerves, delete it. Simple. The file to copy is called "RDM.GSOS", or in the case of the demo, "RDM.GSOS.DEMO". When you install the release version be sure you delete the demo first!

* FEATURES *

o ROM 1 machines only. It's a feature until I can do something about it. That should be very soon, actually.

o 2-3x speed improvement. Fast! <1 millisecond access time. (Benchmark: ProSel-16 w/7 M6Z TransWarp)

o Smartport independent. That is, if Slot 5 is set to "Your Card", the driver is smart enough to install itself as a slotless device and you can access the RAM Disk anyway.

o Device independent. The driver will work even if you boot from the RAM Disk. One driver fits all.

o Fully Functional. Supports virtual RAM Disks. Transparent to the user with exception to the speed improvements. Works with RAM Disk Manager's CDA flawlessly.

That's about all I can think of right now. Read the other documentation file to see how to get a fully working version of the driver.

--Jeff
HUNT FOR RED OCTOBER
A Soft-Sect production
Documentation originally by:
The Dirtbag

Mission Documents
(Orders)
________________________________________

COURSE: Proceed W by NW, 2-9-0 degrees.

ULTIMATE DESTINATION: Cuba

ROUTE: Usual evasive track through Reykjanes Ridge. Head west past the north cape of United State's imperialist puppet state, Norway. Proceed to usual southwest massing point (same point used for North American nuclear attack simulations) and turn towards open Atlantic. Maneuver per standard procedures.

SEA TRIALS: You are to push RED OCTOBER to her limits. Every element of RO's design must be tested and evaluated, especially the Caterpillar Drive.

STRATEGY: To thoroughly evaluate the RO and the Caterpillar Drive, you must elude all naval vessels from all nations (friend and foe alike). This evasion must be treated with utmost seriousness by the entire crew.

Naturally, United States and NATO naval patrols will try and trace your every move. The Soviet navy will also engage in a major exercise to find and follow the Red October.

COMMUNICATION: This is a clandestine mission. Strict communication silence must be maintained to avoid being tracked by United States or Soviet sensors.

BACKGROUND: Some improvisation in navigation may be necessary in order to avoid detection. You are hereby officially notified that such improvisation is permissible for this mission.

Upon crossing the Atlantic, you will skirt down the North American seaboard from Virginia, south to Cuba. If you are successful, you will be the first Soviet sub to arrive at the secret sub base which is under construction near Cuba's Santa Cruz del Sur in the Golfo de Guacanayabo. A submarine replenishment vessel will rendezvous with you there. The exact rendezvous coordinates are in the boat's computer (priority access-key sequence).

A week of rest and relaxation awaits you on the most beautiful beaches of Cuba. Shore leave will not take place, however, if your trek to Cuba is discovered. We presume this discovery will not occur. When the shore leave is complete, follow the same Sea Trials and Strategy on your return trip.

CLOSING: Every time a Soviet vessel puts to sea, it is protecting the sovereignty of our beloved socialist homeland. This is the most important naval technological test we have ever undertaken. The Caterpillar Drive should allow us to move through the world's waters with complete stealth avoiding the aggressive sensor devices deployed by the West. We will at last have naval superiority!

And to the Red October's crew: do your duty. There are no small jobs on the RO; the responsibility for the success of this mission lies with every man, from the highest officer to the lowest seaman. Follow orders, be diligent, and make the homeland proud of you.

END ORDERS
Admiral Yuri Ilych Padorin
YIP/tjc

As commander of the nuclear-powered sub, Red October (RO), you're in charge of one of the most powerful weapons on earth: difficult to detect, swift to strike.

You've been entrusted to test the latest in Soviet naval technology: a revolutionary "Caterpillar" Drive that will make the RO practically undetectable. Unfortunately for Mother Russia, they've trusted the wrong man. You plan to defect to the US and hand over the Reds' new technology.

You've handpicked your officers, men who will risk their lives for your plan. The enlisted men suspect nothing and this must not change. Your mission orders (faked, of course) will help keep your crew in the dark.

The defection plan is cunning. Your engineering officer fakes a leak in the main reactor, and in the confusion, your RO officer, who is a defector, will slip aboard the US Navy ship. You will be able to defect on a replenishment vessel and steal away with the Soviet boat.

The defection starts in the Reykjanes Ridge (affectionately renamed "Gorshkov's Railroad" after Admiral Gorshkov). Along the Ridge are Russian underwater listening network, all with the sole purpose of preventing boats like the Red October from slipping through to the open special event (message, ridge, etc.). The RO's commands must be selected through the keyboard equivalents listed on the preceding pages, or by selecting the commands from the actual menus.

You may use the cursor keys, a mouse, or a joystick for gameplay. When the game loads, hit a cursor key to use the cursor keys; click the mouse button to use the mouse; or press the firebutton to use the joystick. To use a different gameplay option (eg, the mouse instead of the joystick), reload the game, then make your selection.

If you're using the keyboard, the arrow keys direct the RO and number keys 1-5 select the options shown to the right of the Main Display Window (sonar, engines, etc.). If you're using the mouse, click the mouse button to accept commands. If you're using a joystick, press the firebutton to accept commands.

MOVEMENT

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
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Information is vital for the success of your mission. Information is a sub commander's lifeline. The data displayed in this window also doubles as the Sonar Information Window. Messages can be scrolled up and down by clicking on the up and down arrows at the left of the window.

Sonar Information Window (Message Window):

- **Periscope Depth**
- **Sonar Contact Bearing**
- **Sonar Data Locked In**

This Window always shows the Terrain Map, Hydrophone Display, or Torpedo Depth & Heading Windows, depending on what was last selected from the options on right (1-5).

**Press Contour once to call up the Contour Display in the Main Display Window. Click it again to see the Sonar Display.**

**MAIN DISPLAY WINDOW**
- This area is where all Maps, Periscope Views, Ship Recognition Charts, and Battery Power are displayed.
- Battery Power is always visible as a readout next to the battery icon above the Main Display Window. When the readout is completely green, you're fully charged. When it's completely red, you need to surface and recharge the batteries.
- **MESSAGE WINDOW**
  - Text information appears in the Message Window. This includes crew responses to orders, plus other information, including Sonar contacts, Electronic Surveillance Monitor message interceptions, damage control reports, etc.
- Messages can be scrolled up and down by clicking on the up and down arrows at the left of the window.
- The Message Window also doubles as the Sonar Information and Fire Control vessels. Each contact is keyed and details of the contact are shown in the left of the window.
- **Battery Power**
- **Recognition Charts**
- **Sonar Information**
- **Gun Information**
- **Torpedo Information**
- **Recognition Charts**

**CONTOUR/SONAR**

**ON**
- **Speed**
- **Depth**
- **Heading**
- **Range**

**OFF**
- **Speed**
- **Depth**
- **Heading**
- **Range**

**CONTOUR DISPLAY CONTROL**
- Click on this to turn the Contour Map ON or OFF in the Main Display Window.

**SONAR DISPLAY CONTROL**
- Click on this to turn the Sonar Map ON or OFF in the Main Display Window.

**ICONs**

**SONAR**
- Click on this icon to call up the sonar function icons. Submarines operate with a continuous "passive" sonar that gives approximate details of targets and their identity or bearing. This data requires verification by visual sighting or by the use of "active" sonar to gain an accurate fix.
- **Display**
- **Contour/Sonar**

**DOCUMENTATION FOLDER**

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

---

Apple II Computer Info

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You're leaving a trail for hunters. Collapses, water rushes forward against the blade, and lots of noise results from the low pressure area behind the trailing edge of the blade. This low pressure area does. When the propellers turn at high speed, they develop an area of low pressure. 

Propeller Drive - Propellers drive the boat faster than the Caterpillar Drive does. The sub sucks water in through the bow and the impellers eject it forward. 

Caterpillar Drive - The Caterpillar Drive uses impellers rather than the propellers. The sub sucks water in through the bow and the impellers eject it from the stern, thereby moving the boat very quietly, but also very slowly. 

Propeller Drive - Propellers drive the boat faster than the Caterpillar Drive does. When the propellers turn at high speed, they develop an area of low pressure behind the trailing edge of the blade. This low pressure area collapses, water rushes forward against the blade, and lots of noise results (you're leaving a trail for hunters). 

ENGINES

Nuclear - Nuclear power gives you the fastest speeds. However, after game day 12, the nuclear power plant is shut down (this is part of the defection plan). Diesel - Diesel power is noisier than nuclear; but, after you lose the nuclear power plant, diesel is all you have.

Caterpillar Drive - The Caterpillar Drive uses impellers rather than the propellers. The sub sucks water in through the bow and the impellers eject it from the stern, thereby moving the boat very quietly, but also very slowly.

Propeller Drive - Propellers drive the boat faster than the Caterpillar Drive does. When the propellers turn at high speed, they develop an area of low pressure behind the trailing edge of the blade. This low pressure area collapses, water rushes forward against the blade, and lots of noise results (you're leaving a trail for hunters).
**OVERALL STRATEGY & TACTICS**

While stealth is vital, failure to make headway early will result in major troubles. Fortunately, RO has an advantage over it's rival. The Caterpillar Drive provides silent, virtually undetectable movement. The drawback? Using the Caterpillar Drive reduces the RO's speed by two-thirds.

Extended use of the diesel back-up engines increases the need to surface and recharge the batteries. This increases the risk of discovery. Another risk is being attacked, an event which is quite likely.

And don't forget that not to raise the suspicions of the crew. To journey too far from the course outlined in the mission "orders" will cause concerned questions from your navigation officer and may result in your being relieved of command (mutiny!).

---

**NAVIGATION**

Figuring out how to get from Iceland to the Eastern Seaboard of the United States is your navigational challenge. Do you head directly south, or do you go north, first, to throw your pursuers off track? It's up to you.

The North Atlantic Map shows approximate positions of all fleets in relation to the RO.

The Contour Map helps you negotiate the complex valleys of the Reykjanes Ridge, the main route for Soviet Ballistic Missile subs heading for the open Atlantic. This Ridge is where Red and US attack subs constantly lurk.

You can superimpose the Sonar Map over the Contour Map for a more complete picture of who's in the area.

Using these three Maps together, you can plan the safest route to your objective.

---

**Evasion**

Both the U.S. and the Soviet navies have sophisticated sensing devices. There is a way to avoid these (or at least confuse them): sail through obstacles which block the devices' sensors: rocks, ranges, and reefs.

Note: The RO's hull is extremely sensitive, so be careful not to run into anything! After five collisions with the ocean floor the RO is sunk!

Despite the RO's new hull design and the anechoic (noise-absorbing) tiles, it is not immune from sonar (even with the Caterpillar Drive on). Ships and aircraft carry sophisticated beacons that can find the most silent sub. And your night enhancement is turned on! anything! After five collisions with the ocean floor the RO is sunk!

**Under Attack**

Typical Anti-Submarine Warfare (ASW) engagements have several stages.

First, the hunter seeks his quarry. It's likely that the search will be confined to passive sensors, aided by satellite or sea bed sensors. Once contact is made, your sub's classification is determined. The acoustic signature of the target (e.g., sub type, defense systems, etc.) is compared with those in the hunter's data banks. The hunter then moves into an attack position (within about six miles - roughly half a torpedo's range).

If the attack is a success, you're sunk. If not, you can run for it, play "possum", or return fire.

---

**Maps**

Click on this icon to toggle between the Atlantic Map (a view of the entire game area) and the Contour Map.

This won't turn on the Contour Map if you've turned it off from the Main Control Panel using the CONTOUR/SONAR button.

---

**Apple II Computer Documentation Resources**

DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 906 of 1262
USUAL ATTACK WEAPONS

One of the oldest anti-sub weapons is the torpedo. Aircraft, surface ships, and other subs carry these. The RO (or any other nuclear sub) can outrun torpedoes if there's enough time to react. Some torpedoes don't give much warning, however. These torpedoes are delivered to the target via rocket-launchers. After parachuting into the sea, these "fish" quickly home in on their targets.

You can use electronic decoys to fool torpedoes. These simulate prop and general sub noise and are towed about 400 yards behind. Hopefully, the torpedo will hit the decoy instead of you.

A riskier proposition is to head for the torpedo! This only works if your within 1000 meters of the launching vessel. A fish doesn't have time to arm itself within that distance. Thus, if you ram it, it won't explode.

Another traditional anti-submarine weapon is the depth-charge. They're very accurate! If you find yourself under depth charge attack, take evasive action immediately (leave!).

Ship-launched missiles are another threat, though they're not as accurate as torpedoes and depth charges (unless, of course, you're on the surface in which case you're a sitting duck). The best defense against a missile attack is to dive deeper.

There is also danger from mines. The hydrophonics officer keeps you posted of mine fields.

The threat from the air can be the most dangerous since aircraft are hard for subs to detect or defend against. Jets, helicopters, and prop planes carry plenty of search AND destroy equipment.

ON THE OFFENSIVE

RO's defenses are limited to four torpedo tubes. Her torpedo range is 10-12 nautical miles, though chances of a hit are best at about six miles. While acoustic torpedoes can be targeted via sonar bearings from the Fire Control Computer, you can also carry out traditional periscope-view assaults. If torpedoes are set for manual override, you'll have to guesstimate the target vessel's course in relation to the trajectory of the torpedo.

HINT: Try a "noisy sprint" at a target, followed by a silent drift. This may sneak the RO into a good strike position.

Note: If you attack a US ship, naturally, they'll sink you! If you fire on the Soviets or they fire on you while you're in range of US vessels, the US may join the Reds in a seek-and-destroy mission against you, thinking you're a renegade ship with the potential for instigating a nuclear war.

END OF THE GAME

Whether the Red October is destroyed or you succeed in your mission, you'll get a news report on your computer screen that lets you know exactly what happened.

Be sure to call...

Ethereal Dimension Exclusive - Soft-Sect homebase - 9600/104mg. - 301-529-6418
Magnetic Page - Soft-Sect subsidiary - 9600/80mg. - 312-966-0708

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DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 907 of 1262
The objective of the mission is to rescue as many stranded pilots as you can without getting obliterated. Also, try to blow up every enemy craft and installation that is possible.

The mission profile is as follows: Boot up your flight disk and board your spacecraft. Once aboard, you’ll be facing a screen that shows what level you have selected. Use the arrow keys to change it, the range is 1-16. Then press the space bar to return and launch out to a planet. You’ll see the screen split in two. Seconds later you are shot into space. The computer finds a suitable planet and then begins a short re-entry sequence. That only takes a few seconds too. You are now skimming the planet and looking for stranded pilots. Pay close attention to your two scopes, they are very useful and always reliable. When you see an enemy, blow him out of the sky with your photon cannons. When you spot a pilot’s ship get ready to land near it. You should reduce speed to around 500 feet per second and fly close to ground, heed the warning: the micro-altimeter in quadrant 1. Look at your range display and make sure it is less than 3 units for the distance to the ship. If not, the pilot won’t run that far. When it reads 2 you should start the landing sequence. If you are too high the computer won’t land the ship. Upon a successful landing shut down your systems and wait for the pilot to salvage any fuel he can from his ship. He’ll then give it to you upon boarding your ship. Be sure to open your airlock for the pilot. Sometimes it is best to leave the airlock shut till the pilot comes and knocks on it. There may be an alien instead of a pilot, you can without getting obliterated. Also, try to blow up every enemy craft without getting obliterated. Also, try to blow up every enemy craft.

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Every so often you may wish to refer to your status display. You do this by pressing the ‘C’ key. At the top of your screen will appear your status. You will first see a row of money bags, you will see a number of large and small bags (four small bags equals one large). As you buy more items your money supply diminishes. After a quick pause it will show you how many bombs you have aboard. Then it will show you many missiles you have, how many men you have aboard (if any) and how many helicopters remaining. There is also a radar at the top of the screen. It’s basically self-explanatory, the only thing you may want to know is that the large white squares are helicopters. When you hit

---

Your Status:

- Money: $0
- Large Bags: 0
- Small Bags: 0
- Bombs: 0
- Missiles: 0
- Helicopters: 0

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When you will see directly below the radar your fuel line. Check this occasionally because your fuel diminishes quickly. Remember that if you run out of anything you can always replenish your supply.

Price List

<table>
<thead>
<tr>
<th>Item</th>
<th>Prices</th>
<th>Maximum No. on screen</th>
<th>Can be destroyed by:</th>
<th>Can be destroyed by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armored Vehicle</td>
<td>3 small bags</td>
<td>Seven</td>
<td>Men, Tanks, Electricians, helicopters</td>
<td>Bombs, bullets</td>
</tr>
<tr>
<td>Demolition Van</td>
<td>2 small bags</td>
<td>Five</td>
<td>Electricians &amp; tanks &amp; helicopters</td>
<td>Bombs, bullets</td>
</tr>
<tr>
<td>Helicopter</td>
<td>5 large bags</td>
<td>One</td>
<td>Men, tanks, enemy helicopters</td>
<td>Bombs, bullets</td>
</tr>
<tr>
<td>Copters</td>
<td>bags</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men &amp; Vehicles</td>
<td>1 large bag</td>
<td>Thirty Five</td>
<td>Men, tanks, Armored Vehicles</td>
<td>Bombs, tanks, Armored Vehicles</td>
</tr>
<tr>
<td>Electricians</td>
<td>small bag</td>
<td></td>
<td>Men, tanks, Armored Vehicles</td>
<td>Bombs, tanks, everything</td>
</tr>
<tr>
<td>Tanks</td>
<td>1 large bag</td>
<td>Five</td>
<td>Bombs, tanks, everything</td>
<td>but Base</td>
</tr>
<tr>
<td>Gun</td>
<td></td>
<td></td>
<td>Helicopter, copters</td>
<td></td>
</tr>
<tr>
<td>Turrets!</td>
<td></td>
<td></td>
<td>Tanks, copters</td>
<td></td>
</tr>
<tr>
<td>Tactical Stations!</td>
<td></td>
<td></td>
<td>Bombs, copters</td>
<td></td>
</tr>
</tbody>
</table>

Purchasing Items:

To buy an item, any item, just press the letter you wish at any time. Obviously as you buy more items you lose more money. You should always keep track of how much money you have.

Description of items:

Armored Vehicles:
These have one guided missile on them and use it as soon as the enemy helicopter comes within range. Although the missile doesn't always hit the enemy you stand a good chance. The problem with these is that they can only be used once each.

Demolition Vans:
You need to get one of these to the enemy's base to win. Make sure that you have plenty of tanks around it because they can be destroyed by anything.

Electricians:
They are exactly like men, but if you let them walk to one of your turrets, they will repair it as long as they are not attacked while they are doing it.

Men:
Men are deployed in groups of five and then can be picked up by landing near them and letting them walk into your helicopter. Then by hitting the space bar while in the air you make them parachute out. (Note: You may only carry five men at a time and when you release them some may not open their parachute).

Tactical Stations:
These stations lie on six different parts of the screen. The first three are yours and the others are the enemy's. These act like exterior defenses in such that if the enemy's helicopter crashes into one of your stations it explodes. The same thing happens if you crash into his. To take over a station drop off one of your men and he will enter the station. To simply destroy it shoot the balloon-like object a couple of times or simply blow up the building with plenty of bullets or bombs.

Tanks:
Probably the most effective item that you have but you can only have five on the screen at once.

Turrets:
There are four of these on the screen two belonging to you and the other two to him. You must destroy these before your helicopter can get past. Tanks are the only things that can destroy these so send them out first.
When you boot the Ringside Seat disk you will be given the following options:

(F) Play a Game (E) Enter/Revise/List Fighter Data (I) Initialize a disk for saving fighters

Selecting option F will first prompt you for the mode of play. You may have the computer manage either, neither, or both boxers. Apple owner may choose either the keyboard or paddle inputs. If you have selected any other item than demo mode the computer will next ask you to enter the name/division of the two contestants (the name and division for each fighter can be found by using option E). The division is a two-letter code representing the weight class of the fighter. Be sure to separate the name and division of each fighter with a dash (-).

As an example you might enter Louis-HW. After you have selected the two fighters you will be asked to enter the number of rounds you wish for the current fight. Enter a number between 3 and 15 inclusive. Should either fighter have the ability to fight as either a boxer or slugger, you will be prompted for the style you wish the fighter to use during this fight (once a style is selected it cannot be altered during the fight). You will then be asked if you prefer to have the cumulative judges’ scores displayed while the fight is in progress (either A or B). The judges’ round by round scores will be given upon the conclusion of the fight.

Playing the game

In the game, both managers select their fighter’s strategy each round. Once a strategy for a round is selected, that strategy is employed for the entire round with one exception:

A fighter may opt to cover up during a round in order to avoid being knocked out. Following a devastating punch or a knockdown, the fighter being hit may not cover up until the aggressor’s “following up” sequence is completed. If you wish to cover up, and paddle control has been requested (Apple only), push the button until the cover up strategy is displayed. If the keyboard is being used, pressing the “Z” for fighter #1 or the “/” for fighter #2 will cause the fighter to cover up.

Once both managers have selected the strategy for their fighter, the round bell will ring and the two fighters will approach ring center.

The display

Displayed on the screen while the fight is in progress are the fighters’ names, the round clock, the strategy of each fighter, the round number and the cumulative judges’ scores if selected, the percentage of stamina remaining, and a representation of the boxing ring. The top of the screen is used to announce the beginning of each round, and also to describe any ring movement of the fighters. The bottom half is used for color commentary and a description of the blow-by-blow action taking place in the ring.

The scoring section, based on the “10 point must” scoring system, shows the cumulative round-by-round scores by judge 1 (J1), judge 2 (J2), and judge 3 (J3). The cut, injury and condition section shows any cuts, injuries or other conditions sustained by the fighters during the fight. The boxing ring display provides a visual indication of the position of the fighters throughout the fight.

Displayed above each fighter’s name before the bout begins are two numbers (e.g. 2/1). The first number indicates his ability vs a boxer and the second number indicates his ability vs a slugger.

The strategy selection inputs for each fighter will appear at the bottom of the screen at the beginning of each round. Immediately following each strategy is a number representing how well a fighter employs the particular strategy (this number may be reduced as stamina is used up, and a fighter begins to tire). Selecting a strategy by paddle is done by turning the paddle knob until the desired strategy is displayed. Pushing the paddle button locks in the choice, and that is the strategy used during that round. Selecting a strategy by keyboard is done by typing the number associated with the desired strategy:

1 - Flat Footed
2 - Cover Up
3 - Charge In
4 - Stick & Move
5 - Stay Away
6 - Go for KO
7 - Protect Cuts

Pressing the [return] key will lock in the choice as the desired strategy for the upcoming round.

Strategy Actions

The following is a description of each of the seven strategies available to each fighter each round.

1 - Fight Flat Footed

Fight flat footed allows a fighter to rest during a round. His ability to control the fight, his aggressiveness, and his defense all suffer and he becomes a much easier target while using this strategy.

2 - Cover Up

Cover up is usually used after sustaining considerable punishment. This is the only strategy which may be changed during the round (but playing a game). Cover up considerably reduces the fighter’s ability to land a punch and to control the action. It can also cause the opponent’s punches to be partially blocked. Use this strategy if you fear a knockout is imminent in the round, or if you want the opponent to punch himself out.
ABLE TO REGAIN SOME STAMINA. IF HE REGAINS ENOUGH, HE MAY ALSO REGAIN OPTION.

TIRED. IF THE FIGHTER CAN MANAGE TO REST DURING A ROUND, HE MAY BE STRATEGIES. SOME STRATEGIES ARE NOT USABLE IF A FIGHTER BECOMES TOO FIGHTER'S NAME.

REMEMBER THAT AS STAMINA DECREASES, SO DOES THE ABILITY TO UTILIZE FIGHTER ON THE LIST. THIS IS DONE BY ENTERING THE NUMBER NEXT TO THE

------------------- ALLOWS YOU TO LIST ALL OF THE FIGHTERS, OR JUST THOSE IN A PARTICULAR

CONTROL THE ACTION IN THE ROUND. WILL RETURN YOU TO THE MAIN MENU.

FIGHTER FOR MORE SHOTS TO THE BODY. YOU WILL ALSO LOSE SOME ABILITY TO OPTION B

BLOWS TO BE BLOCKED MORE EASILY, BUT AT THE SAME TIME OPENS UP THE AND PREVENT CUTS FROM GETTING ANY WORSE. THIS STRATEGY CAUSES HEAD YOU AND ALL OF YOUR FRIENDS.

YOU THINK THEY ARE VERY BAD). THIS STRATEGY CAN ALSO BE USED TO TRY IMAGINABLE - FROM THE GREATEST FIGHTERS OF THE PAST AND PRESENT, TO ENOUGH TO STOP A FIGHT (YOU WILL HAVE TO USE YOUR JUDGEMENT ON WHEN PROVIDES THE ABILITY TO ENTER AND SAVE FIGHTER DATA FOR ANYONE

7 - PROTECT CUTS

PROTECT CUTS IS USED WHEN TRYING TO PROTECT CUTS WHICH COULD BE BAD OPTION A

WHEN USED EARLY, GIVES THE FIGHTER A MUCH GREATER CHANCE TO SCORE. WHEN USED LATE IN A FIGHT, THE FIGHTER'S CHANCE FOR A KNOCKDOWN IS SOMEWHAT IMPROVED, WHILE AGAIN INCREASING THE OPPONENT'S CHANCE AS FOLLOWS:

1) A CUT IS SAID TO BE BLEEDING WHEN IT IS BORDERED IN RED.

2) A CUT IS SAID TO BE EXTRA DEEP OR WORSENED WHEN IT IS DISPLAYED IN INVERSE.

3) A CUT IS SAID TO BE CLOSED WHEN IT IS IN NORMAL TYPE (NOT BORDERS). BORDERED).

TO SCORE. THIS ADDED DEFENSE IS ATTAINED AT THE EXPENSE OF PUNCHING POWER. USE THIS STRATEGY EARLY IN A FIGHT TO AVOID THE OPPONENT'S POWER WHILE HE IS WELL RESTED, OR AFTER A ROUND IN WHICH YOU SUFFERED MODERATE PUNISHMENT. THIS WILL ALLOW YOU TO RECUP SOME STRENGTH WHILE NOT LOSING MUCH CONTROL. A FIGHTER MAY NOT USE THIS STRATEGY IF HE HAS NO STAMINA REMAINING. THIS STRATEGY MAY NOT BE USED MORE THAN FOUR TIMES IN SUCCESSION (REFER TO "CHARGE IN" FOR RESTRICTIONS REGARDING THIS RULE).

5 - STAY AWAY

STAY AWAY USUALLY IS USED WHEN ULTIMATE DEFENSE OR COUNTER-PUNCHING IS DESIRED. THIS STRATEGY CAUSES THE FIGHTER'S PUNCHES TO LAND WITH MUCH LESS STING, BUT IT ALSO REDUCES THE CHANCE OF BEING KNOCKED DOWN. USE THIS STRATEGY AFTER A PUNISHING ROUND NOT QUITE BAD ENOUGH TO DICTATE COVERING UP. ALSO USE THIS STRATEGY IN LATE ROUNDS WHEN YOU ARE WAY AHEAD IN POINTS.

6 - GO FOR THE KNOCKOUT

GOING FOR THE KNOCKOUT IS USED IN AN EFFORT TO GET THE FIGHT OVER EARLY, OR TO PUT AWAY THE OPPONENT AFTER A GOOD OFFENSIVE ROUND, OR LATE IN THE FIGHT WHEN NO HOPE IS LEFT FOR A DECISION. THIS STRATEGY, WHEN USED EARLY, GIVES THE FIGHTER A MUCH GREATER CHANCE TO SCORE. WHEN USED LATE IN A FIGHT, THE FIGHTER'S CHANCE FOR A KNOCKDOWN IS SOMEWHAT IMPROVED, WHILE AGAIN INCREASING THE OPPONENT'S CHANCE TO LAND A PUNCH, AND TO SCORE A KNOCKDOWN OF HIS OWN. USE THIS STRATEGY EARLY, IF THE FIGHTER HAS A GOOD KNOCKOUT PUNCH RATING, AND LATE TO TRY TO SALVAGE VICTORY FROM AN OTHERWISE SURE LOSS.

7 - PROTECT CUTS

PROTECT CUTS IS USED WHEN TRYING TO PROTECT CUTS WHICH COULD BE BAD ENOUGH TO STOP A FIGHT (YOU WILL HAVE TO USE YOUR JUDGEMENT ON WHEN YOU THINK THEY ARE VERY BAD). THIS STRATEGY CAN ALSO BE USED TO TRY AND PREVENT CUTS FROM GETTING ANY WORSE. THIS STRATEGY CAUSES HEAD HITS TO BE BLOCKED MORE EASILY, BUT AT THE SAME TIME OPENS UP THE FIGHTER FOR MORE SHOTS TO THE BODY. YOU WILL ALSO LOSE SOME ABILITY TO CONTROL THE ACTION IN THE ROUND.

NOTES ON STRATEGIES

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REMEMBER THAT AS STAMINA DECREASES, SO DOES THE ABILITY TO UTILIZE STRATEGIES. SOME STRATEGIES ARE NOT USABLE IF A FIGHTER BECOMES TOO TIRED. IF THE FIGHTER CAN MANAGE TO REST DURING A ROUND, HE MAY BE ABLE TO REGAIN SOME STAMINA. IF HE REGAINS ENOUGH, HE MAY ALSO REGAIN SOME OF HIS ABILITY TO USE HIS STRATEGIES. EMPLOYING A STRATEGY WHEN THAT STRATEGY RATING IS LESS THAN 2 MAY BE MORE OF A HINDERANCE THAN A HELP.

SOLITAIRE PLAY

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IF YOU ARE IN NEED OF AN OPPOSING MANAGER AND NO ONE IS AVAILABLE, ANGELO, THE COMPUTER BOXING MANAGER WILL BE GLAD TO COACH THE OTHER FIGHTER. SIMPLY SELECT THE APPROPRIATE OPTION ON THE "COMPUTER CONTROL MENU" AND THE COMPUTER WILL SET THE STRATEGIES FOR THE FIGHTER(S) YOU TOLD IT TO MANAGE.

STATUS AND CONDITION

--------------

IT IS POSSIBLE FOR A FIGHTER TO BE CUT OR SUFFER EXCESSIVE PUNISHMENT IN A ROUND. SHOULD ONE OF THE ABOVE OCCUR, IT WILL BE DISPLAYED IN THE SECTION DIRECTLY BELOW THE NAME OF THE FIGHTER SUSTAINING THE CUT OR PUNISHMENT. THE ACTUAL DISPLAY OF CUT STATUS VARIES ON EACH COMPUTER AS FOLLOWS:

1) A CUT IS SAID TO BE BLEEDING WHEN IT IS BORDERED IN RED.

2) A CUT IS SAID TO BE EXTRA DEEP OR WORSENED WHEN IT IS DISPLAYED IN INVERSE.

3) A CUT IS SAID TO BE CLOSED WHEN IT IS IN NORMAL TYPE (NOT BORDERED).

ENTERING AND REVISING FIGHTER DATA

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OPTION E

ON THE STARTUP MENU PROVIDES THE OPTIONS OF:

C: CHANGING EXISTING FIGHTERS' DATA.

A: ADDING NEW FIGHTERS

R: RETURNING TO THE MAIN MENU

L: LISTING THE FIGHTERS ON DISK

D: OMITTING EXISTING FIGHTERS

OPTION C

ALLOW YOU TO REVISE THE ENTRIES FOR AN EXISTING FIGHTER. THIS FEATURE PERMITS THE CORRECTION OF ERRONEOUS ENTRIES, OR THE MODIFICATION OF ACTUAL FIGHTER STATISTICS TO EXPLORE "WHAT IF?" POSSIBILITIES. FIGHTERS ON THE GAME DISK CANNOT BE CHANGED; HOWEVER, YOU MAY ADD THEM TO YOUR DISK AS NEW FIGHTERS AND ALTER THEIR PARAMETERS.

OPTION A

PROVIDES THE ABILITY TO ENTER AND SAVE FIGHTER DATA FOR ANYONE IMAGINABLE - FROM THE GREATEST FIGHTERS OF THE PAST AND PRESENT, TO YOU AND ALL OF YOUR FRIENDS.

OPTION R

WILL RETURN YOU TO THE MAIN MENU.

OPTION L

ALLOWS YOU TO LIST ALL OF THE FIGHTERS, OR JUST THOSE IN A PARTICULAR WEIGHT CLASS. IT ALSO ALLOWS YOU TO REVIEW THE PARAMETERS FOR ANY FIGHTER ON THE LIST. THIS IS DONE BY ENTERING THE NUMBER NEXT TO THE FIGHTER'S NAME.

OPTION O
NAME
A fighter's name refers to his last name. This cannot exceed 10 characters.

OVERALL RATING
This entry indicates the fighter's overall ability on a scale of 1 to 10, 10 being the best (7 = average).

DIVISION
This is the division the fighter fights in. This is used as the division when entering fighters for a fight.

VALID DIVISIONS ARE:
HW - HEAVYWEIGHT
WW - WELTERWEIGHT
MW - MIDDLEWEIGHT
LW - LIGHTWEIGHT
JL - JUNIOR LIGHTWEIGHT
FW - FEATHERWEIGHT
BM - BANTAMWEIGHT
LM - LIGHT HEAVYWEIGHT

FIGHTER STYLE
This entry indicates what style a fighter uses. Valid styles are B for boxer, S for slugger, B/S for boxer or slugger. A boxer is normally at such things as sticking & moving and defense, whereas a slugger is usually stronger and better at charging in.

ABILITY VS BOXER - This entry reflects how well the fighter employs his particular abilities vs a boxer style fighter on a scale of -3 to +3. +3 being the best, -3 being the worst, and 0 showing no distinct advantage or disadvantage.

ABILITY VS SLUGGER - This entry works the same as ability vs boxer except it applies to a slugger style fighter.

ABILITY TO FOLLOW UP - This entry reflects how well a fighter follows up, and attempts to put his opponent away after hurting him. It is based on a scale of 1 to 11, 11 being the best (7 = average).

ABILITY TO CUT HIS OPPONENT - This entry is an indication of how much a fighter cuts his opponent on a scale of 1 to 10, 10 being the most (4 = average).

ABILITY TO CHARGE IN - This entry indicates how effective a fighter is at using his charge in strategy. It is based on a scale of 1 to 5, 5 being the best (3 = average).

ABILITY TO STICK & MOVE - This entry works exactly like ability to charge in except it applies to stick & move.

ABILITY TO COVER UP - This entry works like the above except it applies to cover up.

ABILITY TO STAY AWAY - This entry works like the above except it applies to stay away.

ABILITY TO GO FOR THE KNOCKOUT - This entry works like the above except it applies to go for the KO.

ABILITY TO PROTECT CUTS - This entry works like the above except it applies to protect cuts.

ABILITY TO TAKE A PUNCH - This entry indicates how well a fighter stands up under a devastating punch or a barrage of lighter punches on a scale of 1 to 5, 1 being the best (3 = average).

ABILITY TO TAKE A PUNCH WHEN ALREADY HURT - This entry indicates how well a fighter stands up to a devastating punch or a barrage of punches if he has already been hit, on a scale of 0 to 5, 0 being the best (2 = average). This number is independent of ability to take a punch.

ABILITY TO AVOID BEING KNOCKED OUT - This entry is reflective of how easily the fighter is KO'd on a scale of 1 to 10, 1 being the hardest to KO (4 = average).

ABILITY WHEN TRAPPED - This entry indicates how a fighter is affected when he is trapped against the ropes or in a corner. It also reflects his ability to work himself free from one of these situations. It is based on a range of 10 to 34. The first digit indicates how good he is at getting free: 3 being very good, 2 being fair, and 1 being poor. The second digit reflects his ability while trapped: 0 being excellent, 1 being good, 2 being average, 3 being poor, and 4 being very poor.

ABILITY TO AVOID PUNISHMENT - This entry indicates how much punishment a fighter can take over an extended period of time, based on a scale of 1 to 5, 1 being the best (3 = average).

ABILITY TO NOT GET CUT - This entry reflects how easily a fighter is cut based on a scale of 1 to 10, 10 being cut the most (4 = average).

STRENGTH RATING - This entry indicates how strong the fighter is, and how hard he throws punches based on a scale of 1 to 12, 12 being the strongest (7 = average).

QUICKNESS RATING - This entry is an indication of the fighter's footspeed, defense, ability, and coordination based on a scale of 9 to +9, -9 being the quickest (0 = average).

STAMINA RATING - This entry indicates how long a fighter can go before tiring out. As his stamina is depleted, his ability to utilize his strategies begins to deteriorate. Stamina is based on a scale of 1 to 125, 125 being a fighter with tremendous staying power (97 = average).

AGGRESSIVENESS RATING - This entry reflects how tenacious a fighter is on a scale of 1 to 11, 11 being the most tenacious (7 = average). The higher this number, the better chance a fighter has of trapping his opponent. This entry will change throughout the fight depending on the strategies chosen and momentum.

PERCENTAGE OF TIME PUNCHES LAND - 40 to 45 is average, with 75 being the maximum allowed entry.

PERCENTAGE OF TIME PUNCHES MISS - 25 to 35 is average, with 87 being the maximum allowed for the total of punches landed and punches missed.

PERCENTAGE OF TIME FIGHTER CLINCHES OPPONENT - 10 is average, with 94 being the maximum allowed for the total of punches landed plus punches missed plus clinches.
PERCENTAGE OF TIME FIGHTER EMPLOYS RING MOVEMENT - 10 IS AVERAGE.

THE ABOVE FOUR CATEGORIES PERTAIN TO THE PERCENTAGE OF TIME THAT A FIGHTER DOES EACH ACTION. THE TOTAL OF THE FOUR PERCENTAGES MUST ADD UP TO 100.

PERCENTAGE OF TIME FIGHTER LANDS A PARTICULAR PUNCH (5 CATEGORIES) - THERE ARE FIVE TYPES OF PUNCHES WHICH A FIGHTER MAY LAND: JAB, HOOK, CROSS, COMBINATION, AND UPPERCUT. THE PERCENTAGE OF TIME A FIGHTER LANDS EACH TYPE OF PUNCH MUST BE ENTERED, AND THE TOTAL FOR ALL FIVE PUNCHES MUST EQUAL 100.

PERCENTAGE OF TIME PUNCHES LAND WITH EXTRA STING - THIS IS THE PERCENTAGE OF PUNCHES A FIGHTER THROWS THAT LAND WITH EXTRA EFFECT (50 = AVERAGE).

EFFECTS OF MANAGERS' DECISIONS

A FUNDAMENTAL CONSIDERATION IN THE DESIGN OF RINGSIDE SEAT WAS TO PERMIT EACH FIGHTER'S MANAGER TO BECOME INVOLVED AS MUCH AS POSSIBLE IN DETERMINING THE OUTCOME OF THE GAME THROUGH THE DECISIONS HE MAKES. THE EQUATIONS USED TO COMPUTE THE OUTCOME PROBABILITIES OF ALMOST EVERY ACTION MAKE EXTENSIVE USE OF THE VARIOUS STRATEGIES WHICH ARE UNDER THE MANAGER'S CONTROL.

ROBOTWAR

Welcome to the battlefield of the future! It is the year 2002. Wars still rage, but finally, they have been officially declared hazardous to human health. Now, the only warriors are robots - built in secret and programmed to fight each other to the death!

Your country has just developed the most efficient battle robot to date. It should be unbeatable - but part of its micro-computer "brain" is still blank. Only when a strategy is programmed into its memory will the robot be able to fight.

The task set before you is to program a robot that no other robot can destroy.

RobotWar is a fascinating and highly competitive game where robots battle each other to the death! RobotWar is not a game using manual dexterity, instead the robots are controlled by pre-programmed strategies and highly spectator interest.

As well as providing hours of entertainment, RobotWar is designed to teach and sharpen the skills of creative computer programming. Whether you are a beginner or an accomplished programmer, RobotWar will prove to be fun and challenging.

Robot war players design and write robot programs. The program is written with the help of a text-editor, and then translated by an assembler into robot-understandable instructions. The program can then be tested on a simulated robot to make sure it is working properly. Once the player is assured that the program is running as planned, it is installed in a battle robot and sent out to do battle with the other robots.

From the main menu, several options are selectable. These options are described below:

Option 1
This will access the Battle branch where the player can setup and execute one robot battle. See "robots and robot battles".

Option 2
This will access the robotwar assembler and testing branch where the programs are translated and checked for errors, or tested on a simulated robot. See "the assembler" and "the test bench".

Option 3
This will access the text-editor where an existing program can be edited or a new program can be written. See "writing and editing source code".

Option 4
This is a simple control that turns the battle sounds on or off. Pressing the 4 key will change the position of the sound switch.

Option 5
This will access the disk storage branch where a disk can be initialized for storing robot code. See "storing robots on auxiliary disks".

Option 6
This will cause the computer to exit from the robotwar program to applesoft basic.

Option 7
This will access the match scheduling branch where the player can...
schedule and execute a series of battles. See "robots and robot battles".

Option 9
This will allow the player to run a previously scheduled or interrupted match (a series of battles). If you resume a previously interrupted match it will begin with the battle after the one which was interrupted.

Note: If no option is selected from the main menu, the program will automatically select option 8. Robots and Robot Battles Locomotion

Each robot is moved by tracks mounted on a 1.5 meter square chassis. The two independent motors, driving the tracks, enable the robot to move vertically (north/south) and horizontally (east/west).

Power Supply
The power supply will take the severest damage from the enemy shells. It is built into the central body of the robot, along with damage sensors. These sensors monitor the damage to the power supply and when 100% damage is attained, the robot will explode.

Radar
On top of the robot is a radar unit that emits a beam in any desired directions. This beam reflects from walls and other robots and returns to the robot. The beam is accurately timed, enabling the robot to find it's position and to spot enemy robots.

Guns and Ammunition
Your robot is equipped with one gun that swivels through 360 degrees and is automatically loaded. It uses time-fused shells that can be set to explode at any specified distance. The gun also has a cooling period between each shot to keep it from overheating.

The Brain
Inside the robot is a micro-computer "brain" that executes the instructions exactly as they have been programmed. The brain has several parts: an accumulator where a robot performs all arithmetic operations, a program storage area where the instructions are stored in memory, and registers where numbers are stored. The brain links to input sensors monitoring damage and position as well as to the drive motors, radar, and gun. While the robot is on the battlefield the brain is in complete control.

The battlefield
Robot battles take place on a square battlefield inside four strong walls. Each wall is 260 meters long and strong enough that a robot cannot crash or shoot through it. As many as five robots can fight at once, but only one will emerge as the winner.

There is an observations station, directly above the battlefield, as a number from 0 to 256. 0 is at the extreme left of the battlefield and 256 is at the extreme right.

The Scoring System
Each robot has a score associated with it. As each battle is fought the robot's score is increased by points which are added to it's cumulative score. Every time a robot's program is changed, it's score is reset to 0.

Robots earn points in the following manner. During a battle, every time a robot is destroyed, 1 point is earned by all of the survivors. Thus in a five-robot battle, the first to be destroyed receives 0 points. For outlasting that first robot, all other robots on the battlefield earn 1 point. For outlasting 4 other robots, the winner of a 5-robot battle earns 4 points!

Controlling Robots
A robot computer contains 34 registers. The 34 registers are divided into three categories:

1. Memory registers which are used to contain numbers for latter recall.
2. Input/Output (I/O) registers which are used to monitor and control specific robot functions.
3. The Index/Data pair of registers which are used to access the other registers by their numbers instead of their names.

1. Memory Registers
There are 24 memory registers used to store numbers. The memory registers are named A through W and Z. (X and Y are not included - they are input registers as described below).
2. Input/Output Registers
There are nine I/O registers that allow the computer to control the robot's actions. Each controls or monitors a specific robot function as described below:

a) The X register:
The X register is used to monitor the horizontal position of the robot. It always contains the current horizontal position of the robot on the battlefield, as a number from 0 to 256. 0 is at the extreme left of the battlefield and 256 is at the extreme right.

b) The Y register:
The Y register is used to monitor the vertical position of the robot. 0 is at the top of the battlefield and 256 is at the bottom.

c) The AIM Register:
The AIM register is used to monitor and control the angle at which the gun is aimed. When a number from 0 to 359 is stored in the AIM register, the robot's gun will turn to that angle. 0 aims the gun due north, 90 aims it due east, etc. The AIM register always contains the current angular position of the gun.

d) The RADAR register:
The RADAR register is used to control the radar unit on top of the robot and monitor the results of the radar beam. Storing a number from 0 to 359 in the RADAR register, sends a beam out in that direction.

e) The SHOT register:
The SHOT register is used to fire the robot's gun and monitor the state of readiness of the gun. Storing a new number in the SHOT register: Sets the timer on the shell so that it will travel that number of meters before exploding, and then fires it. After a shot is fired the SHOT register will contain the state of the gun's cooling process. When the SHOT register contains a zero the gun is ready to be fired again.

f) The DAMAGE register:
The DAMAGE register is used to monitor the amount of damage detected by the damage sensors. The DAMAGE register starts at 100 at the beginning of each battle and decreases towards 0 as damage is incurred. When the register reaches 0, the robot is completely destroyed and will disappear from the battlefield. The DAMAGE register always contains the current extent of damage.
g) the SPEEDX register:
This register is used to control and monitor the horizontal speed of the robot. The number stored in the SPEEDX register can range from -255 to 255 and controls the direction and speed of the robot. A negative number moves the robot to the left at that many decimeters/second, and a positive number moves the robot to the right at that many decimeters/second. If a zero is stored in this register the robot will stop moving in the horizontal direction. The SPEEDX register always contains the horizontal speed of the robot.

h) The SPEEDY register:
Acts the same as the SPEEDX register, only in the vertical direction. A positive number is in a downward direction and a negative number is in an upward direction.

i) The Random register:
This register is used to control the random number generator. Storing a number in the RANDOM register sets the limit for the generator. Then, each time the RANDOM register is accessed, it will contain a different integer (whole number) between 0 and the random number limit which was previously set.

```
3. The index/Data Registers

The robot registers are usually referenced by their names. The Index/Data pair allows registers to be accessed by number instead of name.

Storing a number from 0 to 34 in the INDEX register causes the corresponding register to be used whenever the DATA register is referenced.

For example, assume the INDEX register contains 27. When the DATA register is referenced in an instruction, register #27 (AIM) will be substituted for DATA.

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-23</td>
<td>A-W</td>
<td>Storage</td>
</tr>
<tr>
<td>24</td>
<td>X</td>
<td>Current X position</td>
</tr>
<tr>
<td>25</td>
<td>Y</td>
<td>Current Y position</td>
</tr>
<tr>
<td>26</td>
<td>Z</td>
<td>Storage</td>
</tr>
<tr>
<td>27</td>
<td>AIM</td>
<td>Aims gun</td>
</tr>
<tr>
<td>28</td>
<td>SHOT</td>
<td>fires the gun</td>
</tr>
<tr>
<td>29</td>
<td>RADAR</td>
<td>pulses the radar</td>
</tr>
<tr>
<td>30</td>
<td>DAMAGE</td>
<td>monitors damage</td>
</tr>
<tr>
<td>31</td>
<td>SPEEDX</td>
<td>control horizontal speed</td>
</tr>
<tr>
<td>32</td>
<td>SPEEDY</td>
<td>control vertical speed</td>
</tr>
<tr>
<td>33</td>
<td>RANDOM</td>
<td>random number generator</td>
</tr>
<tr>
<td>34</td>
<td>INDEX</td>
<td>Index other registers</td>
</tr>
</tbody>
</table>
```
The Language of Robots

The Source Code

Robot programs are written in source code and then translated by the assembler into robot-understandable object code. Source code is composed of comments, labels, and instructions.

1. Comments:
   Comments are used for documenting the source code. Comments can appear anywhere in the program as long as they are preceded by a semi-colon.

   ```plaintext
   ] A TO B ;This stores a in b
   ```

   This is an example of a comment on the same line as an instruction.

2. Labels:
   A label is a reference point used to identify sections within a program. Labels are used in instructions to change the order of execution of the program.

   A label is composed of a group of 2 or more alpha-numeric characters immediately following a RETURN symbol (\]). A label must start with an alpha character (A to Z) and must be less than 32 characters long. A label cannot be the same as any of the register names or command words.

   ```plaintext
   -240 TO SPEEDX
   ```

   NOTE: Negative numbers can be stored as in the following example:

   ```plaintext
   ] -B TO A
   ```

   This example stores the negative of B in A. To store a negative of a register subtract the register from zero. For example:

   ```plaintext
   ] 0 -B TO A
   ```

   Arithmetic commands (+ - * /)

   Arithmetic operations can be performed on a value stored in the accumulator. Whenever the program encounters one of the arithmetic signs it performs the calculation using the contents of the accumulator and the value that follows. It then stores the results of the calculation in the accumulator.

   ```plaintext
   ] 240 + 100 TO A
   ```

   This example loads 240 into the accumulator, adds 100 to it, and stores the result (340) in the A register.

   f) math operators
      + adds two values
      - subtracts two values
      * multiplies two values
      / divides two values

   Restrictions:
   a) no parentheses allowed
   b) use only integer numbers between +1024 and -1024
   c) you must use a condition sign when using an 'IF'
   d) you may store negative NUMBERS in a register, but you can't store negative REGISTERS in a register.

   e) all math operations are done from left to right

   The TO command

   The TO command is used to store a value in a register.

   ```plaintext
   ] 240 TO A
   ```

   This example line of source code causes the computer to load the accumulator with a value of 240 and the store it in the A register.

   ```plaintext
   ] B TO A
   ```

   This example causes the computer to load the accumulator with the contents of the B register and then store it in the A register.

   ```plaintext
   ] 0 TO SPEEXD TO SPEEY
   ```

   This example causes the computer to load the accumulator with 0 and store it first in the SPEEXD and register and then in the SPEEY register. This could be used to stop a robot's movement.

   NOTE: Negative numbers can be stored as in the following example:

   ```plaintext
   ] -240 TO SPEEXD
   ```

   But, you CANNOT store the negative of a register in that manner. For example:

   ```plaintext
   ] -B TO A
   ```

   Will NOT store the negative of B in A. To store a negative of a register subtract the register from zero. For example:

   ```plaintext
   ] -B TO A
   ```

   Arithmetic commands (+ - * /)

   Arithmetic operations can be performed on a value stored in the accumulator. Whenever the program encounters one of the arithmetic signs it performs the calculation using the contents of the accumulator and the value that follows. It then stores the results of the calculation in the accumulator.

   ```plaintext
   ] 240 + 100 TO A
   ```

   This example loads 240 into the accumulator, adds 100 to it, and stores the result (340) in the A register.

   The IF command

   The IF command is used to compare a value with the contents of a register. It can test to see if a register is less than (<), greater than (>), equal to (=), or not equal to (#) a value. If the comparison is true the computer executes the next TO, GOTO, GOSUB or ENDSUB command. If the comparison is false the computer skips the next TO, GOTO, GOSUB or ENDSUB commands.

   The GOTO command

   A GOTO command causes the program to change it's sequence of execution by going to a designated label and continuing its execution from there. A GOTO instruction must always be followed by a label.

   The GOSUB command

   Another way to change the execution sequence is to use a GOSUB command. A GOSUB instruction is similar to a GOTO command. GOSUB must always be
followed by a label. GOSUB will cause the program to go to the designated label and continue the execution until it reaches an ENDSUB. When it encounters the ENDSUB, the program will then return to the next instruction after the GOSUB.

Caution:
Some illegal statements will be translated by the assembler, but then will do odd things when executed.

Programming a Robot
In order to make a robot perform, you must construct a program using the RobotWar language and your own strategy. This chapter gives examples of how instructions can be constructed, using registers, numbers, and commands, and how those instructions can be labeled and sequenced to create program routines.

Movement
Moving about the battlefield is an action a robot performs. To start a robot moving, store a value in the speedx or speedy register.

] 20 to speedx
] 250 to speedy

would start the robot moving down and to the right. However, the robot would continue to move in those directions, and would eventually hit a wall. Therefore, you must stop it at some point, by storing a zero in the speedx and speedy registers.

] 0 to speedx

A robot can only accelerate or brake at 40 decimeters/second. Even though 120 is entered into speedx register, it takes 3 seconds of acceleration to obtain that speed. Conversely, if your robot is travelling at 120 decimeters/sec it takes 3 seconds to stop the robot, after storing 0 in the speedx register.

A movement routine can be established, by incorporating the starting and stopping procedures into a test loop.

] 256 TO SPEEDX
] MVER1
] IF X > 230 GOTO STOP
] STOP
] 0 TO SPEEDX

Moves the robot to the right until it’s X position is tested to be greater than 230 and then it stops.

Monitoring Damage
Monitoring damage is vital to a robot’s survival. When a robot detects a hit, it usually moves to avoid being repeatedly hit by the enemy. By using the DAMAGE register, a damage detection routine can be established. This routine is usually nested inside another routine’s loop so that the robot can be checking for damage while it is performing some other action.

] DAMAGE TO D

Saves current damage in register D.

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Writing and Editing Source Code

Robot programs are entered into the computer using a text editor. The text editor may be entered by selecting option 3 from the Main Menu, or by selecting option 6 from the Assembler menu.

Text-Editor Procedure

When you first enter the text editor, you will see a blank screen with some numbers at the bottom and a flashing square at the top. The numbers at the bottom show the length of the text, and the file name under which it is stored. The flashing square is called the cursor, and is the computer equivalent of a pen for writing characters. As you use the text-editor you will be operating in two modes; the add mode and the cursor mode. The add mode is used to delete text at the cursor, move the cursor around in the text, adjust the position of the text on the screen, load source code files from the catalog, and save source code files to the catalog.

The blank screen indicates that the current text-editor file is empty. At this point there are two available options. One option is to begin writing a new source code, and the other option is to edit a robot that has already been stored.

Ctrl-A to enter the add mode. The letter "A" will appear in the lower right corner of the screen. You can now create a new source code file.

Esc Esc exits you from the add mode.

Ctrl-S to save the file on the disk. The word "SAVE" will appear on the left side of the screen. To save the new robot program you just created you must give it a name. The name can be no longer than 7 characters and must not be the same as any other robot on the disk.

Ctrl-L loads a file from the disk. The word "LOAD" will appear on the left side of the screen.

Cursor Mode

You are now ready to perform the second available option when the text-editor has been loaded, which is editing the source code file. When editing source code you will use the cursor mode to delete text at the cursor, move the cursor around in the text, adjust the position of the text on the screen, load source code files, and save source code files. These functions are described below:

1. Cursor Movement

The cursor can be moved to any location in the file by using the five keys on the right side of the keyboard.

A) The RETURN key moves the cursor up one line
B) The left and right arrow keys.
C) The slash (/) key moves the cursor down one line.

To move the cursor all the way in any direction on the screen, press the Esc key and then the direction key.

Once you have positioned the cursor where you want it, there are several options. Either exit to the add mode, and write some text or stay in the cursor mode and use a cursor function.

NNN

Random Number Generation

The RANDOM register is used to generate random numbers. A few examples of random number routines are:

\[
\begin{align*}
&100 \text{ TO RANDOM} \\
&\text{RANDOM TO A}
\end{align*}
\]

This routine stores 100 in the RANDOM register, which sets the limit for the generator. The generator then returns a random number from 0 to 99 and stores it in the RANDOM register. That value is then stored in A by the TO command. From then on each time the contents of the RANDOM register is stored in a register, the generator will return a different number. The limit of the generator will only change when a new value is stored in the RANDOM register by using the TO command.

\[
B + 1 - A \text{ TO RANDOM}
\]

\[
\text{RANDOM + A TO C}
\]

This routine stores a random number between A and B into the C register.

A Sample robot in source code

;SAMPLE ROBOT 'RANDOM'

\[
\begin{align*}
&250 \text{ TO RANDOM} \quad \text{;INITIALIZE RANDOM -- 250} \\
&\text{MAXIMUM} \\
&\text{START} \\
&\text{DAMAGE TO D} \quad \text{;SAVE CURRENT DAMAGE} \\
&\text{SCAN} \\
&\text{IF DAMAGE > D GOTO MOVE} \quad \text{;TEST -- MOVE IF HURT} \\
&\text{AIM+17 TO AIM} \quad \text{;CHANGE AIM IF OK} \\
&\text{SPOT} \\
&\text{AIM TO RADAR} \quad \text{;LINE RADAR WITH LAUNCHER} \\
&\text{IF RADAR=0 GOTO SCAN} \quad \text{;CONTINUE SCAN IF NO ROBOT} \\
&\text{0-RADAR TO SHOT} \quad \text{;CONVERT RADAR READING TO} \\
&\text{DISTANCE AND FIRE} \\
&\text{GOTO SPOT} \quad \text{;CHECK IF ROBOT STILL THERE} \\
&\text{MOVE} \\
&\text{RANDOM TO H} \\
&\text{RANDOM TO V} \quad \text{;PICK RANDOM PLACE TO GO} \\
&\text{MOVEX} \\
&\text{H-X*100 TO SPEEDX} \quad \text{;TRAVEL TO NEW X POSITION} \\
&\text{IF H-X>10 GOTO MOVEX} \quad \text{;TEST X POSITION} \\
&\text{IF H-X<-10 GOTO MOVEX} \quad \text{;TEST X POSITION} \\
&\text{0 TO SPEEDX} \quad \text{;STOP HORIZONTAL MOVEMENT} \\
&\text{MOVEX} \\
&\text{V-Y*100 TO SPEEDY} \quad \text{;TRAVEL TO NEW Y POSITION} \\
&\text{IF V-Y>10 GOTO MOVEX} \quad \text{;TEST Y POSITION} \\
&\text{IF V-Y<-10 GOTO MOVEX} \quad \text{;TEST Y POSITION} \\
&\text{0 TO SPEEDY} \quad \text{;STOP VERTICAL MOVEMENT} \\
&\text{GOTO START} \quad \text{;START SCANNING AGAIN}
\end{align*}
\]
2. Moving Text

There are also methods of moving the text itself, when in the cursor
mode. The direction, in which the text moves, is set by pressing the '+'
key (a forward direction) or the '-' key (a backward direction) prior to
pressing the L, P, or A keys.

A) The L key will move the text up or down one line.
B) The P key will move the text up or down one full page.
C) The A key will set the text in continuous scrolling motion.

You can move to the beginning or end of the text by pressing the Esc key
first and then the '-' key or the '+' key respectively.

3. Deleting Text

This function deletes text from the screen and the memory if the Apple,
but not from the disk. There are three methods of deleting text:

A) Ctrl-D Any character may be deleted by positioning the cursor over
the character and pressing Ctrl-D.
B) Ctrl-G Any line, or portion of a line, may be deleted by positioning
the cursor over a character and pressing Ctrl-G. This will delete the
character and the rest of the line that follows it.
C) Esc Ctrl-Z All of the text, presently in the text-editor may be
deleted by pressing Esc and then Ctrl-Z. You will have to confirm the
command by pressing the # key. This protects against accidental
erasures.

4. Block Operations

This function allows you to mark a portion of the current source code,
and then manipulate that block to another place in the file. You must
designate the beginning and the end of a block by placing block markers
at those two points. To insert a block marker immediately after the
cursor, press Ctrl-V to mark the beginning and end of the block, and it
will be represented on the screen by a flashing ')' sign. Only one block
can exist in a file at any one time and any attempt to insert a block
mark when a block has already been defined will result in the error
message "BLOCK ALREADY MARKED".

When a block is marked, press Esc V and the block options will be
displayed on the bottom of the screen. They are Copy, Delete, and
Unmark.

To copy a block, move the cursor to the location in the file where you
want to insert the copy of the block and press C. This is a
non-destructive copy.

To delete a block. Pressing D will remove the block and the block
markers from memory.

To unmark the block press U. You may also remove markers with normal
delete commands. Remember, these changes only exits in the memory and
not on the disk.

5. Find Operations

To find all occurrences of a word or phrase in a file, use the find
command. Press Ctrl-F and you will be prompted with the "FIND:" message. At this point, type in the word or phrase you wish to locate and press return.

The first occurrence of the word or phrase will be displayed in the center of the screen. To find all subsequent occurrences press Ctrl-F and Return.

You need not enter the word each time, the search will always begin at the current cursor location and search in the direction that the indicator in the lower left corner of the screen shows.

6. Printing Source Code Files

To print the source code on a printer, press Ctrl-P. The screen will prompt you to type in the printer slot number. Once this has been done, and the RETURN key has been pressed, the text will print out.

7. Adding Text

Position the cursor to where you want to begin adding text and enter the add mode by pressing Ctrl-A. To return from add mode to cursor mode, press Esc twice.

8. Loading files

To load a file into memory which was previously saved on disk press Ctrl-L. The loading operation works similar to loading any other file.

9. Saving Files

To save a file on disk, press Ctrl-S. Use the space bar to select the file name from disk, or type one in. Press RETURN when done.

10. Entering the Assembler

To save the current robot program and enter the assembler, press Ctrl-R. This will save the text as it appears in the memory on the disk, and then exit the text-editor to the assembler. Before a robot can be assembled, it must have been given a name by being saved to disk.

The Assembler

The Assembler translates source code programs into robot-understandable object code. It also checks for errors in the source code and displays a message if one is found.

The assembler can be entered from the Main Menu by selecting option 2, or from the editor by pressing Ctrl-R. If the assembler is entered from the editor, a robot source program is loaded and ready to assemble.

It is possible to assemble a robot from source code on the disk, or load an assembled robot from disk to test. There is also an option to print the assembled robot on the printer.

Assembly Errors

There are eight errors that the RobotWar assembler can detect. When the assembler detects an error it will display a message such as:

NO DATA FIELD IN LINE 27

10 + TO C

The error message indicates the type of error, the program line number and the position in the line (^) where it occurred. Following are the possible error messages:

1. NO DATA FIELD - There is no register or number after a command.
2. UNKNOWN ITEM - You have tried to use a register or a label that is not defined.
3. LARGE NUMBER - You have tried to store a number greater than 1,024, or less than -1,024 into a register.
4. PROGRAM TOO LONG - Program is too big for the allotted program storage area. Programs have a maximum length of 256 object code instructions.
5. FATAL JUNK - You have included something that the computer cannot understand, like an illegal statement.
6. STORE IN NUMBER - You have tried to store a value in a number instead of a register.
7. RESERVED LABEL - You have tried to use a register name as a label.
8. NO PROGRAM CODE - There are no instructions in the program. Object Code Exercise

The following pages list the object code's commands and registers and the translation of the sample robot's source code. Using the list and the two codes for the sample robot, compare and identify the source code and its object code translation. It will be very useful to understand the object code when learning to use the test bench in the next chapter.

List of Object Code Instructions

Instruction Action

,  Load accumulator with next data item
IF Load accumulator with next data item
  + Add next data item to accumulator
  - Subtract next data item from accumulator
  * Multiply accumulator by next data item
  / divide accumulator by next data item
  = Skips the next command unless the accumulator is equal to next data item
  > Skips the next command unless the accumulator is greater than the next data item
  < Skips the next command unless the accumulator is less than next data item
  # Skips the next command if the accumulator is equal to next data item
TO Store accumulator in next dat item
GOTO Branch to the address given
GOSUB GOSUB to the address given
ENDSUB Return from a subroutine
Assembly of Robot Sample
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**Tracing Registers**

The trace is used to check the contents of registers not normally displayed on the test bench. Press the T key to access the tracer. The test bench will stop, and the following question will be displayed:

"NAME REGISTER TO TRACE?" Enter the name of the register you want to trace and press RETURN. The test bench will continue, with the contents of the traced register displayed on the line above "X POSITION".

The Esc key will exit from the test bench.

**Storing Robots**

There is a limited amount of space on the RobotWar disk to store robot files. However, robot files can be transferred to and from auxiliary storage disks.

Auxiliary storage disks are used only to store robot files. Robot files on auxiliary disks must be transferred back to the RobotWar program disk before they can be tested, assembled, edited, or battled.

There is a utility in the menu to initialize a data disk. Only disks initialized by RobotWar can be used as data disks.

To save or load a robot to or from a data disk simply remove the RobotWar disk after entering the robot name and before pressing return. After the file is loaded, swap the disks back again before continuing with the program.

To delete a robot from a disk, exit to basic, and delete the file with the DOS 3.3 command DELETE filename and press RETURN. When done, enter PR#6 to re-start RobotWar.

**Summary of Editor Keys Cursor Mode:**

**Moving keys**

+ Set forward direction
- Set backward direction
Esc + Move to end of text
Esc - Move to beginning of text
A Sets text in continuous scrolling motion
RETURN Move cursor up one line
Esc RETURN Move cursor to top of page
/ Move cursor one line down
Esc / Move cursor to bottom of page
<- Move one space left
-> Move one space right
Esc -> Move cursor to right end of line
Esc <- Move cursor to left margin
P Move up or down one full page
L Move text up or down one line

**Text deleting keys**

Load a robot into the test bench by selecting option 2 from the assembler menu or from the main menu.

**Operating the Test Bench**

As the test bench runs the program, each instruction (in object code) will appear on the left side of the screen as it is executed. On the right side of the screen are displayed the robot's position and register contents. Also shown are the instruction number being executed (program counter) and the accumulator.

**Controlling the Test Bench**

The test bench can be interrupted by pressing the space bar. Press the space bar again to execute one more instruction. This can be useful when analyzing a program to see if it is acting as you had planned. Pressing RETURN will start the test bench running again. To change the speed of the test bench, press a number from 0 to 9.

**Simulating Radar**

Pressing the R key will cause the radar display to light up and the RADAR register will display a negative number to simulate an enemy robot in view. This will allow your program to go into its "enemy spotted" routine.

**Simulating Damage**

Each time the G key is pressed, a random amount, up to 10% will be subtracted from the DAMAGE register. This allows the program the opportunity to use its damage detection routine. The DAMAGE register will also indicate damage if the simulated robot crashes into a wall. The test bench will automatically stop when the DAMAGE register reaches 0.

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Ctrl-D    Delete the character at the cursor
Ctrl-G    Delete the line at the cursor
Esc Ctrl-Z Delete the whole file

File handling keys
Ctrl-L    Clear memory and load a source file
Ctrl-S    Save text as a source file
Ctrl-R    Save current file and enters assembler

Control keys
Esc Ctrl-Q Exits to main menu
Ctrl-F    Executes FIND operation
Ctrl-P    Prints file in memory
Ctrl-V    Places block marker at cursor
Esc-V    Displays block options
C-Copy block
D-Delete block
U-Remove block markers

Add Mode
Text adding keys
Ctrl-A    Start adding text
Esc Esc   Stop adding text
<-    Backspace, erases as it goes
->    Moves text to the right
RETURN    Acts as a carriage return

From the Assembler
Space Bar    Stop the assembler or move it one step
RETURN    Start the assembler operating again
0-9    Adjust the speed at which the assembler is scrolling

From the Test Bench
RETURN    Start the assembler operating again
0-9    Adjust the speed at which the assembler is scrolling
R    Simulate Radar
G    Simulate a shell hit
T    Trace a Register
Esc    Exit the test bench
RUN-FOR-IT MAP

by: The Peeler

The Outpost...312/441-6957

r !XX ! x x ! x !x !x >> out
q !x !- x !- x !- x !- x
p !- x ! x ! x ! x
o ! x !- x !- x ! x
n ! ! x !- x !- x !- x !- x !- x
m ! x !- x ! x ! x ! x ! x
l ! x !- x ! x ! x ! x ! x ! x
k !x !- x !- x ! x
j !- x !- x !- x !
I ! xxx !- x ! x ! x ! x
h !- x !- x ! x ! x
G ! x !- x !- x !
f ! !- x !- x !- x

d ! !- x ! x ! x !
c ! x !- x ! x ! x !
b ! !- x ! x ! x ! x !
a ! !- x ! x ! x ! x !

KEY...

X.....means there is oxygen in that room. I tried to put it as close
to where it is in the room as possible.

^.....means it is an 'up'. The disk loads in the next 3 sections when
you go up. note: You can't go back down once you go up these!

> or <.....means you can go out the direction the arrow is pointing,
but can't come back that way. You must go another way to get back
to the room you just left.

.....in the room means it is an ele- vator in the room. These go up
and down and you must hop on them for them to bring you up.

note: Sometimes it is not as easy as level looks. You must follow
certain paths through something simialr to a maze.
For the Russians, a partial chain of command might run as follows: organizing and moving troops. Each Korps or Army, depending on the type, German Korps, while the German Armee is equivalent to the Russian Front. Army size units for the Soviet. These are your basic formations for unit of combat and maneuver is the Army, which is equivalent to the The military forces at your command are Korps size units for the Axis and Front commands 1 to 6 Armies. You will notice that for the Russians the Theatres A,B and C. Each theatre commands from 1 to 6 Fronts and each about one week of real time so that the maximum scenario length is 8 months.

For the Russians, the commands immediately below Stavka are called Each scenario lasts for a number of turns; up to 31. Each turn represents the unit represented on the map and doing all the fighting. (either Axis or Soviet player) or no humans.

North - 4th Panzer Armee - 41st Panzer Korps. For the Germans, the Korps is Choose whether the game will be played between two humans, one human partial chain of command for the Germans might run as follows: Army Group to avoid confusion with Russian formations of a different level. Thus a protagonists.

6 Korps. The armies under each Army Group are written in the German Armee, affect the artificial intelligence or the combat performance of the Army Group can command 1 to 6 Armees and each Armee can command from 1 to a multiplier on the points accumulated by either player. They do not the war as Army Group North, Army Group Centre and Army Group South. Each Choose a handicap level for the game. Handicap levels in Russia act as

Directly controlled by the OKH are three Army Groups, known for most of the war as Army Group North, Army Group Centre and Army Group South. Each Army Group can command 1 to 6 Armees and each Armee can command from 1 to 6 Korps. The armies under each Army Group are written in the German Armee, to avoid confusion with Russian formations of a different level. Thus a partial chain of command for the Germans might run as follows; Army Group North - 4th Panzer Armee - 41st Panzer Korps. For the Germans, the Korps is the unit represented on the map and doing all the fighting.

For the Russians, the commands immediately below Stavka are called Theatres A,B and C. Each theatre commands from 1 to 6 Fronts and each Front commands 1 to 6 Armies. You will notice that for the Russians the unit of combat and maneuver is the Army, which is equivalent to the German Korps, while the German Armee is equivalent to the Russian Front. For the Russians, a partial chain of command might run as follows: Theatre A - Leningrad Front - 23rd Army.

While the Korps/Army is the basic formation for organizing and moving troops, each Korps is actually composed of a number of divisions. These divisions never appear on the map and are always either included in a Korps/Army formation or held in a HQ reserve. There are three basic types of divisions: Infantry, Motorised and Armoured.

In the campaign game the player can choose to play OKH/Stavka and/or any command of the Army Group/Theatre commands. Playing an Army Group/ Theatre involves directing all of its subordinate formations.

In a scenario, there is no strategic command (I.E. No OKH/Stavka) and only one Army Group/Theatre per side.

There are three scenarios included in the game. They cover the initial drive of Army Group North to capture Leningrad in the summer of 1941, the Axis attempt to capture Stalingrad and the subsequent Soviet counter-attack in 1942 and the climactic armour clash, and its aftermath, at Kursk in 1943. The Leningrad scenario, being the smallest, is used as an introductory tutorial to make you familiar with operational decision making.

The campaign game covers the entire conflict from June 1941 until May 1945 or until a conclusion is reached whether it be in 1943 or 1947! The opening months of the campaign game are used as an introductory tutorial to give you some experience with the strategic decisions you will have to make in the course of the war.

Furthermore, the powerful Game Design Kit we have developed will allow you to customize any of the set scenarios or the campaign game. You may even create entirely new scenarios of campaign games, beginning them from any time between 1939 and 1945!

SPECIAL NOTE:

Russia actually involves four levels of military hierarchy. For the Germans they are OKH/Army Group/Korps/Armee. For the Russians, they are Stavka/Theatre/Front/Army. In order to avoid confusion we will use the German terms throughout these rules. Unless otherwise stated, a rule which describes a German formation will be applicable to the corresponding Soviet force. For example, the statement that two corps can not occupy the same hex at the end of movement should also be read as meaning that two Armies may not do so either.

3. HOW A SCENARIO PLAYS

This chapter should be read before starting the scenario tutorial.

A scenario (not a campaign game) of Russia goes something like this. Choose the scenario you wish to play. Experienced players may wish to vary an existing scenario or to create an entirely new one.

Choose a handicap level for the game. Handicap levels in Russia act as a multiplier on the points accumulated by either player. They do not affect the artificial intelligence or the combat performance of the protagonists.

Choose whether the game will be played between two humans, one human (either Axis or Soviet player) or no humans.

Each scenario lasts for a number of turns; up to 31. Each turn represents about one week of real time so that the maximum scenario length is 8 months.

The military forces at your command are Korps size units for the Axis and Army size units for the Soviet. These are your basic formations for organizing and moving troops. Each Korps or Army, depending on the type,
will contain several infantry, motorized and/or armoured divisions.

In a scenario there will be only one Army Group and Theatre involved.

Each Korps/Army will contain a variable number of divisions, based on availability, the type of Korps and its current order. A divisional reserve is maintained at each Armei/Front as well as a variable number of ground support assets (artillery, anti-tank etc.) and air support assets. These assets are apportioned out of each turn to those Korps/Armies in need of them. A further reserve of divisions and assets are maintained at Army/Group/Theatre level. Finally, a replacement pool is available to both sides to rebuild depleted divisions in the field provided they meet the eligibility criteria. Korps (Armies) are defined by type (E.G. SS Panzer, GDS Tank, Siberian, etc.) and these ratings, together with their current order, largely determine their exact divisional composition.

The battlefield on which you fight is a field of hexagons divided into blocks of 9x9 hexes. The campaign map is composed of twelve of these blocks. A scenario map will use some of these. The ground scale is approximately 40 miles per hex. Different types of terrain are represented by different terrain icons. Railways and cities are shown and victory points are awarded for control of the latter.

It is your job as Army Group/Theatre commander to use this time, these forces and these conditions to capture and hold as many cities as you can, to destroy as many of the enemy formations as you can get your hands on, and, of course, to prevent your opponent from doing this to you. The player who has scored the most number of points by the end of the scenario is the winner.

Your interface with the game is a structured set of menus which become very easy to use. These menus and deploy your formations, to send them into battle and to reorganize them when necessary. Each Armei, (Front) has its doctrine specified however, and individual Korps (Armies) may be given orders relating to the air tactical situation. Ground and air assets are allocated to Korps (Armies) in contact with the enemy.

Only one Korps/Army can occupy a single hex at the end of a turn. This does not prevent them from moving through each other when executing your orders.

Railways play an important part in supplying troops and the rail nets in the game are differentiated into Axis and Soviet gauges (I.E. Narrow and Wide gauge). You have only limited control over the positioning of individual Korps/Armies. The orders given to Armeis/Fronts will determine the response of their component Korps/Armies.

You can examine a variety of reports, including area weather conditions, which will provide the information to base your decisions on.

All orders are issued before any action takes place. Combat between opposing forces is resolved and described by a short report. Other orders are then executed.

This manual contains a short briefing for each scenario which will give you some idea of what must be accomplished in order to win.

On average you can expect a scenario of four months length to take 60 minutes to finish in solitaire mode; a little longer if your opponent is human.

Victory Points (VP’s) are accumulated weekly in a scenario.

A scenario is won by the side with the greatest number of VP’s on the final turn. Note that an automatic victory is awarded in a scenario when the city containing the enemy’s Army Group HQ (Theatre) is captured.

4. PLAYING YOUR FIRST SCENARIO

As a warm up to your adventure in Russia, we invite you to spend the next forty minutes reliving the first frantic months of the German drive to capture the vital Baltic Port of Leningrad. You will take the role of General Von Leeb and command Army Group North in its dash to reach Leningrad before the combination of Soviet reinforcements and bad weather can stall your offensive. You have only twelve weeks (turns) to get the job done! You cant afford to waste a moment!

STARTING UP

Start up your computer. Menu A (Start-Up menu) appears to the right of the title page. As is the case with every menu in the game, you use the arrow keys to locate your choice from the menu, and then type [RET] to select it.

If you select the wrong menu, dont worry. Type [ESC] to go back to the previous menu.

SELECTING THE LENINGRAD SCENARIO

Before we can start play, we have to select the Leningrad scenario, tell the computer to control the Russian forces and decide whether we wish to use a handicap.

Use either arrow key to locate the <GAME> line and type [RET] to go to menu B (Location Select).

Use an arrow key to locate the <SCENARIO> line and type [RET] to go to menu C (Scenario Menu). Apple owners will have to turn the disk to the scenario side.

Use an arrow key and locate the <LENINGRAD> line and press [RET] to go to Menu E (Edit Utility). The scenario briefing screen is displayed to the left of the menu window.

Use an arrow key to locate the <EDIT> line and type [RET] to go to menu F (Handicap Utility). We must now decide whether to use a handicap. Lets give ourselves all the help we can get. The handicaps below the <NO EFFECT> line benefit the Soviet Player; those above benefit the Axis Player.

Use the arrow keys to select the <MAJOR> Axis line and type [RET] to go to Menu G (Player Select). You must assign human or computer control to each player in the game. The pane above the menu window displays the name of the command position. You will be asked to assign control for <AC NESTO>. This is you, so use the arrow keys to locate the <HUMAN> line and type [RET]. You will now be asked to assign control for Theatre A (The Soviet Command). Use the arrow keys to locate the <COMPUTER> line and press [RET].

Once all the command positions have been assigned, the cursor is thrown back to the menu screen and you have the opportunity to change the commanders names. Do this if you wish, otherwise type [RET] until you get back to Menu E (Edit Utility).

Use an arrow key to locate the <START> line and type [RET] to go to menu H (Game Master). Apple owners will have to turn the disk back to the master side.

Thats the preliminaries over with. Were just about ready to play.

REVIEWING YOUR FORCES

The date and a current turn briefing appear above the menu window. It is week 4 of June, 1941. This is the first of the twelve weeks for which the
game will run. Below the menu window is a small weather summary map. Each of the twelve map sections is clear. Its the middle of summe... There is a chance that the more northerly map sectors will have some mud remaining from the previous winter. The map area displayed is the Riga Sector. The Riga Sector is the second from the left of the top row.

The <SOVIET> and <RUN 5> lines in the menu have been overprinted with a solid bar to show that you can not access them. The solid bar will disappear from the <RUN 5> line after the <AXIS> line has been accessed. This is to guard against accidentally selecting <RUN 5> before issuing your orders. The <SOVIET> line will always be overprinted in this game (due to the fact it is a solo game) the computer does not want you to see what it is doing.

Locate the <AXIS> line and type [RET] to bring up menu 2 (Operations Master). This map is updated by the addition of the axis gauge rail net (I.E. Narrow gauge). Date, turn number and current victory point total are displayed below the menu window.

HISTORICAL NOTE: In case you are wondering why the Axis rail net extends into Russia, here is the explanation. In 1939, in conjunction with the Axis-Soviet dismemmberment of Poland, the Soviet Union annexed the Baltic States of Latvia, Lithuania and Estonia as well as a large hunk of eastern Romania. The rail systems of these countries were, by and large, compatible with europe rather than Russia. By the time of the Axis invasion, only a small part of these rail nets had been converted to the wider Soviet gauge. Once Axis forces capture these narrow gauge rail hexes, they can be used immediately for transportation.

Before issuing any orders to our men, we will review our forces and the environment in which they will have to fight.

The four Axis units in the bottom left hand corner of the map are ours. They are opposed by three units from the Soviet Baltic Front immediately to the right.

Select the <REPORTS> line from menu 2 and type [RET] to bring up menu 4 (General Reports). This is just a branch menu. Select the <STATUS> line to bring up menu 5 (Unit Status).

The map has been replaced with a full screen display showing the condition of every unit under your command. There are two pages to this report. Type [RET] to return to the second page. The length of the report is determined by the size of your force.

Look at the first page. The top line identifies Army Group North, displays the date and the number of pages in this report.

There are 4 Armees attached to AG North: 4 Pz, 18th, 16th and 9th Armees. Note that Armeez was historically part of AG Centre. For the purposes of this scenario, however, it has been detached to AG North.

Four Korps are attached to 4Pz Armeez: 10 (Inf), 39 (Pz), 56 (Pz), and 41 (Pz). Only 41 Pz begins the game deployed on the map. The other three arrive as reinforcements at specified times. Type [ESC] to exit this report.

Dont worry about memorizing all the information on this screen. As you become familiar with the game, youll get more and more use from it.

Return to Menu 4 and select Menu 6 (Map Walk). This menu contains a variety of information which we can have a brief look at. At the moment the cursor will be flashing on the map. You may use the arrow keys, the 1 - 6 keys or the J,K,M keys to move the cursor over the map. The map will scroll when you reach the edge. You may type (0) to centre the screen on the cursor. This works on any screen where the cursor is flashing.

Position the cursor over the Axis armour unit at the bottom of the screen. An arrow flashes alternately with the unit symbol to indicate the targeted enemy unit. A unit must be adjacent to an enemy unit to be targeted. The right hand column of the screen displays the identity and condition of the friendly unit.

Position the cursor over an enemy unit. You are told the units Front and Army designation and its level of activity in the previous week.

Position the cursor over the city of Riga. Now move the cursor to Pskov. Pskov is the trigger city for an off-board region. That region is named and the bonus VP's awarded for its capture are displayed above the city data. Its not necessary to worry about the details now; read chapter 8 when you have finished the tutorial for a complete description of the Map Walk routines.

Type [RET] to move on to the menu window.

To turn on a display, use the arrow keys to select which piece of information you wish to examine. Type [RET] again and the cursor will return to the menu window. Select the display you wish to turn off and type [RET].

While more than one display can be on at any time, very often information from one display will be concealed by another display. For this reason we recommend you examine one display at a time; at least for your first few games.

The <CITIES> options work slightly differently. They allow you to examine any city on the map. Select <NAME> and a box containing a square cursor will appear above the menu window. Type in the name of the city you wish to go to. As soon as you have entered enough characters for the computer to recognize the city, the screen will center on it and information concerning its staits will appear to the right of the screen. Type [RET] to go back to the menu window. Select <CYCLE> and the cursor will return to the nearest city on the map. Use the arrow keys to examine each city in turn. Type [ESC] to exit the cycle routine.

Type [ESC] to exit the menu. All displays will automatically be turned off.

<CONTROL> allows you to examine which side controls each hex on the map.

For example, to examine cities occupied by units, you must first switch on the <CLEAR MAP> routine before positioning the cursor over the chosen city.

<RAIL NET> superimposes a full display of all rail lines, regardless of gauge or control.

<COMMUNS> superimposes the communication value of each hex. Basically, communications affect the performance of your logistic net. Have a look at the communications map on the reverse of the terrain map. What this means is that it is much harder to supply your forces in the wilderness.

<WEATHER> superimposes an icon representing the current sector weather in each hex.

All of these reports and displays are fully explained in chapter 8 (The Game Menus Described).

Have a look through them for a few minutes, then type [ESC] until you get back to Menu 2 (Operations Master).

The WEATHER AND ARMY GROUP SUMMARY

The next item in the menu is the weather report. Return to Menu 2 and select <WEATHER>. There are five separate displays on this screen. Below the menu window is an active map display. Map sectors in play are identified by a
Four separate displays have replaced the sector map. The top two displays repeat the turn and weather details described earlier. The bottom left display describes Army Group North, its HQ location, the total VP value of all cities on the map and the number of these currently controlled. The bottom right display is a breakdown of the military forces attached to Army Group North. Only those Korps and Armee in play are recorded; reinforcements are not. KIA's are casualties currently absorbed by AG North.

An Air Support Point (ASP) is approximately equivalent to an Axis Geschwader (30-50 aircraft) or two Soviet Air Regiments (40-50 aircraft).

A Ground Support Point (GSP) is approximately equivalent to a regiment-sized artillery, anti-tank or equivalent HQ asset.

Divisions are your basic fighting units and come in three types; armour, motorized and infantry. Further specialization of types is handled by the Korps type to which the division is assigned; for example, the inf divisions in a Soviet Cavalry Army are considered calvary divisions and are treated as such for all game purposes. Historically, a division could contain from 9000 to 16000 men at full strength; much less when depleted. Soviet tank and mechanized corps are treated as division-sized units.

Replacements are regiment-sized bodies of men, organized in the same categories as your divisions. They are never present on the map. They provide on the spot reinforcement for divisions depleted by battle or attrition. While you have no direct mechanism to assign them, their availability is determined by the logistic and administrative condition of the units that need them. You can never have too many replacements.

For comparison, three replacements are the manpower equivalent of one full strength division. Casualties (KIA) are taken in regiment sized steps.

THE REINFORCEMENT SCHEDULE
Go back to menu 2 and select Menu 7 (Reinforcement Schedule).

Each line shows the reinforcements to be expected on a specific turn. Arrival dates for reinforcements are every fortnight. Reinforcements will arrive at the Army Group North HQ (i.e. as reserves) and be distributed from there as necessary. The combat value of each division type and the size of the replacement pools are displayed above the schedule.

Note that reinforcing Korps and Armee are handled differently. They arrive on their assigned hexes in the particular week specified in the create routine. Sooner or later we hope you will get to having a look at the design features of the game; this distinction will then become obvious.

And now we can start operations against the pesky Russians in earnest.

CHOOSING ARMY DOCTRINE
Select Menu 8 (Army Group Operations). Friendly units have their general symbol replaced with their specific symbol.

Above the menu window, we see that the AG North is at moderate activity. It wont be after weve given our orders. Below the menu window, we are told the AG HQ is at Konigsburg, where it will stay for the duration of the scenario. Armee and Theatre HQs in reserve (Army Group and Theatre HQs can only be moved in campaigns) Supply and Admin are at 7 each (the maximum) , all GSPs have been allocated to Armee HQs, 16 ASPs are present and three infantry divisions are being held in reserve. There is a map; chance that these numbers will be slightly different from game to game. The mechanisms handling unit organization within an Army Group are explained in more detail in Chapter 10 (Game Mechanics and Tactics).

We will set the doctrine and objectives for each Armee in our command. Locate the <DOCTRINE> line and type [RET] to select Menu 9 (Select Armee). The 16 Armee display appears on the right of the screen and only those Korps belonging to the 16 Armee are represented by their specific symbol. 16 Armee has 1 Korps attached (a second Korps will arrive on the next turn) normal doctrine, its HQ is in Tilsit, a line of supply is open to the AG HQ, supply and admin are 7, 3 GSPs are available, 16 ASPs may be drawn upon and two infantry divisions are in reserve.

Note that since Axis ASPs are allocated from the Army Group HQ rather than an Armee, any Axis Armee can call upon the Army Group pool of ASPs.

Use the arrow keys to cycle through the three Armee attached to AG North. The 9 Armee will appear on turn four. Dont worry about the orders displayed for Armees and Korps; they are default values and well soon sort them out.

Locate the 4 Pz Armee and type [RET] to go to Menu 10 (Select Doctrine). In order to advance upon an enemy held objective, an Armee must have Main Effort doctrine. Select <MN EFFORT>. The cursor has been thrown into the map and we have been asked to select an objective. I prefer to send the tanks to Dvinsk initially and leave Riga to be captured by the Infantry Armee. Use the arrow keys to select Dvinsk and type [RET]. You have been thrown back to Menu 9 (Select Armee). The doctrine for 4 Pz Armee now reads <MN EFFORT> and its objective is Dvinsk.

Use the arrow keys to select 18 Armee, type [RET] and set it to <MN EFFORT> with Riga as its objective. Put 16 Armee on <MN EFFORT> with Vilina as its objective. Type [ESC] to go back to menu 8. The Army Group activity is now high.

CHOOSING KORPS ORDERS
Locate the <ORDERS> line and type [RET] to select Menu 13 (Select Korps).

The arrow keys will cycle you through every Korps. The top four lines of text repeat the Armee doctrine; all other information refers to the Korps currently identified by the cursor. Locate the 41 Pz Korps. You are told the Korps designation, its type, its last order (a default value in this case) its status (experience, fatigue and losses) a LOS is open to the 4 PzA HQ, supply and admin are 9, GSPs and ASPs are not allocated as yet and the Korps contains two armoured and one mechanized division.

The cursor alternates between the specific Korps symbol and a directional arrow showing the Korps' intended target. The computer determines which enemy unit each Korps will target upon; the factors which influence its decision are listed in Chapter 10 (Game Mechanics and Tactics). The 41 Pz Korps will have either the enemy unit north or north-east of itself as its target. Type [RET] to bring up Menu 16 (Allocate Ground and Air Support). Were going to attack. Allocate all the GSPs and one-third of the ASPs. Once this is done, Menu 17 (Contact Orders) will appear. Select <ASSAULT>. You will be returned to Menu 13 and the updated Korps display will confirm the orders you have just issued. A description of each type and condition of the target appears in the top panel of information. Wherever possible, confine your attacks to vulnerable targets.

Give the 17 Korps half of the 18 Armee GSPs, half of the remaining ASPs and an <ASSAULT> order. Give the 28 Korps the other half of the 18 Armee GSPs, all the remaining ASPs and an <ASSAULT> order. Finally, give the 1 Korps an <ADVANCE> order. Korps not adjacent to enemy units cannot use GSPs or ASPs and there is no mechanism for you to give them any.

Thats everything you need to do to complete the turn. The invasion surprise flag is in effect so that you can confidently expect to hand out a thorough thrashing to the enemy arrayed against you.

Go back to Menu H (Game Master) and select <RUN 5>. Each battle is
identified and described by a report. Press the <SPACE BAR> to examine the outcome of the next battle. Once all battles have been resolved, the computer will execute the movement orders of each unit.

It's a little hard to predict where each unit will end up; even which units will still be around. Fight as hard as you can for Riga; the sooner you control it the better. Once you have reached an objective, the Armee doctrine will change to normal. You will not be allowed to go to main effort again until the sum of the Armee supply and admin is at least eight, nor is it a good idea to do so unless the objective is undefended. For an enemy city to be a legitimate objective, it must be within 7 hexes of the Armee HQ. This distance is reduced to 4 to 5 hexes in mud and snow weather respectively. Armies with normal orders can transfer their HQs to friendly controlled cities within 7 hexes. Armies may only go on rest in supplied cities.

Play through the rest of the scenario and don't worry if certain orders are denied you at times or if things happen you don't understand. What you are attempting to do is capture Pskov as quickly as possible. An attack on Leningrad itself is impractical from any other jump-off point. When you finish the scenario read through chapters 8 and 10 and then have another go at the scenario.

You may also like to play a scenario a third time taking command of the Russian forces.

Please don't start playing the campaign until you have played all the scenarios; the wait will be worthwhile and you'll enjoy it all the more.

End of Part I of Part I
This program requires an Apple IIgs or an enhanced //e or //c WITH a 65802 or 65816 microprocessor. A 65802 chip can be bought for around $20 and can easily be inserted in place of the 65C02 in the latter two machines.

This program is "virus medicine". It will read your system files (and any other types you specify) and create a data file that contains information on these files. At any time, you can run it in check mode and it will report any of these files that have been altered. For obvious reasons, I am not going to detail exactly what sort of data the program saves, but suffice it to say that it is virtually impossible to change any of these files without detection by this program and it would also be very difficult to either alter this program or the data file it creates without detection.

The program makes an effort to protect itself and its data file from modification. It encrypts itself and resaves itself whenever it is used to write a new data file. However, despite these safeguards, the safest way to use it is to keep this program and its data file on a separate dedicated 3.5" disk, which you use only for running this program.

THE PROGRAM NAME

If you do not keep this program on a separate dedicated disk then you should change its name, so that a viral program specifically looking for this program cannot easily find it and modify it.

THE DATA FILE

The name of the data file defaults to RX.FILE. This name is kept in the STARTUP position of the program. If not kept on a dedicated disk, then its name too should be changed using BLOCK.WARDEN from ProSel. Unless you give it a full pathname, it will be kept on the same disk as the program.

THE VOLUME NAME

The program must be told what volume to check. This defaults to /HARD1, but this can be changed via the Change defaults function in the program.

FILES CHECKED

The program has two means of deciding which files to check. (Ordinarily, pure data files need not be checked, only programs.) The first way it decides whether to check a file is by a list of file types it keeps. It will check all files whose file type is in this list. The list presently contains only SYS (type $FF) and S16 (type $B3) types. You should add the NDA, CDA and TOL types ($B8, B9 and BA) and the tool setup type $B6. There is an option in the program for modifying this list. For example, you could add type $06 for BIN files, or type $FC for BAS files. Since many BIN files are data files, however, it is probably best to use the second option for them.

The second way it decides is by a list of "special files". This list presently contains the file PROSEL. Again, there is an option in the program for adding to and deleting from this list. Note that if you have a file name in this list and the file cannot be found, then a program error will be reported and the program will abort. In such a case, you must remove that file name from the list.

It is suggested that you either add the type $F1 to cover the CD.EXT file, or add that file to the name list.
Whenever you add a program file to your system, you should run Apple.Rx in check mode to make sure things are now ok, and then rerun it in Create mode to revise the data file to include the new program file.

You should run this program in check mode at frequent intervals, perhaps every day, to quickly determine if a problem exists before it has a chance to spread further. In particular it is a good idea to run a check before backing up a hard disk.

**PASSWORD**

To protect itself somewhat, the program requires a password when you enter it. The initial password is APPLEAPPLEAPPLE (passwords are not case sensitive) and one of the first things you should do is to change it with the built in facility to do that. A password must be at least 12 characters long, and when it is changed the program will encrypt most of itself and resave itself to disk. After that point you MUST remember your password. Recreation of the password from the encrypted file is virtually impossible unless you have the facilities of the CIA. It is in the nature of the encryption that even knowing the encryption algorithm, and having both encrypted and decrypted files at one's disposal will not, without gargantuan effort, yield the password that was used to drive the encryption. You can change the password any time you want, but you must know the old password to access the program in order to make that change.

Some functions, including changing the password, are disabled and payment of the shareware fee will bring enabling instructions.

**WHAT THE PROGRAM CANNOT DO**

The program only checks that files have not been changed (by a virus or whatever). It cannot prevent damage by a program that does not change other files; for example, a program that just starts erasing a disk at a certain date. Only well kept backups can protect from that. Even backups cannot protect against a virus that invades other programs, however, and that is the purpose of this utility.

**DISEASE PREVENTION**

Nothing can be 100% protection against viruses. You should practice diligence and prevention. Do not ever download (and use) a program from a pirate board. (I can imagine and understand a software publisher uploading an infected program onto such boards, in sheer retribution.) Never use, in a susceptible environment (such as a hard disk), any program downloaded by or otherwise received from someone you do not know or in whom you do not have confidence.

**COPYRIGHT**

This program is copyrighted 1988 by Glen Bredon. It is expressly forbidden to give this program to anyone else or to upload it to any bulletin board. If the program was not uploaded by me to a major service then you should not use it. These restrictions are to make it more difficult for a look-alike contaminated program to be distributed.

The program is SHAREWARE for $20. When you pay your fee, you should indicate where you got the program, so I can warn you if it is not legitimate. (Of course, this notice is unlikely to appear in a non-legitimate copy.)

Just clip and mail:

```
To: Glen E. Bredon
521 State Road
Princeton, NJ 08540

Re: Apple.Rx version 1.0
Software viral protection program

Glen:
Enclosed is my check for $20 in payment for Apple.Rx. I obtained
```

Enclosed is my check for $20, for which please send me the Apple.Rx program on a 5.25" disk. I understand that you will not distribute the program in this manner during the months of June, July and August.

I understand that the payment entitles me to receive instructions on how to enable the disabled functions, and to receive a warning if my source for the program is not legitimate, and that I may download any future updates from the same source with no further payment, or obtain a revision from you for a P&H fee of $5. I further understand that it is not possible to have 100% sure protection against software viruses and that no such implied warrantee is given. I agree to abide by the copyright and to not distribute any copies of the program to other people or services.

From: __________________________

____ Enclosed is my check for $25, for which please send me the Apple.Rx program on a 5.25" disk. I understand that you will not distribute the program in this manner during the months of June, July and August.

I understand that the payment entitles me to receive instructions on how to enable the disabled functions, and to receive a warning if my source for the program is not legitimate, and that I may download any future updates from the same source with no further payment, or obtain a revision from you for a P&H fee of $5. I further understand that it is not possible to have 100% sure protection against software viruses and that no such implied warrantee is given. I agree to abide by the copyright and to not distribute any copies of the program to other people or services.

From: __________________________
**What is SAP?**

SAP is an animation program. If you have ever used Take-1 (c) Baudville, or Art & Film Director (c) Epyx, then you are already familiar with this program. To put it simply, SAP lets you create movies and put together animations on your GS. This program was somewhat modelled after Take-1, so if you have used this program you shouldn't have much problem adapting to SAP.

Originally, I envisioned SAP as an acronym for "Simple Animation Program." However, once you look at the program, you will see that this is quite a misnomer! The program sports my patented user-hostile interface, and it may take a while to get used to. But please stick with it! Once you master the myriad of commands, it all becomes very simple. In any case, if you feel that "Simple" doesn't apply to this program, feel free to substitute your favorite "S" word in its place (e.g. Stupid, Slick, Sweet, Slow, Silly, etc).

This program is distributed as "Show-Ware". This means that you are free to distribute or copy the program as you wish. However, if you create any nifty animations, then I'd like you to show it to me! This is all I ask. Of course, if you want to send any money or something for some strange reason, I won't turn you away! My address and contact number is listed at the end of this file.

**SAP Overview**

Installation:
I strongly recommend a hard drive. Currently, SAP only recognizes certain directories. If you don't have a hard drive, you'll be stuck with working on the floppy that SAP comes on, and there isn't much extra disk space. Consequently, if you do own a hard drive then first create a subdirectory on your hard disk called "SAP" and then copy all the files and directories from the SAP disk to the SAP directory.

Your hard drive directory should look something like:

*/SAP
  */SAP.DATA
  */MOVIES
  */SCENES
  */ACTORS
  */PICTURES
  */SOUNDS

and the files PROJECTOR, SCENEEDIT, and ACTOREDIT should be in the */SAP directory. There will be various files in the other directories.

If you have unpacked directly to a hard disk, then all is fine. If you unpacked onto a floppy, just copy everything to the hard drive.

Terminology:

BACKGROUND: A $C0 Apple Preferred picture. This picture comprises the background scenery for your animation.

PICTURE: A $C0 Apple Preferred picture. This is the same as "Background," but the term "Picture" is used to refer to a picture containing shots of actors (see below) rather than background scenery for animation.

ACTOR: An actor is any object which will be animated on the screen. This includes pictures of people, text, or anything else. Currently, all actors are bit mapped graphics. An actor is comprised of SHOTS, described below.

SHOT: A shot is one "still shot" of an actor. For example, if you have an actor which is a talking face, this actor may be composed of three shots. The first might be the face with the lips closed, the second is the face with the lips partly open, and the third the face with the lips fully open. When displayed in succession, it will appear that the face is "talking."

SOUND: A standard digitized sound file.

FRAME: A frame is a just like a frame in a regular movie. It is a snapshot in time containing shots of actors overlaid on a background. A collection of frames makes up a SCENE.

SCENE: A scene is a complete animation all on a single background. It is composed of frames containing shots of actors and sounds.

MOVIE: A bunch of scenes played back-to-back to create a movie.

Brief description of the programs:

ACTOREDIT - Use to load up $C0 pictures and "cut" out the shots of the actor.

SCENEEDIT - This program is where most of the work comes in. You put together your animation/scenes with this program.

PROJECTOR - Simply plays back movies, which are just a bunch of scenes.

Description of Directories:

SAP recognizes only certain directories. Files must be copied into the right directory for SAP to work correctly.

*/SAP.DATA - Contains data files for SAP to work correctly.

*/SOUNDS - Any sounds you want to play must be copied to this directory. Standard sounds, no ACE or anything.

*/PICTURES - All $C0 pictures go here. This includes background pictures as well as pictures you will use to cut out actors from.

*/SCENES - All scenes will be saved in this directory.

*/ACTORS - All actors will be saved in this directory.

*/MOVIES - Save your movie files in this directory.

*/SOUNDSMITH - Save your soundsmith songs and wave files in this directory.

The following outlines the general process you follow to create a movie.

1. Envision in your mind what you want the scene to look like. THIS IS VERY IMPORTANT! You must know exactly how your scene will fit together before you create it. This is because SAP works well when you create your scene going forward, but if you have to jump around and do a lot of editing, then SAP becomes EXTREMELY difficult to work with. In the future I plan to implement cut and paste features which will make things much easier.

2. Create shots of your actors and background picture with your favorite paint program. I did not include a paint program with SAP since there are already so many good paint programs on the market, such as Dream Graphix (stick to 16 color palette though). Make sure that the background color in your actor picture is color 0. Color 0 will always be "transparent," that is, any color in the background picture will "show through" color 0 in an actor.

3. Using the ACTOREDIT program, chop out your actors from the $C0 picture and save them on the disk in actor format.

4. Using the SCENEEDIT program, put together your actors and sounds onto a background picture. This takes the most work. Save your scene.

5. Repeat steps 1-4 to create more scenes.

6. Using a text editor, create a file with the name of the scenes you wish to play in your movie in the order that you want the scenes to appear. Make the last line "0" to make the movie end, or make it "1" to make the movie loop. Save this file in the MOVIES directory. If you name the movie file "AUTORUN" then this movie will automatically run when the PROJECTOR program is launched.

7. Use the PROJECTOR program to play back your movie.

This tutorial will walk you through the creation of some simple scenes. It should give you a good idea of how to create your own movies. I advise you to print out this section and follow along with the program as you read.

First, let's make a ball bounce on the screen.

To get an idea of what is going on, the best place to start is not with the SAP programs, but with your paint program. So if you own a hard drive, then after you copy all the SAP files to the hard disk, launch your favorite paint program.

1. Create Your Actors

Normally, you will have to create your own actors in the paint program.
You should see two circles with the centers colored black, and several figures of a running man. Each figure will become what I call a "shot" of an "actor." What normally happens is that you create your actors with your paint program, and then you will cut out the actor from the picture for use in SAP. Later we will make the man run across the screen by showing consecutive shots of the actor, one after the other, and it will look like he is running.

After you've checked out the picture, take a look at the palette. Notice that there are TWO blacks! Why is this? Well, the first (color 0, the black on the palette) is TRANSPARENT in SAP. The background colors will "show through" color 0 in any actor. All other colors will be copied directly to the screen. This means that the other black, which is not color 0, won't have the background show through.

The red circle is filled in with color 0 in the center. When this is animated on the screen, it will look like it has a "hole" in the middle. The blue circle is filled in with a different color black (not 0) in the center. When this is animated on the screen, it won't have a hole but instead a center colored black.

If this is unclear, it will make more sense when we animate the circles on the screen.

You should make sure that the background color of the picture you are going to cut the actors from is color 0. If it is not then you may get funny looking rectangular shapes in your animations.

2. Cut Out Your Actors

Now, exit your paint program and launch the file ACTOREDIT. After it has finished loading you should see a mousetext screen with several numbered options.

Choose option 1), Load Picture, by pressing "1". Another screen will show the directory of file names in the SAP/PICTURES directory. Use the arrow keys to select the file named "TUTORIAL.PIC" and press return.

The picture will load and be displayed on the screen. Click the mouse or press any key to make the picture go away and you will be returned to the main menu.

At the bottom of the screen should be displayed "shot : 0 (empty)". This means that shot 0 is empty; you have no current shots.

Choose option 3), Cut Actor From Picture. A message will be displayed about selecting the upper left corner of the actor. Click the mouse or press any key to make this message disappear. Now, move the mouse. You should see a pair of crosshairs move on the screen in tune with your mouse. Notice that you can only move the crosshairs by two pixels in the horizontal direction - more on this later. Move the crosshairs to the upper left corner of the red circle. You can only cut out rectangular areas, so make sure that the red circle is below and to the right of the white lines. Click the mouse once when you have maneuvered to the right point. Only click once! DO NOT hold down the mouse button and attempt to drag. You only click once!

Now, when you move the mouse, a rectangular box will grow or shrink. Move the box until it contains the entire red circle, and click the mouse. Try to get as close to the circle as possible; the smaller your selected area, the faster SAP will run and the more memory and disk space you save. The area containing the circles will also be included as part of your actor. Finally, you will be shown another message box about saving or discarding your selection. Click or press a key to make the message go away. Now, if you are satisfied with your selection, click the mouse. If you messed up and want to try again, press the spacebar and your selection will not be saved.

You will be returned to the main menu. If you clicked the mouse to save the shot, the bottom of the screen should now say "shot : 1 (empty)". Shot 0 now contains the red circle.

Repeat the previous step, but this time select the blue circle instead of the red circle.

The main menu should now display "shot : 2 (empty)") at the bottom. You may use the left and right arrow keys to move between the currently selected shot. For example, if you move back to shot 0 and press "4" for Delete, the red circle will be deleted and shot 1 (the blue circle) will become shot 0.

Instead, let's see what you've done so far. Press "6" to view the current actor. A message box will be displayed instructing you to use the left and right arrow keys. Press any key through the mouse to make the message go away. You should now see the current shot in the upper left corner of the screen. Use the arrow keys to move among your different shots. In the lower right corner of the screen, the current shot number will be displayed. Press spacebar to return to the main menu.

Notice that the shots are superimposed on the old display screen. If you like, you can clear the SHR screen to color 0 by pressing "8", and then try viewing the shots again with option "8".

Congratulations! You have just created an actor composed of two shots, a red circle and a blue circle. This actor could very well have included shots of the running man as well, but it usually makes more sense to save this as a different actor.

To save this actor, select option 7. You'll be asked for a filename for your actor. (It must be less than 15 characters) and it will be saved in the ACTORS directory. Type "CIRCLES" for the actor filename, and press return.

Before moving on to the scene editor, lets also cut out shots of the running man while we are in the ACTOREDIT program.

If you have cleared the screen, then once again use the load option "1" to load in the picture "TUTORIAL.PIC". Now, this time you won't have to cut out each shot from the picture like you did for the circles. I've already done some of the work for you! I've chopped out 6 of the 8 shots and saved it to disk. It's up to you to cut out the rest.

To load in the saved actor, press "2". The file menu will come up and show a directory of all files in the ACTORS directory. Use the arrow keys to select the file named "RUNNER" and press return.

Take a look at the actor you've loaded by pressing "6", View Actor. Use the left and right arrow keys to toggle among the different shots. When you are finished, press spacebar to return to the main menu.

Now, the bottom of the screen should read "current shot : 0". If you cut from the picture into the current shot, you will erase whatever is in shot 0 now. Press the right arrow key six times until the screen reads, "current shot : 6 (empty)". At this point, whatever we cut will be placed in the sixth slot, which is now empty.

Next, use option "3" to cut the shot from the picture. The running man you want to select is in the right hand column and three rows down from the top. Cut this right arrow key to the red circle. Repeat the process and cut out the man in the lower right hand corner into shot 7.

Once you have finished, you may again use the View Actor option to make sure everything looks okay. If it does, then congratulations! Save this actor (with option 7) and call the file "RUNNER.2".

If something went wrong, then use the left and right arrow keys on the main menu to select the shot which is messed up, press "4" to delete that shot, and
try cutting from the picture again into that shot.
You may use this process whenever you want to edit an actor which you have already created and saved on disk.

3. Create the Scene

Next, we will do the fun (and hardest) part – creating the animation! If you are still in the ACTOREDIT program, type "9" to quit. Now, run the SCENEEDIT program.

Once the program loads, you should be presented with a screen similar to the main menu of the ACTOREDIT program. The first thing you should do is type "1" to load a background screen for your scene.

After choosing option 1, you will again be presented with the directory of pictures. Choose the picture called "STUFF". This is a fairly simple picture with a bunch of boxes and lines all over the place.

IMPORTANT NOTE: Make certain that the background picture and the picture that you created your actors in (in this case, "TUTORIAL.PIC") SHARE THE SAME PALETTE. If they do not, your actors will be the wrong color when animated on the screen! The program will use the palette stored with the background picture as the colors to use when drawing the actors.

Now, we need to load in an actor. Type "2" to load in a saved actor. You will be presented with a list of filenames; these are the actors which you saved from the ACTOREDIT program. Select the "CIRCLES" actor. When you are returned to the main menu, you'll see the "CIRCLES" displayed in the upper right hand corner showing that this actor has successfully been loaded.

Okay, you've loaded a background picture and an actor – the minimum requirements to begin shooting a scene – so let's start! Type "6" to shoot the scene and begin the adventure.

The graphics screen will come up and display a picture with a lot of lines and some boxes. This is the picture "STUFF" that you loaded for your background. In the upper right hand corner is the number 0000. This is the current frame. Frame 0 is the first frame. At this point, you may get a list of commands by typing "$". Do it now. A somewhat imposing list of commands will be displayed on the screen. Take a look at them, and see if it makes sense. If it does, then great! If not, they will make sense shortly, so don't panic or give up hope. When finished, press a key to return to the graphics screen.

The first thing you need to do is C)ast an actor. Type "C" now. This will add a new actor to the current frame. You should see your actor, the red circle, slide over towards the bottom of the screen! Press any key to return to the main menu of the ACTOREDIT program. Select the "CIRCLES" actor. When you are returned to the main menu, you'll see the "CIRCLES" displayed in the upper right hand corner showing that this actor has successfully been loaded.

Notice that the red circle appears to have a hole in the middle! The background shows through. This is because you filled the center with color #0, the transparent color. Let's switch to the other circle, the blue one, which was not filled with color #0. To switch to the next shot of the current actor, press the up or down arrow. Since you only have two shots, the up and down arrow will "toggle" between the blue and the red circle. With the blue circle activated, try moving it with the mouse. You'll notice that the center is filled in black, and the background does not show through. Recall that earlier, the circles were filled in with different numbered blacks.

Switch back to the red circle, and move it to the middle of the left hand side of the screen. Now, watch the number in the lower right hand corner of the screen and click the mouse or press return (they both do the same thing).

What happened? The number should have turned into 0001, but aside from that, nothing else should have changed on the screen.

However, something did happen! A new frame, frame 0001, was created, and frame 0000 was copied into frame 0001. Then, you were moved to frame 1. Since the previous frame was copied into this frame, the location of the actors is identical and everything looks the same. However, if you change the location of the circle, you'll be able to see the difference.

With the mouse, move the circle a couple of centimeters to the right and a couple of centimeters down.

Press the left arrow. This takes you back one frame, to frame 0000. The ball is back in its original position. Press the right arrow to bring you back to frame 0001. The ball moves slightly to the new position.

Make sure you are in frame 0001, and press return or click the mouse. Now, frame 0002 is created and frame 0001 is copied into frame 0002. We want to move the ball diagonally down again, but as you may have noticed, sometimes it is hard to make precise control with the mouse. In this case, you can use the keyboard for "fine tuning." The 8,4,6, and 2 keys move the circle just slightly in the respective direction on the numeric keypad. The W,A,S, and D keys move it a little more. Try pressing "D" twice and "S" twice to move the circle diagonally down and to the right.

Repeat the process until the circle reaches the bottom of the screen.

Let's take a look at what you've done. Type ESC to quit back to the main menu, then type "P" for the scene projector. You should see the red circle slide over toward the bottom of the screen! Press any key to return to the main menu when it is over.

Time to add a little more to the animation! How about we make the circle "bounce" back up, diagonally and to the right. From the main menu, type "6" to return to the "shoot scene" portion of the program.

You can use the arrow keys to move to the last frame, but it is easier to use the "J)ump" command. Type "J" and then "L" for last frame, and the program will jump to the last frame you created.

You may want to check the previous (second to last) frame to see if it is identical to the last frame. It is common to have the last frame repeated twice, if you pressed return but didn't change anything. If the last frame is the same as the previous frame, then move to the last frame. If not, then go to the last frame and press return to create a new frame.

Now, press the up arrow key to switch to the blue circle. Press the "D" key twice and the "W" key twice to move the circle right and up.

Repeat the process, creating new frames and moving the circle up and to the right until it goes off the edge of the screen. When you're done, press ESC to return to the main menu.

Choose an intro effect for your scene by pressing "7". Choose any option you like. Do the same for the exit effect by pressing "8".

View your creation through the projector. "P"!

Assuming everything looks okay, save your scene via the save scene option, "5".

Call the scene "CIRCLE.BOUNCE"

4. More Advanced Scenes

The last scene you created contained only one actor. This time, lets make a new scene with three actors and we'll also add some sound. We'll use the circles in addition to the runner.

Currently, there is no clean way to wipe out the current scene from memory, so you should use one of the following methods:

1) Quit the sceneeditor and re-run it
2) Select "4" to load a saved scene, but instead of choosing a scene...
press ESC to abort. The current scene will be erased, except for the present background picture. Use one of the above techniques to start fresh. Using the commands you have previously learned, load in the background picture "STUFF", the actor "CIRCLES", and finally the actor "RUNNER".

Additionally, use option "3" to load a digitized sound. The familiar screen of file names will appear. Select the sound "NICESOFTWARE". When prompted for the playback speed, enter type "200". The playback speed determines how fast the sound will be played back; 1000 would be quick, and 10 very slow. Of course, this all depends on the original digitization frequency.

Type "6" to begin shooting the scene. Type "C" to cast a new actor; you should see the red circle in the upper left hand corner. Move the circle to the middle of the screen. Type "C" again to cast another actor. Another red circle will appear. Now, type "N" to change this actor to a new one - in this case, the runner. The runner should appear in the spot where the red circle was. If you type "N" again, it will change to the next actor, which would make it turn into the red circle again. For now, leave it as the runner and move it just to the left of the red circle. Type "C" one more time to cast yet another actor. Another red circle will appear. Type the up arrow to change the red circle to a blue circle. You have changed the shot to a different one but you haven't changed the actor. Move the blue circle to the right of the red circle.

Okay, right now you should have the runner on the left, and right next to it a red circle and then to the right of it a blue circle. You are going to make the runner run across both of these circles and you will see a very interesting thing.

As you've noticed, you can only control one actor on the screen at a time. To select a different actor, press the spacebar. The newly selected actor will blink for a moment so you know which one it is. Press the spacebar until the runner is the selected actor.

Press return to create a new frame. Frame 0000 will be copied into the new frame. The runner should still be the selected actor. We're going to try and make him run to the right. The trick is to watch the feet. You want the feet to line up as we switch to the next shot of the runner. So, with your eyes on the feet, press the up arrow key to change the runner to the next shot. Now, use the "M" or "6" key to move the runner slightly to the right so that the feet are near to where they used to be, but the runner is still moving towards the right.

Repeat the process until the runner has moved to the right side of the screen.

The basic procedure is:

Press return to copy/create a new frame
Press up-arrow to switch to the next shot
Use the A,D,4,6 keys to position the runner a little to the right of the previous position

While moving the runner, it may appear that the runner goes over the red circle and over the blue circle. However, when using the projector, this will not be the case! In the editor, the selected actor (in this case, the runner) is always brought to the foreground. In the projector, ACTORS ARE DRAWN IN THE ORDER THEY WERE CAST. This means that the runner will run OVER the red circle, since the runner was cast AFTER the red circle. However, the playback will run BEHIND the blue circle, since the blue circle was cast AFTER the runner. See for yourself! Press ESC to exit the editor, and type "P" to view the projection. The runner will move over the red, but behind the blue. This can be a very useful tool in making actors appear to go behind or over things.

Once this has been understood, return to the main menu and back to shooting your scene, option "6". We also want to add some sound in here. Lets make it start at frame 5. Use the J)ump command to get there, or press the right arrow 5 times to get to frame 5. Next type "P" for "Play Sound". You will be presented with all of the loaded sounds; since you've only loaded one, choose sound 1. Now, when frame 5 comes up, the sound will play! Try it out. Press ESC to go back to the main menu, and run the projector again to check it out.

Of course, it is also possible to animate more than one actor simultaneously. From the main menu, select option 6, and use the J)ump command to jump to the last frame. Move the selected actor to some random spot on the scene. Press spacebar to select the next actor. Move it to some other random spot. Press return to create a new frame. Repeat the process - move the actor to some random spot, press spacebar to select a new actor, and move it to some random spot, etc. Now, when this is played, after the man runs across the screen you should see actors pop up at various locations on the screen. You can also edit existing frames by going there with the arrow keys or the jump command, selecting the actor you want, and moving it. When you leave the frame, any changes you have made will be saved.

Feel free to play around some more with the scene; when you are finished with your creation, add some intro and exit effects, and save this scene under the name "RUNNER.CIR".

5. The Projector

The final step is making a movie. A movie is merely the linking together of various scenes. We'll make a miniature movie consisting of your first scene, the circle bouncing around, and the second scene, the man running across it.

To do this you will need to enter your text editor. The protext editor, Orca editor, or any word processor will do (as long as you save the file as text). Run your word processor and enter the following:

```
CIRCLE.BOUNCE
RUNNER.CIR
END
```

Save this file in the *MOVIES directory under the filename "TUTOR.SAP". What will this do? As you might guess, it will first run the scene named "CIRCLE.BOUNCE" and then the scene named "RUNNER.CIR". These are the names that you used to save your previous scenes. The "O" means that the projector should quit after running the scene "RUNNER.CIR". If you had used a "1" instead, then the projector will re-loop the entire movie. The last line should always contain the word "END".

As another example, if you had instead created the following movie file:

```
CIRCLE.BOUNCE
CIRCLE.BOUNCE
RUNNER.CIR
1
END
```

Then upon running the movie, you would see the circle bounce scene twice, the runner, and then the whole thing would repeat indefinitely until ESC is pressed to abort the movie.

To run your movie, launch the PROJECTOR file. The familiar file menu will appear. Simply select the movie you've just created "TUTOR.SAP" and it will run. Abort at any time by pressing ESCAPE. Any other key will pause the movie at the current frame until another key is pressed.

6. Copying Movies To A Floppy

If you wish to copy your creation onto a self-contained floppy disk, there are a few things you need to do.

First, create the subdirectories PICTURES, SOUNDS, MOVIES, SCENES, ACTORS,
SAP SCENEEDITOR Command Reference

C  - Cast new actor on the screen. This creates a new actor and adds it to
    the current frame. You may not have more than 15 actors on the
    screen simultaneously.

N  - Changes the currently selected actor to the next loaded actor.

SP - Spacebar selects a different actor on the screen.

Up - Up Arrow switches to the next shot of the currently selected actor.

Dwn - Down Arrow switches to the previous shot of the currently selected actor.

R  - Remove the currently selected actor from the frame.

I  - Insert new frame in front of the current frame. The current frame
    is copied to this new frame.

K  - Delete the entire current frame.

J  - Jump to a different frame.

<  - Left arrow moves to the previous frame.

->  - Right arrow moves to the next frame.

CR - Creates a new frame if currently on the last frame. Otherwise,
    it moves to the next frame (same as right arrow). Clicking the
    mouse has the same effect.

P  - Play a loaded digitized sound

O  - Other options to take effect on the current frame
    - Turn off transwarp/zip chip for speed dependent animation.
    - This is useful if animating in tune with music or sound, so
      everything will be synchronized for those with and without
      accelerators.
    - Wait for a key to be pressed.

That's it - upon running the PROJECTOR program, your movie should run.

If you want the PROJECTOR program to automatically run your movie, then
rename your movie file to "AUTORUN". When the projector program is first
run, it initially looks for this file. If found, it will run it. If not, it
will bring up the directory of movie files.

That is all for the tutorial - experiment, and have fun!

If you have problems, look at the "DEMO1" and "DEMO2" scenes and "DEMO.SAP"
movie. These are finished examples of what you might get after using the
tutorial.

SAP Comments and Addendum

Despite stack screen updating, SAP can still be slow due to a large amount
of overhead and C code. You can do the following to increase speed:

1) Keep actors small.
2) Keep actors close together. In particular, keeping the vertical distance
   between actors will speed things up. Two men, running horizontally on
   the top and bottom of the screen will be slower than two men running
   horizontally one right on top of the other.

Additionally, I am aware of the following additions which need to be made:

1) Cut and Paste features in the Sceneditor. This will make it
   much easier to do editing.
2) Ability to remove actors and sounds in the sceneditor. Currently
   you have to erase everything and start all over even if you want to
   just delete an actor or sound.
3) A built-in editor for the projector, so you don't need to load up
   your text editor.
4) General improvements to the user interface.
5) Perhaps a simple paint program in the ACTOREDIT program to make quick
   and minor adjustments.

When System 6.0 and Apple's animation toolset comes out, I may rewrite SAP
Please give me feedback about this program! If I don't get much response, then I WON'T WRITE ANY NEW VERSION. This may sound familiar - I had done the same thing with Columns Beta and Columns 1.0. However, the response to both was very positive and I continued to work on Columns 2.0. SAP can also grow, but it won't if nobody cares for it.

You may freely distribute this program, but if you create anything I'd like to see it.

I may be contacted at:

Kenrick Mock ; at this address until September, 1991
540 Canyon Woods Cir, #110
San Ramon, CA 94583

Kenrick Mock ; at this address after September, 1991
2300 Sycamore Lane, #18
Davis, CA 95616

SAP is written in Orca/C and Orca/M (c) Byte Works, with various routines utilizing the 360 text toolkit (c) 360 Microsystems and Tool219 (c) FTA for Soundsmith.

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BBS : Infinity's Edge: 415-820-9001, user #68
       Altered Apple : 916-737-1235, user #15
       Talisman : 612-332-8876, user #46
       UOP : 415-991-4832, user #53

SAP is written in Orca/C and Orca/M (c) Byte Works, with various routines utilizing the 360 text toolkit (c) 360 Microsystems and Tool219 (c) FTA for Soundsmith.
A brief summary of the editor's commands appears on SCLU's title page. Here is a full description of the SCLU editor:

Control-N: Text entered will be normal.

Control-I: Text will be inverse; only upper case can be entered (the 40 column mode firmware doesn't allow lower case inverse).

Control-F: Text will be flashing; upper case only.

Control-A: ("A" for "Apple"). Text will be MouseText. Note that the 40 column firmware doesn't allow both flashing and MouseText characters on the same screen.

Arrow keys: Move the cursor; II+ users will have to use control-K/Control-J in place of the up/down arrow keys.

<Return>: Moves the cursor to the beginning of the next line; doesn't affect the content of either line.

Control-P: ("Push/Pull") Enter insert mode; text to the right of the cursor will be pushed forward when new text is entered. If a character is deleted, text to the right of the delete will be pulled back. This mode is usually off, and will be turned on by using any arrow key or <return>. Because SCLU is in BASIC, it's pretty slow while in insert mode.

<Delete>/Control-D: Delete character to the left of the cursor; with pull-back if the control-P insert mode is active. II+ users can use control-D in place of the <delete> key to delete text to the mode to normal.

Control-B: ("Beginning") Cursor jumps to the left-hand side of the screen.

Control-E: ("End") Cursor jumps to the right of the last character on the line.

Control-S: ("Shorten") All text to the right of the cursor is erased.
Screen Blanker GS v2.2
by: Ron Mercer (aka. The Dungeon Master)
Call: The Mist // 216/974-1153 70megs, 9600bps

[ A Parasitic Presentation ]
< This one has NO bugs >
< This one does not lock up if an invalid key is pressed >
< This one detects keypresses better >

This USE file for ACOS will take over the answering of your modem, thus allowing for many features (suggestions please?). The screen will be blanked while awaiting a call; to reduce wear on the monitor (character imprints on your screen). While awaiting a call you can toggle the screen (back to normal or back to black) with the spacebar.

To give credit where credit is due, Xor Blade came to me with his problem, so it is for him that this file was written.

Installation is easy; copy the file SCR.BLANK to whatever spec you want it on, then modify your LOGON.SEG (or whatever seg has the MODEM(0) command in it) so instead of a MODEM(0) you have:

```plaintext
use "x:scr.blank":edit(0)
```

(where spec "x:" is a drivespec of your choosing)

Commands Available:
SPACEBAR = toggle screen (black/normal, normal/black)
Q = quit to prodos
G = sysop login
A = pick up phone

Enjoy

Aug18/1988

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 939 of 1262
The script language consists of these commands:

- **DO**
- **TERM**
- **GOTO**
- **HOME**
- **PRINT**
- **SPEED**
- **ECHO**
- **DIAL**
- **CONNECT**
- **RETURN**
- **WAIT**
- **IF**
- **SEND**
- **HANGUP**
- **SENDFILE**
- **GETFILE**
- **BREAK**
- **PAUSE**
- **DISK**
- **RUN**
- **END**
- **PRINTER**
- **EMULATE**

Each command is described next.

**DO label**

Causes script execution to begin executing instructions at a certain label. When a RETURN instruction is encountered, program flow resumes with the next instruction following the DO command. This is just like a GOSUB in Applesoft BASIC.

**TERM**

Temporarily pauses script execution and puts you into TERMINAL mode. When you press Escape to exit terminal mode, script execution continues.

**GOTO label**

Diverts script execution to a certain label. This is like GOTO in Applesoft.

**HOME**

Clears the screen and puts the cursor in the upper left corner.

**PRINT "text"**

Displays text on the screen, but is not sent to the modem.

**SPEED bps**

SPEED will set the bits per second rate for use with IT. Values for "bps" are 300, 1200, 2400, and 9600.

**ECHO mode**

Sets up local or remote echo modes for terminal mode. Arguments for "mode" are ON and OFF. ECHO ON is half duplex (local echo). ECHO OFF is full duplex (remote echo).

**DIAL number**

Dials a phone number. See CALL in the manual for details.

**CONNECT**

Attempts to connect with a host computer after dialing out. Use of the IF statement is useful after executing CONNECT to determine if connection was successfully established.

**RETURN**

Causes script execution to RETURN to the line following the corresponding DO instruction.

**WAIT "text"**

Waits script execution until "text" has come in through the modem. This is used for handshaking on incoming data. Use the IF instruction to determine whether or not the string to handshake on was found.

**IF condition GOTO label**

IF is used to test the most recent function performed by the script, such as attempting to connect with a host computer, sending or receiving a file, or handshaking on incoming text. Example conditions for use with IF are:

- if FOUND goto ...
- if OK goto ...
- if CONNECT goto ...
- if GOOD goto ...
- if FAILED goto ...
- if BAD goto ...
- if TRUE goto ...
- if SUCCES goto ...
- if FALSE goto ...
- if NO goto ...
- if YES goto ...

Placing NOT or NO in front of a condition will test for a negative condition, such as IF NOT FOUND GOTO label. The word THEN can be used in place of GOTO if you desire, although both GOTO and THEN are totally optional. If the condition tested is true, the script will attempt to GOTO to the label name which is at the very end of the IF instruction line. So if you had a label called "Stop" you could do this: IF NO CONNECT Stop

**SEND "text"**

Works just like PRINT, except this will send text to the modem and not to the screen. Remember, if you need to send a carriage return, use "^M" (caret followed by the letter M).
Disconnects the modem with the host, and hangs up the phone.

SENDFILE file options

Prepares to send the "file" using special "options." If "option" is PROTOCOL, XMODEM will be used to send the file.  Example:

    SENDFILE FOOBAR.COM PROTOCOL

If "options" is not PROTOCOL, the file is sent as a regular text file, line by line.  You must specify two "option" arguments: an interline delay value, and a character which to use to handshake on each new line.  Example:

    SENDFILE BLETCH.TXT 7 :

This will send the file "BLETCH.TXT" line by line, with an interline delay of 7, and will wait for a colon from the host before each line of the file is sent out.

GETFILE file PROTOCOL

Gets a "file" from the host computer using XMODEM protocol. (Sorry, text receive-to-disk is not implemented).

BREAK

Sends a modem break tone.  (see &BREAK in the ModemWorks manual)

PAUSE seconds

Causes script execution to pause for so-many seconds, then execution will resume.

DISK command

Allows the script to execute a ProDOS BASIC disk command.  Examples:

    DISK prefix /profile/mail
    DISK delete /ram/temp
    DISK cat,s6,d2

RUN script

Lets you run a different script file from within a script.

END

Causes a script to stop running.  If you're online, you're taken right to terminal mode.

PRINTER mode

Specifies whether any output which is shown inside the terminal mode window will be sent to the printer or not.  Values for "mode" are ON and OFF.  PRINTER ON sends output to the printer, while PRINTER OFF does not.

EMULATE terminal

Initializes terminal emulation for the named terminal template file.  If the template does not exist in the current prefix, you should specify a fully qualified pathname to the file. Terminal template files are those with a file type of $00 on the ModemWorks disk.

FILES

On disk, you'll find a sample script source file named SCRIPT.SRC.  Use SCRIPT.SRC as an example of a typical "dial up and log-in" script.

The program named COMPILE is the actual script compiler.  It can be invoked using the [C]ompile command from within IT, or from BASIC.

BUGS

The COMPILE program will not catch duplicate labels declared in a script file.  Be careful.
Sepia-izer

Lots of IIgs graphics, especially scanned-in images, are grey scale. With 16 shades of grey, a reasonable degree of photographic clarity can be achieved on the GS. However, grey scale is kind of -- well -- grey. Sepia tone is often a much more aesthetically pleasant palette, while retaining all the clarity of grey scale. For those who may not know, sepia tone refers to a range of brownish tones, from almost black to almost white.

Many early photographs were sepia tone, rather than black and white. Personally, I like sepia tone a lot.

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If you launch it, and select a file from the list displayed. Prompts explain how to navigate to the disk and folder your graphics are in. The file SF.GET must be in the same folder that SEPIA.IZER is in when you launch it. (SF.GET is a utility which provides the user-friendly, point-and-click means of selecting files in Sepia-izer. SF.GET is freeware and is available with complete documentation on GEnie and America Online.)

Ifs, Ands, Buts, and Watch-outs:

Sepia-izer is another method of converting grey scale graphics to sepia tone. Sepia-izer will take any PIC or Apple Preferred Format PNT file, and convert the palette of the graphic to sepia tone. To use Sepia-izer, simply launch it, and select a file from the list displayed. Sepia-izer only works on Apple Preferred Format PNT and SHR image PIC files. Unfortunately, Sepia-izer has no capability for displaying graphics, and requires that you already own at least one sepia tone graphic.

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I'm not pretending Sepia-izer is worth much of anything (it's freeware, by the way). It was really a bored-night-summer-night kind of a project. But _I_ use it and find it worthwhile; maybe you will, too. Karl Bunker
of your valuable time.)

The Outfitters

It is here that you will spend your gold to equip and provision your expeditions. As your experience grows, learn to choose effectively among the ways you can invest your wealth. Do you plan to trade? How many goods will you need? Do you aim to conquer? What size army must you assemble? Can you find food? How much should you take? Find the answers that fit your style of exploration. Or prepare yourself for an unhappy relationship with the Court and for expeditions barely able to survive - hardly the marks of explorers destined to become Viceroyos.

Player Tip

Food is bought and bartered for in relation to the number of men in your expedition. Decide on the number of men you want first, then on how many weeks' worth of food you want for them. To get a feel for this relationship, play around with the two quantities the first few times you're give the opportunity.

The Pub

Wise conquistadors will stop by here after every trip to record their maps and discoveries. Losing also all the maps and discoveries you made on your last three trips is heartreching.

The Voyage

When you leave port, mark well the indications of your voyage and how they continually change. On the screen window, north is always at the top, west to the left. At the top of the screen you see the month and year and the number of vessels still in your expedition. To the left is the size of your army and the number of weeks you can feed that many mouths with the food on hand. To the right is the ledger of your cargo of goods and gold. At the bottom is your speed and the depth of the water.

Your ship's cartographer can help you but little on this part of your search. Choose the "view map" option to learn your latitude and pay attention to the passage of time. By such dead reckoning you will learn to cross the ocean with the least expense of food and life.

There are many perils in the uncharted waters beyond Spain. Men die of scurvy or of storms in which no one can hear their last cries for help. Those same storms can blow you far off course and cost you vital time. Your supply of food dwindles as you ply your way across the vast ocean. Wander too long in search of landfall, and you will surely perish.

From the Historical Record

Columbus' critics were right. If there had been no American continent, no Spanish fleet of that era could have completed the ten thousand mile expedition across the Atlantic to Japan. They couldn't carry enough Food.

The food they could carry was no treat - a grim mixture of tough salt mat, hardtack and dried vegetables. Meals were cooked in a wooden firebox embedded in a heap of sand on deck. Sour wine and stale water completed the repast.

Discovery and Exploration

Bring your ships into safe mooring carefully and learn from your costly mistakes. Resolve not to lose more ships by inattentively running around or to the same shoals or shallows. Remember also that if you leave your ships unattended while you set off on long journeys, the sailors who man the ships (who are not included in your roster count) just might sail away before your return.

As you move over the land think of all who will bless your name for your discoveries. The Court and merchants want gold and trade; sailors, other explorers and scholars will be eager to see your maps. Others in the Universities will be anxious to hear of the surface of the land and of the people who live in it. And the Holy Church is ever solicitous to save unenlightened souls.

The Church has a powerful ally in your need for food and someone to help carry it. Unless you find and learn to deal with some local inhabitants, you're not going to get very far in your quest for the fabulously wealthy cities you hope to find.

Playing Tips

1. Imagine a world without roads and you'll begin to grasp the impracticality of rivers to the to the explorers in the 16th Century. Your on your own progress also depends on your use of rivers - a moderate pace on a river moves you as fast as a reckless pace on land.

2. Your computer will build maps for you as you go. Consult them frequently. (Your positions is always approximately in the center.) You want to build pictures in your head and perhaps even keep journal notes of what happened. Your goal is to be able to find your way back to useful places and avoid dangerous ones. (one screen measures 125 miles on a side on the expedition surface and 960 miles on a side on your maps.)

Making Contact with the Natives

In any new region, where the natives live will not be visible (save to the novice) unless you take the time to stop and look for signs. When you have spotted a signal and move to enter a village, think also of what signal you mean to send as you go in. Reckless aggression? Cautious friendliness? Open-handed generosity? The decision is yours alone. And its implications and consequences are yours alone to bear.

There will be considerable variety in the natives you encounter. Some will be more populous, some more courteous, some more hostile, and some more complex combinations of those attributes. If you would survive and prosper, learn to use your ears and eyes for clues to the natives' moods and the patterns in their responses to your actions and combinations of actions.

Trade or Conquest

Both approaches are available to you. Both, if successful, bring valuable bearers as well as goods. To trade, as the natives will be quick to tell (if your gait and perhaps your generosity seem suitable), you must deal directly with the chief. He always stands in the center of the village until an aggressive threat causes him to vanish or yield in despair.

Conquest is quick, but it consumes lives and leaves bitter memories. Trading is safer, but it is also slower and requires many goods. Take whatever actions your heart and mind tell you to take - and attend to what you learn about yourself in the bargain. And harken. None but novices should always believe everything their bearers tell them -
especially bearers far from home on an expedition whose food is going stale. And consider that the natives remember long and well what treatment they receive at your hands. Let your future dreams temper your present schemes.

From the Historical Record

On his final voyage, Columbus found himself stranded in Jamaica. At first the natives supplied food; but the voracious appetites of the explorers - they consumed 15 to 20 times as much food as the natives did themselves - soon put them out of favor. The Spanish were slowly starving.

Columbus devised a stratagem. His almanac predicted a total eclipse of the moon on the last night of February 1504. Columbus summoned the native chief and announced that Almighty God would darken the moon forever.

The eclipse began at moonrise. Soon the entire village ran howling to Columbus' ship, imploring him to halt the destruction. Columbus waited in his cabin until the full eclipse phase had passed, then emerged and took credit for a successful intercession on their behalf.

Columbus and his men enjoyed an ample food supply for the duration of their journey.

Establishing Forts and Missions

Both trade and conquest can bring you the opportunity to establish more than a thinly manned fort, and few to avoid and over gather. How you will depend on the native population of the site. Let the pictures signifying fort and missions be your guide. And let experience tell you how eager the conquered are to throw off their yokes during your absence.

Playing Tips

1. Pay attention to the time of year and to your latitude. Toward the far north and south, the effects of climate become visible in the fall, winter and spring. And, since how much food you'll find in a village depends on when the last harvest was, you'll find paying attention to the seasons materially rewarding as well as aesthetically pleasing.

2. Don't underestimate native communications. Some can spread word of your activities to cities you haven't visited yet. And bearers can show you the location of other settlements - and of treasures, if you pause long enough to listen to them.

3. A mission can supply nearby ships and cause the sailors to wait patiently for the return of the landing party, provided care has been taken to inform the mission inhabitants of the location of the ships.

1540 and Beyond

Within 50 years of Columbus' first voyage, the Spanish had conquered the New World's most advanced civilizations and had begun to consolidate one half of the territory into a colonial empire. Center stage began to pass from the Spanish Conquistadors to the traders and settlers of many nations who followed.

You may continue your explorations after 1540 if you wish, but you will receive no more titles from the Court or other recognition for your efforts. If you wish to see the complete map of the territory you've been exploring so you can begin anew with a New World, see the reference card section of this doc file.

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

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Apple II Computer Info

Notes on the World Maker

Calling brand new New Worlds "random continents" conveys something of the variance and variability, but it doesn't do justice to the sophistication of the program that produces them. New Worlds are not simply drawn willy-nilly. They conform to geological and cultural principles built into the program code.

There is, for instance, a plate tectonics model consulted for each creation. Mountain ranges are generated where the plates bump into each other. And secondary ranges (like the Allegheny mountains on the historical map) may be created as well.

The program also consults a cultural dissemination model for its work. The influences of major civilizations are presumed to spread outward. Consequently, pueblo dwellers generally will be found between city-states and primitive agriculturists. The model will allow for varying levels of this influence produce occasional continent arrangements which have no Incan level civilizations. Alternately, it can make a very rich and powerful arrangements, ones which, like 16th-Century Japan, are highly civilized from coast to coast.

Competitive Play

Though only one player may use and save a position on a particular map disk, competitive opportunities may be created by using 2 of the program disk to make multiple copies of a map disk. Several different players might then explore the same terrain, comparing progress periodically or simply declaring the winner to be the player with the highest totals and title by some agreed upon date. (Note: You can start a new game with a map disk without disturbing a game previously saved to that disk, but you cannot save more than one game on any given disk.)
quantities of the highlighted item from column to column. The price of items and the amount of gold or goods you have to spend appears at the bottom of the screen. If you are simply transferring resources and not buying or bartering, holding the button down will speed up the process. To leave a transfer menu, push the joystick up until the work "leave" appears, then press your button.

Historical - Boot side 2 of your program disk and follow the instructions as they appear on the screen.

Random Continents - Boot side 1 of your program disk and follow the instructions as they appear.

Seven Cities is a game of discovery. The instructions in this file will help you get started by telling you how to create a map disk and how to make one complete trip to and from the New World. You may then turn to the manual if you want additional hints and information.

Boot side 2 of the game disk (i.e., put the disk in drive 1 upside down and turn on your computer or simultaneously press Open Apple, Control, and Reset). Side 2 contains the map you want to copy as well as the copy program itself, so when you see the message, "Insert the disk you want to copy from and press 'space'...", just press the [SPACE BAR]. When you see the message, "Insert the disk you want to copy to and press 'space'...", insert a black disk. Continue following the prompt instructions as they appear (remembering that side 2 of the program disk is the disk you're copying from) until you see the message "Good copy..."

Once the title starts appearing on the screen, you may press the [SPACE BAR] at any time to complete that process. When the complete title is on the screen, make sure you have a joystick plugged in and press [RETURN]. Then press the joystick button to select the highlighted "Play the Game" option. When prompted to do so, remove the game disk and put your map disk in the drive, and press the button again to select "Play a New Game". (If the highlight is not on "Play the Game" and "Play a New Game", use the joystick to move it there before pressing the button.)

Finally, use the joystick to move the highlight to the level you want and press the button. To play, choose any level except Demo. If this is your first trip, Novice level is recommended.

Use the joystick to move to the left to your ship. (Hold down the button to move faster.) At sea, set course (and "automatic pilot") by pressing the button while you push the joystick in the direction you want to go. When you reach land, raise the joystick up and press the button. The level is then completed. When you have completed all levels, you may play the game again by following the instructions in the manual.
As you register your team, the proprietor will ask a series of questions about each member, questions that concern their race, profession, and gender. As the details are recorded onto the register, the resulting attributes of each individual are open for your inspection.
Characters may have any name, in length up to twelve letters, and with no spaces or numerals....
The four great races of Roo, Thalidar, Zhis'ta, and Human each possess their own qualities and quirks. Within each race, males are stronger than females, though the females of a race possess greater dexterity....

Adventurers are trained in one of the five professions:

**WARRIORS:**

Sturdy masters of the mace and broadsword; at least four per party is a sound grouping.

**MONKS:**

Wise and insightful, agile and vigorous.

**RUNEMAGES:**

Possessors of the Runes of power; can decipher glyphs that baffle others.

**SHADOWMAGES:**

Draw their power from shadow.

**NECROMANCERS:**

Seek power over what is most feared: death....

The innkeeper records the background of each adventurer in his log. It is acknowledged that race, gender, and profession determine a character's attributes. But, of course, all individuals bring strengths and weaknesses that exceed those of their positions. The proprietor thus allows extra value to be distributed among any adventurer's attributes, in any or all of the six areas:

**STRENGTH:**

How much an individual can carry, and the amount of damage he can inflict in combat.

**INTELLIGENCE:**

How many spells a character can learn, and how quickly he can learn new ones.

**DEXTERITY:**

The agility of a character -- the ability to move quickly and leap out of (or into) danger. The most dextrous individual moves first in a fight.

**POWER:**

The ability to focus magical energies. Power is drained by magic, restored by rest. A character with no power will not live.

**LEADERSHIP:**

Force of personality. The character with most leadership will be declared leader of the party. Hit points are restored by rest or healing arts, and, as with power, are necessary in order to live.

Once new adventurers have been registered, review or rename veteran characters from past adventures.

Also, recreate any whose souls were saved on the Save Disk. Select this option from the list, name the character whose life and spirit should be restored. Welcome the adventurer back into the party.

Finally, gather the party, selecting up to nine of the most able and ready. The mission ahead is not for the dull of mind or the frail of spirit.

**III BEGINNING THE QUEST**

The adventurers must prepare for the journey to the Keep. They may give equipment and supplies to each other, and through other means prepare themselves. They may also visit Raddath. An enigmatic, pan-dimensional creature, Raddath will offer his wares and wisdom to the party. He has felt the evil of the Keep and thus will give his aid in any way he can. Raddath buys and sells magic and goods, and can heal damage, drain poison, and even revive a character killed while in the Keep. He is not, however, given over to charity. Raddath has no aversion to acquiring a fortune while helping destroy the Keep.

FURTHER NOTE:

While Raddath is skilled in magic, he offers no guarantees of the effectiveness of his cures. No refunds.

The final preparation may be to order the party. Sound organization is essential within the confines of the Keep. Take this opportunity; it may be your last.

The road to the Keep is short, but it wears long on the soul of the hero who walks it....

(OP COURSE, IF YOU HAVE BECOME FAINT OF HEART, NO ONE WILL STOP YOU FROM ABANDONING THE QUEST NOW. IF YOU LEAVE THIS PLACE, YOU MAY NEVER SEE IT AGAIN...)

**IV WITHIN THE TOWER**

While approaching the Keep, and within it, instruct the adventurers with precision and clarity.

RALPH GET THE TORCH

EZEKIEL CAST THE LUMINANCE SPELL

NAOMI GET THE TORCH AND GIVE IT TO REBB

REBB LIGHT THE TORCH AND PREPARE THE SWORD

NAOMI WEAR THE ARMOR THEN PREPARE THE MACE

DAGMAR PUT THE WAND OF TRAVEL IN THE CHEST

Any command not directed to a certain character will inspire the leader of the party to respond.

The party as a whole will move following basic commands.

F or FORWARD
L or LEFT (to face left)
R or RIGHT (to face right)
B or BACKWARD (to step back without turning)

Explore the Keep thoroughly, and exercise caution.

OPEN DOOR, CLOSE DOOR, LISTEN

Inhabitants will occasionally allow you to address them, which you should do in either of the following ways. Try to do so before they lop your head off.

ASK SILDRA WHERE THE GOLD IS "SILDRA WHERE IS THE GOLD"

From time to time, assess the damage inflicted on fellow...
adventurers.

LOOK PARTY (gives members' power, hit points)

STATS

ROLE CONDITION (substitute C for Condition)

LOOK NAOMI

Magical healing is possible through the aid of Raddath. If a visit to him is impossible, characters may use any magic they possess, but at the expense of some power.

The adventurers can investigate and acquire objects while in theKEEP.

SEARCH (some characters will find hidden objects more quickly than others)

LOOK SCROLL

MORDOR GET SCROLL

FANNIE GET ALL BUT TORCH ZOORA GET ALL GET GREAT SWORD AND READY IT

If an adventurer has too heavy a load, something will need to be dropped. The amount they can carry depends on their strength.

DROP THE BASTARD SWORD

DROP ALL BUT THE TORCH

MERKER DROP ALL

Or, the adventurer might simply give the object away.

MYRA GIVE ROBERT THE GEM OF CHANGE GIVE THE SOGGY STICK TO BILL

You might wish to let one object hold another.

OPEN THE BOX AND

PUT THE GOLD INSIDE

CLOSE BOX

PUT ROCK IN HOLE

PLACE GOLD ON THE TABLE

Find out what an object can do by using or examining it.

USE THE FUNNY ROCK

EXAMINE THE FUNNY ROCK

If you have a particular use in mind, and a certain target, state those.

SMASH THE ALTAR WITH THE BREAKER BAR

ATTACK THE CORD WITH THE GREAT SWORD

Light is required to explore the dark, dank Keep. Without a lit torch (or an appropriate light spell), searching will be impossible. (Combat will be possible but difficult; there would be no warning at the approach of monsters.) Any illumination will serve, but will eventually extinguish, becoming a soggy stick or used up spell. It is advisable to have several sources of light at any given time.

LIGHT TORCH

ZEKE CAST THE LUMINANCE SPELL

V MAGIC:

Rely on the power of magic; above all else, it will be your key to success.

Though all may cast spells within the Keep, many have the capacity to learn no more than a scant two or so. Power and training determine one's triumph while using this ancient art. Mages, with exceptionally learned backgrounds, begin the journey with knowledge of a small number of spells. Raddath has acquired many others, which he makes available for sale to the hopeful adventurer.

As all may cast spells, so will all feel the effects of the task. After casting a spell, even the most powerful magician weakens, and eventually must restore powers with sleep. Monitor the losses of power, thus avoiding the loss of an adventurer.

Up to two spells or magical artifacts may be active at any one time.

INVOKER Ring of Life and cast the Fortress Spell

Discover more about spells you acquire by reading or learning them. Read Book of Darkness, Learn Death Spell Get Heal Scroll, Learn It, Cast It

A scroll that is successfully learned becomes a spell that may be cast. The scroll will vanish once it has been learned.

Mere mortals are limited in the number of spells they may know. When one's memory is full and the spell cannot be learned, a spell must be forgotten. Forget Death Spell.

Once a spell has been forgotten, only another scroll will grant a new opportunity to acquire the spell. Ready the magical artifacts as you prepared other weaponry. Ready Souleater Sword

Learning magical spells is sufficient preparation for use.

Watch for podiums while in the Keep. Through these devices you and your band of adventurers may quickly transport to another level of the Tower. The incantations needed to operate these mysterious devices are always changing.

Finally, the halls of the Keep are laced with spells that bind, hide, or hinder. Doors are often sealed with spells of warning, released only by the timely use of magical words discovered by those who made the journey before you. The passwords that are known: SAFETY, LAIR, PASS, FRIEND, HOME

Be apprised of the possibility of other passwords; and hope that if you are unsuccessful in vanquishing the demons from the Kee that you will at least return your successors what you learned.

VI COMBAT:

Successful warriors approach combat with weapons, equipment, and magic in readiness. An adventurer would do well to have equipment prepared for both Attack and Parry, and to wear the armor.
READY BASTARD SWORD, PREPARE GREAT SHIELD, WEAR SCALE MAIL

At a sign of combat, the party will, at your command, negotiate, flee, or remain to fight. When you mobilize the ranks and determine the course of action, you may assign each member to attack, parry, cast spells, change places, prepare equipment, or, of course, do nothing.

When assigning adventurers to their tasks, consider the skill that they might possess due to heritage and profession. These skills might cause them to perform some tasks better than others. Before combat, gain information on a member's skill as such:

EXAMINE ELLA

THE SKILLS:

ATTACK: Skills necessary to land a blow on an enemy.

PARRY: Success with which a character can avoid or deflect a blow.

MAGIC: Technical proficiency in casting magic.

OPEN: The ability to open sealed or locked objects.

SEARCH: The aptitude for finding hidden objects.

If combat has worsened the condition of the party, change positions to preserve life and limb. Enter: ORDER

And, as weariness sets in, allow the few remaining good spirits in the Keep to restore your band's energy. Rest for up to ten hours, then resume the journey. One hit point and a unit of power is restored to each character for every hour of sleep. Sleep for 3 hours.

Beware:

Monsters can sense when a party is asleep and unprepared for attack. A blow while asleep can be far worse than the extremes of combat. Consider the use of certain spells that will conceal the sleeping party from marauding monsters. Or, perhaps choose a safer course: sleep outside the confines of the Keep.

When perils strike and the fate of the party is in jeopardy, preserve the spirit of the adventure onto the disk we have named the "Save Disk." This way, if the situation later becomes hopeless, you may send that party back in time to the earlier conditions, as recorded on the Save Disk.

This is also useful if you must interrupt the quest. Record the adventure and later return.

To save the adventure, enter: SAVE

You will then need to insert the Save Disk. If you have a second disk drive, place the Save Disk there. The program will ask you to assign a number to the version of the adventure you are saving. Make a note of the number you give, and the conditions of the adventure. The computer will alert you when the adventure has been successfully saved and you may proceed.

Up to 15 games may be saved onto your Save Disk.

When you are ready to restore a past adventure, enter: RESTORE

As before, insert the Save Disk, and, finally, give the number of the adventure you wish to restore.

VIII ADDENDA: LORE USEFUL TO THE SERIOUS ADVENTURE

A. MAP-MAKING

Let your mind be occupied by the fight itself, and not with trivia of your whereabouts. Have at hand numerous sheets of gridded parchment, for map-making.

On these sheets, record the halls, the rooms, the stairs and floors of the Keep. Mark every step, and note the local conditions. Beware that the monsters are devious, and may cause walls to shift and doors to vanish. Do not be baffled or hindered, but merely reorder your party and press on.

B. WEAPONS & EQUIPMENT

Able adventurers will make use of a variety of weapons, but will choose wisely from the lot, knowing the characteristics and powers of each piece.

ATTACK WEAPONS AND EQUIPMENT

AXE:

Battle axes such as this, far larger than those for chopping wood, are also far more destructive.
BASTARD SWORD:
So named for its middling size, it reaches four feet.

BREAKER BAR:
Fry open chests, closed doors, and other obstacles that require sturdy leverage.

BROAD SWORD:
Commonly seen, and measuring three feet.

GREAT SWORD:
Stretching a full six feet, few enemies escape death when struck by this instrument.

KINSLAYER SWORD:
A deadly weapon because of its enchantment. One uses this at the price of some power.

MACE:
Of classic proportions, the deadly spiked ball is attached to the stout handle.

QUARTER STAFF:
Tough wooden poles, four and a half feet tall, fend of aggressors from the user.

SOGGY STICK:
The remnants of a torch that has extinguished; a crude but often effective weapon.

SOULSLAYER SWORD:
Delivers injuries that devastate the victim. One uses this weapon at the price of some power.

TORCH:
One torch will provide sufficient light for the entire party, and will last for several moves.

VALKHAM SWORD:
Will fell a monster in a single blow. Immensely powerful, but at the cost of power to the user.

DEFENSIVE EQUIPMENT

MEDIUM SHIELD:
This rectangular shield of half the height of a human tapers to a point at the bottom.

GREAT SHIELD:
Nearly of a warrior’s stature, the sides curve out slightly and protect well.

ARMOR

LEATHER ARMOR:
The simplest and lightest form of armor, made of sturdy sewn leather.

PLATE MAIL:
The wearer must be of great physical strength to wear the heaviest of mail, but will be protected for the effort.

RUNCIC ARMOR:
Magical armor of plate construction which augments a user's defenses.

STUDDED MAIL:
Heavier leather is reinforced with studs of metal, more protective for the wearer.

SCALE MAIL:
Metallic links overlap, lending a reptilian look to the garment. Protection is greater than from the studded mail.

CHAIN MAIL:
Interven metal loops afford better coverage than the scale mail.

SILVER ARMOR:
The most protective of armors, having absorbed so much magic from prior wearers.

C. MAGICAL SPELLS

ATTACK SPELLS

FLAME:
Torch a single creature.

THREAT:
Attacks a creature as does the Flame, but is more effective and of a higher price.

FIREBALL:
Brings effect upon an entire group, thus is quite useful.

SUNBURST:
A spell with exceptional power, it can work against entire groups and can slay Demons as well.

FREEZE:
Locks its single target into inactivity, for a short time.

STASIS:
Like the Freeze spell but for groups of the enemy.

DEFENSE SPELLS

PROTECT:
Defends its caster from an enemy's blows.

GUARDIAN:
Cousin of the Protect spell, but stronger.

BARRIER:
This invisible shield stands between the party and its attackers.

SANCTUARY:
More powerful kin to the Barrier spell.

WARD:
Protects the caster from the enemy.

FORTRESS:
Of similar type as the Ward spell, yet protects the group.

ENHANCEMENT SPELLS

LUMINANCE:
A magical torch.

REVEAL:
Akin to Luminance, but of longer duration.

HEAL:
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Soothes and heals those who receive its application; hit points are restored.

**HASTE:**
Heightened dexterity is the gift, for a short time.

**SPELLS OF THE COLLEGE OF NECROMANCY**

**ZOMBIE:**
Animates a dead adventurer, restoring double the hit points but rendering the individual severely disabled. If such a character leaves the Tower, he will dissolve and can never return.

**DEATH:**
The victim will be drained of life when this potent spell is cast.

**DECAY:**
A group of enemies will suffer dreadfull at the hands of this unpleasant magic.

**DISSOLVE:**
Excises a single foe from this reality.

**MAIM:**
Wholly unpleasant, and to be cast against a group of opponents.

**REVIVE:**
Returns to life an adventurer killed within the Keep.

**SPELLS OF THE COLLEGE OF RUNE MAGIC**

**CANTRIP:**
This spell doubles the potency of objects, but only for a price.

**CURE:**
Damage to a character will be cured no matter how grim the condition.

**FEAR:**
Plunges a foe into paralyzing fear for a short time.

**FIRE:**
Ignites a group of monsters.

**PERCEIVE:**
Cast this spell to obtain a clue about the surroundings.

**SLAY:**
Destroys creatures outright.

**SPELLS OF THE COLLEGE OF SHADOW MAGIC**

**DARKFIRE:**
Inflicts damage on any creature.

**ILLUSION:**
The target of this spell will ignore the entire party.

**MOONFIRE:**
The spell will blind the foe in its path, and thus render it less dangerous.

**SHIFT:**
Instantly transports the group to a safe place.

**STARFLARE:**
A huge and terrifying ball of flame which annihilates all creatures in the way.

**TWILIGHT:**
Causes monsters to become blinded to the presence of the adventurers, and pass by without noticing them.

**D. MAGICAL ARTIFACTS**

**AMULET OF EVIL:**
Single foes may be attacked by the magic of this black necklace.

**BLACK CRYSTAL:**
Protects the user from the blows of the enemy.

**BLACK RING:**
Passed down from the Necromancers, this is endowed with the power to transform a creature into a zombie.

**BOOK OF DARKNESS:**
One who reads this tome will know the dark, and everything it contains.

**BOOK OF NOTES:**
Perhaps the notebook of Nacomedon himself, the reader will glean an answer or two.

**BOOK OF OPENING:**
Its powers can open those things that are closed and locked.

**CHALICE OF AWE:**
A young enchantress once owned the chalice, and used it to rescue those who were caught in the Land of Darkness before their time.

**CULDRON'S WAND:**
The namesake of the wizard Gwyther's aggressive apprentice, this wand will attack numerous enemies at once.

**DEVIL'S GEM:**
Perhaps the storehouse for the soul of a Great Demon (such creatures commonly safekept their souls in gems).

**ELDRITCH STAFF:**
The user of this slender pole may seek advice from the gods.

**FUNNY ROCK:**
With a rock such as this, dexterity can be a trait of even the clumsiest Roo.

**GEM OF DARKNESS:**
When invoked, an able shield against an enemy's blows.

**GLOVES OF COLD:**
These strength-giving articles were fashioned inside a volcano and thus will withstand great heat.

**HAMMER:**
Powers to enchant came to this tool through its creator, a goblin Master Smith and mage.

**RAGGED CLOAK:**
Remain hidden from monsters while wearing this garment.

**RING OF LIFE:**
Will resurrect a fallen adventurer.

**ROD OF POWER:**
The user may enhance his magical abilities through the use of this article.
FOUL FROND:
This green plant-like creature has a bite of poison that can lay flat an adventurer in quick order. When its enemy succeeds in cutting it down, it may leave behind a silver rose.

GARGOYLE:
Short, repelled by bat-like wings, and possessing a spiked tail, spurred elbows, and a horned head. The gargoyle is physically tough, with rough, stone-like skin. Its magical powers are keen, though the creature is not well-armored.

GHOST:
Quick and troublesome, the residual life force of a once living creature, ghosts can be bitter about their plight and thus quite unpleasant. An unfortunate death from before may have bound this creature to a single spot.

GOBLIN:
Puny and dirty, ugly and irritating. Goblins often dress in tattered, cast-off clothing and have little to distinguish them.

HUMAN:
The best of traits can turn the most sour. A small number of these adaptable bipeds have turned to evil, and have used their knowledge of armor and civilization to aid the realm of Dal'brad. Humans can adopt a negotiative stance, but be wary of traitors and falsehood.

VENOMOUS SHEEP:
Small and innocent in appearance, these mindless, fanged creatures can inject a powerful poison which has no antidote. They display great aggression.

OGRE:
Physically strong but unmagical, the ogre is second cousin to the Troll. Its dark skin coloring is tinged with red.

RED CAP:
Evil creatures that thrive when residing on sites of great bloodshed. Their terms of service allow them to wet their caps with the blood of their victims.

STUOR WORM:
A large, slow, python-like creature with a dragon's head may often be found keeping guard over treasures. After constricting an adventurer's armor and shattering it, the Worm will batter its victim.

TROLL:
A weaker relative to the Ogre, but nonetheless tough in battle. This hideous humanoid has dark, scaly skin and misshapen eyes. They dislike sunlight; the dark has invaded their core and has made them cunning and evil.

WIGHT:
Like the Ghost, often has an unearthly tie to a grave. They are slow to act, possibly due to the rotting corpses they inhabit. Their great magical power makes them difficult adversaries.

ZHIS'TA:
A hatred of evil has turned into a love of it. When Zhis'ta becomes part of the evil realm, their cunning and agility take on a keeness that is hard to overcome. However, these traitors, like the Humans that have come into the Keep, have a weakness that can be turned to advantage at the hands of an able warrior.
<table>
<thead>
<tr>
<th>Effect</th>
<th>Power</th>
<th>Target</th>
<th>Duration</th>
<th>Chance</th>
<th>Weight</th>
<th>Cost</th>
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<td>Single</td>
<td>6</td>
<td>15%</td>
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<td>22000</td>
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<tr>
<td>is the chance (percentage) the item or spell will work.</td>
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<tr>
<td><strong>DURATION</strong>:</td>
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<tr>
<td>is the approximate number of turns the invocation lasts.</td>
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</tr>
<tr>
<td><strong>EFFECT</strong>:</td>
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</tbody>
</table>
Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 954 of 1262
Skills

'Till then, have fun with the game...

Following are the bytes that determine which skills you possess. The bytes are the same for either class, but the skills differ. A $00 in the byte means you do NOT have that skill, and a $01 indicates that you DO.

<table>
<thead>
<tr>
<th>Skill</th>
<th>Fighter</th>
<th>Byte</th>
<th>Wizard</th>
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<tbody>
<tr>
<td>Sword</td>
<td>$19</td>
<td></td>
<td>Fire Runes</td>
</tr>
<tr>
<td>Axe</td>
<td>$1A</td>
<td></td>
<td>Metal Runes</td>
</tr>
<tr>
<td>Mace</td>
<td>$1B</td>
<td></td>
<td>Wind Runes</td>
</tr>
<tr>
<td>Karate</td>
<td>$1C</td>
<td></td>
<td>Ice Runes</td>
</tr>
<tr>
<td>Dark Vision</td>
<td>$1D</td>
<td></td>
<td>Spirit Runes</td>
</tr>
<tr>
<td>Tactics</td>
<td>$1E</td>
<td></td>
<td>Weapon Lore</td>
</tr>
<tr>
<td>Armored Skin</td>
<td>$1F</td>
<td></td>
<td>Potion Lore</td>
</tr>
<tr>
<td>Karate</td>
<td>$20</td>
<td></td>
<td>Item Lore</td>
</tr>
<tr>
<td>Hunting</td>
<td>$21</td>
<td></td>
<td>Monster Lore</td>
</tr>
<tr>
<td>Persuasiveness</td>
<td>$22</td>
<td></td>
<td>Priesthood</td>
</tr>
</tbody>
</table>

$23-$25  
<Unknown>

$26-$27  
Experience points

$28  
65535 Counter (When you exceed 65535 Experience points, this goes to $01, when you achieve another 65535 Experience points, it goes to $02, and so on.

Items

The Items are even more screwed up than the Skills. The bytes $29-$32 determine what you hold in each of your ten item positions. Each value placed in the byte designates an item. I know they go down to $00 and up to at least $38... here is a list of $30-$38... I'll update this file when I have time to figure out the rest of them.

NOTE: The column of titles in quotes are the real names of the items. The names in the first column are those before the items are "Identified".

Remember: these are the VALUES, not the bytes.

| $30 | Lantern | "Lantern" |
| $31 | Iron Key | "Key" |
| $32 | Copper Key | "Copper Key" |
| $33 | Silver Key | "Silver Key" |
| $34 | Gold Key | "Gold Key" |
| $35 | Iron Coin | "Royal Seal" |
| $36 | Bloody Head | "King's Head" |
| $37 | Crystal Bar | "Forcefield Key" |
| $38 | Paper Dove | "Teleporter" |

A couple more values I deciphered in my tinkering:

| $0A | Huge Axe | "Battle Axe" |
| $0B | Huge Sword | "2-Handed Sword" |
| $12 | Scale Mail | "Scale Mail" |
| $14 | Suit/Armor | "Plate" |
| $16 | Violet Vial | "Violet Vial" |

When I get the rest of them figured out, I'll post an addition to this file with the completed list, as well as replacing those <Unknown>s with their real functions (one of them has to be health status... I'll probably figure out which one as soon as I re-send this to CYG...)
FOURTH LEVEL TO SAVE SHEILA.

THE KEYBOARD

RIGHT ARROW MOVES RIGHT
LEFT ARROW MOVES LEFT
; MOVES UP
7/ MOVES DOWN
I MOVES UP IN COPY-A VERSION
K MOVES DOWN IN COPY-A VERSION

WEAPONS

RETURN FIRES IN DIRECTION OF MOVEMENT
L LAYS A BOMB

DIRECTIONAL FIRING

A FIRE UP
Z FIRE DOWN
S FIRE LEFT
D FIRE RIGHT

MISCELLANEOUS

P STOPS OUR HERO; EVERYTHING ELSE STILL MOVES
Q QUIET SOUND; TOGGLES OFF AND ON
ESC STOPS GAME. HIT ANY KEY TO CONTINUE

HERE ARE THE SPELLS THAT YOU CAN CAST.

8 GET WEAPONS 1200 POINTS TO CAST
GIVES YOU 1 TELEPORT PILL
2 BOMBS
2 SPEARS
9 GET LIFE 500 POINTS TO CAST
GIVES YOU 1 LIFE POINT
0 TELEPORT 1500 POINTS TO CAST
TELEPORTS YOU SOMEWHERE WITHIN THE CASTLE
* PLAGUE 10000 POINTS TO CAST
KILLS ALL THE MONSTERS IN THE CASTLE
- DEFUSE 6000 POINTS TO CAST
DEFUSES ALL THE BOMBS YOU'VE LAID
SPACE CHANGES SIZE AND SKIPS BORING
PARTS (MUSIC, TEXT, ETC.)

YOU MUST GATHER 4 KEYS AND DEPOSIT THEM IN THEIR PROPER PLACE ON THE
About These Instructions

Most users of ShrinkIt will be interested in unpacking files they have downloaded from a Bulletin Board Service or Information Service. Others will also be using it to pack files that they want to upload to such a service. In these instructions I will first describe how one uses ShrinkIt to unpack archives, and then how to create a new archive file. Finally I will give an explanation of each of the options available in ShrinkIt's Main Menu, and fill in certain other details about ShrinkIt's functioning. If you are ONLY interested in how to unpack a file which you have downloaded, you can just read the section entitled "Unpacking an Archive", and skip the rest of this file. I will attempt to make these instructions understandable to the relatively new computer-user; if you are unfamiliar with any of the terms used, or become generally confused, you may want to consult the instruction manual to your telecommunications software, or a magazine article on telecommunicating with the Apple II.

System Requirements

ShrinkIt requires a 128K enhanced Ile, a Ile, Ile+ or Ilgs. Versions of ShrinkIt for the Apple II+ and unenhanced Ile are also available. Shrinking and Unshrinking functions have been split into two different programs for these older machines. These programs are called IPLUS.SHRINKIT and IPLUS.UNSHRINK, and they will run on any 64K Apple II, using the 40-column screen. More information on these alternate versions of ShrinkIt will be given towards the end of these instructions.

ShrinkIt-GS

These instructions are for the 8 bit version of ShrinkIt. A Ilgs version of ShrinkIt is also available. Archives that have been created with ShrinkIt-GS can be unpacked with version 3.0 or later of the 8 bit ProDos. You can also force ProDos to unpack the archive file, though this will not preserve file attributes.

Launching ShrinkIt

ShrinkIt can be launched using standard program selectors such as Bird's Better Bye, Squirt, ProSel, or the Ilgs Finder. Some versions of ProDos can't launch ShrinkIt; an update to the latest version of ProDos fixes this. However, a small SYS file called SHRINKIT.SYSTEM can be launched from BASIC, and it, in turn, will launch ShrinkIt.

Some Terms Defined

In the Apple II telecommunications community, there are a number of different file- and disk-packing formats which have been used over the years. Most of these formats have been superseded by ShrinkIt and its NuFX format; others are still in use. These various formats are usually denoted with a three-letter suffix appended to the file's name (as in "MY.FILE.BNY"). Here are some of the suffixes you are likely to encounter, with brief descriptions of their related file formats:

.BNY: Binary II format. Though not a true archive format, a Binary II "envelope" will preserve a file's attributes through a download or upload. ShrinkIt can unpack .BNY files, and they can also be automatically unpacked during downloading by many telecommunications programs.

.BQY: "Squeezed" (i.e., compressed with a different algorithm than the ones used by ShrinkIt) file within a Binary II envelope. Created with the utility BLU, these files can be unpacked with ShrinkIt.

.QQ: If you remove the Binary II envelope from a .BQY file, the squeezed files it contains will have the suffix .QQ, or sometimes .SQ. These files can be unsqueezed with ShrinkIt.

.ACU: The archive format used by (formerly AppleLink Personal Edition); these files can be unpacked with ShrinkIt. (America Online currently uses .SHK format for new uploads.)

.SHK: NuFX format; can be created and unpacked with ShrinkIt.

.ANY: A NuFX archive within a Binary II envelope. This is the format...
Unpacking an Archive

ShrinkIt starts up with a display of its Main Menu. The options in this menu are selected by using the arrow keys to highlight an option and pressing <return>, or by pressing the letter associated with the option you want.

When you have downloaded a file with one of the suffixes given above, you will want to process this file through ShrinkIt to unpack it and get at the files or disks it contains. It doesn't matter which of the packing formats your download is in; ShrinkIt will automatically recognize the format and handle the file accordingly.

To unpack an archive, you select "O-Open Archive" from the Main Menu. This will send you to a display called the File Dialog. Similar File Dialog displays are used for many of ShrinkIt's functions; the one you see after selecting Open Archive will show the title "Open Which Archive?" across the upper screen. The File Dialog is used in this case to select which archive file to "open", or unpack.

Most of the File Dialog screen is used to display a list of the files in the currently open folder. On the right side of the screen are a list of the key-commands you can use at this point:

TAB to change disk drives.
RETURN to open a highlighted folder, or open a highlighted file.
ESC to close the current folder.
OA- (Open Apple-period) to cancel this operation.
SPACE to select a file for opening.

Below this list of key-commands you will see this notation:

OA-G or RETURN does function
7 does tree search
Thus, if you only want to select a single file in the File Dialog, you can just press <return> with that file highlighted. If you want to select several files to be opened in sequence, you can select the files you want with <space>, and then press either <return> or OA-G (Open Apple-G).

The "tree search" function is a very powerful feature which will be especially useful to hard disk owners. By pressing "7", you will be sent to a "directory tree display" -- a display of all the folders within the currently open folder. You can then select the folder you would like to open simply by pressing the arrow keys to highlight that folder. Press <return> and you will be back at the File Dialog screen with all your selected files. But the search will not function on volumes which are on an AppleShare network.

At the bottom of the "Open Which Archive?" File Dialog, there is the prompt:

Showing ARCHIVES (OA-S)

This indicates that ShrinkIt is currently displaying only folders and files that it has identified as archive files. ShrinkIt uses two methods to decide whether a file is an archive: It checks the attributes of the file (its flags) and it checks to see if the filename has an appropriate suffix. When a file is downloaded, its attributes may not be preserved through the download. If your telecommunications software doesn't have either the appropriate attributes of the suffixes listed above, ShrinkIt won't be able to recognize that file as an archive. If you don't see your archive file listed (after you've opened the appropriate folder), try pressing OA-S. The prompt will change to "Showing ALL FILES (OA-S)" and indeed, the File Dialog will show all of the files in the current folder.

Press <return> to open the archive file you have selected, and ShrinkIt will display a list of the "items" -- the packed files or disks -- contained in that archive. Which is a "bare" NuFX archive.

When the items you want are selected, press <return>. Another File Dialog screen will be displayed, this one entitled "Select Destination Folder?" You use this to choose which disk and folder you want to put the new, unpacked files in. With this variation of the File Dialog, only folder (DIR) files will be displayed, and the words "Select Current" will be seen at the top of the list of files in each folder you open. Open the folder you want, and then press <return> with "Select Current" highlighted. The archived files will now be unpacked and saved to your disk.

Occasionally, you may want to have the different files within an archive unpacked into different destination disks or folders. If you press OA-<space> to select an item, that item will be unpacked "with prompting"; before the item is extracted, you will be prompted to select a new destination folder for it. You can select ALL of an archive's items to be extracted with prompting by pressing OA-P. For the archive file screen. ShrinkIt will prompt you to select a "device" (disk drive) for the archived disk to be unpacked to.

Creating an Archive

As you might expect, creating an archive is somewhat more involved than unpacking one. However, in many ways the procedure is similar to unpacking. First you will select "N-New Archive" from ShrinkIt's main menu. You will be prompted with:

Archive What?
Files Disk Cancel

Archiving files will be examined first. Press <return> with "Files" highlighted, and you will be sent to the File Dialog display described above. This File Dialog screen is entitled "Archive Which Files?" and naturally, is used to select which files you want to archive. Again, you use <space> to select the files you want, and when done, press <return> or OA-G to go to the next step in creating the archive. If you press <space> with a folder (directory) highlighted, then that folder and all of its contents will be archived.

Next, press <return> or OA-G, yet another File Dialog screen will appear, this one entitled "Name of Archive to Create?" At the bottom of this File Dialog screen you will see a prompt for "Filename:". Using the key-commands described above, you can first open the disk and folder you want your new archive to be saved to. Then type in a filename for the archive file you are about to create. Be sure to avoid confusion of the correct suffix to your filename: Straight NuFX archive should have the suffix ".SHK", and NuFX-within-Binary-II archives should be suffixed ".BXY". After entering the filename, press <return>, and the archive will be created.

There is one very important point to note at this stage: If you want the new archive to be a .BXY (NuFX-within-Binary-II) archive, you must press OA-<return> (Open Apple-<return>), rather than simply <return> after typing in the filename. There is a brief notation to
the right of the "Filename:" prompt to remind you of this.

The best way to create a .BXY file is to use ShrinkIt to make a .SHK file, and then let your telecommunications program add the outer Binary II envelope during uploading. However, not all telecommunications programs can do this. ShrinkIt does not allow you to add new items to a .BXY archive after it has been created. This can only be done with "bare" NuFX archives. For this reason, if you are using ShrinkIt to make a .BXY file, you must start out with all of the files you want to archive in the same folder, so you can select and pack them all at once. If the archive is simple NuFX, you can add a packed file or disk to it after it has been created. This is done by selecting "A-Add to Archive" from ShrinkIt's main menu. You will first be prompted to select the files (or disk) you want to add, and then to select which archive you want the new items added to.

To create a new archive from an entire disk, select "N-New Archive" from the main menu, and then select "Disk" from the "Archive What:" prompt. Disks to be archived may be either 800K 3.5" or 140K 5.25" disks, and may be ProDOS, DDS 3.3, CP/M or Pascal. Some non-standard, "customized" operating systems can also be handled. For most purposes, creating archives from individual files will be more efficient, and preferable. Disk packing is intended primarily as a means of handling data on the older operating systems.

ShrinkIt's Main Menu

The above instructions describe ShrinkIt's two main functions: creating and unpacking archives. ShrinkIt can perform a number of other functions, however. This section reviews each of the options available in ShrinkIt's main menu, in the order in which they are listed.

O-Quit: Exits you from ShrinkIt and returns you to your program selector.

N-New Archive: Create a new archive.

O-Open Archive: Open an existing archive to unpack it, or simply to see a list of its contents.

A-Add to Archive: Add new items -- either packed files or a packed disk -- to an existing archive.

C-Catalog: Display a catalog of a disk or folder. The folder or disk to be cataloged is selected using the File Dialog screen described above.

R-Rename Files: Allows renaming of files.

C-Copy Files: Copy files from one disk or folder to another. After selecting this function, two File Dialog screens will appear. The first will ask "Copy Which Files?", and the second "Destination Folder?"

D-Delete Files: Deletes files.

T-Type Files: This option allows you to read TXT (ASCII text), AWP (AppleWorks Word Processor), and WWP (WordPerfect Word Processor) files. A File Dialog is used to select the file to be Type'd, and then the contents of the file are displayed on-screen. Pressing <space> moves you through the file a page at a time; <return> will exit you from the current file and display the next one you selected (if any). Either <esc> or OA-. (Open Apple-period) will return you to the main menu.

F-Format Device: Allows you to create a new folder. A File Dialog is used to choose where to put the new folder and what to name it.

Format (initialize) a 5.25" or 3.5" disk. If you are using an IIgs and an Apple 3.5 drive, you will be prompted for an option: split "Fast-Format and Skew 2:1". This is a high-speed disk formatter which forges a little error checking for the sake of rapidity. If you dan't want to do a slower, safer formatting, select "Cancel" at this prompt.

E-Erase Device: Erase the contents of a ProDOS disk.

Z-Zero ProDOS Disk: Erase the contents of a ProDOS disk.

? - About ShrinkIt: Displays information about the programmer, gives distribution and copyright information, credits those who helped out, and displays a list of "short cut keys".

Key-Commands and Short Cut Keys

This section describes the key-commands which are available within many of ShrinkIt's functions. Some of them have been referred to before. A few of these commands are needed to perform certain of ShrinkIt's operations, while others are just short cuts or alternate ways of doing things. This list does not include those key-commands whose function is explained by on-screen prompts in the File Dialog displays.

OA-up arrow and OA-down arrow: In the File Dialog, the arrow keys together with Open Apple will move you through the file list quickly.

OA-A: Select all files in the open folder, or all items in the open archive.

OA<space>: Select an archive item to be extracted (unpacked) with separate prompting for a destination folder.

OA-F: Select all items in an archive to be extracted with prompting.

OA-E: In the File Dialog, eject the current 3.5" disk.

OA-O: In the File Dialog, display a list of online volumes.

/: In the File Dialog, instead of selecting a pathname by opening the correct disk and folder(s), you can also type it in; just press /* to start the full pathname. If you type the pathname of a folder, that folder will be opened and displayed in the File Dialog. If you type the full pathname of a file, the operation you have selected (Type, Open Archive, etc.) will be performed on that file.

U: If, for some reason, you want to archive a file without compressing it, you can do so by pressing "U" to select it instead of <space>.

OA-U: You can select all of the files in the open folder to be archived without compression by pressing OA-U.

OA-B: When scrolling through the list of items in an open archive, this will send you to the beginning of the list. When "Typing" a file, OA-B sends you to the beginning of the file.

* : At most points in ShrinkIt, you can simply press "." (period) to cancel an operation, rather than OA-. (Open Apple-period).

ShrinkIt for the ||+ and unenhanced //e

As mentioned earlier, if you are using an unenhanced //e or a //+, you will have to use alternate versions of ShrinkIt. ShrinkIt for these machines is broken up into two programs: IIPLUS.SHRINKIT and
creating archives and IIPLUS.UNSHRINK for unpacking archives. To an extent, the above instructions apply to the IIPLUS ShrinkIts, but there are some important differences.

In general, the IIPLUS ShrinkIts are simpler than the standard version. The 40-column screen is used, so the on-screen information is minimal. None of the utilities, such as copying files, are available; these programs only create or unpack archives.

The Open Apple (OA) key is not used. Some of the OA key commands are replaced with Control key commands, but others, such as OA-A (select all) are not implemented. To select an archived file to be extracted with separate prompting, press "P" (instead of OA-cpasece). In the File Dialogs of the IIPLUS ShrinkIts, instead of pressing <esc> to close the current folder, you must press <return> with the words "Parent Directory" highlighted.

For More Technical Information...
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If you want to know more about data compression:
If you want to know more about the NuFX ("nu-eff-ex") archive format, please consult the Apple Filetype Technote for $E0/$8002.

Trademarks
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In Shogun, you play the role of resourceful English seaman John Blackthorne, Pilot-Major of the Dutch trader-warship Eramus, which is on a secret mission of trade and plunder to the Spanish-dominated Pacific Ocean.

The year is 1600, and the powerful Catholic empire of Spain and Portugal is locked in a death struggle with the upstart Protestant nations of England and Holland. The Catholic nations have spread their political and religious influence across the world, reaching as far as China and the almost mythical land of Japan, extracting great wealth in spices and precious metals. Their extensive knowledge of the Asian seaways is highly secret information coveted by English and Dutch traders. But while the European powers battle each other, a longer and even more vicious struggle is raging among the feudal lords of Japan.

After hundreds of years of anarchy, Japan was unified by the great warrior Makamura, was Taiko, or military ruler. But the Taiko has died, leaving as heir a seven-year-old boy, and a great warrior Nakamura, was Taiko, or military ruler. But the struggle is raging among the feudal lords of Japan.

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Hints
=======

Shogun contains on-screen hints! If you ever get stuck, just type HINT and follow the instructions on your screen. The hints generally progress from a gentle nudge to a complete answer. Don't let the presence or absence of hints on a particular subject affect your thinking. In fact, fake hints have been added to prevent this. We strongly recommend that you look at only one hint at a time. Avoid the temptation to use the hints too often; this inevitably spoils, or at least lessens, the fun of solving a puzzle.

If you don't have the will power to stop looking at the hints you can type HINTS OFF. This will deactivate the on-screen hints (unless you RESTART or RESTORE to an earlier point).

Function Keys
==============

As described elsewhere in this manual, many commands have abbreviations: you can type N instead of NORTH, for instance, or I instead of INVENTORY.

With function keys, you can use a single keystroke as an abbreviation for whatever you choose. You can use a function key to abbreviate a long word that you don't type (like TORANAGA), or to abbreviate a commonly used command (like RESTORE), or to abbreviate a whole sentence (like LOAD THE PISTOL).

The 10 user-defined functions (F1-F10) are accessed by holding down the Closed Apple/Option key and simultaneously pressing the number key (1-0) which corresponds to the function you want to use. The arrow keys have also been defined as function keys. Initially, they are defined as the four cardinal directions. You may, however, change them also. Please note that the left arrow key is defined as WEST and cannot be used as a backspace key.

You start the story with the function keys already set to commonly used commands. To see what the function keys are to, or to change the settings of the function keys, TYPE DEFINE at the prompt {>} and press the RETURN key. Then use your mouse or up and down arrow keys to highlight the setting(s) you want to change. The vertical bar ||| or exclamation point !!! is used as an abbreviation for the RETURN key automatically pressed when you use that function key. Note: Only one RETURN can be included in each function key definition. Anything typed after the first RETURN will be discarded.

You can restore all the original settings of the function keys by highlighting the RESET DEFAULTS command and pressing the RETURN key. You can save any changes you make by highlighting the SAVE DEFINITIONS command. If after saving your own definitions you wish to RESET DEFAULTS, or save a new set of definitions, you may retrieve your previous definitions save by highlighting the RESTORE DEFINITIONS command and pressing the RETURN key. To leave the DEFINE screen, highlight the EXIT command and press the RETURN key.

Special Commands
================

Below are explanations for a number of useful one-word commands. In many cases, these will not count as a move. Type the command after the prompt {>} and press the RETURN key. Most of these commands appear in all Infocom games, but those that are starred (*) are new.

AGAIN
- This repeat your previous input. For instance, typing TURN THE WHEEL TO PORT then typing AGAIN would be like turning the wheel to port twice in a row. You can abbreviate AGAIN to G.

BRIEF
- This command tells Shogun to fully describe a location only the first time you enter it. On subsequent visits, Shogun will tell you only the name of the location in BRIEF mode, and remain in BRIEF mode unless you use the VERBOSE or SUPERBRIEF commands. SUPERBRIEF tells Shogun to display only the name of a place you have entered, even if you have never been there before. In this mode, Shogun will not even mention which objects are present. Of course, you can always get a full description of your location and the items there by typing LOOK. SUPERBRIEF mode is meant for players who are already familiar with the geography. The VERBOSE command tells Shogun that you want a complete description of each location, and the objects in it, every time you enter it, even if you've been there before.

COLOR
- If you are playing Shogun on a computer with a color monitor, you can type COLOR to change the colors of the text and background on your screen. This command works only on computers which support a color display.

DEFINE
- This command allows you to change the settings of the function keys. See the "Function Keys" section above.

DIAGNOSE
- Shogun will give you a report of Blackthorne's (ie: your) physical condition.

HINT
- If you have difficulty while playing the story, and you can't figure out what to do, just type HINT. Then follow the directions at the top of your screen to read the hint of your physical condition.

INVENTORY
- Shogun will list what Blackthorne is carrying and wearing. You can abbreviate INVENTORY to I.

LOOK
- This give you a full description of your location. You can abbreviate LOOK to L.

NOTIFY
- Normally in Shogun, the game will not notify you when your score changes. You can turn on this notification feature by using the NOTIFY command. Typing NOTIFY a second time turns the feature back off.

OOPS
- If you mistype a word, such that Shogun doesn't understand it, you can correct yourself at the next prompt by typing OOPS and the correct word. For example, if you typed ATTACK
THE NINAJ WITH THE SWORD and were told "[I don't know the
word 'ninaj']!" you could type OOPS NINJA rather than retyping
the entire sentence. You can abbreviate OOPS to O.

QUIT
- This lets you stop. If you want to save your position before quitting, follow the instructions in the "Starting and Stopping" section below. You can abbreviate QUIT to Q.

*REFRESH
- This command clears your screen and redraws the display.

RESTART
- This stops the story and starts it over from the beginning.

RESTORE
- This restores a previously saved position. See "Starting and Stopping" below for more details.

SAVE
- This puts a "snapshot" of your current position on you save disk. You can return to a saved position in the future using the RESTORE command. See "Starting and Stopping" below for more details.

SCRIPT
- Tells your printer to begin making a transcript of the story. A transcript may aid your memory, but is not necessary, and will work only on certain computers.

SCORE
- This command will show your current score and a ranking which is based on that score.

SUPERBRIEF
- Tells Shogun to give you the sparest level of description. See BRIEF above.

*UNDO
- You can use this command to "back up" one move. Suppose, for example, that you found a package but didn't know what it was. You might type OPEN THE PACKAGE and be told "The package explodes as you open it, destroying all your possessions." You could then type UNDO, and you would "back up" one move. Your possessions would be intact, and you could try giving the package to an enemy, or leaving it alone, or something else.

UNSCRIPT
- This tells your printer to stop making a transcript.

VERBOSE
- This command tells Shogun too give you the wordiest level of description. See BRIEF above.

WAIT
- This causes time in the story to pass. Since nothing happens until you type a sentence and press RETURN, you could take a nap, eat dinner, then return to the story to find that nothing has changed. You can use WAIT to make time pass in the story without doing anything. For example, if you saw two soldiers arguing, you might WAIT to see what they'll do; if you were aboard a ship, you might WAIT to see where it goes. You can abbreviate WAIT to Z.

==========
Sample Transcript
==========

This transcript is not from Shogun, but will give you a good feeling for how Infocom's interactive fiction works. It contains some simple puzzles and their solutions. The player's commands appear in capital letters after each prompt >>.

>>LOOK
You are at the helm of the tradeships Dek Twintig, about to make port in Goro.

>>LOOK AT THE SEA
The sea is as calm as the day is beautiful. The sails are full and the brisk wind moves the ship along at a quick and steady pace. Directly to port lies the barrier reef which makes Goro an ideal harbor, sheltered from the relentless battering of the sea and safe from easy enemy attack.

>>LOOK AT THE REEF
The reef is to port, marked by a line of churning surf and broken two hundred yards ahead by the mouth of the winding channel that leads to the anchorage in Goro Harbor. The Dek Twintig is running before the wind parallel to the reef.

>>LOOK AT THE CHANNEL
The channel is ahead and to port, marked by red and green buoys; red buoys mark the channel's left side and green buoys mark the right side.

>>WAIT
Time passes...
From atop the mainsail in the crow's nest you hear the lookout yell, "Coming up on the channel now."

>>TURN THE WHEEL TO PORT
You turn the wheel to port and the Dek Twintig slips into the channel.

>>LOOK AT THE CHANNEL
The channel surrounds you on both sides, about twice as wide as your ship, with red and green buoys marking its boundaries. Beyond the buoys lie shallow water, rocks, and disaster. The channel bends to starboard about three hundred yards ahead.

>>WAIT
Time passes...
The ship moves deeper into the channel propelled by the stiff winds.

>>WAIT
Time passes...
The ship moves deeper into the channel propelled by the stiff winds. The ship seems to be moving away from the center towards the left side of the channel. You hear the lookout yell excitedly, "Approaching red buoy dead ahead!"

Startled, you look to the left for the buoy but it's too late because you've just left the channel and run aground. Luckily, you're on a sand bar, and not the rocks.

>>UNDO
(UNDO done)

>>TURN WHEEL TO STARBOARD
You quickly turn the helm to starboard just avoiding the red buoy. The Dek Twintig responds, veering back towards the center of the channel.

>LOOK AT THE CHANNEL
The channel surrounds you on both sides, about twice as wide as your ship. The lookout yells, "Channel turning starboard, Captain!"

>Straighten Wheel
You quickly straighten the wheel and the ship immediately centers herself in the channel.

>LOOK AT THE CHANNEL
The channel surrounds you on both sides, about twice as wide as your ship. The lookout yells, "Channel turning starboard, Captain."

>TURN THE WHEEL STARBOARD
You turn the wheel to starboard, expertly following the center of the channel.

>STRAIGHTEN THE WHEEL
You straighten the wheel holding the Dek Twintig to the center of the anchorage. You notice a small boat being launched from the shore and heading your way.

>Tell the First Mate to Lower the Anchor
Seersucker orders three men forward to lower the anchor. Presently, you hear a splash and first part of your voyage is complete. The small boat is getting closer.

>LOOK AT THE BOAT
The small boat, now coming up beside the Dek Twintig, is manned by a crew of twelve. They are dressed in strange but beautifully wrought clothing. Some of the men look like warriors.

>Seersucker, Lower the Ladder
With the help of Hornung and Shalle, Seersucker lowers the ladder over the side. 

>Wait
Time passes... 
You enter the harbor under full sail, a tribute to English seamanship. The anchorage is just a hundred yards away now.

>Crew, Lower the Sails
The crewmen, who had been taking in the first sight of Goro, snap to and scurry up the riggings and smartly lower the sails and the Dek Twintig coasts majestically to the anchorage. You hear a small boat being launched from the shore and heading your way.

>Tell the First Mate to Lower the Anchor
Seersucker orders three men forward to lower the anchor. Presently, you hear a splash and first part of your voyage is complete. The small boat is getting closer.

>Look at the Boat
The small boat, now coming up beside the Dek Twintig, is manned by a crew of twelve. They are dressed in strange but beautifully wrought clothing. Some of the men look like warriors.

>Seersucker, Lower the Ladder
With the help of Hornung and Shalle, Seersucker lowers the ladder over the side.

>Wait
Time passes...
Four heavily armed men board the ship and position themselves around the top of the ladder. After a few moments a fifth man climbs the ladder. His manner and dress set him apart from the others, he is obviously their superior.

>Inventory
You are carrying official letters of introduction from the Dutch government, a sword, and a box containing a present to the people of Goro from Prince William of Orange. You step forward to address the leader. Immediately the four armed men jump forward, drawing their swords. You quickly step back.

>Bow to the Leader
The leader takes a much more relaxed stance. His guards relax but eye you warily.

>Give Letters to the Leader
You hand the letters of introduction to the leader. He looks at them but doesn't comprehend their meaning.

>Give the Box to the Leader
The leader takes the box and opens it. Inside is a globe of Europe and Japan outlined in precious stones. The leader runs his hand over the European portion of the globe letting it come to rest on the purposely unadorned country of Spain. You feel uncomfortable with his choice of resting place.

>Wait
Time passes...
The leader closes the box and speaks to one of the guards. The guard goes to the side of the ship and yells down to the men remaining in the small boat.

>I Am Captain Wicks
Upon hearing your name, Glaz becomes livid with rage, turns to Admiral Sukata and anxiously says something to Sukata. Instantly, Sukata yells something to his men and then to Glaz. The guards on deck come to a fighting posture while those remaining in the small boat begin to scurry up the ladder. Glaz faces you and says, "Captain Jeremiah Wicks, I hereby place you under arrest in the name of Admiral Sukata for the crime of piracy." As he speaks the guards move towards you.

>I Am Not a Pirate
The guards continue their advance. Your crew is not sure what to do.

>I Am Captain Alexander Wicks
You hurriedly explain to Glaz that Jeremiah Wicks is your half-brother, a scrounger, and an enemy of England and all nations. He turns and speaks once more to Sukata, Sukata listens intently then orders his men to stop.

Starting and Stopping
On your screen, you will see a description of the opening location of the story, Bridge of the Eramus, followed by the prompt (>), indicating that Shogun is waiting for your first input. There are a few inputs for you to try at the first several prompts. After typing each input, don't forget to hit the RETURN key.

>Inventory
You should now have a feel for interacting with the story. You decide what to do next.

Saving and restoring: It will probably take you several days to complete Shogun. Using the SAVE feature, you can continue the story at a later time without having to start over from the beginning, just as you can place a bookmark in a book you are reading. Even if you aren't about to stop playing, it's useful to SAVE before (or after) trying something dangerous or tricky. That way, even if you get lost or "killed" in the story, you can return to your saved position.

To save your place, type SAVE at the prompt (>), then press RETURN. Using a disk with data on it (other than for Shogun saves) may result in the loss of that data, depending on your computer. You can save your position as often as you like by using additional
Blank disks. Any time you want to return to a saved position, just type RESTORE at the prompt (>), and hit RETURN. You can then continue the story from your save.

Quitting and restarting: If you want to start over from the beginning, type RESTART and press the RETURN key. (This is usually faster than re-booting.) Shogun will ask you to confirm this command. If you want to stop entirely, type QUIT and press RETURN. Once again, Shogun will ask to make sure this is really what you want to do. Remember: when you RESTART or QUIT, you must SAVE if you want to return to your current position in the story.

Interactive Fiction

In Shogun, you type your commands in plain English each time you see the prompt (>). Most of the sentences that Shogun will understand are imperative sentences. See the examples below.

When you have finished typing your input, press the RETURN key. Shogun will then respond, telling you whether your request is possible at this point in the story, and what happened as a result.

Shogun recognizes your words by their first nine letters, and all subsequent letters are ignored. For example, Shogun would not be able to distinguish between DEMONSTRATION, DEMONSTRATIVE, and DEMONSTRATOR.

To move around, just type the direction you want to go. Directions can be abbreviated: NORTH to N, SOUTH to S, EAST to E, WEST to W, NORTHEAST to NE, NORTHWEST to NW, SOUTHEAST to SE, SOUTHWEST to SW, UP to U, and DOWN to D. IN and OUT and PORT, STARBOARD, FORE and AFT will also work in certain places.

Shogun understands many different kinds of sentences. Here are examples, using objects and characters that don't necessarily appear in Shogun:

> WALK TO THE NORTH
> WALK WEST
> WALK NORTH
> WALK SOUTH
> WALK EAST

You may use lower-case letters and words like A and THE if you wish. Shogun doesn't care one way or the other.

You can use multiple objects with certain verbs if you separate them by the word AND or by a comma. Some examples:

> TAKE THE PISTOL AND THE BAG
> DROP THE SWORD, THE COMPASS, AND THE TOWEL

You can include several sentences on one line if you separate them by the word THEN or by a period. Each sentence will be handled in order, as though you had typed them individually at separate prompts. For example, you could type all of the following at once, before pressing the RETURN key.

> TAKE THE PISTOL AND THE BAG

If Shogun doesn't understand one of the sentences on your input line, or if an unusual event occurs, it will ignore the rest of your input line.

The words IT and ALL can be very useful. For example:

> EXAMINE THE APPLE. TAKE IT. EAT IT
> TAKE THE KIMONO. PUT IT ON

The word ALL refers to every visible except object those inside something else. If there were an apple on the cabinet and an orange inside the cabinet, TAKE ALL would take the apple but not the orange.

There are various kinds of questions that Shogun understands. Examples include: WHO IS {someone}, WHERE IS {something or someone}, and WHAT IS {something}. For example:

> WHO IS TORANAGA?
> WHAT IS A SAMURAI?
> WHERE IS OSAKA?

When you meet other people in Shogun, you can talk to them by typing their name, then a comma, then whatever you want to say to them.

> PRIEST, HELLO
> YABU, TELL ME ABOUT THE PLAN
> MARIKO, GIVE ME THE DAGGER

Shogun tries to guess your intention when you give incomplete information. When it makes a guess, it will tell you. For example:

> UNLOCK THE DOOR
> THE QUEEN

If Shogun doesn't understand one of the sentences on your input line, it will ignore the rest of your input line.

Keep in mind, however, that most people don't care for idle chatter, you should listen to others and answer their questions. Often your actions will speak louder than your words.

Sometimes Shogun "knows" you mean to answer a question posed by another character. In these situations you can omit the name and comma. For example if Mariko asked, "What's your favorite color?" you could answer.

> YELLOW

You can also ask questions of characters by using the form ASK (someone) ABOUT (something). For example:

> ASK OCHIBA ABOUT THE SAMURAI
> ASK OMI ABOUT ISHIDO
> ASK YABU ABOUT THE PLAN

Shogun tries to guess your intention when you give incomplete information. When it makes a guess, it will tell you. For example:

> UNLOCK THE DOOR
> (with the key)

The door is now unlocked.

If you command is ambiguous, Shogun will ask you to clarify. You can answer these questions simply by supplying the missing information at the very next prompt. For example:

> GIVE THE PROCLAMATION
> THE QUEEN

The queen smiles as she accepts your gift.

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Tips for Novices

1. Draw a map. It should include each location, the connections to adjoining locations, and any interesting objects there. Remember, there are 10 possible directions (NORTH, SOUTH, EAST, WEST, NORTHWEST, SOUTHEAST, SOUTHWEST, UP AND DOWN) plus IN and OUT, PORT, STARBARD, FORE and AFT.

2. EXAMINE all objects you come across in the story.

3. TAKE as many things as you can carry. Most objects that you find are important for solving the puzzles that you'll run into.

4. SAVE your place often, so that if you mess up or get "killed", you won't have to start over from the beginning.

5. Read the story carefully! There are often clues in the description of locations and objects.

6. Try everything you can think of. Even strange or dangerous actions are fun and may provide clues; you can always save your position first. Here's a silly example:

> GIVE THE BROKEN COMPASS TO TORANAGA

Toranaga scornfully refuses your offer. He continues to look in the bushes for his dagger.

Thus, you discover that maybe giving something else to Toranaga (perhaps your dagger?) might be better.

7. There are many possible routes to the end of Shogun. If you get stuck on one puzzle, move on to another. Some puzzles have more than one solution; other puzzles don't need to be solved at all. Sometimes you will have to solve one puzzle in order to obtain the item(s) or information you need to solve another puzzle.

8. Play Shogun with a friend! Different people may find different puzzles easy and can often complement each other.

9. If you really have difficulty, you can type HINT. The screen will then show you a list of questions to which you can get answers. (Simply follow the instructions at the top of your screen to see the hint of your choice.) You don't need to use the hints to enjoy the story, but it will make solving the puzzles easier.

10. Read the sample transcript above to get a feel for how interactive fiction works.

11. You can word a command in many different ways. For example, if you wanted to stop the ship, you could type in any of the following:

> DROP THE ANCHOR IN THE WATER
> THROW THE ANCHOR IN WATER
> PUT ANCHOR IN WATER

If you type a sentence that Shogun doesn't understand, try rephrasing it or using synonyms. If Shogun still doesn't understand, you're probably trying something that isn't important for completing the story.

Common Complaints

Shogun will complain if your input confuses it completely. Shogun would then ignore any further sentences on your input line. (Certain events, such as attack, will also cause Shogun to ignore any additional sentences on your input line, since the event may have changed your situation drastically.) Here are some of Shogun's complaints:

(I don't know the word ______.)

That word is not in the story's vocabulary. It may help to use a synonym or rephrasing the command; more likely, you're just barking up the wrong tree. Shogun uses many words in the descriptions that it will not recognize in your inputs. So, you might read, "The moon casts violet shadows across the crater," but discover that Shogun doesn't know the words MOON or SHADOW or CRATER in your input. When this happens, you can assume that you don't need to refer to those things to complete the story; they are there only to create a more vivid image of your location.

(I think there's a verb missing in that sentence!)

Unless you are answering a question, each sentence must have a verb (or one of the special commands). Among the most important verbs that Shogun understands are TAKE, DROP, PUT, GIVE, LOOK, READ, EXAMINE, OPEN, CLOSE, ENTER, EXIT, EAT and WEAR. There are many more. Remember, you can use a variety of prepositions with your verbs. (For example, LOOK can become LOOK AT, LOOK INSIDE, LOOK BEHIND, LOOK UNDER, LOOK THROUGH, and so on.)

(I can't understand that many nouns with ______.)

Shogun recognized your verb, but it can't understand so many noun "phrases" with it. For example, Shogun may recognize SKIP but not SKIP THIS PART.

(I can't see any ______ right here!)

The object you referred to is not visible. It may be somewhere else, or it may be present but in a closed container.

(I can't use more than one object at a time with ______.)

You can use multiple objects (that is, nouns or noun phrases separated by AND or a comma) or the word ALL only with certain verbs, such as TAKE, DROP, and PUT. For example, EXAMINE will not work with multiple objects; you couldn't say EXAMINE ALL or EXAMINE THE BOWL AND THE SWORD.

(There isn't anything to ______.)

You used the word ALL, but there aren't any appropriate objects visible.

(Sorry, but I don't understand. Please that another way, or try something else.)

The syntax (sentence structure) you used is not among the hundreds of syntaxes that Shogun recognizes. For example, SIT UNDER THE TREE and SKIP AROUND THE MAYPOLE are syntaxes that Shogun wouldn't recognize. There's a limited amount of space in the program, so syntaxes that are less common or not useful aren't included. Try rephrasing the sentence.

(I beg your pardon?)

You pressed the RETURN key with typing anything.
THE SCENARIO: DEVICE ZX88B – mistakenly activated during a moment of feverish international tensions- is about to trigger twenty DOOMSDAY Bombs from a series of enemy satelites encircling the Earth! The world holds it's breath as you are assigned to disarm the device before it detonates the bombs.

Device ZX88B is a sophisticated failsafe system designed to resist tampering. It can't be turned off. It can't be destroyed. The twelve microchips within it are designed to send detonation pulses to the enemy satellite network within minutes of activation. The source of these pulses is the microfuse built into each of the twelve microchips.

Game Play:

Motherboard: The Motherboard within DEVICE ZX88B represents all twelve microchips and shows you which are available for entry at any given time. Enter a microchip by typing it's number. As long as the game lasts, you will always have a choice of at least two microchips to enter. The game evaluates your play on each chip, and awards a greater number of choices after a well played screen. If a chip defeats you, you may choose to re-enter it immediately, or re-enter it later in the game.

Microbatteries: You must use the power stored in each of the microbatteries to OVERLOAD, and disarm each microchip. You must go to a battery to transfer power to each of the other two batteries on each microchip. You continue to go to a battery and send charges to the other two until one of them becomes overloaded and begins to flash. At this time the flashing microchip is vulnerable and so are you. You must reach the overload without being hit. This causes the circuit to blow. You then begin a "Lightning Run" for bonus points. The "charge" on the overloaded battery becomes the amount of time available to you for the lightning round.

Neutrons, Double Neutrons, and Photons: Avoid being hit by these foriegn particles that pulsate throughout the microchip. Contact with any of them will drain power from the batteries and alert THE DEVICE of your intrusion. FIVE hits will cause the system to eliminate you and make micro fuse contact.

Microspark: Microsparks usually appear in dead ends and contact with them will send a power surge throughout the circuit, further charging the batteries.

Microfuse: The microfuse is the herat of the microchip. Do not let the left and right sides connect. If connection is made a detonation pulse will result. Polarity on the fuse can be flipped by making contact with it, thus slowing it down.

Lightning Run: During the lightning round you can run up your score and get revenge on the neutrons and photons by running over as many of them as you can.
Apple II Computer Info

Lightning: During the lightning round the spark becomes lightning and acts as a point multiplier. Each time you contact it point values for the neutrons and photons double.

Vacuum: The vacuum roams the wires of the microchip during the lightning round. Contact with it will bring the lightning round to an end.

The Twelve Micro-chips:
1. Bouncing Neutrons - slow
2. Quicker Neutrons - medium fast
3. Neutron Chambers - normal
4. Photon Chamber - Beware of the flashing electron guns that fire Photons.
5. Chamber Maze - Travel through the walls of the maze instead of the wires.
6. Double Cross Chamber - Where you enter determines if you travel in the walls or in the wires.
7. Magnetic Chamber - The walls draw you from side to side, changing without warning.
8. High Speed Micro-chip - Batteries drain faster and microfuse makes contact in half the time of a normal chip.
9. The Short Circuit - Short circuit moves quickly, timing is crucial to jump through it.

The Controls:
- Space Bar - Begins Game
- CTRL-J - Joystick
- CTRL-P - JoyPort
- 1-9,A-C - Select Micro-chip
- Button 0 - Jump
- CTRL-S - Toggle sound
- CTRL-R - Restart
- ESC - Pause

TO RUN SIDEWAYS YOU WILL NEED AN APPLE ][+,e,c COMPUTER WITH AT LEAST 48K, AT LEAST ONE DISK DRIVE, A PRINTER INTERFACE CARD, AND A DOT-MATRIX PRINTER WITH DOT-ADDRESSABLE GRAPHICS CAPABILITY. FOR A LIST OF CURRENTLY SUPPORTED PRINTERS AND PRINTER INTERFACE CARDS, SEE THE SECTION ENTITLED 'INSTALLATION GUIDE'.

WHAT'S ON YOUR DISK

A. Photon Wire Maze - Beware of the One Way wires.
B. Photon Walls - Combine all your talents to jump wires and move through the chamber walls.
C. Photon Diamonds - Maneuver the diamond maze and skillfully jump through the short circuit.

SAMPLE.PRF - THIS IS A SAMPLE SPREADSHEET, WHICH CAN BE USED IMMEDIATELY TO DEMO SIDEWAYS PRINTING.

INSTALLING THE PROGRAM

BEFORE YOU CAN USE THE SIDEWAYS PROGRAM, YOU MUST TELL IT THE TYPE OF PRINTER YOU HAVE, THE TYPE OF INTERFACE CARD YOU HAVE, IN WHICH SLOT THE INTERFACE CARD IS LOCATED, AND THE NUMBER OF DATA BITS PER BYTE THAT YOUR PRINTER WILL ACCEPT (NORMALLY 8).

1. PUT YOUR SIDEWAYS DISK IN DRIVE 1 AND TURN ON THE COMPUTER.
2. WHEN THE SCREEN TITLE APPEARS, TYPE THE CHARACTER "I" (FOR INSTALL). BE SURE TO DO THIS BEFORE THE MAIN SIDEWAYS MENU APPEARS.
3. THE "INSTALL" PROGRAM WILL TELL YOU HOW SIDEWAYS IS CURRENTLY INSTALLED, AND WILL PRESENT A MENU FOR CHANGING THE INSTALLATION. SELECT WHICHEVER ITEMS NEED TO BE ALTERED; THE PROGRAM WILL LEAD YOU THROUGH THE VARIOUS OPTIONS IN A SERIES OF MENUS.
4. WHEN YOU HAVE MADE ALL THE NECESSARY CHANGES, USE THE "TEST INTERFACE" OPTION TO DO A PRELIMINARY CHECK OF THE SYSTEM. THIS WILL SEND A LINE OF TEXT CONTINUOUSLY, INSURING THAT YOUR SELECTION OF PRINTER INTERFACE CARD AND AND SLOT NUMBER WERE CORRECT.
5. **NOW USE THE "EXIT" OPTION TO LEAVE THE INSTALL PROGRAM AND START THE NEWLY INSTALLED SIDEWAYS PROGRAM.**

6. **CHECK OUT THE SYSTEM BY PRINTING THE SAMPLE SPREADSHEET THAT WE'VE INCLUDED ON YOUR SIDEWAYS DISK WHEN THE SIDEWAYS SCREEN COMES UP, TYPE IN "SAMPLE.PRF", FOLLOWED BY <RETURN>.**

   **IF YOU BUY A NEW PRINTER, OR OTHERWISE CHANGE YOUR CONFIGURATION, MAKE SURE YOU KEEP SIDEWAYS AWARE OF NEW DEVELOPMENTS BY REPEATING THE ABOVE PROCEDURE.**

   Refer to the section entitled "INSTALLATION GUIDE" for information on particular printers and interface cards, and how they should be installed.

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### STARTING UP THE PROGRAM

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**PUT YOUR SIDEWAYS DISK IN DRIVE 1 AND TURN ON YOUR COMPUTER FIRST, A TITLE SCREEN WILL APPEAR, FOLLOWED, AFTER A FEW SECONDS, BY THE SIDEWAYS MENU.**

**WHAT YOU SEE ARE ALL THE CURRENT SETTINGS OF THE FORMATTING AND PRINTER OPTIONS. YOU MAY ALTER ANY OF THESE OPTIONS, SAVE THE NEW SETTINGS TO DISK, SELECT A FILE FOR SIDEWAYS PRINTING, OR EXIT TO A DIFFERENT PROGRAM.**

The cursor always points to a highlighted field; initially it points to the print field. Use ctrl-e and ctrl-x to move the cursor around the screen to different fields (on an apple IIe use up-arrow and down-arrow). If you would like to alter the value of a field, simply position the cursor to that field and re-enter it.

**FOR MOST OF THE FIELDS, YOU WOULD SIMPLY ENTER THE NEW VALUE AND TERMINATE YOUR ENTRY WITH <RETURN>, OR CTRL-E OR CTRL-X. YOU CAN USE LEFT-ARROW OR DELETE TO DELETE THE LAST CHARACTER YOU TYPED, OR <ESC> TO DELETE YOUR ENTIRE ENTRY. IF YOUR ENTRY IS INVALID, YOU WILL GET AN ERROR MESSAGE, AND THE FIELD YOU JUST ENTERED WILL REVERT ITSELF TO ITS PREVIOUS VALUE.**

The rest of the fields are "toggle" fields: you can change their contents simply by striking any alphabetic key (such as the space bar). These fields include horizontal form size, character font, and double strike.

**SELECTING A FILE TO PRINT**

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**TO PRINT A FILE, POSITION THE CURSOR TO THE PRINT FILE FIELD AND TYPE WITH FLASHING OR INVERSE CHARACTERS. IF YOU DON'T REMEMBER THE NAME OF THE FILE YOU WANT TO PRINT, YOU CAN EXAMINE THE FILENAMES ON YOUR DISK BY USING A "WILDCARD" IN THE FILENAME YOU ENTER. THE EQUAL (=) SIGN IS THE WILDCARD CHARACTER-IT STANDS FOR ANY SEQUENCE OF CHARACTERS IN THE CORRESPONDING POSITION OF THE FILENAME. FOR INSTANCE, P=W WOULD MATCH ANY FILENAME STARTING WITH P AND ENDING WITH W. AFTER ENTERING THE FILENAME WITH THE WILDCARD IN IT, DON'T TYPE <RETURN>, BUT USE RIGHT-ARROW TO DISPLAY, ONE-BY-ONE, ALL TEXT FILES MATCHING YOUR ENTRY. WHEN THE FILE THAT YOU WANT APPEARS, HIT <RETURN> TO PRINT IT.**

**HERE ARE SOME EXAMPLES OF WILDCARDS:**

- `= ALL FILES ON DEFAULT DRIVE`
- `,D2 ALL FILES ON DRIVE 2`
- `=ING ALL FILES ENDING IN ING`

**FILENAME RULES:**

**YOUR FILE MUST BE ON A DOS 3.3 DISK. DOS ASSIGNS EVERY FILE ON YOUR DISK A "FILE TYPE", WHICH GENERALLY DESCRIBES THE FORMAT OR PURPOSE OF THE FILE. THE "TEXT" FILE TYPE INDICATES A FILE COMPOSED OF PRINTABLE CHARACTERS-THIS IS THE TYPE OF FILE SIDEWAYS EXPECTS, AND IF YOU ENTER A FILENAME OF A DIFFERENT TYPE, SIDEWAYS WILL NOT RECOGNIZE IT. TEXT FILES ARE INDICATED BY THE "**" CODE NEXT TO THE FILE NAME WHEN YOU CATALOG YOUR DISK.**

**YOU SHOULD NOT USE FILE NAMES WITH EMBEDDED CONTROL CHARACTERS, OR WITH FLASHING OR INVERSE CHARACTERS.**

While sideways will handle lower-case characters in a filename, it is good practice to avoid using them. Sideways will disregard case when you use right-arrow to search for a file; however, when you terminate your filename entry with <return>, all the characters of the filename must be in the correct case for the file to be found.

**When you use right-arrow to search for a matching filename, the equal sign (=) is a wildcard; but when you terminate your filename entry with <return>, the equal sign is taken literally.**

**SIDEWAYS OPTIONS**

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**SETTING PAPER DIMENSIONS:**

**HORIZONTAL FORM FEED REFERS TO YOUR PAPER WIDTH. IT WILL TOGGLE BETWEEN 8 INCHES AND 13 INCHES. IF YOU HAVE A NARROW CARRIAGE PRINTER, SLOT, DRIVE, VOLUME:**

**IF YOU DON'T SPECIFY A SLOT OR DRIVE NUMBER, SIDEWAYS WILL USE THE DEFAULT SLOT AND DRIVE. INITIALLY, THE DEFAULT IS THE SLOT AND DRIVE FROM WHICH SIDEWAYS WAS BOOTTED (NORMALY SLOT 6, DRIVE 1). WHENEVER YOU SPECIFY A SLOT OR DRIVE WITH A FILENAME, IT BECOMES THE NEW DEFAULT.**

**IF YOU DON'T SPECIFY A FILENAME, BUT TYPE IN A SLOT AND/OR DRIVE NUMBER, FOLLOWED BY <RETURN>, SIDEWAYS WILL CHANGE THE DEFAULT SLOT AND DRIVE WITHOUT ATTEMPTING TO PRINT ANYTHING. YOU MUST REMEMBER TO PRECEDE THE DRIVE OR SLOT NUMBER WITH A COMMA. FOR EXAMPLE, TO CHANGE THE DEFAULT DRIVE TO DRIVE 2, TYPE IN:**

```
, D2 <RETURN>
```

**IF YOU SPECIFY A VOLUME NUMBER, SIDEWAYS WILL MATCH THIS NUMBER TO THE VOLUME NUMBER ON THE DISK, AND GIVE YOU AN ERROR ON A MISMATCH.**

**WILDCARDS:**

**IF YOU DON'T REMEMBER THE NAME OF THE FILE YOU WANT TO PRINT, YOU CAN EXAMINE THE FILENAMES ON YOUR DISK BY USING A "WILDCARD" IN THE FILENAME YOU ENTER. THE EQUAL (=) SIGN IS THE WILDCARD CHARACTER-IT STANDS FOR ANY SEQUENCE OF CHARACTERS IN THE CORRESPONDING POSITION OF THE FILENAME. FOR INSTANCE, P=W WOULD MATCH ANY FILENAME STARTING WITH P AND ENDING WITH W. AFTER ENTERING THE FILENAME WITH THE WILDCARD IN IT, DON'T TYPE <RETURN>, BUT USE RIGHT-ARROW TO DISPLAY, ONE-BY-ONE, ALL TEXT FILES MATCHING YOUR ENTRY. WHEN THE FILE THAT YOU WANT APPEARS, HIT <RETURN> TO PRINT IT.**

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**When you use right-arrow to search for a matching filename, the equal sign (=) is a wildcard; but when you terminate your filename entry with <return>, the equal sign is taken literally.**

**SIDEWAYS OPTIONS**

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**SETTING PAPER DIMENSIONS:**

**HORIZONTAL FORM FEED REFERS TO YOUR PAPER WIDTH. IT WILL TOGGLE BETWEEN 8 INCHES AND 13 INCHES. IF YOU HAVE A NARROW CARRIAGE PRINTER,**
YOU SHOULD LEAVE IT SET TO 8 INCHES.

VERTICAL FORM FEED IS THE DISTANCE BETWEEN PERFORATIONS OF YOUR PRINTER PAPER. WHENEVER SIDEWAYS IS DONE PRINTING A PAGE, IT FORM FEEDS TO THE NEXT MULTIPLE OF VERTICAL FORM SIZE. IT IS NORMALLY SET TO 11 INCHES.

SETTING THE STYLE OF THE PRINTOUT:

DOUBLE STRIKE IS A TOGGLE FIELD WHICH MAY BE ON OR OFF. IF IT'S ON, EACH LINE WILL BE PRINTED TWICE, FOR ADDED PRINT DENSITY.

CHARACTER FONT IS A TOGGLE FIELD WHICH GIVES YOU A CHOICE OF VARIOUS TYPE SIZES, FROM TINY TO EXTRA LARGE. ON THE RIGHT OF THE SCREEN, THE DIMENSIONS OF THE "DOT-MATRIX" - THE VERTICAL AND HORIZONTAL PRINT DOTS THAT ARE USED TO MAKE UP EACH CHARACTER IN THE SELECTED FONT ARE SHOWN.

CHARACTER SPACING IS THE DISTANCE BETWEEN SUCCESSIVE CHARACTER COLUMNS, MEASURED IN TERMS OF THE VERTICAL DOT DENSITY OF THE PRINTER. YOU CAN CROWD CHARACTERS TOGETHER, OR SPREAD THEM APART, BY MAKING THIS NUMBER SMALLER OR LARGER - THE RESULTING NUMBER OF CHARACTERS PER INCH IS DISPLAYED AT THE RIGHT.

LINE SPACING IS THE DISTANCE BETWEEN SUCCESSIVE PRINT LINES, MEASURED IN TERMS OF HORIZONTAL DOT DENSITY OF THE PRINTER. YOU CAN CROWD LINES TOGETHER OR SPREAD THEM APART BY MANIPULATING THIS VALUE - THE RESULTING NUMBER OF LINES PER INCH IS DISPLAYED AT THE RIGHT.

YOU MAY SET A DIFFERENT CHARACTER AND LINE SPACING FOR EACH CHARACTER FONT; WHEN YOU CHANGE FONTS, YOU AUTOMATICALLY REVERT TO THE CHARACTER AND LINE SPACING ASSOCIATED WITH THE NEW FONT.

SETTING THE FORMAT OF THE PAGE:

LEFT MARGIN CONTROLS THE AMOUNT OF WHITE SPACE BETWEEN TOP-OF-FORM AND THE LEFTMOST SIDEWAYS PRINT COLUMN.

TOP MARGIN CONTROLS THE AMOUNT OF WHITE SPACE BETWEEN THE RIGHT EDGE OF THE PAPER AND THE 1ST SIDEWAYS PRINTED LINE.

BOTTOM MARGIN CONTROLS THE AMOUNT OF WHITE SPACE BETWEEN THE LAST SIDEWAYS PRINTED LINE AND THE LEFT EDGE OF THE PAPER.

THE AMOUNT OF SPACE AVAILABLE FOR PRINTING IS DETERMINED BY SUBTRACTING TOP MARGIN AND BOTTOM MARGIN FROM HORIZONTAL FORM SIZE. THE PROGRAM AUTOMATICALLY COMPUTES THE NUMBER OF LINES THAT WILL FIT ON EACH PAGE, AND DISPLAYS THIS ON THE RIGHT HAND SIDE OF THE SCREEN.

OTHER OPTION:

STARTING PAGE ALLOWS YOU TO SKIP OVER THE INITIAL PAGES OF A PRINT FILE; IT IS NORMALLY SET TO 1.

SAVING OPTION SETTINGS TO DISK

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ONCE YOU HAVE SET UP THE SIDEWAYS OPTIONS AS YOU LIKE THEM, YOU CAN SAVE THEM TO DISK BY TYPING CTRL-S, AND RELOAD THEM FROM DISK BY TYPING CTRL-L.


YOU CAN ALSO SAVE THE OPTION SETTINGS TO THE SIDEWAYS DISK ITSELF. IF YOU HAVE DONE SO, THEY WILL BE RELOADED EVERY TIME YOU BOOT SIDEWAYS, AND YOU WILL NOT NEED TO USE CTRL-L.

IF YOU HAVE ONE STANDARD SET OF OPTION SETTINGS THAT YOU USE MOST OF THE TIME, IT MAKES SENSE TO SAVE THEM TO THE SIDEWAYS DISK. IF YOU HAVE DIFFERENT OPTIONS SETTINGS USED FOR DIFFERENT PRINT FILES, YOU MIGHT WANT TO SAVE EACH OF THE VARIOUS SETTINGS TO A DIFFERENT DISK, AND USE CTRL-L TO READ THEM IN.
The actual playing of the game is very simple since Silent Service is almost totally mouse controlled. What I will be doing is giving a description of each command and its uses.

**Scenarios:** This is the first options you will see when booting up the game.

- **Convoy Actions:** Here you have an actual fight. You have to destroy all the ships. Watch out for destroyers because they attack back.

- **War Patrols:** This is comprised of several convoy actions. In this option you must find the ships. Here you have a limited amount of fuel (55 days). When finished return to base.

**Difficulty Levels:** After choosing a scenario you will be taken to another menu. This menu has options that affect the game's difficulty.

- **Skill Level:** Range: 1-4; 1 = Midshipman, 2 = Lieutenant, 3 = Commander, 4 = Captain. The levels affect accuracy of torpedos, damage from depth charges, skills of enemy lookouts and other factors.

**Reality Levels:** These also control difficulty and also amke the game more realistic.

1. **Limited visibility:** If selected ships that are beyond sonar and radar range will not appear on maps.

2. **Convoy Zig-Zags:** Convoys will change course at regular intervals if selected.

3. **Dud Torpedoes:** Torpedos will launch but don't explode.

4. **Port Repairs only:** Once something is destroyed it may not be repaired.

5. **Expert Destroyers:** Certain enemy convoys will be escorted by expert destroyers.

6. **Convoy Search:** Convoys won't always appear in radar range. Convoys can be sighted by doing a 360 degree periscope/binocular sweep of the horizon.

7. **Angle-On-Bow Input:** The computer will no longer calculate the angle for torpedo shots. You must enter the angle yourself based on periscope observations. This option is for experts only!

**Terminology**

- **Port:** The left side of the ship
- **Starboard:** The right side of the ship
- **Bearing:** The direction you are looking
- **Heading:** The direction your ship is going

**The Game:** After choosing all the levels you will be taken to the actual game. It will eventually take you to an inside view of the submarine. From this option page you can select your next move by moving to the mouse to certain locations on the graphic. The options are: go to bridge (can only be done if surfaced), examine maps and charts, quartermasters log, damage reports, instruments and gauges. You can also continue patrol in the war patrol option and quit to main menu in the other modes.

- **Bridge:** From the bridge you can fire torpedoes and the gun. You can also vary the speed of the sub from full reverse to full forward. The sub can dive from this screen. You can also change the direction of the sub and use the binoculars and also change the time mode. You can also identify the enemy ship when it is in you binocular or periscope sights on target (the ship is on target the sight turns white). To identify the target move the mouse pointer the large box and click the mouse.

- **Periscope:** This option is the same as the bridge options. The periscope can be used up to 44 feet below the water. When under water the gun can not be used. It can also not be used at night.

- **Maps:** This option allows you to navigate the sub. You can also use the three zoom levels to locate ships. The time mode is very important for speeding up the process of approaching ships. Time mode 1 is normal (one minute game time takes 15 seconds). Each increase in time scaling doubles the speed. Time mode 4 is 32 game time.

**Special Commands and descriptions**

- **Torpedo:** Your sub has 24 torpedos, 14 forward and 10 aft (back). A torpedo is fired by clicking the mouse on the torpedo graphic. A torpedo has an effective range between 1000 and 4000 yards. After firing several torpedos. Only 4 torpedos can only be used when surfaced. If a ship is approaching you want to decrease the gun deflection. "-" decreases gun deflection, the "=" key increase gun deflection. Use the the "=" if the distance is increasing. Each time you press the key the deflection increases or decreases 25 yards. Example: If a destroyer is moving towards you at 18 knots at a distance of 4000 yards it will move over 200 yards before the projectile would hit it. Therefore a deflection of -200 to -250 yards should be selected before firing. When the ship is 2500 yards away the deflection should only be a 100 yards.

- **Deck Gun:** The deck gun has an effective range of 8000 yards. You start with 80 shells. The main purpose of the gun is to destroy damaged ships. The gun has almost no effect on destroyers, but work quit well on tankers and troop transports. The gun can only be used when surfaced. If a ship is approaching you want to decrease the gun deflection. "-" decreases gun deflection, the "=" key increase gun deflection. Use the the "=" if the distance is increasing. Each time you press the key the deflection increases or decreases 25 yards. Example: If a destroyer is moving towards you at 18 knots at a distance of 4000 yards it will move over 200 yards before the projectile would hit it. Therefore a deflection of -200 to -250 yards should be selected before firing. When the ship is 2500 yards away the deflection should only be a 100 yards.

- **Battery:** The sub's battery is capable of running for 1 hour at flank speed when under water and several hours at lower speed. The battery recharges when the sub is surfaced.
Blow Emergency Tanks: Control E does this. You use this option only when your sub is in a fatal dive. This will usually bring you to the surface. You can use this only once per battle. Once used you will not be able to dive again.

Release Fake Debris: "?" accomplishes this. This can only be used once. This used to fake destroyers into believing that the sub was destroyed.

Volume: As you all know the volume can be controlled through the control panel. You can also use the "v" key. This will allow you to select low, medium, high, or off for the volume.

Convoy Action Scenarios: These scenarios have various types and amounts of ships to fight. Some are harder than others.

- Plunger in the Inland Sea: (day/submerged) You will fight an escorted cargo ship. You will be fighting moving ships. They will also change direction.
- Wahoo vs. Convoy: (day/surfaced) You will have to destroy an unescorted group of ships, but time is of the essence because a destroyer is on the way.
- Hammerhead at Borneo: (night/radar) In this scenario you will be introduced to night combat. Avoid being as long as possible. Approach at moderate speeds.
- Searaven at Toagel Mlingui: (endaround) You are in a bad position against a convoy. You must maneuver around the enemy to get a good attack.
- Tautog at Night: (radar/visual night) Here you can approach the convoy but more care must be taken since there is good visibility this night.
- Grayback in the China Sea: (submerged radar) A very difficult scenario. Three radar equipped destroyers are guarding the convoy. The best plan of attack is to use your periscope in a dawn or dusk attack.

SHIP IDENTIFICATION: THESE DIAGRAMS ARE NECESSARY TO PLAY THE WAR PATROL OPTION.

This is the A ship

This is the B ship

shit, this is taking way too long I'm just going to tell the minor variations so you can play this option.
THE QUEST

The Caliph of Damaron was a powerful ruler in his youth; but now he's an old man, and pretenders are plotting to further their own selfish ends in the kingdom. Princess Sylphani, the Caliph's beautiful daughter, has been urging her father to name a successor before it is too late.

The morning our story opens, Sylphani, as was her custom, was the first to enter the Caliph's chambers. But instead of her father, she discovered a Falcon on his bed. The Caliph was no longer human.

The princess immediately summoned the royal physicians; but in spite of their supposed knowledge, they had no answer's. However, the wise men were able to agree on this: if the transformation was the result of a conjuror's spell, it would have to be broken soon. Otherwise, the Caliph might be trapped as a foalson forever.

Princess Sylphani realized she needed a hero. She remembered the orphaned boy who was raised at the palace by her own mother - the boy who had left to become a sailor when she was only ten years old. She had made him promise to return if ever she needed him, and she couldn't imagine a greater need than this.

You, the mighty Sinbad, receive the summons from your childhood playmate, and immediately hasten to Damaron. Overwhelmed at what a beautiful young woman Sylphani has become, you silently take a vow to do anything she requires.

The task is formidable. You must marshal the Caliph's forces to guard the city; you must undertake a great voyage to learn how the Caliph can be saved; and, above all, you must keep Princess Sylphani under your constant protection.

ON THE TRAIL

At the crossroads, you see a signpost showing potential destinations. Click on a city to go there. At the top of the screen on the right side is an INFORMATION BAR that contains, from left to right, a Location Box, a Restart Box, and a Music Box. The Location Box tells you where you are. Click on the Restart Box to begin your quest anew; click on the Music Box to toggle the music on and off.

Plan your travel's by clicking on the map on Sinbad's belt. Check the precious time contained by an hourglass; as you undertake your journeys, the sand fills the bottom of the glass. When the last grain of sand passes from the top, the Caliph's doom is sealed. You also use the hourglass to send order's to the armies of Damaron (see war is hell later) and check your progress on the quest.

If you are lucky enough to find a Genie, he grants you three wishes, and stays with you until you use all three. Click on his bottle to confer with him. You may choose any number of wishes; if one the one you see does not satisfy your desire, click on the bottom of the screen to see another. When you decide to accept a wish, click on the scroll.

Your odyssey will take you on ocean voyages as well as overland treks, and all the tools listed above are available to you in your cabin aboard the Sabaralus as well. To travel on the high seas, you may click on any of the destinations listed on the right page of the log book. (coming up later). To land on your current location click on the left page.

On the left side of the screen at the crossroads, and in your cabin aboard the Sabaralus, is the strength bar. If your strength is low, click on the strength bar for a rest for a day.

Sinbad and the Throne of the Falcon

DOC's rewritten by Exocet of FactUS

YOUR LOYAL CREW

Your ship, the Sabaralus, is the worthiest ship afloat, and your crew will defend it with their lives. But, while you are on land, pirates are likely to attack your ship. Each attack costs lives, and when your entire ship is gone, the pirates will take your ship. So, when you anchor, remember that large continents may have many ports. If you try to explore the entire continent from a single harbor the journey may cost several lifes. Also alwys remember where you leave your ship!!!

Each time the ship lands you must decide how many men to take with you, and how many to leave guarding the ship.

When you return to your ship to begin a voyage, you can send out a recruiting party to recruit new crew member's, the best places to get new crew member's are in large ports...

THE FINE ART OF CONVERSATION

In your travels between cities, you may run into some old friend's. Libitina, the Gypsy, or the Shaman. When you see one of these people, click on him or her, instead of the signpost, click anywhere else to ignore them.

LIBINITIA

Libitina is a dangerous seductress, renowned for her power's of sorcery. She is the only person who can tell you where the idols are. Try to get her to tell you there location, but don't make her angry. If you do she will surely kill you.

IRIS THE GYPSY

You knew her as a child, and her knoledge can be very valuable to you.

THE SHAMAN

The Shaman is a legendary figure. He alone holds the knowledge to unlock the curse affecting the Caliph. When you locate him remember his word's, and don't forget where you found him!!

THE SWORD FIGHT

Sinbad alway's attack's from the left. Move the joystick left or right to advance or retreat. Hold the button down and push up for high swing, right for normal, down for low.

When in a duel, you may retreat, but when you do, your crew remain's at the mercy of your oppenent's, there are some fight's that you can't retreat from.

THE CYCLOPS

When one of these beasts attack's your camp and kidnaps your men, you must face him in his underground lair, the only weapon you may use when dealing him is your sling and stones. Move the sling left and right with the joystick, and press the button to through the stones, but watch out for the boulder's that the cyclops throws!

Well, that's about it, I left out some of the garbage, but don't think that I missed anything in particular. Enjoy the game, and have fun.

Exocet
Apple II Computer Documentation Resources (a2_docs_documentation.msw)
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DOCUMENT skate.die

Skate or Die
You can use the mouse, joystick, or the keypad to control your skater. The joystick gives the best control of your skater though.

Keys:
- S: sound on or off.
- A: abort current event and return to Rodney's Skate Shop.

Rodney's Shop
You start out in Rodney's where you need to register before you skate. Just click on the on the "Sign-In" clipboard and then type in your name. To remove a name click over it. Move the pointer around in the shop to make any further selection. After leaving Rodney's just skate in the direction of the event of your choice. Push the joystick forward to move in the direction that your facing. Push left or right to go in one of those directions. Pull back to slow, or stop completely.

Events

Downhill Jam: You fight time and your buddy(if you ain't got one we supply Lester) to reach the main street first. Careful though, there's a reception party waiting. The controls are like Downhill Race with Regular and Goofy foot options available. Also, clicking while leaning the controller does the clobbering stuff. Click and lean into the direction you're facing to punch, either high, middle or low depending on where you're leaning the controller. Click and lean away from the directions you're facing to kick, either high, middle or low. No bonus points if you skate longer than 4 minutes.

Downhill Race: Moving the controller forward with a click is a jump and back is a duck. Click and left/right does a slide turn. There are no bonus points if you skate longer than 4 minutes.

High Jump: While your in the ramp, move the controller rapidly in any direction you want to build speed. You get a maximum of five passes on the right side where the height marker is. To go for it and record your attempt, click the button at the highest point of your jump.

Pool Joust: You get five passes to to get your opponent, then he takes the boffing stick and gets a chance to slam you. The first one to get three slams wins, but you have to win by two.

Freestyle Ramp: There's a hundred feet of wood and steel, carved into a wide smooth U-shape. You start on the left platform, move the controller forward or back to choose your entry point. After you drop in, you'll have ten passes through the ramp, executing tricks at the left, right, or both ends. As you make a pass, click the button in the pump zones to increase your speed and to select a certain trick. Also, lean the controller into or away from the direction your going.

<table>
<thead>
<tr>
<th>Trick</th>
<th># of Pumps Needed</th>
<th>Lean Controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kickturn</td>
<td>None</td>
<td>Away from the current direction</td>
</tr>
<tr>
<td>Rock-n-Roll</td>
<td>None</td>
<td>Into the current direction</td>
</tr>
<tr>
<td>Footplant</td>
<td>One</td>
<td>Away from the current direction</td>
</tr>
<tr>
<td>Rail Slide</td>
<td>One</td>
<td>Into the current direction move controller forward or back when on the platform to rail side. A click or lean into or away from the direction your going.</td>
</tr>
</tbody>
</table>
DOCUMENT skyfox

Move the joystick right and left to turn the plane. Move it up and down to change altitude. Press and hold down the second joystick button to engage the after burners for quick thrust. Release it to return to your pre-thrust speed.

**Tank Training 1**
- You are launched flying due east toward three consecutive waves of tanks. When you destroy the last one, you will automatically be returned to base. Launch again to face even more tanks.
- Use your overhead radar scanner to spot your targets.

**Tank Training 2**
- You will be launched onto the tail of an enemy plane. Shoot fast or it will circle and attack you.
- The forward scanner shows planes which are in range and will help you determine whether they are above or below you.
- (The space bar toggles between forward and overhead scanners.)
- Try your guided and heat seeking missiles.
- (Press G or H to arm and the joystick button to launch.)
- Succeed and you can re-launch against successively more planes.

**Plane Training 1**
- Launches you nose to nose with the enemy.
- The slow don't live.
- Start your disk as you would any other. Use a self-centering joystick. Press the joystick button to begin.

**Choosing Ranks (Skill Levels) And Scenarios**

Move the joystick right and left to select SCENARIOS and forward and backward to select RANKS (skill levels). Press the joystick button when you have the ones you want. There are 5 RANKS from CADET (the easiest) to ACE OF THE BASE (the hardest). There are 15 SCENARIOS.

The first 7 SCENARIOS are TRAINING MISSIONS, some with ENEMY TANKS only, some with ENEMY PLANES only, some with both. TRAINING MISSIONS contain no ENEMY MOTHER SHIPS and the enemy cannot destroy your home base.

In the 8 invasions you must protect your home base or lose your computer and whatever fighters you still have there.

When you wipe out all the enemy forces or when the enemy wipes out all your planes, you will be returned to base. When you get to the end of the game, use your joystick to select either same game (same rank, same scenario) or restart (if you want to change either). Then press the button.

(See inside for more information about scenarios.)

**Launching A SkyFox Fighter**

After you choose rank and scenario, the base computer will appear on the screen. To launch automatically against the nearest targets, press the joystick button to enter the launch tube. If necessary, then use the joystick to select low (for launching against tanks) or high (for launching against planes). Press the button again to launch. Your launch speed depends on your rank.

**Flying A SkyFox Fighter**

Move the joystick right and left to the turn the plane. Move it up and down to change altitude. Press and hold down the second joystick button to engage the after burners for quick thrust. Release it to return to your pre-thrust speed.

**Tank Training 1**
- You are launched flying due east toward three consecutive waves of tanks. When you destroy the last one, you will automatically be returned to base. Launch again to face even more tanks.
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- (The space bar toggles between forward and overhead scanners.)
- Try your guided and heat seeking missiles.
- (Press G or H to arm and the joystick button to launch.)
- Succeed and you can re-launch against successively more planes.

**Plane Training 2**
- Launches you nose to nose with the enemy.
- The slow don't live.

**Plane Training 3**
- Like tank training 2, but with planes.

**High/Low Training**
- Alternate waves first of tanks, then of planes.

**Combo Training**
- Move the joystick right and left to select SCENARIOS and forward and backward to select RANKS (skill levels). You may fly through the cloud layer that separates air and ground wars.

**Small Invasion**
- 1 Mothership to defeat, before it launches enough planes and tanks to destroy your base. Protect your base and the outlying installations containing your friends and relatives. Be sure to save some missiles to use against motherships.

**Full Invasion**

**Ending The Game**
- For every enemy plane and tank destroyed, you receive 1000 points. For every plane or tank that you lose, you lose 8000 points. (You can use the Space Bar to switch between forward and overhead scanners.)

**Green Code**
- Every time you destroy an enemy plane or tank, you receive 1000 points. For every plane or tank you lose, you lose 4000 points.
to fire a missile or you will get a 'no target' message on the scanner.

Using Automatic Pilot To Find More Enemy Targets
--------------------------------------------

When no enemy targets are in view, press both joystick buttons simultaneously or press A on the keyboard to engage the automatic pilot. Your on-board computer will locate the nearest enemy targets and send you to their location.

Using The Base Computer
------------------------

The base computer displays a tactical map which shows the location of all your installations and of all enemy vehicles. You may also follow this procedure to choose your own target to launch against from the base. (And while you're in the base, you can use the base computer to play an old 20th century video game if you can find the control that brings it up.)

Pressing C again disengages the base computer.

Flying Through The Clouds
-------------------------

There is a cloud barrier that stretches between 1,000 and 10,000 feet. You must fly through it each time you switch between ground and air combat. Flying up to 30,000 feet results in heavy fuel consumption. Look for enemy planes between 30,000 and 40,000 feet. They will only fly in that range.

As you approach the cloud barrier the base computer will automatically be disengaged and moved out of your way.

Landing A SkyFox Fighter
------------------------

You may land at home base to recharge your shields and take on fuel. You may not land at any installation other than your home base. (Your home base is shown on the tactical map as a white checked square. All other installations are shown as solid white squares.)

To Land:
1) Enter the sector containing your base;
2) Reduce your speed to zero by pressing zero on the keyboard;
3) Reduce altitude to zero by pushing forward on the joystick.

Once you've successfully landed; the base computer will appear on the screen.

Link With Computer's Tactical Map.
----------------------------------

'C' Brings up the computer map.
Pressing C Again removes it.

With the map up: I,J,K,M or the cursor keys move the cursor (blinking square).

'Z' zooms in on a square under cursor.

'A' Engages automatic pilot, targeting square under the cursor.
If tactical map is not up when automatic pilot is engaged, computer will automatically select nearest enemy occupied square instead.

'R' Brings up an installation status report.
Check the shields on each installation.
When they reach zero the installation is destroyed.

'T' Brings back the tactical map.

Guided Missile Count-
Press G to arm and G again to disarm and the joystick button to fire. You must be facing a target on your radar scanner to fire.

Clock- shows elapsed time since invasion.

Fuel Indicator-
Fuel consumption increased with speed. Using afterburners for thrust boosts 9 with the second joystick button and climbing to fight planes are especially expensive.

Land at home base to refuel. Running out of fuel in flight is fatal.

Speed Indicator-
In Miles Per Hour.
Press a number on the keyboard to set a new speed. 0 Stops, 1 Sets at 10% of maximum, 2 at 20%, etc.

Ground maximum is 1500 mph.
High altitude maximum is 3000 mph.

Control S- Toggles sound on and off.
Control B- Restarts The Game.
Control F- Pauses The Game.
Esc- Sends help when you are at the base or flying with the computer map up.

Radar Scanner Display-
The space bar toggles between overhead and forward radar screens. Overhead radar shows installations as well as enemy targets. Enemy targets blink. Watch for messages to appear here.

Heat Seeking Missile Count-
Press H to arm and H again to disarm and the joystick button to fire. You must be facing a target on your radar scanner to fire.

Auto Pilot Indicator-
Will show either auto or norm depending on your flying mode. Press A or both joystick buttons simultaneously to engage.

Shield Indicator-
When all the blue is gone so are you. Land at home base to recharge.

Altitude Indicator-
Be careful. Above the rank of cadet, hitting the ground hard costs some shield strength.

These Docs Typed By: The Time Lord  <>  Club X Rules!

Special Thanx To:
Disk Destroyer, Ghost Rider, And The Saint For Helping With The Dox, the title pages and keeping me awake so I could put this ware out the same day I got it.
Also I would like to thank Late Night With David Letterman, Budweiser, My Mom And Dad For Moral Support, Ronald Reagan, My Local Radio Channel, M-TV, My Dog And My Cat, And No Doze.
Special Thanx To Michael Jackson, My "HERO".

******************************************************************************
--WE DELIVER!--
******************************************************************************
The plane controls are accessed when flying in your plane. All controls must be typed in upper case!

- **[Button 0]** fire button
- **[Button 1]** thrust
- **[Both]** auto pilot
- **[space]** switch scanner
- **[G]** guided missile
- **[H]** heat seeking missile
- **[0-9]** speed
- **[A]** auto pilot
- **[C]** computer

For information on what all these functions do, check out my article by the name of Skyfox charts.

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**About the Article**

This article is (c)opyright 1984 by the Wyvern. It is not to be changed nor used on any other bbs without the Wyvern’s permission. The Wyvern (me) can be reached on the temple of doom.

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**The Computer Commands**

Computer commands can be reached by pressing the **[C]** key when flying your plane. The **[C]** must be typed in upper case!

- **[ESC]** help
- **[Z]** zoom
- **[T]** tactical display
- **[I, J, K, M]** move cursor
- **[A]** auto pilot to cursor
- **[S]** score
- **[R]** installation report

---

**Chart #1**

The Computer Commands

---

**Chart #2**
[0-9] Speed: Increases your speed from not moving at all to going
9000 miles per hour. 0 being the lowest & 9 being the highest
(speed).


[C] Computer: Activates the computer.

preface
------- This will explain what all those cmds I gave you in
charts, actually do in Skyfox and how to use them.

Computer Commands
-------------------

[ESC] help: This will give you a display much like my charts
telling you the usable commands in Skyfox.

[z] zoom: This will display a zoom screen where you can look
around and really get to see the sectors.

[t] tactical display: Displays the tactical display, showing what
is going on in every sector.

[i,j,k,m] move cursor: Move the cursor to where ever you want it
on the tactical map.

[a] auto-pilot cursor: Will activate the auto-pilot to take you
to the sector your cursor is in.

[s] score: Will show your score, and all the stuff you did to get
it, and a brief status.

[i] installation report: Gives you a report on what is going on
with your installations.

Plane Controls
--------------

[button 0] Fire button: Allows you to file your regular laser
blasts, or if armed a heat seeker/guided missile.

[button 1] Thrust: Puts thrust into your jets carrying your
plane at a much faster pace.

[both] Auto pilot: Activates the auto pilot.

[space] Switches from map scanner to attack scanner.

[g] Guided missile: Arm a guided missile which can be launched
with the press of button 0. Hit 'g' again to disarm the missile.

[h] Heat seeking missile: Same as the above but all apply to the
comm- and 'h' and we are dealing with a heat seeking missile.
Attacking
----------
In Skyfox attacking is the most important thing. Why, you say? Well in Skyfox attacking and winning the battle is the way you score.

So obviously we will want some cool attacking tips from the Wyvern, rite? Well I don't care what you answered to that question because I am about to torture you with them anyways!

When attacking your scanner should always be in the attack mode as I call it. The attack mode is the mode that does not show your enemies as dots, it shows them as sorta like real far away planes you can hardly see.

The reason you will want your scanner in attack mode is because it is much easier to catch your enemies and as the term goes "blow the hell outa the losers!". Once you have all of that set up you will want to reduce your speed and get ready to kill 'em! Now if there is lots of these evil faggot planes out there we will want to launch a nuke at them, but the great god of games didn't supply us with nukes, but he did give us heat seekers and guided missiles! So we want to load in a few seekers and waste most of them before they kill us! Then just use regular fire on the rest!

Now when palying with a mother ship it is better to save heat seekers and maybe waste your reg. laser bursts & guided missiles.

Now for the patient people out there not in the mood of fucking up fighters all day, we have the "patient person technique"!!! Here is how it works.

You go to some nice deserted area where you can stretch out, order a pizza and sip that coke. Set the speed to 0, load a heat seeker, and let it hover there. Soon some fighter planes will come along, as you spill the coke all over your shirt and throw the pizza on the ceiling! Now you must use your brains for once instead of relaxing! So you just fire away!!!!!!! Be sure to use that heat seeker that you loaded wisely or it may come back at you and you won't have to worry about scraping the pizza off the ceiling!

The scanner is displayed at all times of flight. It is the little screen type thing rite in front of your face there. By pounding the spacebar you can toggle it from map to attack mode or visa versa.

You say, map, attack? What is this loon talking about!? Well let me explain this subject a little more!!!

Map mode would be the mode where you can see squares and your small little plane there, and your loser enemies (that we hope to terminate) are displayed as dots.

Attack mode would be the mode where you can see like a 3-d type mini display. The lanes come up looking like planes you can hardly see, and your plane is not displayed as in map mode.

Map mode should be used when you are just flying around, that way you have a better view of what is going on, where your enemies are, and if you go out of the colony then you will know just how to get back!

Attack mode should be used when you are in battle, that way you can direct yourself better, have a better attack type view of your opponents and thats all you really need it for when attacking!

Latitudes
--------
I refer to latitud as the cross be-ween the sky and the surface. Only on some missions are you able to cro-ss latitudes, and on some the program will cross them for you!

When on ground to get to the sky latitude, simple put your speed up to 9, and push the joystick up.

The cross entry point for going up to the sky is 999. When you hit 999 you will pass through a huge cloud and end up in the high blue sky (no this is not the twilight zone).

When in the sky to get back to land, simply put your speed up to 9, and push your joystick up. Just like you did to get here in the first place!!!

The cross entry point for going down to land is 10,000. When you hit 10,000 the same thing happens, but you end up on land, and no we still haven't found the twilight zone so just calm down!
Apple II Computer Info


[3] once the cursor is on the blue base box, hit 'A' for auto-pilot who will fly you there.

[4] once in the base sector reduce your speed to 0 as soon as the auto-pilot stops, that way you wont go flying out of the sector.

[5] push joystick up, until your height (shown to the very right on your plane instrument panel) is to 0, and poof, you are in the base!

If by any chance you did not enter the base, check the computer for your sector and make sure you are on the blue box, make sure your speed & height is 0. If all that is right and it still is not working, you must have a bad copy!

The auto pilot is like attacking a very important part of the game. The pilot is important for it allows you to set it to travel to enemies and it is also programmed when not set by you to seek out the nearest enemy and fly you to it.

Obviously most of us do not use the auto pilot much because we don't fully understand its capabilities. It took me a while to figure out how important the auto-pilot really was. We can use our auto-pilot for two things. Those two things are, having it fly us to a set destination that we program in or just have it fly us to the nearest enemy.

First of all I will be talking about using it to take you to your very own set destination. In order to do this we will have to pull out our computer with the [C] command. If it says your computer is discharged you might as well forget about having anything to do with it and go on with just your gun and missiles. Once we have the computer, a tactical map will appear in front of us. On the side it will tell you what all the little colored squares represent, use the I, J, K, M keys to find a place you want. You may want to zoom in on an area to make sure that what's there is what you want to go to. Then just hit [A] and we are off!

Secondly we can use it to just take us for a cruise to check out the nearest enemy. To do this all you have to do is press 'A' while in the flying plane process and it will take you there!

The base is represented by a blue checkered square on your tactical map. When you first start out you are in the base.

We all know that us Skyfox fighter pilots have a hectic time, so they even put an alpha invaders in the base for us! All ya gotta do to play is hit CTRL-G from the tactical map.

You return to the base, if you fly there, if your plane gets bombed and you have to get a new one or when you start over.

At the base you are refueled and the damage on your plane is fixed, sorry but no more missles of any kind are given out so use them wisely!

To return to the base in simple steps from anywhere you may be do this:

[1] activate computer and tactical map.
When using the auto-pilot method if it says discharged, switch to map mode and look where your enemies are. Fly out of that sector and then auto pilot.

(Firing Techniques)

As soon as you hit a sector with some enemies, get ready to fire!

The tanks are by far the easiest, because they all come in a row. The smaller they are the more you should move the target up and fire, the larger they are the more you should move the target down and fire.

The planes are usually alone and hard to hit. Just keep on their tail and fire away.

I really see no need to use your 10 missiles (seekers & guideds). Unless you get scared you really don't need to use them. I got to a score of 45,000 without using the missiles once on the corners scenario and found your missiles don't really do much good.

PURPOSE
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Allows an Apple II family computer to boot ProDOS 8 on a disk device other than the ordinary default one. This is helpful when it is inconvenient or impossible to switch the position of disk controller cards to change the boot disk drive. In addition, SMARTBOOT will boot to ANY device on a Smartport chain (not just the first one).

SMARTBOOT is MOST useful for a computer like the IIc+ where there is one internal Apple 3.5 drive and a hard disk (such as the superb Chinook CT-20c). That configuration is limited to booting from the internal Apple 3.5 drive, since that drive comes first in the slot 5 SmartPort chain. With SMARTBOOT, you can boot from the hard disk rather than the internal 3.5 disk.

On the //c (my computer), SMARTBOOT is also useful because it will wait for the secondary boot disk to come online. I can turn on my computer AND my Chinook CT-20c hard disk at the same time, and SMARTBOOT will not try to boot the hard disk until it is ready.

On a IIgs, SMARTBOOT is only good for booting ProDOS 8 from a disk other than the first in a Smartport chain. Since most IIgs users are heavily into ProDOS 16 or GS/OS, I doubt there will be much demand for this program from them; however, the program has been tested and will work on a IIgs.

SMARTBOOT does not, unfortunately, work for GS/OS, the more sophisticated operating system for the IIgs, because of that its insistence on booting only from drive 1 on a slot.

GLOSSARY (for those experienced users, skip down to the next section)
ProDOS 8 -- the disk operating system for 8-bit Apple computers. Firmware -- built-in software that is present at all times in a computer; usually controls the hardware attached to the computer.

Slots -- connectors in the //e, //+, or IIgs into which cards can be plugged that allow control of various devices, including disk drives, printers, and modems. In the //c or IIc+, these slots are simulated by the firmware.

Smartport -- the name Apple gave to the built-in software that controls any disk device (except for 5.25 drives) plugged into the disk port on the back of the //c, IIc+, or IIgs.

Chaining -- attaching several disks to the same disk port by plugging one into another.

Booting -- the process of starting up a disk operating system by reading progressively larger segments off of a disk into memory, until the entire system is loaded.

Primary Boot Disk -- the disk usually used to startup the ProDOS 8 disk operating system; on a //c or IIc+, this would be the internal disk drive.

Secondary Boot Disk -- the disk to which SMARTBOOT transfers control for the actual boot process. Like any ordinary ProDOS boot disk, it must have in the main directory the file "PRODOS" (the true one, not a renamed SMARTBOOT as goes on the Primary Boot Disk) and at least one SYS file whose name ends in "SYSTEM" (such as BASIC.SYSTEM).

Unit -- the disk device at a particular position on a Smartport chain. The first disk device is Unit #1, and so on. On the IIc+, the internal 3.5 drive is Unit #1 on the Slot 5 Smartport.

Mirrored Disks -- disks that appear to be in a slot other than the one they are physically plugged in to. This is necessary when there are more than two devices attached to a slot, as ProDOS 8 can only understand two per slot. In these cases, the third and fourth are "mirrored" to an unused slot, usually slot 2.

Volume Name -- a unique name given to a disk by ProDOS, allowing it to tell the difference between disks. It is given a name that is preceded by "/" (such as /MYDISK).

Device Name -- a name given to specific devices on a Smartport chain.

Block 0 -- the first block on any disk; for ProDOS disks, this contains a short program that looks for the file PRODS, loads it, and transfers control to it (see "Booting").

WHAT IT DOES

Let’s take the examples of two Apple systems:

SYSTEM A: a fully loaded Apple //c with (ProDOS Disk Name)

Slot 4 = Ramdisk, 1 Meg (/RAM4 )
Slot 5, Unit 1 = UniDisk 3.5 #1 (/DISK.A)
Unit 2 = UniDisk 3.5 #2 (/DISK.B)  
Unit 3 = UniDisk 3.5 #3 (/DISK.C)
Unit 4 = Chinook CT-20c hard drive (/CT )
Slot 6, Drive 1 = Internal 5.25 drive (/DISK.D)

SYSTEM B: a minimally loaded Apple IIc+ with

Slot 5, Unit 1 = Internal 3.5 drive (/DISK.E)
Unit 2 = Chinook CT-20c hard drive (/CT2 )

With this setup, an ONLINE call to ProDOS will return the following:

```
SYSTEM A:
Slot 6, Drive 1 = (/DISK.D) Internal 5.25 drive
Slot 5, Drive 1 = (/DISK.A) UniDisk 3.5 #1
Slot 5, Drive 2 = (/DISK.B) UniDisk 3.5 #2
Slot 4, Drive 1 = (/RAM4 ) Ramdisk
Slot 2, Drive 1 = (/DISK.C) UniDisk 3.5 #3 (mirrored to this slot by ProDOS)
Slot 2, Drive 2 = (/CT ) Chinook CT-20c (mirrored to this slot by ProDOS)
```

```
SYSTEM B:
Slot 5, Drive 1 = (/DISK.E) Internal 3.5 drive
Slot 5, Drive 2 = (/CT2 ) Chinook CT-20c hard drive
```

Ordinarily, if you turned the computer on with ProDOS disks in all drives it would boot the 5.25 internal disk on System A, and the 3.5 internal disk on System B. If you removed the disk from the internal drive on System A, the computer would automatically try the first device in slot 5 (the UniDisk 3.5 #1, /DISK.A in this case). You would NOT be able to boot directly to the hard disk on either system.

Enter SMARTBOOT. Run the Basic program SB.INSTALL, and follow the instructions to install SMARTBOOT or SMARTBOOT.TINY. If you selected the Slot 5, Unit 4 device as the Secondary Boot Disk for System A, or the Slot 5, Unit 2 device as the Secondary Boot Disk for System B, you would be able to boot almost immediately to the hard disk when starting up the computer at power-on, or when restarting by pressing Control-Open-Apple-RESET.

PROGRAM DESCRIPTION

SMARTBOOT (SYS file)

This is the full-featured version of the program. It replaces the file PRODOS on the Primary Boot Disk. When executed, it transfers control to the slot and unit numbers specified at relative bytes 7 and 8 in the file.

If the slot contains a Disk II controller card, it will ignore the unit number and simply boot drive 1 on that card.

If the slot contains a Smartport card (such as slot 5 on the //c, IIc+, and IIgs), it will check to see if the disk device is online. If there is an error, it will continue checking that device until it IS online. For instance, if the selected device is a 3.5 disk drive, it will wait until a disk token is received. If the selected device is a Chinook CT-20c hard disk, SMARTBOOT will continue checking until the "NO DEVICE CONNECTED" (28 hex) error is gone (that is, until the drive has come up to speed and is ready to use).

If the disk device is not ready to boot, the error message returned by the Smartport firmware is displayed. (The other bytes displayed refer to the place in the program where the Smartport call was made, and is primarily for error checking purposes.) A "clock" will be displayed that advances approximately once per second until the Secondary Boot Disk is ready.

If you manually patched the slot and unit numbers into SMARTBOOT (see "HOW TO USE SMARTBOOT" below) and selected a slot and/or unit that does not contain a disk device, an error messages is displayed and the program halts with a "*" prompt and a cursor. From there you can switch to an ordinary boot disk and try again (and reconfigure your SMARTBOOT program to select a slot that really contains a disk device).

SMARTBOOT.TINY (BIN file)

This is the brief version that is loaded from Block 0 of the Primary Boot Disk. (It is less then 256 bytes long, so will load properly even from a 5.25 disk.) It does not do as much error checking as regular SMARTBOOT, and
will fail with almost any ordinary error that would cause a "Check Disk Drive" error on a //c.  It is not sophisticated enough to wait for a hard disk to come up to speed (as SMARTBOOT will).  If you don't need all the error checking, or don't want to replace the file PRODOS on the Primary Boot Disk, this is the version you should use.

SB.INSTALL (BAS file)

This is an Applesoft program that installs either of the two above programs, and makes a small alteration to Block 0 on the Secondary Boot Disk to ensure that the boot will work for Units 3 or 4 on a Smartport.  This patch should not affect ordinary booting; however, there should be a reason that it needs to be removed, SB.INSTALL will remove the patch and restore the original code (as any good patch program should -- thanks for teaching that to me, John Link!)  The patch to Block 0 DOES take into account the two different versions of the Block 0 boot code for ProDOS that exist.

HOW TO INSTALL SMARTBOOT

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The Applesoft program, SB.INSTALL, expects to find itself running from the Primary Boot Disk.  That disk can contain any files you wish it to, but must also contain SB.INSTALL and either SMARTBOOT or SMARTBOOT.TINY.  These files must not be in a subdirectory.

Use FILER or the Apple System Utilities Disk to transfer the files SB.INSTALL and either SMARTBOOT or SMARTBOOT.TINY to the Primary Boot Disk.

If installing SMARTBOOT, you must manually change the name of the program to PRODOS.  To do this, launch BASIC.SYSTEM and at the "1" prompt insert the Primary Boot Disk.  If PRODOS already exists on this disk, type

DELETE PRODOS

or

RENAME PRODOS,PRODOS.OLD

Then, type

RENAME SMARTBOOT,PRODOS

If installing SMARTBOOT.TINY, just make sure that PRODOS is either absent from the disk or is the true PRODOS (and not a renamed SMARTBOOT).

Start the SB.INSTALL program by typing

RUN SB.INSTALL

and follow the prompts.  You will need to have ProDOS disks in all online disk devices in order for the program to properly identify the disks in the Smartport devices.

HOW TO USE SMARTBOOT

SMARTBOOT.TINY can be used only by booting through a power-on (cold boot), by Control-Open-Apple-RESET (warm boot), or from Basic by PR#6 (if slot 6 drive 1 holds the Primary Boot Disk.)

SMARTBOOT can be used the same way, plus can be invoked from Basic by typing

-PRODOS

It can also be started from various program selectors:

PROSEL (by Glen Bredon)

Set up your menu entry like this:

Screen title: SmartBoot (or whatever)
Prefix: /PRIMARY (use your Primary Boot Disk name)
Pathname: PRODOS
Startup: <empty -- but see below>

SMARTBOOT will support the ProDOS convention for accepting a startup string.  If the startup position above contains the slot and unit numbers, SMARTBOOT will replace the default values set by SB.INSTALL and use the new numbers to do its booting.  This would allow you to boot to several different devices on a Smartport chain with the same SMARTBOOT file (renamed, of course, as PRODOS).  For example, to boot to Slot 5, Unit 3:

Screen title: SmartBoot
Prefix: /PRIMARY
Pathname: PRODOS
Startup: 53

Be sure if you want to do this for Unit 3 or 4 on a Smartport chain that you have a patched Block 0 on the disks in those drives.  This could be done with SB.INSTALL; just run it once for each drive you want to patch, finishing with your usual Secondary Boot Drive.  Also, you can do this with BLOCK.WARDEN by reading Block 0 off a patched disk and writing it to a non-patched disk.

Also notice that you may use BLOCK.WARDEN to change the startup slot and unit in SMARTBOOT (renamed as PRODOS, you recall) just as it can change a startup file name.  (See BLOCK.WARDEN documentation for details.)

DAVEX (by Dave Lyons) / ECP-8 (by Don Elton)

SMARTBOOT can be started from DAVEX by typing:

/PRIMARY/PRODOS 53

at the prompt to boot the disk in slot 5, unit 3.  I am not as familiar with ECP-8, but it should work the same from that ProDOS 8 shell program.

FOR THOSE INTERESTED...

After running SB.INSTALL, even if you don’t actually install anything, exit to Basic by selecting (3) from the main menu.  Then type

GOTO 20000

and you will see the full list of disk devices that are online when SB.INSTALL was run.  "S" refers to Slot, "D" to Drive, "T" to the true (actual) slot, and "U" to Unit.  "Dev" refers to the ProDOS device code.

FINAL COMMENTS

If you downloaded this file from GEnie, it should be bug- and virus-free.  If you got it from any other info service or BBS, there is a chance that it could have picked up a virus somewhere.  If there is any doubt, as usual for downloaded software, MAKE SURE YOU HAVE A BACKUP before you commit your disks to it.  As mentioned above, SB.INSTALL does do writing to Block 0 of the Secondary Boot Disk (and to the Primary Boot Disk if using SMARTBOOT.TINY).  If that makes you nervous, make a backup before you commit yourself to using SMARTBOOT.

This program is FREEMAKE.  If you have any problems or suggestions for improvements, send me E-mail on GEnie (S.WEYHRICH) or directly to the address below.

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Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 982 of 1262
OBJECTIVE: THE SNAKE IS TO EAT ALL THE APPLES IN THE ROOM (LEVELS) AND THEN EXIT THE DOOR AT THE TOP OF THE SCREEN. EACH TIME AN APPLE IS EATEN THE SNAKE GETS LONGER AND MOVES FASTER. IF THE SNAKE BUMPS A WALL YOU LOSE IT. THERE ARE 10 APPLES PER MAZE. 3 APPLES PENALTY IF YOU TAKE TOO LONG TO EAT AN APPLE.

SCORING: THERE ARE 28 LEVELS (ROOMS) PER GAME AND YOU START OUT WITH 3 SNAKES. GAME STARTS ASKING HOW MANY PLUMS. IF SNAKE HITS PLUM WITH ITS HEAD DEAD ON YOU LOSE IT. THE MORE PLUMS YOU PLAY WITH THE MORE XTRA POINTS YOU GET EACH TIME AN APPLE IS EATEN.

JOYSTICK:
SHIFT CTRL-P - SIRIUS JOYPORT
CTRL-K BACK TO KEYBOARD CONTROL

KEYBOARD:
(I) - UP
(J) - LEFT
(K) - RIGHT
(M) - DOWN
<- COUNTER CLOCKWISE
-> CLOCKWISE
The Game:

Woodstock is missing! Snoopy, the Super Sleuth, knows who’s responsible. The feline fiend, Professor Morehairy, has kidnapped Woodstock.

Can the Super Sleuth rescue Woodstock from Morehairy’s castle of danger? Can he escape from the traps and treacherous robots lurking in every room? Read on and become part of Snoopy’s spell-binding tale of mystery!

<< THE CONNECTION >> is an action-packed, two-sided adventure game. There are six challenging levels to play on each side of the disk. Help Snoopy climb to the top of the castle on Side 1. Help him try to capture Morehairy on Side 2. You can begin with either side. But watch out! Side 2 is far more dangerous.

On every floor, challenges await you - flying carpets, magic lamps, trap doors, moving floors and, of course, Morehairy's robot guards!

Warm Up:

To play SNOOPY TO THE RESCUE you need:

* an Apple ][+ or //e with 48k
* one Apple Disk Drive
* a monitor, (color monitor preferred)
* a joystick (recommended)

To begin playing either side, follow these steps:

* Make sure the computer is off and the monitor is on.
* Lift the disk drive door.
* Insert the disk. The side facing up is the side you will play.
* Close the disk drive door.
* Turn on the computer and the program loads.

Ready, Set, Go:

To guide Snoopy, you can use:

-JOYSTICK: Move the joystick in the direction you want Snoopy to go. Press the lower button to make him jump.

-KEYBOARD: Press the left and right arrow keys to guide Snoopy. To make him stop moving press the SPACE BAR. Press the Z key to make him jump.

He on the look out for trap doors and drop-away bridges. Magic lamps shoot Snoopy to higher floors. Guide him carefully onto flying carpets and moving floors or he'll fall off.

A Special Tip about Jumps:

When approaching a jump, guide Snoopy slowly and stop him when he reaches the edge. Then make him jump. Completing some jumps requires that a portion of Snoopy’s foot hangs over the edge. Be careful and look before he leaps!

Here's the Strategy....

In order for Snoopy to escape safely from a level, he must:

* Select numbers from each of Morehairy’s tricky number boxes to add up to the level's challenge number.
* Pass by the robot guards and deactivate them with one of Morehairy's magic keys.
* Avoid all other traps and snares.

Matching Morehairy’s Challenge Number:

Morehairy has booby-trapped his castle. Each level has a challenge number. Watch it appear at the top of your screen. Unless Snoopy matches it, he cannot leave the level. Along the game path are 5 boxes. In each box, numbers appear and change. 1, 2, 3, 4,... Snoopy’s mission is to reach each box and choose a number from it. The chosen numbers must add up to the challenge number above. If Snoopy fails to freeze a number from each box or adds incorrectly, he must start the level over with one less chance to save his friend.

Freezing a number:

-JOYSTICK: Position Snoopy over the box. When the number you want appears, press the top button on the joystick. The number freezes.
Apple II Computer Info

-KEYBOARD: Use the arrow keys to guide Snoopy over a box. To stop Snoopy at the box, press the SPACE BAR key. To freeze a number, press the RETURN key.

Watch out for Green Robots:
=================================

If Snoopy runs into a green robot, he loses a turn and must begin the level again. But if Snoopy reaches a magic key, the robot guard will turn red temporarily. Snoopy can safely deactivate the robot when it is red.

Count your Chances:
====================

Snoopy has only five chances in each game to climb to the top of or escape from the castle. He gains an extra chance after completing skill level one. You can keep track of how many chances he has left by counting the small figures at the top left of the screen.

Be careful! Snoopy loses a chance every time he meets a green robot, falls too far, slips into the moat, or fails to match Morehairy's challenge number.

Practice Makes Perfect:
=======================

You can practice a level before you play it in a game. Begin play and when the first level appears, press the CONTROL (CTRL) and N keys at the same time. Keep pressing the keys until you reach the level you want to practice.

Success is... Beginning Again:
==============================

What happens when you've completed all 6 levels on one side and Snoopy has some chances left? You get to begin again, but the play is harder and faster. The 6 levels on each side can be repeated as many as 4 times.

Special Features:
=================

Play ends when Snoopy runs out of chances or when you choose to end the game. To end the game, press the SHIFT and * keys at the same time. The initials of the top 20 players can be added to the scoreboard along with their scores and the number of levels completed. To erase the scores, type 911 at the Score Frame.

-SOUND: You can play with or without sound. To play the entire game without sound, type 911 at the Random House screen before you press RETURN.

-PAUSE: To pause during play, press the ESC key. Press any key to resume play.

-EARLY OUT: To end the game early, press the SHIFT and * keys at the same time.

-PRACTICE LEVELS: Press the CONTROL (CTRL) key and the N key until you reach the level you want to practice.

-FAILING TO EQUAL THE CHALLENGE NUMBER: If you realize you cannot match the challenge number, press the CONTROL (CTRL) key and the Q key at the same time. Snoopy loses a chance and begins the level over.
SnowTerm is a communications program for the Apple IIGS computer.

Version 1 of SnowTerm was essentially just a VT100 terminal emulator. In the documentation for version 1 of SnowTerm, I promised that SnowTerm would be expanded to become a communications program. This release of SnowTerm, version 2, is the first step towards fulfilling that promise.

SnowTerm emulates the Digital Equipment (DEC) VT100 and VT52 terminals. SnowTerm runs in the super high resolution graphics mode of the Apple IIGS and uses the desktop user interface. SnowTerm uses the graphics and color capabilities of the Apple IIGS to accurately emulate the VT100 terminal including bold and blinking character attributes, the line drawing character set, and double high and double wide characters. Although the VT100 implements a subset of the ANSI standard, the VT100 and SnowTerm do not implement the (so-called) ANSI color graphics used by some IBM oriented bulletin boards.

SnowTerm is not free software and it is not in the public domain; it is shareware. You may try it free for 10 days after which you must either become a registered user or discontinue use of the software. To become a registered user, send a check for $20 to:

Snow Software
PO Box 58621
Salt Lake City, UT 84158

In return, you will receive the latest version of SnowTerm on 3.5" disk, a manual, and technical support via email. Orders outside of North America please add $5 per copy for shipping. Due to the increased size of the Apple IIGS system disk, the system disk is no longer shipped as part of SnowTerm unless you specifically request it. Add $3 to receive the Apple IIGS system disks (two 3.5" disks).

The SnowTerm disk includes a font editor that allows you to customize the fonts used by SnowTerm. It also includes, by permission of the authors, several public domain and shareware programs that complement SnowTerm.

Once you are a registered user, you may download and use updated versions of SnowTerm for no charge or you may order updated versions for a minimal shipping and handling fee. Currently registered users of SnowTerm may order an update from Snow Software. Several upgrade options are available:

- SnowTerm v2, manual, and latest IIGS System Disk .......... $10
- SnowTerm v2, manual, no System Disk ........................ $7
- SnowTerm v2 disk only, no manual or System Disk .......... $3
- SnowTerm v2 manual only, no software ....................... $5

These prices are in US dollars and include all shipping and handling charges for destinations in North America.

You may give a copy of SnowTerm to other users or post it on electronic bulletin boards for other users to evaluate, as long as this documentation is included. Distribution is included with SnowTerm without this documentation and using SnowTerm after the 10 day trial period without becoming a registered user is considered copyright violations.

System Requirements

To run SnowTerm you must have an Apple IIGS computer with a minimum of 768K of system RAM. A color RGB monitor is also recommended. This version of SnowTerm will work with an external modem connected to the built in GS Modem port, the GS Printer port, or to a Super Serial card compatible interface plugged into one of the slots. It also will work with internal modem cards that are Super Serial card compatible.

This version of SnowTerm requires GS/OS version 3.0 or higher (GS system disk version 5.0.2 or higher). It is recommended that you obtain and use System Disk 5.0.3. Since SnowTerm uses resources, a new feature of System Disk 5, SnowTerm will access the program disk more often during the operation of the program. For this reason, it is recommended that SnowTerm be used on systems with at least two disk drives or a hard drive.

Installation

WARNING: The SnowTerm executable file contains both a resource fork and a data fork. Many older copy utilities cannot copy such extended files. Therefore, you should only copy SnowTerm with copy utilities that you know work correctly with extended files, such as the System Disk 5.0.2 Finder. If the size of the SnowTerm file decreases when you copy it, the copy utility you used did not copy the resource fork.

If you downloaded SnowTerm from a communication service or BBS system then SnowTerm will be packed into a .BXF format file which must be processed with ShrinkIt or ShrinkIt/GS.

After processing with ShrinkIt, there will be several files, one of which is called SnowTerm.Single. This file must be processed further to obtain the SnowTerm executable file. There are two methods that may be used to process SnowTerm.Single. If you are using ShrinkIt/GS, you may open the SnowTerm.Single file just like any other archive file and select the SnowTerm file that is packed in the archive and extract it.

If you are not using ShrinkIt/GS, then you must use the program UNSINGLEST (which is included in the SnowTerm archive) to convert SnowTerm.Single into an extended file. Make sure that UNSINGLEST and SnowTerm.Single are in the same directory (folder). You can launch UNSINGLEST with the Finder or other program launcher. You will need about 200 free blocks on the disk in order to unpack SnowTerm.

Again I emphasize, DO NOT copy the SnowTerm executable file with a copy utility that does not handle extended files.

Hardware Configuration

Important: If you are using the built in modem or printer port, you must use the Apple IIGS control panel to configure the port with the built-in connected parameter set to "Modem". Currently the desk top Control Panel does not allow you to set the device connected parameter. You must do this from the "Classic" control panel.

You may also need to set the following serial port parameters using the control panel:

- Device Connected: Modem
- Auto Dial: no
- Dialing: none
- Auto Answer: off
- Answer Ring: 4 rings
- Dial Tone (2200): 1 second
- Ring Delay: 1 ring
- Remote Ring: on
- Remote Connect: off
- Line Status: on
- On hook: off
- Ringing: off
- Monitor: on
- Escape Key: off
- Blank Data: off
- Data Bits: 7
- Stop Bits: 1
- Parity: even
- Flow Control: Xon/Xoff
- Control E: off
- Control X: off
- Inhibit: off
- Hardware: off
- Local: on
The modem init string is sent to the modem when SnowTerm first starts up.

The modem init string and the printer init string are "Control strings" -- a general purpose feature of SnowTerm which allows the user to enter an ASCII string with special sequences which specify control characters to be embedded within the string. When you are entering strings in dialog boxes, various control characters pressed on the keyboard perform editing operations and thus cannot be used to directly specify characters to be embedded in a string. Thus, a control character language of sorts has been developed.

Control strings allow control characters to be specified by two different means. Control characters can be specified by a two character sequence consisting of a caret (^) followed by an upper case character in the range A, A-Z, [ , \, ], ^, and _.

For example, the sequence ^A would result in a control-A character ($01) being embedded in the control string.

The second method of entering control characters will be quite familiar to C language programmers because it is essentially the C escape sequence method of specifying character values. A C escape sequence begins with a back slash character (\). After the back slash there are several options for specifying the desired character.

First, you may use one of several single character mnemonics. For example, the \r sequence will generate a carriage return. SnowTerm recognizes the following mnemonic characters, most of which are the same as defined by C:

- \b backspace (BS) - hex 08
- \e escape (ESC) - hex 1B
- \f form feed (FF) - hex 0C
- \l line feed (LF) - hex 0A
- \n new line (NL) sequence (CR + LF) - hex 0D 0A
- \r carriage return (CR) - hex 0D
- \t horizontal tab (HT for a hex 09
- \v vertical tab (VT) - hex 0B
- \? DEL character - hex 7F
- \^ caret -- allows a caret to be included
- \^\ back slash -- interpreted as a single back slash
- \^\ caret -- allows a caret to be included

Notice that a double back slash inserts one back slash character into the string and a \^ combination will insert a caret character which would otherwise be used to indicate a control character. For example, \^\A would generate a caret character followed by an A instead of inserting a control-A.

Besides using a mnemonic character after the back slash, SnowTerm allows octal, hexadecimal, or decimal numbers to be used to specify the ASCII value of the control character (actually any ASCII value between 0 and 255 may be specified).

To specify the ASCII value with an octal number, a THREE digit octal number must follow the back slash. C programmers take note that, unlike C, you cannot specify the octal number with just one or two digits. In C, three digits long. For example, the sequence \123 would specify the ASCII character 'S'.

To specify the ASCII value with a decimal number, precede the THREE digit decimal number with a \ or \0d (both 'd' and 'D' are accepted). The decimal number must be exactly three digits long. For example, the sequence \d123 would specify the ASCII character 'T'.

To specify the ASCII value with a hex number, you have two options. First, the standard C method which is to precede the TWO digit hex number with a \ or \x (both 'x' and 'X' are accepted). The hex number
must be exactly two digits long. Optionally, you can precede the two digit hex number with a \%. For example, the sequences \0X41, \41 and \$41 all specify the ASCII character 'A'.

Control strings may freely mix normal ASCII characters, caret prefixed control characters, and C style escape sequences together in one string. For example, the following sequence would set an ImageWriter II printer into 15 cpi printing mode and slashed zeros mode.

`\{qls000\}$01`

This sequence is interpreted as ESC q ESC D CTRL-B CTRL-A. For illustration purposes, I used two methods of specifying the ESC character, `\` and `\e`. Note that when mixing `\` and `\` symbols, the order in which they appear determine how they will be interpreted. For example, `\\` is interpreted as control-` while `\` is interpreted as `\`.

NOTE: Any printable ASCII characters in the control string are sent with the MSB cleared (low ASCII). The only way to specify high ASCII characters is by using one of the numerical escape sequences with a value greater than 127.

Running SnowTerm

SnowTerm can be launched by the Finder or other program launcher.

Special Keys

SnowTerm treats the numeric keypad of the Apple IIGS just like the VT100 keypad. Thus, under some conditions, the keypad keys will send escape sequences rather than the ASCII codes for the characters shown on the keypad. This allows SnowTerm to work correctly with the VMS operating system.

A break character can be sent using the Send Break menu command or its key equivalent, command-B. Previous versions of SnowTerm sent a break when option-B was pressed. This still works in version 2, but may not work in future versions as the option keys get assigned to other uses.

The DELETE key will send either a delete character (hex 7F) or a backspace character (hex 08), depending on the selection made in the terminal dialog box under the Setup menu. Holding down the option key and pressing the DELETE key will send the other character (backspace if the DELETE key normally sends the delete character).

SnowTerm files

REGFONT and SPECFONT are special font files for SnowTerm. These files must always be in the same directory (folder) as the SnowTerm file. These files must NOT be placed in the FONTS folder of the system disk.

If you use the Preferences command to save a defaults file, it will be called ST.DEFAULTS and will be located in the same directory as the SnowTerm file.

SnowTerm looks for a file called ST.DIALLIST in the directory where the SnowTerm program is located. If it finds this file, it reads the list of phone numbers stored in this file for use with the Dial command. The ST.DIALLIST file is a ProDOS text file and can be created with any text editor including AppleWorks. If you are using AppleWorks, you must not save the file as an AppleWorks file. Instead, use the print command to print the phone numbers to a text file.

The format of the file is one phone number per line. The name comes first followed by the number with a colon (:) separating them. The name portion is what appears in the Dial dialog box list and can be up to 16 characters in length. The number portion can be up to 39 characters in length. A maximum of 20 phone numbers can be defined in the file. The following is an example of the contents of a ST.DIALLIST file that contains two phone numbers:

Work:5551212
A BBS system:18005559999

The first phone number defined in the phone list will be used as the initial default phone number in the dial dialog.

VT100 emulation differences

The VT100 terminal emulation provided by SnowTerm differs from an actual VT100 in the following ways:

SnowTerm does not support the 132 column mode of the VT100 due to lack of graphics resolution. A future version will provide horizontal scrolling to support 132 column mode.

SnowTerm does not transmit an ANSWERBACK message when CTRL-BREAK is pressed.

SnowTerm does not support the underline cursor mode. Only the block cursor is supported at this time.

SnowTerm does not support the margin bell.

SnowTerm does not support the VT100’s smooth scroll mode.

SnowTerm does not respond to any of the VT100’s self test escape sequences.

SnowTerm cannot correctly combine the bold and blink character attributes on the same character. Characters which have been assigned both the bold and blink attributes will appear as either bold or blinking, but not both. The user may select whether such characters appear as bold or blink using the Terminal dialog box.

SnowTerm does not contain a UK character set. The REGFONT and SPECFONT file contain only the US character set. Registered users also receive REGFONT.UK and SPECFONT.UK which can be used instead of the normal fonts to provide a UK character set. However, SnowTerm will not switch between the US and UK character sets like the VT100 will.

Recording buffer

The recording buffer is a facility that allows received text to be captured and then saved to disk, listed on the screen, or printed to the printer. The 0% display on the left side of the menu bar indicates how full the recording buffer is and whether it is currently capturing data or not. If it is RED, data is being captured. If it is black, data is not being captured.

The buffer preferences dialog allows you to specify features related to the recording buffer. It is recommended that you ALWAYS use the "filter control chars" mode which prevents control characters from being captured. Since the printer port and the list window both get very upset by control characters, you should always leave the filtering on.

The "Expand tabs" mode will convert tab characters into enough space characters to move to the next tab stop. It is recommended that this mode be used as well.
If "Auto save" is on, the contents of the recording buffer will be automatically saved to disk when the buffer becomes full. Normally, this data is saved in a file called ST.CAPBUF in the same directory as the SnowTerm file. You may change the path and file name for the autosave file by using the "Set Autosave file..." option.

If "Auto save" is turned off and the buffer becomes full, recording will be disabled.

The "Recording at start" control specifies whether the recording buffer is on or off when SnowTerm first started.

The "% display on" and "% position" controls allow control over buffer status display in the menu bar. You can turn it on and off and position it within the menu bar. The position is relative to the right edge of the menu bar.

The scroll bar allows you to adjust the size of the recording buffer. Note that you may set a size that can't be allocated due to memory fragmentation. In this case, SnowTerm will not resize the recording buffer.

When listing the recording buffer to the screen, a Text Edit control is used. This allows rapid scrolling through the data, but also uses lots of memory because the Text Edit control keeps its own copy of the recording buffer. If there is insufficient memory to create the Text Edit control, you may need to reduce the size of the recording buffer.

You may edit the text in the Text Edit control, however any editing done is not reflected back to the actual recording buffer contents. If you cut or copy data from the Text Edit control, it will be placed in the system clipboard and can be read by other programs such as Apple Macintosh GS. A Select All command in the Edit menu makes it easier to copy all of the text in a window into the clipboard.

Any font may be used to display the text in the Text Edit control. However, you may want to use a fixed width font rather than a proportional font. Since most computer terminals use fixed width fonts, most screens and listings produced by computers don't look right when viewed with a proportional font. The Monaco and Courier fonts are two fixed width fonts that work well in a Text Edit control. If find the Monocro font more readable and have made it the default font. You are free to choose whatever font you want to use by using the "Choose Font" button in the Buffer Preferences dialog box.

Sending Files
---------------

Currently SnowTerm can only send text files and receive text files (using the recording buffer facility). XMODEM and other protocols will be added in future releases.

After choosing a file to be sent, a "Text File Send Options" dialog box allows you to set several options. The Prompt Char option allows you to specify a single character that SnowTerm will look for before sending the next line. This prompt character is useful when uploading text to an editor on a remote machine. This allows the file transfer to be paced by the receiving machine so that the next line is not sent before the receiving machine is ready for it.

The prompt character is entered as a SnowTerm control string. Thus, you may directly enter an ASCII character or may use one of the control string escape sequences to enter any ASCII value from 0 to 255. Note that if the control string you enter evaluates to more than one ASCII character, only the first character is used as the prompt character.

If you are uploading to an editor that does not issue a prompt character but does echo the text back, you can use a carriage return as the prompt character and SnowTerm will wait until the remote computer finishes echoing the line before sending the next line. I have found that some screen-oriented editors, like LSE on VAX computers, do not issue a carriage return to move the cursor to the next line. Instead they send an escape sequence. I've found that setting the prompt character to ESC (^[ or \e) works very well with such editors.

The Character Delay and Line Delay options allow you to specify a delay to be inserted between characters and lines so that text is not sent faster than the receiving machine can accept it. These delays are specified as numbers from 0 (no delay) to 9 (max delay).

The "Add SP to blank lines" option will add a space character to any blank line. Since some message editors on remote machines detect that you are finished entering text by the presence of a blank line, this option allows blank lines to be uploading without erroneously ending the upload.

You may abort the sending of a text file by pressing the command key (open Apple) and the period key (.) simultaneously. You can tell if a file is still being transferred because the File menu will be highlighted in the menu bar during the file transfer. A "peep" will announce the successful completion of a text file transfer.

While a text file is being transferred, any characters received through the serial port will be displayed on the SnowTerm terminal screen. This allows you to watch the progress of the text file transfer if the remote computer is echoing the text back. If you have recording buffer enabled when you start sending a text file, recording is turned off while the file is transferred and turned back on when the transfer has been completed.

Listing and Printing Text Files
-----------------------------------

SnowTerm v2 contains commands to list and print text files. The list facility uses a Text Edit control just like the List Buffer command. All load restrictions that Buffer Text Edit control apply to the List File Text Edit Control. The same font is used.

The Open command in the file menu is used to list the contents of a file. Only one file may be listed at a time. If a file listing window is open when you select the Open command, the current window will be closed.

You may also print a text file to the printer.

The use of Text Edit controls will be expanded in future versions of SnowTerm to provide file editing, multiple file windows, etc.

Echo Received Characters to Printer
-----------------------------------

Received characters can be echoed to the printer. All control characters will be filtered. This features follows the printer options supplied in the Hardware Configuration dialog box. It also follows the "Expand Tabs" option in the Buffer Preferences dialog box to expand tab characters into spaces if the option is set.

Reset commands
---------------

SnowTerm provides two different reset commands. One resets the serial port and the other resets the terminal emulation. Both of these are provided mainly to recover from line noise which may cause problems with either the terminal emulation or the serial port.

One common error mode occurs when line noise causes the receipt of a
XOFF handshaking character when the remote computer did not send an XOFF character. The XOFF character will prevent any further transmissions from your computer to the host computer until the host sends a XON. Since the remote computer didn't send the XOFF, it won't send a XON. So there you sit, pressing keys and nothing happens. If you have a modem with transmit and receive lights, you will notice that pressing a key does not cause the transmit light to turn on.

The reset serial port command was made to solve this problem. It will reset the serial port software so that it no longer knows that a XOFF was received.

Another common failure mode is the erroneous receipt of the control character which switches the VT100 emulation into special graphics mode. All lower case characters received are displayed in special graphics mode. The reset terminal emulation command will reset the VT100 emulation to its normal state and solve this problem.

New Preferences
------------------

Version 2 has two new controls in the Preferences dialog. The first, Confirm Quit, specifies whether or not an Alert box will pop up to ask you to confirm that you really want to quit.

The second new control, Std Colors for NDAs, allows control over a new feature which will change the screen colors to the standard desktop colors whenever a NDA is the top window on the screen.

Snow Software electronic mail addresses:
GENERAL: J.SNOW2 Compuserve: 71550,1152
MCmail: 321-3461 America Online: JohnSnow
UUCP: ..!uunet!utah-cs!esunix!jsnow
INET: esunix!jsnow@cs.utah.edu

Revision History
Version 2.00
--------------

Initial release of version SnowTerm v2.

Version 2.01
------------

Fixed a bug that caused the desktop colors to not change to the standard colors when a NDA was moved and activated.

Changed the hardware dialog box to select printers by GS/OS character device names rather than by slot number.

Version 2.02
-------------

Fixed a bug that caused the Recording On/Off to be in the wrong state if "Recording at Start" option was selected.

Version 2.03
------------

Fixed several bugs dealing with serial port initialization. First, the modem init string was being sent to the modem before the baud rate specified in the defaults file was set. SnowTerm now correctly sets the serial port parameters before sending the modem init string. The "Reset Serial Port" command was resetting the serial port but not restoring the serial port parameters specified by the defaults file.

The modem init string has been expanded from a maximum of 14 characters to a maximum of 39 characters.

The control character filter for the capture buffer and the printer echo has been improved so that entire escape sequences are now filtered out. If the control character filter is turned on, all characters of any recognized escape sequence will be filtered. The recognized escape sequences will vary with the type of terminal being emulated (i.e. the VT52 emulation will not filter VT100 escape sequences). In addition, if the terminal wrap around mode is enabled, a carriage return is inserted into the capture buffer and/or sent to the printer when the terminal emulation wraps around to the next line.

When SnowTerm was in half duplex mode, a keypress that generated an escape sequence was incorrectly echoed to the screen. Only the first character of the escape sequence (the ESC character) was being echoed.

Version 2.04
-------------

Fixed a bug which would sometimes cause SnowTerm to freeze. It would also cause other programs that would access the serial port to freeze after SnowTerm was run. This problem was happened more often if the Super Serial card driver was used.
DOCUMENT solo.flight

SOLO FLIGHT

Cracked by:
The Wombat / The GoniF / Dr. Micro
[THE PPG]

Doc file by The Wombat

IMPORTANT READ CAREFULLY

After completing your first landing since loading the game, you will be asked to enter a landing fee credit code (an attempt at piracy protection). To determine the correct response, read the account # displayed by the computer when it asks for authorization code. Then go to the authorization code table (found at the end of the doc file) and locate the account # given by the computer. Located directly beneath the account # is the authorization code response. Type the authorization code into the computer and press 'return'.

OPTIONS

Use the 1 key to select practice FLYING or the MAIL PILOT game. The 1 key also selects which of three states you wish to fly in. (Kansas, Washington, or Colorado). Use the 2 key to choose difficulty level. During flying practice you may select clear weather (for touch and go practice in the local area), landing practice (places the aircraft on short final for landing), windy conditions, or ifr (instrument flight rules-low clouds). When playing then mail run game, you may select from the student pilot, private pilot, senior pilot, or command pilot difficulty levels. Press 3 to continue.

BASIC FLYING

Two controls are used for the most basic flying - the control stick or yoke & the throttle. The joystick (yoke) changes the altitude and direction of your aircraft; the throttle affects your speed. Use the joystick to make your plane turn, climb and dive. Holding the stick to the right causes the plane to bank to the right; when the plane is banked right it will turn right. Note that when you center the joystick the plane will remain banked and continue turning. Bring the plane back level by pushing the stick in the opposite direction of bank. Pulling forward on the stick will cause your nose to go down and the plane will dive.

Pulling back on the stick will bring your nose up. The throttle controls the amount of power generated by your engine. Maximum power is required when taking off and climbing, somewhat less power is needed for cruising, and low power is generally sufficient for landing.

Remember that there is a relationship between the pitch altitude and the amount of power required for level flight. At low speeds, significantly more nose up is required for level flight.

VIEW

The top half of the flight screen shows your plane and local terrain highlights. If you are at a low altitude your shadow will be visible on the ground. Airports are black, VOR towers, farms and mountains are white. If you fly into or above the clouds, ground objects will not be visible. Generally the view is to the front; you may look to the side or behind you using the appropriate commands.

INSTRUMENTS

The bottom half of the flight screen contains your flight instrumentation. The large red dial on the left is your altimeter. Each mark on the dial is 1000 feet for the small hand and corresponds to a complete revolution of the large hand. The large dial on the right is your speed indicator which goes from 0 to 180 knots. The small circle in the middle is your artificial horizon/altitude indicator which indicates your altitude relative to the horizon. The vertical strip in the center is your throttle indicator. Maximum power is at the top, zero power is at the bottom. The four digital indicators at the lower left are very important. The first number is pitch, positive values indicate your nose is up, negative values means nose down. The next number is the degrees of flaps that are extended. The next value is a digital and alpha directional compass reading. Zero degrees is due North, 90 is East, 180 South, and 270 is West. The bottom indicator is your Vertical Velocity Indicator (climb). Positive values indicate you are gaining altitude, negative values indicate you are losing altitude. Your fuel guage is on the lower right. The indicator light center left is your temperature warning light. It will flash if your engine is overheating. The two status lamps center right indicate that your landing gear is down and your brakes are applied when illuminated. Your navigational instruments are at right. The two VOR readouts indicate the directional bearings from the VOR stations. The ILS system shows weather your landing approach is high, low, or on the runway. Your elapsed time is displayed at the upper right.

FLIGHT CONTROLS

In addition to control via the joystick, a number or commands may be entered through the keyboard.

THROTTLE: The numbers '0' to '9' control your throttle. Zero is no power, 9 is maximum power.

NOISE: Press 'N' to turn on/off the engine noise.

LANDING GEAR: Press 'L' to raise or lower the landing gear.

BRAKES: Press 'B' to apply or release the brakes.

FLAPS: Press 'F' to control the flaps. You may use 0, 20, or 40 degrees of flaps.

VIEW: Use the left and right arrow keys to look out the right and left windows. Use the down arrow to look behind you. To return to the front view, use the up arrow key. (for II/II+ users: W-front, A-left, S-right, Z-back)

PAUSE: Press 'P' to pause the game. Press any other key to continue.

RESTART: Press 'ESC' to restart.

EMERGENCY: If you wish to create an emergency equipment failure for practice purposes, press the 'E' key.

SLIP: Bank your aircraft and press joystick button to put your plane into a sideslip. This maneuver, usually performed by crossing the
rudder and ailerons, allows you to slip your plane into the wind to lose altitude without changing heading.

JOYSTICK ADJUST: Center your joystick and press 'J' to adjust the game to your joystick.

MAIL PILOT

The mail pilot game tests your flying skill and judgement. Your task is to deliver five bags of mail to their destinations in the least amount of time. Once you have selected the Mail Pilot game, a map will be displayed. Press START to continue to the Mail Pilot screen. On the mail pilot screen use the 1 key to load mail. The destination(s) will be displayed on the screen under MAIL FOR. You may load up as much mail as you like. However, each bag adds to the weight of the plane and increases the difficulty of flying. One or two bags is recommended. You may load up on fuel by pressing the 2 key. Fuel also adds weight but must be sure to load enough to make it to your destination. To begin your journey, press the 3 key. Then be sure to study the map to decide a flight plan. When you are ready to take off, press 3 again. If you wish to return to the main map at any time, press 1.

When you arrive at your destination airport and stop your aircraft, your landing points are calculated. Points are gained for slow landings with gentle touchdowns. Delivery points are also accumulated based on difficulty level. Next you will be shown a map and your route will be displayed. Press 3 to go on to the Mail Pilot screen. Any mail for this airport is automatically unloaded and added to your score. You may now load additional mail or fuel and continue the game. The game ends when five bags have been delivered or when you crash.

As the game progresses, the weather will gradually deteriorate. Winds will get stronger, clouds may come in, and turbulence may develop. At the higher difficulty levels your plane is prone to mechanical and instrument failure. Your engine may overheat and various instruments may become inoperative. This is not due to a bad crack! All malfunctions are repaired when you land at an airport.

If the disk is not write protected, high scores will be recorded on the disk.

EMERGENCIES

At the more advanced difficulty levels your aircraft is prone to instrument and mechanical failure. If the temperature light begins to blink, your engine is overheating and will cut out shortly. Find a place to land. Your altimeter, airspeed indicator, and VOR indicators may also malfunction and register zero readings. The artificial horizon could also cease functioning. Landing at any airport will repair your aircraft. Multiple use of the 'E' key will cycle the program through all emergencies possible in the simulation.

WEATHER

The current weather conditions are displayed at the bottom of the screen: wind direction and speed, cloud ceiling in feet, and visibility in miles. Under windy conditions, landing your aircraft becomes tricky, especially if the wind is blowing across the runway. Use less flaps, higher airspeeds, and aircraft slips to compensate for winds. Low cloud ceilings often require instrument flying, although you may choose to fly above the clouds.

STATE MAPS

Kansas: Kansas is a nice flat state, ideal for novice flyers. Wichita and Kansas City have airports with long, wide runways. There are also many nice cornfields and mysterious Indian pyramids to fly over. VOR 1/VOR2 bearings for Kansas are:


Washington: Washington has a mountain range separating the coastal cities from Chehal and Yakima. Some of the mountains are up to 4000 feet high, although the two mountain passes can be traversed at 2000-2500 feet. Three of the of the Washington airports are also elevated.


Colorado: Flying between the small airstrips nestled in the Rocky Mountain Valleys of Colorado is the ultimate challenge for a mail pilot:


CAUTIONS

Take heed of the following cautions, especially at the advanced difficulty levels.

1. Don't make sharp or high speed turns while taxiing. Your landing gear struts are delicate and are liable to ground loop.

2. Don't lose your airspeed and stall when attempting a slow landing. Use your flaps to lower stall airspeed.

3. Plan your route on the map before taking off. A sudden lowering or an emergency may hide familiar landmarks or require immediate landing.

4. Don't run your engine at full power for too long; overheating is likely to occur.

5. Don't overload the aircraft. With a heavy mail and fuel load, your aircraft will be very sluggish. The aircraft will have a hard time taking off from elevated Colorado airports, and will require longer landing distances.

VOR NAVIGATION

VOR navigation is based on a series of ground stations that send out radio signals. These signals are received by instruments in the cockpit and decoded and read as bearing to a particular VOR station. There is no range information associated with VOR navigation. In Solo Flight, each airport is defined as a radial intersection. (A radial bearing is a number 0 to 360 that if the aircraft was turned and flown on a heading of 180 degrees from the radial bearing, the flight path would be in bounds to the VOR station).

North of the VOR station is radial 360, East is 90, South is 180, and West is 270. To find a particular airport, the pilot should determine its radial intersection from both VORs. He should then intercept a radial, turn from one of the VORs and fly until the cross radial from the other radial is reached. For example, in the Kansas map, the Kansas City airport is located on the 36 degree radial of VOR 2 with...
the end of the main runway on the end of 67 radial of VOR 1. To find the airport in the weather, the instrument pilot could establish himself on the 36 degree radial of VOR 2, heading 36, and descend to missed approach altitude until crossing the missed approach radial, the 67 of VOR 1.

ACCOUNT # TO AUTHORIZATION CODE TABLE

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Sorcerer of Siva

Movement

1 - 9  forward 1-9 feet
R       turn right
L       turn left
V       turn around (volte-face)
^       ascend stairs

Major Spells

T       teleport to next chamber

Special Commands

A       attack monster with your dagger
Y       drink healing elixir
0       rest (move 0 feet)
N       energy spell (magically refresh yourself)
E       examine wall for secret passage
S       search floor for trap door
G       get treasure
D<digit> drop indicated treasure
I       inventory
space   stop
C       continue
Q       quit

Treasures

1       healing elixir
2       silver ring
3       amber talisman
4       hemamite talisman
5       gem encrusted brass scepter
6       ruby amulet
7       platinum ring
8       gold ring
9       a pair of old boots
Only you can guide Space Ace, and his weak alter-ego Dexter, to rescue Kimberly and defeat Borf. But watch out, many dangers and deadly beasts await as you travel throughout the galaxy chasing Borf from space station to planet and back again! Survive Borf’s monsters, rescue Kimberly and finally confront Borf himself in deadly hand to hand combat all before the Earth is enslaved forever!

GAME INSTRUCTIONS

---

Before loading Space Ace, make a backup copy of each of the Space Ace disks (yeah, right!) and put them aside in case anything should happen to your original disks.

After booting your Apple IIGS with a system disk or autobooting from a hard drive, insert the Space Ace Disk One into the disk drive and double click on the "Space Ace" icon to begin the game.

Space Ace for the Apple IIGS is not hard drive installable. (It is now, haha!)

STARTING THE GAME

---

After the game has loaded the demo mode will automatically begin. The demo runs through scenes from the first disk and then returns to the title screen and credits. To start playing the game simply press the zero (0) on the keypad at any time. You will know the game has started when the player score screen appears. This screen shows your score and the number of lives you have remaining. The first scene will then load automatically.

PLAYING SPACE ACE

---

You do not directly control all of Ace's actions, rather you control his reactions to the events that happen around him. As you watch the animation, you must decide in which direction Ace should move on the screen and when.

To finish a scene successfully you must make a move or press the fire button (zero (0) on the numeric keypad) when Ace is in danger. Timing is very critical and often you may make the correct move but at the wrong time. Also, you may not always be able to make more than one move. If you are having trouble, watch the animation carefully and move Ace in the safest direction or if no direction is safe press the fire button to use Ace's laser gun or laser staff.

If you're sure you have the correct move try varying the time when you make the move, a little sooner or a little later. Don't be surprised if Ace doesn't move immediately after you have made a move. You must wait for the animation to finish and if you made the correct move(s) you will continue on to the next scene.

Don't be surprised when you see Dexter in one scene and Ace in another. Ace has been hit by the Infanto Ray once already and he transforms back and forth between some of the scenes. You have three lives and the game will end if you lose all of your lives or when you have completed all of the scenes on the disks.

From time to time it will be necessary to change the disk in the drive. After you have finished all the animations on a disk you will be asked to insert the next disk so that the game can continue. NEVER eject one of the game disks while you are playing, unless you are prompted, or you may damage the disk!

CONTROLS

---

The way to control Ace is by using the numeric keypad on the keyboard. The directions you will need are UP (8), DOWN (2), LEFT (6), and RIGHT (4). To use Ace’s laser gun or press, the '0' on the keypad.
You can pause the game at any time by pressing the 'P' key on the keyboard. To continue to play, press the 'P' key again and the game will resume.

You can toggle the audio off and on by pressing the 'A' key on the keyboard.

ENDING THE GAME
----------------
The game will come to an end after you have lost three lives. To stop playing, the game simply click on "quit". You can then safely remove the disk in the drive.

PLAYING SCENE ONE
---------------------
Borf will appear from his space station flying on an anti-gravity platform. He will fire his laser gun at the rocks around young Ace. Just before the third laser shot, move RIGHT and Dexter will jump behind the large rock on the right hand side of the screen. Borf will fire again hitting the top of the rock. Before Borf shoots at the rock again, move LEFT and Dexter will jump from behind the rock to the centre of the screen. Borf will follow and fire his gun again. Before Borf can shoot, move DOWN, Dexter will jump behind the rock again and you will have finished this scene.

SPACE ACE HINTS
----------------
Note: The scenes in Space Ace for the Macintosh and the Apple IIGS may not appear in the order listed below and for some versions, certain scenes will not appear at all. If the scene number does not match the scene, the scenes can be easily recognized by the individual descriptions provided below.

Scene 1
Borf flies out of his ship on an anti-gravity platform. As he approaches Dexter, Borf begins to fire his laser gun. Dexter must dodge the laser shots, hiding behind the rocks at his sides.

Scene 2
After getting away from Borf, Dexter runs towards his spaceship. But before he gets there he must cross the path of a floating robot who is tromping the ground beneath him. Dexter must dodge the stomping arms and make his way across the crumbling ground.

Scene 3
More floating robots come flying at Dexter and he must dodge laser shots to get to his spaceship.

Scene 4
Dexter has launched his ship and is flying towards Borf's Space Station. Dexter must slow the ship down without landing too hard on the station.

Scene 5
Inside the station a huge, green muck monster lurches out of the mud to try and eat Ace. Ace must kill the fuckin' monster before it kills him.

Scene 6
Dexter is standing on a section of broken bridge and a large stomping arm appears to crush the bridge. Dexter must jump from the bridge to safety.

Scene 7
Dexter must now jump onto a moving platform to get across the remaining piece of bridge.

Scene 8
Dexter is running along a rock path when suddenly a large purple monster appears. Dexter must jump through the monster's open jaws and run to safety.

Scene 9
Another purple monster appears along the path and again Dexter must dodge the monster's gaping mouth.

Scene 10
After escaping the purple path creatures, Dexter is grabbed by the tentacle of the largest of the purple monsters! Dexter must kill the monster before it devours him.

Scene 11
Dexter is dropped onto a rock bridge, in front of two caves. Beside the bridge two purple monsters appear bounding up and down waiting for him to move. Dexter must get into a cave before two blue cat people get him from behind.

Scene 12
Dexter is now in the centre of the station. He must make his way through the maze of corridors and buildings in order to find the evil Borf. But all around him are Borf's security dog creatures! As Dexter runs past an intersection, two of the dog creatures appear from the sides to try to stop him. Dexter must dodge the creatures as they jump towards him.

Scene 13
Dogs appear from in front, behind and the side of Dexter intent on killing him. Dexter must continue running down one of the corridors.

Scene 14
The dog creatures follow Dexter through a narrow corridor, between rows of energy conduits. Dexter must get out from between the conduits before they come to life or the dogs get him.

Scene 15
Ace is standing between two of Borf's security robots. They raise their laser blasters and fire! Ace must dodge the laser shots and run down another corridor.

Scene 16
Ace makes his way down a corridor and past several energy conduits. As he passes them, the conduits come to life! Ace must dodge the energy bolts before they fry him alive.

Scene 17
Dexter continues through the corridors and must dodge another laser blast.

Scene 18
Borf's stronghold is almost in sight but before Dexter can reach it he must stop and dodge another laser blast.

Scene 19
Dexter makes his way down the last corridor and must climb up to Borf's control
center.

Scene 20

Ace is now in the control center and Borf attacks swinging his staff before knocking Ace off his feet with a hard sidekick. Ace must block the staff swing before getting kicked.

Scene 21

Ace continues to grapple with Borf in hand to hand combat! Flaming staff in hand, Borf attacks. Ace must block Borf's staff before it knocks him unconscious.

Scene 22

Again Borf swings his staff down towards Ace's head. Ace must block the staff before it knocks him out.

Scene 23

Ace goes on the offensive! Borf blocks Ace's attack and counters with a round-house kick. Ace must duck under the kick before attacking again.

Scene 24

On his back Ace is vulnerable and Borf isn't waiting for him to get up! Borf swings his staff down to finish Ace off and Ace must block the staff.

Scene 25

Getting to his feet, Ace stands in front of Borf waiting for his move. Borf swings his staff once and then again! Ace must jump over and duck under the staff.

Scene 26

Borf swings again! Ace must dodge the blow before jumping onto Borf's back.

Scene 27

Borf's little, blue goons come to help their master! Ace can't stop them all, so he must jump from Borf's back.

Scene 28

Swinging down on the rope, Ace must jump onto the platform Kimberly is strapped to.

Scene 29

Kimberly in hand, Ace lands in a pool of lava, on top of the platform. As Ace waits, the lava slowly creeps over the edges of the platform. Ace must jump from the platform to safety.

Scene 30

Now that Kimberly is safe, Ace must get Borf before the Infanto Ray gets him. Running along a platform inside the station, Ace must dodge the ray without falling off the platform.

Scene 31

Borf fires his Infanto Ray again. Dexter must dodge the ray without falling off the bridge he's running on.

Scene 32

Ace turns down a bridge lined with mirrors as Borf fires again. The Infanto Ray destroys the bridge ahead of Ace.

Scene 33

Borf aims the Infanto Ray and fires! The only option is to push a mirror into the path of the ray. After that, the game should end. Kimberly awaits hot and horny for sex. Press the fire button to control Ace's penis.

end of file.
Floating robots come flying at Dexter and he must dodge laser shots to get to his spaceship.

Scene 3 - Moves 6,4,4,4
After getting away from Borf, Dexter runs towards his spaceship. But before he gets there he must cross the path of a floating robot who is tramping the ground beneath him. Dexter must dodge the stomping arms and make his way across the crumbling ground.

Scene 4 - Move 8
Dexter has launched his ship and is flying towards Borf's Space Station. Dexter must slow the ship down without landing too hard on the station.

Scene 5 - Move 0
Inside the station a huge, green muck monster lurches out of the mud to try and eat Ace. Ace must kill the fuckin' monster before it kills him.

Scene 6 - Moves 6,8
Dexter is standing on a section of broken bridge and a large stomping arm appears to crush the bridge. Dexter must jump from the bridge to safety.

Scene 7 - Moves 6,6
Dexter must now jump onto a moving platform to get across the remaining piece of bridge.

Scene 8 - Moves 2,6
Dexter is running along a rock path when suddenly a large purple monster appears. Dexter must jump through the monster's open jaws and run to safety.

Scene 9 - Move 0
Another purple monster appears along the path and again Dexter must dodge the monster's gaping mouth.

Scene 10 - Move 8
After escaping the purple path creatures, Dexter is grabbed by the tentacle of the largest of the purple monsters! Dexter must kill the monster before it devours him.

Note: The Apple IIGS version is quite a bit different than the original arcade game. Many of the scenes have been shortened as you may already know. For example, Dexter changes back and forth to Space Ace for no apparent reason. The arcade game dramatized this a bit more but this by no means decreases the fun of the game, the Gs version in my opinion is one of the best games of the year. Even if it isn't your thing you must admit that it is extremely graphically impressive. This cheat will tell you all of the moves necessary to solve the game. The timing is all up to you, good luck. It's really just a matter of practice. Just so you know the first move seems to be the most difficult timing wise.

*** All spelling errors are by no means attributed to the author and should be directed to Frodo.

Scene 1 - Moves 6,4,2
Borf flies out of his ship on an anti-gravity platform. As he approaches Dexter, Borf begins to fire his laser gun. Dexter must dodge the laser shots, hiding behind the rocks at his sides.

Scene 2 - Moves 2,8

Thanks to
The Magnetic Field  708/498-5189
Silver Tongue  708/759-1916
Private Storage  215/745-0495
Apple Tree Midwest  816/826-4158
The Outer Limits  718/492-3054

Note: The Apple IIGS version is quite a bit different than the original arcade game. Many of the scenes have been shortened as you may already know. For example, Dexter changes back and forth to Space Ace for no apparent reason. The arcade game dramatized this a bit more but this by no means decreases the fun of the game, the Gs version in my opinion is one of the best games of the year. Even if it isn't your thing you must admit that it is extremely graphically impressive. This cheat will tell you all of the moves necessary to solve the game. The timing is all up to you, good luck. It's really just a matter of practice. Just so you know the first move seems to be the most difficult timing wise.

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The dog creatures follow Dexter through a narrow corridor, between rows of energy conduits. Dexter must get out from between the conduits before they come to life or the dogs get him.

Scene 15 - Move 6

Ace is standing between two of Borf's security robots. They raise their laser blasters and fire! Ace must dodge the laser shots and run down another corridor.

Scene 16 - Move 4

Ace makes his way down a corridor and past several energy conduits. As he passes them, the conduits come to life! Ace must dodge the energy bolts before they fry him alive.

Scene 17 - Move 4

Dexter continues through the corridors and must dodge another laser blast.

Scene 18 - Move 6

Borf's stronghold is almost in sight but before Dexter can reach it he must stop and dodge another laser blast.

Scene 19 - Move 8

Dexter makes his way down the last corridor and must climb up to Borf's control center.

Scene 20 - Move 0,6

Ace is now in the control center and Borf attacks swinging his staff before knocking Ace off his feet with a hard side-kick. Ace must block the staff swing before getting kicked.

Scene 21 - Move 0

Ace continues to grapple with Borf in hand to hand combat! Flaming staff in hand, Borf attacks. Ace must block Borf's staff before it knocks him unconscious.

Scene 22 - Move 0

Again Borf swings his staff down towards Ace's head. Ace must block the staff before it knocks him out.

Scene 23 - Move 0

Ace goes on the offensive! Borf blocks Ace's attack and counters with a round-house kick. Ace must duck under the kick before attacking again.

Scene 24 - Move 8,2

On his back Ace is vulnerable and Borf isn't waiting for him to get up! Borf swings his staff down to finish Ace off and Ace must block the staff.

Scene 25 - Move 0,2

Getting to his feet, Ace stands in front of Borf waiting for his next move. Borf swings his staff once and then again! Ace must jump over and duck under the staff.

Scene 26 - Move 6,2

Borf swings again! Ace must dodge the blow before jumping onto Borf's back.

Scene 27 - Move 4

Borf's little, blue goons come to help thier master! Ace can't stop them all, so he must jump from Borf's back, to the rope.

Scene 28 - Move 6

Swinging down the rope, Ace takes Kimberly in hand, and lands in a pool of lava, on top of the platform. As Ace waits, the lava slowly creeps over the edges of the platform. Ace must jump from the platform to safety.

Scene 29 - Move 0

Ace grabs the staff to protect Kimberly and him from Borf's Henchmen.

*** Note, the game will crash if you die here.

Scene 30 - Move 0

Now that Kimberly is safe, Ace must get Borf before the Infanto Ray gets him. Running along a platform inside the station, Ace must dodge the ray without falling off the platform.

Scene 31 - Move 4

Borf fires his Infanto Ray again. Dexter must dodge the ray without falling off the bridge he's running on.

Scene 32 - Move 6

Ace turns down a bridge lined with mirrors as Borf fires again. The Infanto Ray destroys the bridge ahead of Ace.

Scene 33 - Move 4,6

Borf aims the Infanto Ray and fires! The only option is to push a mirror into the path of the ray. After that, it's automatic.....

end of file.
Saving the Game

The game selects an animation rate for the 3-D display appropriate to
the following keyboard commands provides the maneuverability you need for a
heart-pounding dogflight or a delicate docking. The keyboard allows full control of your Sunracer in flight. Either of Game Speed
Keyboard Movement

To fire a weapon, press both buttons at once. Use joystick or keyboard to move/change facing

To slow down, press the second button. Use button or space bar to fire plasma rifle (Bang, bang!)
To accelerate, press the first button. Commands Used in Space Flight

Commands Used When Docked at Bases

Commands Used While Navigating

Commands Used While Fighting

Commands Used When docked

Commands Used in Hive!

Moving with a Joystick

Moving with the keyboard

To turn, push the stick in the direction you want to turn. To accelerate, press the first button. To slow down, press the second button. To fire a ready weapon, press both buttons at once.

Joystick Movement and Attack Commands

Additional Keyboard Commands

Additional Keyboard Commands

S or 5 - Stop Rotation  Spc or 0 - Fire Ready Weapon

Additional Keyboard Commands

Ok, now you have probably seen about 2 or 3 versions of the game Space Rogue...The one to have is the one that is: Space.RG1.WORKS. All the other versions of the game will crash on you. The Mad Meister found the problem and fixed it.

Player Reference Card

You begin the game in the deep space of the Karonus star system. Follow these steps to read the nearest star base.

1) Plot a course. Press N for navigation mode, then use the joystick or keyboard to select the CHART command. Press RETURN or a joystick button. Move the cursor across the map of the Karonus star system until you find Hiathra Starbase: the green square symbol at coordinates 13,19. Press RETURN of joystick button.
2) Select the HELM command. Autopilot will guide your ship to the new coordinates.
3) If a ship attacks you on the way, the journey stops. Select COCKPIT to fight the battle. Press T to target the enemy, and the space bar to fire plasma rifle (Bang, bang!).
4) After your ship arrives at its destination, (sector 13,19), select COCKPIT to return to the space view. If you haven't done so already, press a button.
5) At the base, walk around, talk to everyone you meet, and buy some cargo. To leave the base, return to your ship. You're on your way...

Commands Used in Space Flight

Joystick Movement and Attack Commands

To turn, push the stick in the direction you want to turn.
To accelerate, press the first button.
To slow down, press the second button.
To fire a ready weapon, press both buttons at once.

Keyboard Movement

The keyboard allows full control of your Sunracer in flight. Either of the following keyboard commands provides the maneuverability you need for a heart-pounding dogflight or a delicate docking.

W or 8 - Nose Down  C or 3 - Roll ship wise
X or 2 - Nose Up  Z or 1 - Roll counterclockwise
A or 4 - Left Turn  = or + - Accelerate
D or 6 - Right Turn  (-) - Decelerate
S or 5 - Stop Rotation  Spc or 0 - Fire Ready Weapon

Additional Keyboard Commands

<table>
<thead>
<tr>
<th>Button</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>-give up; try to surrender to attackers</td>
</tr>
<tr>
<td>J</td>
<td>-jetisson all cargo</td>
</tr>
<tr>
<td>L</td>
<td>-toggle between manual and automatic laser fire</td>
</tr>
<tr>
<td>N</td>
<td>-go to Navigation Control screen</td>
</tr>
<tr>
<td>R</td>
<td>-ready a new weapon</td>
</tr>
<tr>
<td>T</td>
<td>-target base/ship with TAC</td>
</tr>
<tr>
<td>V</td>
<td>-toggle between camera views</td>
</tr>
<tr>
<td>Ctrl-C</td>
<td>-toggle joystick or keyboard</td>
</tr>
<tr>
<td>Ctrl-E</td>
<td>-toggle between Cruise and Newtonian Flight</td>
</tr>
<tr>
<td>Ctrl-F</td>
<td>-toggle between joystick and keyboard</td>
</tr>
<tr>
<td>Ctrl-H</td>
<td>-toggle TAC display between graphics and data</td>
</tr>
<tr>
<td>ESC</td>
<td>-pause game</td>
</tr>
<tr>
<td>Ctrl-T</td>
<td>-toggle TAC display between graphics and data</td>
</tr>
<tr>
<td>Ctrl-V</td>
<td>-toggle camera views</td>
</tr>
<tr>
<td>T</td>
<td>-target base/ship with TAC</td>
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<tr>
<td>L</td>
<td>-toggle between manual and automatic laser fire</td>
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</tbody>
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Ok, now you have probably seen about 2 or 3 versions of the game Space Rogue...The one to have is the one that is: Space.RG1.WORKS. All the other versions of the game will crash on you. The Mad Meister found the problem and fixed it.
During game play, press CTRL-S to save the game's current position onto a previously made backup copy of the DATA disk. You can only save the game
while you are in space, not at a base or while using the Navigation computer.

Troubleshooting

If the game fails to load or save, make sure your computer and disk drive are plugged in, turned on, and connected properly (NO SHIT!).
Re-insert the disk, in the proper drive. Try again.

If you are saving a game, read the section on "Saving the Game", dummy.

If nothing works, try getting another kracked copy of the game, and trying that, if that doesn't work, YOU'RE UP SHIT'S CREEK, WITHOUT A PADDLE!

This part 1 of the Dox, has been brought to you by:  Practical Pirates...

where "Kracking isn't right, just practical!"

{SuperTac <7=help>/36};

1.) How many light years in a parsec?
   Answer: 3.26

2.) What is the spectrum type of the hottest blue stars?
   Answer: TYPE O

3.) What is the mathematical expression for force?
   Answer: F=ma

4.) To whom does a Star Pilot pledge his allegiance to?
   Answer: IMPERIUM

Special Thanx To Kid Slick and the Practical Pirates for releasing this ware.

Note: Be sure to get the file "SPACE.RG1.WORKS" it is the bug-free copy.

...Call these wonderful boards...

The Magnetic Field_____[312] 966-0708
The Cage_________________[312] 945-3665
FunTime GS_______________[305] 989-0181

-eof
1. **Keyboard Controls**

   **Select key selects flight modes**

   
   "L" initiates countdown clock

   "E" press to start primary engine on launch. Press again to cut engine when orbit is achieved.

   "C" cargo doors open/close toggle

   "ESC" pause

   "Space bar" status check

   Joysticks push up and down for X-axis. Left and right adjusts Y-axis. With fire depressed up and down will adjust X-axis.

2. **Launch screen description**

   
   **********
  .STATUS BOX**********
   
   **********
   *THRUST BAR------------------------
   
   **********
   *COMPUTER THRUST SUGGESTED LEVEL--*
   
   **********
   *STATUS BOX*
   
   **********
   **DEORBIT BURN MANEUVER**
   
   1. Adjust Z axis until altitude reads 210
   
   2. Pull joystick back or forth to sed speed to Mach 23.9
   
   3. Press R to activate OMS
   
   4. Turn shuttle around completely by joystick left/right till Yaw=180.
   
   5. Set pitch at -004
   
   6. Press fire button till Mach reaches 19.0
   
   7. Turn shuttle back around by setting Yaw=0
   
   **REENTRY AND LANDING**
   
   1. Pull back joystick to set +24 pitch for proper reentry angle.
   
   2. Close cargo bay doors.
   
   3. Follow reentry course exactly (the graph appearing under the status box) by joystick movements L/R and U/D.
   
   **Landing**
   
   1. When you see mountains make a right turn. Line up shuttle with runway using radar screen.
2. FOLLOW GLIDE PATH INDICATORS AND STAY BETWEEN THE ARCHED LINES AGAIN BY USING JOYSTICK (THE GLIDEPATH INDICATOR AGAIN APPEARS)

3. PRESS FIRE BUTTON TO DISPLAY RANGE.

4. WHEN RANGE IS NEGATIVE DROP LANDING GEAR.

5. PUSH STICK FORWARD TO LOWER NOSE.

6. WHEN SHUTTLE HITS RUNWAY PUSH FORWARD AGAIN TO KEEP NOSE FROM POPPING UP.

**LIST OF ACRONYMS**

AX AXIS
ALT ALTITUDE
FLT FLIGHT
MET MISSION ELAPSED TIME
MECO MAIN ENGINE CUTOFF
OMI ORBITAL MANEUVERING SYSTEMS
RCS REACTION CONTROL SYSTEM
RNG RANGE
SHR SOLID ROCKET BOOSTER
SP/M SPEED IN MACH
SSME SPACE SHUTTLE MAIN ENGINE
STS SPACE TRANSPORTATION SYSTEM
TAEM TERMINAL AREA ENERGY MANAGEMENT
DAP DIGITAL AUTO PILOT

---

**MISSION PROFILE.**

You are in control of the space shuttle, Discovery, on the 101st shuttle mission of the Space Transportation System. Your target is an orbiting satellite approximately 210 nautical miles above the Earth.

Your mission: To launch, rendezvous and dock with the satellite as many times as you can, using a minimum amount of fuel, then return safely to Earth. A word of caution: Each time you successfully dock, the satellite’s orbit becomes more erratic.

---

**EQUIPMENT CHECK.**

---

**SPECIAL CONTROL FEATURES:**

- **Ctrl R:** Aborts flight and returns to demo screen.
- **Ctrl S:** Turns sound on and off.
- **Ctrl X:** Reverses X axis control direction of Joystick.
- **Ctrl Y:** Reverses Y axis control direction of Joystick.
- **Ctrl J:** Changes control from keyboard to joystick.
- **Ctrl K:** Changes control from Joystick to keyboard.

Effect When TRN is on Effect When ROT is on Effect Before/After Orbit Stage

<-- (2) Altitude decrease OMS Burn = button + joystick back

--> (2) Altitude increase OMS Burn = button + joystick back

I Speed increase Pitch down = joystick pushed forward

J Y Axis to left Yaw Left = joystick to left

K Y Axis to right Yaw Right = joystick to right

M Speed decrease Pitch up = joystick pulled back

Once a key is pressed, action will continue until you press the SPACEBAR to disengage.

---

**COMMAND KEYS AS FOLLOWS:**

- **ESC** = EXIT THIS PROGRAM
- **CTRL P** = PRINT LISTING
- **CTRL L** = VIEW/PRINT IN LOWER CASE

---

**COMMAND KEYS DURING LISTING:**

- **ESC** = EXIT LISTING
- **ARROW KEYS** CONTROL LISTING SPEED

---

**PRINTER IN WHICH SLOT? (1-7, ESC)**

---

Space Shuttle Documentation by the Disk Jockey.
Flight mode selection: Press Spacebar, 1, 2, or 3 to cycle through flight mode options. Press RETURN once selection has been made.

Primary Engine/Countdown Key: Press "E" to start primary engine and initiate countdown clock. Press "E" again when orbit altitude is reached.

Cargo Door Key: Press "C" to open/close cargo bay doors when orbit altitude is reached.

Landing Gear Key: Press "G" to lower landing gear just prior to touchdown.

Joystick Controller: A realistic directional hand controller forward and back moves shuttle forward or back (x-axis). Left and right controls left/right movement (y-axis). With the fire button depressed, forward or back stick movement moves shuttle up or down (z-axis). Also the fire button has other uses in Launch, Orbit, and reentry phases as described in those sections.

Status Check: Press SPACEBAR to cycle through readouts of this important information: Position, axes and pitch, mission elapsed time (MET), and remaining fuel (flight #3).

Flight Selection.

There are 3 different flight modes. Spend time with training flights #1 and #2 before taking on all the challenge of a real, unassisted shuttle mission (flight #3). Flights can only be selected before countdown begins.

Flight #1 Autosimulator: This is a combination demonstration flight and autosimulator. The shuttle flies an abbreviated mission. You do not use any of the console controls. In this flight mode, most aborts are ignored. Whenever you touch the joystick, you can take control from that point until rendezvous. Then you can only use the joystick controller to correct your X axis and land.

Flight #2 Simulator: Astronauts spend 1000's of hours practicing in ground-based simulators before flying an actual shuttle mission. In this mode, experience the challenge and demands of a real mission - with a couple of important exceptions. You don't use any fuel units, so you have all the time you need to complete the mission. Also, onboard computers will assist you during flight by compensating for less than perfect piloting skills. Most aborts are overridden, but your flight indicator display will alert you when you've erred.

Flight #3 STS 101: A full-fledged shuttle flight. All aborts are operative and flight conditions are quite realistic. Good luck!

Flight Evaluation.

Abort Indicator: If critical problems occur at any time during a flight, you may receive a "Launch Scrub" or "Mission Abort" signal. If this happens, your flight has ended. Check and look up C/W number to find out what went wrong.

Ranking: If you safely land the shuttle at Edwards Air Force Base in flight #3, you performance will be computer evaluated. Your ranking will be determined by the number of successful dockings and the number of fuel units remaining at the end of the flight.

<table>
<thead>
<tr>
<th>Description</th>
<th>docking fuel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commander.</td>
<td>responsible for overall crew safety and 6 or 7500</td>
</tr>
</tbody>
</table>

Flight Checklist.

1) Select flight mode by pressing the SPACEBAR and keys 1, 2, or 3. Then press RETURN once selection has been made.

2) Wait approximately 5 seconds for all systems to become operational.

3) When digital countdown clock appears, press "E" to activate Main Engine and initiate countdown.

4) At MET-004, press the fire button to ignite main engines, then use this button to keep "T" and "C" arrows aligned until you reach orbit.

5) Watch Trajectory Tracking Screen and use the joystick to maintain
correct ascension track and left-right alignment (horn sounds to warn
you reached orbit).
5) Watch Trajectory Tracking Screen and use the joystick to maintain
correct ascension track and left-right alignment (horn sounds to warn
you of trajectory variance).
   - Move joystick forward or backwards to maintain correct
     trajectory course. Try to stay on or just below the plotted
     line.
   - Move joystick left or right to keep dot centered in small
     "plane indicator" box.
6) At about 205 nautical miles, press "Z" to shut off the main
   engine. The closer you come to the 210 mile altitude, the nearer
   you'll be to the target satellite's orbit. WARNING: If you shut off
   the main engine at less than 195 miles, the shuttle will fall to
   Earth!

Stabilizing Orbit.

Objective: Establish a stable by opening Cargo Bay Doors for heat
release and adjusting shuttle position to achieve visual contact with
Earth.

Cargo Bay Doors: Your first task is to open the bay doors. This is
vital and must be done during the first orbit. Radiators that shed
excess heat generated during the launch are on the inner surfaces of
these doors. If the doors remain closed, heat builds up inside the
shuttle and the warning horn sounds. You then have just 15 seconds to
open the doors. If you don't, the mission will be aborted.

Nose Down Maneuver: When the shuttle first achieves orbit, the nose
of the craft is pointed up, out of the line of sight of the
satellite. In order to dock, you must see the satellite. Adjust the
pitch, as explained below to bring the shuttle's nose down. When you
do this, you'll be able to see the blue Earth through the window.
Cargo bay door opening and pitch adjustment must be performed on the
first orbit before any further operations should be attempted.

Sequence to Stabilize Orbit:
1) Press "C" to open cargo bay doors.
2) Press "R" to activate OMS Rotational Engines.
3) Move joystick forward or back to set pitch to -28.

Stable Orbit Summary: Cargo bay door opening and pitch adjustment
must be performed on the first orbit before any further operations
should be attempted.

Objective: Establish a stable by opening Cargo Bay Doors for heat
release and adjusting shuttle position to achieve visual contact with
Earth.


Objective: You are attempting to dock with a satellite that is
traveling at Mach 23.9, several hundred nautical miles above the
Earth. You will have to slow down or speed up to reduce distance (X
axis) to 0. Also you will have to be at the same altitude (Z axis)
and position (Y axis). All of these movements are interrelated -
changing one can affect the others. And in flight mode #3, time is
important because the longer you take, the more fuel you consume. To
save fuel, tap the joystick instead of holding it in a control
position.

Docking Checklist.

Maneuvering in Space: There are 2 different ways to maneuver the
shuttle in orbit. For major maneuvers (30 nautical miles or more),
the Orbit Maneuvering System (OMS) can be used. This system takes
some study and experience to use effectively. So when first starting
out, use the Reaction Control System (RCS). Its clusters of rocket
engines in the shuttle's nose and tail can move the shuttle about its
tree major axes (X, Y, Z).

1) To use the OMS, press "R" to activate ROT (rotational engine).
   Lean joystick left or right to affect Yaw, forward or back to
   affect Pitch. Press fire button to fire engine.
2) To use RCS, press "T" to activate TRH (transitional engine).
   Lean joystick left or right to affect Y axis, forward or back to
   affect speed (and X axis), forward or back while pressing
   fire button to affect altitude (Z axis).

Shuttle Speed and Position: Speed is just as important as position.
Never allow your speed to drop below Mach 170 or your altitude to
fall below 195 nautical miles, or you'll burn up in the atmosphere!
Your X axis relationship to the satellite depends on your speed,
which is affected by your engine. To overtake the satellite when it
is ahead of you (when the X axis value is positive), your speed must
be greater than 23.9. As you make your final approach to the
satellite, keep speed close to Mach 23.9.

Drifting: As you near the satellite, continually recheck all axes.
The satellite's movement is erratic, settings will shift. When RCS is
active (TRH is on), press "X", "Y", or "Z" to display current
status of those axes. Press the SPACEBAR at any time to check
position, remaining fuel, mission elapsed time, and pitch and yaw.

"S" Curve: On the Ground Track Screen, the "S" line indicates both
the satellite's and the shuttle's ground track around the Earth. The
shuttle's position is the solid dot, the flashing dot is the target
satellite. Notice as you track the satellite, that your X axis
(distance between shuttle and satellite) will suddenly change
significantly as the satellite wraps around the tracking line. This
is because the orbital tracking line wraps around the display as a
real orbit would wrap around the earth.

Docking Screen: Use the "S" curve screen until you get fairly close
to the satellite. Then 2 smaller radar screens will appear. The left
screen shows your Y axis (up-down), and a wide view of your Y axis
(left-right). The right screen, which you'll use more, shows the X
axis and micro (close in) Y axis.

Satellite Sighting: When you see the satellite, prepare to conduct
false

close range maneuvers with the RCS (TRN engine on).

Multiple Docking: Every time you dock (in flight #3), you receive a "Rendezvous" signal and some additional fuel units. Each additional docking becomes more difficult, so the amount of fuel you get increases. After each rendezvous, the satellite moves away from the shuttle. Wait until it is at least 80 units (X axis) away before attempting to dock again, or the satellite will interfere with the shuttle's signals.

Docking Sequence: Match the position of the shuttle with that of the satellite by correcting Z, Y and X axes, preferably in that order.

1) Press "T" to activate RCS Transitional.
2) Correct Z axis to 0. Press button and move joystick forward or back. A negative number means the satellite is below you. A positive number shows the distance, in units, that the satellite is ahead of you. To increase shuttle speed, move joystick. Likewise, move joystick back to decrease speed. The satellite’s speed is Mach 23.9.
3) Correct Y axis to 0. Move joystick to the right or left. A positive number means the satellite is to the right of you. A negative number means the satellite is to the left of you.
4) Correct X axis. Move the joystick forward or back. A positive number shows the distance, in units, that the satellite is ahead of you. A negative number shows units the satellite is behind you. To increase shuttle speed, move joystick. Likewise, move joystick back to decrease speed. The satellite’s speed is Mach 23.9.
5) When you meet the satellite, all axes must be adjusted to 0 and stabilized for 2 seconds. Then you will receive a "Rendezvous" signal, indicating that you've docked.

Deorbit Burn.

Objective: To turn shuttle around, fire engines and decelerate to the correct speed for leaving orbit. This is one of the most critical phases of your flight.

During deorbit operations, the shuttle is oriented to a tail-first attitude, decelerating to reentry speed by the powerful OMS engine, then turned around to a nose-first attitude.

You begin to lose altitude when you've slowed the shuttle down below the speed needed to sustain orbit at 210 nautical miles.

Sequence for Deorbit Burn:
1) Pull back joystick to set +24 pitch for proper reentry altitude. When the deorbit burn, the shuttle must then be reoriented nose-first to the correct attitude. From above, looking down, the shuttle will be moving tail-first. You will then receive intermittent signals which you need to use to correct your course and plane.
2) Correct Z axis until altitude reads 210. The satellite moves away from you, decelerating to reentry speed by the powerful OMS engine, then turned around to a nose-first attitude.
3) Follow reentry course on computer screen. Pull stick back to go right. Push forward to go left. Left and right on the stick centers stabilized for 2 seconds. Then you will receive a "Rendezvous" signal, indicating that you've docked.
4) Correct X axis. Move the joystick forward or back. A positive number means the satellite is to the right of you. A negative number means the satellite is to the left of you.
5) Correct Y axis to 0. Move joystick to the right or left. A positive number means the satellite is below you. A negative number shows units the satellite is above you. To increase shuttle speed, move joystick. Likewise, move joystick back to decrease speed. The satellite’s speed is Mach 23.9.
6) When you meet the satellite, all axes must be adjusted to 0 and stabilized for 2 seconds. Then you will receive a "Rendezvous" signal, indicating that you've docked.

Deorbit Burn Maneuver: First you must turn the shuttle around so this it is traveling tailfirst. Then in order to maintain the correct attitude, set your Z axis and pitch. Once this maneuver is completed, fire the engine to decelerate. If the Z axis and pitch are not set correctly, firing the engine will make you shuttle climb or dive. After the deorbit burn, the shuttle must then be reoriented nose-first to the correct attitude. Entering the atmosphere backwards will cause the shuttle to burn up!

Yaw: Left-right rotation of the nose of the shuttle.

Sequence for Deorbit Burn:
1) Adjust Z axis until altitude reads 210.
2) Pull joystick back or push forward to set speed to Mach 23.9.
3) Press "R" to activate OMS (rotational).
4) Turn shuttle around completely. Move joystick left or right to set Yaw at 180.
5) Set pitch at -004.
6) Press joystick button until speed is Mach 19.0.
7) Turn shuttle around nose-first be setting Yaw to 0.

Reentry.

Objective: To establish and maintain the correct pitch, yaw and speed, follow the correct trajectory, and properly manage heat buildup during reentry. There are 3 important stages to reentry: Entry Interface, TAEM and LOS. Position, altitude, velocity, and heading must all be exact to both manage the tremendous heat buildup and correctly position your shuttle for the final approach.

Entry Interface: This is the point in your flight where atmospheric entry officially begins. As the shuttle descends, atmospheric drag dissipates tremendous energy, generating a great deal of heat. This heat quickly builds up. Pitch and speed must be correct to utilize the shuttle’s thermal protection system.

Terminal Area Energy Management: After entry interface, you must closely follow the proper descent trajectory in order to maintain enough altitude and speed to reach the final touchdown point. This process of conserving your energy by maintaining the correct position, altitude, velocity and heading is called Terminal Area Energy Management (TAEM).

Loss of Signal: During reentry, the shuttle superheats the gas of the upper atmosphere creating flashes of color outside your window. Heat strips electrons from the air around the shuttle, enveloping it in a sheath of ionized air that blocks all communications with the ground. So at 140 miles, you will experience a temporary partial loss of signal (LOS). Keep a close eye on your radar at this point. You will receive intermittent signals which you need to use to correct your course and plane.

Descent Screens: On your reentry screen, "X" indicates cut-off of your OMS engines (deorbit burn). "T" indicates the terminal area energy management phase. "L" indicates your transition to final landing approach. The small box at left is your plane indicator.

Reentry Sequence:
1) Pull back joystick to set +24 pitch for proper reentry altitude.
2) Close cargo bay doors.
3) Follow reentry course on computer screen. Pull stick back to go right. Push forward to go left. Left and right on the stick centers plane.
4) Correct X axis. Move the joystick forward or back. A positive number means the satellite is to the right of you. A negative number means the satellite is to the left of you.
5) Correct Y axis to 0. Move joystick to the right or left. A positive number means the satellite is below you. A negative number shows units the satellite is above you. To increase shuttle speed, move joystick. Likewise, move joystick back to decrease speed. The satellite’s speed is Mach 23.9.
6) When you meet the satellite, all axes must be adjusted to 0 and stabilized for 2 seconds. Then you will receive a "Rendezvous" signal, indicating that you've docked.

Deorbit Burn Maneuver: First you must turn the shuttle around so this it is traveling tailfirst. Then in order to maintain the correct attitude, set your Z axis and pitch. Once this maneuver is completed, fire the engine to decelerate. If the Z axis and pitch are not set correctly, firing the engine will make you shuttle climb or dive. After the deorbit burn, the shuttle must then be reoriented nose-first to the correct attitude. Entering the atmosphere backwards will cause the shuttle to burn up!

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thud of the front landing gear.

Stat Messages.

<table>
<thead>
<tr>
<th>Message Number</th>
<th>Message or Action Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Not lined up with runway on touchdown.</td>
</tr>
<tr>
<td>150</td>
<td>Touchdown too early (hit desert).</td>
</tr>
<tr>
<td>200</td>
<td>Nose gear not down at end of runway.</td>
</tr>
<tr>
<td>250</td>
<td>Off course at start of banking turn.</td>
</tr>
<tr>
<td>300</td>
<td>Landing gear not down at touchdown.</td>
</tr>
<tr>
<td>350</td>
<td>Cargo bay doors not closed at ascent or reentry.</td>
</tr>
<tr>
<td>400</td>
<td>Pitch is greater than +24 on reentry (skip into space).</td>
</tr>
<tr>
<td>450</td>
<td>Too close to the planet (hit).</td>
</tr>
<tr>
<td>500</td>
<td>Cargo bay doors not open during orbit (overheat).</td>
</tr>
<tr>
<td>550</td>
<td>Orbital insertion angle incorrect at MECO.</td>
</tr>
<tr>
<td>600</td>
<td>Speed too low to sustain orbit (below mach 17.0).</td>
</tr>
<tr>
<td>650</td>
<td>Altitude too high (255 miles max).</td>
</tr>
<tr>
<td>700</td>
<td>Altitude too low to sustain orbit (below 195).</td>
</tr>
<tr>
<td>750</td>
<td>Speed too low to sustain orbit (below mach 17.0).</td>
</tr>
<tr>
<td>800</td>
<td>Cargo bay doors not open during orbit (overheat).</td>
</tr>
<tr>
<td>850</td>
<td>Orbit insertion angle incorrect at MECO.</td>
</tr>
<tr>
<td>900</td>
<td>Speed/altitude too low to attain orbit at MECO.</td>
</tr>
<tr>
<td>950</td>
<td>Out of fuel.</td>
</tr>
<tr>
<td>1-99</td>
<td>Number of dockings. Also many appear as the last digit of a mission abort stat.</td>
</tr>
</tbody>
</table>

Acronym List.

- AX: Axis
- ALT: Altitude
- FLT: Flight
- MET: Mission Elapsed Time
- MECO: Main Engine Cut Off
- OMS: Orbital Maneuvering System
- RCS: Reaction Control System
- RNG: Range
- SRB: Solid Rocket Booster
- SP/M: Speed in Mach
- SSME: Space Shuttle Main Engine
- STS: Space Transportation System
- TADM: Terminal Area Energy Management
- DAF: Digital Auto Pilot

-the Disk Jockey-

SPEED:
- 4 FAST ACCELERATION
- 2 MINOR ACCELERATION
- 1 MINOR DECELERATION

ENERGY:
The indicator tells how much energy you have. Restore energy at any base planet (Sol).

VERT:
Indicates how much your starship is turning.

ORBIT LIGHT:
Tells if you are in orbit around a planet.

DATABASE LIGHT:
Lights when your ship has sustained damage.

COMP LIGHT:
Use B key to control best to leave it on red.

SHIELDS:
S key toggles put your shields on and leave them on.

RADAR:
R key shows where you are in relation to the planet.

HYPERDRIVE:
H key takes you to a preset star system.

COMPUTER:
C key the computer system has most of the controls in lists which do pretty much what they say.

You have a better chance of taking over planet if you knock out the starship orbiting it first. When you have conquered a planet take the loot back to Sol to sell it for credits so you can buy more troops, tanks, missiles, transports, and fighters.
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**Spare Change**

- **<Ctrl> R** = restart
- **<Ctrl> Z** = user options -- change different parts of the default settings. Fun cartoons in this section. **<ESC>** exits.
- **<Ctrl> C** = configures keyboard. In this section, **<Ctrl> R** resets high scores. **<cr>** exits.
- **<Ctrl> V** = displays high scores. **<cr>** gets you back to the title page.
- **<ESC>** = pauses game.
- **<Ctrl> S** = sound toggle. Three settings:
  1. normal
  2. lower sound level
  3. sound off. pressing **<Ctrl> S** again toggles it back to normal.

---

**SPEEDWAY CLASSIC**

Scoring-
Starting Bonus: +3000 points.
Time: +20 points each sec under 6 mins.
Position: +100 points each position above 21st.
Track Edge Penalty: -200 points per unit time on edge
Spark Contacts: -100 points each incident
Spinouts: -200 points each incident
Fire Collisions: -400 points each incident

---

Ctrl-R to restart race.
ESC to restart sign-up (Ctrl-R, ESC if race in progress).

---

Mode Commands- Enter in response to PLAYER'S NAME?
The first character of each command is a "."

- **.SOUND OFF** Speaker off
- **.SOUND ON** Speaker on
- **.DEMO** Self-running mode
- **.PLAY** Normal mode
- **.ERASE A** Erases all Class A scores
- **.ERASE B** B
- **.ERASE C** C
- **.ERASE D** D
SPELLPRUF is a program that will check your word processor documents for spelling errors. By comparing the words in your text against its dictionary, it will determine which words it does not recognize. You can then opt to add them to the dictionary, if you wish, or simply skip them. By comparing the screen to a printed copy, you can find and mark all spelling errors. Later, these can be changed using your word processor.

To use SPELLPRUF, you need a 64K Apple II (any version will do). If you don't know what this means, don't worry. SPELLPRUF uses a lot of disk space, mainly because its dictionary can expand to any size you wish. For that reason, it needs to create a disk for itself, which is called the SPELLPRUF Master disk. Follow the screen prompts. Once all is correct, SPELLPRUF will create the Master disk.

To check a word processor document, you must first prepare it for use with SPELLPRUF. It must be in the form of a DOS 3.3 text (or ASCII) file. Some word processors (like Write Away) save their files as text files in DOS 3.3--these are ready to go as is. Some word processors have a menu option to save or print a file as a text file. You must use this feature to translate your files to text (consult your word processor manual for help). In short, to determine if a file is ready for use by SPELLPRUF, put the disk with the file in question on it in drive 1 and type CATALOG from the Applesoft prompt (]). If an I/O error occurs, your word processor more than likely using ProDOS to use SPELLPRUF just convert the file to DOS 3.3 using your System Master or Copy II+ from Central Point Software. If the file appears like this:

```
T 014 FILE.WP
```

then it is ready to be spell-checked (the T stands for text file). If the file appears with a B (for binary file) instead of a T, you must use the word processor to create a text file for the document.

Once your file is ready for checking, place the SPELLPRUF Master disk in drive 1, and turn on your computer (or press [Control]-[Open-Apple]-[Reset] if it's already on). SPELLPRUF will show a catalog of your word processor files disk. Enter the name of the file to be checked. SPELLPRUF will then compare the file against its first dictionary, showing you a total word count and an error count as it goes. If there is more than one dictionary (meaning if this is not the first time you've used the program), it will then check the errors against those dictionaries, keeping you informed of its progress through the file.

Once all errors have been found and determined to be absent from all the dictionaries, SPELLPRUF will display your file, highlighting each error as it comes to it. "Errors" may be either true spelling errors or words simply not in any dictionary. If the word is spelled incorrectly, mark it down on a printed copy of your document for later editing. If it is correct, and you want it to be remembered for future documents, press the [SPACEBAR]. If you want to skip that word, press [Return]. Once it has shown you all the errors, it will sort and index the words that you told it to remember. It will then save these words in a new dictionary. You can then either check another document or reboot your system.

The author suggests that you print a copy of these instructions, as you may need to refer to them in the future.
# Spitfire Simulator

## Spooler Classic Desk Accessory

by Bill Tudor

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Version: 1.01
Updated: 10-Dec-1990

This file contains the documentation for the Print Spooler CDA, an Apple IIgs Classic Desk Accessory that allows you to perform background printing of up to 14 Apw/Orca source files (Src), Merlin source code (Txt), or standard text files (Txt).

Note: Spooler.DA, Print Spooler, Print Spooler CDA, and Print Spooler Classic Desk Accessory are ALL terms used to identify this program.

### Requirements:
+ Apple IIgs computer/at least 1Mb of RAM
+ printer connected to internal slot 1

### Features:
+ Merlin file expansion
+ up to 14 files in the print queue
+ automatic tab expansion
+ "point & shoot" file selection

### Scenery and Targets

0- Aerodrome Scene in South Eastern Endland. (For Beginners)
1- Grid Scene for General Flying
2- Messerschmitt Bf 109 Fighter
3- Focke Wulf 190 Fighter
4- Junkers Ju 87 Dive Bomber
5- Heinkel He 111 H6 Bomber
6- Junkers Ju 52
7- U.F.O.
8- Zeppelin
9- U.F.O.
+ The Spooler.DA will only work under GS/OS. You cannot enter the CDA from ProDOS 8.

+ The Spooler.DA should continue background printing even if a ProDOS 8 program is run...but this has not been tested.

+ You CANNOT print to slot 1 while the spooler is running.

+ The spooler only works with Txt and Src files. Merlin Txt files will be expanded, as will tab characters. Any other control characters in the text are simply ignored.

+ You cannot disable VBL IRQ's while the spooler is running.

+ You MUST have enough free RAM to hold ALL of the files in the print queue.

+ Avoid the use of IRQ intensive programs (like communication programs) while the Spooler.DA is active.

+ Spooler may have problems with programs that disable interrupts often or when running during large amounts of disk access.

+ Spooler will not work if the host program destroys background task queue.

1. Overview:

The Spooler.DA remains dormant in memory until a print session is active. You can tell that a session is active by either observing the action of your printer or listening for periodic 'clicks' of the IIgs speaker. When the Spooler is active, it sends a line of text to the printer about once every half-second. You may continue to use your IIgs normally while the spooler sends information to the printer. When the print job is complete, the spooler places itself back in a dormant state until it is again activated via the CDA menu.

2. Getting Started.

Simply copy the Spooler.DA to your *:System:Desk.Accs folder on the system disk and re-boot the computer.

2. Setting up the Print Queue.

Enter the IIgs CDA menu by pressing <command-control-esc> and select the CDA called "Print Spooler". You will be presented with a main menu screen. The menu lists all the files currently in the print queue, and provides options for left margin, line numbers, adding a file to the queue, and deleting the queue. The options are described below.

A. Adding a file to the queue [Option 1]

Selecting option [1] will cause the Print Spooler CDA to first prompt you for the path of the file you wish to add to the print queue. Select the DIRECTORY (folder) that contains the file you wish to print. After the directory has been established, you will be asked to select the filename. You can press <ESC> at any time to return to the main menu.

The following command are available when selecting the PATH (Directory):

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape</td>
<td>abort; return to menu</td>
</tr>
<tr>
<td>Up Arrow</td>
<td>change last directory</td>
</tr>
<tr>
<td>Down Arrow</td>
<td>change last directory</td>
</tr>
<tr>
<td>Left Arrow</td>
<td>drop dir. from path</td>
</tr>
<tr>
<td>Right Arrow</td>
<td>append dir. to path</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tab</td>
<td>change disk drive</td>
</tr>
<tr>
<td>Return</td>
<td>accept path as is</td>
</tr>
<tr>
<td>Clear</td>
<td>clear entire path</td>
</tr>
</tbody>
</table>

The following commands are available when selecting the FILE:

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escape</td>
<td>abort; return to menu</td>
</tr>
<tr>
<td>oa-Period</td>
<td>abort; return to menu</td>
</tr>
<tr>
<td>Up Arrow</td>
<td>change filename</td>
</tr>
<tr>
<td>Down Arrow</td>
<td>change filename</td>
</tr>
<tr>
<td>Return</td>
<td>accept the current filename</td>
</tr>
</tbody>
</table>

B. Deleting the print queue [Option 2]

Select option [2] to delete the entire print queue and start the file selection process from the beginning again.

C. Printing line numbers [Option 3]

Select option [3] to toggle printing of line numbers on/off. If line number printing is set to ON, all of the files in the print queue will be printing with a line number at the beginning of each line.

D. Left Margin [Option 4]

Selecting option [4] will increase the left margin by 1 character at a time up to a maximum of 8 characters. If this option is selected when the left margin is already at 8 characters, the left margin value wraps back to 0.

E. Quiting [Escape ]

Press ESCAPE to exit the Print Spooler CDA. If there are ANY files listed in the print queue, background printing will begin. Printing continues until all of the files in the queue are printed. You will here a click in the Apple IIgs speaker every time the spooler finishes a line (about every 0.5 seconds).

3. Cancelling a print job.

If the Print Spooler CDA is entered while a print job is currently in session, you will be asked if you want to cancel the print job. Selecting "Y" will abort the current print job and allow you to setup a new print file queue. Note that you may have to manually eject the final page from the printer. Selecting "N" will exit the CDA and allow the current print job to finish up. You CANNOT use the Print Spooler CDA while a print job is in session.

Enjoy!
Spy hunter has four scenes.

1) Road -- what you start out on. You can go all the way over into the dark green but the light green is a no-no.

2) Water -- after driving for a while, you will lose control and the road will narrow until you run into a small shed... you will come out the other side as a small speedboat. If you stick with it long enough, you come out as a car again.

3) Bridge -- a common occurrence, this in no way affects play.

4) Icy road -- the background goes white, and the car is a little more difficult to control.

Cheating

Hit P while playing to have unlimited cars, and all the weapons. Be warned -- I have seen the utility van come along and then keep going, after playing with the cheat for a while... You’ll have to start over again if that happens.

Happy motoring!

The Minuteman

In the game there are ten different moving objects. Here are their descriptions.

1) Dark blue car -- shoot to kill, or ram off road. Sometimes has razors coming out of its tires that it will kill you with.

2) Wide blue car -- impermiable to machine gun fire. You must ram him off the road.

3) Light blue small cars -- these cars are civilians. You get no points for them, but they're fun to hit anyways.

4) Motorcycles -- same as Light blue small cars.

5) Helicopter -- Travels overhead, to kill it you must use your missiles (more on that later). Occasionally drops...

6) Bombs -- dropped by the helicopter, when they land they produce a small crater that will kill you if you run over it.

7) Blue boats -- these boats appear when you turn into a ship. They drop red bombs that will kill you if you hit them.

8) Wide blue boats -- these babies will shoot thick missiles at you if they get right behind you, or else they will attempt to ram you off the road.

9) Utility van -- the big red mac that lets you off when you die, and appears once in a while to give you new weapons. When it appears, get in back of it and press the top button, and it will let you in. Your weapons are displayed on the bottom of the screen. The bottom button fires guns & missiles, the top is the slick and smoke screen. The computer will fire a missile instead of the machine guns when a chopper is on the screen, and releases the oil slick until you run out and then you release the smoke.

10) Old, big, blue, mafia car -- this car comes down from the top of the screen, and occasionally a window opens and a gun gets pointed out, and fires across the road.

Change of scenery
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SPY vs SPY

WRITTEN BY: ??????
UPLOAD BY: THE BLIND THIEF

SIMULVISION utilizes a revolutionary split-screen display depicting both players activities simultaneously! Even while playing alone against the computer, you get to see what the other wise-SPY is up to.

SIMULPLAY lets both players play... you guessed it! Simultaneously. No more need to wait your turn as you travel throughout a selectable, yet randomly generated maze of interconnection rooms. While setting and defusing booby-traps, engaging in hand-to-hand combat, searching for the Top Secret briefcase (guess its not secret anymore) and looking for the only way out, you must collect your passport, secret plans, money, and a key in order to escape from the foreign embassy before your plane take off without you. Like alfred E. Neuman says, "If at first you don't succeed at first... SPY, SPY again."

GAME OPTIONS:
When SPY vs SPY has finished loading into your computer, you will be presented with OPTION screen.

Located inside the top room you will be able to select and modify the following options:
1. Number of players
2. Difficulty level
3. 'Intelligence Quotient' of the computer (one player version only)
4. Airport exit revealed or until the end.

STARTING:
With your joystick or appropriate keys, move your cursor, up and down, left and right, to any of the options. By moving the joystick right or left you can select one or two player mode, difficulty level, and I.Q. of the computer (only available in one player mode.)

MOVEMENT:
The rooms that you are in are three dimensional. Pushing the JOYSTICK forward will move you towards the rear of the room. Pulling the JOYSTICK right or left will move you right or left. If you move from room to room, you will notice that a Movement Status Indicator bar (located below your room) is scrolling from right to left and being updated with each new room you have entered. These symbols can show you how to go back to where you’ve come from. For examples, if you move one room to the right and two rooms back, you will see, reading from right to left, two "down" arrows and one "left" arrow. To find your way back, follow the arrows reading from left to right, deleting each arrow until you return to the room in which you started. See "Bread Crumbs" hand-to-hand combat:

First, move within range of any object (you will hear a short tone and see a flash). Then press the Joyskck button. Any object within a room can be opened or lifted and may reveal one of the hidden items you are looking for. If you're not so lucky, it will activate a BOOBY TRAP, blowing you to smithereens....

OPENING DOORS:
Again, move within range of any closed door. Press the JOYSTICK button and the door will open.

KEYS AND THEIR FUNCTIONS

R Move left
L Move right
A Move back or up
Z Move forward or down
Q Access trapulator
S Toggle music on/off

SPACE
Press to open or close a door To pick up or drop an object Select or activate a booby trap Start game Press once to stop your man, again to drop an object.

ESC
Pause game play

CTRL-R
Return to option screen

In Hand-to-Hand combat, use the K, L, A, and Z Keys to move the arm with the club: in, out, up, or down, while depression the CONTROL Key.

GAME ELEMENTS

SIMULVISION:
The top half monitors the actions of the White Spy, the bottom half depicts the Black Spy (either player 2 or the computer). The activities of both Spies are revealed to both players in the rooms shown on the left side of the screen. The right side is reserved for the Trapulator and its six icons.

SIMULPLAY:
With the clock running at all times, we didn't think it was fair to make players wait to take turns. So, voila! Simulplay. Since both Spies’ activities take place out in the open, the challenge becomes watching and remembering what the other Spy does while you go about your business. Simulplay allows players to engage in club-to-club combat, place booby-traps, chase each other and generally get in the way.

HAND-TO-HAND COMBAT:
The combat mode exists only when both spies are in the same room. SIMULVISION ends, and the spy that entered the common room appears on the same screen as the Spy that was already there. Both spies have the options of attacking, leaving, or avoiding the other Spy.
In the combat mode, spies cannot search objects, or use the Trapulator (no map or traps). Doors, however, still work, and so do any traps that might be connected with them. If spies are not within range of any object when pushing the JOYSTICK BUTTON, they will select the club with which they can hit the other Spy on the head or stab him in the stomach. When push the button on the head, the button is held down while the JOYSTICK is moved from the Up position to the Down position (swing the club downward). To stab, move the JOYSTICK from left to right (or right to left, depending on which way the Spy is facing). When the JOYSTICK BUTTON is first pushed down, the Spy will automatically face his opponent, regardless of which way he was facing or moving. To move your Spy during combat, release the button ad move as normal.

Hitting the other Spy weakens him, and about 7 solid blows are needed to "kill" him. However, Spies will recover strength over a period of time.

If a Spy is carrying anything when he enters a common room, the object is lost or hidden in the common room, depending on the type of object. Traps and remedies are lost, while inventory items and the briefcase are hidden somewhere in the room. The winner of the combat sequence can search the object out, and either regain or gain possession.

NOTE: At the beginning of each new game, both Spies will start out in the same room only a few steps from each other. Soooop, don't become the victim of SAP-stage... keep your guard up.

TIME:
Both players start out with equal time to travel the maze, collect required objects, search for the briefcase and exit the embassy before the other. Time is counted down at 1 second per trap. Hence, 5 seconds penalty is added. You lose time when you set a booby-trap. When setting a trap, you will hear several beeps. This will tell you that the trap was properly set and it reminds you to watch your trapulator, which will show the appropriate time. However, if you are the victim of a booby-trap or the loser in a hand-to-hand combat the clock will continue to count down even though you are 'unconscious'. These losses of time can never be regained. When time is about to run out the red button on top of the TRAPULATOR will flash and sound it's warning. Both players can never run out of time at the same time. Therefore, one player will outlive the other. The surviving player will continue his search for the briefcase required objects and the exit. If you are playing against the computer and the computer has time remaining, you can abort the mission by typing CTRL-R. Even after your spy's demise, the trap he has set remain. The game is by no means over just because one player's time has run out. To stop the game or pause, press the ESC key.

BOOBY TRAPS:
As players move through the maze of rooms, they may select any of the five booby-traps. The booby-trap arsenal contains: Bombs, Springs, Buckets of Water, Guns with Strings tied to the Trigger and Time Bombs. The Time Bomb needn't be hidden. In fact, it is activated immediately and is the only booby-trap that cannot be carried or neutralized! The Gun with a string and the bucket of water can only be attached to a closed door. All other traps may be placed behind or in anything found in any room.

Spies can carry traps in and out of rooms, placing them where they wish when they are ready. Booby-traps are depicted in black while the remedies are shown in color.

TO PLACE AND SET A TRAP:
1. Press the JOYSTICK button... TWICE! You have just accessed the TRAPULATOR. Observe the large arrow.

2. Move the large arrow about the Trapulator using the JOYSTICK or KEYBOARD arrows.

3. Position the arrow of the booby-trap of your choice.

4. Press the JOYSTICK or if you are using the keyboard, the SPACEBAR. The booby-trap is now held by your spy.

5. Position the Spy in front of the hiding place you have selected.

6. Watch for a brief flash in your Spy's room. This flash indicates the Spy is properly positioned.

7. Press the JOYSTICK/SPACEBAR. The booby-trap will disappear and you will hear the short 'beeps'. These indicate that the trap has been set AND that time is being deducted from the time remaining before your flight leaves.

NOTE: In the case of the Gun with a String trap, only the gun will no longer be visible. As you move your Spy about the room, the string will stretch and follow the Spy Position him in front of a closed door, watch for the flash, press the Joystick/Spacebar and the trap is set.

Once a trap has been set, EITHER Spy has can set it off! A Time Bomb will go off in 15 seconds once selected. Any Spy(s) in the room at the time of detonation will be zapped. Unlike other traps, the TimBomb is not set off by the searching of the Spies. Listen carefully for them. They come in handy if you are being chased. The unfortunate Spy will lose 7 seconds of actual time. Also, 20 seconds will be deducted from his game time, for a total penalty of 27 gaming seconds. The other player will be awarded bonus points for each trap set off by the opposition. If the booby-trap has been in possession of the briefcase, the other Spy can use this time to attempt to locate the victim and grab the briefcase.

To add insult to injury, when a player sets off a trap, he gets zapped while the other Spy laughs hysterically.

REMEDIES:
Except for the Tim Bomb, each of the traps has a disarming remedy hidden throughout the maze. Each type of remedy is always hidden in the same type of location. For example, the scissors are used to disarm the Gun with string. Scissors are only found in the First Aid kists hanging on the back walls. As with traps, remedies can be picked up and carried from room to room. Spies CANNOT carry more than one remedy at a time except inside the briefcase.
TRAPULATOR: Located to the right of each of the rooms is a calculator-like, state of the art, Trapulator. It serves four basic functions. You can use it to SELECT BOOBY TRAPS; pinpoint your LOCATION, gauge your TIME remaining and check INVENTORY.

Across the top of the Trapulator is a digital clock which indicates the time left until your plane takes off (with or without you)! Below the clock are six buttons. On the first 5, selectable booby-traps are indicated. However, the sixth button in the lower right hand corner calls up a map of the embassy you have broken into. The map will appear in the room that your spy is occupying. The room your Spy is in will be the one blinking on and off. Rooms filled in with a color indicate that your Spy has been in that room at least once. Any required inventory items are represented by a dot. The map does NOT tell you what item or how many are in a particular room, just that something you are looking for is there. Finally, the Trapulator displays items you have successfully collected as you ready your escape. Its also indicates if an item has been taken from you. The item will now appear on the opposition's Trapulator. Across the bottom, left to right, should be your passport, money, key and the secret plans. The map does NOT show the location of the other Spy, nor does it reveal anything about the other floor of the embassy (if there is one).

INVENTORY: Your mission being to escape the embassy, Top Secret briefcase in hand, it is important to remember that all else is but a mere distraction. Before time runs out you must manage to find, fill, and keep the briefcase, locate the only exit and board your plane with ALL of the following: PASSPORT, traveling MONEY, the KEY, and the secret PLANS.

It is helpful to know that these items are never found in any of the remedy locations. Use the briefcase to hold all these items. Carry them with you or hide them. There is only one of each in any game. Protect the briefcase at all costs. If an item is found and you do not possess the briefcase your spy will be carrying a white satchel and the item contained will be flashing on the Trapulator.

EXIT: There is only one way out of each embassy building. The exit door is marked. You can NOT leave without all of the required inventory. The airport guard will see to that!

SPLIT LEVEL EMBASSIES: Some of the embassy buildings are two stories high. Your Spy can climb from floor to floor by using the ladders. Holes in the floors are often hidden by carpets. Use the JOYSTICK or SPACEBAR to cover/uncover such an opening. Use the JOYSTICK OR KEYBOARD to move up or down.

LADDERS AND RUGS: If you enter a room with a ladder, you can activate it by moving within range and pressing the JOYSTICK button. Pressing the JOYSTICK button once will lower the ladder to ground level, enabling you to move your Spy up the ladder to the upper floor. If you do not push your spy up the ladder but push the JOYSTICK button a second time, the ladder will raise back up. To climb up or down, tap your JOYSTICK once in the appropriate direction. The spy will move by himself. Do NOT keep the JOYSTICK forward or back. If you enter a room with a rug, standing within range of the rug, pressing the JOYSTICK button will lift the rug and reveal a hole. Move your player over the hole and he will climb down the ladder to a lower floor. You can cover a hold by standing near it and again pressing the JOYSTICK button.

"BREAD CRUMBS": You can re-trace your steps by using the small character indicators just below the front edge of your room. These guides (not available in the higher levels) actually point the way back to where you have just come from!

SCORING:

Points are awarded or deducted for the following:

+80 winning at hand-to-hand
-20 losing at hand-to-hand
+30 for placing a booby-trap
-80 for being the victim of a trap or airport security guard's boot
+60 only for stealing other player's inventory item
-70 calling up the help MAP
+40 using a remedy successfully

RANKING:

At the conclusion of each game, players will be awarded the title or rank they have earned. Bonus points and time penalties are calculated by the computer.
If you'll notice, they are in alphabetical order from bottom to top, counting and E♯ is F. Keep that in mind. (The following is an example of a musical staff.}

Note: This is the note. The musical alphabet is CDEFGAB and that is how SS looks.}

Note: This is the note. The musical alphabet is CDEFGAB and that is how SS looks. Note that the SS alphabet is in the Trebel clef.}

- **E (in Trebel)**
- **F (in Trebel)**
- **G (in Trebel)**
- **A (in Trebel)**
- **B (in Trebel)**
- **C (always)**
- **D (in Trebel)**
- **E (in Trebel)**
- **F (in Trebel)**
- **G (in Trebel)**
- **A (in Trebel)**
- **B (in Trebel)**

Octave: This is what pitch the note will be played at. Each new octave starts at C (ex: A4 B4 C5 D5). I usually use the C in the Trebel clef as C5, the C in between the clefs (middle C, etc) as C4 and the C in the Bass clef as C3. Your octave may range from a low 2 to a high 7.

Octave Effect: This is the instrument number to play. They range from 1 to F (a Hex number(1,2,3,4,5,6,7,8,9,A,B,C,D,E,F)). You can use any instrument in any row. Effect: A very useful tool. This affects the way a note prefoms. Although I think 0.9 has some bugs in the Effect Area (some of the Effects listed in the docs don't work). The most useful effects I use are Volume and Tempo. To change the volume of your score, go up to the effect box and type 3 (this says 'I'm changing the volume, you dummy!' to SS) followed by any number from 00 to FF (again, this is Hex). 00 is no volume at all and FF is full blast. This type of volume only affects the current note. To change the Tempo, go to the Effect box and type F (again, "I'm changing Tempo now!") followed by any number from 01 to 0F (WARNING: Under NO circumstances type F00 and play it as it will shut off the speed of your song). There is no way out of this (the Tempo Bar in the pull-down is now all solid, and you can't change Tempo again in your song because your song isn't moving!), except to re-load the song.

Ok, now that that's settled, the first question everyone asks me is "How do you set the Time Signature?" Forget this. There are no time signatures in Soundsmith. If you want to make a whole note, put down a note and leave 3 blank spaces after it. If you want to make an eighth note, put down a note and leave no spaces after it (if you aren't adding anything after it, that's fine). The note will play to its full extent, but it won't mess anything up. If your pickey, place '8TP' in place of the note (octave). This should stop the note, but I haven't had much luck with that. Let's say you have sixteen notes in your song: to make a whole note, put down the note and leave 7 blank spaces after it. To make a quarter note, put down a note with 1 blank space. As you can see, I've doubled the distance between all notes, and with this, you may also need to half the tempo.

OK, now you should understand the spreadsheet doesn't mean didly in SS. What is important is when each note starts since that is all that is really heard.

Shortcuts: i Instead of typing in each note, octave, instrument, and effect, you can simply highlight the square you want to work on by clicking on it. Then, typing any number on the keypad will set the octave, and any number on the top-number-row will set the instrument (apparently, 5 on the keypad and 5 on the keyboard are different!). Typing the keys between [G] and [:] on the keyboard will produce the notes C through A (unfortunately, I cannot get a B note to work). The letters on the row above will produce the sharp notes. Ex:

<table>
<thead>
<tr>
<th>Y</th>
<th>[G]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[C]</td>
<td>[D]</td>
</tr>
<tr>
<td>[G]</td>
<td>[H]</td>
</tr>
</tbody>
</table>

Of course, all the OpenApple- commands work as well.

Cut and Paste is vital to a song writer. You may want to copy part of your song, take your little mouse, click and hold at the top part of your program and drag the mouse all the way to the bottom part of your program. You may also drag it across several rows. Now that it is all highlighted, release the mouse and select Cut or Copy (without the Remove the piece and puts it into memory, copy copies the piece into memory). Now take the mouse and move it to the top corner of where you want your segment to end up and then select paste (or hit OpenApple-V). Voila, there it is!

You may notice Fade IN and Fade Out in the menu (OpenApple+G and QA). This is a really Kick-Butt item. I just found out how to use it tonight. All you do is select the area of the song (for example, the last block) and then select Fade Out or Fade IN.
Apple II Computer Info

SS automatically calculates the variables needed for a nice, even fade in/out. Nice for ending songs with. I'm gonna use this one extensively!!

Change Sample. If, for some reason, you decide you hate the instrument you wrote your song in, select the portion of the song with the instrument (you can select whole rows, columns, and blocks by clicking on the heading), and go to change sample. Put simply, it's asking: You want me to change all the Instrument Number x to Instrument Number y. This is useful.

Set Octave. This is rather useful. Sometimes, you make a really great Drum Beat, and when you listen to it, you discover it sounds like your supper is attacking you from the inside because the octave is way too low. Select the area and then pick Change Octave from the Menu. This will set everything in the selected area to Octave x. A drawback of this is when you have multiple octaves such as B3 C4 D4, it will change them all to the same octave, such as B5 C5 D5 (which will produce 1 high note and 2 low notes instead of 3 low notes).

Never forget about the UNDO item. If you make a bad mistake (such as fading a part of a song you don't want to) go up and select Undo and it will undo it.

Another Warning: Never use Select All or anything that uses more than 64k. If you do something, such as change the octave of a whole song, the program will sit there for an unmeasured amount of time. Although this might work, I have never seen it work.

DOC. This is pretty neat. It shows exactly what memory specifically designated for your DOC (Digital Oscillator Chip (the sound chip!)) is used up by the instrument data.

Play and Graphic Play are used to listen to your music. Continue and Graphic Continue doesn't continue the song from where you stopped it, like I previously thought, it merely acts as a loop so it will play forever. Stop Sound stops it from playing. (You can do Continue and listen to the song while you're writing it. It'll play the notes after you add them.)

After you have a song all written out, go back to MUSIC in the Pull-down and make set the Total Positions to the greatest position+1. This will cause the song to end right after the last position. (+1 because Number of Positions starts with 1 and Position Number starts with 0). Clicking on the LOOP box will make the song start over after the last position.

A few Hints:

To give your song a weird hollow type sound, copy all the tracks and fill up all 14 tracks with your music. I have done this in my song 'Drums.a.Plenty' in the 5th block (I think). Sounds spiffy.

Make your song fun to watch, as well as listen to. In my arrangement of 'Funky.Town', I improvised an ending. I made all 14 tracks light up in descending order for a super-freaky-neato wave effect. This is fun to watch, but boring to listen to.

The lower the octave of a note, the longer it gets. To make a long fuzzy sound, use C2 with the instrument 'BLAST'(Axel.F.). I have done this for the very last note in my song 'Drums.a.Plenty'

If you're just starting out, I recommend adding a drum beat to a classic song such as 5th Symphony, Blue Danube or something. See my example of Pachelbel's Canon in D under the name 'New.Cannon'

To give that BassDrum2 more bass, play 2 or 3 notes at the exact same time. Boom. To improve overall sound, connect your GS to your Steereo. This is very simple to do and will cost you maybe $8 at Radio Shack and will require no extra equipment, except some wires. I'm telling you, the sound is UNREAL! It'll get rid of that Internal Rattle and also wake the neighbors.

After writing and uploading the song, ask people to leave you mail. The amount of mail you recieve (however minimal) will make you feel absolutely great! I know it kept me going!!

Hmm...don't you wonder what Beethoven, Bach, Brahams or any other great composer would have done with a GS and SoundSmith?????

Welp, that concludes this lesson. If there are any questions at all, please, feel free to leave mail to me, Cappy, or AFA Gene (if he's in a good mood, he'll forward the message to me, otherwise, he'll revoke your password. hehe :-)).

Mark Young (real name)
aka Cappy (America Online)

(Huibert Aalbers (Spelling!!): I would like to help you write the manual for Soundsmith. If you are reading this, try and contact me. I am on America Online)
SoundSmith Reference:

SoundSmith is a program designed to create easily music for the IIGs and allow to include them in your programs.

The instruments used by SoundSmith must be standard AIGS instrument files (Electronic Art's Instant Synthesizer and Instant Music use this type of files) or PSGS instrument files (created with the French public domain program Poly-sons). I am writing a small utility program to convert sounds digitized with the Sonic Blaster or Future Sound card to AIGS instruments. It will be included in the SoundSmith package as soon as it is finished.

When SoundSmith is booted, the desktop appears with one open window. This window contains the list of the loaded instruments and four buttons to load/ remove instruments and save sound files (not music files). It is possible to load up to 15 instruments at once.

You can see how much memory is available by looking the size of the largest free block at the bottom of the window. However, this value does not represent always the size of the largest loadable instrument because the IIGs handles his DOC Memory in a very special way (that is why other music programs don't allow you to use more than four instruments at once, like Instant Music or don't allow you to choose your instruments like Music Studio to avoid problems). I cannot explain here how everything works but you can find more information in the Apple IIGs Hardware Reference. Using the DOC Memory option from the Information menu lets you see a map of the DOC Memory.

When an instrument has been loaded, two other windows appear. The first one gives you some information about the instrument selected in the instrument list. The vibrato speed and vibrato depth parameters are not used by SoundSmith (but the user may want to change the values of these parameters before saving a Music Studio sound file). The keyboard window allows to hear the selected instrument. In the next version of SoundSmith, playing on the keyboard while the music is running will record the notes.

The Open Music option of the File Menu allows you to load a music. After loading the instruments and the music, a new window will appear. This window should look familiar to everyone used to work with Appleworks GS spreadsheet.

You can edit the music by selecting any zone (clicking the mouse on the block number selects the whole block, on a line number selects a line, on a track number selects the track) and using the Cut, Paste, Copy and Clear commands. The selected zone can be extended by holding the Shift key down while pressing the mouse button. When a single case is hi-lighted, you can move around by using the arrow keys. These commands are identical to the ones used by AppleWorks GS spreadsheet.

To enter a new note, you can enter the values in the three editable boxes on the music window (a single case must be selected) and pressing RETURN or use the keyboard short-cuts:

- To enter a note using the current instrument, effect and octave press:
  - G for C, Y for C#
  - H for D, U for D#
  - J for E
  - K for F, O for F#
  - L for G, P for G#
  - J for A, X for A#
  - F for B

The effects are composed by an effect number and an effect value. They modify the way a note is played (except the set tempo effect which modifies the tempo for all the following notes).

At this time, the following effects have been defined:

- **Effect:** 0 = Arpeggiato
- **Value:** 0 = no Arpeggiato
- **nm:** Increment 1=nm, Increment 2=nm
- **Value:** 3 = Set Volume
- **nm:** New Volume (0-$FF)
- **Value:** 5 = Decrease Volume
- **nm:** Volume to subtract from Instrument Volume.
- **Value:** 6 = Increase Volume
- **nm:** Volume to add to Instrument Volume.
- **Value:** F = Set Tempo
- **nm:** New tempo.

You can now start to compose by using the New Music File option from the File menu, but before you have to know the way SoundSmith plays the music. You can use up to 14 tracks simultaneously, and you can use any instrument in any track but you can only play one instrument at a time in one track. Let's see how this works with an example:

**Track 00**

00. C#3 1000
01. E3 2000
02. --- 0000
03. C#3 2000
04. STP 0000

SoundSmith will first play line 00. This means that it will play a C#3 note using the first sample. Then it will play line 01. To do this, it will first stop to play the C#3 note and then play the E3 note, using the second sample. This means that if the first sample is long, you will not hear it completely. If you want to continue to play a note, you must do what I have done on line 02. You can repeat this way as many times as you want and you will have a sequence of notes which will be played until the end of the wave is reached or a new note is played. If you want to stop a note without having to play another one, you must enter a STP command instead of a note (line 04).

SoundSmith gives you total control over the stereo effects. There are two different ways to select on which channel a note will be played. The first one is used by all the IIGs music programs. Each instrument has a stereo parameter that indicates on which channel it will be played. To use this method you must select for each instrument on the Instrument Data Window the stereo channel that you want to assign to that particular instrument. Then you must go to the Tracks option from the Information menu and click on the Use Instrument data button.

The other way to use the stereo is much more powerful. You assign a stereo channel to each track. This means that an instrument will play on the right or left channel depending on which track it is played. This is very interesting because it allows to create incredible effects. This option is activated by clicking on the Use Channel/Track data button on the Tracks dialogue box.

The Music option from the Information menu allows to set some important parameters like the length of the music, the tempo, etc.

The length of the music is given in number of blocks. If the music is for example four blocks long, you must tell the program which four blocks to play. This is necessary because you may want to repeat some blocks. You can play blocks 0,1,2 and 3 or 0,1,0,1 or 2,4,6,8, etc. Imagine that you want to play the following sequence: 0,1,2,2. Set position to 0 and then block number to 2. Then set position to 2 and then block number to 2. Repeat the same steps for positions 2 and 3, setting the block number to 2. On the Music data dialogue box there is also a check button. If you click on it, the music will loop.

The Preferences option from the Information menu lets you set some important parameters. The volume scroll bar sets the main volume (this is the same value that you set on the control panel). The Keyboard translation scroll bar is used to select the keyboard octave (if the keyboard translation is 2, the first note of the keyboard will be C2).
The sound file format buttons allow you to select the type of file that will be used when saving a sound file (not a music file!). When the sound file format is set to Music Studio, SoundSmith will save two files, a wavebank and a sound file. These files can be loaded by Music Studio. This allows you to use new instruments with this popular program (even if I believe that SoundSmith is much better...).

The SoundSmith binary file has the following structure:

- Number of instruments: 2 bytes
- DOC Memory: 64k
- Instrument Definition: 92 bytes

The Play options from the Play menu does not need to be explained. When using the Graphic Player option you will see that you can move a cursor that looks like an electric guitar. Use it to select the active tracks and the ones that are displayed on the screen. Attention, since no more than four tracks can be displayed at once, you must first unselect a track to be able to select another one. The Continue and Graphic Continue options use the value of the Position scroll bar (on the music data dialogue box) to know where to start to play the music.

Now, I think that this should help you to understand how SoundSmith works and how to compose music. I am really sorry for my bad english but I am doing my best. This manual covers all the important functions of this program but I know that some points could have been better explained. However, since I had to send you this manual, I could not spend more time on it. I will rewrite it and include it on the next version of SoundSmith.

**CREATING A NEW KNIGHT**

The five traits - virility, intellect, holiness, agility, and initial hits - describe a basic character. They signify as follows:

**VIRILITY:**
- Fighting strength, ability to carry gold and perform tasks that require strength

**INTELLECT:**
- Effectiveness in casting magical spells and performing other magic.

**HOLINESS:**
- Your ability to use clerical spells for such matters as examining objects that are unrecognizable.

**AGILITY:**
- Quickness and cleverness in getting out of the way of danger, skill at picking locks and other actions that require nimble feet and fingers.

**INITIAL HITS:**
- Your life index. As you are injured, your hit index declines until it hits 0. At 0 you will die. These points can be restored by finding your way out of the dungeon or using spells.

**COMMANDS USED WHILE EXPLORING**

**Drop:**
- Allows you to drop anything you do not want or need. Most things will stay where you dropped them except for gold, which everyone knows will most likely be taken by monsters and others that inhabit the dungeon.

**End and save game:**
- If you wish to end the game at any point in the dungeon, do so with this feature. Note: If the machine is turned off your knight will perish. Perished knights may be reincarnated but at a heavy cost in gold, magic and experience points. Make sure to end the game with this command and not the "OFF" switch!

**Rest:**
- Allows your knight to breathe easy for a while, to recover from temporary blindness or the like. Beware though, monsters do not rest and will still attack you if you are resting.
Each of these spells inflict varying amounts of damage depending on the nature of the enemy.

**PEACEFUL SPELLS**

- **Passwall**: allows you to pass a wall in front of you, but be careful: if there is not a corridor or room beyond the wall, you will be embedded in solid rock!

- **Light**: This spell cures blindness. The more severe the blinding, the more Light spells will need to be cast before you are cured.

- **Invisibility**: This spell allows you to make yourself invisible to most monsters. Eventually this spell wears off. More than one may be cast if longer Invisibility is desired.

- **Cure Paralysis**: This spell makes your limbs healthy again.

**COMMANDS WHEN ENCOUNTERED BY MONSTERS**

- **Heal wounds**: Restores some of your hit points each time this spell is used.

- **Divine Guidance**: Similar to praying. When this spell is invoked, the gods may help you or they may not.

- **Neutralize Poison**: Removes the effects of poison.

- **Teleport**: This spell will transport you from any one location on a level to another. Tell the gods exactly where you wish to go. Make sure you do not teleport into a stone wall.

- **Jump Plane**: Allows you to move up or down through levels in the dungeon. You are placed randomly on the new level. Also there is a 10% chance that this spell will put you where you do not want to go.

- **Etherealness**: With this spell you can move through walls and monsters cannot find you. Unfortunately you cannot carry any gold with you. And it wears off gradually.

- **Less**: If this spell is successful, you are given the blessing of the gods for a short period of time. With the blessing, you are harder to hurt and more powerful.

**MAGICAL OBJECTS**

- **Potions**: Potions can perform a variety of actions such as curing poison or imparting strength. You have the option to taste it first. The effects of the liquids wear off gradually, so don’t place too much faith in their long-range power.

- **Scrolls**: Scrolls allow you to cast spells during the dungeon trip in which they
are used.

Chests:
Though a chest is not magical itself, it is almost always protected by magic. Chests should be ransacked for their gold and other magical items.

Books:
Books are rare but they have the incredible ability to change your basic characteristics or may give you experience points. Books cannot be carried. They must be used or not. If you do find one and not decide to use it, it will stay where it’s at unless some other adventurer finds it. Books may be used but once.

Rings:
You can only wear 2 rings at once. If a third ring is found and you wish to pick it up, one of the other rings must be dropped. Rings bring many things.

Helmets and Shields:
These are always lucky finds, for they are never cursed and always protect the wearer.

Swords and Armor:
These can help you in attacking monsters and defending yourself, but if they are cursed they shall weaken you sorely. Cursed items may not be dropped but they may be exorcised at an Oasis. No expense should be spared in removing a cursed item from yourself. Be alert for the famous sword Excalibur and the wondrous Mithril Armor. They would be lucky finds for your quest.

OASES
-----
Oases are refuges for weary knights. Here you can heal your wounds without using precious spells (very costly) or you may decide to participate in a game of chance or bet on some races.

EXORCISING A CURSED WEAPON
-------------------------------
Whatever the price is, a weapon that is cursed should be exorcised at any price. Exorcising is also done at an Oases.

THE GOAL: THE GRAIL
---------------------
Your ultimate goal is to discover the Grail that the evil Kormath has stolen.

DUNGEON MASTER OPTIONS
------------------------
From the main menu, choose Play the Dungeon Master and observe your choices.

C)lean Up the Knight File:
Allows you to remove unwanted characters.

R)e-initialize the Dungeon:
Completely clean the labyrinth and redistribute magic and monsters as it cleans.

E)dit Password:
Allows the Dungeon Master to keep his/her own password safe from prying eyes.

P)urge Old Messages:

destroy all old notes that are scattered about the labyrinth which are not addressed to living characters.

*** NOTE *** TAKE SPECIAL CARE NOT TO ELIMINATE A KNIGHT CARRYING THE GRAIL, IF THIS HAPPENS THE GRAIL WILL BE LOST COMPLETELY. REINITIALIZING THE DUNGEON WILL BE THE ONLY RECURSE.

OTHER OPTIONS
--------------
From the main menu:

L)ist all the characters:
Useful for recalling who exists and how many experience points each knight has required. Hall of Fame members will be displayed in inverse video. The list may contain up to 16 knights at once.

D)isplay the Hall of Fame:
Shows Kormath’s Hall of Fame, containing all who have successfully retrieved the Grail.

FROM THE SPECIAL OPTIONS MENU
--------------------------------
Before you enter the dungeon, certain things can be changed:

R)ename:
change your character’s name

U)pdate password:
re-disguise your password.

E)xterminate:
If the shame of failure has overwhelmed you, you may remove your character here.

S)ound:
toggle on/off, either play in silence or with the pleasure of hearing groans and walls.

C)ontinuous Update:
toggle on/off, unless you wish to venture forth in ignorance of your condition, do not use this option.

K)ey:

-------------

DUNGEON MASTER OPTIONS
------------------------
From the main menu, choose Play the Dungeon Master and observe your choices:

C)lean Up the Knight File:
Allows you to remove unwanted characters.

R)e-initialize the Dungeon:
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E)dit Password:
Allows the Dungeon Master to keep his/her own password safe from prying eyes.

P)urge Old Messages:

-------------

STANDING STONES BY ELECTRONIC ARTS
-----------------------------------
WRITTEN BY P. SCHMUCKAL & DAN SOMMERS

-------------

THE PENGUIN
----------

-------------

MORE SOFTDOCS SOON FROM THE PENGUIN!
Welcome to Gamestar Stadium

Congratulations. You're in the middle of a tight pennant race and momentum is on your side. But everyone's out to beat you, especially the hard-hitting computer team. So if you want to win the pennant, please read this official program. When the right combination of pitching, hitting and strategy, you may even become a Star Leaguer! Have Fun.

The Scouting Report

You get to choose your starting pitcher in Star League Baseball, as well as bring in a reliever. Here's the latest scouting report:

*Heat* Muldoon --

Overwhelming fast ball.
Good screwball and slider.
Tendency to miss the strike zone when he goes for the corners.
Tires quickly if fastball used too often.

*Curves* Cassidy --

Great curve ball an incredible sinker.
Excellent control and good stamina.
Clearly the most balanced pitcher in the league.

*Knuckles* Flanagan --

*Liveliest* knuckleball this side of the Rockies.
Good control and stamina.
Only used for short-term relief work.

Pre-Game Ceremonies

1. Press the '1' key on the computer console to choose between playing a GAME or taking BATTING PRACTICE.  
2. Press the '2' key to select between 1 PLAYER or 2 PLAYER game.  
3. Press '3' key to go to the NEXT MENU or PLAY BALL when you choose the BATTING PRACTICE option. If you take BATTING PRACTICE, you will face "Heat" Muldoon in a series of random pitches until you press the '1' key.

4. To Re-Start a game press CONTROL-RESET

5. If you choose to play a GAME, a new menu will come up when you press '3':

   1 HOME CURVES-LIERS
   2 VSTR HEAT-SLUGERS
   3 PLAY BALL

6. The HOME team uses the 1 key to select its starting team and pitcher. The LINERS hit for average; the SLUGGERS hit for the fences.

7. The VISITOR team uses the 2 key to select its starting team and pitcher.

8. Both teams can have the same combinations if you choose. When playing solo against the computer, the scoreboard and menus will read COMP in place of HOME.

9. When both teams have made their selections, press the 3 key to PLAY BALL!

Play Ball

As in real baseball, your goal in Star League Baseball is to outscore your opponent in 9 innings (extra innings if necessary). If you beat the computer team, consider yourself a Star Leaguer!

Pitching & Holding Runners

1. Each half inning begins with the pitcher stating in the PITCHING MODE. This mode allows you to pitch to the batter and is indicated when the pitcher bends over to look for a "sign" from the catcher.

2. To designate a pitch press and hold Button #0 on the joystick. The pitcher will move upright, pause position.

3. Move the joystick to pitch:

   High Sider (Bal) Slow Sider
   Medium Slider
   
   Fast Ball Change-Up
   
   Medium Screwball Low Screwball (Bl) Slow Screwball

   "Heat" Muldoon

High Curve
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---

Apple II Computer Info

Medium
Curve

(Ball

Slow
Curve

Medium
Fast Ball

Change-Up

(Ball

Medium
Sinker

Low Sinker

Slow
Sinker

"Curve" Cassidy

---

High Knuckler

(Ball

Slow
Curve

Knuckler

Low Knuckler

Slow
Sinker

"Knuckle" Flanagan

---

4. To get out of PITCHING MODE to pick off a runner, just RELEASE Button #0 BEFORE moving the joystick. You can then throw to any base as follows:

3rdBase

1stBase

2nd Base

Home

---

Apple II Computer Info

---

player. Press Button #0 TWICE again to go back into PITCHING MODE. The pitcher will now bend over and look to the catcher for a sign. YOU MUST BE IN THE PITCHING MODE FOR A NEW BATTER TO COME UP AFTER A HIT OR AN OUT.

Batting

---

1. Press an HOLD Button #0 on the joystick right BEFORE the pitch is thrown to BUNT. Release the Button BEFORE the ball reaches the plate to "take" the pitch - if you try to bunt and miss, it's a strike.

2. Press the red button AFTER the pitch is thrown to SWING AWAY

*Note*

The joystick is used for all functions when playing against the computer. When playing against another person, the joystick is used for fielding and pitching only. Batting and base running are controlled by the keyboard. Players should alternate between keyboard and joystick depending upon whom is at bat.

<table>
<thead>
<tr>
<th>KEY</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Swing</td>
</tr>
<tr>
<td>Z</td>
<td>Stop Swing</td>
</tr>
<tr>
<td>&lt;-</td>
<td>Run ahead</td>
</tr>
<tr>
<td>Space</td>
<td>Stop Runner</td>
</tr>
</tbody>
</table>

Running

---

1. Once the ball is hit fair, the batter automatically runs to 1st base.

2. To move him AHEAD, push and hold the joystick to the LEFT. To STOP the runner on or between bases, return the joystick to the CENTER position (just release it).

3. If there are runners on base, you control the LEAD runner; the other runners will run automatically if forced. As soon as your LEAD runner scores or is put out, control QUICKLY shifts to the next LEAD runner. Don't daydream or your new LEAD runner may wander off base and be tagged out.

Fielding

---

1. After the ball is hit FOUL or a HOMERUN is hit, the ball is returned to the catcher. You must throw it back to the pitcher (Press Button #0 twice) and go into the PITCHING MODE (Press button again TWICE to continue pitching).

2. When the ball is hit FAIR, the player nearest the ball's PATH becomes eligible to field it.

3. Use the joystick to move your eligible fielder to the ball.

4. A ball with a shadow is a FLY ball; a ball without a shadow is a GROUNDER. FLY balls can be CAUGHT for an out; GROUNDERS require you to take some action to force an out (throw to base, tag runner, etc.).

5. To catch a FLY ball, keep your eye on the ball's SHADOW. As the ball descends, position your outfielder so he'll collide with the ball's SHADOW. If you miss the ball, move your fielder to pick it up.

Throwing
1. Press and RELEASE button #0 on the joystick controller to DESIGNATE a throw.

2. Move the joystick to THROW to a base; press Button #0 again to THROW to the pitcher.

The positions on the joystick are reset up just like the bases on the screen — throwing from base to base will soon be like second nature to you.

3. If a runner tries to steal HOME you must MOVE your catcher to TAG the runner coming home. If you don’t MOVE your catcher the runner will run by you and score.

Scoring
-------

1. STRIKE - pitch that crosses homeplate between batter's shoulders and knees. Three strikes result in an out.

2. BALL - pitch that is high or low or out of strike zone. Four balls results in a walk.

3. OUT - catching fly balls, striking out batters and forcing tagging runners results in an out. There are three outs per half-inning.

4. BATTING ORDER - visitors bat top of inning; home or computer bats bottom of inning.

5. RUNS - score runs by moving runners around the bases and home. Team ahead after 9 innings wins game. If score is tied after 9 innings, extra innings will be played until one team wins. HOME or COMP doesn't bat at the bottom of the 9th or extra innings if it is ahead.

As the game progresses, the starting pitchers "tire" They'll begin to lose their "stuff" and/or start missing the strike zone. Between the 7th and 8th innings there will be a 7th inning stretch, complete with music. A menu will come up for you to change pitchers. When both teams have made their selections press to re-start the game.
You have a choice of two missions, diversion or assault. In the diversion scenario you attack units for a specified time period and then exit the map to the south at recall. In the assault scenario you must locate and destroy your objective. At present, I don’t know how to end this scenario.

You also may select one of three standard suits or have one made up to order. For a custom suit, you are given a certain number of points and each option costs a varying number of points. The leftover points are used for powering the suit.

### Table 1: Movement Commands

<table>
<thead>
<tr>
<th>What to Enter</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>Move forward on ground 0 to 9 spaces</td>
</tr>
<tr>
<td>J</td>
<td>Jump forward over something</td>
</tr>
<tr>
<td>T</td>
<td>Take off/land</td>
</tr>
<tr>
<td>R</td>
<td>Turn right 45 degrees</td>
</tr>
<tr>
<td>L</td>
<td>Turn left 45 degrees</td>
</tr>
<tr>
<td>V</td>
<td>Turn around (about-face) 180 degrees</td>
</tr>
</tbody>
</table>

### Table 2: Combat Commands

<table>
<thead>
<tr>
<th>What to Enter</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>M + Direction + Range</td>
<td>Launch missile</td>
</tr>
<tr>
<td>F</td>
<td>Fire powergun</td>
</tr>
<tr>
<td>P</td>
<td>Set powergun (1-9)</td>
</tr>
<tr>
<td>B</td>
<td>Fire blaster</td>
</tr>
<tr>
<td>S</td>
<td>Force shield on/off (low power)</td>
</tr>
<tr>
<td>X</td>
<td>Force shield on, extra power/low power</td>
</tr>
</tbody>
</table>

### Table 3: Special Commands

<table>
<thead>
<tr>
<th>What to Enter</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Infravisibility on/off (only with ninja suit)</td>
</tr>
<tr>
<td>D</td>
<td>Release decoy (only with marauder suit)</td>
</tr>
<tr>
<td>H</td>
<td>Hide</td>
</tr>
<tr>
<td>E</td>
<td>Activate radar (emissions sensor)</td>
</tr>
<tr>
<td>C</td>
<td>Check system status</td>
</tr>
<tr>
<td>A</td>
<td>Activate repair system</td>
</tr>
<tr>
<td>W</td>
<td>Check score</td>
</tr>
<tr>
<td>O</td>
<td>Objective? (either direction to objective for assault mission or nature of installation, i.e. civilian or military.)</td>
</tr>
</tbody>
</table>
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Showmatch
Errorbells
Showmode
Backup
Return
List
Autoindent
Ignorecase
Number
Scroll
Tabstop
Backup
Number
Lines

Showmatch sm nosm
Errorbells ws ws
Showmode mo nomo
Backup bk nobk
Return cr cr
List list nolist
Autoindent ai noai
Ignorecase ic noic
Number nu nonu
Scroll scroll 12
Tabstop ts 8
Lines lines 25

The EXINIT environment variable can be used to modify the default values on startup as in:

  setenv EXINIT="set sm ts=4"

The 'backup' parameter, if set, causes the editor to retain a backup of any files that are written. During file writes, a backup is always kept for safety until the write is completed. At that point, the 'backup' parameter determines whether the backup file is deleted.

In environments (e.g. OS/2 or TOS) where lines are normally terminated by CR-LF, the 'return' parameter allows files to be written with only a LF terminator (if the parameter is cleared).

The 'lines' parameter tells the editor how many lines there are on the screen. This is useful on systems like the ST where various screen resolutions may be handled. On the Amiga system window resizes are atomically detected and acted upon. It is suggested that one's window be larger than 2 rows and 5 columns.

Colon Commands

Several of the normal 'vi' colon commands are supported by STEVIE. Some commands may be preceded by a line range specification. For commands that accept a range of lines, the following address forms are supported:

  addr + number
  addr - number
  where 'addr' may be one of the following:
    a line number
    a mark (as in 'a' or 'b')
     % (entire file)
     . (the current line)
     $ (the last line)

The Global Command

A limited form of the global command is supported, accepting the following command form:

  g/pattern/X

where X may be either 'd' or 'p' to delete or print lines that match the given pattern. If a line range is given, only those lines are checked for a match with the pattern. If no range is given, all lines are checked.

If the trailing character of a command is omitted, 'p' is assumed. In this case, the

STEVIE - Simply Try this Editor for VI Enthusiasts

Quick Reference Card

by

Tony Andrews And G. R. (Fred) Walter

STEVIE may be freely distributed. The source isn't copyrighted or restricted in any way. If you pass the program along, please include all the documentation and, if practical, the source as well.

STEVIE used to stand for 'ST Editor for VI Enthusiasts', however since this editor is used on more machines than just ST's the acronym was changed.

Starting the Editor

The following command line forms are supported:

  vi [file ...]  Edit the specified file(s)
  vi - tag      Start at location of the given tag
  vi + file     Edit file starting at end
  vi +n file    Edit file starting a line number 'n'
  vi +/pat file Edit file starting at pattern 'pat'

If multiple files are given on the command line (using the first form), the "":n" command goes to the next file, "p" goes backward in the list, and "rew" can be used to rewind back to the start of the file list.

Set Command Options

The ":.set" command works as usual to set parameters. Each parameter has a long and an abbreviated name, either of which may be used. Boolean parameters are set as in:

  set showmatch
  or cleared by:

  set noshowmatch

Numeric parameters are set as in:

  set scroll=5

Several parameters may be set with a single command:

  set novb sm report=1

To see the status of all parameters use ":.set all". Typing ":.set" with no arguments will show only those parameters that have been changed. The supported parameters, their names, defaults, and descriptions are shown below:

<table>
<thead>
<tr>
<th>Full Name</th>
<th>Short</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vbell</td>
<td>vb</td>
<td>vb</td>
<td>Use visual bell (novb for audible bell)</td>
</tr>
</tbody>
</table>
trailing slash is also optional. The current version of the editor does not support the undo operation following the deletion of lines with the global command.

The Substitute Command
-----------------------
The substitute command provides a powerful mechanism for making more complex substitutions than can be done directly from visual mode. The general form of the command is:

`s/pattern/replacement/g`

Each line in the given range (or the current line, if no range was given) is scanned for the given regular expression. When found, the string that matched the pattern is replaced with the given replacement string. If the replacement string is null, each matching pattern string is deleted.

The trailing 'g' is optional and, if present, indicates that multiple occurrences of 'pattern' on a line should all be replaced.

Some special sequences are recognized in the replacement string. The ampersand character is replaced by the entire pattern that was matched. Operators for example, the following command could be used to put all occurrences of 'foo' or 'bar' within double quotes:

`1,5s/foo|bar/"\&"/g`

The special sequence "\n" where 'n' is a digit from 1 to 9, is replaced by the string the matched the corresponding parenthesized expression in the pattern. The following command could be used to swap the first two parameters in calls to the C function "foo":

`1,5s/foo\(([^,]*),([^,]*)\)/foo(\2,\1)/g`

Like the global command, substitutions can't be undone with this version of the editor.

The Delete Command
-------------------
`:\[range\]d` will delete the range of lines.

File Manipulation Commands
---------------------------
`:w` write the current file
`:wq` write and quit
`:x` write (if necessary) and quit
`:Z` same as ":x"

`:e` file edit the named file
`:e!` re-edit the current file, discarding any changes
`:e #` edit the alternate file

`:w` file write the buffer to the named file
`x,y w` file write lines x through y to the named file
`:r` file read the named file into the buffer

`:i` file edit the next file
`:p` edit the previous file
`REW` rewind the file list

`:f` file show the current file name
`T` change the current file name

`:TA` tag go to the named tag

`:HELP` display a command summary
`:!CMD` execute the 'cmd' via a system() call

The ":help" command can also be invoked with the <HELP> key on the Atari ST or the Amiga. This actually displays a pretty complete summary of the real vi with unsupported features indicated appropriately.

The commands above work pretty much like they do in 'vi'. Most of the commands support a '! suffix (if appropriate) to discard any pending changes.

String Searches
----------------
String searches are supported, as in vi, accepting the usual regular expression syntax. This was done using Henry Spencer's regular expression library without modification. Tony Andrews added code outside the library to support the \< and \\> extensions and code inside the library to support the ignorecase option.

Operators
--------
The vi operators (d, c, y, <, and >) work as true operators.

Tags
----
Tags are implemented.

System-Specific Comments
------------------------
The following sections provide additional relevant information for the systems to which STEVIE has been ported.

Atari ST
--------
The editor has been tested in all three resolutions, although low and high res. are less tested than medium. The 50-line high res. mode can be used by setting the 'lines' parameter to 50. Alternatively, the environment variable 'LINES' can be set. The editor doesn't actively set the number of lines on the screen. It just operates using the number of lines it was told.

The arrow keys, as well as the <INSERT>, <HELP>, and <UNDO> keys are all mapped appropriately.

UNIX
-----
The editor has been ported to UNIX System V release 3. It's hard-coded for ansi-style escape sequences and doesn't use the termcap/terminfo routines at all.

OS9
---
The editor has been ported to OS9 version 2.2.

OS/2
-----
Make sure 'ansi' mode is on (using the 'ansi' command).

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bypasses the driver and makes the appropriate system calls directly. This is all done in the system-specific part of the editor so the kludge is at least localized.

The arrow keys, page up/down and home/end all do what you'd expect. The function keys are hard-coded to some useful macros until I can get true support for macros into the editor. The current mappings are:

F1 :p <RETURN>
F2 :n <RETURN>
F3 :e # <RETURN>
F4 :rew <RETURN>
F5 [[
F6 []
F7 <<<
F8 >>>
F9 :x <RETURN>
F10 :help <RETURN>
S-F1 :p! <RETURN>
S-F2 :n! <RETURN>

MSDOS

STEVIE has been ported to MSDOS 3.3 on an AT using the Microsoft C compiler, version 5.10. The keyboard mappings are the same as for OS/2.

The only problem with the PC version is that the inefficiency of the screen update code becomes painfully apparent on slower machines.

BSD 4.3

This port was done so it could be worked on in a main-frame enviroment.

Amiga

The arrow keys and the help key are supported, as is window re-sizing. It is strongly suggested that you not try to type in console commands (alt-esc in some keymaps, plus the appropriate other keys) since STEVIE captures all console input. If you do type alt-esc then typing '|' will return you to STEVIE.

If you have ARP installed, then you can use wildcards on the command line, in the :e command and in the :r command.

If you 'run stevie' it will first attempt to open a window that is 640x200; if this doesn't work then it tries to open a window that is 480x200; if this fails it gives up.

NOTE: that you can't use :!cmd on BCPL programs.

Missing Features

1. Macros with support for function keys.
2. More "set" options.
3. Many others...

Known Bugs and Problems

1. The yank buffer uses statically allocated memory, so yanks of more than 5K of text will fail. If a delete spans more than 5K, the program asks for confirmation before proceeding. That way, if you were moving text, you don't get screwed by the limited yank buffer. You just have to move smaller chunks at a time. All the internal buffers (yank, redo, etc.) need to be reworked to allocate memory dynamically.

2. If you stay in insert mode for a long time (around 5K's worth of characters, including newlines) the insert buffer can overflow. When this happens you lose your ability to automatically undo the text just inserted and the redo/undo/(undo of undo) buffers are reset to the current position.

3. Several other less bothersome glitches...

Character Function Summary

The following list describes the meaning of each character that's used by the editor. In some cases characters have meaning in both command and insert mode; these are all described.

^@ The null character. Not used in any mode. This character may not be present in the file, as is the case with vi.

^B Backward one screen.

^D Scroll the window down one half screen.

^E Scroll the screen up one line.

^F Forward one screen.

^G Same as ":f" command. Displays file information.

^H (BS) Moves cursor left one space in command mode. In insert mode, erases the last character typed.

^J Move the cursor down one line.

^L Clear and redraw the screen.

^M (CR) Move to the first non-white character in the next line. In insert mode, a carriage return opens a new line for input.

^N Move the cursor down a line.

^P Move the cursor up a line.

^U Scroll the window up one half screen.

^V Indicates that the next character is should be treated as entered and not modified (used to enter control characters, etc.).

^Y Scroll the screen down one line.

^[ Moves to the tag whose name is given by the word in which the cursor resides.

^\ Same as ":e #" if supported (system-dependent).

SPACE Move the cursor right on column.

$ Move to the end of the current line.

% If the cursor rests on a paren '()', brace '{}', or bracket '[]', move to the matching one.

' Used to move the cursor to a previously marked position, as in 'a or 'b. The cursor moves to the start of the marked line. The special mark '' refers to the "previous context".
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+ Same as carriage return, in command mode.
, Reverse of the last t, T, f, or F command.
- Move to the first non-white character in the previous line.
. Repeat the last edit command.
/ Start of a forward string search command. String searches may be optionally terminated with a closing slash. To search for a slash use '\/\/' in the search string.
0 Move to the start of the current line. Also used within counts.
1-9 Used to add 'count' prefixes to commands.
: Prefix character for "ex" commands.
; Repeat last t, T, f, or F command.
< The 'left shift' operator.
> The 'right shift' operator.
? Same as "/", but search backward.
A Append at the end of the current line.
B Backward one blank-delimited word.
C Change the rest of the current line.
D Delete the rest of the current line.
E End of the end of a blank-delimited word.
F Find a character backward on the current line.
G Go to the given line number (end of file, by default).
H Move to the first non-white char. on the top screen line.
I Insert before the first non-white char. on the current line.
J Join two lines.
K Move to the first non-white char. on the bottom screen line.
L Move to the first non-white char. on the middle screen line.
M Reverse the last string search.
N Open a new line above the current line, and start inserting.
P Put the yank/delete buffer before the current cursor position.
R Reverse search 'upto' the given character.
S Move forward one blank-delimited word.
T Move forward 'upto' the given character.
U Yank the current line. Same as 'yy'.
W Yank the current line. Same as 'yy'.
X Delete one character before the cursor.
Y Delete one character before the cursor.
Z| Exit from the editor, saving changes if necessary.
[| Move backward one C function.
]l Move forward one C function.
^ Move to the first non-white on the current line.
' Move to the given mark, as with '. The distinction between the two commands is important when used with operators. I support the difference correctly. If you don't know what I'm talking about, don't worry, it won't matter to you.
- Switch case of character under cursor.
 a Append text after the cursor.
b Back one word.
c The change operator.
d The delete operator.
e Move to the end of a word.
f Find a character on the current line.
h Move left one column.
i Insert text before the cursor.
j Move down one line.
k Move up one line.
l Move right one column.
m Set a mark at the current position (e.g. ma or mb).
n Repeat the last string search.
o Open a new line and start inserting text.
p Put the yank/delete buffer after the cursor.
r Replace a character.
s Replace characters.
t Move forward 'upto' the given character on the current line.
u Undo the last edit.
w Move forward one word.
x Delete the character under the cursor.
y The yank operator.
z Redraw the screen with the current line at the top (zRETURN), the middle (z.), or the bottom (z-).
| Move to the column given by the preceding count.
General Information

Beagle Bag is a disk full of games for your Apple computer. You may be surprised to find that it is a normal disk, just like ones you have initialized yourself. Most other game disks on the market are "locked up" and won't respond to everyday DOS commands. Not Beagle Bag -- you can catalog it, load from it, save to it, delete and rename programs...ALL that good stuff. Even ctrl-Reset works "normally" (almost) instead of causing a memory-scratching reboot. Most software manufacturers lock their disks to (try to) prevent piracy. Beagle Bros trusts you and leaves programs unlocked to make them more friendly and more usable. We appreciate your support; don't pirate our disks, and we won't pirate yours.

The first thing you should do with Beagle Bag is back the disk up using one of the "Copy" programs from your System Master disk (or any other Apple copy program). Store the copy or master in a safe place, away from prying magnetic fields.

If you're not using one of the two Menu programs on the disk, you can run a Beagle Bag Game just like any other AppleSoft program-- Type "RUN" followed by the program name and hit return. Ending programs follows standard procedures too-- type CTRL-C (sometimes CTRL-C/Return) or hit ctrl-RESET. You will usually be given the option of re-running the program or returning to Short Menu.

Short Menu

Booting the Beagle Bag disk is a good idea, because it installs Apple's normal Disk Operating System in your Apple (and runs "Short Menu", a streamlined version of the more all-purpose "Beagle Menu" (see next page). After Short Menu displays the game names, use the Arrow keys to move the flashing cursor to the game you want. Hit Return to run the game or Esc to quit the Menu. Selecting the "&Catalog Disk" option does just what it says. Some Beagle Bag games don't appear in the Menu, but will be seen in the catalog.

You may adapt Short Menu to any normal disk. Type your applesoft (and integer) program names, maximum separated by commas, into a Data statement similar to Short Menu's last program line (which you must delete). END YOUR DATA STATEMENT WITH A COMMA, and save your new menu before you run it. If you are having problems, you may want to temporarily delete the "Onerr Goto" command near the start of the listing.

*If you're new around here-- to "boot" a disk, type "PR#6" and hit return. If this fails, turn the power off, insert your Apple II Computer Documentation Resources (a2_docs_documentation.msw)

Beagle Menu

The Beagle Bag disk contains a multi-purpose program called "Beagle Menu" that will display only the file names you want in a text screen menu. Go ahead and run it with any normal-DOS disk in your drive. Beagle Menu will take over your Apple, first scanning the catalog and then displaying certain files for menu display and execution. BEAGLE MENU WILL PROBABLY NOT WORK IF YOU HAVE NON-STANDARD DOS IN MEMORY. To get standard DOS in memory, boot a normal disk like Beagle Bag or the System Master.

Program Line 100 determines which file names will be displayed in the menu. Load Beagle Menu by typing "LOAD BEAGLE MENU" (return). Then type "LIST 100" (return). You might see--

100 S=1: B=0: A=1: T=0: U=0

S, B, A, T, and U stand for sector-numbers and binary, Applesoft, Integer, Text, and Unlocked files. The number 1 means DISPLAY that file-type; a value of 0 (zero) means DON'T DISPLAY it. In the example above, most-10s-numbers to the left of each file name will be displayed (S=1); Applesoft files will be displayed (A=1); Binary, Integer and Text files will NOT be displayed (B=0, I=0 and T=0); and Unlocked files will NOT be displayed (U=0). For almost all practical purposes, you should leave VARIABLES B AND T SET EQUAL TO ZERO.

Change line 100 to fit your needs, and save the program before you run it by typing "SAVE BEAGLE MENU" (return). Of course, if you want, save it under the name "HELLO" or "N" or even "VISI CALC"; I don't care. "N" is nice, because you can simply type "RUNN" to run it. There is a handy program called "Master Create" (on your System Master disk) that you can run to change the name of a disk's "Greeting Program", the program that automatically runs when you boot that disk.

When Beagle Menu is run, it will first "read" the disk that is in the drive and then "catalog" it. If and when the screen is full (every 20 names), the program will "take a picture" of that "page" and store it in memory, then proceed to the next page of 20 file names.

You will then see Page 1 on the screen with an inverse "cursor" to the left of the top file name. To move the cursor, use the Left and Right Arrow keys. If you move the cursor beyond the first or last file name on the screen, Beagle Menu will look for another page to display. Play with it and you'll see what I mean.

Pressing Return will execute the program at the cursor. Applesoft or Integer files will be run; Text files will be EXE'C'd (probably inappropriate from a menu program, come to think of it...); and binary files will be BRUN. You must remember (or learn now) that many binary files are NOT MEANT to be BRUN, but BLOADed instead. If your BRUN a stored picture-file, for example, you will "crash" into the monitor, giving you an asterisk-prompt and a flashing cursor.

Typing ",I" will LOAD an Applesoft or Integer file (wiping out Beagle Menu, of course), or BLOAD a Binary file. A BLOAD won't necessarily be obvious; for example, BLOADing a hi-res picture won't SHOW you the picture, it will just load it into memory. But then that's another subject.

Typing ",H" will display the HELP Page. "Help" pretty much explains the rest of Beagle Menu's functions, so I won't cover them here.

In response to the comments I have had so far on this
Three keys operate each elevator car. Car #1, the car on the left, is controlled by the 1, Q & A keys; Car #2 by 2, W & S; Car #3 by 3, E & D, and Car #4 by 4, R & F. Notice that these four groups of keys are in four vertical columns on the keyboard. The TOP row of keys (1,2,3,4) make elevator cars 1,2,3 and 4 go UP. The BOTTOM row of keys (A,S,D,F) makes cars 1,2,3 and 4 go DOWN. And the MIDDLE row of keys (Q,W,E,R) makes the cars STOP and pick up passengers.

The object of the game is to pick up as many carloads of passengers as possible between 5:00 (game starts) and 5:30 (game ends). The number of passengers you have delivered is indicated by the graphics number on the left of the screen. The time is shown on the right.

Random lights will appear on various floors of the building. These lights represent passengers wanting to get out of the building. Any elevator car may respond to any light. To pick up the passengers, simply send any elevator car UP (1,2,3 or 4 key) to the lit floor and STOP (Q,W,E or R). Passengers will get in the car ONLY if it is UNOCCUPIED. If you stop an empty car at a lit floor, the floor light will go off and the car itself will light up. It is now FULL.

You must now send the elevator DOWN (A,S,D or F) to the ground floor. Once the car is there, passengers will automatically get off, and you will be credited with a carload of passengers on the scoreboard.

Plan-ahead strategy is necessary for high scores. Don't wait for floor lights before sending a car up. Instead, send cars up in anticipation, and position them apart from each other ready to respond to nearby floors. This is the way real elevators work. If a car is stopped at a floor, and a light comes on, passengers will automatically get aboard. It is also advisable to keep one of the cars near the bottom floor, because lower-floor passengers can be handled in the fastest-time. In this building, it could be a real disadvantage to be on an upper floor, but WINNING is what counts, RIGHT?!

You may speed things up by pressing the Space Bar to cut the power to one or more cars, thereby putting all energy into the remaining ones. The text below each car will indicate whether or not it is on. If your time is about to run out, and you're trying to get that last carload of passengers down, Car #1 may be speeded up greatly by turning off the power to Cars 2, 3 and 4.

Variations:
a. Beginners often like to learn using only one elevator car for an entire game, then two, etc.
b. One player takes Cars 1 and 2; another takes 3 and 4. This makes it easier to concentrate on what's happening, and higher scores are often possible.
c. Try using one, two, three and four cars and compare scores with other players using the same set. You may be surprised!
d. If you own a compiler, compile Elevators and stand back!

GAS CRUNCH

GAS CRUNCH needs only one instruction: It is possible to win, so don't give up.

HANG PERSON

You don't need instructions for Hang Person do you? I
didn't think so. For two players or more, one player can enter a secret word or words for others to guess. For one player, hit Return-only and the computer will "think" of a word or words for you to guess. To change the computer's word(s) in the program, List Lines 10000-10140 and replace any words you want, but keep the total at 150. The program decides which of the 150 words to pick in Line 9000.

MAGIC PACK

MAGIC PACK consists of four tricks: PLENTY QUESTIONS, 21 NUMBERS, NEXTWORD and CARD SCANNER. Select them all from Magic Pack's menu. Plenty Questions and Card Scanner are not meant to be run by anyone other than a "magician" (you?) who has PRACTICED with these tricks.

1. PLENTY QUESTIONS

PLENTY QUESTIONS involves some "computer magic," and you are the magician. YOU MUST PRACTICE THIS TRICK several times to get the hang of it (it's worth it; audiences really enjoy a slick presentation of this trick).

The object of Plenty Questions if for the computer to guess the audience's secret word by asking certain "Yes or No" questions.

Tell someone to think of an object (in this case, any word or words that can follow the word "a" or "an"). You must be sure that the secret word is 16 characters in length or less (12-or-less is better), containing only the letters A through Z, spaces, hyphens and/or apostrophes. NO PERIODS allowed.

When you see "Hit Any Key When Ready", pretend as though you are hitting just ANY key, and casually (but carefully) hit ctrl-A [ the CTRL key, then the A key; holding both down at the same time]. You are now in the "Magic Mode". If any key OTHER than ctrl-A is hit first, the trick WILL NOT WORK (see "Non-Magic Mode" below). The computer will now ask a random question and wait for a Yes or No answer.

The computer's magic is based on CLEARING your memory of what you type, whilst the computer is typing out its question. At this time, all eyes will be on the screen and not on you or the keyboard. You can even read the question out loud to distract everyone from any sound or movement from the keyboard. After you type your secret letter and your Yes or No answer, press the Return key. You will now have the secret letter; a new secret letter will be inserted into the computer's memory when the letter "I" in "PLENTY QUESTIONS" at the top of the screen changes to a number i (one).

To finish a secret word, type a PERIOD as your invisible secret letter. For example, if the secret word is "Cow", your answers could be "(O)Yes"; "(O)No; "(W)Maybe" and ";)Sometimes" (kinds for others to guess. End questions. After you type an invisible period and a Yes or No answer and hit Return, the computer will finish with an "I've Got It!", followed by "It's a Cow" whatever the secret word is.

If you make a mistake and have not yet typed your Yes or No answer, hit Return, and type a new secret letter. If you have already typed an incorrect secret letter and answer AND hit Return, enter a Left Arrow (backspace) as your next secret letter. This will ERASE the previous secret letter. In the confusion, you may wonder if you are misspelling the secret word. Don't worry too much; who says a computer is supposed to be able to spell?

If you want to start the secret word over, type a Slash, and all of your previous secret letters will be erased from memory.

To delay the computer's guess, enter a Right Arrow as your secret letter. The computer will ignore this character and ask your answers could be "(C)Yes", "(O)No; "(W)Maybe" and ";)Sometimes" (kinds for others to guess. After you type an invisible period and a Yes or No answer and hit Return, the computer will finish with an "I've Got It!", followed by "It's a Cow" whatever the secret word is.

Non-Magic Mode: Sooner or later, one of your audience members will insist on typing th answers themselves, or they will refuse to tell you the secret word. If this happens, you have shown the trick once too often. Let the skeptic take over anyway. He will hit "any key" (not ctrl-A) when asked to do so, and now the computer will NOT look for secret characters. Instead, it will ask 17 questions and then make a random (and undoubtedly incorrect) guess. Explain that the computer is probably tired, and go on to another question. This is a handy feature when the secret word is very short and you want to see a few more questions.

If you don't know the secret word or if you need an escape because you are confused, type an invisible Comma before your answer, and the game will end with the computer guessing a random word. It doesn't hurt to have the computer guess wiring occasionally. After all, he (she) is only human...

There are two built-in default words. The computer will guess "LIGHT BULB" whenever you type a secret Semi-Colon. He will guess "TUNA SANDWICH" if you enter a secret Period after only one question. You can set the audience up with one of these two words if you think they have figured things out. You can change these two words in program Lines 1460 and 1500. Be sure to include a period at the end of the words, like this: S$="WORDS.

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NAME GAME is a real crack-up at parties. The instructions, however, are a bore, so I omitted them.

OINK!

OINK! is an easy-to-play two-key game. Enter two players' names (come on, be imaginative with those names!). Press Return after each. The computer will decide who goes first.

Type "R" to roll the dice. You will be awarded points equal to the number you roll. Roll as many times as you want, EXCEPT if you roll DOUBLES (both dice the same), your turn will end, and you will lose your points for that turn.

Type "Q" to quit your turn and keep all of your points. Bonus points are offered as incentive not to quit. First player to 200 points and type a "Q" wins the game.

PICK-A-PAIR

PICK-A-PAIR is a great party game that will alleviate "Computer Phobia" (a common disease these days) in almost anyone. Try Pick-a-Pair with your non-typing or non-computer friends. It's easy to play and they'll like it.

Well, I suppose we could tell YOU. The computer starts his next word with the LAST LETTER of your word and expects you to do the same. If you're into reprogramming this, you could make his word start with the SECOND letter of your word, or the next-to-last letter, etc., etc.

CARD SCANNER

You're the magician again. Your Apple, with some help from its "Advanced Video Scanner" (people really BELIEVE this!), will read a randomly-selected playing card through the video monitor. The trick here is, first of all, to know what the card is yourself. Then, when the computer says to type "HUM", you pretend to, but you DON'T. Instead, you type the initials of the card's identity, and NO MATTER WHAT YOU TYPE, the letters R-U-N- WILL APPEAR ON THE SCREEN. Here are the code letters for the playing cards:

First key ("R" appears) - A or 1: ACE
2 through 9: NUMBER-CARD, 2 through 9
0 (zero): 10-CARD
J, Q, or K: JACK, QUEEN OR KING

Second key ("U" appears) - C, D, H or S: CLUBS, DIAMONDS, HEARTS or SPADES
Third key ("N" appears) - N: (insignificant).

For example, to indicate King of Spades, type "KSN", and hit a free shot at you (and he won't miss!). All bullets will bounce into the bullet bucket and trigger the score accumulator. Point totals for each shot are determined by the time on the screen when the shot was fired. The faster you shoot, the larger your score for that turn. First player to 10 points wins. A rounded-off score appears on each player's hat. The exact scores appear on the text screen below each shooter.

SLIPPERY DIGITS

SLIPPERY DIGITS works just like your old 15-number game. Try the "Visible" version first to get the hang of it.
Arrow Keys move the numbers Left and Right, and the A and Z Keys move them Up and Down. When a letter enters its proper location, you will hear a musical "beep" (if you haven't turned off the sound).

In the Invisible Mode, each number will become visible ONLY WHEN IN THE CORRECT POSITION. Look at the horizontal color (or grey) bars at the top of the screen. These indicate the color of the number blocks that should be in each vertical row. This feature is especially helpful in the Invisible Mode.

The "Black & White or Color TV" choice at the beginning of the game simply gives the number colors more contrast in Black & White, and more color in Color. Both ways, the game works the same.

The shuffle before each new game will take longer on some games. The computer checks after each shuffle to see if it is physically POSSIBLE to achieve numerical order. Half of the time it isn't so it re-shuffles.

**SUB SEARCH**

**SUB SEARCH** is a real-time search for a group of invisible enemy "submarines". Your job is to seek out these subs and capture their fuel supplies before your fuel and oxygen run out.

When you run Sub Search, your Apple will decide how many subs you are to find and determine your oxygen and fuel supplies. Press return when ready to begin your search.

Five keys control the movement of your sensor on the screen: To move UP & DOWN, press the A & Z keys.
To move LEFT & RIGHT, press the Arrow keys.
To JUMP 15 SPACES (at a cost of only 10 units of fuel), press the Space Bar.
Each of these five direction keys only needs to be pressed once to cause movement in the appropriate direction. It's a good idea to keep your fingers on these keys during the game.

Data regarding fuel supply, oxygen supply and number of subs will be updated on the lower section of the screen.

The SCANNER is activated with an S keypress. Missing subs will be temporarily revealed with "blips" in the horizontal and vertical bars on the screen. Using the scanner will cost you 40 units of fuel, so activate it sparingly. After the scanner is used, press a direction key to continue searching.

The EQUALIZER converts fuel to oxygen and vice versa. Hitting Q will trigger the equalizer and prolong your search.

**OXGEN:** Your oxygen will decrease at an erratic rate whether you are moving or not. The only way to obtain more oxygen is to use the Equalizer (Q).

**FUEL:** Your fuel supply will decrease one unit for every unit you move on the screen. Locating an enemy sub WILL INCREASE your fuel supply by 40 units. Using the scanner (S) will COST you 40 units.

**FINDING SUBS:** Besides using the scanner (S), invisible subs may be found by searching with your sensor, using the direction keys (A, Z, and Arrows). Your sensor will leave a trace pattern where you have searched. This trace will be erased if you use the scanner. If you encounter a sub, you will notice it in your trace pattern. You will also notice your trace pattern slowly disintegrating as you move. Do not confuse the "holes" in the pattern with the subs you are looking for.

You must land PRECISELY on a sub to capture it. Once captured, a sub will become visible, and you will hear one or more beeps. The number of beeps tell you how many subs you have NOT yet been located. This information also appears on the lower right of the screen.

The game ends when you have found all of the subs OR when you have run out of fuel or oxygen. You will be given a final score based on the percentage of subs found times 1000, plus the amount of fuel and oxygen you have left.

**TEXTTRAIN**

by Bert Kersey & Jack Cassidy

TEXTTRAIN is a real-time race against a *train-time* clock. You will keyboard-control a text-format "freight train" whose "engine" and "cars" appear on your monitor as text characters - the engine is an inverse asterisk/plus, and the cars are inverse and normal letters. You control the motion of the train (Forward and Reverse); the five turnouts or track switches; and the Coupling and uncoupling of the cars.

The object of TEXTTRAIN is to couple together a pre-defined series of freight cars and pull them to the Check Station at the top of the track layout in the fastest possible time.

At the start of the game, you will be asked to type a word. This word must be from one to nine letters in length and contain no non-alphabetical characters and no letter "P" (explanation later). This word or series of letters will be the "train" you must create during the game. If you're a beginner, start with a two-or-three-letter word. After you type the word, hit Return, and the game will start.

Your Apple will draw a track layout, scramble the letters of your word, and place them, along with several random letters on the layout as freight cars. Notice that the clock at the start runs immediately from time 0:00. The clock runs quite fast to make up for the small scale of the train (as good an explanation as any!). Above the clock is a representation of the train you must create. On the track, you will see the engine, always an inverse two-character car. The front (asterisk) of the engine flashes while it is idling. The plus-sign is the back of the engine onto which are coupled a few cars (letters). The Freight On Board (F.O.B) Chart at the left shows what's in the cars.

While the train is idling, you are in the "Command Mode". The commands available to you are displayed at the bottom of the screen. The F, R, C and S keys are the only keys that will do anything in this mode, except the asterisk option is not displayed on the screen.

**FORWARD** and **REVERSE** motion is initiated by pressing F and R. Try it. To STOP the train, hit any key except F and R. The SPACE BAR is the most easy-to-find "brake" key. It is permissible (and often very efficient!!) to hit ANY of the Command Mode keys (F, R, S or C) to stop the train.
As the train travels around the track to the top straightaway, its string of cars will read backwards. The order of cars you will be concerned with is FROM THE ENGINE BACK. Notice that the trains **HARVEY** and **YEVRAH** are the same.

SWITCHES are thrown by first pressing the S key. When you hit S, all five switches will light up with numbers. To throw a switch, simply press the appropriate number key. If the switch is *open*, it will *close* and vice versa. Any key other than 1,2,3,4 or 5 will put you back in the Command Mode. If a car is on or near a selected switch, you will be warned and returned to the Command Mode. Keep an eye on the switches as your train moves. Your train will DERAILE, thus ending the game, if it encounters a closed switch!

COUPLING and UNCOUPLING are initiated with a C keypress. After hitting C, you will be asked how many cars you want behind your engine. This must be a number from 0 (engine-only, no cars) to 9. No train longer than nine cars (plus engine) is allowed. You MUST enter a proper one-digit number to get out of the Coupling Mode. To couple cars onto your train, you must BACK YOUR TRAIN into them. Your train will automatically stop, and you will be put in the Couple Mode.

YOU CANNOT COUPLE CARS ONTO THE FRONT OF THE ENGINE. An attempt to do so will derail the train and end the game! The same misfortune will occur if you forward OR reverse into the siding bumper (just under the clock). You must stop BEFORE you reach the bumper, or you crash!

The Freight-On-Board (F.O.B) Chart identifies the cars the engine is coupled to. Each car's letter stands for the cargo of the car-- B for Boxes, K for Kites, etc. If the cargo word on the F.O.B. Chart. If you want, change the set of words in the TextTrain listing (Lines 2070-2110) to suit yourself.

To successfully finish a game, you must drive your completed train COMPLETELY INSIDE the Check Station and STOP. You also may drive THROUGH the Check Station or stop there anytime you want.) If you do stop, your train will automatically be inspected for a modest fee. If your train consists of the correct freight cars IN THE CORRECT ORDER, your time will be noted and compared with the best time so far for the current set-up. From the second repeat game on, the best time so far will be posted under the clock. When a game ends, you will be given three options. An asterisk playing against yourself! Before the game starts, some probing questions will be asked of you. Type your answers and hit Return after each.

**NAMES OF PLAYERS:** If your name is FRANK and you prefer DARTH or PRUNEFACE, by all means, use it. The second player's name will be rejected if it has the same first three letters as the first player's name. You'll see why later.

**LEVEL OF DIFFICULTY:** Selecting 1,2 or 3 will control the speed of the game. Beginners should use 3. Give 1 a try too; it's fun!

**KEYWORD:** Enter any 5-letter word or series of letters with no REPEAT CHARACTERS. Then hit Return.

The object of Wowzo is to move your "man" (the first three letters of your name) through the maze and land on ALL FIVE of the keyword letters before your opponent. There is no
"beginning" and no "end" to the maze. After you enter a legal keyword, the Apple will place its letters in random maze positions and place the first three letters of each player's name in the upper left corner. These three letters are the player's "men".

The computer will decide who goes first- let's say George. "GEO" will flash in the maze, and the computer will print "George's Turn-Which Direction?", or "Which Gate?". You, George, must respond accordingly before the timer reaches zero. Assuming time doesn't run out, on each turn you will move at least one gate AND move your piece at least once, but NOT NECESSARILY IN THAT ORDER.

WHICH DIRECTION? To move your man in the Wowzo maze when you are asked "Which Direction?", press a key:

- To move Left or Right, press an Arrow key.
- To move Up or Down, press the A or Z key.

Your man will move in the direction chosen until it encounters a maze wall OR keyword letter. In either case, it will automatically stop. If you land on a letter, whether you need the letter or not, you get another turn. If you hit a wall without encountering a letter, your turn is over unless you haven't moved a gate...

WHICH GATE? Any gate may be moved on any turn. When the computer asks "Which Gate?", press a gate letter. The appropriate gate will pivot 90-degrees. Don't press Return.

COMPUTER GATES: After each player's turn, just to make things more interesting, the computer will move two randomly-selected gates.

When you land on a letter, the following happens: a. You will be credited with the letter on the scoreboard (if you don't already have the letter) b. The computer will replace the letter somewhere else in the maze. c. You will get a BONUS TURN; another GATE and MOVE.

If time runs out during your turn, you will be sent, via Air Mail, to the upper left corner of the maze, and your turn will end. Period.

Wowzo Strategy: The most obvious defensive strategy is to use the gates to seal off your opponent about ten miles from the nearest letter that he needs. Also, use already-landed on letters for extra mileage via bonus turns AND to remove a letter from your opponent's path. Try to line up with several letters and grab them all in one turn. A game of Wowzo can end abruptly this way!

PLUS ----

Some of these programs have been gathering dust around here for years (a couple of them probably should have STAYED here). Some of these relics won't appear in the Short Menu until you catalog the disk.

DATE SEARCH is my favorite, I suppose. Even though it isn't really a game, people get a kick out of it. The only good thing I can say for CROSS WORD is that it lives up to its name. GINK is explained fully on page 13. If you use one of the names from BABY NAMES for your kid, please contact our lawyers (Legal Brothers) concerning royalty fees.

PACK MY BOX is a challenge that will probably never be met, but let us know if you do! POLY-DICE is fun if you're a statistics nut- You may want to expand it to roll more dice (how about all night long?). I can't BELIEVE how long people will play NAME GAME. See page 13 for more details. Every Apple owner should have a copy of TEST PATTERNS (although it could get expensive). And PLEEEEEASE don't phone the Beagle Building saying your copy of NAKED CITY doesn't work; it's SUPPOSED to do that! Secretly load it into a friend's Apple, and stand back and watch...
THE SOURCE FILE IS A APPLESOFT PGM NAMED BALL THAT EXISTS ON THE DISK. ENTERED BY: JUDIE MAC

THE OBJECT FILE IS THE MACHINE LANGUAGE BINARY FILE THAT IS CREATED BY THE COMPILER. THE OBJECT FILE NAME DEFAULTS TO THE ORIGINAL FILE NAME WITH THE EXTENSION .OBJ ADDED, SO THAT THE OBJECT FILE PRODUCED FOR THE BALL.OBJ. THE DEFAULT IS SPECIFIED BY ENTERING <RETURN>. THE SOURCE FILE IS ASSumed TO BE LOCATED ON THE SAME DISK AS THE COMPILER UNLESS YOU SPECIFY OTHERWISE. THE OBJECT FILE DEFAULTS TO THE SAME DISK THAT THE SOURCE IS ON. DIFFERENT SLOTS OR DRIVES CAN BE SPECIFIED USING THE NORMAL ,S<SLOT NUMBER> AND ,D <DRIVE NUMBER> SYNTAX. COMPILATION IS USUALLY SLIGHTLY FASTER IF ONLY ONE DRIVE IS USED. DISK COMMANDS CAN BE EXECUTED BY TYPING <CTRL-D> FOLLOWED BY THE COMMAND AND <RETURN> THE NEXT TWO PROMPTS ASK YOU WHETHER YOU WANT DEFAULT VALUES FOR ALL OTHER COMPILATION OPTIONS. SINCE MOST COMPILATIONS ARE PERFORMED WITH THE SAME SET OF OPTIONS, YOU SHOULD ENTER <RETURN> AFTER EACH PROMPT TO SPECIFY THE DEFAULT VALUES.

THE INCREASE IN THE BALL PROGRAMS EXECUTION SPEED IS QUITE APPARENT WHEN COMPARED TO THE SAME PROGRAM RUNNING UNDER THE INTERPRETER. COMPARE SPEEDS BY FIRST RUNNING THE INTERPRETED PROGRAM:

\[
\text{RUN BALL}
\]

THE SOURCE TWO PROMPTS ASK YOU FOR THE NAMES OF THE SOURCE AND OBJECT FILES:

\[
\text{SOURCE FILE BALL OBJECT CODE FILE: (DEFAULT BALL.OBJ) <RETURN>}
\]

THE NEXT TWO PROMPTS ASK YOU WHETHER YOU WANT DEFAULT VALUES FOR ALL OTHER COMPILATION OPTIONS. SINCE MOST COMPILATIONS ARE PERFORMED WITH THE SAME SET OF OPTIONS, YOU SHOULD ENTER <RETURN> AFTER EACH PROMPT TO SPECIFY THE DEFAULT VALUES.

IF YOU HAD REFUSED THE DEFAULT CONFIGURATIONS ABOVE, YOU WOULD NEED TO SPECIFY THE VALUES OF SEVERAL COMPILATION OPTIONS. THE ACTUAL Compilation PROCESS STARTS WITHOUT FURTHER INPUT SINCE YOU HAVE SPECIFIED THE DEFAULTS ABOVE. WHEN Compilation BEGINs, THE DISK IS ACCESSED ALMOST CONSTANTLY TO EITHER READ THE SOURCE FILE OR TO WRITE THE OBJECT FILE. THE COMPILER LISTS THE SOURCE PROGRAM ON YOUR CONSOLE AS IT IS BEING COMPILED AND GENERATES APPROPRIATE MESSAGES IF IT ENCOUNTERS ANY ERRORS. THEN THE SOURCE STOPS LISTING, THE FIRST PARTS OF Compilation IS FINISHED, AND THE COMPILER PRINTS:

\[
\text{*****BEGINNING PASS2}
\]

THE SECOND PART OF Compilation ALSO USED THE ??? EXTENSIVELY. TO INDICATE THAT IT IS STILL CompILING, THE COMPILER PRINTER A PERIOD ON THE SCREEN EVERY FEW SECONDS. WHEN IS IS FINISHED, THE COMPILER PRINTS:

\[
\text{*****CODE GENERATION COMPLETE}
\]

AT THIS POINT, THE ACTUAL Compilation PROCESS IS COMPLETE, SO THAT YOU WILL RECEIVE A LISTING OF Compilation INFORMATION, ANSWER "Y" OR "YES" TO THE NEXT PROMPT. Compilation INFORMATION AND LINE NUMBER REFERENCE TABLE YES

THIS INPUT ALSO ACCEPTS <CTRL-D> DISK COMMANDS. IF YOU WANT TO LIST THE Compilation INFORMATION ON A PRINTER, YOU CAN FIRST TURN ON YOUR PRINTER BY ENTERING:<CTRL-D>PR#<PRINTER SLOT>

TASC PRINTS OUT THE DESIRED INFORMATION, DISPLAYS THE FOLLOWING MESSAGE, AND THEN RE-ENTERS THE INTERPRETER:

\[
\text{*****COMPILATION COMPLETE}
\]

THE INCREASE IN THE BALL PROGRAMS EXECUTION SPEED IS QUITE APPARENT WHEN COMPARED TO THE SAME PROGRAM RUNNING UNDER THE INTERPRETER. COMPARE SPEEDS BY FIRST RUNNING THE INTERPRETED PROGRAM:

\[
\text{RUN BALL}
\]
TASC is highly compatible with the Applesoft interpreter. This compatibility allows the Applesoft interpreter to function as the primary debugging tool. The interpreter provides much better debugging facilities than a compiler, since it includes features such as trace.

There are some drawbacks to debugging with the interpreter: statements that are only executed under special circumstances may never be examined, and the interpreter halts execution when it encounters the first error in a program.

Debugging with the compiler does not suffer from these drawbacks since the compiler examines every statement in a program, and can continue the compilation even if it encounters errors.

In general, compiling a program is an effective way to check for syntax errors; however, program logic errors are more easily tracked down with the interpreter.

Compilation:
A compiler, on the other hand, takes a source program and translates it into a machine language object file. This object file consists of a large number of machine language calls to routines in the interpreter. In addition, close language compatibility with the interpreter. In contrast to the interpreter, the compiler analyzes all statements before running. In addition, absolute memory addresses are provided for variables and program lines. These addresses eliminate the list searching that occurs with an interpreted program executes. TASC, unlike the interpreter, implements true integer arithmetic and integer loop variables in for/next loops. In comparison, the Applesoft interpreter converts all integers to real numbers before operating on them. These conversions make interpreted integer arithmetic relatively inefficient. In addition, the interpreter forbids use of integers as loop control/variables in for/next loops.

Program Development
1. Create and edit Applesoft source.
2. Run and debug source with the interpreter.
3. Compile source, creating a binary object file.

Debugging with the Applesoft Interpreter:
Debugging a program intended for compilation is a two step process that involves:
1. Creating the source program.
2. Running the program under the interpreter to check for errors.

Creating a Source Program:
An Applesoft source program requires the use of the editor available within Applesoft. Programs are created by simply entering Applesoft statements from within Applesoft. Once a program has been created, it can be saved to disk with Save. TASC can only compile Applesoft disk files.

Running a Program with Applesoft:
Programs should be debugged using the Applesoft interpreter before being compiled. If the program to be compiled uses TASC features that are not available in the interpreter, it may be necessary to debug the program with the compiler.

TASC is highly compatible with the Applesoft interpreter. This compatibility allows the Applesoft interpreter to function as the primary debugging tool. The interpreter provides much better debugging facilities than a compiler, since it includes features such as trace.

There are some drawbacks to debugging with the interpreter: statements that are only executed under special circumstances may never be examined, and the interpreter halts execution when it encounters the first error in a program.

Debugging with the compiler does not suffer from these drawbacks since the compiler examines every statement in a program, and can continue the compilation even if it encounters errors.

In general, compiling a program is an effective way to check for syntax errors; however, program logic errors are more easily tracked down with the interpreter.
OPTIONS:
THE DEMO RUN SHOWED ONLY THE MOST BASIC TYPE OF COMPILATION. TASC INCLUDES SEVERAL OPTIONS THAT CAN BE USED TO CONTROL Compilation MORE CLOSELY. THE REQUESTED OPTIONS CONTROL MEMORY ALLOCATION AND Compilation TO EXPLICITLY SPECIFY THE VALUES FOR THESE OPTIONS, SIMPLY ANSWER "NO" WHEN THE COMPILER OFFERS THE DEFAULT VALUES.

MEMORY USAGE:
THE MEMORY USED BY THE COMPILED CODE AT RUNTIME IS DIVIDED INTO THREE AREAS:
1. RUNTIME
2. LIBRARY
3. OBJECT PROGRAM
4. VARIABLES
TASC ALLOWS THE LOCATION FOR EACH OF THESE BLOCKS TO BE SPECIFIED SEPARATELY. THE MEMORY ALLOCATION FEATURES CAN BE USED TO PROTECT MACHINE LANGUAGE PROGRAMS, SHAPE TABLES, THE HIRES SCREENS, OR ANY OTHER IMPORTANT PART OF MEMORY.

THE DEFAULT ALLOCATIONS ORDER, LIBRARY, PROGRAM, VARIABLES. THE LIBRARY IS ALLOCATED LOWEST AND PROGRAM AND VARIABLES FOLLOW. THE LIBRARY BEGINS AT LOCATION 2051, OR $803.

ALTERNATE ADDRESSES FOR THE BLOCKS ARE SIMPLE TO SPECIFY. THE NEW LOCATION FOR THE LIBRARY IS ENTERED AS A NUMBER AND DEFAULTS TO $803. ADDRESSES CAN BE SPECIFIED IN EITHER HEXADECIMAL OR DECIMAL. HEX MUST HAVE ($) AS THE LOCATION FOR THE LIBRARY MUST BE LOADED BEFORE A COMPILED PROGRAM CAN BE RUN. BY DEFAULT THE LIBRARY IS LOADED AT $803. WHEN A PROGRAM IS COMPILTED TO EXPECT THE LIBRARY AT A DIFFERENT ADDRESS, THE LIBRARY MUST BE LOADED IN AT THE CORRECT ADDRESS BY USING "A" OPTION WITH THE LOAD COMMAND. MOVING BINARY FILES, WITH ADR UTILITY.

THE BEGINNING ADDRESS FOR THE OBJECT CODE MAY BE SPECIFIED WITH:
1. THE WORD HGR1
2. THE WORD HGR2
3. A DECIMAL OR HEX NUMBER
   <RETURN>
HGR1 AND HGR2 SET THE BEGINNING OF THE PROGRAM ABOVE THE APPROPRIATE HIRES SCREEN. THEN 4K RUNTIME LIBRARY DEFAULTS TO THE SPACE BELOW THE FIRST HIRES SCREEN. this DEFAULT LOCATIONS IS SUGGESTED FOR PGMS OF HIRES.

VARIABLE SPACE MAY BE SPECIFIED EXPLICITLY OR ALLOWED TO DEFAULT. THE BEGINNING OF VARIABLE SPACE DEFAULTS TO THE END OF THE OBJECT CODE.

COMPILED PGMS USE THE NORMAL HIMEM POINTER TO DETERMINE THE TOP OF AVAILABLE STRING SPACE, AND STRINGS Grow DOWNWARD FROM THERE.

COMPILATION OPTIONS:

- COMPILATION LISTING YES
- PAUSE ON ERRORS YES
- INTEGER ARITHMETIC YES
- INTEGER CONSTANTS YES
- RESUME/DEBUG CODE NO

ANSWERING "NO" OR "N" TO THE DEFAULT OPTION PROMPT PROVIDES A CHANGE TO TURN EACH OF THESE OPTIONS ON OR OFF.

THE COMPILER NORMALLY LISTS THE SOURCE FILE. TURNING THE LISTING OPTION OFF SUPPRESSES THE LISTING. ERRORS, WARNING, AND SPECIAL MESSAGES ARE PRINTED AS USUAL.

PAUSE ON ERRORS OPTION:
ERRORS NORMALLY HALT Compilation AND ALLOW THE USER TO ABORT OR CONTINUE Compilation. TURNING THE PAUSE OPTION OFF SUPPRESSES THE PAUSE AFTER ANY ERROR MESSAGE ARE PRINTED.

INTEGER ARITHMETIC OPTION:
TASC INCLUDES A FULL INTEGER ARITHMETIC PACKAGE. TRUE INTEGER ARITHMETIC ALLOWS OPERATIONS ON INTEGERS TO BE PERFORMED IN ABOUT HALF THE NORMAL TIME. INCLUDING THE OPTION SUBSTANTIALLY INCREASES THE SPEED OF PGMS THAT USE INTEGERS.

INTEGER CONSTANTS:
CONSTANTS IN A COMPILED PROGRAM CAN BE TREATED AS INTEGERS OR FLOATING POINT NUMBERS. SELECTING THE INTEGER CONSTANTS OPTIONS ALLOWS CONSTANTS THAT ARE USED AS INTEGERS TO BE STORED IN INTEGER FORMAT. IF A CONSTANT IS NEEDED IN FP IT INCLUDES BOTH.

INTEGER CONSTANTS TAKE UP TWO BYTES IN THE OBJECT FILE; FP TAKES FIVE. THE INTEGER CONSTANTS OPTION SHOULD NORMALLY BE LEFT ON.

RESUME/DEBUG CODE OPTION:
TURNING ON THE RESUME/DEBUG CODE OPTION CAUSES CODE TO HANDLE THE RESUME STATEMENT TO BE INCLUDED IN THE OBJECT PGM. THE RESUME IN APPLESOFT ALLOWS AN ERROR TRAPPING ROUTINE TO RESUME EXECUTION AT THE BEGINNING OF THE STATEMENT THAT CAUSED THE ERROR. TASC ALSO FULLY SUPPORTS ONERR GOTO. THE COMPILED VERSION OF ONERR GOTO TRAPS ALL RUNTIME ERRORS, INCLUDING THOSE THAT OCCUR WITHIN ROUTINES FROM THE APPLESOFT INTERPRETER.

INCLUDING THE RESUME/DEBUG OPTION REQUIRES THE COMPILER TO GENERATE EXTRA CODE AT THE BEGINNING OF EACH STATEMENT THAT MAY GENERATE AN ERROR. SELECTING RESUME/DEBUG CODE OPTION CAUSES THE OBJECT CODE TO BE LARGER AND SOMEWHAT SLOWER.

THE FOLLOWING COMMANDS ARE NOT INCLUDED IN TASC

CONT  DEL  LIST
LOAD  SAVE  LOMEM:
&  RECALL  NOTRACE
SHLOAD  STORE  TRACE

THE FOLLOWING COMMANDS ARE SUPPORTED WITH SOME LIMITATIONS:
DEF FN DIM &<CTRL-C>

DEF FN:
IN THE INTERPRETER, A DEF FN DOES NOT DEFINE A FUNCTION UNTIL THE DEF FN STATEMENT IS ACTUALLY EXECUTED AT RUNTIME. THE COMPILER, ON THE OTHER HAND SCAN ALL FUNCTIONS DEFINITIONS AT COMPILETIME. THEREFORE FUNCTION DEF CAN BE LOCATED ANYWHERE WITHIN THE SOURCE FILE. THE SOURCE CANNOT CONTAIN MORE THAN ONE DEF FOR A GIVEN FUNCTION, EVEN IF IDENTICAL.

DIM:
EXECUTING A DIM STATEMENT IN WHICH THE SPECIFIED DIMENSIONS ARE CONSTANTS SETS ASIDE THE SAME AMOUNT OF STORAGE FOR THE ARRAY EACH TIME THE PGM IS RUN.

EXECUTING A DIM STATEMENT IN WHICH THE SPECIFIED DIMS ARE ARITHMETIC EXPRESSIONS SETS ASIDE SPACE FOR THE ARRAY DEPENDING ON THE COMPUTED VALUE OF THE EXPRESSION.

DEFAULT DIM: IF AN ARRAY REF IS ENCOUNTERED BEFORE A DIM STATEMENT, THE ARRAY IS GIVEN THE DEFAULT MAX VALUE OF 10 FOR EACH DIM OF THE ARRAY. APPLESOFT ALLOWS THE USE OF 0 AS AN ARRAY SUBSCRIPT, SO AN ARRAY DIMED AT 10 IS ACTUALLY 11 (0-10)

CTRL-C:
EXECUTING A COMPILED PROGRAM:
1. INTERPRETED PROGRAMS ARE STORED AS APPLESOFT FILES INDICATED BY A "A". THESE ARE EXECUTED BY A RUN COMMAND.
2. COMPILED PROGRAMS ARE STORED AS BINARY "B" AND MUST BE EXECUTED BY A BRUN COMMAND.

NEW:

NEW CAUSES THE INTERPRETER TO RESET POINTERS, BUT NOT CLEAR THE PROGRAM SPACE. THEREFORE THE PROGRAM CAN BE SAFELY RE-EXECUTED IF NO PROGRAM LINES HAVE BEEN TYPED IN AND STORED INTO THE PROGRAM SPACE.

IMMEDIATE COMMANDS:
NONE

STATEMENTS NOT IMPLEMENTED:

Apple II Computer Info
THE ABOVE OPERATIONS EXPECT INTEGER VALUES.

INTEGER ARITHMETIC PACKAGE:

- **Addition**
- **Multiplication**
- **Negation**
- **Subtraction**

THE FOLLOWING INTEGER OR FP

- **AND**
- **FRE**
- **IF/THEN**
- **PRINT**
- **FOR**
- **BECOMES UNDER LEXICAL TOKENS**
- **OR**
- **POS**

THE FOLLOWING RETURN INTEGER VALUES:

- **ASC**
- **LEN**
- **FOL**
- **PEEK**
- **POS**
- **SCRN**
- **SCRN**

**COMMON:**

- **CLEAR COMMON:**
- **CLEAR CHAIN:**
- **USECOMMON:**

THE **USECOMMON** AND **USECOMMON** STATEMENTS ARE DESIGNED FOR CREATING LARGE SYSTEMS OF PROGRAMS THAT COMMUNICATE WITH EACH OTHER.

**DECLARATION:**

- **ASC**
- **LEN**
- **PDL**

**INTEGER OR COMMON DECLARATIONS OUT OF SEQUENCE OR NOT AS BEGINNING OF**

**PEEK**

- **POS**
- **SCRN**

**COMMON:**

- **INCOMPLETE:**
- **INCOMPLETE EXPRESSION MISSING RIGHT PARENTHESES IN EXPRESSION**
- **DEFCOMMON:**
- **REDEFINED:**
- **FUNCTION DEFINED MORE THAN ONCE SPECIFIED ARRAY DIM DIFFERENT THAN THE**
- **FIRST DIM SPECIFIED**
- **SUBSCRIPT:**
- **MISSING OR ADDED CHARACTER OR ITEM**
- **LINE NUMBER GREATER THAN 65534**
- **TOO COMPLEX:**
- **expression too complex**
- **object code or variable extends past 48K**
- **TYPE MISMATCH:**
- **numeric expression where string was expected string expression in IF/THEN**
- **DEFINED:**
- **LINE NUMBER OR FUNCTIONS PRODUCE FATAL ERROR AT THE BEGINNING OF PROCESS.**
- **SELF-MODIFYING PROGRAMS:**
- **PHONE LIST ON APPLE DEMO THIS PROGRAM WILL NOT COMPILe PROPERLY. MUST**
- **BE RE-WRITTEN IN STRAIGHTFORWARD METHODS TO BE COMPILED.**
- **ADR:**
- **PRINTS OUT THE DECIMAL BEGINNING ADDRESS AND LENGTH OF THE MOST**
- **RECENTLY LOADED FILE. MUST USE THIS INFO WITH "A" AND "L" PARAMETERS TO BSAVE THE M.L. PROGRAM.**
- **THE NORMAL PROCESS FOR MOVING A PROGRAM IS:**

```
1000 INPUT "WHICH PACKAGE?".N
1010 IF N = 1 THEN ? D$"BRUN GL"
1020 IF N = 2 THEN ? D$"BRUN AP"
1030 IF N = 3 THEN ? D$"BRUN AR"
```

```
GL
10 REM!DEFCOMMON A,B(3,4),C$ .
1000 REM!CLEAR CHAIN
1010 ? D$"BRUN GL"
GL1
10 REM!USECOMMON A1,B1(3,4),C1$ .
1000 REM!CLEAR CHAIN
1010 ? D$"BRUN GL2"
GL2
10 REM!USECOMMON A2,B2(3,4),C2$ .
1000 REM!CLEAR CHAIN
1010 ? D$"BRUN GL3"
GL3
10 REM!USECOMMON A3,B3(3,4),C3$ .
```
CREATE ADR: TO TRANSFER ADR TO ANOTHER DISK

1. LOAD CREATE ADR FROM TASC DISK
2. REMOVE TASC DISK
3. INSERT DISK FOR NEW COPY
4. TYPE RUN

CONVERTING 3.2 TO 3.3:
USE MUFFIN ON DOS MASTER

DOCUMENT tele.porter

******************************************************************************

*****************************************
Tele-porter Documentation

thanks to U-Called-It-U-Name-It and

The Nut along with Preston Jr.

******************************************************************************

**** ALERT ****
THIS COMMAND WILL RING THE BELL ON THE REMOTE APPLE.

**** ANSWER ****
SETS THE COMMUNICATOR TO ANSWER THE PHONE WHEN IT RINGS. THE APPLE
WILL ANSWER ANY PHONE CALL WHICH COMES IN ON THE LINE THE APPLE IS
CONNECTED TO. THIS MAY ONLY BE USED WITH THE HAYES MICROMODEM AND THE
NOVATION D-CAT. INVOKE BY TYPING A OR ANSWER. WHILE IN ANSWER MODE,
THE MESSAGE 'WAITING FOR CALL' WILL APPEAR IN THE COMMAND WINDOW.

WHEN THE PHONE RINGS THE MESSAGE 'RING DETECTED, WAITING FOR CARRIER'
WILL APPEAR IN THE COMMAND WINDOW. IF CARRIER IS DETECTED, THE
MESSAGE 'CONNECTED' WILL APPEAR AND YOU WILL BE RETURNED TO COMMAND
LEVEL.

IF NO CARRIER IS DETECTED, THE MESSAGE 'NO CARRIER, LINE DISCONNECTED'
WILL APPEAR IN THE COMMAND WINDOW AND IT WILL RETURN TO ANSWER MODE.

**** BOOT ****
THIS COMMAND WILL RE-BOOT FROM THE DRIVE USED TO BOOT TELE-PORTER.

THE BOOT COMMAND WILL BOOT ANY OPERATING SYSTEM (DOS/PASCAL) OR
PRODUCT SO THAT USER PROGRAMS CAN PROCESS DATA TRANSFERED WITH THE
TELE-PORTER.

THIS MAY BE INCLUDED IN AN EXEC FILE TO RUN ANOTHER PROGRAM UNATTENDED
AFTER COMPLETION OF DELAYED TRANSFERS. YOU MAY THEN PROCESS WHAT WAS
JUST RECEIVED.

**** CALL ****
THIS ALLOWS YOU TO ORIGINATE CALLS TO A REMOTE APPLE USING
TELE-PORTER. INVOKE BY TYPING CALL. RESPOND TO NUMBER: WITH THE
TELEPHONE NUMBER. YOU MAY USE SEPERATORS SUCH AS ( AND - IN THE PHONE
NUMBER. AN * SIGNIFIES TO PAUSE 2 SECONDS BEFORE CONTINUING. A +, ON
THE NOVATION ONLY, WILL INDICATE TO WAIT FOR A SECOND DIAL TONE. FOR
EXAMPLE; NUMBER:1-(203)327-3204 THIS IS ONLY VALID FOR THE HAYES
MICROMODEM AND THE NOVATION D-CAT. WHEN CARRIER IS DETECTED, THE
MESSAGE 'CONNECTED' WILL APPEAR IN THE COMMAND WINDOW AND YOU WILL BE
RETURNED TO COMMAND.

IF CARRIER IS NOT DETECTED WITHIN 30 SECONDS, THE MESSAGE 'NO CARRIER,
LINE DISCONNECTED' WILL APPEAR IN THE COMMAND WINDOW AND YOU WILL BE
RETURNED TO COMMAND.

**** CATALOG ****
THIS ALLOWS YOU TO PRODUCE A CATALOG OF ANY DISK ON THE LOCAL APPLE.
INVOKE BY TYPING CAT OR CATALOG. RESPOND TO LOCAL: WITH A DOS FILE
NAME OR A WILDCARD, FOR EXAMPLE;
Apple II Computer Info

**** LOGON ****

THIS COMMAND WILL TURN ON THE SYSTEM LOGGING FACILITY. RESPOND WITH A VALID DOS FILE NAME. BE SURE TO TURN THE LOG OFF BEFORE EXITING THE FILE TRANSFER. THE SYSTEM LOG CAN BE PRINTED WITH THE APPLESOFT PROGRAM "LOG LISTER" SUPPLIED ON THE TELE-PORTER DISK.

**** DELAY ****

THIS COMMAND WILL DELAY FOR THE NUMBER OF MINUTES SPECIFIED AND THEN EXECUTE AN EXEC FILE. YOU WILL SUPPLY THE TIME IN MINUTES AND THE EXEC NAME TO RUN.

THIS ALLOWS YOU TO DO UNATTENDED OVERNITE TRANSFERS WHEN THE PHONE RATES ARE LOWER, EVEN IF YOUR MACHINE DOES NOT HAVE A CLOCK CARD.

**** END ****

THIS WILL TERMINATE THE FILE TRANSFER AND RETURN YOU TO THE MAIN MENU.

**** EXEC ****

THE EXEC COMMAND ALLOWS YOU TO STORE ANY COMMANDS IN A STANDARD DOS EXEC FILE TO BE EXECUTED VIA THE EXEC COMMAND. INVOKE BY RESPONDING E OR EXEC TO THE COMMAND PROMPT. RESPOND TO THE LOCAL: PROMPT WITH THE EXEC FILE NAME, SX, DX. IF NOT ENTERED, DX WILL DEFAULT TO S6 AND DX WILL DEFAULT TO D1.

EACH LINE OF THE EXEC FILE MUST CORRESPOND EXACTLY TO WHAT YOU WOULD HAVE TYPED IF YOU HAD ISSUED THE COMMAND IN RESPONSE TO THE COMMAND PROMPT.

AN EXAMPLE OF AN EXEC FILE TO CALL A TELEPHONE NUMBER:

CALL 1-203-357-8002

**** HANG ****

THIS ALLOWS YOU TO HANG UP THE PHONE UPON COMPLETION OF THE CURRENT SESSION. THIS IS ONLY VALID FOR THE HAYES MICROMODM AND THE NOVATION D-CAT.

INVOKE BY TYPING HA OR HANG. THE MESSAGE 'DISCONNECTED' WILL APPEAR IN THE COMMAND WINDOW.

**** HELP ****

ALLOWS YOU TO GET A MORE DETAILED EXPLANATION OF ANY COMMAND. INVOKE BY TYPING HELP. RESPOND TO THE PROMPT FOR WHAT COMMAND WITH THE COMPLETE NAME.

**** INIT ****

THIS COMMAND ALLOWS YOU TO INITIALIZE DOS COMPATIBLE DISKS. THE INIT COMMAND WILL NOT PRODUCE A BOOTABLE DISK.

NOTE:

BECAUSE DOS IS NOT STORED ON A DISK INITTED BY THE TELE-PORTER THEY WILL HOLD APPROXIMATELY 6% MORE DATA THAN STANDARD DOS DISKS.

**** LOGOFF ****

THE LOGOFF COMMAND WILL TURN OFF THE SYSTEM LOG AND CLOSE THE LOG FILE.

THE LOG MUST BE TURNED OFF BEFORE YOU EXIT THE FILE TRANSFER.
**TELENGARD COMMAND KEY:**

**BY THE WYVERN/300 (LUB**

**CALL 805/682-5148 NOW!**

---

**ACTION PHASE CMDS:**

**C = CAST SPELL**
**F = REPLOT**
**H = HELP**
**S = STAY**
**Q = QUIT**

**STORAGE GAME = CTRL-S**

**STRENGTH = CTRL-P**

**HEAL = CTRL-H**

**RESCUE = CTRL-R**

**MOVE COMMANDS:**

**A = WEST**
**D = EAST**
**X = SOUTH**

---

**ENCOUNTER PHASE COMMANDS:**

**G = GRAB TREASURE**
**D = DROP TREASURE**

**Q = QUEST FOR MONSTER**

**S = SEARCH**

**I = SPEAK TO MONSTER**

**X = INVENTORY**

**E = EXAMINE WALL FOR DOOR**
**R = REMOVE DOOR**

---

**RETURN = PICK ITEM UP**

---
behind the wheel looking out through the windshield of the car. In the no ordinary highway. The perspective you have is that of a person sitting under the hood. It will not be as simple as plying a lead foot, because this is not just a matter of shifting, but rather knowing when to shift. When you do shift gears, there is a window that opens in the lower right corner of the dashboard displaying the gearshift and the gear you are currently in. There are also two indicators on the dashboard, one for the current mph and another for rpm. The mph indicator simply displays your current speed, while the rpm indicator tells you how much faster you can go without blowing your engine in the current gear.

The most important device on your car is the radar detector (never leave home without it). This device is located in the upper left part of the windshield, attached to your sun visor. When the red lights start flashing on the radar detector, it means that a radar gun has been detected, so slow down. It is safe to speed up when the red lights turn to green.

The Pit Stop

Once you have completed the stretch of road, your car automatically pulls over into one of four gas stations (time to take a leak). Here you are given your average speed, the time it took for you to complete the stretch of road and your total points so far. If your score is low, the dealership will have called ahead and told the gas station to send you back.

Winning The Game

If you are successful and do complete the mountain road four times, your car will automatically pull over into the dealership for the surprise of your life. Inside the glove compartment is the title to a brand new yugo!!! (ha ha ha) just kidding, anyway, inside you will find the title to your car, which the dealership has signed over to you. The game will now prompt you for your name (if your score is high enough) in order to put you in the top drivers hall of fame.

Some Hints and Tips

When you first get the game, start out with something that does not have as much zip as the 173 mph lamborghini. The porsche is one of the best all-around cars for beginners (if you have the dough). It combines good speed and handling along the mountain road to help you get the "feel" of the game.

When your rpm indicator gets in the red area, it is time for you to shift into the next highest gear, or bye bye engine!!!

Shift into first gear before you accelerate when starting out from the gas station or beginning a new game. If you don't, you're history even before you get started.

If you have been pulled over too many times by the police, try this: get up a speed of over 110 mph, and nothing will stop you. You're just a blur on their radar

Don't be a loser! Just give it a try! No guts? Afraid they'll kick you right out of their showroom? Well, here's your chance!! Test drive by accolade puts you behind the wheel of your favorite sports car. The game starts out with a glamorous title sequence (awesome!!!), while a stereo soundtrack plays in the background (depending on what computer you are playing). To abort the sequence press the fire button on the joystick, and the game will finish loading. Now comes the hard decision-which car to drive?

Choosing A Sports Car

The screen is now split in half, showing one of the five sports cars that you may test drive and the specifications of the current car. To cycle through the different cars, press the joystick up or down. This will cause the top portion of the screen to scroll, displaying a different sport car, and the bottom portion to display specifications. The cars from which you may choose are: lamborghini countach, ferrari testarossa, porsche 911 turbo, lotus turbo esprit, and the chevrolet corvette. Each car performs just like in real life, including speed and handling.

You had better bring along your swiss bank account money, because you're going to need it. For instance, the lamborghini has a top speed of 173 mph, mid-engine/rear drive handling and a price tag of $135,000. While the corvette has a top speed of 154 mph, front/rear handling and a price of only $35,000. To select your car, press the fire button.

Seeing What's Ahead

Now that you have selected a sports car, let's take a look at what lies ahead. The object of the game is to drive as fast as you can along a mountain road, while avoiding obstacles such as sunday drivers, on-coming traffic, pot holes, water slicks and, most of all, the fuzz. Whoops, I almost forgot the little bird that flies over and shits all over your windshield (it's just not the car that has real-life performance).

In addition to this, you must keep your car on the road without crashing, which is no simple task when you're going 160 mph. The game ends after you have crashed your car five times or you rear-end an officer of the law. (those assholes!!)

Game Play, How to Play, etc

Now, it is finally time to see what this fancy european or american car has under the hood. It will not be as simple as plying a lead foot, because this is no ordinary highway. The perspective you have is that of a person sitting behind the wheel looking out through the windshield of the car. In the top-middle of the windshield, you have a rear view mirror which is very detailed, showing the cars you have passed and the distance they are behind you.

The mountain route you must drive has a nice perspective to it and makes you feel like you are actually driving on the road. To accelerate push the joystick up, to decelerate push down, and to shift gears, press the fire button while pushing the joystick up or down. It takes a lot of practice to shift gears, because it's not just a matter of shifting, but rather knowing when to shift. When you do shift gears, there is a window that opens in the lower right corner of the dashboard displaying the gearshift and the gear you are currently in.

A couple additions to the "Test Drive Docs" file... | A couple additions to the "Test Drive Docs" file...

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
<table>
<thead>
<tr>
<th>Ctrl-R</th>
<th>Ends current game and takes you back to the car selection menu.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Escape&gt;</td>
<td>Pauses/restarts current game.</td>
</tr>
<tr>
<td>s</td>
<td>Toggles sound off/on.</td>
</tr>
<tr>
<td>m</td>
<td>Toggles music off/on.</td>
</tr>
</tbody>
</table>

---

This program is FREEMARE. You can distribute TEX freely, just don't sell it. I do ask that you make sure that this doc file is made available with the program. You are under no obligation to pay anything for TEX.

However, if you like this program and want to show your appreciation I do accept gratuities. If you send me $10.00 I will send you the latest version of TEX and some of my other programs that I have written. PLEASE tell me what version you have so I can determine whether or not I should send you a disk right away. The $10.00 will also entitle you to 1 free update that will be AUTOMATICALLY mailed to you when I update TEX again. This way I make a little money and you do not have to spend the money downloading the update.

My address is:
Floyd Zink, Jr.
P.O. Box 060069
Palm Bay, FL  32906

I repeat YOU ARE UNDER NO OBLIGATION TO PAY ANYTHING FOR TEX, but if you want me to continue to provide programs in this manner than support the cause and send in the $10. Thanks.

Features
--------
1) Catalogs disks
2) Types files
3) Appends files together
4) Deletes files
5) Renames files
6) Strips linefeeds and ^Z's from files
7) Removes carriage returns from files

Program Selectors
------------------
TEX supports a start-up pathname. If you enter a start-up pathname from a program selector like PROSEL or ECP8 the program will use that pathname and strip the linefeeds from it and then exit by the quit code. If there is no start-up pathname then TEX will display the menu and you can go on from there.

The Menu
--------
You can select a menu item by either the first letter in the item or by using the arrow keys to move the inverse bar to your selection and then pressing return. You will be returned to the menu after all processing is done.
Selecting Files To Be Processed

After making your menu selection you will be prompted for a source directory name and where necessary a destination pathname or target directory. You can use the TAB key to skip to the next '/'. The filepaths shown or OA-TAB to back up to the previous '/'. The DELETE key will delete characters and the ←→ keys will backspace and move the cursor forward. When prompted for a destination pathname be sure and enter a pathname for a file not a directory.

After the directory(ies) are selected a catalog of the source directory will be displayed. Using the up and down arrows will move the bar accordingly. The left arrow will unselect an item if it was selected otherwise it will move the bar up. The right arrow will select an item if not already selected otherwise it will move the bar down. Pressing the space bar will toggle a selection also. In addition a OA-space or a control-a ('A) will toggle all the items. Pressing return will implement the selected task using the just picked filenames.

Filename Queue

The files selected are put into a linked list. This means you can select the files in the order you want them processed. This is particularly handy for the APPEND function.

Using The Mouse

If you have a mouse TEX will find it and allow you to use it instead of using the arrow keys and you can use the mouse button to select files though you still have to press return to start the process after the files are selected.

The sensitivity of the mouse is at location $204B when the program is in memory. This is the $4B byte after the beginning of the program. It is currently set at $08. This means the mouse must move 8 increments to move inverse bar. If you want to change this use a block editor or from the basic prompt enter:

CALL-151 ;enter monitor
BLOAD TEX,TSYS,A$2000 ;load file
204B:XX ;XX being the new value. Higher value=lesser sensitivity. BSAVE
TEX,TSYS,A$2000 ;save file "C" ;back to basic

Type Files

When typing files pressing any key will pause the display. Pressing any key again will start the typing again. Pressing ESC will jump to the end of the current file and pressing ESC again will exit back to the main menu. Pressing a 'p' or 'P' will toggle the paging option. When paging is on the file will be displayed a screen full at a time and will wait for a keypress between each page.

Append Files

This feature merges text files that you have selected into one file. After the merge you will be asked if you want to delete the original separate files.

Strip Linefeeds

The linefeed stripper creates a temp file with an '.S' extension. When it is done processing it renames the original file with an '.ORG' extension and renames the temp file to the original file name. Before processing the files you will be prompted for some settings as follows:

1) From the 'Minimum line length' prompt you can use the up and down arrow keys to change the default length. The purpose of the minimum line length is to try to maintain formatting in short lines. If you use the default of '60' TEX will not remove the carriage returns in lines of less than 60 characters. DEFAULT = 60

2) Removing a space immediately before a CR. If 'Yes' then TEX assumes this space is extraneous and removes it. If 'No' then TEX leave this space in. DEFAULT = Yes

3) Removing CR when followed by only ONE space. If 'Yes then TEX assumes this space is not for formatting and removes the CR. If 'No' then TEX assumes it is for formatting and leaves the CR in. DEFAULT = Yes

4) If prompting for settings is answered 'Yes' then you will be prompted for all the settings between every file. If 'No' then you are only prompted the one time. DEFAULT = No

When you press return to select the files to be processed if you hold down the open-apple key then the above defaults will be used and you will not be prompted for any of them.

Deleting Files

TEX will not delete files that are locked. I have to draw the line somewhere, TEX can't do everything <grin>!

Renaming Files

When you choose the rename feature you will be prompted for the files as usual and then the files will be displayed one at a time with the cursor over them to allow you to rename them. Pressing escape will skip that file and go to the next one.

Final Words

If you encounter any bugs or come up with any suggestions for improving the program please let me know. I will consider all reasonable suggestions for improvements.

You can get support from me on the following systems:

AppleLink PE - AFL Floyd (Apple II Utilities Forum Leader)
CIS - Floyd Zink, Jr. 73147,7217
Genie - FLOYD.ZINK
Floyd Zink, Jr.

The carriage return remover creates a temp file with an '.R' extension. When it is done processing it renames the original file with an '.ORG' extension and renames the temp file to the original file name. Before processing the files you will be prompted for some settings as follows:

1) From the 'Minimum line length' prompt you can use the up and down arrow keys to change the default length. The purpose of the minimum line length is to try to maintain formatting in short lines. If you use the default of '60' TEX will not remove the carriage returns in lines of less than 60 characters. DEFAULT = 60

2) Removing a space immediately before a CR. If 'Yes' then TEX assumes this space is extraneous and removes it. If 'No' then TEX leave this space in. DEFAULT = Yes

3) Removing CR when followed by only ONE space. If 'Yes then TEX assumes this space is not for formatting and removes the CR. If 'No' then TEX assumes it is for formatting and leaves the CR in. DEFAULT = Yes

4) If prompting for settings is answered 'Yes' then you will be prompted for all the settings between every file. If 'No' then you are only prompted the one time. DEFAULT = No

When you press return to select the files to be processed if you hold down the open-apple key then the above defaults will be used and you will not be prompted for any of them.
The world of the other side consists of three parts—one side, your side, the other side and an unclaimed frontier that separates and surrounds the two sides. Each side has clearly defined borders that are visible on the map. The entire world has been divided into 55 areas. In the middle of this world (in area 28) there is a large chasm separating the two sides. The goal of the game is to construct a bridge spanning this chasm. Each team adds to the bridge brick by brick. Each brick costs more as you build toward the other side.

Each turn of The Other Side follows a simple and logical progression. The four steps below make up each year/turn of the game:

1. **Planning Your Moves** - Plan and then type in the actions you intend to take during the upcoming year.
2. **Executing Your Moves** - Carry out the actions you had planned for this year.
3. **Year End Report** - Record the important domestic and international information which will be used to plan your next year’s moves.
4. **Planning Your Moves** - Plan and then type in the moves you have planned for the upcoming year. You must use the code which is described below. You will be prompted for incomplete or improper commands. (Refer to the yearly planner in the players' tools section for a suggested first turn.)

---

The Planning code

<table>
<thead>
<tr>
<th>Possible Actions</th>
<th>Possessions</th>
<th>Fuels</th>
</tr>
</thead>
<tbody>
<tr>
<td>b = build</td>
<td>d = driller</td>
<td>p = patrol</td>
</tr>
<tr>
<td>e = exchange</td>
<td>b = bomb</td>
<td>c = covert patrol</td>
</tr>
<tr>
<td>r = run mixer</td>
<td>t = tank repair</td>
<td>f = fuel gift</td>
</tr>
<tr>
<td>a = attack</td>
<td>i = inspection</td>
<td>n = number sheet</td>
</tr>
<tr>
<td></td>
<td>m = money gift</td>
<td>u = underground</td>
</tr>
<tr>
<td></td>
<td>p = prospection</td>
<td>c = cease fire zone</td>
</tr>
<tr>
<td></td>
<td>g = green</td>
<td></td>
</tr>
</tbody>
</table>
For a fee, an area can be declared neutral to allow visits or building by the other side which will not alarm your side’s C.A.D. To declare a cease fire zone, type ‘c’ and the number of the area you wish to make neutral. ‘c30’ will make a cease fire in area 30. Each side can only have 1 at a time.

u = underground.
By setting off a bomb underground, new fuel resources may be released. It may contaminate the fuel. First build the bomb then type ‘u’ and the area number. ‘u8’ will explode a bomb underground in area 8.

Placing a possession in an area
When building you will see a close up of the area where you are placing the possession. To place to object using (i,j,k,m). patrols must be right next to objects they are either protecting or attacking.

Breaking C.A.D. code
C.A.D. your computer assisted defense system, if your cash gets too low or if the other side makes moves which seem aggressive, C.A.D. may step in and take over your moves. When it takes over, it acts swiftly and directly. The only way to stop it is by typing in the appropriate three-letter code (combination of a,b,c) which will turn it off. you can get the code if the code breaker machine appears with C.A.D. this code will only work during the year in which it was bought. To use the code breaker, press return when the amount of money you wish to spend appears. Type in the three letter code when C.A.D. appears again during this turn.

Beyond your control
Occasionally events will occur that are completely beyond your control. C.A.D. may take over or your country may experience a national strike. A strike depletes your sides cash by 500 and causes you to loose your turn.

Year end report
Watch this it tells all about your fuel and the condition of your fuel tanks, the actions of the other side and the results of the prospectors explorations. Also note the contamination levels as they increase leaking from your tanks.

THE QUEST WILL ACCEPT MULTIPLE SENTENCE COMMANDS, I.E. THOU CANST SAY "GET THE SWORD AND THEN SMITE YON DRAGON" AND THE GAME WILL OBEY THOSE COMMANDS.SUCH MULTIPLE COMMANDS MUST BE FOLLOWED BY A COMMA, A PERIOD, THE WORD "AND" OR THE WORD "THEN"....HAVE FUN!!!
The game begins by asking you a series of questions; if you make a mistake, press 'ESC' to start over. When you select a 2 player game you can choose a different skill level for each player.

J = Joystick
K = Keyboard

The joystick has 8 different directions. The four diagonal directions cause the Snapper to alternate left and right turns. If the joystick position is near the center, then the Snapper will continue in the same direction. While the joystick control is rather unusual and takes some getting used to, it also provides for quick and sure response for the advanced player, and was chosen with that in mind.

With the keyboard, there are 4 directions.

N = Up
M = Down
, = Left

The Snapper will not change direction if the key is just held down (unless holding repeat too)...it will continue in the same direction till the next key press.

When you start playing the game, you'll see a gridwork of lines with scoring and status information above it. You control the Snapper, directing it about the grid; the Snapper starts in the exact center of the grid. In other rounds you will see 4 bases of a number of blots in 2 different colors, 2 whirlers which start near the top corners of the grid, and a Gamma-Field. The whirlers and the Gamma-Field move about and are controlled by the Apple; the whirlers move on the grid lines (like the Snapper) and the Gamma-Field moves at random over the display. The bases stay fixed, and the Blots also stay fixed until eaten by the Snapper.

The scoring and status area above the grid displays on-going information about the game. The top line indicates the total score for each player, the number of shields available (yellow X's) and the number of lives left (Snapper symbols). The next two lines are organized into 3 boxes. The center box gives you the amount of time left in this round; you'll lose your Snapper if time runs out. (The normal game sounds will change at 10 and 5 counts left, as an audible warning that time is running out.) The left-hand box shows the current values for each of the two colors of blots; each time that you eat a blot, these values will increase. The right box gives the accumulated round score, plus the player's current score multiplier. You don't get the round score added to your total score until you touch one of the 4 bases. An extra line below the 3 boxes is used to send messages to the player.

You score points by guiding the Snapper to eat blots which are scattered about the grid. You don't actually get the points for eating the blots, however, until you touch one of the 4 bases. Since the blots increase in value for each blot eaten, but are restored to their original values when the round ends (when you touch base or die), you're encouraged to get as many blots as you can before touching base. Also, as the game progresses, you'll find that you must get a minimum number of blots in the round before you are permitted to touch base. (This is indicated in the 'special message' section of the score area.)

Your Snapper is killed if you run out of time or if it touches either a Whirler or Gamma-Field. You have a limited number of shields available; a shield is activated by either pressing down (not holding down) the first joystick button or if using the keyboard by either pressing the shift key while pressing one of the direction keys or by pressing '/'. You'll get one shield for each new round, up to a maximum of 3. The shield is on when the Snapper is yellow. It will protect you from the whirlers, but not from the Gamma-Field (which must simply be avoided). The shield can also be used to prevent you from actually touching base, should you desire not to do so, but can't avoid going over it.

At the outset, the grid lines show in purple. However, as you progress to higher rounds, more and more of these lines will turn blue-green in color. Such lines are slicks; whenever the Snapper turns onto a slick, it will move twice as fast as usual. However, the Snapper can't turn off the slick until it reaches the end of that slick. When the Snapper reaches the end of the slick it may immediately turn back onto the same slick by reversing direction; if this is done, the Snapper will continue at double speed, but it may now turn off onto any available path along the way. At the uppermost rounds available in the game, every path is a slick.

The Whirlers travel along the grid lines (and aren't affected by the slicks) in addition, they occasionally remove grid lines, preventing the Snapper from going over such removed lines. These lines are restored at the next round if the Snapper is killed, or if you get a ring.

After every 10 blots or so that you get, you will have a chance to get a ring. The ring appears in the center of the grid, and is signalled by an extra audible tone. The ring only stays up for a fixed amount of time and will flash when it starts to disappear. You'll want to get the ring whenever possible because your multiplier will be increased by one (to a maximum of 40) and the new multiplier affects the end value of the round score which is added to your total score. The ring only stays up for a fixed amount of time and will flash when it starts to disappear. When you end your round by touching base, it will remain your turn for another round. If your Snapper is killed, however, then it becomes the other player's turn, unless he has no more lives.

You may restart the game at any time by pressing 'ESC'; when the game ends press 'ESC' to restart, the game won't restart itself.
Your assignment is vital. Three couriers headed to a top-secret conference in Brussels are missing. Each was carrying a crucial component of the NATO non-nuclear defense plans. Now two are dead and the third -- last seen in Berlin -- has vanished. You must find the three critical components (a computer chip, a floppy disk, and a CPU) before the NATO meeting -- and before they fall into the wrong hands.

You know what's at stake. This time it isn't surveillance. It isn't a drop. Or data farming. This is the majors, and you've just been called up. And there's only one rule in this game: don't trust anymore.

Fly to Berlin and await further instructions. Outside of occasional electronic contact, you're on your own. But then, you've always liked it that way.

HOW TO CREATE YOUR AGENT

There's a small matter regarding your cover. Field Operatives are allowed to select their own now. After hiring a few Human Resource Psychologists the Company was convinced morale would improve if you had a hand in selecting your new profile.

Create Your Profile

You can have up to four different agents on file at any one time. To create a new agent identity:

1. Position the cursor on Create Agent and press the button (or press C).
2. Type in the name you want to use for your new identity. (up to 23 characters)

How to Load the Game

1. Turn on your computer, insert Disk 1 into the drive, and the game will auto-boot. Mech Insert : Press Space Bar at the Factus Screen).
2. Follow the prompts for switching disks.

Hard Disk Installation

1. Boot up your hard drive.
2. Create a new folder and name it COURIER.
3. Insert Disk 1 into your disk drive.
4. Double click on the 'Disk 1' icon.
5. Copy the following files into the COURIER folder on your hard drive (you can select multiple files by holding down the shift key when you click on each icon):
   a. Title.res
   b. Map.res
   c. Control.res
   d. Fonts.res
   e. Shot.snd
6. Open the system folder on Disk 1 and copy the files START into the COURIER folder on your hard drive.
7. Close all windows for Disk 1 and remove it from your drive.
8. Insert Disk 2 into your disk drive.
9. Copy all the files from Disk 2 into the COURIER folder on the hard drive.
   o Double click on the Disk 2 icon to open it, the use the 'SELECT ALL' option from the 'SPECIAL' pull-down menu to select all the files and drag them into the COURIER folder.

How to Run From a Hard Drive:

1. Boot up your hard drive.
2. Open the COURIER folder.
3. Double click on the START icon.

The Third Courier

Moondancer:
Grade Level

Indicated your progress. No matter how good you may be now, everyone starts out as Sleuth. As you advance (gain experience points), you graduate to higher levels: Agent, Resident Agent, Spy, and finally, Master spy. You attain these levels based on the following expedience points:

<table>
<thead>
<tr>
<th>Level</th>
<th>Expedience Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent</td>
<td>25,000</td>
</tr>
<tr>
<td>Resident Agent</td>
<td>40,000</td>
</tr>
<tr>
<td>Spy</td>
<td>60,000</td>
</tr>
<tr>
<td>Master Spy</td>
<td>75,000</td>
</tr>
</tbody>
</table>

How To Change Your Mind

If you’re satisfied with your character, you have two choices:

1. Select Activate and start the game
2. Click on Done or Press D and return to the Agent Selection Screen.

However, unlike life, if you don’t like your character profile you can start over again. Just click on Prev Page (or press P) and fill in the dossier with new information.

How to Activate an Agent

After you create an identity (you can create up to 4), you can activate it at will from the agent file disks.

1. Click on Select Agent (or press S), then click on (or use the arrow keys to move the cursor to) one of the four file disks.
2. Click on Activate Agent (or press A). You will begin in your apartment or wherever you last saved the game.

How to Terminate an Agent

If you wish to create a fifth identity, you must first "retire" one of your other agents.

1. Click on Select Agent (or press S)
2. Choose one of the four file disks by clicking on it or moving the cursor to it and pressing Enter.
3. Click on Terminate Agent (or press T). You will be asked if you want to delete this Agent. Press Y or N. If you terminate, he’s gone.
4. Go back and create a new agent as you did in Create Your Profile.

How to Review an Agent's File

Allows you to review the dossier and current statistics of any your saved agents.

1. Click on Select Agent or press S.
2. Choose one of the four file disks by clicking on it or moving the cursor to it and pressing Enter.
3. Click on Review File (or press R). You will be taken to the second page of the dossier. When finished reviewing the file, click on Done (or press D) and you will return to the Agent Select Screen.

How to Quit the Game

To return to DOS, follow these steps:

1. Click on Quit Game (or press Q). You will be asked if you want to save the current status of your agent.
2. Select Y, NB, or ESC (ESC returns you to the menu). Selecting Y saves your agent's status and returns you to DOS. Selecting N does not save your agent's status and returns you to DOS.

Controls

In The Third Courier, you can use a mouse, joystick or keyboard to control your movements.

In you are using the keyboard, simply press the appropriate key for the desired action. With a mouse or joystick, highlight the desired option and press the mouse button or fire button.

The directional movements works as follows: Select a direction, such as North. You will now be facing north. To continue moving north, continue to click on North or press N on the keyboard. In other words, the first selection turns you in that direction. NOTE: If using a mouse or joystick notice that the direction you are facing will rotate to the top of the on-screen compass.

<table>
<thead>
<tr>
<th>Action</th>
<th>Keyboard</th>
<th>Mouse/Joystick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn/Move North</td>
<td>N</td>
<td>Click N</td>
</tr>
<tr>
<td>Turn/Move West</td>
<td>W</td>
<td>Click W</td>
</tr>
<tr>
<td>Turn/Move East</td>
<td>E</td>
<td>Click E</td>
</tr>
<tr>
<td>Turn/Move South</td>
<td>S</td>
<td>Click S</td>
</tr>
<tr>
<td>Climb stairs or in elevator</td>
<td>U</td>
<td>Click Up arrow</td>
</tr>
<tr>
<td>Descend stairs or in elevator</td>
<td>D</td>
<td>Click Down arrow</td>
</tr>
<tr>
<td>Run</td>
<td>R</td>
<td>Click Action box</td>
</tr>
<tr>
<td>Chat</td>
<td>C</td>
<td>Click Action box</td>
</tr>
<tr>
<td>Fight</td>
<td>F</td>
<td>Click Action box</td>
</tr>
<tr>
<td>Open Action Menu</td>
<td>A</td>
<td>Click on Action</td>
</tr>
<tr>
<td>Open Inventory Menu*</td>
<td>I</td>
<td>Click on Inventory</td>
</tr>
<tr>
<td>Open Places Menu</td>
<td>P</td>
<td>Click on Place</td>
</tr>
<tr>
<td>Pauses the game</td>
<td>ESC</td>
<td>Click on Place</td>
</tr>
<tr>
<td>Toggles the sound on and off</td>
<td>Ctrl S</td>
<td>Click Ctrl S</td>
</tr>
</tbody>
</table>

When a menu is open:

<table>
<thead>
<tr>
<th>Space Bar</th>
<th>Release button</th>
<th>Closes menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up Arrow</td>
<td>Slide mouse up</td>
<td>Moves up item list</td>
</tr>
<tr>
<td>Down Arrow</td>
<td>Slide mouse down</td>
<td>Moves down item list</td>
</tr>
<tr>
<td>Enter</td>
<td>Release button</td>
<td>Activates highlights item</td>
</tr>
</tbody>
</table>

* With certain actions, the Inventory Menu allows you to take or drop more than one time. When you finished, press the space bar to close this menu.

Keyboard Shortcuts

Here are some keyboard hot-buttons that will help speed up your actions as you explore Berlin.

1. To use the hot buttons, press the letter key (e.g. A)ction, I)nterior, P)lace) to open the menu you want.
2. When you menu opens, highlights an option by pressing its first letter. If more than one option shares a first letter, press the first letter again to highlight the next possibility; continue to press that letter until the option you want is highlighted.
3. To register your selection, press Enter.
You'll be staying at a Knesebeck Strasse apartment building where most CIA people stay. If you venture beyond the Berlin Wall, prepare yourself for a trip into the past. Where West Berlin is alive with technicolor brilliance and sparkle, East Berlin still has the look of a forty-year-old black and white WWII movie. Nothing has changed. It has only aged. Little reconstruction, no modern services. The trains still carry wooden seats, the cars with their two-piston engines sound like noisy motorcycles, and the air is thick with the smell of cheap, burnt motor oil. A cloud of despair hangs over the city, making the shadows gray and the faces longer.

Mech Insert: West Berlin is within the Wall, East Berlin is on the outside.

**HOW TO NEGOTIATE THE MAIN ACTION SCREEN**

Your apartment is the first place you'll see in Berlin. We trust you'll find it comfortable -- and quite secure. Your apartment is furnished with a computer and an answering machine. The computer is the only way The Company can contact you.

**Dialog Box**

Displays critical conversation and information.

**View Window**

All the people you meet, the weapons you carry, the city streets, the building you enter, the taxi, the U-Bahn, and the border crossings will be displayed here.

**Status Box**

Indicates your current location, weapon in hand, and available ammunition are displayed here. As you explore the city, icons representing types of establishments you are passing will appear on either the right or left side of the status box. Their positions indicate which side of the street they are on.

If you turn in the direction of the icon, you will be facing the entrance to the building represented by the icon. The building may or may not be open to you. Remember that most businesses have set hours. Most in West Berlin open about 6 a.m.

**Character Information Display Unit (C.I.D.)**

The C.I.D. Unit on the right of the screen has multiple functions. You will use this handy device to access special menus, keep track of your character's statistics, and the time of day, move around the city and make split second decisions in encounters.

**Menus:** Action, Inventory and Places

The options contained inside these menus are your modes of action. They are dynamic menus, which means that certain options are only available when they are applicable to the situation at hand. To operate these Menus:

1. With a mouse or joystick, position the cursor on the appropriate selection and press the button (or Press Action, Inventory, or Place on the keyboard).
2. The menu will open up & the available options will be displayed in black type (options are not available at the present time are show in grey).
3. With a mouse or joystick, position the cursor on the appropriate selection and press the button (or use the up and down arrow keys from the keyboard to highlight your selection and press enter).

**Action Menu**

**Arm**

Arms you and also unarms you when you are armed. Allows you to change weapons during an encounter.

**Bribe**

Offers money to people you encounter. Because you're street wise, you always bribe the correct amount.

**Buy**

The Shopping command.

**Drop**

Removes an item from your inventory. Be careful; once you leave the location where you drop something, it's gone forever.

**Hail Cab**

A speedy way to get around town. But it costs.

**Listen**

Try to pick up some interesting dialogue -- or hear someone approach.

**Search**

Examine a location or an object.

**Sell**

Sell items you acquire.

**Sneak**

Allows you to surprise foes by moving furtively.

**Stake Out**

Watch a particular location over a period of time.

**Take**

Adds available objects to your inventory.

**Use**

Lets you use a particular object.

**Save**

Saves your game at the current location.

**Restore**

Returns you to your last saved position.

**Quit**

Takes you back to the Agent Creation screen; from there you can choose.

**Quit Game**

Exits you to DOS.

**Inventory Menu**

This menu lists all the items you have in your possession at the tim you open it. In certain locations, such as Mission Control or your apartment or in a restaurant, it will list the objects that are available to you there. At these locations, th Inventory menu will open automatically when you select options from the Action menu such as Buy or Take.

**Place Menu**

When hailing a cab (option from the Action Menu), this menu opens to reveal the places you can get to by taxi. As you uncover more important locations at Berlin, these locations are added to the place menu.

**Dynamic Character Traits**

Your character's traits reflect the choices you made on the dossier. They are represented as bar graphs on the C.I.D. Unit. Each graph fluctuates as you move, have encounters and gain experience. Watch these stats as you play. They affect how well your character can react to different situations.

- **Intelligence:** It is affected by your experience, solving problems and your health.
- **Strength:** Increases due to successful combat and decreases bases on the amount of damage your character has taken. Health also affects your strength.
- **Knowledge:** Increases as you uncover facts and gain proficiency with new items and weapons.
- **Intuition:** Changes as a result of encounters with other characters.
encounter options

when you meet someone, applicable encounter options will appear. to select an option, position the cursor over the appropriate option and press the button or press the appropriate letter key.

encounter options

chat
a good way to get information; chat with everyone unless, of course, they're ready to swing an ax in your direction.

run
if your health or strength is down, you might want to let your feet do their stuff. a word of warning, however. when you run, you have no control over where you go. you are dropped randomly in the city.

fight
combat goes in rounds between you and the other guy. the outcome will be determined by your strengths and weapons and your opponent's strengths and weapons. you can be wounded in combat, which will affect some of your character traits.

during combat you may arm or change weapons by opening the action menu and selecting arm.

your inventory menu then opens, so you can select the weapon you wish to be armed with. combat continues until one of you is defeated or one of you runs. if you win, you can now search your opponent. if you lose your are terminated... dead. but if you open the action menu and select restore, moondancer is returned to the last "saved" position. so it may be prudent to save the game often.

threaten
threaten is an aggressive action that evokes different reactions from the people you meet. some will run, some will fight, some will call the police, and some will call you names.

search
if you happen to eliminate an opponent, be sure to frisk them. they may be carrying vital info.

random coins: 10000

experience points
shows your character's current level rating (1-5). these numbers increase as you gain experience and are promoted by langley.

level

time and day
the digital readout provides you with the time of day (represented in military time). many places in the city at 0600 hours and close at 1800 hours. the number of day represents the day elapsed since the beginning of your mission. remember you have only 7 days to accomplish your mission.

compass
you may only move in the compass directions that are highlighted. to leave your apartment, for example, n is your only possibility. to move, position the cursor over one of the compass points and press the button, or press the appropriate letter key: east, north, west, south.

encounter options

when you meet someone, applicable encounter options will appear. to select an option, position the cursor over the appropriate option and press the button or press the appropriate letter key.

encounter options

chat
a good way to get information; chat with everyone unless, of course, they're ready to swing an ax in your direction.

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if your health or strength is down, you might want to let your feet do their stuff. a word of warning, however. when you run, you have no control over where you go. you are dropped randomly in the city.

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search
if you happen to eliminate an opponent, be sure to frisk them. they may be carrying vital info.
Submachine Guns

Hopefully you won't meet anybody carrying one of these, but rumor has it that some have been supplying submachine guns to some of the locals to prevent people like you from doing their job correctly.

- K-50M
- M11
- MPL

Close Combat Weapons

A little refresher here from your school days might be in order on some of these, so we'll include descriptions.

- Bali-Song: A short, flat-bladed knife, commonly called a 'butterfly knife'.
- Billy Club: A short, hard-wood stick to hit people with.
- Stiletto: A thin-bladed knife, longer and thinner than a Bali-Song.
- Sykes-Fairbairn: A heavy, military knife which can be fixed into a bayonet if need be.

GIZMOS

There are some items at Mission Support that may be of value. Occasionally check with Murphy in Supply to see if he has any of these devices available. (Note: that some devices will only be available as you gain certain levels).

Electronics

- Bomb Sniffer: Standard issue C.A.N.I.N.E. class explosion detection device capable of detecting even minute traces of explosive compounds at range of up to 50m.
- Bug Finder: The Super Sentry Speakfree Bug Finder, which, when used in conjunction with the Super Sentry Bug Eradicator, (q.v.) allows the most secure local bug protection on the market today.
- Bug Killer: The Super Sentry Bug Eradicator, a single use device which not only destroys local convert listening devices, but doubles as a handy aerosol stain remover as well.
- Bug Recorder: Located in your apartment, this device records any Super Bugs you have activated.
- Ferat: Infrared through Ultraviolet wave detection device keyed to hormonium compound used to coat NATO defense plans. Will emit a beeping sound when within 10m. of said plans.
- Photo-Fax: A photographic facsimile machine which will allow you to send pictures to suspected contacts and agents to Langley from a distance. Will send thru modem, the complete dossier to your apartment computer. This is a very important device, as it is the only method of direction communication you will have with the company.
- Super Bug: An extremely small and powerful covert listening device designed to blend well into any number of art-deco and neo-modern backgrounds.

Protective Gear

- Gas Mask: For those awkward moments when breathing just won't do.
- MK1 Vest: Although never field tested, this vest is said to be "near entirely bulletproof at 100m." RAD is working on improved models and some are rumored to exist on the black market.
- Amyl Nitrate and Tannic Acid: If Moondancer is unlucky enough to ingest poison, these can be antidotes.

Tools

- Lock Picks: Come on, you're supposed to be a super agent.
- Flashlight: Used in dark places, like underneath buildings, so that you can see the vermin you're sliming around with.

BERLIN TOUR GUIDE FOR NON-GERMS

Whenever visiting a new city, it's always a good idea to bring along a good guide book. It increases the pleasure of your wanderings -- and you never know what interesting nuggets of information you might pick up. Here's a brief description of some of Berlin's notable districts.

WEST GERMANY

The Park District: To the south of and east lies the great Berlin park, a place of scenery, beauty and enchantment. For centuries, lovers have strolled hand in hand through these woods, enthralled by their pastoral beauty. Many forms of entertainment abound herein and, of course, public restrooms are provided.

The Place District: North and east is home of the famous Charlottenburg Palace, the largest mansion in Berlin and bastion of German culture. Surrounding the palace are some of the finest restaurants and bars Berlin has to offer. Be sure to sample the beer.

The Templehoff District: Smack in the center of Berlin lies the Templehoff business district, home of Berlin's thriving international trade community. Experience the hustle and bustle of a truly dynamic economy at work, and perhaps see the city from a new perspective -- high atop the Templehoff building itself.

The Dairy District: The mere mention of Germany immediately conjures up images of good food. Beer, pretzels, and of course, wurst are as German as bagpipes are Scottish. This south-western district is the home of these rural delights. The cheese merchants, known for their biting wit and rural wisdom, are always glad to exchange pleasantries with foreign travelers.

The Industrial District: What city could survive without the working man? Berlin is no exception. North and west lies the home of the proletariat and his pleasures. Here you will be staying in some of the most affordable housing in all of Europe.

EAST GERMANY

Max Engels Plaza: Wide open space and open air cafe's mark this plaza, the largest in East Germany. Here, it is said, old friends may meet and relive happier times.

Cultural District: Traveling east from the plaza along Unter den Linden, one encounters the home of German culture. If one is careful, one might almost be able to see the spirits of such German immortals as Beethoven, Mozart, and Wagner as their music drifts out from the opera house.

Government District: Between Friedrichstrasse and Otto Grotewohl along Unter den Linden sits the center of international government in East Berlin. Travelers who encounter troubles may wish to consult their embassy, located along this stretch of road.

Brandenburg Gate: Of all of the beauties of Germany, one of the greatest must be the gates of Brandenburg concerti. It was once said of these gates:
"If I could choose, from all of life's pleasures, my last sight, it would be of the gates at Brandenburg."

Official Listing of [Factus] Boards

The LookOut ........ [403] 457 - 0114
Private Storage ..... [215] 745 - 0495
Apple Tree Midwest II [816] 826 - 4158
Brave New World ..... [707] 938 - 2997

End of File.

Mission Briefing-
Moondancer:

Your assignment is vital. Three couriers headed to a top-secret conference in Brussels are missing. Each was carrying a crucial component of the NATO non-nuclear defense plans. Now two are dead and the third, last seen in Berlin, has vanished. You must find the three critical components (a computer chip, a floppy disk, and a CPU) before the NATO meeting—and before they fall into the wrong hands.

You know what's at stake. This time it isn't surveillance. It isn't a drop. Or data farming. This is the majors, and you've just been called up. And there's only one rule in this game: don't trust anyone.

Fly to Berlin and await further instructions. Outside of an occasional electronic contact, you're on your own. But then you've always liked it that way.

Other Stuff-

Other than that, the manual doesn't say a lot else that is not obvious, or at least easy to figure out. Here is a list of stuff that may not be apparent.

- USE the photo-fax to send a picture of a person to Langley, and if they have a dossier on that person, you can access it through your computer at your apartment.
- FERAT is a device that lets you know when you are near a part of the plans.
- Amyl Nitrate and Tannic Acid—these can be antidotes to poison.

Some Hints-

- You should probably make a street map as you go along. The game comes with one, but it is just a simple map—there's nothing special on it except the location of your apartment, which is on Kneesebeck St., between Berliner and Hohenzollern. By the way, Berliner runs north and south.
- You can ARM during an encounter, which comes in handy considering that the local police seem to get upset when you walk around with your 'piece' hanging out!

That's about all I can think of that you might need, after all, the manual doesn't tell you much else. The map will be coming out soon.

Call These Boards:

The LookOut ........ [403] 457 - 0114
Private Storage ..... [215] 745 - 0495
Brave New World ..... [707] 938 - 2997
OBJECTIVE: SHOOT OBJECTS THAT FLY AND DROP BOMBS ON YOU

JOYSTICK:
LEFT TO RIGHT MOVEMENT ONLY

SPACE BAR:
ENGAGES WARP DRIVE

BUTTON 0:
FIRES LASERS

KEYBOARD:
(F) SHIP TO LEFT
(G) STOPS SHIP
(H) SHIP TO RIGHT
(0) OR (1) FIRE LASER
SPACE BAR - ENGAGE WARP DRIVE

NOTE:
EXTRA SHIP GIVEN AT 50,000 POINTS AND EVERY 100,000 POINTS THEREAFTER. MISSION IS COMPLETE WHEN LAST GROUP OF ALIENS ARE DESTROYED.

[ESC] - SHUTS OFF SPEAKER
[S] - SUSPENDS PLAY
[B] - WHEN HIT AT PROMPT FOR

PADDLE OR JOYSTICK SUSPENDS STAR BACKGROUND DURING PLAY.
YOU ARE THE CLOUDSHIP IN THE MIDDLE OF THE SCREEN. YOUR JOB IS TO BLOW AWAY THE ENEMY SHIPS ON EITHER SIDE OF YOU. NO MATTER HOW MANY ENEMY SHIPS YOU HIT, HOWEVER, THERE WILL ALWAYS BE REPLACEMENTS UNTIL YOU HIT THE DRONE-CLONE REPLENISHERS THAT APPEAR OCCASIONALLY ON THE EXTREME RIGHT & LEFT OF THE SCREEN.

ONCE YOU HIT BOTH REPLENISHERS ON A LEVEL, THE ENEMY SHIPS WILL NOT REAPPEAR ONCE YOU HAVE SHOT THEM. CLEAR ALL THE ENEMY SHIPS FROM A LEVEL & YOU MOVE ON TO THE NEXT, TOUGH LEVEL.

YOU ARE AWARDED AN EXTRA SHIP FOR EVERY 2,000 POINTS YOU ACCUMULATE. HOWEVER, A MAXIMUM OF 9 SHIPS IS ALLOWED AT ANY ONE TIME.

CONTROLS:

JOYSTICK:
THE JOYSTICK CONTROLS YOUR VERTICAL MOVEMENT.

BUTTON 0 FIRES TO THE RIGHT
BUTTON 1 FIRES TO THE LEFT.

THE SPACEBAR WILL STOP YOUR MOVEMENT ALTOGETHER.

ATARI JOYSTICK—UP/DOWN—LEFT & RIGHT FIRES.

KEYBOARD:

A & Z = UP & DOWN
ARROWS = FIRE
V = VIEW HISCORES
[ESC] = PAUSE
CTRL-S = SOUND

Documentation:
This is an abbreviated documentation file intended to give you enough information about TIC to let you try it out while you decide if you want to buy the full package that includes the complete 40 page user's guide. It is not all inclusive and the package you downloaded isn't all inclusive either but is there to let you 'try before you buy'.

Features:

TIC is a ProDOS based terminal program for the Apple //e and Apple //c personal computers with an Apple Super Serial card or equivalent in slot 2 and an optional printer attached to slot 1.

TIC also supports the new Apple IIgs with either an Apple Super Serial card plugged into slot 2 or using the built-in IIgs serial port.

This program supports a standard TTY terminal mode along with several terminal emulations and file transfer protocols: xmodem, xmodem crc, ymodem, ymodem crc, turbo xmodem/ymodem and Ascii Express (tm USII) protocol for ProDOS file transfers. Ascii text uploads are also supported using x-on/x-off protocol with user selectable prompt, character, and line delays.

A copy buffer can be used to record an online session or to download a file where protocol modes are not available. The copy buffer may be saved to disk either automatically when the buffer fills or manually.

Getting Online:

TIC automatically places you right in terminal mode as soon as you leave the title screen. You can dial your modem either manually by typing in the commands that your modem recognizes (see your modem manual) or under the control of command/macro files (described below). It's usually best to get comfortable with the manual method before venturing to use the command files. For Hayes compatible modems you can dial the phone by typing ATD followed by the phone number and then hit the RETURN key.

Hardware Set-up:

Note that in order to use this program with the Apple Super Serial card you must have switch 6, block 2 turned to the ON position thus enabling interrupts.

If you are using this program with the Apple IIgs port then you need to set your Control panel to select MODEM PORT for slot 2. Depending on your cable you may need to set the modem port to DCD HANDSHAKE OFF. The other options on the modem port screen should be left at their default values as TIC will control them directly.

About Shareware:

This is a Shareware program. This means that it is distributed primarily electronically via bulletin board programs and information systems. You
This document is a supplemental user's guide to describe how the Command file feature works and to specify the syntax used within Command files. There are also several new features, not related to Command files that have been added to TIC as a result of user suggestions.

Note: OA-X refers to the Open Apple plus "X" key combination. CA-X refers to the Closed Apple plus "X" key combination. Note that the newer Apple IIgs and /e keyboards substitute "OPTION" for the Closed Apple key.

TIC now supports powerful Command files. These Command files, if properly named, are automatically executed when you press the Closed Apple key together with a letter key or they may be specified manually using the OA-X command described above. If the user presses the CA-A combination then TIC will look for a file named "TIC.KEY.A" to execute as a command file. Command files that are executed as Keyboard Macros are called Macro Command Files. In order for TIC to find its Command files, TIC keeps up with the concept of a Root directory. The Root directory is the directory that TIC resides in when it is run. All Macro Command files must reside in the Root directory.

At startup time, if a file named "TIC.STARTUP" is found in the Root directory then TIC will execute it as a Command file automatically. If you are using a program selector such as the Extended Command Processor (ECP) then you may specify an alternate startup Command file at run-time by specifying the alternate file name after the TIC file name:

```
tic <file>
```

The above would start TIC and force TIC to execute <file> as the startup Command file.

In order to invoke Macro Command files, you must have a text file named TIC.MACROS in TIC's Root directory. Each line of this file should begin with the letter of a valid Macro key. i.e. if you start a line in TIC.MACROS with "A" then you should have a file named "TIC.KEY.A" in the same Root directory. The remainder of the line should start immediately after the letter identifier and should be the name of the service associated with the particular Macro key. An example TIC.MACROS file might contain:

```
appBBS
brBBS
cmBBS
fyBBS
```

Most Command file operations can be aborted by pressing the ESC key. There may be a short delay in aborting certain Command file functions.

The Command file Syntax:

TIC Command files are text files created by any text editor. They consist of lines of text with a single command per line. Blank lines are ignored as are leading and trailing spaces which may be included in the file to improve readability. Upper and lower case characters are allowed and will not affect parsing. TIC does not check the file type of Command files.

```
Command List:
# This is the comment character. It is a command that is ignored. One or more blank characters must follow the # symbol. Labels are defined as the first word following the # symbol. Thus to encode the label 'start' in a Command file you would use the following:
# start <-- this is a label. "Start"
BUFFER ON
```

Turns on the recording buffer.
BUFFER OFF
    Turns off the recording buffer.

BUFFER CLEAR
    Erases the recording buffer.

BUFFER SAVE
    Saves the recording buffer to the autosave file.

BUFFER WRITE <file>
    Saves the recording buffer to <file>.

DISPLAY <string>
    The <string> is displayed to the CRT. <string> may contain imbedded control characters or you may encode them by prefixing a letter key with the "^" symbol. Thus, "^C" is Control-C. Use "^^" to encode a single "^" character literally. Note that the characters displayed are sent to the CRT using the communications console driver so carriage returns and line feeds must be encoded separately as "^M^J". Either single or double quotes are required if <string> contains imbedded blanks.

DO <label>
    Calls a subroutine that begins with the line following <label>. See also, RETURN. Note that only one DO procedure may be active at one time.

EMULATE <pathname>
    Emulate the terminal defined in the termcap file found at <pathname>. Specify TTY for no emulation.

GOTO <label>
    Transfers control to the statement following <label>.

HANGUP
    Hangs up the telephone connection.

IF EXISTS <path> <statement>
    If <path> exists then execute <statement>. Otherwise, execution continues with the statements that follow this statement.

IF FAILED <statement>
    If the previous statement failed (i.e. a WAITFOR statement didn't find its target before the time limit expired) then <statement> is executed. Otherwise, control passes to the next statement and <statement> is ignored.

IF KEYBOARD <CHAR> <LABEL>
    If the most recently pressed keyboard character matches <CHAR> then continue execution with the statement following <LABEL>.

PAUSE <seconds>
    Execution pauses for the duration specified in <seconds>. If <seconds> is omitted then execution will pause for approximately one second.

PRINT INIT <string>
    Sets the printer initialization string as specified. Control characters can be encoded just like DISPLAY.

PRINT OFF
    Turns off online printing.

PRINT ON
    Turns on online printing.

PRINT SCREEN
    Prints the current screen.

QUIT
    The ProDOS QUIT MLI call will cause TIC to shutdown and exit to the selector program.

RECEIVE <file>
    Receives <file> from a host computer using Xmodem, Ymodem, or ProDOS xmodem protocol.

RETURN
    This statement returns control back to the next line following the last executed DO statement.

SEND <file> PRODOS
    Transmits <file> to a host computer using ProDOS Xmodem protocol.

SEND <file> TEXT
    Transmits <file> to a host computer using Ascii protocol using the previously defined prompt, line delay, and character delay.

SEND <file> XMODEM
    Transmits <file> to a host computer using Xmodem protocol.

SEND <file> YMODEM
    Transmits <file> to a host computer using Ymode protocol.

SET APPEND ON
SET APPEND OFF
    This determines whether automatic buffer saves are appended to the original autosave file. The default is SET APPEND OFF which means that when each buffer save is done, a new autosave file is created with a higher number appended to the end of the file name. This limits you to 10 autosave files of about 16K each. If you SET APPEND ON then all buffer saves will be appended to the end of the current autosave file creating a single large file.

SET AUTOSAVE <file>
    This sets a new autosave file. The <file> name should be at least 3 characters in length.

SET BAUD 300
SET BAUD 1200
SET BAUD 2400
Apple II Computer Info

SET BAUD 4800
SET BAUD 9600
SET BAUD 19200

Sets the Baud rate as indicated.

SET BINARY2 AUTO
SET BINARY2 MANUAL

AUTO is the default. This determines whether TIC will automatically unpack Binary II files as they are downloaded.

SET BUFFER AUTO
SET BUFFER MANUAL

AUTO is the default. This determines whether TIC will automatically turn its copy buffer on and off upon receipt of the Control-R and Control-T signals from the host. To disable this feature, use the SET BUFFER MANUAL statement within a command file.

SET CODELAY <0-9>
SET LEDLAY <0-9>

Sets the Character or Line delay timer for Text file uploads. These settings default to 0 if you do not set them and remain set until you reset them or re-run TIC.

SET DFORMAT 8N1
SET DFORMAT 7E1
SET DFORMAT 7E2
SET DFORMAT 7O1

Sets the data bits, parity, and stop bits for the serial port.

SET DUPLEX FULL
SET DUPLEX HALF
SET DUPLEX CHAT

Sets Duplex to full, half, or chat for terminal mode.

SET ECHO ON
SET ECHO OFF

Enables or disables the display of Command file statements as they execute. These statements are used primarily to debug Command files.

SET FADDR ON
SET FADDR OFF

Enables or disables TIC adding a space character to blank lines during text mode uploads. The default value is ON.

SET PORT SSC
SET PORT IIGS

Sets the communications driver to Super Serial Card or IIgs internal port. This command overrides the initial card identification routine in TIC.

SET PREFIX <path>

Sets the ProDOS prefix.

SET PROMPT <character>

Sets the handshaking prompt for text uploads.

SET SLOT <1,2,4,5,6,7>

Tells TIC where to find your Super Serial card (or clone) that you wish to use for the communications port. Has no effect when used with an internal port on the Apple IIgs since its port is fixed at slot 2.

SET TIMER <seconds>

Sets the time limit for WAITFOR searches.

STOP

The Command file is terminated if this command is encountered. No error message is displayed.

VIEW <file>

<file> is displayed to the CRT.

WAITFOR KEYBOARD

Execution will pause until a key is pressed at the keyboard or until the time limit expires. If time expires then FAILED becomes true and can be tested by the IF statement.

WAITFOR STRING <string>

Execution will pause until <string> is received over the serial port or until the time limit expires. If <string> is omitted then execution pauses until any character is received over the serial port. Note that <string> may contain imbedded control characters just like the DISPLAY command.

WAITFOR TIME '00:00'

Execution will pause until the specified time matches the ProDOS system time. You should not use this command if you do not have a ProDOS compatible clock installed. Note that the time string must be exactly 5 characters long and must be encoded in 24 hour format.

XMIT <string>

The <string> is transmitted out the serial port. Note that imbedded control characters may be encoded in <string> just like with the DISPLAY command.

Turbo Xmodem:

Turbo Xmodem is a means of speeding up xmodem or ymodem downloads. It works by pre-acknowledging incoming blocks of data to eliminate the delay that slows down xmodem transfers between blocks of data. On the down side, a single data error will result in an aborted transfer. In addition, you can only use this mode when downloading to a ram disk. This file transfer protocol can speed up xmodem downloads by as much as 100% but has limited utility because of the limitations noted above. It is included by popular demand.
The Icon Menu Display is used to select an Icon for editing, delete an Icon, add more Icons, or save all the Icons in memory to disk. The Icons in memory are shown in the center of the display. At the bottom of the display, brief instructions for this display, the total number of Icons in memory, and the number of free bytes left for Icon image data are shown.

To edit an Icon, use the Up and Down arrow keys to move the cursor to the desired Icon and press Return. You will then be asked which aspect of the Icon you wish to edit. Typing F or S will show the Icon Edit Display and allow you to edit either the Full-sized or Small version of the Icon. Typing E will allow you to edit the Extended Parameters attached to the Icon.

To delete an Icon, move the cursor to the desired Icon and press D. If you delete all of the Icons in memory, the File Menu Display will be shown and you must select another file for editing or exit the program.

To add more Icons, press A. The File Menu Display will be shown and you may either set the prefix (by selecting Folders), select an Icon file to add to memory, or return to the Icon Menu Display. As said in the previous section, a maximum of 40 Icons can be contained in memory at one time.

To save the Icons in memory to disk, press S. The current prefix will be shown and you will be prompted for a FileName. The name of the Icon file last read is the default. You may either use the prefix and type just the filename or you may type the full pathname of the file you wish to save the Icons in. The Icon file must be in a folder called ICONS in the root directory of the disk in order to be recognized by Finder. It is recommended, although not required, that you attach .ICONS to the end of the Icon file's name.

To exit the program press Escape.

When editing the Extended Parameters:

- The Name field can be no longer than 15 letters, numbers, periods and asterisks. Use the asterisk as a wildcard character. If an asterisk is entered as the Name, it will match all FileNames.

- The FileType field can either be entered as a decimal number or the code seen in the Icon Menu Display under "Typ" (i.e., 4 or TXT, 182 or BRK, etc.). ALL (or 0) may be entered in order to match all FileTypes, however, this field is the best way to match Icons to files and normally should not be set to ALL. The FileType field can also indicate that the Icon is a hardware device. If you wish to make an Icon represent a hardware device, enter one of the following codes instead of a normal FileType:
  - 265: 5.25" Drive
  - 266: RAM/ROM Disk
  - 267: 3.5" Disk
  - 268: 5.25" Disk
  - 269: Hard Drive
  - 270: Floppy Disk
  - 271: Empty Trash

- The AuxType MUST be entered as a decimal number from 0 to 65535. If this number is zero, it will match all AuxTypes.

- The Application field can be no longer than 63 characters and must be a FULL pathname. This field indicates to Finder which application to launch if this Icon (usually a document) is opened. It may be blank and should be so if this Icon represents an application.

The Icon Edit Display is used to change the shape and colors of Icons. In the black area of the display are two boxes containing aspects of the current Icon. Inside each box are little blocks. Each block corresponds to a pixel in the

---

The Icon Editor (TIE) is used to edit existing Icon files for the Apple IIGS Finder. The Finder uses these Icons to set certain files apart from other files and to launch applications from document files.

The Finder can match files with Icons by any combination of three fields: File Name, FileType, or AuxType. Finder keeps a list of "Icon Blocks" (one Icon Block is contained in each Icon file) that have been read in when Finder was started. The first file the Finder reads is FINDER.ICONS from the boot disk’s ICON folder. After that, Finder will read in any and all Icon files that it finds in the ICON folders of any inserted disk. These other Icon Blocks are inserted in front of the list in memory so that FINDER.ICONS is always the last block in the list.

When Finder needs to match a file to an Icon, it starts with the first Icon in the list. There can be either an exact match or a match by use of a wildcard. If ALL THREE fields in the Icon match the file, the Icon is assigned to that file. All three fields must match or Finder will try again with the next Icon in the list. The last Icon in the list is the last Icon in FINDER.ICONS. This is the generic document Icon and will ALWAYS match all three fields.

The File Menu Display is used to select the Icon file that you desire to work on. When the program is run, this is the first display that will be shown. In the center area of the display, all of the Icon files and any "Folders" (DIR files) are shown. At the top left of the display, the current disk device is shown and at the bottom of the display, brief instructions for selecting a file are shown.

To select a file, use the up and down arrows to move the cursor to the desired file and press Return. If the current file is an Icon file, it will be opened and all of its Icons will be read by the program (up to a maximum of 40 Icons). If the current file is a Folder (DIR file), the prefix will be set to that Folder and the contents will be displayed for further selection. If the Folder contains no selectable files, the prefix will be set to the root directory and its files will be displayed. If the root directory contains no selectable files, the program will attempt to find a disk that contains either Icon files or Folders.

To return to the root directory, press the space bar.

To switch disk devices, press C. TIE will search through the device chain for a ProDOS disk that has selectable files on it. If no such disk is found, you will be prompted to insert a ProDOS disk in a disk drive. TIE will NOT recognize the Auxiliary 64K bank RAM disk.

To exit this display, press the Escape key. If no Icons have been read, TIE will end. Otherwise, the Icon Menu Display will be shown.

Once an Icon file has been selected and read, the Icon Menu Display is shown.

The Icon Menu Display is shown in the center of the display. At the bottom of the display, brief instructions for this display, the total number of Icons in memory, and the number of free bytes left for Icon image data are shown.

To edit an Icon, use the Up and Down arrow keys to move the cursor to the desired Icon and press Return. You will then be asked which aspect of the Icon you wish to edit. Typing F or S will show the Icon Edit Display and allow you to edit either the Full-sized or Small version of the Icon. Typing E will allow you to edit the Extended Parameters attached to the Icon.

To delete an Icon, move the cursor to the desired Icon and press D. If you delete all of the Icons in memory, the File Menu Display will be shown and you must select another file for editing or exit the program.

To add more Icons, press A. The File Menu Display will be shown and you may either set the prefix (by selecting Folders), select an Icon file to add to memory, or return to the Icon Menu Display. As said in the previous section, a maximum of 40 Icons can be contained in memory at one time.

To save the Icons in memory to disk, press S. The current prefix will be shown and you will be prompted for a FileName. The name of the Icon file last read is the default. You may either use the prefix and type just the filename or you may type the full pathname of the file you wish to save the Icons in. The Icon file must be in a folder called ICONS in the root directory of the disk in order to be recognized by Finder. It is recommended, although not required, that you attach .ICONS to the end of the Icon file's name.

To exit the program press Escape.

When editing the Extended Parameters:

- The Name field can be no longer than 15 letters, numbers, periods and asterisks. Use the asterisk as a wildcard character. If an asterisk is entered as the Name, it will match all FileNames.

- The FileType field can either be entered as a decimal number or the code seen in the Icon Menu Display under "Typ" (i.e., 4 or TXT, 182 or BRK, etc.). ALL (or 0) may be entered in order to match all FileTypes, however, this field is the best way to match Icons to files and normally should not be set to ALL. The FileType field can also indicate that the Icon is a hardware device. If you wish to make an Icon represent a hardware device, enter one of the following codes instead of a normal FileType:
  - 265: 5.25" Drive
  - 266: RAM/ROM Disk
  - 267: 3.5" Disk
  - 268: 5.25" Disk
  - 269: Hard Drive
  - 270: Floppy Disk
  - 271: Empty Trash

- The AuxType MUST be entered as a decimal number from 0 to 65535. If this number is zero, it will match all AuxTypes.

- The Application field can be no longer than 63 characters and must be a FULL pathname. This field indicates to Finder which application to launch if this Icon (usually a document) is opened. It may be blank and should be so if this Icon represents an application.

The Icon Edit Display is used to change the shape and colors of Icons. In the black area of the display are two boxes containing aspects of the current Icon. Inside each box are little blocks. Each block corresponds to a pixel in the
This program is ShareWare and may be distributed freely as long as it is not sold or separated from these docs.

If you find this program useful, send $5.00 to:

Chris Budewig
457 Harr Dr  Apt G
Midwest City, OK 73110

Icon. The color of each pixel can be selected by you to create the final image and shape. In the text area of the display, the Icon number and aspect of the Icon are displayed. Available commands and the current color are also shown here.

Each aspect of the current Icon is normally bordered in grey, but if the Icon is too big for TIE to display (more than 36 pixels wide or high) then either the bottom or right sides (respectively) of the display boxes will be drawn in red. If this condition does happen, you may still edit the part of the Icon that is shown.

The left hand box contains the Icon Image and may be edited using 16 colors. The right hand box contains the Icon Mask associated with that Image and may only be edited with two colors, black and white. Each white pixel in the Mask will allow the corresponding pixel in the Image to be displayed in the Icon. When editing the Mask, the current color has no effect.

NOTE: For the most part, the colors that TIE uses to display Icons correspond with the actual colors used on the Finder screen. However, some colors do not match what is seen in Finder.

To change a pixel, select a color by pressing the corresponding key shown below each color at the bottom of the screen (Hexadecimal number: 0 - F). The name of the current color will show up in inverse. Then move the cursor to the pixel you wish to change with the arrow keys and press the space bar. If you make a mistake, just press the space bar again and the pixel will be restored to its original color.

To change a pixel, select a color by pressing the corresponding key shown below each color at the bottom of the screen (Hexadecimal number: 0 - F). The name of the current color will show up in inverse. Then move the cursor to the pixel you wish to change with the arrow keys and press the space bar. If you make a mistake, just press the space bar again and the pixel will be restored to its original color.

To edit the Icon Mask, press the backslash key (\) and the cursor will switch edit boxes. Now follow the instructions for changing a pixel, except that color need not be selected (when a pixel is changed in the Icon mask, it is toggled between black and white). Press backslash again to continue editing the Icon image.

When your Icon is finished, press Escape or Return to exit the Icon Display.

TIE Internals

--- ---------

TIE is written in AppleSoft BASIC and poor, old Dr. BASIC is really pushed to his limits.

- BASIC simply cannot handle the amount of raw data involved with storing Icons in memory, so I wrote my own variable storage routines (mostly in BASIC, but they do include a short ML subroutine) for the Icon image data.

- The Icon Edit Display, if you will notice, is done on the Double Lo-Res Screen using a little known trick that Uncle-DOS (aka Tom Weishaar) reported in Open-Apple magazine on page 43 (June '85 issue). It was found in the //c ROM, but it seems that Apple used the same trick in the IIGS! It also seems that Apple didn't correct the bug that Uncle-DOS found! Maybe if we all bug Apple, they will fix it. If you don't know what I'm talking about, bug Tom Weishaar to "reprint" the article online! (Or maybe I will if he gives the go-ahead)

- If you look carefully at the Initialization code in the beginning of the program, you will notice that the program relocates itself in order to make room for a File buffer and Icon storage. If you rename the program, you must also change the name used in the statement that relocates the program or else it WILL crash! (change the :::: PRINT D$;"-TIE" to :::: PRINT D$;"-<New.Name>"

The Icon Editor is copyright (c) 1988 by ACE Software
Apple II Computer Info

TimeMaster IIgs is an Apple IIgs time correction utility. It calls atomic time standard services using the system modem and adjusts the time of the Apple IIgs internal clock to within 1 second. TimeMaster IIgs maintains a log of time corrections in an ASCII text file and provides a graph plot of long term clock drift trend analysis. TimeMaster IIgs uses this drift analysis to allow you to predict an update of your IIgs clock without calling the time service! Two time services you can call are the U. S. Naval Observatory in Washington, D.C., (202) 653-0721, and one in Toronto, Canada, (416) 445-9408. The call lasts about 25 seconds. This only costs $0.15, calling Washington from St. Louis after 6pm.

Installation

---

TimeMaster IIgs consists of the following files:

1. TimeMaster.IIgs  The executable TimeMaster IIgs utility. Launch this file from the GS/OS Finder desktop, or another program launcher.

2. TimeMaster.Pref  This contains Setup Preferences in text format. It is created in the same directory as 1 above when you select the Save Preferences menu.

3. TimeMaster.Log   This is a text file log that is created the first time you call a time service. It contains results of each time correction (whether by an actual call, or due to a predicted correction) with the date, time and seconds adjusted.

4. TM.read.me       This documentation file as an ASCII text file.

5. TM.read.me.awp   This documentation file as an AppleWorks word processing file.

The TimeMaster.IIgs (file 1 above) executable file is the only one you need to run this application. It can be placed in any directory on your disk. Be sure to have some extra space on this disk, because the TimeMaster.Pref and TimeMaster.Log files (2 and 3 above) are created in this same directory.

TimeMaster IIgs Startup

---

TimeMaster IIgs requires specific Apple IIgs Control Panel settings to assure proper communications with your external modem. Enter the Control Panel by pressing the Open-Apple, Control and ESC keys simultaneously. You must set the Apple IIgs Control Panel for "Slots" so that Slot 2 is set to "Modem". You must power down and restart your Apple IIgs for these to take effect. You should be able to keep these settings present. You may delete this file to restore the original TimeMaster IIgs settings.

Be sure to turn on power to your modem.

TimeMaster IIgs execution is initiated by launching the application file named "TimeMaster.IIgs" from the GS/OS Finder by double-clicking the "TimeMaster.IIgs" file's icon, or by using another GS/OS program launcher.
You are asked if this deletion is okay before the file is deleted.

Delete Time Log

This Menu deletes the file named 'TimeMaster.Log' from your disk, which eliminates all record of previous calls to time services. You are asked if this deletion is okay before the file is deleted.

Quit

Exits TimeMaster IIgs to the calling system (e.g. Finder, or other program launcher).

Edit Menu

---

Cut

All Edit functions may be used for entry or change of text information (e.g. in the Setup dialog), using keyboard equivalents.

Copy

open-apple-C = copy

Paste

open-apple-V = paste

TimeMaster Menu

---

Dial

The Dial Menu causes TimeMaster IIgs to call the time service, set the Apple IIgs clock, hang up the phone, and append the time correction to the text file 'TimeMaster.Log'. If Busy or No Answer, you will be notified.

Hangup

The Hangup Menu simply tells your modem to hang up the phone. It is useful only in rare instances to force a disconnect.

Plot Clock Drift

This Menu displays a graph of your IIgs clock drift history and characteristics. Up to two years of recorded clock corrections are plotted.

Blue '+' symbols indicate clock corrections in seconds that were recorded in the TimeMaster.Log file based on actual calls to the time service (via the Dial Menu).

Light Blue '+' symbols show corrections to the IIgs clock recorded based on TimeMaster IIgs predictions (via the Predict Time Menu).

A Green line shows the running average clock drift per month (in seconds per month). Over time, this should be fairly constant for your Apple IIgs, however each computer is unique.

Red '+' symbols show the future monthly projection of clock drift (in seconds) if you do not correct the clock by Dialing the time service or use the Predict Time Menu.

Predict Time

This Menu uses the analysis of the Plot Drift function to predict how far your Apple IIgs clock has probably drifted since your last actual call to a time service. It then predicts a correction to the IIgs clock, sets the IIgs clock to this updated time, displays this information on the screen, and logs this prediction to the time log file 'TimeMaster.Log'.

Predict Time can be used in between time service calls to keep your IIgs clock as up to date as possible. While this is certainly not as accurate as a time service correction, it does update your clock fairly accurately without a phone call.

TimeMaster IIgs Operation

Select all three menu items under the desktop Apple in the menu bar and review the information displayed for About TimeMaster IIgs..., Help..., and Credits. This gives vital information on this application, and provides an address to send your $1 contribution for this shareware utility. Please do so now!

Select the "Setup" item under the TimeMaster Menu. This displays the current settings for the modem initialization string, phone number, time zone difference, tone/pulse dialing and disable timeout selections. Use the mouse to position the cursor to make any changes to this information with the keyboard. The modem initialization string is set for an EXTERNAL, Hayes-compatible modem, connected through the IIgs modem port. (Internal modems, or modems connected to serial cards just will not work properly.) Refer to your modem documentation to determine if you need to change this. If you don't know what any of this means, then don't mess with this string. Please note, TimeMaster IIgs does need to have the "Q0" and "V1" parameters included in this string. These parameters tell your modem to return results codes to TimeMaster IIgs so it can monitor the call's progress, and to send these results in words, not codes.

The phone number can be changed since your needs for dialing may differ. You may add prefixes like "9-" if going through an office PBX phone system. You can also add suffixes to accommodate telephone service access codes, and the like.

Be sure to update the Time Zone Difference for your time zone. This is the number of hours to be subtracted from the time service to set your Apple IIgs clock. It is initially set at -6 since I live in St. Louis, its not Daylight Savings Time yet, and I call the Greenwich Mean Time service maintained at the U.S. Naval Observatory in Washington, D.C. This entry must be from -23 to +23.

Select the radio button for Touch-tone or Pulse dialing, depending on your local phone service.

Finally, use the checkbox to select, or not, the Disable Timeout function. Selecting this checkbox disables all timeouts during call processing. It is useful for areas that have very slow telephone service.

Exit the Setup dialog by selecting the "OK" button.

Now, to call the time service, use the "Dial" item under the TimeMaster Menu. TimeMaster IIgs will display calling progress information as it initializes the Apple IIgs serial port to 300 baud, initializes the modem, dials the time service, connects with it, and receives the correct time. If the service is busy or not answering, you will be notified. The call lasts about 25 seconds after connection. This only costs 15 cents for me to call the Washington service from St. Louis after 6pm.

If you forget to power on your modem, TimeMaster IIgs could appear to freeze at this point. If Timeouts are enabled, control will be returned with an appropriate message in a few seconds. If Timeouts are disabled, just press the ESC key, and control will return to you.

After TimeMaster IIgs has received the correct time from the service, it hangs up the phone, and provides statistics on the screen for the Apple IIgs time, correct time and the difference in seconds. It then displays a continuously running clock in the lower left screen area of the Time Service's time and date. It updates your Apple IIgs internal clock in accordance with the Time Zone Difference.
TimeMaster IIgs will create an ASCII text file called 'TimeMaster.Log' in the same directory as the application is located. It is created the first time your clock is corrected. It contains a log entry of the date and time called, and the difference in seconds. This file is then added to each time you call the service or use the Predict Time Menu to update the IIgs clock. This file can be deleted using the Delete Log item, under the File Menu.

Use the Plot Clock Drift Menu to display a graphic plot of the drift in your Apple IIgs clock over time. This shows all clock updates for a two year period, calculates and plots an average drift per month, and a projection of monthly drift.

After you have called a time service with TimeMaster IIgs a few times, this should set a trend for clock drift in your Apple IIgs clock. Since this drift should remain fairly constant, TimeMaster IIgs can use this information history to Predict updates needed to keep your Apple IIgs clock accurate. Use the Predict Time Menu to take advantage of this capability. You will see TimeMaster IIgs initially Plot Clock Drift to determine the average drift, and your IIgs clock will be updated to correct for clock drift that has occurred since your last actual call to a time service.

You can preserve the Setup settings you used by selecting the Save Preferences item under the File Menu. This saves those settings in the ASCII text file 'TimeMaster.Pref' in the same directory as the application is located. The next time you start up TimeMaster IIgs, it will read these preference settings and use them. You can delete this file using the Delete Preferences item, under the File Menu, to restore the original TimeMaster IIgs settings.

Select the Quit item under the File Menu, press the open-apple and Q keys, or click the mouse cursor in the window close box to exit TimeMaster IIgs.

TimeMaster IIgs Revision History
------------------------------------------------------------
Version 1.0 ------------------
TimeMaster IIgs was initially released as version 1.0 on 15 March 1992.

Version 1.1 ------------------
Version 1.1 adjusts several factors that made TimeMaster IIgs time-out on some calling areas and really time-out if you had an accelerator (like TranswarpGS or ZipGS). All time-outs have been changed to use the IIgs clock ticks rather than processor timing. Also, all time-outs have been lengthened to allow plenty of time (hopefully) for the anticipated action, such as a connection, to complete.

Version 1.1 also removes the requirement for setting the control panel modem baud rate. TimeMaster IIgs now will automatically set the baud rate to the required 300 baud when you select the "Dial" menu item. TimeMaster IIgs does nothing with your control panel modem baud rate setting.

Version 1.2 ------------------
Added Disable Timeouts to allow for slow phone services.

Version 2.0 ------------------
Added Delete Preferences function.
Added Delete Time Log function.
Rearranged Menus to put file and setup functions under the File Menu.
Added the Plot Drift function for clock drift analysis.
Added the Predict Time function.

Version 2.1 ------------------
Added hot keys for all menu items.
Disabled Edit Menu items when they are not available. They are available only while in the Setup dialog.
Displayed the wait cursor (watch hands) during call processing and other processing delays. This looks neat if you have the Animated Watch Init installed.

The Developer Requests Your Support For Shareware
------------------------------------------------------------
Mike Gooding is the developer of TimeMaster IIgs. I welcome any constructive comments you may have about TimeMaster IIgs, or any Apple II programming. I can be reached on several on-line telecommunication services:

<table>
<thead>
<tr>
<th>Service</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEnie</td>
<td>M.Gooding</td>
</tr>
<tr>
<td>CompuServe</td>
<td>72627,1365</td>
</tr>
<tr>
<td>America Online</td>
<td>ArchMike</td>
</tr>
<tr>
<td>Proline</td>
<td>pro.applejacks;Atlas</td>
</tr>
</tbody>
</table>

I am pleased to offer TimeMaster IIgs as a Shareware product for the Apple IIgs. I have extensive background with Apple II computers since acquiring a II plus in 1980. I founded The Software Mill in 1983 for the development and marketing of several Apple II products, including: "SDM: Screen Data Manager", a data base management system; and a commercially distributed Apple II re-hosting of "Monkey See - Monkey Spell", originally programmed for Atari computers.

Look for one of my recent Apple IIgs Shareware games, called Shuffle Mouse, on the same services TimeMaster IIgs is distributed.

I hope you enjoy using TimeMaster IIgs. Please support this Shareware effort by contributing a little to encourage me to develop more Apple IIgs Shareware products.

I'm only asking for a $1 contribution, so please support Shareware by grabbing a buck out of your wallet, shove it in an envelope and mail it to me now! Hey, if you are not in the U.S.A., send me some of your local currency!

Thank you for your support of Shareware.

Thanks to those who sent their shareware contributions, or more, for previous versions of TimeMaster IIgs:

Gant, Soffian, Hart, Bettinelli, Lockart, Smith, Williams, Santore, Weldon, Mosier, Chevrier, Lyon, Eddings, Mcowell, Mackey, Baskwill, Rayback, Merlin, Galbraith, Lewis, Pedeltiy, Reedy, Hardies, Traynor, Weithofer, Buback and Bruun.

Acknowledgement
------------------------------------------------------------
Special thanks go to Tom Gooding for his assistance in beta-testing and programming advice.

Shareware & Copyright Notice
------------------------------------------------------------
TimeMaster IIgs is Shareware and may be distributed freely, but users are requested to send a mere $1 contribution to the developer:

Mike Gooding
14319 Cypress Hill Drive
Chesterfield, MO 63017-2838 U.S.A.

TimeMaster IIgs is copyrighted 1992 by Mike Gooding, who reserves all commercial rights.

You may provide copies of TimeMaster IIgs to your friends for evaluation. TimeMaster IIgs may be placed on computer bulletin boards (BBSS) and online telecommunication.
services (e.g. GEnie, Compuserve and America Online) provided that the TimeMaster IIgs package is downloadable without charge, beyond normal connect charges. TimeMaster IIgs may be placed on diskettes distributed by user groups at a nominal fee.

When distributing TimeMaster IIgs, please provide the entire contents of the TimeMaster IIgs package, as contained in the compacted file named "TimeMaster.shk" or "TimeMaster.bxy", making sure to include all documentation files.

Vendors wishing to put TimeMaster IIgs into their catalogs must contact the developer, at the address above, to secure permission to distribute TimeMaster IIgs, and describe their fee and shareware policy. A suitable shareware contribution from such vendors would be appropriate, and appreciated.

Whenever TimeMaster IIgs is included on a diskette, catalog or online service, it must be identified as shareware. Operators and vendors must make it clear that online charges or disk fees do not qualify as payment for the use of this shareware program, and that the requested shareware contribution should be sent to the developer.

TimeMaster IIgs is implemented in the ORCA/C, ANSI Standard C Language. As such, this program contains material from the ORCA/C Run-Time Libraries, copyright 1987-1991, by Byte Works, Inc. Used with permission.

TimeMaster IIgs uses serial I/O routines, copyright 1988-1989 by Snow Software. Used with permission.

TimeMaster IIgs uses dialog routines, copyright 1992, by Tom Gooding. Used with permission.

End of TimeMaster IIgs Documentation

The game is played around a rectangular playfield. You can just move on the border of the field. The aliens, whom you are fighting, may travel from the time tunnel and out onto the border area. You may move left or right only. However, you can also warp right to the other side just by pressing button (1), moving the joystick forward, or pressing the space bar. The warp function allows you to escape many tight situations, but its use is limited. Your reserve warp supply is shown on the right of the screen, in a hourglass like format. You may shoot the aliens for points, with the other joystick button.

Extra ship at 5000 points. Extra warp when you hit a firefly.

The game does not require Pronto-DOS. This version is also >48< sectors shorter than the original and does not require subsequent disk access. However, it will not save high scores.

These are just preliminary, check later for a complete set of docs with the game cheats.
Chapter 4  UltraMacros Reference

The Anatomy of a Macro

Tokens

Local and Global Macros

Calling other Macros

Reserved Macros

\(<\text{sa-del}\>)\ \text{SOLID-APPLE-DELETE}
\(<\text{ahead}\>)\ \text{SOLID-APPLE-}\
\(<\text{back}\>)\ \text{SOLID-APPLE-}\
\(<\text{date}\>)\ \text{SOLID-APPLE-}\
\(<\text{date2}\>)\ \text{SOLID-APPLE-}\
\(<\text{time}\>)\ \text{SOLID-APPLE-}\
\(<\text{time24}\>)\ \text{SOLID-APPLE-}\
\(<\text{find}\>)\ \text{SOLID-APPLE-RETURN}
\(<\text{find$}\>)\ \text{SOLID-APPLE-}\
\(<\text{print}\>)\ \text{SOLID-APPLE-}\

New Open-Apple Commands

\(<\text{no}\text{ token}\>)\ \text{OPEN-APPLE-}\
\(<\text{sa-del}\>)\ \text{OPEN-APPLE-DELETE}
\(<\text{getstr}\>)\ \text{OPEN-APPLE-}\
\(<\text{ao-ctrl-@}\>)\ \text{OPEN-APPLE-CONTROL-}\
\(<\text{uc}\>)\ \text{OPEN-APPLE-}\
\(<\text{lc}\>)\ \text{OPEN-APPLE-}\
\(<\text{insert}\>)\ \text{OPEN-APPLE-}\
\(<\text{call}\>)\ \text{OPEN-APPLE-}\
\(<\text{store}\>)\ \text{OPEN-APPLE-}\
\(<\text{recall}\>)\ \text{OPEN-APPLE-}\
\(<\text{inc}\>)\ \text{OPEN-APPLE-CONTROL-}\
\(<\text{dec}\>)\ \text{OPEN-APPLE-CONTROL-}\
\(<\text{bell}\>)\ \text{OPEN-APPLE-CONTROL-}\
\(<\text{no}\text{ sleep}\>)\ \text{OPEN-APPLE-}\
\(<\text{clear}\>)\ \text{OPEN-APPLE-}\

Special UltraMacros Tokens

\(<\text{input}\>)\ \text{OPEN-APPLE-}\
\(<\text{id}\>)\ \text{OPEN-APPLE-}\
\(<\text{ikey}\>)\ \text{OPEN-APPLE-}\
\(<\text{key}\>)\ \text{OPEN-APPLE-}\
\(<\text{begin}\>)\ \text{OPEN-APPLE-}\
\(<\text{end}\>)\ \text{OPEN-APPLE-}\

Special UltraMacros Tokens with Parameters

Defining Numeric Variables

Parameters

\(<\text{chr}\#\text{ NUM}\>)\ \text{OPEN-APPLE-}\
\(<\text{getstr}\#\text{ NUM}\>)\ \text{OPEN-APPLE-}\
\(<\text{alphaMACKO}\>)\ \text{OPEN-APPLE-}\
\(<\text{hilight}\ \text{NUM EXP,NUM EXP,NUM EXP,NUM EXP}\>)\ \text{OPEN-APPLE-}\
\(<\text{left}\ \text{STRING VAR,NUM}\>)\ \text{OPEN-APPLE-}\
\(<\text{len}\ \text{STRING VAR}\>)\ \text{OPEN-APPLE-}\
\(<\text{msg}\ \text{STRING}\>)\ \text{OPEN-APPLE-}\
\(<\text{onerr}\ \text{OPTION}\>)\ \text{OPEN-APPLE-}\
\(<\text{posn}\ \text{VAR,VAR}\>)\ \text{OPEN-APPLE-}\
\(<\text{pr}\#\ \text{NUM EXP}\>)\ \text{OPEN-APPLE-}\
\(<\text{rem}\ \text{STRING}\>)\ \text{OPEN-APPLE-}\
\(<\text{right}\ \text{STRING VAR,NUM}\>)\ \text{OPEN-APPLE-}\
\(<\text{screen}\ \text{NUM EXP,NUM EXP,NUM EXP}\>)\ \text{OPEN-APPLE-}\

TimeOut UltraMacros is a powerful addition to the TimeOut family of AppleWorks enhancements, adding macro capability and numerous new commands that can be used with any AppleWorks or UltraMacros application. Because UltraMacros is compatible with all other TimeOut packages, it is a solid foundation to build on.

So What's a Macro?

A macro is a single keystroke that does the work of many keystrokes. An AppleWorks macro is a SOLID-APPLE key command; you simply hold down the SOLID-APPLE key while pressing another key and a predefined sequence of keystrokes is performed. For example, you can set up a macro like SOLID-APPLE-N for Experienced 6502 Programmers Only that types your name and address, or use SOLID-APPLE-I to indent a paragraph three spaces (one keystroke instead of the usual seven). Macros save you a lot of typing and a lot of time. Also, with fewer keystrokes, the fewer chances of making errors.

NOTE: The SOLID-APPLE key on the Apple //e and //c has been replaced by the OPTION key on the //gs. If you have a //gs, think OPTION whenever the manual mentions SOLID-APPLE.

Remember that macros are SOLID-APPLE commands, The AppleWorks OPEN-APPLE commands perform the same commands as before. UltraMacros is a very flexible package. A wide variety of built-in macros are provided on the UltraMacros disk. They can be used "as-is" or changed to suit your own needs. You can also design completely new macros once you get more familiar with UltraMacros. Novices and experts alike will appreciate the many new OPEN-APPLE commands which are also included.

Special Features of UltraMacros

In addition to macros, UltraMacros provides other features that make your life at the keyboard easier and more productive. These include new AppleWorks commands, an AppleWorks bug fix, and mouse control.

New AppleWorks Commands

UltraMacros adds new OPEN-APPLE and SOLID-APPLE commands that save you time and effort. For example, you can press SOLID-APPLE-= at any time to enter the current time (if you have a clock). Read about the new commands starting on page 16 (Chapter 3). A complete list of new commands starts on page 31 (Chapter 4).

Bug Extermination

AppleWorks has a bug that doesn't allow you to enter CONTROL-@ for printer or interface definitions. See page 72 (Chapter 4), for details on solving this problem.

Mousing Around

UltraMacros allows you to use a mouse to scroll rapidly through AppleWorks and to make menu selections. See page 72 (Chapter 4) for details.

Appendix

TimeOut Utilities

Using the Utilities

Configure

Load to Memory

Dump from Memory

Change Memory Status

Change Name

Sort Menu

Key Chart

Help!

Customer Support Information

WELCOME TO TIMEOUT ULTRAMACROS

--- END- Chapter.1 ---
to your AppleWorks Startup disk.

Before you can use macros and the new commands, you must update a copy of your AppleWorks Startup disk. (Note: the floppy disk version of AppleWorks uses two disks: a STARTUP disk and a PROGRAM disk. If you are running AppleWorks from a hard disk, 3.5" disk or RAM disk, there is only one disk.)

You actually need to make two modifications to AppleWorks: TimeOut must be added so that you can use the TimeOut applications on the UltraMacros disk, and then a file, called ULTRA.SYSTEM, must be added to your AppleWorks STARTUP disk. This is the actual macro program.

TimeOut UltraMacros is provided on both 5.25" and 3.5" disks. Before using your TimeOut UltraMacros disk, please take a moment to make a backup copy of the disk you will be using. Since the disks are not copy protected, you may use any standard disk copier or Beagle Brothers' TimeOut FileMaster. Be sure to write protect your original disk so you don't accidentally overwrite it. Please do this now.

All of the sample AppleWorks files (macros) are on side 2 of the 5 1/4" disk. Read "Path Notes" for information about the PathFinder demo.

Beagle Bros' software isn't copy protected. That makes it easier for you to use and easier to make backup copies. Please support us in our commitment to supply friendly, easy-to-use software by not giving away copies to your friends.

TIMEOUT COMPATIBILITY
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TimeOut is compatible with AppleWorks versions 2.0 and later. If you have an earlier version, contact your dealer about getting an update from Apple. You must also have the USA version. TimeOut does not work with foreign language versions of AppleWorks.

TimeOut is compatible with most enhancements to AppleWorks including Applied Engineering's desktop expander and Checkmate's desktop expander. UltraMacros is not compatible with Pinpoint, SuperMacroWorks or AutoWorks.

INSTALLING TIMEOUT
---------------------

Once your backup copy has been made, boot your TimeOut UltraMacros disk by placing it in your boot drive and turning your computer off and back on or by pressing Control-Open-Apple-Reset. Then press "T" for install TimeOut.

Soon the title screen will appear. The menu contains three options.

1. Update AppleWorks
2. Read NOTES
3. Quit

Select READ NOTES. This will inform you of any changes to TimeOut UltraMacros that have been made since this instruction manual was printed.

After you read the NOTES, you will return to the TimeOut startup screen. This time select Update AppleWorks.

THE TIMEOUT MENU
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You must now specify whether or not you would like TimeOut to sort the list of TimeOut applications in the TimeOut menu. The names will be sorted alphabetically if you specify Yes. Otherwise, they will appear in the same order as they do in the disk catalog. By specifying No, you decide the order of the names in the TimeOut menu by placing them on your TimeOut applications disk in the order you want.

LOCATIONS OF TIMEOUT APPLICATIONS
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The next step is to indicate where TimeOut should look for the TimeOut applications. If you can't fit all of your TimeOut applications on a single 5 1/4-inch floppy disk, you can now have multiple application disks. All of the application disks must have the same name (for example: /TIMEOUT). When you are installing TimeOut on your AppleWorks disk, specify YES when asked if you need more than one TimeOut Application disk.

When you start up AppleWorks, insert each TimeOut Application disk, specifying YES when asked "Read another TimeOut Application disk?" Specify NO when the last TimeOut Application disk has been read.

Be sure to insert the correct TimeOut Application disk when you select the application from the TimeOut menu.

All of the TimeOut applications must be placed on the same disk, or any ProDOS disk device. (See Copying Applications to the TimeOut Application disk several pages ahead of this point.) The choices you have are:

1. AppleWorks STARTUP disk
2. Slot and Drive
3. ProDOS directory

Be sure to insert the correct TimeOut Application disk when you select the application from the TimeOut menu.

The simplest approach is to place the TimeOut Applications on your AppleWorks STARTUP disk. By doing that, you never have to search for a separate TimeOut Applications disk. If you have a hard disk or 3.5" disk, you can place them in the same directory or subdirectory with your AppleWorks STARTUP program (APLWORKS.SYSTEM).

If you have more than one disk drive, you may want to dedicate one drive to your TimeOut Applications. You may specify either Slot & Drive or ProDOS directory to indicate where the TimeOut applications disk will be. For more information on ProDOS directories, see the section in your AppleWorks manual called ProDOS, "prefix for filenames".

LOCATIONS OF APPLEWORKS
-------------------------------

The next step is to indicate where your AppleWorks STARTUP program is so TimeOut can be installed. You may specify either Slot & Drive or ProDOS directory. After indicating the location of AppleWorks, press a key and your AppleWorks STARTUP program will be updated with TimeOut.

REINSTALLING TIMEOUT
---------------------

After you have already installed TimeOut, if you need to change the applications disk location or the order of the menu, you can reinstall TimeOut by following the same steps for initial installation. This will only work if you have not
installed any other AppleWorks enhancement programs since you installed TimeOut. If you have, then you may need to completely reconfigure AppleWorks.

INSTALLING ULTRAMACROS

If you're already using Super MacroWorks, you may wish to read about the changes on UltraMacros (Chapter 4) before continuing with this installation.

1. Make sure you have a copy of your AppleWorks STARTUP disk which has already been modified with TimeOut. If you're using a desktop expander, install it before installing UltraMacros. Make sure that your AppleWorks disk is functional with all other modifications installed before attempting to add UltraMacros.

2. Boot the UltraMacros disk and press U for "Install UltraMacros." The macro program (ULTRA.SYSTEM) will be installed into memory.

3. Remove the UltraMacros disk from the main disk drive, insert the AppleWorks STARTUP disk and press RETURN.

4. The UltraMacros installation program will attempt to modify your AppleWorks STARTUP disk. If it can't find it, it will prompt you to enter the pathname where AppleWorks can be found. You probably won't have AppleWorks in a subdirectory unless you understand subdirectories and pathnames already. In any case, complete pathname information can be found in manuals such as the ProDOS User's Manual. A pathname ALWAYS begins with a "/" followed by the disk name. Any subdirectories following the disk name are preceded by a "/" as well.

5. Your AppleWorks STARTUP disk will be updated with UltraMacros' macros and new commands. A message will appear on the screen when the updating is complete.

6. Press RETURN; the built-in macros and commands supplied with the UltraMacros disk are now ready for use.

COPYING APPLICATIONS TO THE TIMEOUT APPLICATION DISK

If you are using other TimeOut applications, you will need to copy the applications of the UltraMacros disk to your TimeOut applications disk. Otherwise, you can use the UltraMacros disk as your TimeOut applications disk.

Copy the following files:

TO.MACRO.OPT
TO.CLIPBOARD
TO.UTILITIES
TO.COMFILER

Note: You may not need to copy the file TO.UTILITIES or TO.CLIPBOARD if they're already on your TimeOut application disk.

If you do not have a file copy program, or you are not familiar with the one you have, there is a new method of easily copying your TimeOut files to your TimeOut Application disk.

After installing TimeOut on your AppleWorks disk, the installation program will present a menu allowing you to do this. Select "Copy files to TimeOut Application disk" and then specify the location of your TimeOut Application disk. All of the TimeOut files will then be copied.

STARTING UP APPLEWORKS WITH TIMEOUT.

When you start up AppleWorks with TimeOut installed, you should see the TimeOut title screen before you reach the AppleWorks main menu. TimeOut will scan your TimeOut applications disk looking for TimeOut applications.

Note: If you receive a message indicating that TimeOut is getting errors trying to load the TimeOut applications, it means that TimeOut is unable to find the applications. At this point you must insert your applications disk if you have not already done so. If you have inserted your applications disk and are still getting errors, you either do not have any applications on the disk or your disk has been damaged. You will need to create a new applications disk.

If you do not see a TimeOut title screen, you have not installed TimeOut correctly. Go back and start over.

As TimeOut identifies each TimeOut application, they are listed on the screen. An asterisk ("*" ) before the application name indicates that it is memory-based. You may press Escape at any time to cancel loading memory-based applications.

Note: If you use a program selector such as the Apple Desktop you must select ULTRA.SYSTEM instead of APLWORKS.SYSTEM. The APLWORKS.SYSTEM file has been renamed to APLWORKS.SYS so that booting ProDOS will automatically start ULTRA.SYSTEM. If you select APLWORKS.SYS, you will run normal AppleWorks without any macros.

ACCESSING TIMEOUT APPLICATIONS

While you are using AppleWorks, you may call up the TimeOut menu at any time by pressing Open Apple-Escape. A menu similar to the following will appear (you may have fewer or more applications than this):

<table>
<thead>
<tr>
<th>TimeOut Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. FileMaster</td>
</tr>
<tr>
<td>2. Graph</td>
</tr>
<tr>
<td>3. QuickSpell</td>
</tr>
<tr>
<td>4. SideSpread</td>
</tr>
<tr>
<td>5. SuperFonts</td>
</tr>
<tr>
<td>6. Macro Options</td>
</tr>
<tr>
<td>7. Utilities</td>
</tr>
</tbody>
</table>

Use the up and down arrow keys or type a number to select an application, then press Return (press Escape if you don't want to make a selection). If your applications are not memory-based, be sure your TimeOut applications disk is in the drive when you press Return. Otherwise, you will be prompted to insert your TimeOut application disk.

MEMORY USAGE

You will notice with TimeOut installed that you have slightly less desktop memory for your AppleWorks documents. TimeOut itself takes up some of the memory.

Memory-resident TimeOut applications also take up desktop memory. If you are short on desktop memory, reconfigure your applications so they are disk-based.

However, for maximum speed, make your TimeOut applications memory-based or run them from a RAM disk.

Note: UltraMacros is always in memory. However, it resides in a special place that doesn't take up any desktop memory.

CONTROL-RESET PATCH

When you install TimeOut on your AppleWorks Startup disk, TimeOut makes a patch to AppleWorks so that Control-Reset will take you to the Main Menu instead of the machine language monitor.

END- Chapter 2
This section introduces you to some of the new commands included with UltraMacros. It assumes that you've already booted AppleWorks and are in a Word Processor file (UltraMacros works everywhere in AppleWorks, but the Word Processor is a good place to test things).

**USING THE NEW ULTRAMACROS COMMANDS**

**UltraMacros** adds several new SOLID-APPLE and OPEN-APPLE commands to AppleWorks. Try these for starters:

1. **Press SOLID-APPLE-'.** The date set when AppleWorks was started up will be displayed in the format: September 27, 1987. If an error beep happens instead, UltraMacros is not installed.

2. Now place the cursor on the first letter of the date that you entered step 1 and press OPEN-APPLE-. The letter will be changed to lower case. For example, "September 27, 1987" would now be "september 27, 1987".

3. **Press OPEN-APPLE-.** The next letter will be switched to upper case. Get the picture? You can change the case of any letter with the colon/semi-colon key. If you hold down OPEN-APPLE and press the key normally, the letter becomes lower case; if you also hold down the shift key, the letters become upper case. The cursor is always changed to overstrike mode so that extra letters aren't inserted.

4. Place the cursor in the middle of a word and press OPEN-APPLE-DELETE or SOLID-APPLE-DELETE. The character under the cursor will be gobbled, but the cursor will remain at the same spot. This command actually executes two normal AppleWorks keystrokes: a RIGHT-ARROW followed by DELETE.

These new OPEN-APPLE commands can be used anywhere that AppleWorks prompts you for input. For example, the OPEN-APPLE-DECEDE command can be used to change a file name after you press OPEN-APPLE-N. Or you can press SOLID-APPLE-' to enter the date when the Data Base asks you to "Type report date" when you're printing a file.

**Recording Your Own Macros**

This section tells you how to record your keystrokes so that they can be played back later with one keypress. It assumes that you've already booted AppleWorks and are currently in a Word Processor file.

1. **Press OPEN-APPLE-X.** The title at the top of the screen changes to RECORD A MACRO. If it doesn't, you didn't install UltraMacros right.

2. The prompt at the bottom tells you to "Select macro key:". Press the "T" key to record a "T" macro. SOLID-APPLE-T will be used to activate this macro later. The bottom right side of the screen will show "Recording T" and the cursor will stop blinking.

3. You are now in record mode and whatever you type (mouse moves are included) will be memorized. Type your name and press RETURN.

4. Now press CONTROL-9 to end the macro definition. (On IIs's and some other I's you don't have to press the shift key; on some you do.) The cursor will start blinking and the bottom right side of the screen will show "Done macro T".

5. You've just recorded your first macro! To use it, hold down the SOLID-APPLE key and press T. Your name is typed much faster than it was entered, unless you're an incredible typist. This macro can now be used anywhere that AppleWorks expects keyboard input: in a file, naming a file, etc.

6. Now press OPEN-APPLE-X and press T again. This message appears on the bottom line: "Replace global macro T?" Because you already have a macro "T" in your macro set, UltraMacros lets you decide if you want to destroy the original macro. This is a safeguard to avoid accidentally erasing a macro.

7. Press Y to replace your "T" macro. You can now record the new macro. This time, press OPEN-APPLE-I first. The cursor jumped to the beginning of the file. Any OPEN-APPLE command can be recorded as part of the macro.

8. Now press RETURN followed by the UP-ARROW and enter your name on the top line of the file. Press CONTROL-9 to end the macro.

9. Press OPEN-APPLE-9 to jump to the end of the file, and then press SOLID-APPLE-T to try out the modified macro "T". It will jump to the top of the file, insert a line, and enter your name.

You can press OPEN-APPLE-X to start recording macros from virtually anywhere in AppleWorks or in a TimeOut application. You may not press OPEN-APPLE-X when the TimeOut OPEN-APPLE-Escape menu is visible on the screen, or when you're in the middle of an OPEN-APPLE-O getstring command. The command will be ignored. However, you may start a macro within AppleWorks and then press OPEN-APPLE-ESCAPE or OPEN-APPLE-O as part of the macro.

Most key can be recorded as macros. Look down farther for a list of reserved macros. Keep in mind that there is no difference between upper and lower case macro names, and that all "named" keys such as RETURN and TAB have CONTROL-key equivalents (e.g. TAB is actually CONTROL-I).

Press OPEN-APPLE-X to enter record mode. Press OPEN-APPLE-T. The Recording T message will appear. Enter something and press CONTROL-8 to end the macro. Press SOLID-APPLE-T. Your name is entered as defined above.

Press BOTH-APPLE-T. The thing you just entered appears.

All keys can have both SOLID-APPLE and BOTH-APPLE definitions. Macros that use SOLID-APPLE-RETURN, such as SOLID-APPLE-RETURN, can be defined as BOTH-APPLE macros. The UltraMacros sample includes BOTH-APPLE definitions for the named keys such as TAB, ESCAPE, etc. Of course, they can easily be changed. It's a good idea to use BOTH-APPLE for potentially dangerous macros (like quit AppleWorks without saving files) that you don't want to execute accidentally.

You can record a macro for anywhere from 2 to 4,000 or so keystrokes, depending on how many macro keystrokes are already in memory. If the macro table is full, the Done macro message will appear as soon as you press the new macro key, unless you're replacing an existing macro. Then you'll be able to enter as many keystrokes as the original macro contained.

The only exception is macro 0(zero). You can always enter up to 80 keystrokes, but it also automatically stops recording at 80 keystrokes.

Any macros recorded using OPEN-APPLE-X are lost when you exit AppleWorks. There are two ways to make the macros permanent. One way is to use the Macro Options third option "Save macro table as default set". This save all active macros "as-is". The next section explains how to edit existing macros and then make them permanent.

**Creating Custom Macros**

This section tells you how to create custom macros by editing a macro file, compiling the changed macros, and then saving them on disk.

**Built-In Macros**

The built-in macros are those macros which are part of ULTRA.SYSTEM and are available whenever you start AppleWorks. These macros (except for a few...
reserving macros) can be changed at any time to anything you wish.

1] Boot AppleWorks and insert the UltraMacros disk.
2] Add the Word Processor file Macros Ultra to the desktop from the
UltraMacros disk and print it for a handy reference. These are the sample
macros included with ULTRA.SYSTEM. All of them are available for use if
you've added UltraMacros to your AppleWorks disk.
3] Examine the printout while reading the descriptions of how macros are
made. You can modify this file to create your own custom macros.

Creating a Macro File

A macro file is any AppleWorks Word Processor file which contains macro
definitions. You can create a custom macro file by adding an existing macro
file to the desktop and changing the definitions, or by using the Macro
Compiler's Display current macro set option to list the current macros into a
file. There's nothing magical about the macro definitions in the Word
Processor. They must be compiled into true macro codes to be used by
UltraMacros.

Creating your very own UltraMacro

Here's a step-by-step look at creating your first custom macro definition
and making it a permanent part of AppleWorks.

1] Start up your UltraMacros version of AppleWorks.
2] Insert the UltraMacros disk and add the file Macros Ultra to the desktop.
   Use OPEN-APPLE-N to change it name to Macros Mine. Macro file names don't
   have to start with "Macros"; it just makes it easier to find them that
   way.
3] Go back to the AppleWorks Main Menu and then make a new Word Processor
   file called TEST.
4] Press SOLID-APPLE-B to see a sample "begin a memo" macro.
5] Press SOLID-APPLE-N to see the author's daughter's name.
7] Use the OPEN-APPLE-F command to find "Heather". You should see the
   following macro definition:

   H:<awp>Heather Brandt! name of a little "Lassie" lover

8] Change Heather Brandt to your name. Ignore the <awp> for now. Just make
   sure that your name is immediately after <awp> and is followed by a "!".
   You could cheat and use OPEN-APPLE-R to replace it, but that won't teach
   you anything.
9] Now use the OPEN-APPLE-F command to find "B:<awp>". You should see the
   following macro definition:

   B:<awp><rtn><rtn><awp>
   Date: <rtn><rtn><rtn><rtn>
   From: <sa-n><rtn><rtn>
   P.O. Box 20920<crtn><rtn>
   El Cajon, CA  92021<crtn><rtn><rtn><rtn>
   To: ! begin a memo

The first line contains special bracketed codes call tokens. Each <rtn>
represents a carriage return.

The second line also contains <date>. This token will always print the
date which was set when AppleWorks was first started.

The third line contains <sa-n>. This is the same as pressing
SOLID-APPLE-N; that's why the macro printed the name given in macro-N.

Switch back to the TEST files and look at what the macro did until you can
see the relationship between the macro definition and the result.

10] Replace the sample address between the From: and To: lines with your own
    address. Start each line in the same column as the "J" in JEM and end
    with a <rtn>.
12] Press RETURN to select Compile a new set of macros.
13] Press RETURN to select No for the Pause each line? prompt.
15] The compiler will then scan the entire file, converting the text and
    tokens into UltraMacros' codes.
17] Press SOLID-APPLE-B to see the memo macro with your name included within
    it. Now press SOLID-APPLE-N to see just your name.
18] If the macros don't work the way you think they should, go back and
    examine the definition again, comparing it to the samples in steps 7 and
    9.
20] If your AppleWorks Startup disk is not in a drive, remove your Program
    disk and insert the Startup disk.
21] Select Save current macros as default set.
22] Press RETURN to select No for Activate auto-startup macro?
23] The ULTRA.SYSTEM file will be updated with the new macro definitions.
24] Re-insert your AppleWorks program disk if necessary and press RETURN to
    return to AppleWorks.
27] Press SOLID-APPLE-B. Voila! Your new definition is in effect along with
    all of the other Macros Ultra sample macros.
28] Press SOLID-APPLE-B again, but this time tap the ESC key immediately
    afterward. The macro is halted before it finishes. You can press ESC
    to stop any run-away macros.

--END--  Chapter 3
Each macro begins with a character or token that represents the key used with SOLID-APPLE to activate the macro. In this example, the character "C" indicate that this macro is executed by pressing SOLID-APPLE-C.

Next comes a colon, followed by a token that designates where the macro will work; this macro is for the Word Processor.

Next come the keystrokes and tokens that actually make up the macro. In this example there are five keystrokes: OPEN-APPLE-O, C, N, RETURN, and ESCAPE.

An exclamation mark signals the end of the macro definition. Any text after the "!" is ignored. In this example the words "center text" describe what the macro does. They are not considered part of the macro.

Here are some of the tokens that you can use to create macros:

-\texttt{<del>}: DELETE key
-\texttt{<esc>}: ESCAPE key
-\texttt{<rtn>}: RETURN key
-\texttt{<tab>}: TAB key
-\texttt{<left>}: LEFT-ARROW key
-\texttt{<right>}: RIGHT-ARROW key
-\texttt{<up>}: UP-ARROW key
-\texttt{<down>}: DOWN-ARROW key
-\texttt{<spc>}: SPACE BAR key

The tokens for OPEN-APPLE, SOLID-APPLE, BOTH-APPLE and CONTROL commands use the abbreviations oa, sa, and ctrl followed by a hyphen and the appropriate key. Here are some examples:

-\texttt{<oa-1>}: OPEN-APPLE-1
-\texttt{<sa-b>}: SOLID-APPLE-B
-\texttt{<ba-right>}: BOTH-APPLE-RIGHT-ARROW
-\texttt{<sa-ctrl-c>}: SOLID-APPLE-CONTROL-C

UltraMacros adds a number of unchangeable OPEN-APPLE and SOLID-APPLE commands to AppleWorks (See the "Reserved Macros" heading).

Tokens may be entered in upper or lower case, but no spaces are allowed between the letters making up the token. For example, <rtn>, <RTN>, and <<rtn>> are all valid tokens for the RETURN key, but <rtn> is not valid.

Multiple consecutive tokens can be used without brackets around each individual token. Just separate the tokens with spaces or commas. For example, two UP-ARROW commands followed by a LEFT-ARROW can be represented as <up>up><left>, <up up left>, or <up>up left>.

The compiler also allows you to include comments between the <brackets>. Comments are surrounded by curly {braces}. The previous example could include a comment like this:

-\texttt{<up> up : this text gets ignored by the compiler} left

The macro compiler will ignore the curly braces and everything between them. No macro table space is wasted by using comments. The previous sample will compile into three bytes two UP-ARROW codes and one LEFT-ARROW code. Do NOT use token <> brackets inside of the () comment brackets. This is legal: a<all { comment } stop>! but this isn't: a<all (-- see? )>

Note: If the curly braces are not between token brackets, they will be treated as normal text.

Each macro must be classified as either local or global. A global macro is one that works anywhere. A local macro is one that works only within a specific application.

In a macro definition, the token just after the colon indicates whether the macro is local or global:

-\texttt{<all>}: ALL applications (global)
-\texttt{<awp>}: AppleWorks Word Processor
-\texttt{<adb>}: AppleWorks Data Base
-\texttt{<asp>}: AppleWorks Spreadsheet
-\texttt{<ato>}: A TimeOut application only

You can't have more than one global macro with the same name (the second one will never be used), but you can give the same name to several local macros as long as they are in different applications.

The order in which macro definitions appear in a file is important. When you select a macro, UltraMacros starts at the beginning of the macro table and searches for the first macro with the specified name. When a match is found, the application definition is checked.

1] If the macro is type <all>, it is executed regardless of where you are within AppleWorks or TimeOut.
2] If the macro is type <ato>, it is executed only if you are currently in a TimeOut application.
3] If the macro is an AppleWorks application type, UltraMacros checks to see if you're in the specified application. If so, the macro is executed; if not, it keeps searching.

From this you can see that if multiple macros are created with the same name, the local AppleWorks macros should be first, followed by the TimeOut macros, followed by the global macros.

TimeOut is part of AppleWorks, so you don't have to use <ato> in macros which are designed for TimeOut; <ato> just makes sure that the macros will not run outside of a TimeOut application.

Note: BOTH-APPLE macros are not considered the same as SOLID-APPLE macros even if they use the same key. A key such as "A" could conceivably have eight completely different definitions; a BOTH-APPLE and SOLID-APPLE command for <awp>, <adb>, <asp> and <ato>.

Recorder macros (those defined using OPEN-APPLE-X) are global by default. If you want to make a recorded macro local, list the macros into a file and use AppleWorks to change the <all> token to a local token. Then recompile the macro set.

CALLING OTHER MACROS

One macro can call another macro in two different ways:

- y:<all>oa-left oa-M-T<down left rtn>! delete a line
- y:if aup : oz-9 : up : goto sa-a-y>! delete the last line in a file

In the first example, SOLID-APPLE-Y calls macro SOLID-APPLE-LEFT to move the cursor to the left column; UltraMacros then returns to SOLID-APPLE-Y and the current line is moved to the clipboard.

In the second example, SOLID-APPLE-9 uses the <goto> command to send control macro SOLID-APPLE-Y. UltraMacros never returns to SOLID-APPLE-9 because <goto> is a "one-way" command.

Users with Basic programming experience can think of the first example as a GOSUB and the second as a GOTO (how fitting). Just remember that using a macro NAME will continue the current macro when the called macro is finished, and that using GOTO means that the macro will never come back.

"Macro nesting" occurs when a macro calls a macro which calls a macro...
Apple II Computer Info

finished. The limit is 18 levels. A macro which calls itself will also execute 18 times and then stop.

1:all>**sa-1! print 18 asterisks

To execute a procedure more often, use <begin> and <rpt> along with variables (they are explained later).

<ba-1>:<all : A = 120 :begin : print "*": A = A - 1: if A > 0 then rpt>!

print 120 asterisks

CAUTION: When you're about to delete a macro from a file, make sure the macro isn't needed by another macro in the file. Use the OPEN-APPLE-F command to search for references to the macro. For example, if you plan to delete macro F, search for "sa-f".

RESERVED MACROS
---------------
The special macros listed below cannot be re-recorded, changed or deleted; you must use them "as is". You can use these macros at any time (unless otherwise noted): directly from the keyboard (press the appropriate key along with SOLID-APPLE), while recording a macro (press the appropriate key along with SOLID-APPLE), or in a macro definition (use the appropriate token). Macros SOLID-APPLE-CONTROL-@ and SOLID-APPLE-^ are also reserved. They don't do anything, at least not that you'd care about. You are allowed to use the BOTH-APPLE equivalents of these two macros, however.

<sadel> SOLID-APPLE-DELETE
Deletes the character under the cursor.

<ahead> SOLID-APPLE-.
Finds the first blank space to the right of the cursor position. This macro works wherever AppleWorks allows you to edit characters, including Word Processor files, Data Base categories, at Find prompts, and when AppleWorks prompts you to enter names.

<back> SOLID-APPLE-,
Finds the first blank space to the left of the cursor position.

<date> SOLID-APPLE-'
Displays the date in this format: September 29, 1987 (handy for dating letters or Data Base and Spreadsheet reports).

<date2> SOLID-APPLE-
Displays the date in this format: 09/29/87 (handy for dating transactions in the Spreadsheet).

<time> SOLID-APPLE=*
Displays the time in this format: 6:50 pm. If you don't have a clock, the time will always be 12:00 am.
NOTE: If you have a //gs and 12:00 am is always given for the time, you'll need to copy the ProDOS file from the UltraMacros disk to your AppleWorks startup disk.

<time24> SOLID-APPLE++
Take a guess.
This means that any macros containing <find> (if they will be called from other macros) should end with a <stop>. This way the calling macro is only executed if the item is not found, and can therefore be used for error-trapping. A macro could search for a file, and if unsuccessful, it could then change to another disk and search it. Before you only had one shot at it. See the CONTROL-P phone macro in Macros Ultra for an example.

<findpo>
SOLID-APPLE-^*
In the Word Processor only: Moves the cursor to the next caret. The caret may be a printer options caret or a text caret which is part of the document. This macro only works when the "Type entry or ..." message is visible at the bottom of the screen.

This macro is easier to use for locating printer options in a file than the OPEN-APPLE-F command, which requires you to know which option you're searching for (and its two-letter code). <findpo> simply searches for the next caret in the file regardless of what it represents.

A macro can use the <screen> command to check what kind of option was found by <findpo>. For example, this macro finds the next superscript or subscript code, but ignores all other printer codes or carets:

<ctrl-s>:<awp><findpo : $8 = screen 42,24,4 : if $8 = "Subs" then stop
else if $8 = "Supe" then stop else rpt>!

<print>
BOTH-APPLE-CONTROL-P
The print token is for use within macros only.

NEW OPEN-APPLE COMMANDS
-----------------------
The following commands can be used directly from the keyboard as well as from within macros. If you're recording a macro, press the appropriate key along with OPEN-APPLE. To use the command in a macro definition, use the token.

no token
OPEN-APPLE-X
Begin recording a macro. This command must be used from the keyboard only; it can't be used within a macro.

"sa-del"
OPEN-APPLE-DELETE
Deletes the character the cursor is on. This command is identical to SOLID-APPLE-DELETE. NOTE: When recording a macro, you must use SOLID-APPLE-DELETE.

"getstr"
OPEN-APPLE-0 (zero)
Presents a "=" prompt on the bottom line of the screen, allowing up to 60 characters to be entered for defining macro 0. This command is used from the keyboard only. Do not use it while recording a macro.

<aa-ctrl-0>
OPEN-APPLE-CONTROL-0
Sends a CONTROL-@ to AppleWorks. Use this while recording or defining a macro. If you just use CONTROL-@ the macro will stop at that point. CONTROL-@ is used only for printer and interface definitions. NOTE: Make sure you used the bug fixer in the main menu of UltraMacros before you use this.

<u>OPEN-APPLE-:
Changes the character at the cursor to upper case.

<lc>
OPEN-APPLE-;
Changes the character at the cursor to lower case.

<insert>
OPEN-APPLE-!
Turns on the insert cursor. To turn on the overstrike cursor, use this command followed by an OPEN-APPLE-H command.

<zoom>
OPEN-APPLE-8
Forces zoom OUT. Follow this command with OPEN-APPLE-2 to zoom in.

<read>
From the keyboard, OPEN-APPLE-^ will read the character at the current cursor position into macro 0. You can use the arrow keys to move the cursor to a new position before reading another character. While recording a macro, OPEN-APPLE-^ will read the character at the current cursor position into the macro being recorded (the character will become text in the macro definition). In a macro definition, successive <read>'s add to macro 0. If you want each <read> to reset macro 0, put the <read> in another macro and call that macro:

a:=call sa-b : if $0 = "." then left else rpt>! go to end of sentence
b:=call read>
A better way to do the same thing would be to read the character cursor directly:

<findpo>
OPEN-APPLE-^*
This macro finds the next caret in the file regardless of what it represents.

<findpo>
SOLID-APPLE-^*
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OPEN-APPLE-;
Changes the character at the cursor to lower case.

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OPEN-APPLE-!
Turns on the insert cursor. To turn on the overstrike cursor, use this command followed by an OPEN-APPLE-H command.

<zoom>
OPEN-APPLE-8
Forces zoom OUT. Follow this command with OPEN-APPLE-2 to zoom in.

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From the keyboard, OPEN-APPLE-^ will read the character at the current cursor position into macro 0. You can use the arrow keys to move the cursor to a new position before reading another character. While recording a macro, OPEN-APPLE-^ will read the character at the current cursor position into the macro being recorded (the character will become text in the macro definition). In a macro definition, successive <read>'s add to macro 0. If you want each <read> to reset macro 0, put the <read> in another macro and call that macro:

a:=call sa-b : if $0 = "." then left else rpt>! go to end of sentence
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This macro finds the next caret in the file regardless of what it represents.

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In the Word Processor only: Moves the cursor to the next caret. The caret may be a printer options caret or a text caret which is part of the document. This macro only works when the "Type entry or ..." message is visible at the bottom of the screen.

This macro is easier to use for locating printer options in a file than the OPEN-APPLE-F command, which requires you to know which option you're searching for (and its two-letter code). <findpo> simply searches for the next caret in the file regardless of what it represents.

A macro can use the <screen> command to check what kind of option was found by <findpo>. For example, this macro finds the next superscript or subscript code, but ignores all other printer codes or carets:

<ctrl-s>:<awp><findpo : $8 = screen 42,24,4 : if $8 = "Subs" then stop
else if $8 = "Supe" then stop else rpt>!
the command. A brief flash at the top left of the screen indicates that the command was executed. The current layout and display setting do not affect <cell>. In the spreadsheet it uses the literal values or label as displayed on the cell indicator line, and in the Data Base it uses the full category entry as shown in the single-record layout. From within a macro, use <cell> as part of any string definition like this:

\[
\text{c::<asp : $3 = cell : down : print $3>! copy a cell}
\]

<store>
OPEN-APPLE-<
Stores the current contents of macro 0, up to 15 characters, in a special unused area of a word processor, spreadsheet, or data base file. The name being stored is displayed at the bottom right of the screen. This command is designed for linking files, but it may be used for any other purpose you think of.

<store> and <recall> also work with the Data Base.

<recall>
OPEN-APPLE->
Sets macro 0 equal to the text stored by the <store> command. <store> would be rather useless if the information couldn't be recalled.

<store> and <recall> also work with the Data Base.

<inc>
OPEN-APPLE-CONTROL-W
Increments the character at the current cursor position. For example, "a" becomes "b". It follows the ASCII numbers.

<dec>
OPEN-APPLE-CONTROL-A
Opposite of <inc>; decrements the character at the current cursor position.

<bell>
OPEN-APPLE-CONTROL-G
Sounds the AppleWorks error bell once. It’s handy for getting someone's attention.

<nosleep>
OPEN-APPLE-CONTROL-N
Cancels the currently defined "sleeping" macro, if any. See the description of <wake> for more information.

<clear>
OPEN-APPLE-CONTROL-X
Clears all numeric variables to 0 and all string variables to no definition. A brief flash at the top left of the screen indicates that the command was executed. //gs users can press OPEN-APPLE-CLEAR.

Macros SOLID-APPLE-CONTROL-@ and SOLID-APPLE-^ are also reserved. They don't do anything, at least not that you'd care about. You are allowed to use the BOTH-APPLE equivalents of these two macros, however.

Special UltraMacros Tokens

The following tokens are for use within macro definitions only. None of them are keyboard commands, and they can not be recorded using the OPEN-APPLE-X command. They are used as is (i.e. they require no parameters).

<input>

-----

<id>
--
Return the unique id number of the current TimeOut application. If TimeOut is not active, a zero will be returned. This token can't be used by itself; it must be part of a variable definition or other numeric expression.

\[
a:<\text{call : A = id : $1 = "This TimeOut application is \$1" + str$ A : msg $1>!}
\]

Determine the TimeOut application number.

\[
a:<\text{if : a = id :if a=7 then msg 'FileMaster' stop else if a = 8 then msg 'Macro Compiler' stop>!}
\]

Act differently for each.

<ifkey>
--
Checks to see if a specific key has been pressed (exact matches only) and if so continues. This is not part of the if-then-else logic.

\[
a:<\text{call :sa-b rpt>!}
\]

b:<a;; " ifkey rtn then print "Return was pressed:"! or
b:<\text{call :ifkey A<then print "A was pressed">!}
\]

<begin>
--
This does nothing unless used with <rpt>. It marks the restarting point for repeating part of a macro instead of repeating the entire macro.

<end>
No commands after <rpt> will ever be executed (unless they're part of an IF-THEN-ELSE statement). A conditional command must be used to exit the macro or it will run continuously. For example:

g:<all : bell : rpt>! could drive you crazy; press Escape to exit.

h<all : print "This part executes once" : begin : bell : rpt>! Prints a message and then beeps like crazy.

NOTE: Due to a rather obscure unfixable problem, you are not allowed to use some literal numbers between a begin/rpt sequence. Well, you can use them, but the macro won't work right. The numbers 17, and 37121 through 37375 inclusive. If you must use these numbers, use a variable to represent them inside of any begin/rpt sequences. (In fact, why not "always" use a variable so there is no chance of forgetting these rather unremarkable numbers, and getting bitten?)

<stop>
---

Stops all macro activity immediately. Use it to stop a nested macro from returning to the calling macro, or to get out of a <rpt> situation. For example, go back to the <findpo> sample.

Special UltraMacros Tokens with Parameters

The next group of tokens require additional parameters. Most parameters involve variables, so a description of UltraMacros' variables is next. The token definitions are continued following the variable section.

Defining Numeric Variables

---

Numeric variables may be defined many different ways. You must be careful that you don't accidentally redefine a variable if another macro expects to use that variable later.

We suggest leaving variables U, V, W, X, Y, and Z as "throw away" variables. Assume that they can be redefined indiscriminately by any and all macros. We also suggest reserving variable Q for recording the number of a file you leave later. Finally, a string may be defined exactly like another string. In this example, you don't accidentally redefine a variable if another macro expects to use that variable later.

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Start up AppleWorks and insert the UltraMacros disk. Add the file Macros Ultra to the Desktop and examine the variable usage in it. See macros SOLID-APPLE-1 and SOLID-APPLE-2 for examples of using variable Q.

Here is a chart showing the various ways to define numeric variables and use them in conditional macros.

<table>
<thead>
<tr>
<th>condition</th>
<th>var</th>
<th>operator</th>
<th>operand</th>
</tr>
</thead>
<tbody>
<tr>
<td>if</td>
<td>A</td>
<td>&gt;</td>
<td>X</td>
</tr>
<tr>
<td>through</td>
<td>$7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ifnot</td>
<td>Z</td>
<td>&lt;</td>
<td>$1</td>
</tr>
<tr>
<td>key</td>
<td></td>
<td></td>
<td>$2</td>
</tr>
<tr>
<td>length of a string</td>
<td></td>
<td>value at an address</td>
<td></td>
</tr>
<tr>
<td>value of a string</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TimeOut application</td>
<td></td>
<td>$10</td>
<td>decimal number</td>
</tr>
<tr>
<td>hexadecimal number</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>variable</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remember those crazy mix and match animal cards when you were a kid? This is the same idea, except that a variable can only be defined using the "equals" operator. Otherwise you can pick any item out of each category and use them together in a macro.

Any number of operands can be chained together using the four basic math operators (+ - / *). No parentheses are allowed. The equations are strictly evaluated left to right with no other precedence.

Defining String Variables

String variables may be defined in many different ways. Literal strings may be surrounded by single or double quotation marks:

a:<all : $8 = "This is a literal string";>!

Strings may be defined as the current date or time in these four formats:

call $0 = date; $1 = date2; $2 = time; $3 = time24;>!

Strings may be defined as the current Spreadsheet cell or Data Base category:

Manual update a page or so previous said that <cell> would read the current Word Processor line. I think this implies that it would work here also.

a:<all : $8 = cell>!

A portion of the screen may be used to define a string (see the description of the <screen> a few pages hence. <getstr> must be followed by a space. You can't use Ai:<all : $3 = getstr,15>! (When used in the Data Base, always follow <getstr> with a <rtn> i.e. <all : $3 = getstr 15 ; rtw>. See the file "Linking Samples".)

a:<all : $3 = getstr 15>!

See the description of <getstr> three pages hence for more information.

Finally, a string may be defined exactly like another string. In this example, $7 is made identical to $2:

a:<all : $7 = $2>!

Here is a chart showing the various ways to define string variables and use them in conditional macros:

<table>
<thead>
<tr>
<th>condition</th>
<th>str</th>
<th>operator</th>
<th>operand</th>
</tr>
</thead>
<tbody>
<tr>
<td>if</td>
<td>&quot;text&quot;</td>
<td>&lt;</td>
<td>$2</td>
</tr>
<tr>
<td>(define)</td>
<td>through</td>
<td>=</td>
<td>getstr</td>
</tr>
<tr>
<td>ifnot</td>
<td>left</td>
<td>&lt;</td>
<td>str</td>
</tr>
<tr>
<td>keyboard input</td>
<td></td>
<td>value of a var</td>
<td></td>
</tr>
<tr>
<td>db category, ss cell, or</td>
<td></td>
<td>string equivalent of a var</td>
<td></td>
</tr>
<tr>
<td>screen</td>
<td>right</td>
<td>&gt;</td>
<td>&quot;This example has &quot;quotation marks&quot; in it&quot;</td>
</tr>
<tr>
<td>80 col text screen</td>
<td></td>
<td>&quot;text&quot;</td>
<td>A literal string</td>
</tr>
<tr>
<td>chr$</td>
<td></td>
<td></td>
<td>Another string variable</td>
</tr>
<tr>
<td>ASCII1 value of a variable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>left</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right portion of a string</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any number of operands can be chained together using concatenation (+). No parentheses are allowed. The equations are strictly evaluated left to right with no other precedence. Any characters beyond 80 are ignored.

Parameters

Here are some of the possible parameters for UltraMacros tokens:

**MACRO**

A macro name such as SA-B or BA-CTRL-D

**NUM**

(number)

A literal decimal number from 0 to 65535
A literal hexadecimal number from $0 to $FFFF
A variable name from A to Z (the value of the variable is used)

NUM VAR
A variable name from A to Z (the value of the variable is used)

NUM2
A NUM (see above)
A "key" token presents a "^" on the bottom line of the screen, allowing up to 60 characters to be entered. (This is similar to OPEN-APPLE-0.)
a: <all : $1 = getstr 8 : print $1>! read in 8 characters and print them

A "peek" token presents a "#" on the bottom line of the screen
A "val" token
A "id#" token
NUM EXP
A NUM (see above)
A "asc" STRING
A new token has been added to UltraMacros. <asc> is used to convert a string character to its ASCII equivalent as shown on the Key Chart. Only the first character of a string is used. This command complements the <chr$> token.
x: <all $0 = "Test" : print asc $0>! prints "84"
x: <all $0 = "z" : x = asc $0 + 2 : print x>! prints 124
Add <asc> to the token list on page 81, and see the sample <asc> macros in Macros Ultra.

<goto MACRO>
A macro name to the specified macro name, if goto is not used, the second macro will return to the original macro and continue there. It will behave like a gosub. Goto just jumps to the named macro and keeps on going. No nesting occurs when goto is used.
a: <all : sa-b : print "The end">!
b: <all : if A = 4 then goto sa-c else rtn>!
c: <all : print "$4">!
Pressing SOLID-APPLE-C will start this macro example. Control passes to SOLID-APPLE-B. If A is not equal to 4, the macro jumps to SOLID-APPLE-C where string "$4" is printed. Because we used a goto, control does not return to SOLID-APPLE-B, but rather goes back to SOLID-APPLE-A and "The end" is printed.

<string EXP>
A STRING expression; STRING EXP's must be connected by "+" only; the equation is evaluated from left to right until the maximum length of 80 characters is reached.

<h Chr$ NUM>
Prints the ASCII value of a variable. See the Key Chart for a complete list. For example, the following macro will print the number 1:
a: <all : X = 49 : print chr$ X>!

<left STRING VAR, NUM>
Extracts the leftmost numbers of characters specified from a string.
a: <all : "Beagle Bros" : $2 = left $1,6 : print $2>! Prints Beagle (Only the first six characters.)
Assigns the current cursor position to the two variables following the token. The AppleWorks application affects the command like this:

<table>
<thead>
<tr>
<th>First Variable</th>
<th>Second Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Processor</td>
<td>column</td>
</tr>
<tr>
<td>Data Base</td>
<td>category</td>
</tr>
<tr>
<td>Spreadsheet</td>
<td>column</td>
</tr>
<tr>
<td></td>
<td>row</td>
</tr>
</tbody>
</table>

If the cursor is not in one of these three application, both variables will be set to zero. <posn> is compatible with TimeOut applications that use the AppleWorks application. For example, TimeOut Graph works in the Spreadsheet, so <posn> can be used with it.

Start up AppleWorks and add the file Macros Ultra from the UltraMacros disk to the Desktop. Examine the cursor-positioning macros for examples of <posn> usage.

Whenever a message is displayed, the remainder of the line is filled with the second to last character that was already on that line (i.e. the character above the "p" in A-? for help). This automatically erases the vestiges of previous longer messages. As the example shows, a null message erases the entire line.

The <posn> token must be followed by a colon. The second <posn> will result in a compiler error, but the first <posn> is legal:

```
a:all : pr# 0
```

A text string may precede the variable like this:

```
a:all : print :Variable A is now " A>
```

The onerr status is always reset to normal when a sequence of macros is done executing.

```
<onerr OPTION>
```

Allows you some control over what happens if an error occurs. An error is defined as a keystroke that causes AppleWorks or a TimeOut application to ring the error bell. Normally a macro continues on without regard to the error (the error bell is silenced as well). There are three onerr options:

1. `all : onerr stop>`! Stop the current macro after an error. If the macro was called from another macro, control returns to the calling macro. This does not shut down all macros; only the current macro is ended.

2: `all : onerr off>`! Revert to normal; ignore all errors. Resets the onerr status to normal, so macros ignore the errors, for better or worse.

3: `all : onerr goto sa-h>`! On any error, execute the named macro and return to calling macro where the error occurred.

The onerr status is always reset to normal when a sequence of macros is done executing.

```
<posn VAR,VAR>
```

Print has the most variations of any single UltraMacros command. The compiler will be happy to point out any errors you might make, but studying this section will make you much less error-prone.

### Printing Text

Like Applesoft, <print> allows a literal text string to be printed. You may use either double or single quotes around the text. The limit is 70 characters of text at a time.

```
a:all : print "Literal text <rtn>"! Prints "Literal text <rtn>"
```

The <rtn> is NOT converted to an actual RETURN.

```
a:all : print "double quotes inside 'single' quotes"! will print as "double quotes inside "single" quotes
```

### Printing Numeric Variables

Print can be used to display the value of any numeric variable. For example, if variable Q holds the desktop number of a specific file, this macro sequence would return you to that file:

```
a:all : print :Variable A is now * A>
```
When printing numeric variables, a "$" immediately after the print statement will cause the variable's hexadecimal value to be displayed in either two or four characters.

\( \text{a:=all : A = 8 : \text{print}\$ \ "Hex A = \$\ A\"! \ \text{print} \ "Hex A = \$08" } \)

\( \text{a:=all : X = 61453 : \text{print}\$ X\!: \ \text{print} \ "F00D" } \)

Numeric variables can also be printed as characters rather than numbers, The \(<\text{chr}\>\) token converts the numeric value to the equivalent key command. See the Key Chart for a complete list. Here's a sample.

\( \text{a:=all : X = 185 : Y = 41 : \text{print} \ \text{chr}\ X \!: \ \text{print} \ \text{chr} Y\!\! \) The Key Chart shows us that 185 is an OPEN-APPLE-9 and that $41 is an upper case "A". This sample will hump to the end of the file and then print an "A".

**Printing Strings**

The ten string variables may be printed by themselves only. No other options may be used when printing strings. These strings may contain text or command keystrokes. To define a string with commands instead of text, just define macro \(0\) (zero), the same as $0, and then use a macro like this:

\( \text{a:=all : $2 = 0 : \text{print} \ $2\!: \ \text{execute macro} 0 \ (\text{zero}) } \)

Because macro 0 (zero) and $0 are the same thing,

\( \text{a:=all : print} \ $0\!: \ \text{is exactly the same as} \)

\( \text{a:=all : sa-0}\! \)

**NOTE:**

**ALL PRINT STATEMENTS MUST BE FOLLOWED BY A COLON ":" OR ">"**. Other tokens can be followed by spaces and then another token, but <print> is an exception.

**<rem STRING>**

This command allows you to embed a remark in the middle of a macro. The remark does not get used in the macro. The command syntax is identical to <print>. Just surround the remark with single or double quotation marks.

The difference between using <rem> as opposed to just adding a comment after the "!" mark or by using the curly braces ({}), is that <rem>'s are preserved when the macro is assembled, so they are still present when you use the Macro Compiler to list the current macros into a Word Processor file. We prefer to use the curly braces to make sure we keep our Word Processor source files handy, but it's your option.

Here's a macro from the Macros Ultra file that deletes from the cursor to the end of the file. Actually, it moves the data to the clipboard so that it can be undone. It's a simple example, but it does illustrate how to use <rem>'s:

\( \text{a:=all : \text{oa-MO-Trem "Move to the clipboard": } \text{oa-9 : rtu : rem "jump to the end and do it!": } \text{sat} \)} \)

Comments and <rem> make it easier to follow the logic of a macro, especially if you want to change a macro you wrote last month or last year.

**<right STRING,NUM>**

Extracts the rightmost number of characters specified from a string.

\( \text{a:=all : $1 = \ "Beagle Bros": \ $2 = \ \text{right} \ $1,4 : \text{print} \ $2\!: \ \text{prints Bros} } \)

**<screen NUM,EXP,NUM,EXP>**

Read any part of the AppleWorks screen into a string variable. It is used like this:

\( \text{s:=all : $1 = \ \text{screen \ 7,1,15}\!: \ \text{Read current file name from top line. } } \)

The first parameter is the left column (1,80)
The second parameter is the line (1-24)
The third parameter is the length (1-80)

**<screen>** treats all characters as normal text, regardless of how they appear on the screen; it can't be used to tell if something was highlighted. (That is good news. If there is the slightest chance the cursor is within the range of the read performed by <screen> you should first switch to the overstrike cursor (oa-0) or you will have an underscore as part of the string variable. See sa-SPACE in Ultra Macros for method of properly restoring the insert or overstrike cursor.)

**<str> VAR NAME**

Converts a numeric variable to a decimal character string. It must be used as part of an equation. Here are some examples:

\( \text{x:=all : A = 4: \ $3 = \ "A + \ \text{str}\ A + \ "": \ \text{print} \ $3\!: \ \text{prints} \ "4\" } \)

\( \text{y:=all : B = 255: \ $1 = \ \text{str}\ B : \ \text{print} \ $1\!: \ \text{prints} \ "255\" \text{because} 255 \text{is the decimal equivalent of the decimal} \text{SFF used to define} B. } \)

This command is handy for including variables in a message:

\( \text{a:=ato : I = 164: \ $1 = \ "\text{TimeOut ID}\#: \ \text{str}\ I : \ \text{msg} \ $1\!: \ \text{show id}\" } \)

**<val STRING VAR>**

<val> is the opposite of <str>. It converts a string variable to a numeric value and must also be used as part of an equation. If the specified string starts with a non-numeric character, the value will always be zero. If the first character is a number, it will (and all other numbers following immediately after it) will be converted to a numeric value. Here are some examples:

\( \text{a:=all : \ $3 = \ "test4": \ A \ = \ \text{val} \ $3\!: \ \text{A will = 0} } \)

\( \text{a:=all : \ $2 = \ "48612": \ X = \ \text{val} \ $2\!: \ \text{X will = 48612} } \)

\( \text{a:=all : \ $8 = \ "2802x": \ V = \ \text{val} \ $8\!: \ \text{V will = 280} } \)

\( \text{a:=all : \ $0 = \ "14.48": \ B = \ \text{val} \ $0\!: \ \text{B will = 14} } \)

**<wait NUM EXP>**

Delays a macro for a set amount of time, or until a key is pressed. The actual delay will vary depending on your computer. Experiment to find the approximate delay needed for a second or a minute on your computer. Here's a macro you can use to calculate delay values:

\( \text{D:=all : msg \ "Enter a delay value: \ $0 = \ \text{getstr},5 \ \text{D = val} \ $0\!: \ \text{bell} \ : \ \text{wait} \ D \ : \ \text{bell} \ : \ \text{rpt}\!: \ \text{Test wait} } \)

One suggested use for the <wait> command is to allow a user to browse through a large document without having to touch the keyboard:

\( \text{b:=all : D = 400 \ : \ \text{wait} \ D \ : \ \text{down} \ : \ \text{rpt}\!: \ \text{Adjust D as desired. } } \)

**<wake MACRO at NUM EXP:NUM EXP>**

Puts a macro to "sleep" and wakes it at a designated 24-hour time. After a <wake> command has been issued, you can work normally, using macros and any UltraMacs commands as always. When the clock's time matches the sleeping macro's, it springs to life. Use it to set alarms, automatically save a file every few minutes, or everything down at 5:00!

The following example will start macro "A" at noon. then when macro "A" wakes up, it will set macro "C" to wake up at 5:00PM

\( \text{a:=all : \ \text{wake sa-b at 12:00}\!: } \)
If-Then-Else Logic

---

One of UltraMacros' best features is its true conditional capability utilizing if-then-else logic. Other macro programs may allow a conditional "if" or two based on keyboard input, but UltraMacros allows a full range of conditional commands using the numeric and string variables. Five tokens are involved with conditional logic: if, ifnot, then, else, elseoff.

The key to all conditional macros, <if> is always followed by a numeric string variable:

```
a:<all : if A = C + 4 then print A : else stop>
```

which is followed by an operator (greater than >), less than <, or equals =)

```
a:<all : if A =
```

which is followed by the expression to be evaluated

```
a:<all : if A = 5
```

If the statement is true, the macro continues normally. If the statement is not true, the macro ends (unless an <else> is present later in the macro).

```
a:<all : if A = 5 goto sa-s>!  If A is not 5 the macro stops here
```

### <ifnot>

Same as <if>, except that the statement must be false for the macro to continue normally.

```
a:<all : ifnot A = 5 goto sa-s>!  If A is not 5, then the macro stops here.
```

### <else>

This part of if-then-else logic reverses the true-false condition of the logic. If the statement is true, then execute the first part, else execute the second part. There is no limit to the number of <else> in one macro.

Whenever an <else> is encountered during a macro, the macro skips ahead to the next <else> or to the end of the macro, whichever is found first. It can be used during debugging to keep part of a macro from executing so a different part can be properly tested:

```
a:<all : if A > 4 then C = 3>!
```

This macro will always print "A two". Later the macro could become:

```
a:<all : if A > 4 then C = 3>!
```

Now the macro will always print "A one". When finished, the macro could be:

```
a:<all : if A = 5 then print "five": else print "Not five">!
```

There is no direct connection between if and else, so they can be used independently, although they make a good team. Here's a sample:

```
a:<all : if A = 5 then print "five": else print "Not five">!
```

This does just what you'd expect. If variable A is equal to 5, the word "five" is printed. If variable A is not equal to 5, the words "not five" are printed.

### <elseoff>

Does nothing unless used with else (See above). Its purpose is to cancel the conditional status of a macro and cause any commands following the <elseoff> to be executed regardless of any preceding <if> condition.

For example, if a conditional macro is supposed to print a phrase at the end, regardless of what other text is printed, you'd do this:

```
a:<all : if A = 5 then print "A is five": else print "A is not five": elseoff print " at this time.">!
```

If a is five it would print "A is five at this time," and if a is not five, it would print "A is not five at this time."

If the <elseoff> is removed, the macro will print either "A is five" or "A is not five at this time.,"
because we thought there might still be a few hackers out there who like to deal directly with their Apples. Besides that, we can always use them to write pretty powerful macros ourselves.

See the file Macros Special on the UltraMacros disk for some examples.

CORRECTION TO THE ABOVE:
Macros Special is not on the UltraMacros disk. It will be on the first TimeOut disk containing sample macros.

<call>
The call token is used to run machine language subroutines. It simply does a JSR to the address specified. It's up to you to make sure that the address is valid and that the routine will return to the macro via an RTS with all bank switches set properly.

A good place to poke in machine language subroutines is the AppleWorks temporary work buffer from $800 to $9FF.

CAUTION: The buffer is destroyed by AppleWorks disk access and by a few UltraMacros commands. Be careful!

When a macro is operating, the alternate zero page one is active, as well as the second bank of $D000 memory. Page 1 of the 80 column display is active. If you change any of these, they MUST be restored before your routine returns control to UltraMacros or AppleWorks will surely die.

The call command is a bonus feature and must be used carefully by experts only. Know what you are doing before you do this!

<poke>
Poke is a handy, albeit dangerous, command. Use it to build machine language subroutines for use with <call>.

It can also be used to directly change some flags within AppleWorks. For example, the <insert> token forces the insert cursor on. To force the overstrike cursor on, you can use this:

O:<all : poke $10F1,1>! Force overstrike cursor active.

The insert cursor continues to blink until another key pressed, and then you see the cursor is changed. To make it instantly change, add an invalid key like this:

O:<all : poke $10F1,1 :ctrl-x >! Force overstrike active and make it immediately obvious.

We aren't authorized to provide a list of AppleWorks addresses. You'll have to explore on your own. Some information is available from bulletin board systems. Last time we heard, AppleWorks author Bob Lissnor had an AppleWorks board somewhere in Nevada with a lot of handy information. Sorry we can't provide a phone number. (WE CAN! Try (702) 831-1722. Be Nice if you call. How many developers provide a modem line for you to call in and learn and/or voice your concerns about their program?)

<peek>
Peek returns the value found at the specified address. This example from the Macros Ultra file uses <peek> to determine the current file number:

1:<all : q = peek $C54 : oa-q esc>! Leave "1" file; go to main menu.
2:<all : oa-q print q : rtn>! Return "2" the file we left.
6. If an error occurs, the compiler will attempt to give you as much information as possible. When you press a key after reading the error message, you will be returned to the file with the cursor on or near the error.

Macro Compiler Errors

There are several errors which stop the compiler. Macros up to the error are usable, but no macros following the error line are compiled. When you press a key after reading the error message, you will be returned to the file with the cursor on or near the error.

No errors

The compiler recognized the entire macro file as a valid macro set. That doesn't mean that the macros don't contain potential execution errors. It does mean that all command tokens were used properly.

No Start Found

The compiler couldn't find the word "START" in the file. The word "START" must be on a line by itself, immediately preceded and followed by carriage returns (no spaces). This message can't occur if you select "Compile from cursor".

Reserved Macro Name

An attempt was made to define a reserved macro (see page 31). Remember that named keys such as RETURN and TAB have control key equivalents.

Incorrect application name

A valid local/global designation couldn't be found. Valid tokens are <all>, <awp>, <adb>, <asp>, and <ato>. Every macro must start with the macro name, followed by a colon ":" followed by the application name. (They are not kidding about the colon. If you don't include it, your macro will probably be ignored and not compiled with NO error messages. See how long THAT takes you to find the first time!)

Table full

The entire macro table was used up. This refers to the actual macro bytes generated and is not referring to the size of the Word Processor file. The only solution is to create multiple macro files from the one large one or to remove enough macro definitions so the compiled macros will fit into the table space. Since the default macros that come with the disk only use half of the space you can probably rest easy tonight.

Syntax error

The catch-all error message. Anything the compiler doesn't recognize is a syntax error. This is usually a misspelled token name.

Not enough parameters

The UltraMacros' token being compiled requires one or more additional parameters. See "Special UltraMacros Tokens with parameters" for a description of all tokens which use additional parameters.

Too many parameters

The UltraMacros' token being compiled requires at least one fewer parameter. See "Special UltraMacros Tokens with parameters" for a description of all tokens which use additional parameters.

Logic error

The macro definition was illogical. You might not think so, but guess who's the boss? Remember that UltraMacros us very strict and limited in its string and numeric variable usage.

String too long

A sequence of text characters used in a string definition exceeds the character limit.

END found in line

The compiler was stopped by an END command, not by an error. All macros up to the END line are usable.

Stopped by an ESCape

You pressed the ESCAPE key during compiling to halt the process. All macros already compiled are usable.

Display current macro set

This option will list all of the current macros into a Word Processor file. The listing can then be modified and recompiled as desired. The primary purpose of this option is to display recorded macros.

1. Add an AppleWorks Word Processor file to the Desktop. It can be an existing file, or a new one.
2. Press OPEN-APPLE-ESCAPE to call up the TimeOut menu. Select "macro compiler" from the menu.
3. Select "Display current macro set".
4. The current set of macros will be added to the file in token format. This file can then be changed and recompiled as desired.

Macro Options

The Macro Options TimeOut application contains UltraMacros' user-definable options. From within AppleWorks, press OPEN-APPLE-ESCAPE and select "Macro Options" to get this menu:

1. Launch a new Task
2. Create a Task File
3. Save macro table as default set
4. Deactivate macros
5. Reactivate single-stepping
6. Version
7. Other Activities

The first two options on this menu deal with Task files. Look beyond explanation of 1-7 of the options menu followed by 1-7 of the Other Activities menu.

1. Launch a new Task
When selected, this option reads the AppleWorks disk and looks for Task files. The names are shown on the screen. Press ESCAPE to return to the "Macro Options" menu, or select the Task you want to launch.

2. Create a Task file
-------------------------------
This option takes whatever macros are currently active in AppleWorks and saves them as a Task file on your AppleWorks STARTUP disk.

First you are prompted to enter a name for the new Task file. Enter a legal ProDOS name (you know, 1 to 15 characters beginning with a letter and containing only letters, periods, and numbers).

If the AppleWorks startup disk is not found, you will be prompted to insert it. At this time you can press ESCAPE to cancel, or you can insert the STARTUP disk and press Return.

When the Macros have been updated, put the previous disk back in the drive.

3. Save macro table as default set
---------------------------------------
This option takes whatever macros are currently active in AppleWorks and saves them into the file "ULTRA.SYS" on your AppleWorks STARTUP disk. These macros will be then be available whenever you start AppleWorks. No compiling will be necessary.

Before the macros are saved you are asked if you want to activate the auto startup macro. If you choose "Yes", the first macro in the macro set will be automatically run each time AppleWorks is started.

If the "ULTRA.SYS" file is not found, you will be prompted to insert your AppleWorks STARTUP disk. At this time you can press ESCAPE to cancel, or you can insert the STARTUP disk and press RETURN. When the macros have been updated, put the previous disk back in the drive.

4. Deactivate macros
-------------------------------
This option completely disconnects UltraMacros from AppleWorks. Choose this option if you wish to print using the Applied Engineering print buffer. After deactivating, the menu will appear as "4. Reactivate macros".

5. Reactivate single-stepping
-------------------------------
This option turns on "single-step" mode, which is useful for debugging complex macros. The menu will change to "5. Deactivate single-stepping".

When a macro sends a character to AppleWorks, this option forces a pause before each character actually gets to AppleWorks; the character is sent only after you press a key. If you press ESCAPE the macro will stop, but single-step mode will remain active.

Select "Deactivate single-stepping" to return to normal speed.

6. Version
---------
This option shows the current version of the UltraMacros package. You will need to know this number if you ever contact Beagle Bros about UltraMacros.

7. Other Activities
---------------------
Choose this to display the following menu:

1. Set cursor blink
2. Set mouse button response
3. Set mouse response
4. Deactivate the mouse
5. Reactivate key-lock
6. Reactivate screen preserver
7. Set screen preserver delay

Other Activities
-------------------
The options on this menu allow you to make changes to how UltraMacros functions. When you exit this menu by pressing ESCAPE, you will be asked if you want to save any changes to your AppleWorks STARTUP disk. If your answer is "yes", the current settings will be in effect every time you start AppleWorks.

1. Set cursor blink
---------------------
Choose this option to adjust the speed at which AppleWorks' cursor flashes. The current setting is displayed and you're prompted to enter a new value. Enter a number from 1-255 where 1 is the fastest and 255 is the slowest.

2. Set mouse button response
--------------------------
Choose this option to adjust how long the mouse button delays after it is used to select menu options. If you find yourself jumping several menu steps at time when you press the mouse button, you should increase the delay.

The current setting is displayed and you're prompted to enter a new value. Enter a number from 1-255 where 1 is the shortest delay available and 255 is the longest.

3. Set mouse response
---------------------
Choose this option to adjust how far the mouse has to travel horizontally or vertically before the cursor moves.

The current horizontal setting is displayed and you're prompted to enter a new value. Enter a number from 1-255 where 1 is the most responsive and 255 is the least responsive. Press ESCAPE when desired number is entered.

The current vertical setting is displayed and the same procedure is used to change it.

Apple //gs users can also use the Control Panel Options to change the high speed mouse option to "yes" or "no".

4. Deactivate the mouse
---------------------
This option makes Ultra Macros ignore your mouse card. It is useful for /c users who don't have a mouse. They do have mouse cards built in, and the cards sometimes give false readings as though a mouse was being moved. If you experience sporadic random cursor moves on any kind of Apple //gs, give this option a try.

Select the option; the menu will now be redisplayed as "4. Reactivate the mouse". Options 1 and 2 will now give "Mouse not found" if selected.

5. Reactivate Key-Lock
---------------------
Key-Lock is a special feature designed primarily for physically disabled AppleWorks users who have a difficult time pressing the OPEN-APPLE or SOLID-APPLE keys in combination with other keys. This option makes the OPEN-APPLE and SOLID-APPLE keys "lock on" until another key is pressed.

Here's how it works. First, select the option. Because Key-Lock is not
activated, the menu option will now be redisplayed as "5. Deactivate Key-Lock". Press ESC a few times to get back to AppleWorks. Get in a word processor document and press OPEN-APPLE. An inverse "O" appears in the bottom right corner of the screen. The cursor stops blinking and UltraMacros waits until you press another key.

If you press OPEN-APPLE again, the command will be cancelled and the normal cursor will appear. If you press another key, such 1, the OPEN-APPLE version of the key will be entered in AppleWorks. In this case, the cursor will jump to the top of the document. Now press OPEN-APPLE again followed by 9 and you’ll jump to the end.

To execute a macro, press the SOLID-APPLE key. An inverse "S" will appear. As before, you can press OPEN-APPLE to cancel, or another key to execute a command. To start a "BA" macro, press the OPEN-APPLE key followed by the SOLID-APPLE key. The inverse "O" will change to a "B" and the desired macro key can be pressed.

6. Reactivate screen preserver

The screen preserver will automatically blank your screen if there has been no key press or mouse move for a specified amount of time. This avoids monitor "burn-in" (i.e. scorching of the phosphors on the monitor screen).

Here's how to use it. First, select the option. Because the preserver is now activated, the menu option will now be redisplayed as "6. Deactivate screen preserver".

Now, sit and wait a few seconds. The screen will blank out, but don't despair. Just press a key to restore it. The screen preserver is tied to the blinking cursor; if an inverse bar menu such as OPEN-APPLE-C "Copy Text:" is active, the screen will never be blanked. The screen preserver is also ignored while the TimeOut OPEN-APPLE-ESCAPE menu is on the screen. It does work within TimeOut applications, though.

7. Set screen preserver delay

The current setting is displayed and you’re prompted to enter a new value. Enter a number from 1-255 where 1 is the shortest delay and 255 is the longest.

Data Converter

The TimeOut Data Converter allows you to quickly and easily transfer data between spreadsheet and data base files.

To transfer data from a spreadsheet to a Data Base file, use the OPEN-APPLE-C command to copy some Spreadsheet rows to the clipboard. Press OPEN-APPLE-ESCAPE and select "Data Converter" from the TimeOut menu. The data on the clipboard will instantly be converted into Data Base data.

Create a new Data Base file or load one in from disk. Place the cursor where you would like to insert the Spreadsheet data, press OPEN-APPLE-C and select "From the Clipboard". Each Spreadsheet row will now be inserted into your Data Base file. Each column from the Spreadsheet will become a Data Base category.

To transfer from a Data Base file to a Spreadsheet file, copy from the Data Base file to the clipboard, call up the TimeOut menu, select "Data Converter", and copy from the clipboard to the Spreadsheet file. Each category from the Data Base will become a Spreadsheet column.

If you’re using the AE expander, use UTILITIES to configure Data Converter.

Mouse Control

Once UltraMacros has been installed on your AppleWorks disk, you can use an Apple mouse to speed scrolling and menu selections. Here’s how:

Move the mouse to position the cursor just like using the arrow keys. Hold down the OPEN-APPLE key to move the cursor farther and faster within a file.

Press the mouse button to do one of the following:

(a) Select an option from any AppleWorks or TimeOut menu (the same as pressing the RETURN key).
(b) Scroll quickly through an AppleWorks file (the direction, up or down, is the same as the last vertical mouse movement.

You can adjust mouse sensitivity or deactivate the mouse using the Macro Options TimeOut application. See previous discussions for details.

Unless you specify otherwise, the mouse is always active (if you have one). If you have a mouse with a mouse interface card but no mouse is plugged in, you must deactivate the mouse; otherwise you will probably be faced with an out of control cursor that jumps wildly when you least suspect it. This can also happen on a //C that doesn’t have a mouse plugged in.

Mouse Tip:
The mouse is especially handy for creating Data Base single record layouts. Just hold down the OPEN-APPLE key and use the mouse to drag categories into position.

Linking Files

You can use the <store> and <recall> commands to link AppleWorks files together. Linking allows you to do things like print an unlimited number of files with one keypress, or have a custom set of macros loaded automatically with any Spreadsheet file.

The <store> command saves the first 15 characters of macro 0 (zero), generally a name, in an unused area or a Word Processor or Spreadsheet file. The <recall> command puts the name back in macro 0 (zero).

Start up AppleWorks and insert the UltraMacros disk. Add the Word Processor file "Linking Samples" to the Desktop and study it for some sample linking macros and ideas.
Task Files
---
Task files are precompiled sets of macros that have been saved on the AppleWorks startup disk as system files. They are called "Task" files because they allow you to quickly and easily execute a specific task.

New tasks can be launched in several ways:
1. From within AppleWorks by using the TimeOut Macro Options application.
2. From outside AppleWorks by using a program selector such as Apple Desktop, MouseDesk, Alan Bird's program Selector, ProSel, ECP or Squirt.
3. From outside of AppleWorks by typing -TASK.NAME from Basic with the AppleWorks STARTUP disk in the current drive.

To see a sample task file, start up AppleWorks and insert the UltraMacros disk. Add the Word Processor file "Task Sample" to the desktop.

When a task is launched from outside of AppleWorks, it first loads ULTRA.SYSTEM, which in turn loads AppleWorks. The first macro in the set of macros is then executed. The first macro from "Task Sample" looks like this:
```java
:s:a-1! get to main menu and run second macro.
```

The macro enters the two RETURN keystrokes needed to get past the AppleWorks copyright message and accept the current date. It then jumps to the next macro in the set.

Note: See "Task Sample" for replacement first macros if you don't have a clock or if you need to pause to remove the AppleWorks STARTUP disk and insert the PROGRAM disk.

The second macro should actually begin the task. This is the macro that's executed when the task is launched from within AppleWorks. The sample second macro looks like this:
```java
:l=all :rtn :rtn :sa-1! get to main menu and run second macro.
```

This example is simple, but it illustrates the potential of Task files. Here are some possible Task file uses:
1. Add a specific group of files to the AppleWorks Desktop.
2. Copy a 3.5" disk to a RAM disk using TimeOut FileMaster.
3. Load a Spreadsheet file and graph it TimeOut Graph.
4. Load a Word Processor file and print it with TimeOut SuperFonts.
5. Any complex and repetitive task, such as printing out a weekly report using Data base or Spreadsheet Data.

It's a good idea to create a "Default Macros" task file first and save it on your AppleWorks STARTUP disk. Then when a task is completed, you can quickly get back to your default set of macros. In fact, a Task File can even do that automatically after it's completed its task.

NOTE: Programmers interested in licensing a special type of Task File for use on disks they sell should read the file "Programmer tasks" on the UltraMacros disk.

The special Case of Macro 0 (Zero)
---
Macro 0 (zero) is a unique macro because it's used by many special UltraMacros commands. Use macro 0 (zero) only for very temporary macros, because it can be redefined quite easily before you know it. Here's a list of ways that macro 0 (zero) can be redefined:

1. Press OPEN-APPLE-X to record up to 80 characters; the keystrokes are passed on to AppleWorks as they are entered.
2. Press OPEN-APPLE-O to enter up to 60 characters; the keystrokes are not passed on to AppleWorks.
3. Press OPEN-APPLE^- to read the character under the cursor into macro 0 (zero).
4. Press OPEN-APPLE-4 to read the current disk name into macro 0 (zero).
5. Press OPEN-APPLE-^ to read the current path into macro 0 (zero).
6. Press OPEN-APPLE-- to read the current Data Base category or Spreadsheet cell into macro 0 (zero).
7. Press OPEN-APPLE-> to recall the STORE'd name file into macro 0 (zero).
8. It can be redefined from within a macro using <$0 = ...>.

Once macro 0 (zero) has been defined, the keystrokes may be sent to AppleWorks by pressing SOLID-APPLE-0. A handy example is copying a Data Base category and pasting it into the Word Processor, into the Spreadsheet, or into another Data Base category.

1. Press OPEN-APPLE- -- while in the Data Base. The current category is read into macro 0 (zero).
2. Move to the new location in the Data Base or anywhere else.
3. Press SOLID-APPLE-0 (zero) and the category is duplicated.

The contents of macro 0 (zero) are also used by the SOLID-APPLE-RETURN <find> command to determine what it looks for. If you have a lot of files on a disk, try this:

1. Go to the "Add Files" menu.
2. Press OPEN-APPLE-0. You will be prompted with a >.
3. Enter the file name you wish to find and press RETURN.
4. Press SOLID-APPLE-RETURN. The cursor will jump to the specified name or stop at the end of the file list if it couldn't find a match.
5. Press RETURN to load the file.

Examine the Spreadsheet file called "Macro 0 Memo" on the UltraMacros disk for a handy chart showing the possible macro 0 (zero) uses.

A Macro Explained
---
Here's some information about a handy macro that uses just a few of UltraMacros powerful commands. Hopefully it will give you a better understanding of how UltraMacros commands can be utilized.

1. Start AppleWorks and insert the UltraMacros disk in a drive.
2. Add the Data Base files "Addresses" and "Phone Calls" to the Desktop, along with the "Macros Ultra" Word Processing file.
3. Select "Macros Ultra" and use OPEN-APPLE-P to find Phone Calls.
4. You'll see a detailed macro description. Examine it briefly.
5. Switch to the "Addresses" file and put the cursor on a name. Press SOLID-APPLE-CONTROL-P. In an instant you'll see a screen something like this:

File: Phone Calls
Selection: All Records
Record 2 of 2

Date: Aug 19 87
Name Bryan Ross
Number: (111) 222-3333
Time Start: 5:35 PM
Time End: -
Comment: -

---

All you need to do is press SOLID-APPLE=- when the conversation is over (to enter the time), and you've got a detailed record of the call. How did the macro do it? Examine it step-by-step. The curly (braces) allow you to embed comments between the <token brackets>. These comments are not stored in the macro table, so they don't waste any space.

Nowhere does it tell you that you have to compile the macro file before using it. You should know that, but we're reminding you here anyway.

TimeOut MacroTools

---

MacroTools is a TimeOut disk fill of sample macros, TimeOut tips, and special TimeOut applications, and a surprise or two. UltraMacros beginners will appreciate the powerful ready-to-use macros and instructional macro tips.

Veteran macro maniacs will love the programming ideas and samples on the disk. They'll especially like "Debug", a TimeOut application that displays all kinds of useful macro table information that only a macro programmer could enjoy. It even allows variables to be examined and modified!

Check the "NOTES" file on the UltraMacros disk for more information about MacroTools.

TimeOut MacroTools will be released during the first quarter of 1988.

Changes from Super MacroWorks

---

Here is a brief summary of changes for users converting from Super MacroWorks to UltraMacros. Several obvious differences relate to TimeOut, all compiling, saving of compiled macros, macro listing, changing mouse options, etc., is done using the TimeOut applications. The resulting saving of memory space allows the actual UltraMacros program (ULTRA.SYSTEM) to be more powerful.

The following new tokens have been added to UltraMacros:

atol, begin, call, cell, clear, else, elseoff, getstr, goto, highlight, id#, left$, nosleep, onerr, peek, poa$n, print, pr#, rem, right, right$, screen, then, time24, val, wait, wake

A significant improvement in an existing command is the new ability of <find> to search any numbered highlighted bar menu. It works with the OPEN-APPLE-ESCAPE TimeOut menu and with any normal menu such as the list of printers you're given before printing a file.

The following tokens are not available. They are unnecessary because their functions can be duplicated with existing commands.

end?, menu, resume, swap, OPEN-APPLE-#, OPEN-APPLE-$, ;print, compile, save0, load0, 0=, if0, var=, incvar, decvar, varnot, var

The "var" commands have been replaced with a full set of 26 numeric variables. These commands can be replaced with the new UltraMacros commands as described in the file "Macros From SMW" on the UltraMacros disk.

The ability to automatically download a Power Print font at startup time was dropped.

NOTE: You may leave Super MacroWorks on the AppleWorks STARTUP disk. The UltraMacros installation program will rename SUPER.SYSTEM to SUPER.SYSOLD.

To use UltraMacros, you can then boot your AppleWorks STARTUP disk, choose "ULTRA.SYSTEM" with a program selector, or type "ULTRA.SYSTEM" from Basic.

To use Super MacroWorks, type "-SUPER.SYSOLD" from Applesoft BASIC or choose "SUPER.SYSOLD" with a program selector.

---

Macro Token List
---

Here's a complete alphabetical listing of all UltraMacros tokens, along with a short description.

<table>
<thead>
<tr>
<th>Token</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>adb</td>
<td>AppleWorks' Data Base application code</td>
</tr>
<tr>
<td>ahead</td>
<td>Find next space</td>
</tr>
<tr>
<td>all</td>
<td>Any of AppleWorks' three application types</td>
</tr>
<tr>
<td>asc</td>
<td>Convert string character to its ASCII equivalent as shown on the Key Chart. Only the first character of a string is used.</td>
</tr>
<tr>
<td>asp</td>
<td>AppleWorks' Spreadsheet application code</td>
</tr>
<tr>
<td>atoi</td>
<td>TimeOut application code</td>
</tr>
<tr>
<td>awp</td>
<td>AppleWorks' Word Processor application code</td>
</tr>
<tr>
<td>ba</td>
<td>Both Apple i.e. OPEN-APPLE and SOLID-APPLE are pushed together back</td>
</tr>
<tr>
<td>prevous</td>
<td>Find previous space</td>
</tr>
<tr>
<td>begin</td>
<td>Start of repeatable section (see rpt)</td>
</tr>
<tr>
<td>bell</td>
<td>Sound the AppleWorks error bell</td>
</tr>
<tr>
<td>call</td>
<td>Execute a machine language subroutine</td>
</tr>
<tr>
<td>cell</td>
<td>Read current cell, category, or WP line to macro 0 (zero)</td>
</tr>
<tr>
<td>clear</td>
<td>Set all numeric and string variables to 0</td>
</tr>
<tr>
<td>ctrl</td>
<td>Control key</td>
</tr>
<tr>
<td>date</td>
<td>Display date in this format: November 26, 1987</td>
</tr>
<tr>
<td>date2</td>
<td>Display date in this format: 11/26/87</td>
</tr>
<tr>
<td>dec</td>
<td>Decrement the cursor character</td>
</tr>
<tr>
<td>del</td>
<td>Delete key</td>
</tr>
<tr>
<td>disk</td>
<td>Read disk name to macro 0 (zero)</td>
</tr>
<tr>
<td>dow</td>
<td>Down arrow key</td>
</tr>
<tr>
<td>else</td>
<td>Reverses conditional status of a macro</td>
</tr>
<tr>
<td>elseif</td>
<td>Return to macro being unconditional</td>
</tr>
<tr>
<td>esc</td>
<td>Escape key</td>
</tr>
<tr>
<td>find</td>
<td>Find a name or carriage RETURN</td>
</tr>
<tr>
<td>findp</td>
<td>Find a printer option</td>
</tr>
<tr>
<td>getstr</td>
<td>Define a string from the keyboard</td>
</tr>
<tr>
<td>goto</td>
<td>Jump to specified macro</td>
</tr>
<tr>
<td>highlight</td>
<td>Invert specified screen portion</td>
</tr>
</tbody>
</table>
5. Change name menu.

4. Change memory status application name. If you choose not to have the menu sorted, you can still sort it after starting up AppleWorks by selecting "Sort menu" from the Utilities menu.

3. Dump from memory. When you apply TimeOut to your AppleWorks STARTUP disk, you are given the option to configure TimeOut applications disk is as it appears in the Utilities menu. Select "Utilities" and you will see the following screen:

**TIMEOUT UTILITIES**

Using the Utilities

To use the TimeOut Utilities, make sure that the file TO UTILITIES has been copied to your TimeOut applications disk. Start up AppleWorks and press OPEN-APPLE-ESCAPE to call up the TimeOut menu. Select "Utilities" and you will see the following screen:

- **Configure**
  - The "Configure" option allows you to set new defaults for your TimeOut applications. Configurable options might include printer type, default font, location of files needed by the application, etc. Not all TimeOut applications have configurable options.
  - To configure an application, select "Configure" from the Utilities menu. Then select the application you want to configure. You will see a menu indicating what options may be configured for that particular application. You should see the current value for each option in brackets {...}.
  - Select an option that you would like to change. Enter or select the new value for that option. Make sure that the TimeOut applications disk is in a drive so that the application can be updated with the new value. The next time you use the application, it will use the new value you have supplied.
  - After you are finished updating configurable options, press ESCAPE to return to the Utilities menu.

- **Load to Memory**
  - TimeOut applications are either disk resident or memory resident. If an application was configured as disk resident when you started up AppleWorks, you can load it into memory using the "Load to Memory" option. Just select the option from the Utilities menu and select which application you would like to load.

- **Dump from Memory**
  - If you receive a message from AppleWorks indicating that it was unable to complete an option because of insufficient Desktop memory, you may need to dump one or more TimeOut applications that are memory resident. Select "Dump from memory" from the Utilities menu and select which application you would like to dump. Notice that the amount of free memory indicated in the lower right hand portion of the screen increases with each application you dump. Applications that are dumped are returned to disk resident status for the remainder of the AppleWorks session.

- **Change memory status**
  - This option allows you to indicate whether a TimeOut application is disk or memory resident. Note that this only indicates how the application will be treated when you start up AppleWorks. To load an application into memory or to return it to the disk for the current AppleWorks session, you will need to use the "Load to memory" option or the "Dump from memory" option.

- **Change name**
  - This option allows you to change the name of the application as it appears in the TimeOut menu. The Beagle Brothers staff carefully selects a good name for each application. However, you have the flexibility of renaming it if you wish.
  - If the new name you enter is longer than the old name, the name change will not be reflected in the TimeOut menu until the next time you start up AppleWorks.

- **Sort Menu**
  - When you apply TimeOut to your AppleWorks STARTUP disk, you are given the option of indicating whether or not you want the TimeOut menu automatically sorted by application name. If you choose not to have the menu sorted, you can still sort it after starting up AppleWorks by selecting "Sort menu" from the Utilities menu.
If you're having trouble with your own custom macros, exhaust every possibility before writing. To have me (Randy Brandt) examine your macros for what might be an UltraMacros problem, send them on a disk to my attention along with a description of the problem and your hardware/software setup.

Please remember that debugging macros are almost last on my priority list (just before taking out the trash), but you might catch me on a good day.

There are a few features which are unclear or not mentioned in the manual:

1. String variables can be referenced indirectly by using a numeric variable to specify the string to use:
   ```
   a: call $0 = "ZERO" : $1 = "ONE" : A = 0 : print $A : A = A + 1 : print "*" + (A) + 1 : prints ZERO ONE
   ```

2. String tokens requiring one parameter can not use equations. The following macro would be illegal because `getstr 3 + 2` should be `getstr 5` or some other single parameter.
   ```
   a: call msg <" + getstr 3 + 2 + screen 1,1,9 + ">!
   ```

Parameters for strictly numeric tokens can be equations:

```
-- highlight 9, L, len $(A) + 10, L! from "Macros Menu"
Macros Manual
Load the file "Macros Manual" from the UltraMacros disk. It contains many of sample macros described in the manual, as well as a few bonuses.

Customer Support Information

If you have questions or problems, you can contact the Beagle Bros Technical Support Staff for expert assistance.

Before calling, check the instruction manual to see if it contains the information you need. Write down a complete description of the problem, the version number of the software, and the names and version numbers of any other AppleWorks enhancement programs you're using.

If you have a modem, you may also receive Tech Support on our 24-hour Customer Support System. The system provides an electronic mail and conferencing system, along with the latest information about product updates and changes.

Technical Support:
(619) 452-5502 8AM to 5PM, weekdays (Pacific time)

Modern Tech Support:
(619) 452-5565 24 hours, everyday

Or, you can write to:
Beagle Bros, Inc.
6215 Ferris Square, Suite 100
San Diego, CA 92121

-MACRO- Chapter 4 & END OF ULTRAMACROS DOCS
You're at the wheel of a 2500-horsepower vehicle specially built to propel you from a dead stop down a quarter-mile track in the shortest possible time. Your reflexes have to be lightning fast because it's like trying to control a rocket skidding along the ground.

Top Fuel Eliminator is a simulation of a complete season of drag racing. The season is composed of nine events on a points system.

Getting off the Ground: Take your mouse and go to the very lower left hand corner. You should see two little green triangles. The "T" stands for torque. If you keep this on full the whole time, the little temp light in the high left hand corner will light up and you will have to turn it down. To move the triangle, use your mouse. I don't know what the "C" stands for, but you must use your mouse to use that, too. Put that almost to the very high and watch your ship take off the ground.

You'll be competing against eight of the world's best drivers. To win a race, or even make it down the track in one piece, you'll also have to pay close attention to track and weather conditions and adjust your dragster accordingly. Top Fuel Eliminator gives you lots of options that will affect your chances of winning.

Getting Started

The Cockpit: In the middle of the screen, of course, if your window. Below that, you'll see now a little box with "ALT" (Altitude), "SPD" (Speed), "VSI" (Vertical climb per second or Vertical fall per/sec), "ETA" (Estimated Time Arrival to ground). Right now, you should see the altitude climbing rapidly. Get up to about 1000 ft, and then take your "C" down with your mouse untill the VSI is at 000. If it's going up 1 or going down 1, you can make minor adjustments with the keys "A" and "S".

Gaining or losing speed: Take your joystick and tap it just a little forward. Your ship will go down just a tiny bit, but your speed will have increased by a few Knots. Keep on doing this until your speed is about 70-100 Knots. It isn't as easy as it sounds.

To fire rockets:

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
The Pit Area screen appears, and you're ready to begin with racing season.

THE RACING SEASON

Nine events make up the racing season. They're scheduled in the following order:

1. Winter Nationals
2. North Nationals
3. Spring Nationals
4. East Nationals
5. Summer Nationals
6. South Nationals
7. Fall Nationals
8. West Nationals
9. World Event

Each event is composed of several races: a qualifying session, the first round of eliminations, the semi-final round eliminations, and the final round eliminations which determines the Top Fuel champion for that event. If you don't qualify for a race, or if you lose a race, you're eliminated from that event and Top Fuel Eliminator goes on to the next event.

QUALIFYING

You're given two attempts to qualify for an event during the qualifying session. To qualify, you need not beat your opponent, but you must commit any fouls (see "Race Rules"), and you must beat the posted "bubble" time.

The bubble time is the maximum time allowed for the qualifying attempt and is determined by the slowest qualifying speed. There are nine drivers trying to race in each event but only eight are allowed. Therefore, the qualifying time of the eight fastest driver will be the bubble. If you beat that time, then he is eliminated from the field.

FIRST ROUND

If you qualify, you'll automatically be placed in the first round. Your opponent will be the one with the closest qualifying time to yours. If you win the race, you advance to the semi-final round. Losers will be eliminated.

SEMI-FINAL ROUND

Two races involving four drivers are held in this round. The winner of each race will advance to the final round. Losers will be eliminated.

FINAL ROUND

Two drivers will race for the event title. The winner is the champion for that event. The loser is the runner-up. If you've made it this far, Top Fuel Eliminator will then begin the next event.

RACE RULES

A vehicle may be disqualified from a race for the following reasons:

- Triggering a red light by leaving the starting line too early
- Experiencing engine failure
- Crossing the center line
- Crashing

If one car "red-lights" and the other crosses the center line, the car that red-lights will be declared the winner since center line crossing is more a serious offense. By the same reasoning, a crash is more serious than line crossing and will disqualify you first. If two cars commit the same foul, the one who gets to the finish line first wins.

Both cars crash, the one that travels the greatest distance wins.

THE PIT AREA

Each race is preceded by the appearance of the Pit Area screen. It's here, in the pit, that you're presented with playing options for entering the race and for fine-tuning your dragster. The options are designated by icons across the bottom of the screen. Moving the joystick left or right cycles you through the icons, highlighting them as you go. When an icon is highlighted you may select it by pressing the button.

ENTERING THE RACE – THE XMAS TREE ICON

This is the race icon. Selecting this option puts you at the starting line of the race, so be prepared to put the pedal to the metal before you start it. Once you're at the starting line, there's no backing out. "Xmas Tree" is drag racing parlance for a set of vertically aligned colored lights used to start the race. It appears to the left of your dragster and should be observed carefully. A tachometer appears to the right of your vehicle and should be given equal attention.

The tachometer will first show a rev to an idle of 2000 rpm's as the Xmas Tree begins with a staging light. Your dragster will then rev to 5000 rpm's, and the Xmas Tree will begin counting down the seconds to the race. Your response time is crucial now, so start alert. The Xmas Tree will quickly run through a succession of yellow light and then hit green. This is your signal to go by pressing the button. A race is often won by launching at the precise moment the green light is given. After that, you bear for the finish line with as much speed and driving skill as you can muster.

You must shift gears only once during the quarter-mile race, and you'll need real skill to pick the precise moment to do so. Shifting is accomplished by pressing the button. Your Dragster's engine "red-lines" at 6000 rpm's, and your engine will blow up, costing you the race, if you don't shift before the tachometer reaches the mark. However, you must also be careful not to shift too early or you'll never generate enough horsepower to win.

Steering a 2500-horsepower monster in a straight line for just a quarter of a mile is going to be more difficult than you might think. It will probably take some practice before you gain enough skill to compete against some of the better drivers in this game.

FINE-TUNING YOUR DRAGSTER

You can increase your chances of winning by fine-tuning various components of your dragster. These adjustments are made by selecting other options available on the Pit Area screen. Each of these options has several settings along with a corresponding calibration. Push the joystick left and right to cycle through the available settings. Press the button to select a setting.

QUESTION MARK ICON

This option provides you with track information that's essential in determining what adjustments to make on your vehicle. The track information is of such importance that this option is highlighted automatically whenever the Pit Area screen is accessed. The information changes continually, so it's best to check it before each race and adjust your vehicle accordingly. Logical and experience will dictate what adjustments to make in response to the information.

CLOCK ICON

Selecting this option allows you to adjust your ignition timing, which is a critical factor in producing horsepower. The higher the number of degrees of advance, the more horsepower will be produced. This
introduces a greater possibility of engine failure, though, so set your
timing cautiously.

**FUEL CAN ICON**

Selecting this option allows you to adjust the nitro-methane mixture
used for fuel in your dragster. This very explosive fuel can be made
even more volatile by increasing the percentage of nitro in the mix.
This will produce more power but also increase your chances of engine
failure. If your racing opponent is slow, a low nitro mix may be the
safer way to go.

Selecting this option allows you to adjust the clutch on your dragster.
Clutch adjustments allow you to transmit engine power to the rear
wheels in a manner most suitable for the track conditions. If the track
conditions are good, setting the clutch for high grab will cause the car
to accelerate faster. Under slippery track conditions, low grab may be
preferable; power will be transmitted to the rear wheels more smoothly,
decreasing your chances of spinning your wheels.

**TIRE ICON**

Selecting this option allows you to adjust your tire pressure to suit
track conditions. Under slippery conditions, a low tire pressure may
provide more traction. Traction is a product of friction and resistance,
however, so a low tire pressure may also slow you down a bit, especially
on dry pavement. Carefully consider the track conditions before
choosing your tire pressure.

**AIRPLANE (WING) ICON**

Selecting this option allows you to make a wing adjustment. The "wing"
is a wing-shaped device located over the rear wheels of the vehicle. It
controls the air’s angle of deflection as it passes over the rear
wheels. As the angle of the wing increases, the downward force of air on
the rear wheels increases, resulting in better traction. However, the
amount of drag also increases, which slows the vehicle down a bit. There
is no free lunch in physics. You must decide where the advantage lies,
based on the conditions described in the track information. For
instance, under slippery conditions, you would probably benefit from a
high wing angle as it would keep the wheels from spinning excessively.

**ENGINE ICON**

This options allows you to adjust the supercharger speed. A supercharger
is basically a big air pump that forces the air and fuel mixture into
the engine under pressure, greatly increasing engine performance.
Increasing the supercharger speed, and thus the pressure, increases the
amount of horsepower the engine is capable of producing. However, there is
a greater danger of engine failure when too much pressure is forced
into the engine. As with the other vehicle adjustments, use this one
with discretion.

The major factors for determining horsepower are fuel mixtures, ignition
timing, and supercharger speed. You’ll learn from experience how to deal
with these variables for optimum performance. Besides losing a race,
there are other indications for a badly set-up vehicle. For example, if
you see smoke coming from your wheels in the overhead view of the race,
you may want to set up your dragster differently to get better traction.

**A N D T H E W I N N E R I S**

After each race is completed the following information is also displayed:

- A Performance Analysis of your driving in that race.
- A Ladder Chart showing the standing of each driver in the event up to that
  point.

After each event is completed the following information is also displayed:

- An Event Points Chart showing the points awarded to you in that event.
- An Accumulated Points Chart showing the points each driver has
  accumulated up to and including that event.

**PERFORMANCE ANALYSIS**

- **<Elapsed Time>:** Your time from starting line to finish line.
- **<Top Speed>:** The speed you were traveling at the finish line.
- **<Reaction>:** Based on how well you shifted gears. Shifting gears too early does not
  allow the engine to develop its full potential of horsepower, which
  results in a slow Elapsed Time and poor rating. Waiting too long to
  shift will cause the engine to over-rev and result in an engine failure.
  Remember, your engine "red-lines" at 9500 rpms.
- **<Power>:** An indication of how well you set up your engine in the Pit Area.
- **<Reaction>:** An indication of how well you set up the vehicle in the Pit Area.
- **<Engine Fail>:** Caused by an improper pit set-up or a bad shift.
- **<Crash>:** Either you hit the wall or the engine exploded during a crash.
- **<Red Light>:** If you leave the starting line before the light turns green, you may be
disqualified from the race.
- **<Line Cross>:** If you cross the center line, you may be disqualified from the race.

At the bottom of your statistics chart a message displayed indicated
whether you’re: Qualified, Not Qualified, Disqualified, Eliminated, or a
Winner.

**LADDER CHART**

At the end of each race a ladder chart appears to illustrate each
driver’s standing in that race. If you qualified for the race, your name
will appear among the eight names listed to the left of the ladder chart
that appears after the qualifying session. Play close attention to which
driver you’re going to race in the first round and each subsequent
round. As you’ll learn through experience, some drivers are faster than
others, so you’ll want to set up your vehicle in the Pit Area accordingly.

If you win the subsequent elimination rounds of a race your name will
advance to the right, toward the final round that determines Top Fuel
honors.

**POINTSSYSTEM**

**Events Points Chart**

After each national event is completed an events points chart is
displayed. Points are awarded in four categories as follows:
- **Qualifying Category:**
Apple II Computer Info

Fastest         8 Points
2nd             7 Points
3rd             5 Points
4th             5 Points
5th             4 Points
6th             3 Points
7th             2 Points
8th             1 Point
Not Qualified   No Points

CONTESTANT CATEGORY:
Each contestant gets 100 points for entering the event.

AWARD CATEGORY:
Winner         - 800 Points
Runner Up      - 600 Points
Semi-Finalist  - 400 Points
First Rounder  - 200 Points
Not In Race     - No Points

SEASON POINTS CHART
The season Points chart is displayed immediately after the Event Points
Chart. It shows the total points each driver has accumulated up to and
including that event.

THE END OF THE SEASON
At the completion of the nine national Top Fuel Eliminator displays your
standing for the season all nine drivers. You may then begin a new
season.

-End-

THE SOUTH POLE........[312] 677-7140

THE TRACER SANCTION

SOLVE
BY
THE
<<LONE KIDS
\"
\\\
\\\"
\\\"
\\\"
\\\"

THE FOLLOWING COMMANDS HAVE BEEN BUILT INTO THE GAME TO AID YOU IF U CAN'T TYPE WORTH A SHIT.......

SHIFT 1 - SAVE THE GAME
SHIFT 2 - LOAD THE GAME
SHIFT 3 - LAST COMMAND ENTERED
SHIFT 4 - HELP ME CONDOR
SHIFT 5 - DROP
SHIFT 6 - GET ALL
SHIFT 7 - QUICKSAVE
SHIFT 8 - QUICKLOAD

PLEASE READ THE TUTORIAL TO GET FURTHER INFO SUCH AS STRING COMMANDS....

BELOW IS AN EXACT SOLVE WHICH HAS SOME UNNECESSARY COMMANDS INCLUDED IN CASE YOU WANT TO SEE MORE.......BUT NOT EVERYTHING(I CANT DO ALL FOR YOU)...

[] - UNNECESSARY COMMANDS (NOTE, IF U DO ANY OF THEM U MAY HAVE TO DO SUM OF THE OTHERS FOR THE SOLVE TO WORK)
() - INDICATES # OF TIMES TO DO THE COMMAND
<> - INDICATES A SET OF STRINGED COMMANDS

-----------------------------------------------------------------------------

MONGO
----- TALK MAN,E,N,BUY FUEL,500,[E,BUY MAP,LOOK MAP,W],N(2),TURN POINTER TO SONEX,PUSH BUTTON

SONEX
----- E,(S(2),[N,W,KNOCK,S,E],S,E,N,SELL GEM,S,W,S,[E,CUT IN LINE,W],N(3),BUY FUEL, 800,N(2),TURN POINTER TO JUBILEX,PUSH BUTTON

JUBILEX
-----

S,GET ALL,N,E,S(4),[N,W,BUY DRINK,GET DRINK,DRINK VODKA,TALK MAN,S,GET STICK,N,E],E,GET BATTERY,W,GIVE SUIT,S,GET SHOVEL,E(2),GO CAVE,YELL,N,GET DIAMOND,DIG,W(3),N(4),BUY FUEL,800,N(2),TURN POINTER TO SONEX,PUSH BUTTON

SONEX

-----------------------------------------------------------------------------
DOCUMENTATION track.n.pack

Track/N/Pack Pro 1.0

by Sergeant Busbee of IPG

Box by The Bunny Slayer

Well, it's been a long time since Sarge wrote a useful hack, and this one is one of his best. A need has been growing recently for a version of Track-N-Pack that operated in ProDOS and worked on 3.5s as well as floppies. The wait is over...

Track/N/Pack Pro is here!

Why Split Disks?

In case you don't know, disks are *SPLIT* to allow packing and transfer even when a disk packs to more than 280 (or 1600) blocks. TNP strips a certain amount of information from the disk to be split, stores that info in a file, and then erases the blocks that were stored. The packing program then has a lot of blank space and will pack the disk in less than a disk. After transfer, the disk must be unpacked and then UnSplit, which reverses the Split operation.

Loading:

TNP is a ProDOS System file, so it can be run from BASIC by "-TNP.PRO" or from the ProDOS "BYE" screen.

The Menu:

The Menu should look something like this...

1. Choose Device
2. Split Disk
3. UnSplit Disk
4. Credits
5. Quit

Hitting 1 presents you with a list of the slots and drives of all disk devices on-line. Type the number corresponding to the device you want to split/unsplit from. Only 5.25" and 3.5" disk drives are supported. If you try to split a RAMDISK, you'll get an error from TNP.

After you make your choice you'll be back at the menu.

Hitting 1 presents you with a list of the slots and drives of all disk devices on-line. Type the number corresponding to the device you want to split/unsplit from. Only 5.25" and 3.5" disk drives are supported. If you try to split a RAMDISK, you'll get an error from TNP.

After you make your choice you'll be back at the menu.

1. Choose Device

Hitting 1 presents you with a list of the slots and drives of all disk devices on-line. Type the number corresponding to the device you want to split/unsplit from. Only 5.25" and 3.5" disk drives are supported. If you try to split a RAMDISK, you'll get an error from TNP.

After you make your choice you'll be back at the menu.

2. Split Disk

After a warning, type in the name of the file the "split" is going to be stored in. You must type the name in in ALL CAPS (I'm lazy...wait for the next version). Be careful about how you have your prefixes set if you use partial pathnames. None of that nice user-friendly file selection bullshit here...

After you type the filename and hit return, hit RETURN again to start the split. Various errors are possible and TNP will tell you if one occurs.

NOTE: The old DOS version of TNP allowed you to specify how many tracks got...
split from the original. TNP PRO doesn't yet support that. The amount split from disks is as follows:

5.25"  32 blocks (the first 4 tracks)
3.5"  192 blocks (the first 192 tracks)

The next version of TNP will support variable length splits.

The drives you selected will whir and what not... if all goes well, you'll be back at the main menu ready to hop into your packer.

3. UnSplit Disk

This glues a disk back together after it's been split. Type in the filename of the file the "split" is in (the same name as in part 2) and insert the proper disks and hit RETURN. The drives will whir again and after a bit the disk will be as good as new!!!

4. Credits

Credit where credit is due...

This is some of Sarge's Bullshit

If you type 'Y' after this, you'll be dropped into the ProDOS "BYE". Any other key will take you back to the menu.

Finale:

If you have comments, questions, or suggestions about TNP PRO, just call THE CAVERNS OF QYV / 618-242-2252 3/12 24hrs and leave a note to Sergeant Busbee (#1). He'll get back to you and probably even answer your question.

This has been an Illinois Pirate's Guild release... it is over...

Track/N/Pack Pro is here!

Why Split Disks?

In case you don't know, disks are "SPLIT" to allow packing and transfer even when a disk packs to more than 280 (or 1600) blocks. TNP strips
Important Note:

To use one drive, you will have to switch disks often. When you hear a beep and see a cursor (this can appear at any time, even in the middle of a room description), flip the disk and lightly touch the space bar. Make sure you do not hit it more than once or it could register twice and cause loss of data. Always save games often. That way if you do make a mistake it won’t be hard to get back to your old position.

To use two drives, make a copy of side 1 and put it in drive 2. Keep side 2 in the original drive 1.

I. What You Need

Required

[ ] Apple //e with the extended 80-column text card or an Apple //c
[ ] 128k bytes of RAM
[ ] One 16-sector disk drive

Optional

[ ] One or more BLANK formatted disks (for saving games)
[ ] Printer (for SCRIPTING)
[ ] Second disk drive (for convenience with SAVES)

II. Loading the Disk

Turn off your Apple. Insert the story disk in Drive 1 and turn on the computer. If you have an autostart ROM, the story will automatically load. If you do not have an autostart ROM, you will see a grid pattern and the asterisk prompt. Type 6, hold down the CONTROL key and press P, then release them both and press RETURN. The disk drive will spin and the story will load. After about 30 seconds, you will see a message asking you to insert side 2 into the drive. Remove the story disk, flip it into the same drive. Press RETURN to complete the loading process. You will not need to flip the disk again unless you reboot or use the RESTART command. If nothing appears after a minute or so, contact The Sheik at the Trade Center.

III. Talking to the Story

Whenever you see the prompt [>, the story is waiting for you to enter a command. Your command can be up to one line in length. If you make a mistake when entering a command, use either the left-arrow or DELETE key to erase the error. After you have typed in your command, press the RETURN key. The story will respond and the prompt will reappear.

If a description will not fit on the screen all at once, [MORE] will appear at the bottom of the screen. After reading the screen, press any key to see the rest of the description.

IV. Scripting
You can use the SCRIPT command to print out a transcript of your moves in the story. The SCRIPT function is an optional feature which is not necessary to complete the story and may not be available with certain hardware.

If the SCRIPT command works with your hardware configuration, you may make a transcript as you go along.

1. To start the transcript at any time, make sure the printer is ready, then type SCRIPT at the prompt [>].
2. When prompted, enter the slot number (1-7) in which your printer card is installed. (On an Apple //c the slot number is the port number, which should be 1.)
3. To stop the transcript, type UNSCRIPT. SCRIPT and UNSCRIPT may be used as often as desired.

V. Saving a Story Position

*** WARNING ***: The disk you use for SAVE and RESTORE is maintained in a special format and should not be used for any other purpose. Files of any other kind stored on the SAVE disk will be destroyed by the SAVE command. You need a blank, initialized disk to SAVE your story positions. See your Apple Disk Operating System Manual (Dos 3.3) or Apple Pascal Reference Manual for instructions on initializing a diskette.

You may save up to 4 positions per SAVE disk and RESTORE any one at any time. To save more than 4 positions you must use a new disk. Each position is assigned a number from 1 to 4. You specify a position number (1 to 4) each time you use the SAVE command, and you write over anything previously saved with that number. You must use a different number for each position you want to save.

1. To save your current position, type SAVE at the prompt [>] and press RETURN. You will see the following:

   SAVE POSITION
   POSITION 1-4 (DEFAULT is 1) >

   Before you insert the SAVE disk, specify which position on the disk you will use or press RETURN to use the default (position 1).

2. You will then see:

   DRIVE 1 OR 2 (DEFAULT is 1) >

   The story is asking you which disk drive you want to use. If you have only one disk drive, press RETURN to save to your drive 1. If you have 2 drives it will be more convenient to use the second drive for SAVES, so type, "2" (and RETURN).

3. You will then see:

   SLOT 1-7 (DEFAULT is 6) >

   The story is now asking you which slot you want to use. Apple //c owners will not see this message. Specify the slot number of press RETURN for slot 6.

4. Finally, you will see:

   POSITION 1, DRIVE #1, SLOT 6. ARE YOU SURE? (Y/N)?

   The position, drive, and slot numbers should match the ones you just entered. If any of them is incorrect, press N to repeat from step 1. If they are correct, press Y.

You should now proceed that will appear on the screen. If you follow the prompts correctly you will finally see:

   OKAY, DONE

If you see:

   FAILED

Please contact The Sheik at The Trade Center.

You may now continue the story. You can use the SAVE disk and the RESTORE command to return to this position at any time.

VI. Restoring a Saved Story Position

To return to a previously saved story position, type RESTORE at the prompt [>]. Then follow the steps in Section V, above.

VIII. Troubleshooting

A. If the story fails to load properly, or if SAVE, RESTORE, or SCRIPT fails, check each of the following items. If none of these offers a solution, contact The Sheik at the Trade Center.

1. Make sure all connections are secured and all power switches are turned on.
2. Inspect all disks for any visible damage.
3. Make sure each disk is in its proper drive. The story disk may only be run from the main drive. For SAVE/RESTORE, make sure that you have typed in the correct drive and slot numbers for the SAVE disks.
4. Make sure all disks are inserted correctly and all drive doors are closed.
5. Make sure your SAVE disk is not write-protected.
6. Make sure your SAVE disk has been initialized properly. As a last resort, try a different disk.
7. If you have turned off the Apple or have pressed the RESET key, follow the instructions for loading the disk (Section II above).
8. Try again, the problem may only be momentary.

If all else fails, you can call the Infocom TECHNICAL HOTLINE at (617) 576-3190. Please note that this number is for technical problems only, not hints.

B. If you receive an error message, follow this procedure:

   Boot the story disk and start the story. When the initial screen is displayed, type $VERIFY at the prompt [>]. The disk will spin for 5 to 10 minutes and one of the following messages (or something like of them) will appear.

1. "DISK CORRECT." This indicates that the disk has been damaged and the story program is intact. The problem may be with your hardware, probably the disk drive. It is also possible the program contains a bug. If you suspect a bug, call the Infocom Technical Hotline number.

2. "INTERNAL ERROR." This reply indicates either hardware trouble or disk damage. Repeat the $VERIFY process several times. Also try $VERIFY on your friends computer. If the story works ever replies "DISK CORRECT," the problem is in your hardware.
Triple-Dump is a Screen-Dump utility that can print three different forms of media. Hi-Res & Double Hi-Res Graphics (1), Lo-Res & Double Lo-Res graphics (2), & Text screens - 40 or 80 column (3). What makes Triple-Dump so unique is that it is the only Screen-Dump that can print Double Lo & Hi-Res graphics as well as 80 Column text screens. This is why it is called: "The Print Anything Program".

Configuration:

After you are in the Triple-Dump program, the first thing you must do is to configure the disk for your computer. By using the left and right arrow keys, move the HI-LIGHTED bar to the selection: Change printer, and press RETURN. The list of the different printers supported will be loaded and displayed on the screen. Again using the arrow keys, select your printer. With the same method, select your printer interface. Set the Printer-Delay & Paper-width to the accurate positions for your printer. Set the Slot # of your Printer-card, and select if you need Line-feed or not. Then SAVE PRINTER CONFIGURATION so that the same set-up is loaded each time the program is run.

The Program:

The first thing to do is to select the form of media you wish to print-out. Move the HI-LIGHTED bar to: Current Set-Up. Each time you press return, a different form of media to be printed will appear. Continue pressing RETURN until you get the desired media.

Move the Hi-Lighted bar to: Load Picture, and press RETURN. A catalog of the current disk in use will be displayed on the screen. According to the current form of media in use, you can load up a picture (or text screen) from the disk (Triple-Dump will tell you if you make a mistake in the form of picture you try to load). The Program will load the picture in, and then you will be back at the main menu.

Move the bar to: Crop Picture. This section will let you select a specific part of the picture you want to print out (if you want to print out the whole picture, skip this section). There will be a flashing box around the outer perimeter of the picture, by using the arrow keys, you can adjust the area on the screen you want to print out (you can hit "," & "." to move the box quickly).

To change the Left margin hit "L", then you can adjust the Left side margin.
To change the Right margin hit "R", then you can adjust the Right side margin.

To adjust the Top margin hit "T", etc...

To adjust the Bottom, hit "B", etc...

When you have "Cropped" the desired portion of the picture to print out, hit RETURN to return to the menu.

Special Function keys from main menu: At the main menu, by hitting <Space bar>, you will be displayed the current picture, hit <Space bar> again to return. Press "L" to get a line feed, "F" for a form-feed. At the main menu, hit <ESC> to exit the program.

If you have 2 drives, you may run the program from Drive 2 by changing the disk drive #.

Special printing Features:

Rotate: This feature lets you rotate the part of the picture that you cropped so that it appears on paper in a way in which it is desired to. By hitting RETURN, you can change between: 0 - 90 - 180 - 270 degrees of rotation, choose the one that is best for you picture.

Indent: Changes the number of pixles, blocks or characters (according the current media being processed) "Indented" from the left of the printer paper to the left margin of the media being printed.

Negative: You may decide that you want to have the section of the picture that you want to print out inverted (white on black, instead of black on white). If this is the case, you may select this feature.

Magnify x - Magnify y: This feature lets you enlarge the section of the picture you want to print out to any size you want, as long as it fits on your printer paper. Use this feature along with Rotation to fit the picture on your paper.

Density: You can set the density of the Print-out at: 60H, 66V -or- 66H, 66V. This changes the number of pixles per inch. Higher density makes a denser smaller picture, lower makes a larger - less dense picture.

Hope you enjoy the added features that this program gives you over any other screen dump.
Tunnels of Armageddon Cheat Number Two
By DrMicrochp

As most of you know, typing in "K- A - C - P - E - R", at the stage of the game where the color wheel becomes necessary to gain access to the game, will allow you access without consulting the wheel. You simply type KACPER and hit return and you're in.

While playing the game in this fashion I discovered a real first class cheat. After entering the game via the KACPER back door, type/press the letter "Q" while in the game. Presto! You have an unlimited supply of "disintegrator" bullets. These bullets will destroy any door, generator, or guardian. It's similar to Ammo Type 3 but it's unlimited. Also it doesn't seem to matter which way you aim as anything in general direction gets blown away. Constantly firing like this, I made all the way to level/stage 6 without even trying. Now I feel like I can get through this game. No more dodging black wall obstacles! Careful though, as some moving gray walls can still cause you enough damage to put you out of the game. Enjoy!

The installation and explanation of Turbo Run is so simple that these two are.

Turbo Run is written entirely in ACOS. Also, to facilitate easy installation, Turbo Run is contained ENTIRELY in one file: TURBO.SEG.S Turbo Run will make two files on its own:
- TURBO.VAR A file to temporarily store the users variables
- TURBO.TOPTEN Top Ten players list.

To clear the Top Ten players list, just DELETE the top ten file. It's as simple as that.

If you are running your system off of a GS, it is to your advantage to run the BBS at the "fast" mode (2.7 Mhz). This will make the game go a LOT faster thus increasing the fun for the player.

To install, just "link" to the game from main.seg or wherever and in the label BACK in Turbo Run change the link back to wherever you want.

The program will automatically check to see if the user has ProTERM emulation. However, should a user have difficulty in getting on, as has been the case with EPIC modem owners, the caller can simply type "PROTERM" when prompted to do so after it says "you don't have ProTERM Emulation." You can take this out if your users don't have this problem.

If your board is running at 300 baud, don't even bother putting this up. Turbo Run currently is running on a "unlimited play" system. It is up to you, the sysop, to determine any limit of games per call or how you wish to use this game. It can be used as a casino game, or merely for fun.

One last thing, the game looks REALLY bad from local mode. Please give this game a chance by perhaps calling your system remotely and seeing what this game looks like to the caller. It is worth it. Rumor has it that there will soon be a way to see the terminal emulation from local mode, but currently we know of no way that this is possible.

If your users enjoy Turbo Run, you may be interested in some of our other GBBS games, including WHEEL OF FORTUNE. (sorry, I HAD to plug that.)

Forward any questions to any of the following systems:

The Cottontail Ranch......................602/433-0159
Hill of the Skull..........................602/486-0514
The Tower of Zot West......................602/451-0309
The Back Door................................602/375-9586
The Krack Mart.............................602/482-6933
I have never played it with the keys but with the joystick. I believe a control-J will allow that. Typing ctl-V reverses the vertical axis, ctl-H, the horizontal.

Fly thru the first level like a space invaders game, blasting the aliens, and get to the planet in the bottom left-hand corner. You will then go to level 2. In this level you must gather up the little aliens in the holes by pressing button 0, without getting them eaten by the nasty aliens that will appear at times. You can duck into a hole by pressing button 1, and come out again from a different hole with button 1. The hole you come out of is random. Once you have as many aliens as you can get, go back to your ship and press the button. Then you will go back to level 1, but from the other side. Escape back to your ship to the right hand side of the screen. The problem with this is that you use up fuel *fast*. If you see that you're close to using up fuel on level two, go back to your ship fast, and get back past the next level quickly.
This tome is dedicated to Althus, Fire of the Abyss, Seer of Mysteries, Saint of the Unholy, Darkest of the Fallen Ones; Golthur, Lamp of the Heavens, Carrier of Strength, Keeper of Souls; Adron, First of the Heroes, Player of Games and Divine Charioteer. You who gaze on, call forth these Prayers: the oldest of the gods wait to hear and ensnare you.

The calling of a Priest is a dangerous one, always paid for by the soul of the Priest. The dealings with gods are fraught with treachery for they are jealous masters, vengeful of powerful or glorious mortals, and impatient with insignificant humans. Their promises are two-edged. The gods gave Prayers to the mortals to bind them in the gods' service; in return for the gods' divine assistance, the Priest must barter with his soul. If a Priest should invoke a god carelessly or incorrectly, the god will punish the Priest by draining that Priest's energy or stealing the Priest's soul. Thus the Prayers must be used with caution.

The Sect of Priests, working with meticulous care, have purchased and discovered many Prayers; few are simple, the strongest are awesome in their avens; Carrier of Strength, Keeper of Souls; Adron, First of the Heroes, this work are the surest Prayer; most do not require overmuch of the caster. They have been secured by the blood of many Priests; they are for you to use for the glory of your calling.

The meanings hidden in these Prayers are for you to decipher. A Priest cannot be told the correct meaning of a Prayer: such gnostic experience will come only through the Priest's own dedication. The Prayers in this codex have been translated, with one exception, from the original Hurnash. Although such translation can never match the nuances of the originals, the Prayers retain their strength.

Your skill allows you to serve four of the divine suzerains. You are bound to the gods: Ufthu, God of War; Drutho, God of the Underworld; Golthur, God of the Physical Self; and Fshofth, God of the Spiritual Self.

Before you can disturb any of the gods, you must possess an anointed ring to focus your power. Each of these rings was forged in the darkness of the Temple furnaces and dedicated to single god. The power of the rings comes from the purity of the metal: Iron, Copper, Silver, Gold and Platinum. Greater than all of these are the Crystal rings; forged by the gods to bind the most powerful of Priests. Each of the four jealous lords demands a separate ring. You will start with two rings from the basest metals; as you grow in power and in devotion you will be awarded greater rings. These rings will be awarded to you in the four Temples of the Sect of Priests within the Mountain City. Each Temple is used to worship one of the proud gods. Within each Temple is a humble Shrine; at this Shrine you will be judged, and if worthy, granted a purer ring to the god ruling the Temple. There are also Altars throughout Mountain City, places where the power of the gods is stronger. These Altars serve all the gods; within these your Prayers will be heard more favorably, and you may offer supplication to any of the gods.

It is possible for a Priest with the basest ring to recite the greatest Prayers, but be warned: the gods are waiting for the time when your ambition overreaches your power. You should use your power wisely, and within your station. To help you, Prayers fo
Each Prayer will demand a toll from you. This toll varies according to the god and the Prayer. Every Prayer will deplete your energies; the strongest Prayers would leave a weak Priest broken. Remember this drain, and do not allow your strength to fall too far. It will return, but only slowly.

This, your manual, shall be your guide to communion. Tread carefully within the garden of the gods.

Prayers to Ufthu, God of War

Ufthu, God of War, Tongue of Iron, Qanak Dasoro, Priest of the Scarlet Assassins, Dragon Lord, Master of the Abyss, is the most powerful of the gods. Proud is his strength, unpredictable in his weakness. Ufthu is a wary god, careful in his dealings with mortals, but his greatest weakness is vanity. Take this warning, but know that Ufthu, Silent Huntsman, will heed the calls of one who serves him truly. These Prayers are yours.

RALKOR         Divine Arrow

Ufthu, O Bow of the Stars,
Hear this low voice,
Send down your bolt,
Against the one who stands against you.

KANNH          Hammer of Shattering

Ufthu, Sword of the Night, Hammer,
Defend you lowly subject,
Smite those who stand near your servant,
And damn them to the darkness.

DROM           Strength of the Sword Arm

Ufthu, Soldier of Misfortune,
Hear your humble Priest,
Send your strength to those on earth,
Who bear steel against the dark foes.

IDRIS          Peaceful Bones

Ufthu, Supreme Lord of Corruption,
Through this ring I call your divine essence,
Take back these lifeless bodies that assail us,
That struggle against death's mortal coil.

THOL           Mist of Confusion

Ufthu, Jewel of the Desert,
I call on your breath to come from the ether,
To slow your enemy,
To steal from them their skills.

Prayers to Drutho, God of the Underworld

Drutho, God of the Underworld, Goddess of Stealth, Seducer of the Earth Spirits, Queen of Corruption, Ethereal Hermaphrodite, Demon Lover, Lord of the Portals, the youngest of the gods, hides far from the light of the older gods. Within the lowermost cave

Drutho, O Worm of the Deep,
Call forth the meaning of these words;
Pass your darkest light over their script,
That they will yield their meaning to me.

UMESH          Knowledge Without Wisdom

Drutho, O Worm of the Deep,
Call forth the meaning of these words;
Pass your darkest light over their script,
That they will yield their meaning to me.

HOYAMQ         The Temple Passage

Drutho, Gol Dragur, moraseth kanu,
Open this way for your servants;
Having discovered the portal you had hidden,
We now must pass through.

TAPU           Sacred Passage

Drutho, Dark One, hear this Prayer.
Weave your magic around our passage,
That we may walk past traps,
That we may pass danger in safety.

BYNDU          Drawing Together

Ah, Drutho, grant me the power;
Make fast the beckoning sign,
To draw forth opponents unto my presence,
And bind them beside me, to stay as I will.

MORPETH        Quiet Walking

Drutho, Mistress of Stealth,
Bind our feet with soft silken cloth,
Silence our voices and muffle our steps,
That we may walk without calling our death.

BELAMQ         Translucent Passage

Drutho, Lord of the Portals, this way resists
Our most urgent attempts.
Take its outline, hinge and bolt,
And dissolve its stubborn form into ether.

Prayers to Golthur, God of the Physical Self

Golthur, Oldest of the Gods, Ruler of Souls, Lamp of the Heavens, Carrier of Strength, Maker of the Many Little Candles, is a treacherous master.

Golthur, the Spider of Time, lies in wait for those whose souls he can steal.

Golthur, the Trapper, has given his Priests these Prayers; you who pray to him, tend your words, that your dark husbandry will not call forth your corruption. Walk the words well, for if you fall he will ensnare you and draw your soul through your nostrils. That is his due for heeding your command.

SIRDHE         Patterns of Healing

Golthur of the Labyrinth, we ask your indulgence,
We who are weakened call you,
Send your strength to our wearied limbs,
And we will fight for your glory.

HOLNMAK        Priestly Strength

Golthur, Silent Lord, I ask your kindness;
Look upon your servant protected by the doyaqur,
Send these shaven Priests through these arms,
That I might serve you better in your designs.
Golthur, you must hear the voice calling from this circle, 
To the lowlands, where one needs your help; 
Take the failing body you see before you, 
And create new and whole its life force.

Golthur, Lamp of the Heavens, here at an Altar, 
We come to ask you to give us our strength, 
To give us our health and wholeness, 
We who would supplicate you.

Golthur, Ancient One, hear your Priest, 
Take from our bodies the poison of your experience, 
Take from our souls the plague of your knowledge, 
That we may walk in the innocence of health again.

Fshofth, Invisible Mage, Cold Walker, Thief of the Red Cities, Holder of Mysteries, 
Guardian of the Spirits, Chief of the Eagles, is a strange god. The wild dictates of 
his worship seem hardly those of a god, and are understood by few. Of all of his 
Prayer these are those that seem to have some chance of being answered by this Master. 
The untranslatable Prayer of Lairain is included: the Priest who can harness this 
Prayer would be powerful indeed. None of the Priests of Fshofth have managed to gain 
its deep secrets.

Fshofth, On the shore of the lost lake, 
There is a house. Though the spell makers talk, 
It is quiet still. For though chanting sounds, 
It will little disturb the air where they dwell.

Fshofth, there is no sound on the rocks, 
No wind among the grasses; 
The liraya has made its kill, 
The pups shall feast tonight.

Fshofth, within the smallest quivering cell, 
After the cold kiss, there is less life strength, 
But growing within the beating heart, 
I feel that quickness return.

Fshofth, hark at the kauri branch, a bird dips: 
Takes honey from the silvered flowers, and stops, 
Troubled by a dark image, far in the forest. 
Your glass will shatter the foundations of the dream.
THE ADVENTURE

Hail, Noble One! Our land is in need of a stalwart hero, one who will brave perils to horrific to consider. A plague has befallen the Realm, a scourge is upon the land! Our villages lie sacked, ruinous mounds of ashes where once trenched peasants stout of heart and sound of mind, where once a diversity of races and as varied as the elements. From the tiniest bobbit to the most towering human, our folk show a strength of character unknown in other parts of the world. Until the coming of the foul Mondain, our folk lived in harmony and worked together in the true spirit of comrade-ship. The principal inhabitants of Sosaria are:

HUMAN: Endowed with a natural intellect higher than any other race, the humans are the backbone of Sosarian society. Found in all walks of life, they are strong of body and of unexcelled spirit.

ELF: Shorter than their human counterparts by the span of three hands the elves of Sosaria are slight of build and swift of movement. Their superior natural agility makes them excellent musicians and clever thieves. At home amongst the trees of the deepest forest or in the alleyways of the capital, The Sosarian Elf makes a stalwart companion and a relentless foe.

DWARF: Mountain folk and legendary miners, the dwarves of Sosaria stand but half a humans height, yet often outweigh slender elves. They are matchless in courage and possess an inordinate endowment of natural strength. Never accept the Sosarian Dwarf's challenge to wrestle for drinks in a tavern, unless thy supply of gold be endless and thy generosity ample.

BOBBIT: A small and gentle race, the Sosarian Bobbits are believed to have come to our realm from a distant place. They are said to favour mountainside meadows and the serenity of forest clearings. Their diminutive height being even less than that of a dwarf, they shun any task that involves hard, physical labour, preferring instead the pursuits of study and contemplation. Bobbits are naturally weak, yet possess a serenity indicative of profound wisdom.

PROFESSIONS

Whilst the professions practiced by our folk are numerous, there are but four courses of action that may be followed by the novice adventurer. These are:

FIGHTER: The rigorous training involved in learning to become a fighter results in a stronger, more agile adventurer. The knowledge acquired during this period permits the fighter to use virtually every kind of weapon that might be found in Sosaria.

CLERIC: A profession suited to those who are of an introspective nature, the study of the ways of the cleric requires patience and results in a good deal of wisdom. Such is their calm and concentration that at no time will the proper spell cast by a cleric fail to attain its desired result.

THIEF: Whilst not a profession held in the highest esteem among those charged with maintaining the public order, thieving is a trade that often serves the adventurer well. Many of the explorer's finds are guarded by clever and devious traps that require nimble fingers and a dexterous hand. Larceny and the opening of locks comes much easier for the thief than for other mortals, for they who follow this occupation are endowed with exceptional agility.

CASTLES & TOWNS

Sosaria is a land dotted with the castles of the nobility of the Realm and with numerous towns wherein the traveller might purchase supplies and provender. Townes and castles may be entered freely, but woe to the one who foolishly is apprehended in an act of thievery, for the public order is maintained here by burly Guards who fear none.

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 1105 of 1262
down upon our people and devastate them. The need to slay the vile While those naturally born to the practice of sorcery, who can invent
Unparalleled Savagery. These malicious creatures stand poised to swoop
the Evil One has formed Alliances with Starwalking Monsters of influence.
STARWALKING shall never again be put to rest. Such is our plight that even the most
exploring underground. The corridors of the dungeons are lined with the dusty tomes that contained the records of the once flourishing arcane
Sosaria. Hearken to my words: The use of extreme caution is needed when coming of Mondain the Wicked that our scholars once again unearthed the
expedition with the spoils of a careful foray in the dungeons of that all who dabbled in sorcery were to be banished. 'Twas not until the
of Mondain's minions. An intrepid adventurer can finance many an corrupting for the general populace and the lords of the land decreed
of the lowest depths of some of these hellholes contain creatures that make
many of the horrors unleashed by Mondain upon our poor land. Indeed, the THE MAGICAL ARTS
creatures and unknown forces. These mazes have become the dwellings of

Our land is an ancient one, where strange and wondrous beings once tongue of the Realm, but certain terms and phrases have no meaning even
evener. During gothic and renaissance since the coming of the evil Mondain. Many hold the belief that sorcery is indeed needed to combat sorcery. The practitioner of the arcane arts can purchase the needed tools of the trade in various magic shops scattered throughout the Realm.

FOOD: None can live without sustenance. The food shops of Sosaria provide the local populace with fresh produce and meats, while the adventurer can find provisions therein that will last for weeks in the wilderness with no special care.

PUBS: The people of our land are not without a certain fondness for strong spirits and lively companionship. Most settlements are graced with public houses where a tankard of strong ale from the region of Trinsic can be had for but a few coins. Many of the people found in these taverns are quite friendly, and the ones serving the drinks are often fountains of wisdom and gossip.

DUNGEONS: Our land is an ancient one, where strange and wondrous beings once walked the earth and civilizations rose and fell. There are numerous labyrinth to be found throughout Sosaria, the handiwork of unspeakable creatures and unknown forces. These mazes have become the dwellings of many of the horrors unleashed by Mondain upon our poor land. Indeed, the lowest depths of some of these hellholes contain creatures that make even the staunchest warriors blanch and tremble. Yet these subterranean passages also contain caches of the ill-gotten gains of the predations of Mondain’s minions. An intrepid adventurer can finance many an expedition with the spoils of a careful foray in the dungeons of Sosaria. Hearken to my words: The use of extreme caution is needed when exploring underground. The corridors of the dungeons are lined with the bones of explorers who overestimated their abilities!

STARWALKING While the arachne Mondain can be defeated, one’s mettle will first have to be tested in the farthest reaches of the heavens. ‘Tis said that the Evil One has formed Alliances with Starwalking the Unparalleled Savagery. These malicious creatures stand poised to swoop down upon our people and devastate them. The need to slay the vile wizard is doubled in the face of this threat.

should a champion emerge from the mists of legend, the means by which to combat this menace will appear — so say the prophets. The legends which foretell of this hero include a number of writings and several ballads sung by the bards of our Realm. Among the more recent discoveries pertaining to the coming of the starwalkers is an arcane manuscript. found on the foothills of M. Drash. Since it appears to hold instructions for the use of some form of transport, it has been broad cast throughout the land in hopes that it might prove useful to one engaged in the quest to rid Sosaria of Mondain. The substance of the document is as follows:

"In the heavens, each vehicle has the means to control rotation, as well as thrust and retro (reverse thrust). In the front view mode one can turn left, right, climb, and dive.

"The starways are divided into 49 sectors on a 7x7 grid. In the top view mode one can see all within the current sector. A long range scan may be obtained by use of the ‘Inform’ control. Consult the Pilots Reference Manual for the symbols needed to interpret a scan.

"One can jump to the next sector in the direction of current travel by using the Hyperjump capability of the vehicle.

"Docking with starbases can be attained at any of the unused docking ports and should be made only at slow speeds while headed directly into the port opening. A docking fee is required. Upon docking, a ‘Base Comand’ query will be issued and the pilot is expected to indicate the direction toward the next vehicle that will be used.

"Reentry takes place when your ship passes over the lands of Sosaria.

NOTE: Only the shuttle craft has heat shields. Any vehicle will incinerate if it collides with a star.

"One may encounter and engage in combat with hostile beings in the heavens. Once combat has begun, the pilot cannot return to the top view mode until all enemy craft have been driven from the current sector or the pilot has chosen to hyperjump to the next sector.

IMPORTANT: Changing from front view mode to top view mode at high speeds will surely result in a fatal collision. Be wary of fuel levels and shield condition. A ship without fuel drifts forever and a depleted shield spells certain death."

Our most learned scholars have translated the document into the common tongue of the Realm, but certain terms and phrases have no meaning even to the most erudite sage. Nonetheless, such is our desire to be rid of the scourge of Mondain that we make this information available to all.

THE MAGICAL ARTS As mentioned elsewhere in this manuscript, the practice of magic had once died out in Sosaria. The power of the mystic tradition proved too contemptible for the general populace and the lords of the land decreed that all who dabbled in sorcery were to be banished. ‘Twas not until the coming of Mondain the Wicked that our scholars once again unearthed the dust-covered, forgotten records of the once flourishing arcane arts, and set about to retrain adepts in the use of enchantments. Our leaders realize that once the discipline of magic is reawakened, it shall never again be put to rest. Such is our plight that even the most dreaded of the arts is laid bare to all who will try to learn it and who swear to use its powers to combat the spread of Mondain’s vile influence.

While those naturally born to the practice of sorcery, who can invent...
their own enchantments and forge new ground in the arts, have yet to emerge as powerful wizards in their own right. A certain progress has been made. There are four artifacts available to the budding mage which will enhance the ability to weave enchantments: Staff, Wand, Amulet, and Triangle. The latter is a magical sword that may also serve as a weapon. Several powerful spells, which will cost the buyer in both gold and experience, may be purchased in the magic shoppes of Sosaria. These include:

BLINK:
The ability to be physically transported a short distance while underground.

CREATE:
The ability to create a wall of magical force directly in front of the spellcaster.

DESTROY:
The ability to remove a wall of magical force that blocks the spellcaster’s path.

KILL:
An enchantment hurled at a foe in front of the spellcaster. If successful, this cantrip will destroy the opponent.

LADDER DOWN:
This enchantment creates a magical ladder which permits the spellcaster to descend to the next level of a dungeon.

LADDER UP:
This enchantment creates a magical ladder which permits the spellcaster to ascend to the next level of a dungeon.

MAGIC MISSILE:
The ability to strike a foe with a blast of magical force. The more skilled and well-equipped the spellcaster, the greater the damage inflicted by the blast.

OPEN:
This spell permits the opening of coffins at no risk to the spellcaster by magically disarming any traps.

PRAYER:
The ability, when in dire straits, to call upon one’s personal deity in hopes of finding a way out of a pressing dilemma. Should be used only when the spellcaster is in serious need of divine aid.

UNLOCK:
This spell permits the opening of chests at no risk to the spellcaster by magically disarming any traps.

--- END --- Part 1 of 2
and are considered an even greater menace to mariners than the winds of a typhoon. They are protected by a shell tougher than enchanted plate armour, and thus are extraordinarily difficult to defeat in combat.

ETTIN:
Travellers in the forests of our land have oft been fooled into thinking they have come near to a group of fellow explorers when they encounter an Ettin, for these two-headed monstrosities have been known to carry on heated discussions with themselves. An Ettin invariably abandons its dialogue when it hath the chance to attack an adventurer.

GELATINOUS CUBE:
Called 'dungeon sweeper' by some, the Gelatinous Cube is a subterranean dweller that roams corridors in search of food. Their bodies are composed of a clear, corrosive, jelly-like substance which renders them difficult to see, but they may sometimes be detected by the remnants of armor (ah! not 'armour'!) or debris contained within them. They are omnivores, digesting anything they find after absorbing it into their massive bodies. Contact with a Gelatinous Cube hath ruined the armour of many a hardy warrior.

GREMLIN:
Mischievous kin of the trolls and lizard men, Gremlins are underground creatures of voracious appetite. A favorite diversion is to stealthily approach unwary travellers and pilfer their food rations. Many an adventurer hath been consigned to death by starvation below the surface of Sosaria as a result of the antics of these creatures.

HOOD:
When the corrupt influence of the unspeakable Mondain spread throughout the Realm, even some of our stalwart peasants fell under the sway of the evil wizard. These warped individuals now roam the countryside attacking travellers. While unskilled in the use of arms, they nonetheless pose quite a nuisance to adventurers.

INVISIBLE SEEKER:
Among the most dangerous of the denizens of the catacombs below our land is the Invisible Seeker. None have ever seen one of these horrific slayers, for they are -- as their name implies -- unseeable. Their presence is usually first detected when open wounds suddenly begin appearing on the body of a victim. They are, however, susceptible to harm from most weapons.

KNIGHT:
Like their forest-dwelling counterparts the Dark Knights, the predatory Knights of Sosaria are warriors who have forsaken the ways of Chivalry for the paths of Evil. They are fierce opponents and must be treated with care if one is to avoid an untimely demise.

LICH:
The Lich is an evil spellcaster who, through the necromantic arts, hath entered a state of living death in order to prolong an unholy reign on earth. Woe to the explorer who stumbles upon the lair of a lich, for the undead mage will guard its domain fiercely and attack without hesitation.

LIZARD MAN:
When Mondain first came to our land he performed unspeakable experiments with his servitors and he fierce reptiles that inhabit some of the streams and rivers in the south of our land. The result was the Lizard Man, a being both reptilian and human in a single body, armed with cruel teeth and a disposition to match its appearance.

MIMIC:
Beware the treacherous Mimic, for it hath been the doom of many a dungeon explorer. Disguised as a tempting treasure chest, the Mimic patiently awaits the overly-curious adventurer. When the victim makes as if to examine the chest, the Mimic attacks with a ferocity unmatched.

MIND WHIPPER:
Truly hideous, the Mind Whipper is a being with the body of a human, a face that resembles nothing so much as the underside of a squid, and an unquenchable thirst for the mental energies of its victims. The few who have survived encounters with Mind Whippers have emerged as babbling lunatics, their minds flayed from their souls by the relentless onslaught of these terrible creatures.

MINOTAUR:
As mentioned before, the evil Mondain experimented ceaselessly with the cross-breeding of man and beast in an effort to create the ultimate soldier. As if the creation of the dread Lizard Man was not enough, the vile wizard also mated the famed Baratarian fighting bull with some of his followers, resulting in the Minotaur -- a horror that walks on two legs like a man, but which has the head and the cruel horns of a bull.

NECROMANCER:
The Necromancer is a mage whose specialty is the practice of the arcane arts that pertain to the dead. Practitioners of such a morbid specialty were naturally drawn to the foul Mondain as jackals are to the carrion of the plains.

NESS CREATURE:
The seas surrounding Sosaria are home to a number of beasts, among which numbers the dread Ness Creature. For many years these reptilian behemoths were thought to be naught but the workings of the overwrought imaginations of mariners. The sinking of the frigate PEMBROKE in plain view of a small armada hath disproven this belief.

ORC:
Small, pig-visaged humanoids, the Orcs were the vanguard of Mondain's first advance. Tribal by nature, they are sub-human at best, just a slight cut above true bestiality. They abhor all things human and will lay waste to anything fashioned by human hands. 'Tis said that they relish the taste of human flesh.

PIRATES:
The pirates that infest the coastal waters of Sosaria are the scourge of the honest mariner. They ply the waterways seeking unarmed merchant ships to plunder, and often press the younger crew members into service as marauders. Once engaged, a pirate vessel and its crew will battle to the end, seeking no quarter and offering none.

RANGER:
Alas! Even the noble Ranger, preserver of the woodlands and keeper of the forests, hath fallen under the sway of dark Mondain! These matchless trailblazers long watched over the preserves of the Sosarian nobility, but as Mondain's treachery took hold, many of them forsook their old ways and became predators themselves. He who is pursued by a Ranger must turn and make a stand, for once on a trail the Ranger will never give it up.

RAZ, GIANT:
The underground passages of the Realm are prowled by oversized rodents, the result of Mondain's necromancy and an abundance of food in the form of the Evil One's minions. The Sosarian Giant Rat is a vicious predator and should not be taken lightly.

SKELETON:
The progeny of Necromancers and undead Liches, Skeletons are the animated corpses of dead warriors from which the flesh hath withered and fallen away. They fight tirelessly in an effort to carry out the bidding of their dark masters.

SPIDER, GIANT:
Few moments hold more terror for the intrepid explorer than when a Giant Spider, venom dripping from its fangs, is encountered in the corridor of...
SQUID, GIANT:
Sosarian mariners swap legends of the Kraken, or Giant Squid, in every pub in every port of the Realm. These monstrous creatures have been known to rise from the ocean depths, seize a vessel in their long tentacles, and drag the hapless vessel and its crew to a watery grave in the space of but a half-dozen heartbeats. SQUID, GIANT:
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TANGLER:
Looking for all the world as naught but a vine covered tree stump, the Tangler lurks in subterranean corridors, waiting to ensnare explorers of the underground. Once a Tangler hath ensnared an adventurer in its tentacles, it will hold the victim fast until starvation ends the struggle. The monstrosity then feasts on the corpse.

THIEF:
Long before the coming of Mondain, the common cutpurse was a plague to travellers in Sosaria. Lurking in alleys, poised behind trees, and skulking in dungeon corridors, these villains are always ready to relieve innocent citizens of their valuables and their lives. 'Tis a service to your fellow Sosarian to exterminate a Thief whenever possible.

TRENT:
Native to the woodlands of Sosaria, the evil Trent seems like an ordinary oak tree until one approaches near enough to be ensnared in the grasp of its pliant branches. Once it hath crushed the life from the victim, the Trent then devours it, leaving no trace of its prey to warn other travellers.

VIPER:
Since before the dawn of civilization, the race of serpents hath roamed the land. From the most harmless garden snake to the giant constricters, these legless creatures have always inspired fear in the human race. In the case of the Viper, this fear is well-founded. These vicious reptiles strike fiercely at all who stray too closely. Their venom-laden fangs bring a swift yet painful death.

WANDERING EYES:
Many a dungeon seeker hath been startled to enter a darkened chamber and be greeted by a number of eyes staring out of the murky blackness. Stare not long, for the Wandering Eyes weave a hypnotic spell that entrances even the most strong-willed and leaves one helpless before the magical onslaught that inevitably follows mesmerization.

WARLOCK:
Rogue practitioners of the magical arts, Warlocks are the evil servitors of Mondain. The Foul One hath trained them in the casting of bolts of mystic energy and sent them forth to wreak havoc amongst the populace. Slay them if ye can, for the arcane arts should never be used for wicked purpose.

WRAITH:
Summoned from the nethermost regions of Hell by Mondain's perverse enchantments, Wraiths are the restless souls of dead Clerics. Once on the material plane, they drift about seeking potential 'converts' to the discipline of Evil. Since one must first die in order to be converted, 'tis strongly advised that their enticements be resisted.

zzzz
z
z
zzzz GRN:
Little is known of the mysterious Zorn. 'Tis a creature that not only defies logic, but that seems to defy the very laws of nature. It can burrow through anything and is completely omnivorous. In battle it seems to generate far more force than one would estimate possible from a creature of its size. When slain, the Zorn quickly evaporates, thus none have ever been studied closely.

-1/8/87
-THE END.
Here is a list of the immediate execution commands in the game:

A) ATTACK      B) BOARD
C) CAST SPELL   D) ESCEND
E) ENTER CASTLE, VILLAGE, TOWN ETC  F) FIRE
G) GET          H) HYPERSPACE
I) IGNITE TORCH J) UMF
K) LIMB POLE   L) LUNCH/LAND
M) READY MAGIC   N) NEGATE TIME
O) OFFER       P) PASS ESC key - Acknowledge disk swaps or return from "status"
Q) QUIT        R) READY WEAPON
S) STEAL       T) TRANSACT A:
U) UNLOCK DOOR  V) VIEW Attempts to damage foe with "ready weapon", must be followed by the
e direction of thy foe.
X) XIT          Z) STATUS

RETURN=FORWARD, NORTH
<=> = LEFT, WEST
/ = BACK, SOUTH

Here is a list of the coordinates for different planets:

XENO YAKO ZABO LIFE

SUN  4  4  4  NO
MERCURY  5  4  5  ??
VENUS  3  3  4  NO
EARTH  6  6  6  YES
MARS  6  2  3  YES
JUPITER  1  3  4  ??
SATURN  2  8  5  NO
URANUS  9  4  6  YES
NEPTUNE  4  0  5  ??
PLUTO  0  1  4  YES

If you enter the wrong coordinates, you'll be in deep space...

From the depths of Hell...
He comes for vengeance!

EXODUS: ULTIMA III by Lord British

PART I: COMMANDS

SPACE BAR - Pass
ESC key - Acknowledge disk swaps or return from "status"

A: Attempts to damage foe with "ready weapon", must be followed by the
direction of thy foe.

B: Board - Board a frigate or mount a horse.

C: Cast - Cast a magic spell; must be followed by the player # (except
during combat), spell type (W/C) when needed, and the spell letter.

D: Descend - Climb down a ladder to the next lower dungeon level

E: Enter - Go into places such as towns, castles and dungeons.

F: Fire - Fire a ship's cannons (once thou hast boarded), in direction
indicated in an attempt to obliterate thy foes. Range is three
squares. You gain neither gold nor experience from enemies killed
this way.

G: Get chest - Open chest; must be followed by the player # who will
search for traps, open the chest, and acquire the contents.

H: Hand equipment - Trades equipment between two players.

I: Ignite a torch.

J: Join gold - gives all gold in party to player indicated.

K: Klimb - Climb up a ladder to next higher dungeon level or surface.

L: Look - Identifies object in a given direction. Useful before entering
unknown places or terrain

M: Modify order - Exchange the positions of any two players in party.
Negate time - Requires a special item. Stops time for all outside of the party. Allows an audacious thief to steal vast treasures and escape the treasure’s guardians.

Peer at gem - Requires a special item, one use for each. On the surface, the world map is shown. In a dungeon, all of the level is visible. In a town or castle, the map shows all inside areas.

Steal - Attempts to steal chests from behind store counters, success based on thieving abilities.

Transact - Allows a player to trade with shops or talk to townspeople in order to collect clues vital to winning the game.

Unlock - Opens doors if you have a key. One use per key.

Volume - Toggles sound on and off.

Wear armour - Outfits a player with the armour of their choice, if owned, for defense in combat.

Xit - That’s exit, dismount horse or leave frigate.

Yell - Allows player to yell any word one feels. Useful when being chased by a dragon. Yell, [OPEN] gate!

Ztatus - Displays a players status, attributes, and possessions. The Return key scrolls.

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WEAPONS & ARMOR

<table>
<thead>
<tr>
<th>Weapons</th>
<th>Equipment</th>
<th>Armor</th>
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<tr>
<td>Hands...</td>
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<tr>
<td>Dagger...</td>
<td>B.........</td>
<td>Cloth</td>
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<td>Mace.....</td>
<td>C.........</td>
<td>Leather</td>
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<tr>
<td>Sling....</td>
<td>D.........</td>
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<tr>
<td>Sword....</td>
<td>G.........</td>
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<tr>
<td>2-H Sword.</td>
<td>H.........</td>
<td></td>
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</tbody>
</table>

PART II: The Character

Assign each character a # from 1 to 20
Note:
Druids regain magic points at twice the rate of normal spell casters.

PART III: The Game

To start up the game, boot side one of the disk. When the option to enter *1* or *2* appears, type in the drive # in which the scenario disk will be.

A sample view of Sosaria appears. Hit the SPACE BAR. You are now offered three choices:

* Return to view to see the demo again

* Organize a Party to set up the game

* Journey onward to begin/continue the adventure

Only the first letter of any option need be used to select that option.

For now, select *O*. These are the options that you have:

* Examine the Register Lets you see what characters are available for adventuring. It displays the name & class of every character. The first 3 letters before a character's name give the character's Sex, Race, and Class. The FOURTH letter states the health of the character: G = good, P = poisoned, D = dead, A = ashes. If the character is already part of a party, a diamond will appear next to his/her/its name.

* Create a Character This allows you to create characters as described in Part II.

* Form a Party Allows you to form a Party of up to four members, from the characters on the disk. Use the number that you entered first for each character to choose.

* Disperse a Party This disbands a party and returns the members to the register.

* Terminate a Character This clears a character permanently from the register. You would use this to make room for another character, or if the present one is a total loser.

* Main Menu Returns you to the primary option list.

SPECIAL NOTES
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COMBAT:
When combat is joined, a special combat SCREEN appears. Each member of the party is shown separately, as is each monster. The characters can all move, fight and spell individually, in order of their order in the party. Although the players may only attack horizontally or vertically, monsters may attack on a diagonal. You may attack from a distance with a bow, spell or dagger. If you attack with a dagger, it is considered thrown if the enemy is farther than one square away. Experience is given to the character who strikes the fatal blow!

CHESTS:
When a monster group on land is defeated, a chest will always be left behind. Some will contain treasure, others will be empty. Many of these chests will be trapped. Some traps include: Acid (injures the character opening the chest), Poison (same), Bomb (destroys the contents of the chest and hurts the entire party) and Gas Trap (affects the entire party).

DUNGEONS:
Map everything in a dungeon. There are many secret doors. Magical winds may blow out your torches. If thou walks slowly, glimpses of faint mystic writings may be noticed periodically. There are also many traps and pits. If the thief is in the front of the party, he will have an excellent chance of spotting traps before the party trips them. If you find a fountain, be sure to stop and drink carefully.

TRANSPORTATION:
Most progress is on foot, although you may be able to locate or buy horses. To sail a ship, you may not sail against the wind.

MOON GATES:
Passing through a Moon Gate will teleport the party to hidden powers. Many areas are only accessible through these gates. The coming and going of the Moon Gates is somehow related to the phases of Sosaria's twin moons, Trammel and Felucca. The phases of these moons is indicated at the top of the screen as follows:

0: New moon
1: Crescent waxing
2: First quarter
3: Gibbous waxing
4: Full moon
5: Gibbous waning
6: Last quarter
7: Crescent waning

TOWN SHOPS:
Weapons shop: Buy/Sell weapons
The Armory: Buy/Sell armor
The Grocery: Buy food
Guild Shop: Buy thieving equipment
The Pub: Gold may loosen a tongue...
The Healers: Restorative healing
The Stable: Buy horses
The Oracle: Buy knowledge & insight

SPECIAL MONSTERS:
(There are three types of monster for each reference here, but as they differ only in name, they are not listed.)

Thief:
Can steal any weapon or armor that is not equipped.

Pincher:
Can poison

Daemon:
Can hurl magic attacks

Dragon:
Can attack from three spaces away, even when not in the combat mode!

Devil:
Can hurl poisoned magic bolts!

Pirates:
Can fire cannon at all members of party

Sea Serpents:
Can hurl magic across water.

Man-O-Wars:
Can poison/hurl magic!

PART IV: Magic

A spell will cost you a certain amount of magical energy to cast, as follows:
A: 0 pts
B: 5 pts
C: 10 pts
D: 15 pts
P: 75 pts

THE BOOK OF AMBER RUNES (sorcery)

A) REPOND - 0
When Orcs, Goblins or Trolls attack the party, cast this Rune. Thou shalt be attempting to dispel the magic which is a part of their inner being.

B) MITTAR - 5
Hurl this talisman towards thine enemy. A shimmering sphere of light will spring from thy hand, and will strike with a force depending on the skill and concentration invested.

C) LORUM - 10
A warm, soft, magical light of short duration will be produced when this spell is cast.

D) DOR ACRON - 15
When this spell is cast, the mage and his companions will be transported to the next lower level of the dungeon.

E) SUN ACRON - 20
As the words of this spell are chanted, the party will be lifted to the next higher level of the dungeon.

F) FULGAR - 25
A fireball will infallingly strike thy foe when this spell is invoked, with a force strong enough to kill most common men and cause great damage to beasts of greater strength.

G) DAG ACRON - 30
This spell will randomly teleport you from one spot to another on the Sosarian surface.

H) MENTAR - 35
A blue ball of screaming horror will fly toward thine enemy when this spell is incanted. It will invade his mind, and irreperably corrupt his mental process in direct proportion to thine own intelligence.

I) DAG LORUM - 40
When this spell is cast, an enduring and shimmering light will appear.

J) FAL DIVI - 45
This spell will allow you to cast any of the spells normally accessible only to Clerics.

ADvanced Spells:

K) NOXUM - 50
As this spell is spoken, it will catch flame and rush at thy foes, thwarting each with a devastating blow.

L) DECORP - 55
When the song of Decorp is sung, the air shall shake. Upon whomever thou indicated, the Magic shall descend, and their life shall be extinguished - always and completely!

M) ALTAIR - 60
When this spell is cast, time will slow and finally stop, allowing the party to move freely in the suspended state.

N) DAG MENTAR - 65
Cast this spell, and thy foes will be struck with a savage blow with damage directly related to thine intelligence.

O) NECORP - 70
When the need arises, throw this spell above the heads of thine enemy. It will shatter, and they will quickly be transformed to putrid vestiges of their former beings.

P) 75
This spell is never called by name, save when invoked. All does who hear the Utterance are completely and permanently destroyed.

THE ANCIENT LITURGY OF TRUTH (prayer)

A) PONTORI - 0
This will allow you to turn undead, and Skeletons, Ghouls and Zombies will be expelled from their being.

B) APPAR UNEM - 5
This will allow you to open a chest with no risk to the party.

C) SANCTU - 10
Lay thy hands upon one who is wounded, and he will be healed. In the beginning, thy power will be limited, but thy capacity as a healer will grow and be strengthened with experience.

D) LUMINAE - 15
Cast this upon an object, and it will glow with a soft blue light, temporarily lighting your way.

E) REC SU - 20
This spell shall become translucent and thy party shall float up one level in a dungeon.

F) REC DU - 25
The floor will become translucent, and they party shall sink down one level in a dungeon.

G) LIB REC - 30
This shall cause you to fade away from one location in a dungeon, and reappear in another.

H) ALCORT - 35
With thy touch, the poison coursing in the veins of thy companion shall be transformed into a life-giving fluid.

I) SEQUITU - 40
If thou raiseth thy ankh into the air and cryeth out the name of this invocation, thee and thy companions shall rise forth from the depths of a dungeon to the surface.

J) SOMINAE - 45
Thine entire self will radiate with a light, that can be sustained indefinitely, as it draws forth from thine own inner force.

K) SANCTU MANI - 50
Anoint the wounds of thy companion with an oil, and his flesh shall be restored and blood flow through his veins, although he lies quivering on the threshold of death.

L) VIEDA - 55
If thy should lose thy way, meditate on this spell, and a vision of thy surroundings shall come to thee.

M) EXCUUN - 60
Apple II Computer Info

By speaking the name of this great miracle, thou can direct the pure light of truth at a foe, causing his life to cease.

N) SURMANDUM - 65
It is now within thy power to recall one from the realm of death. Step into the shadow of death, and lead thy companion back to the world of light. If, however, his strength of will is not strong enough to make the return journey, the backlash from this failed miracle will turn his body to ashes.

O) ZXKUQYB - 70
Speak softly the words represented by these letters, and most of thy foes will be struck down with a force so strong it will end their lives.

P) ANJI SERMANI - 75
Beseech the One who is Truth and Wisdom, and thy friend's life shall be forever restored.

MAXIMUM ATTRIBUTE VALUE FOR RACE

<table>
<thead>
<tr>
<th>RACE</th>
<th>STRENGTH</th>
<th>DEXTERITY</th>
<th>INTELLIGENCE</th>
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HOW TO SOLVE ULTIMA III

Note that these tips on how to solve are no solution. These are not accurate in any way.
1. Format a party, transfer all food and weapons to one member. Leave the town to save game, reboot, delete empty character shells, and create three more. Go to town and buy these front line men with bows.

2. Consider making a Cleric for you'll need his healing power.

3. You can get 550 hit points by (T)ransacting with the king, if you have enough experience.

4. With these points, go to dungeon in northeast corner of the island, in the blackened area. You'll recognize it by its waterway and protecting ship.

5. In first two levels, you should find two "plates" which you should touch. One is Mark of King, other is Mark of Fire. With the Mark of King you can get 2550 hit points with enough experience.

6. When you leave castle, go west 8 steps and south 34. When moons are in 0,0 conjunction, the Town of Dawn will appear below you. In it are better arms and armor as well as keys, powders and gems. In the lower right hand corner are the more important向上 the shrines there are but four of which you go and pray, try to find a ship. Try digging on the two-square island near the island town, as things can get rough. Go as far west as you can, Lord of Time says: <Yell> EZOCANE. If it isn't the Mark of Dawn Lasts but a Moment, Marks gained in Dungeons.

7. Make your way to the town on the island east of the Mainland. You'll notice it by bribable guard before locked gate. You can save $100 fee and a key by entering the maze south of the entrance. Go north at the first place you can, then straight east as far as you can, and then north inside gate. Go west to the locked gate. Use a key. Go south to on the entry on the left side of the screen. Go north to the first north possibly, went to the next south possibly, and west again. This should put you next to a guard. Bribes West lies a treasure area, good for about $1,100 (about $2,000 if you have Mark of Force). It's good to have thief who can grab chests, and cleric who can heal him. Repeat this process until you have it all, say about $13,00 or so. We carefully you don't Combine your gold hoard, give it all away, say, to your second or third man, and use both your Thief and Wizard's spells to collect the loot.

8. Loaded with gold and at least four keys, get in your ship, find a whirlpool somewhere you'll be cast on an island, shores of strength are all but lost into the brink of Intelligence. Track around to another locked gate. After the initial north and east travel, work your way south and slightly east. Ignore the next locked gate you see. Shrine of Dexterity is in the southeast area. After entering the dark area (to the right and north of landing point) work your way northeast.

9. Near initial entry into this area you'll be able to go south. Following that track gets you to the south shore of the Island, where you must capture a Pirate ship. Using another key, sail through the locked gate to the west and into the awaiting Whirlpool in order to get back to the point where you first entered the Whirlpool. Several trips between Death Gulch and Shipwreck Island should bring up your attributes up to a fairly impressive level, and will certainly make your life easier.

10. Now you should have at least two marks and all four Cards. You'll find Mark of Force in this area. Shrine of Intelligence lies behind three locked gates in the north-central area. Don't bother opening up cages. Cature ship that's waiting for you and sail west to where you can disembark. Shrine lies behind the third gate. You reach the Shrine of Wisdom by going north from the entry gate of the Shrine of Intelligence. Track around to another locked gate. After the initial north and east travel, work your way south and slightly east. Ignore the next locked gate you see. Shrine of Dexterity is in the southeast area. After entering the dark area (to the right and north of landing point) work your way northeast.

11. In upper central part, you'll encounter three sets of invisible enemies (Floors) each of whom hit pretty hard. Use your Wizard's "P" spell or your Cleric's "O" spell. To get the rest, negate time, line up your men abreast, and march up the room, attacking forward and to sides. Each Floor panel will only take one hit to kill when you find them. When powder wears off, watch which Shrine is getting hit: he's the one nearest to your foe.

12. The time has come! Move to the left of the machine that is Ultima. Insert love, move right, insert Sol, right, Insert Moons, right again and Insert Death. That should do it!!
APPLE II COMPUTER INFO

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</tr>
</tbody>
</table>

OBJECTS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horses</td>
<td>4/800</td>
</tr>
<tr>
<td>Attributes</td>
<td>$1/100</td>
</tr>
</tbody>
</table>

**Available only in the Town of Dawn.

ARMS:

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>Cloth</td>
<td>75</td>
</tr>
<tr>
<td>Leather</td>
<td>195</td>
</tr>
<tr>
<td>Chain</td>
<td>575</td>
</tr>
<tr>
<td>Plate</td>
<td>2500</td>
</tr>
<tr>
<td>+2 Chain</td>
<td>6130*</td>
</tr>
<tr>
<td>+2 Plate</td>
<td>8250*</td>
</tr>
</tbody>
</table>

OBJECTS:

<table>
<thead>
<tr>
<th>Item</th>
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</thead>
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<tr>
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</tbody>
</table>

**Available only in the Town of Dawn.

Apple II Computer Documentation Resources (a2_docs_documentation.msw) DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 1116 of 1262
DOCUMENT ultima.v.2

Ultima V Quick Dox and Reference

Typed: Chief Justice/CtC 3/15/88
 Reformatted and slightly modded by: Galaxy Stranger 3/19/88

Here are the sides of Ultima V with their corresponding sizes. Make sure you get the correct boot disk, CtC released two versions of the first (boot) side. The first (200 block) version had some errors in configuring the sound to work with a mockboarding; the correct (198 block side) corrects this problem.

Side 1  Side 2
Disk 1  Program (198) Dungeon (191)
Disk 2  Britannia (151) Underworld (162)
Disk 3  Towne (206) Dwelling (189)
Disk 4  Castle (200) Keep (204)

GETTING STARTED

Insert Disk One, the Ultima V program disk, label side up into your disk drive. Turn on your computer and monitor. You will see the opening graphics. Press the SPACE BAR to exit this view and bring up the main menu. Use the arrow keys and RETURN to select an option.

The first time you play Ultima V, select "TRANSFER FROM ULTIMA IV" if you want to use your character from that game, otherwise, select "CREATE A CHARACTER". From this point, you should follow the on-screen instructions. Remember to use the ESC key to acknowledge all disk swaps. After creating or transferring, you will return to the main menu.

Next, select the "INTRODUCTION" option in the main menu before continuing to the main part of the game. After completing the introduction sequence, select "JOURNEY ONWARD" to proceed to the main part of the game.

In all subsequent sessions, you may skip both the transfer/create character step and the instructions sequence by either selecting "JOURNEY ONWARD" from the main menu or pressing the "J" key while the disk is booting.

If you have at least 128K of memory and a Passport Systems MIDI interface, press the "J" key to select an option. Enter towns, cities, and other structures. Party members must be standing directly on structure to enter.

MOVEMENT

Except in dungeons or when engaged in combat, your party is represented by a single figure. During combat, each party member is shown and allowed to act independently. Pressing the following keys will move your party or party member in the designated direction:

North: Up arrow or \ or RETURN
South: Down arrow or / or RETURN
West : Left arrow or ; or RETURN
East : Right arrow or ' (quote)

In dungeons, the period key will turn you around. These keys are also used to indicate direction when attacking and casting spells.

MENUS

In a game menu, use the directional keys to move the cursor bar and highlight your choice. When you are satisfied with your selection, press the SPACE BAR. To leave a menu without making a choice, press the ESC key. If you are selecting a member of the party from the party roster, you may alternatively indicate your choice by typing in the number of the player's position in the roster.

A arrow symbol just below a menu indicates that the list extends to include more items in one or both directions.

COMMANDS

Here is a list of commands that are executed by pressing the designated key:

A /Attack/
Attempt to engage a person or creature in combat. Must be followed by a direction. In combat, you can aim the weapons in any direction, at any target within the weapon's range by using the direction keys to move the crosshair on top of the target. Press <A> again or the SPACE BAR to fire.

B /Board/
Board a frigate, ship, or other conveyance, or mount a horse. If you board a ship from a skiff, the skiff will be stowed and kept ready for later use.

C /Cast/
Cast a spell. Must be followed by the first letters of the spell's syllables. Only works when the proper reagents have already been mixed and the spellcaster has enough Magic Points remaining. Some spells require additional information (direction or target).

E /Enter/
Enter towns, castles, and other structures. Party members must be standing directly on structure to enter.

F /Fire/
Fire cannons. Must be followed by a direction. Ship cannons may only fire when the ships broadsides are facing the target.

G /Get/
Take possession of gold, food, and other items you find. Must be followed by a direction.

H /Hole Up/
In dungeons and wilderness, hole up and camp once a day to rest, heal wounds, and recover magical strength. In cities, hole up in an unoccupied bed to quickly pass time. On sea, hole up to make minor repairs to your ship.

I /Ignite a Torch/
Light a torch, if you have one, to see at night or in dungeons.

J /JIMMY LOCK/
Unlock most doors and safely open chests with a skeleton key. Keys are re-usable, but often break if the person jimmying is not nimble enough.

K /Klimb/
Climb up or down ladders in buildings and dungeons, down steel grates, or over small rockpiles, fences, and other objects.

L /Look/
Identify any object or terrain feature or read signs one step away. Must be followed by a direction. May allow further interaction with some objects, such as wells and fountains.

M /Mix/
Prepare spell reagents for later use. Enter the first letters of the spell's syllables, then select the appropriate reagents from the menu. Press <M> again to mix.

N /New Order/
Exchanges the positions of any two party members, excluding the leader. Select the two members to be exchanged from the roster menu with the cursor bar.

O /Open/
Opens an unlocked door or chest. Opening a locked chest will set off a trap if the chest has one.

P /Push/
Allows small objects, like tables and chairs, to be moved around the room. May be used to block doors.

Q /Save Game/
Save the current game status. If you do not use this command to end a playing session, any progress made since the last save will be lost.

R /Ready/
Equip a party member with personal items from the party’s stores. Use the arrow keys and space bar to select or de-select an item in the menu bar. Press ESC when finished.

S /Search/
Search the location or object in the direction indicated. Searching may detect traps on chests, concealed doors, dungeon floor traps, or reveal hidden items. Use the south direction key to search the immediate area in the dungeon halls.

T /Talk/
Converse with merchants or townsfolk in the direction indicated. Conversation is possible over counters, tables, fences, through windows, and doors with windows.

U /Use/
Use a potion, spell, or other special item found during the game.

V /View/
Reveals a bird’s eye map of the surrounding countryside, city, or dungeon floor currently occupied. View requires a special item.

X /X-it/
Exit or dismount current form of transportation, leaving it behind while continuing on foot. Horses not left on a hitching post may wander off. Exiting from a ship is possible only if there is a skiff available or if the ship is next to land.

Y /Yell/
On a ship, Yell will hoist or furl sails. In other situations, Yell will allow you to enter up to two lines of text to be spoken loudly.

Z /Stats/
Displays the status and attributes of your party members, including several screens of information such as supplies, weapons, armor, and magic. Use the East and West directional keys to scroll up and down long lists. Pressing the ESC or SPACE BAR will exit the Z-stat screens.

1-6,0
Several commands require that one party member be designated to perform the action. When this is required, an illuminated cursor bar will appear over the names of your party members. Use the directional keys to highlight the name of the character you wish to designate and press RETURN. Or, abort the command by pressing ESC. Instead of designating which party member is to perform a command each time you invoke it, you may set any living player as the “active player”. Until you select another party member or disable this feature by pressing 0, this player will be the default player for those commands which require a single party member for execution (i.e., Jimmy, Get, Search, etc.). This player will not serve as the default during combat, although you may separately assign a party member to be the active player during combat. To assign a player as the active player, press the number key from 1 to 6 representing that player’s position in the party roster.

<Space Bar>
Pass a turn, allowing time in the game to proceed. Also aborts any command requiring a directional key.

<Escape>
Aborts or exits commands which use scrolling menus. Also speeds exit from combat scenes after all foes have been overcome.

CTRL-S
Turns sound effects on or off.

CTRL-T
Toggles speed between fast and slow on an Apple II GS on any Apple II equipped with an Applied Engineering Transwarp or a compatible accelerator card.

CTRL-V
Set Mockingboard and Phasor volume. Must be followed by a number from 0-9

TO MAKE A BACKUP DISK:
To keep a backup copy of your characters’ status or to play more than one game simultaneously, use any ProDOS compatible utility to copy BOTH sides of the Britannia/Underworld disk onto a blank floppy disk.

HINTS
Conversation is integral to Ultima V. Only by piecing together clues from the different inhabitants can you complete your quests. You may ask inhabitants about a number of topics. Often you will need to know what to ask a specific person to glean interesting information. Everyone will talk about their job and give you their name, and asking about these will often help you learn who else to interview and what questions to ask them.

As an example of conversation, you might Talk to Dupre. First you type “JOB”. He responds, “I am hunting Gremlin!” Type “RUNTING” and he may respond with an interesting insight. Or Iolo might have suggested that you ask Shamino about his sword. If you have already spoken to Shamino, you would not have known to ask him that, and must seek him out again. You may be asked questions by some of those you meet. Consider carefully before responding; your life may depend on it. How you converse with others will determine how willing they will be to share information they have when you next meet them. Do converse with people more than once. Some people you will meet may be willing to become your travelling companion. If you wish to do so, invite them to “JOIN” your party.

Press RETURN or type “BYE” after an inhabitant’s response to conclude a conversation.

Keep a journal of your travels. Keep a list of the clues you pick up; there will be too many for you to simply carry in your hand.

Thoroughly explore the Realm. Exploring each town, castle, keep and other populated spots will prove to be time well spent.

SCREEN VIEWS
This part of the documentation refers to pictures in the manual. Most of it is common sense, and stuff for beginners. So, we’ll skip it.

MUSIC WITH ULTIMA V
Warriors Of Destiny includes over a dozen musical compositions ranging from village dances to castle fanfares. To hear the music, you need an Apple II equipped with 128K of memory and any of the following boards:

SWEET MICRO SYSTEMS
A. Mockingboard A
B. Sound I
C. Mockingboard C
D. Sound II
E. Sound / Speech I

APPLIED ENGINEERING
Apple II Computer Info

F. Phasor
PASSPORT DESIGNS
G. Apple MIDI Interface (for use with MIDI synthesizers)

To start the music, select "ACTIVATE MUSIC" from the Title Screen menu. From the Music Configuration menu, select "CHANGE MUSIC CONFIGURATION."

For each of your music boards, place a letter (from the list above) under the slot in which the board is installed. Only one MIDI board can be used, and the total number of voices for all other boards cannot exceed twelve. Press RETURN after making your music board selections.

To save your settings for later recall, select "SAVE MUSIC CONFIGURATION". To exit from the Music Configuration menu, select "RETURN TO THE GAME."

MIDI INTERFACE

If you selected a MIDI Interface, a MIDI Information screen will appear. Set "MIDI CHANNEL" to match your synthesizer. Set "NUMBER OF VOICES" to the maximum number of voices your synthesizer can play at one time.

The name of each Musical Selection will be displayed with a corresponding Instrument Suggestion. Use the cursor or type the first letter of the title to select a song. Enter MIDI NUMBERS using either of the following methods:

Select an instrument from your synthesizer keyboard. The MIDI NUMBER will automatically be entered on the Apple screen. (This method works with most, but not all MIDI synthesizers.)

Type in the MIDI NUMBER (MIDI Program Change number) on your Apple. Synthesizers use various numbering schemes, so check your manual. Instrument 1 is usually Program Change number 0. Hit RETURN to hear the song played in that voice.

When finished entering MIDI information, press ESC to return to the Configuration Menu.

*Note: Phasor boards must be set to "Phasor Mode" (all four switches in closed position.)

CHART OF SPELLS

<table>
<thead>
<tr>
<th>SPELL</th>
<th>EFFECT</th>
<th>TIME</th>
<th>REAGENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1ST</td>
<td>An Mox</td>
<td>cure poison</td>
<td>anytime</td>
</tr>
<tr>
<td>CIRCLE</td>
<td>An Zu</td>
<td>awaken</td>
<td>combat</td>
</tr>
<tr>
<td>Grav For</td>
<td>in lor</td>
<td>magic missile</td>
<td>combat</td>
</tr>
<tr>
<td>Mani</td>
<td>heal</td>
<td>anytime</td>
<td>ginseng, silk</td>
</tr>
<tr>
<td>2ND</td>
<td>An Sanct</td>
<td>unlock</td>
<td>anytime</td>
</tr>
<tr>
<td>CIRCLE</td>
<td>An Xren Corp</td>
<td>repel undead</td>
<td>combat</td>
</tr>
<tr>
<td>in wis</td>
<td>locate</td>
<td>noncombat</td>
<td>nightshade</td>
</tr>
<tr>
<td>Kal Xren</td>
<td>ccall animal</td>
<td>combat</td>
<td>silk, mandrake</td>
</tr>
<tr>
<td>Rel Hur</td>
<td>wind change</td>
<td>noncombat</td>
<td>ash, moss</td>
</tr>
<tr>
<td>3RD</td>
<td>In Flam Grav</td>
<td>wall of fire</td>
<td>dng./com.</td>
</tr>
<tr>
<td>CIRCLE</td>
<td>In Nox Grav</td>
<td>wall of poison</td>
<td>dng./com.</td>
</tr>
<tr>
<td>In tor</td>
<td>blink</td>
<td>anytime</td>
<td>ginseng, silk, pearl, ash, moss</td>
</tr>
<tr>
<td>in zu Grav</td>
<td>wall of sleep</td>
<td>dng./com.</td>
<td>ginse, silk, pearl, ash, moss</td>
</tr>
<tr>
<td>vas Flav</td>
<td>ball of flames</td>
<td>combat</td>
<td>ash, pearl</td>
</tr>
<tr>
<td>vas Lor</td>
<td>great light</td>
<td>noncombat</td>
<td>ash, mandrake</td>
</tr>
<tr>
<td>4TH</td>
<td>An Grav</td>
<td>dispell field</td>
<td>anytime</td>
</tr>
<tr>
<td>CIRCLE</td>
<td>Des For</td>
<td>downward move</td>
<td>dng./com.</td>
</tr>
<tr>
<td>in sanct</td>
<td>protection</td>
<td>anytime</td>
<td>ash, ginseng, garlic</td>
</tr>
<tr>
<td>in sanct Grav</td>
<td>protection field</td>
<td>dng./com.</td>
<td>silk, pearl</td>
</tr>
<tr>
<td>uss por</td>
<td>upward move</td>
<td>dungen, moss, silk</td>
<td></td>
</tr>
<tr>
<td>wis quas</td>
<td>reveal</td>
<td>combat</td>
<td>silk, nightshade</td>
</tr>
<tr>
<td>5TH</td>
<td>An Ex Por</td>
<td>magic lock</td>
<td>anytime</td>
</tr>
<tr>
<td>CIRCLE</td>
<td>In Bet Xren</td>
<td>insect swarm</td>
<td>combat</td>
</tr>
<tr>
<td>in zu Grav</td>
<td>magic unlock</td>
<td>anytime</td>
<td>ash, moss, garlic</td>
</tr>
<tr>
<td>in zu Grav</td>
<td>sleep</td>
<td>combat</td>
<td>ginseng, nightshade, silk</td>
</tr>
<tr>
<td>rel tym</td>
<td>quickness</td>
<td>combat</td>
<td>ash, mandrake, moss</td>
</tr>
<tr>
<td>vas mani</td>
<td>great heal</td>
<td>noncombat</td>
<td>ginseng, silk, mandrake</td>
</tr>
<tr>
<td>yel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6TH</td>
<td>An xen Ex</td>
<td>charm</td>
<td>combat</td>
</tr>
<tr>
<td>CIRCLE</td>
<td>In An</td>
<td>negate magic</td>
<td>anytime</td>
</tr>
<tr>
<td>in vas por ylem</td>
<td>tremor</td>
<td>combat</td>
<td>moss, ash, mandrake</td>
</tr>
<tr>
<td>quas An wis</td>
<td>confuse</td>
<td>combat</td>
<td>mandrake, nightshade</td>
</tr>
<tr>
<td>wis An ylem</td>
<td>xray</td>
<td>noncombat</td>
<td>mandrake, ash</td>
</tr>
<tr>
<td>7TH</td>
<td>In Mox Hur</td>
<td>poison wind</td>
<td>combat</td>
</tr>
<tr>
<td>CIRCLE</td>
<td>In Quas Corp</td>
<td>fear</td>
<td>combat</td>
</tr>
<tr>
<td>in quas wis</td>
<td>peer</td>
<td>noncombat</td>
<td>nightshade, mandrake</td>
</tr>
<tr>
<td>in quas xren</td>
<td>stone</td>
<td>combat</td>
<td>ash, silk, moss, ginseng, nightshade, mandrake</td>
</tr>
<tr>
<td>sanct lor</td>
<td>invisibility</td>
<td>combat</td>
<td>mandrake, nightshade, moss</td>
</tr>
<tr>
<td>xren corp</td>
<td>kill</td>
<td>combat</td>
<td>pearl, nightshade</td>
</tr>
<tr>
<td>8TH</td>
<td>An Tym</td>
<td>time stop</td>
<td>anytime</td>
</tr>
</tbody>
</table>
CIRCLE
In Flam Hur flame wind combat ash, moss, mandrake
In Mani Corp resurrect noncombat garlic, ginseng, silk, ash moss, mandrake
In Vas Gav Corp cone of energy combat mandrake, nightshade, ash moss, mandrake
Kal Xen Corp summon combat mandrake, garlic, moss, silk
Vas Rel Por gate travel noncombat ash, pearl, mandrake

These won't be the greatest since I have to make them in text-graphics.

\ = A
\ = B
\ = C
\ = D (See Note 2)
\ = E
\ = F (See Note 1)
\ = G
\ = H
\ = I
\ = J
Note 1:

Apple II Computer Documentation Resources (a2_docs_documentation.msw)

DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 1128 of 1262
In the translation for O, the 'F' shape has a little 'Notch' in the two lines in the 'F' shape. The F is smooth-pointing up.

Note 2:
The "TIE" shape for the letter 'D' has two open spaces in the middle. The "TIE" shape for the letters 'ST' have just a long space in the middle.

Note 3:
In the "A" shape in the letter 'V', the top segment is all filled in.

The 'o' is used as a spacing mark in Britannian writing.

Good Luck

-END-
<table>
<thead>
<tr>
<th>The City of Yew</th>
<th>West Britanny</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facilities</strong></td>
<td><strong>Facilities</strong></td>
</tr>
<tr>
<td>Provisioner</td>
<td>Jail</td>
</tr>
<tr>
<td>Level 1</td>
<td>Level 1</td>
</tr>
<tr>
<td>Arms of Justice</td>
<td>Government Offices</td>
</tr>
<tr>
<td>Level 1</td>
<td>Level 1</td>
</tr>
<tr>
<td>Apothecary</td>
<td></td>
</tr>
<tr>
<td>Level 1</td>
<td></td>
</tr>
<tr>
<td><strong>Items</strong></td>
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<tr>
<td>Silver Sword</td>
<td>Dungeon</td>
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<tr>
<td><strong>Inhabitants</strong></td>
<td><strong>Inhabitants</strong></td>
</tr>
<tr>
<td>Madam Pendra</td>
<td>Phillip</td>
</tr>
<tr>
<td>Jaana Jaymes</td>
<td>Christopher A.K.A. Dibbs</td>
</tr>
<tr>
<td>Landon</td>
<td>Camile</td>
</tr>
<tr>
<td>Duclas</td>
<td>Bar</td>
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<tr>
<td>Greymarch</td>
<td>Inn</td>
</tr>
<tr>
<td>Jerome</td>
<td>Iolo's Bows</td>
</tr>
<tr>
<td>Felespar</td>
<td>Orchard</td>
</tr>
<tr>
<td>Aleyn</td>
<td></td>
</tr>
<tr>
<td>Mario</td>
<td></td>
</tr>
<tr>
<td>Judge Dryden</td>
<td></td>
</tr>
<tr>
<td>Chamfort</td>
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**East Britanny**

<table>
<thead>
<tr>
<th><strong>Facilities</strong></th>
<th><strong>Inhabitants</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipwright</td>
<td>Phillip</td>
</tr>
<tr>
<td>Healers</td>
<td>Chistopher A.K.A. Dibbs</td>
</tr>
<tr>
<td><strong>Items</strong></td>
<td>British</td>
</tr>
<tr>
<td>Two Ren Hur Scrolls</td>
<td>Jaymes</td>
</tr>
<tr>
<td>Plans for the HMS Cape</td>
<td>Camile</td>
</tr>
<tr>
<td><strong>Inhabitants</strong></td>
<td><strong>Inhabitants</strong></td>
</tr>
<tr>
<td>Jerry</td>
<td>Bar</td>
</tr>
<tr>
<td>Blanch</td>
<td>Inn</td>
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<tr>
<td>Cletus</td>
<td>Iolo’s Bows</td>
</tr>
<tr>
<td>Rectus</td>
<td>Orchard</td>
</tr>
<tr>
<td>Drusus</td>
<td></td>
</tr>
<tr>
<td>Donzus</td>
<td></td>
</tr>
<tr>
<td>Blicus</td>
<td></td>
</tr>
<tr>
<td>Dacus</td>
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</table>

**North Britanny**

<table>
<thead>
<tr>
<th><strong>Facilities</strong></th>
<th><strong>Inhabitants</strong></th>
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</thead>
<tbody>
<tr>
<td>Milan</td>
<td>The City of Cove</td>
</tr>
<tr>
<td><strong>Inhabitants</strong></td>
<td><strong>Inhabitants</strong></td>
</tr>
<tr>
<td>Sir Adam the Torch</td>
<td>Terrance</td>
</tr>
<tr>
<td>Master Hawkins</td>
<td>Greynson</td>
</tr>
<tr>
<td>Squire Jimmy</td>
<td>Grennell</td>
</tr>
<tr>
<td>Milan</td>
<td>Gwennu</td>
</tr>
<tr>
<td><strong>Items</strong></td>
<td><strong>Items</strong></td>
</tr>
<tr>
<td>Fields of Grain</td>
<td>Nothing</td>
</tr>
<tr>
<td>Gems in Tree Trunk</td>
<td></td>
</tr>
<tr>
<td><strong>Inhabitants</strong></td>
<td><strong>Inhabitants</strong></td>
</tr>
<tr>
<td>Jessica of Sanctuary</td>
<td></td>
</tr>
</tbody>
</table>
Enlor
Leena
Ava

The City of Paws
Facilities
Siege Crafters Armoury
The Flame of Courage
Training Room
Items
White Potion Level 2
Inhabitants
Toede
Maxwell
Monsieur Loubet
Gardner
Kristi
Thol
Lord Malone

The Guild
Wishing Well Horses
The Smuggler's Inn
Provisioner

Items

Ring of Invisibility in tree stump
Inhabitants

Glinkie
Lorian
Domfits
Ferru
Dr. Cat
Bandai

Trinsic
Facilities
Paladin's Protectorsate Armoury
Wounds of Honor Healer
Horse and Rider Stables
Items

Four Gems Level 2
Inhabitants
Leila
Paul
Woolfe
Hettar
Gruman
Sindar

Greyhaven Lighthouse
No Facilities
Items

Blue Potion Level 1
Inhabitants

Anthony
Lord Kenneth the Composer
Chaolotte
Sir Arbunot
David

Serpent's Hold

Facilities

Jail

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Emilly
Windmere

The City of Minoc

Facilities
Shipwright
Healers Mission  (FREE Healing)
Mission of the Helpless
Darkwatch Armoury

Items
Ring of Skull Keys in Tree at NW corner
Red Potion     Level 2
Scroll In Mani Corp Level 2
Yellow Potion  Level 2
Scrolls         Level 2

Inhabitants
Enchantress
Poina
Lady Sahra
Fenelon
Rew
Captain Blythe
Beggar
Tactus
Regina

The Lycaeum

Facilities
Kitchen
Stable
Pub
Healer
Library
Flame of Truth

Items
White Potion    Level 3

Inhabitants
Rob
Lady Hayden
Sir Sean
Rolilo
Maria
Lord R'hien
Lady Janell

Moonglow

Facilities
Provisions
Herbalist

Items
Black Potion    Level 1
White Potion    Level 1
Scroll KXC      Level 1

---

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
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The document contains a list of different types of armor and weapons, along with their attributes and effects. It also includes a section on item commands and spell effects. The document is a resource for the Apple II computer game Ultima V, providing guidance on in-game items and abilities.

**Armor Types**
- Chain Mail
- Scale Mail
- Ring Mail
- Leather Armour
- Cloth Armour
- Spiked Shield
- Large Shield
- Small Shield
- Spiked Helm
- Chain Coif
- Leather Helm

**Weapons**
- Halberd
- Sword
- Two-Handed Axe
- Hammer
- Two-Handed Axe
- Short Sword
- Mace
- Morning Star
- Bow
- Crossbow
- Long Sword
- Sling
- Club
- Dagger
- Sling
- Flaming Oil
- Club

**Spells**
- Cure Poison
- Wake
- Magic Missle
- Invisibility
- Quickness
- Curser
- Immunity
- Protection
- Insect Swarm
- Ball of Flames
- Upward Move
- Wall of Poison
- Wall of Fire

**Item Commands**
- Escape: Exit commands, leave battlefield
- Ctrl-T: System Speed
- Ctrl-V: Volume level of music
- SPACE: Abort, pass turn
- Ctrl-S: Sound effects on/off
- G: Get
- M: Mix
- S: Search
- Z: Z-stats
- F: Fire
- L: Look
- R: Ready
- Y: Yell
- E: Enter
- H: Hole Up
- K: Klimb
- Q: Quit & Save
- X: X-It
- Mani: Heal
- A: Attack
- N: New Order
- T: Talk
- Ctrl-A: Add

**Website Information**
- FILE: ULTIMA V QREF
- DOCUMENT ultima.v.qref (b) Denotes a Bludgeon: Hit probability is based on Strength, not Dexterity.
- (p) Denotes a Polearm: May be used to attack over obstacles.
- (x') Number in parentheses denotes range.
DOCUMENT ulyssis

*****************************************************************************
*                              ULYSSES & THE GOLDEN FLEECE *=
*                              BY *
*                              BSBAL THE WISE *
*                              S *
*                              MICHAEL DECAYE *
*****************************************************************************

<<WARNING>> THIS TELLS EXACTLY HOW TO SOLVE 'HIRES ADVENTURE #4: ULYSSES AND THE GOLDEN FLEECE'. THIS IS NOT A HINT SHEET.

NOTE: (PARENTHESIS) INDICATE A DIRECTION TO MOVE. <BRACKETS> INDICATE AN ACTION -AND THESE- INDICATES A FOOTNOTE

START:

(E,S,S,E,N)
<GET CHEST>
- YOU CAN'T OPEN THE CHEST YET, YOU'LL NEED THE MAGIC WORD--
<SAY YES>
- THE GUARD ASSUMES YOU MEAN THAT YOU HAVE AN APPOINTMENT, OTHERWISE, YOU MAY WAIT AROUND UNTIL YOU GET KICKED OUT--
<BOW>
(E,E,N,N,W)
<BUY WINE>
<BUY ROPE>
<BUY WAX>
<BUY WOOD>
<BUY SWORD>
<BUY LEATHER>
<BUY FLINT>
- IF YOU READ THE SIGN YOU WILL NOTICE THAT YOU CAN BUY A LANTERN. BUT IF YOU DO, YOU WILL NEVER FINISH THE ADVENTURE.--
(E,N,W)
<DROP CHEST>
(S)
<GET COIN>
(N)
<HIRE CREW>
- YOU NEED THE CREW TO SAIL THE SHIP--
(K)
<GET NOTE>
- ARE YOU TRYING TO BRIBE A GUARD?!?--
<YES>
<GET NOTE>
- FROM THE BOTTLE, OF COURSE--
(E,N)
<CAST OFF>
(N,W)
<GET BAD>
- IF YOU GO NORTH FROM HERE, YOU WILL loose ALL YOUR STUFF--
(E,S,E)
<GET CONDOR>
- POOR BIRD--

(E)
- THE NEXT SET OF DIRECTIONS ARE FROM THE MAP--
(N,N,E,S,W,S,E,E,N,E,E)
<GO ISLAND>
(E,S,S)
<GET BRIDLE>
- I WONDER WHO THE BRIDLE IS FOR?
(E,S)
<LOCK HOLE>
<GET DUST>
- DON'T SNORT IT--
(N,W,N,N,N,N,U,N,E,N)
<GET WATER>
- IT'S MAGICAL--
(S,N,S,S,E,E,S,E)
- YES, SOUTH THEN NORTH, YOU DON'T END UP IN THE SAME SPOT--
<TIE LEATHER>
<GET JEWELS>
- DRAGONS ARE SO GREEDY--
(N,E,E)
<FLICK CONDOR>
<USE WAX>
<AND FEATHERS>
<FLY>
<GET ROCK>
<GET REINS>
- I WONDER WHO THE REINS ARE FOR--
(D,W,N,S)
<THROW DUST>
- OUCH--
(E,S,E,E)
<POUR WINE>
<ON ME>
(S,E)
<BUY ROPE>
<GO SHIP>
<BUY WAX>
<IN OCEAN>
- POSIDON IS ALLERGIC TO WATER--
(N,E,E,E)
<TIE ROPE>
<TO ME>
- DO YOU WANT TO BE TIED TO THE MAST?--
<YES>
<HOLD WAX>
- TO SOFTEN IT UP--
<WAX EARS>
- PUT THE WAX IN THE CREWS' EARS, OR THEY WILL BE DRAWN TO THE SIRENS. STRANGE POEM, REMEMBER THE LAST VERSE--
(W,W,N,N,N)
<GO ISLAND>
(W,W,W)
<LOCK TREE>
<READ CARVING>
- NOTICE HOW THE CARVINGS CHANGE FROM 'SEVENSEAS' TO 'SVEENSEAS'--
(E,E,N,E,N)
- HMM, YOUR MEN SEEM HUNGRY--
(W)
<OPEN CAGE>
<GET MALLET>
(E,S,E,N)
<GIVE WINE>
-CYCLOPS LIKE WINE. WHAT DO YOU NEED TO MAKE MORE WINE?

<GRAPES>
-MAKE WINE

<GET TRUNK>
-Sharpen Trunk

<IN EYE>
-How mean-

<KILL SHEEP>
-The sheep will still run out of your reach even though they are dead, strange-

<START FIRE>
-Cook Sheeps

<MAKE WINE>
-Your men would’ve eaten you, had you not found the sheep-

<MAKE WINE>
-Now you get to open the chest-

<LOOK CHEST>
<GET SWORD>
<KILL SKELETONS>
<GET REINS>
<GET FLEECE>

THE KING DELIGHTEDLY TAKES THE THE FLEECE. HE AWARDS YOU A KINGDOM OF YOUR OWN AND 300 BAGS OF GOLD.

CONGRATULATIONS!!!!!!!!! YOU HAVE SUCCESSFULLY COMPLETED "$LYSSES AND THE GOLDEN FLEECE" AND ARE HEREBY DECLARED A LEVEL-2 ADVENTURER.
for a range). Unify will then read in the UNI.BLK.xxxx file from the source drive, where xxxx is the block number, and then patch the target disk.

Unify a Disk:
------------- This is perhaps the most important option of Unify, it allows you to Unify a disk and then saves a file UNIFY.name which holds all of the checksums for each block of the disk. This is done so that you can upload the UNIFY.name file along with the ware and when people download it they can use Unify to check to see if their copy matches your copy (Auto-Unifying). If you do not want to save a UNIFY.name file then press ESCAPE. When selected Unify asks you if you wish to output the blocks and checksums to the screen, if you select yes then each block and corresponding checksums will be printed out on your screen, if you select no Unify will tell you to please wait and will Unify the disk without printing any blocks or checksums to the screen (selecting no will speed up Unifying the disk).

Auto-Unify a disk:
------------------ This option is for checking a disk against a UNIFY.name file. If you suspect you have a bad copy then use Unify to Auto-Unify your disk against the UNIFY.name file and Unify will notify you of any non-matching blocks (or if your copy is perfect). If there are some bad blocks then you may print them out to any slot or your screen (slot 0) by pressing the slot to dump to. The output is formatted for 80 column printers, and can also print out to an 80 column card as well.

Change slots and drives:
------------------------ This option allows you to change the slots and drives Unify is set up for. SRC denotes the source and TRG denotes the target, the source is always the first asked for disk. A RAMdrive works fine with Unify, but Unify does not support subdirectories. All files, being saved or loaded, must be on the main root directory (ie: not within any subdirectories).

Quit:
----- Well this is pretty self-explanatory, when selected Unify will either exit into BASIC (if BASIC.SYSTEM has been loaded) or will exit via a ProDOS quit call if BASIC.SYSTEM has not been loaded.

Closing Comments:
----------------- Unify works on ALL Apple's which can handle ProDOS, if you cannot display lowercase simply press "A" at the main menu and everything will then be formatted for uppercase only. Unify works with just about all versions of ProDOS (including ProDOS 8) and also works perfect with Diversi-Cache for speeding up disk access.

-END-

--- Theory of Operation ---

To operate the hyperdrive, you need to enter hyperspace by pressing the spacecraft into an alternate dimension-set called hyperspace. Once in hyperspace, the spacecraft is no longer subject to the rules which govern motion in normal space. Due to the chaotic nature of hyperspace, the aiming system used in reentry is only accurate enough to return the user to a particular star, not a particular planet.

--- Application ---

The hyperdrive is used to travel between star systems. It is not accurate enough to use for interplanetary travel. Hyperdrive motors are equipped with the special feature, overload. Overloading the hyperdrive will destroy any other ships within a 50,000 meter radius. It should only be used for emergencies, since it severely damages your hyperdrive.

--- Warnings ---

Never attempt to operate the hyperdrive with an orbital radius of less than 20,000 kilometers or damage may result.
Never attempt to make trips of less than 1 light-year; i.e., 0 light-years, as damage may result.
The sub-light drive comes in several different forms. Some depend on ejecting matter at very high velocities while others use controlled gravity to drive the ship forward in space. Due to the speed of light being an absolute limit on anything traveling in normal space, a trip between even the closest of star systems would take years using sup-light drive.

Applications:

The sub-light drive is used for travel between planets in the same star system and maneuvering between objects in orbit about a planet.

Theory of Operation:

The ship is destroyed and the game ends if converter damage goes below 1 damage point.

Note:

The converter transforms Ore IV (a radioactive isotope of hydrogen) into electrical energy.

Application:

The converter operates automatically any time the power level in the accumulators is less than the power required for a particular job. When the converter is running, it produces a low "whirring" sound. If there is not enough Ore IV for the amount of power required, the computer will beep rapidly and fail to complete its current job. The converter will automatically deplete your Ore IV supply.

Warning:

The ship is destroyed and the game ends if converter damage goes below 1 damage point.
The resource scanner is automatically switched on when the user begins mining sites and displays ore concentration, natural hostility, and population sophistication data on each one. This enables you to select the site with the best danger of payoff ratio.

Theory of Operation:
The high definition scanner uses a large part of the electromagnetic spectrum in order to produce a highly detailed picture of an object and an account of the spacecraft's most probable configuration.

Application:
The high definition scanner can be used to determine whether a particular target presents a threat. It can also be used to find choice targets to board and plunder.

Theory of Operation:
A term referring to the system of racks, conveyors, and lifts used to bring missiles from its storage area into firing position.

Application:
The storage of missiles occurs automatically as they are purchased.

Warning:
If the missile rack is destroyed, all your ship's missiles will be lost.

Theory of Operation:
The missile launcher launches the missiles and provides primary course guidance.

Application:
Operation of the missile launcher occurs automatically as firing is requested.

Theory of Operation:
The lasers used as weaponry are the flexible-aperture micropulse type. They emit intense beams of coherent light to blind or puncture enemy targets.

Application:
The laser can be used for defense or offense against targets in orbit. Note that the laser cannot be aimed at ground targets (it diffuses and becomes ineffective) or at drydocks (programmed inhibition).

Functioning of the shield generator is automatic and occurs whenever you are fired upon. The shield may only be able to stop a fraction of the incoming fire.

Theory of Operation:
Electronic warfare dates back to the late Twentieth Century (Common Era) and the basic elements are still the same. Electronic countermeasure, or ECM, is the process of jamming your opponent's tracking radar and missile guidance systems. This dramatically reduces the odds of an incoming missile hitting your ship.

Application:
The ECM will automatically jam missiles as they come in.

Theory of Operation:
Assault capsules are electro-gravitically driven space shuttles used to land troops on the surface. They are heavily armoured and contain two or more Voigt-Effect cannons.

Application:
The assault capsule is used to clear a hostile area prior to deployment of ore processors.

Theory of Operation:
Crew armor is used to protect the crew from injury and supply additional speed and payload capacity during boarding or ground assaults.

Application:
The computer will automatically ask you for armor when it is needed. You may have only one unit of armor per crew member.
An ore processor is a giant mining platform that can land on the surface of habitable and airless worlds. It has no defense capability and its mining lies

Theory of Operation:
The cargo hold stores up to eighty (80) items of varying size in an atmosphere controlled environment.

Application:
Cargo is automatically stored in the cargo hold.

Warning:
If the cargo hold is destroyed, all the cargo inside is lost.

Theory of Operation:
The cargo hold stores up to eighty (80) items of varying size in an atmosphere controlled environment.

Application:
Cargo is automatically stored in the cargo hold.

Warning:
If the cargo hold is destroyed, all the cargo inside is lost.

Theory of Operation:
The cryogenic vault is a low-temperature (98 degrees K) storage area for passengers and prisoners. Putting non-essential personnel into suspended animation greatly reduces operating costs and accommodations size. A person entering the vault is pumped full of cryo-protectant and his body temperature is reduced to that of liquid nitrogen. The thawing process is rapid and a certain percentage of revivals fail.

Application:
The cryogenic vault can be used most profitable to carry emigrants to other worlds. Many planets need hard-working immigrants. Underpopulated worlds encourage immigration with kickbacks to transport captains such as yourself. Passengers are placed into the cryogenic vault automatically after returning from a Starport or completing a ship-to-ship boarding in Weapons.

Note:
To find the loading status of the cryogenic vault, check the miscellaneous section of Report Status and look under the heading of "passengers."

Theory of Operation:
The orbital shuttle is an electro-gravitic transport used for starport-to-ship operations.

Application:
The orbital shuttle is used to carry cargo, migrants and ore to and from starports.

Warning:
Orbital shuttles have extremely limited range, usually less than 1500 kilometers. It is necessary to maneuver your spacecraft in an extremely low orbit to facilitate their use.

Theory of Operation:
The computer is used to control many of the systems on the ship. A particular program is required for a particular system.

Warning:
The ship is destroyed and the game ends if computer damage goes below 1 damage point.

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Warning:

The ship is destroyed and the game ends if computer damage goes below 1 damage point.

The area of space containing the Local Group is divided into a cubic volume of space 200 light years on a side. Appendix A contains a list of stars and their coordinates within this cube. Note that the home star of the Local Group, Hope, lies at the center of the cube.

Navigation from star to star is accomplished using hyperspace. The X, Y, and Z coordinates of your destination are fed to the hyperspace navigation program and the rest is handled by the computer. A hyperspace jump, regardless of the distance, takes 6.8 days.

Navigation within a solar system is accomplished using sub-light engines. In order to move from planet to planet, you need to feed the sub-light navigation program the current coordinates of the planet. Since planets move, their locations cannot be presented in a table. Rather, the current coordinates of a destination planet can be obtained from the solar scan in the sub-light drive section. The coordinates for a planet are given in spherical coordinates, with one slight modification.

When arriving at a planet, you are placed into a standard orbit which is to be defined as an orbit with a radius four times the radius of the planet. All other coordinates for the orbit are zero.

Changing planetary orbits are also accomplished using sub-light engines. For planetary orbits, it is necessary to feed the sublight navigation program the coordinates for the new orbit.
The computer system aboard your ship consists of a computer processor and a mass storage unit. These units work together to perform all computer activities aboard your ship. The mass storage unit stores the programs, while the computer processor executes them.

There are ten computer programs that you may purchase to run on your computer. Two of these programs, sub-light navigation and hyperspace navigation, are absolutely essential to operate your ship. The following is a description of each of the ten programs:

- **Weapon**
  - Controls the loading and aiming of missiles and lasers.
  - This program is not currently implemented.

- **Resource**
  - Controls scanning of a planet surface for valuable ores. Must be used to land ore processors.

- **Docking**
  - Performs all computations necessary in order to dock your ship with either another ship or a drydock. Docking attempts will not be allowed if this program is not running.

- **Shuttle Control**
  - Controls the ascent and descent of orbital shuttles. Must be running to land orbital shuttles.

- **Sub-c Navigation**
  - Performs all computations necessary in order to execute a sub-light maneuver. In addition, this program actually controls the ship attitude and engine thrust to make the maneuver totally automatic. If this program is not running, no sub-light maneuvers will be permitted.

- **Hyperspace Navigation**
  - Performs all computations necessary in order to execute a hyperspace jump. If this program is not running, no hyperspace travel will be permitted.

- **Market**
  - Analyzes the cargo aboard your ship to determine the category (i.e. food, narc, arti) of each piece. If this program is not running, you will not be able to determine the category of each piece of cargo.

Each of these programs has a characteristic called timeshare. This is the amount of time-space the program occupies in the computer processor and mass storage. Appendix D contains a list of programs and their timeshare values. For instance, the resource program takes up two timeshare units. From Appendix C, under processors, you can see that the Alkis 2 processor can hold up to 12 timeshare units. This means that the Resource program consumes 2/12 of the processor space. Also from Appendix C, under Mass Storage, you can see that the Skandis unit can store up to twenty-five timeshare units. Thus the resource program consumes 2/25 of the storage space. It is important to note however, that processor space is only used when program is running. Storage space on the other hand is used regardless of the run state of the program.

A program in mass storage has three characteristics: Status, Load State, and Priority. All three of these characteristics can be viewed or changed by you at any time in the Program Control section.

The status of a program may either be "run" or "halt". If the status is read or set to "run", the program is in operation and uses up processor space. A "halt" condition suspends execution and frees up processor space. The status condition does not affect storage space.

The load state of a program may either be "auto" or "manual". If a program is set to manual, the status of that program can only be changed by you. A program in auto can have its status changed by the computer itself. For instance, if the hyperspace navigation program were in a halt status with auto load, the computer could begin executing that program if needed. If you attempt to plot a hyperspace jump, the computer will run the program automatically without your having to change the status manually.

The priority value of a program is only meaningful if the program is set on auto load. Priority values range from zero to nine, with nine having the highest priority. If the computer encounters the need to run a program which is set to auto load, it will first check if there is enough free space in the processor. If there is, it will simply go ahead and execute the program. If not enough free space exists, the computer will attempt to halt another auto load program. The only auto load program the computer will halt are programs with the same or lower priority than one it is trying to run. If the computer cannot free up enough space, it will abort the attempt.
The process of mining ore is very dangerous and tedious. The worst disadvantage for the beginning merchant is the enormous start-up cost. The equipment required for a reasonably profitable mining expedition comes to well over 50,000 credits.

The object of mining is to buy an item on a world where it is commonplace and relatively inexpensive and bring it to a world with a slightly lower sophistication and run the price up 250%. Multiply that by the 80 products you can carry at a time and you can see the amount of profit involved in a successful trip.

A starport will offer products only within the range of numbers that have the same ten digit as the port's sophistication. Example, if Grotto's starport has a sophistication of 76, it will offer products that range in sophistication from 70 to 79 (notice these all start with the same tens digit).

The value of a product is based on its sophistication and its base price (a value you will never know exactly). If the product has a base price of 7000 and a sophistication of 73, on Grotto it would sell for approximately 6500 credits. Conversely, if a product has a base price of 7000 and a sophistication of 79, it would sell for about 7500.

Other merchants at a starport will buy products that are up to 9 sophistication points greater than the starport's sophistication of 85, merchants at the Grotto starport will buy it.

The best method of trading is to buy products with a sophistication slightly less than the sophistication of the starport of the starport you are at. For example, merchants on Grotto are trying to get rid of a product with a sophistication of 73, because Grotto it's not current technology. You buy that product for a reduced price and bring it to the Stowe starport (sophistication = 67) where it's suddenly the latest thing! Plan on making a 250% profit.

You must take into account a planet's culture as well as its sophistication. On Rouvchorra (culture = 4 Formation of Aristocratic States), for example, many products are illegal and will be confiscated if you try to bring them down to the starport. Consult Appendix G to make sure none of the types of products you bring down to a planet are illegal.

Some planets in the Local Group have a surplus of people. Other planets are rapidly expanding and need all the manpower they can get. The object of passenger transport is to take people from a planet in the former category and take them to a planet in the latter.

Planets offering emigrants will actually pay you to take people away. Planets that need people will pay you for immigrants. The problem is that many cultures do not accept transportees and all of them want people who are at least 1 and no more than 10 sophistication points greater than the planet.

Transport captains can expect over 1000 credits per passenger on a well-planned run.

In orbit above many of the planets, complete anarchy is the rule. Properly armed, you can profit from this situation. To capture another spacecraft, however, is a long and dangerous process. You must carefully analyze your target and be able to outmaneuver it into a forced docking. Your troops must be stronger and better equipped than your target's to successfully capture it. Once captured, though, the
ship's entire crew are your prisoners, all their credits and ore are yours, and all
their cargo. But only if you live.

----- Using Menus -----

The Flight and Starport disks are "menu drive". This means that all sections
are accessed by selecting the section from a menu (or list) of sections on the
screen. When a menu is displayed on the screen, you will see a pointer that points to
one of the sections on the menu. This pointer may be moved from section to section by
pressing the option key. To run a section, you must first use the option key to move
the pointer to that section. Pressing the select key will then run the section. To
exit a menu and return to the previous menu (if any), press the start key. This
procedure is used for all menus in the game.

----- Sound Effects and their Meanings -----

There are several sound effects that are used throughout Universe. These are
detailed as follows:

| Ship Under Attack |

If your ship is hit by an enemy weapon, you will hear a sound that resembles an
explosion. When this sound occurs, one of the parts aboard your ship may take some
damage or be destroyed. Upon hearing this noise, you should either transfer to a
different orbit (in an attempt to escape the attacker) or fire back.

| Ore Converters in Use |

Whenever the ore converters run, you will hear a whirring sound. This sound
will last for a few seconds to as long as a minute, depending on how much ore is
being converted. A few short beeps will occur if you run out of ore during the
conversion process.

----- Special Thanx to Silicon Warrior & A.P.G -----
You find yourself in the drydocks of Axia, talking with Zefrep, the sales manager. He will lead you over to a terminal from which you can view the current selection of ten ships. It is important to remember that these ships are merely framework, and that you must fill it with hulls and parts from the Merchant's Load Package in order to make it operational.

A menu of ship names will appear on the screen. To obtain information on one of the designs, type the number corresponding to the name and then press the return key. The terminal will go blank for a few seconds while it accesses the proper information, then display the first of several screens of information on the ships. The top half of the screen will give you an angled view of the ship. The bottom half will relate the specifications of the ship. The specifications are defined as follows:

- **Designation**: The model name for the design
- **Company**: The company who constructed the ship
- **Year**: The year construction was completed
- **Price**: Current cost of purchase
- **Length**: Overall length of the ship in meters
- **Beam**: Overall width of the ship in meters
- **Draught**: Overall height of the ship in meters
- **Mass**: Mass of the ship in millions of kilograms
- **Max. Hulls**: The maximum numbers of hulls the ship can hold
- **Visibility**: The overall visibility of the ship (this is a number between 0 and 99; the higher the number, the more visible the ship is to other ships.)
- **Integrity**: The overall structural integrity of the ship (this is a number between 0 and 99; the higher the number, the more structurally sound the ship is.)

When you are finished reviewing the data, press the return key and the computer will access the next screen information. The last screen of data is a ship overview.

When you are finished reviewing the data, hit the return key and you will find yourself back at the selection menu. You may now select another design to review.

You can obtain additional information on the ships from Appendix H. This will list the size and visibilities for each section on the ship. Ships are divided into maximum of eight different sections. Each section is capable of holding a particular number of hulls. Hulls are the main measure of a parts size. The larger sections will be able to hold more hulls, therefore more parts. Sections also have visibility.
factor. This is a measure of how visible the individual section is to another ship. The higher the value, the more visible the section is. The more visible sections have the greatest chance of being hit by enemy fire. A good strategy is therefore to place vital parts in the section with the lower visibility factors.

Once you are finished reviewing ship designs, you may purchase a ship by pressing the select key when at the selection menu. Zefrep will then ask you which ship you want to purchase. To do this, press the number corresponding to the ship you want, then press the return key. The cost of the ship will be deducted from the credits you have. The ship will be moved from the storage area to the drydock area so that you will later be able to place your hulls and parts aboard your ship.

Creating the Player's Disk

This section will create the player's disk for the game. This is the disk that is used throughout the game to keep track of all the data on your ship. (See version specific section for more information on this process.)

While Zefrep is moving your ship into the drydock area, he will ask that you assist the computer in creating the player disk. You will be asked to remove the construction disk from the disk drive, then press the return key.

You will need a black disk to use as the player disk. The computer will ask you to place this disk in the disk drive and press the return key to begin formatting. The format procedure will take almost a minute. If the format is successful, the computer will ask you to replace the construction disk. The format may fail if the disk proves to be defective. In this case, the computer will allow you to place a different disk in the drive and try again.

When you get a successful format and have replaced the construction disk, the computer will then begin the process of moving data onto the player disk. Simply follow the instructions the computer gives for inserting disks. Several disk insertions will need to be made during this process. Above all, be patient! Universe is a complex game that requires over three quarters of the space on the player disk for data.

Zefrep will inform you when the process is complete. At this point, your ship, parts, and hulls are in position and you are ready to boot the computer with the flight disk.

After booting the flight disk, you must proceed directly to docking control (this is a section on the docking control menu). This section will allow you to place the parts included in the load onto your ship, after placing the parts, you must select purchase items (also on the docking control menu). Here, you will need to hire at least 10 crew members (you may wish to hire at least 15 if you plan to use orbital shuttles) and to purchase enough provisions to last them until you return to a drydock.

This procedure must be followed in the given order. If you fail to do so, you may find yourself sitting in your ship with no parts or crew. This will end the game rather abruptly.
coordinates here by moving the starsystem pointer up to the annual entry line (use the up arrow key).

After positioning the starsystem pointer, you may then jump to or obtain data on that system. At the far right hand side of the screen you will see a *visited* indicator that is set to "Y" if you have been to that system before, or an "N" if you have not. If the indicator is set to "Y", you may obtain data on the planets orbiting that star by pressing the option key. The planetary data will include the planet name, the sophistication levels of the drydock and starport (including of course whether or not the planet has a starport drydock), and the type of planet. You may return to the starsystem list by pushing the start key.

You may select a star as your destination by pressing the select key. If the starsystem pointer is on the manual entry line, it will first be necessary to enter the proper coordinates. To do this, press the option key and a small cursor will appear after the "X", "Y", and "Z" coordinates, pressing return after each. Then you may press the select key to select those coordinates as your destination.

You will now see the Local Group map as the hyperspace navigation program plots the appropriate coordinates. The source coordinates will be displayed on the left, while the destination is displayed on the right. The distance between the two locations is given at the center of the map, measured in light-years. The amount of energy needed for the jump is displayed at the bottom of the map.

To make the jump, push the select key. To abort the jump, push the option key and you will return to the starsystem list. If the computer beeps when you push the select key, the hyperspace navigation program has rejected the jump due to insufficient energy or an illegal jump distance.

Once the hyperspace navigation program has accepted a valid jump, the computer will begin calculating, fueling, and sequencing for the jump. Do not be alarmed if you see strange patterns of light on the screen. This is simply sensory distortion due to the hyperspace effect, providing you obey the orbital radius minimum for a hyperspace jump, you will find yourself at the destination. If you were too low in the orbit of the planet, a message will display that you must return to the select scale mode. If you were too high in the orbit of the planet, you will find that you did not move. You may have also damaged your hyperdrive.

To return to the drive system menu, you must first have the starsystem list displayed on the screen. Pushing the start key from this point will return you to the drive system menu.

+-----------------+
| Solar Scale |
+-----------------+

At the bottom of the screen is the status area. Here is where the computer displays the current scale, coordinates, selected object, and status. Upon entering sub-light drive, you will be in the select scale mode, use the option key to toggle between solar and planetary scales. The current scale will activate that scale. The start key will return you to the drive systems sub-menu.

If you select the solar scale, the computer will begin by doing a solar scan. This scan will look for all planets and stars for your current location. The star, if present, will be displayed at the center of the display area. Planets will appear as dots, and your ship will appear as a dot with a box around it. The computer will switch to the destination select mode.

To select your destination, use the option key. One of the dots will begin to blink, indicating the current object. Information on this object can be seen at the bottom of the screen. These objects are always planets, with the exception of the one object as a destination or your ship. The data on the object includes the planet name and its coordinates, displayed as rho, phi, and theta respectively. All angles are displayed in degrees. Pressing the option key again will select the next object. Continue pressing the option key again until the destination planet you want is displayed. At this point, press the select key to select the current object as your destination, or the start key to return to the select scale mode.

After selecting your destination, the sublight navigation program will make the appropriate computations. At the bottom of the screen you will see the following information:

| Time........Time in minutes to |
| Energy......The amount of energy needed for the transfer |
| Ore........The amount of Ore IV needed |
| Ore........The amount of Ore IV needed |

Push the select key to begin the transfer, or the start key to abort. If the computer beeps after pressing the select key, the sub-light navigation program has rejected the transfer. This is due to either insufficient energy, ore, or the number of gravities of thrust needed for the maneuver is too great. If the computer switches to the destination select mode and a cursor will appear in the "rho" coordinate. You are now in the destination select mode, and the computer is waiting for you to enter the coordinates of your destination.

The coordinates are as follows: rho, epsilon, theta-epsilon, and theta. To enter the coordinates, simply type in the numbers, entering all angles in degrees. A radius or angle that is too small or large will be rejected. The minimum radius will be 5% greater than the radius of the planet. For example, the minimum orbital radius around Axia would be 6615 kilometers. The maximum radius will be around ten times the radius of the planet. You may hit return for the radius without entering a number if you do not wish to manually enter coordinates. If you have entered coordinates, you may press the option key to display the coordinates of the objects in orbit. You may select an object as a destination by pressing select when the object's data is at the bottom of the screen. Due to the physics of planetary orbits and the limitations of sub-light engines, you will not be able to select a destination whose orbital radius is within 500 kilometers of your ship's orbital radius.

Objects other than an orbital drydock or your ship appear with the description "HRS**". This is a hi-resolution scanner section and enter the appropriate contact must be within range of the scanner, so you may wish to first transfer to the contact's location.

In order for your orbital scanner to pick up other objects in orbit, you must be within range of the orbital scanning beacon. The beacon is a ring of satellites surrounding the planet at an orbital radius equal to five times the radius of the planet. To be within range, the difference between your orbital radius and that of the beacon must be less than the maximum range of your orbital scanner.

After selecting a destination, the sublight navigation program will compute the course and resources needed. The following data will be displayed:

| Time........Time in minutes to |

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If you now press the option key, a "V" will appear at the end of the status line indicating that the transfer will be "visual". This means that you will be able to watch the maneuver on the screen. This will be interesting to watch since the transfer uses real formulas, however it will take considerably longer than a "non-visual" transfer. To select a non-visual transfer, press the option key again. This will turn off the "V" on the screen. At this point, you may press select to begin the transfer. After the transfer, you will return to the select scale mode.

These docs are verbatim from the manual, except where noted. Eight asterisks denote chapter titles. A phrase/word that has an asterisk on either side or is in all caps in mid-sentence is either bold-faced or italicized in the documentation. All caps on a single line delineate a major subheading in a chapter. "<" and "">" brace comments from me.

Enjoy.

********INTRODUCTION*********

THE STORY SO FAR ...

*History*

During the latter part of the First Stellar Expansion, it became evident that the technology from planets in the Home Cluster could not support the ever expanding colonization effort.

The hyperdrive had opened an era of fast, economical travel between the stars. Journeys that used to consume decades could be made in a matter of days. However, the hyperdrive was not without its problems. Its unrefueled maximum range was a major limitation. After 3 or 4 hyperjumps, the ship would be completely out of the inhabited regions, with nowhere to refuel. Its fuel capacity was also part of the second hindrance: the so-called "Mass Limit." Stated simply, it sets a severe limit on the maximum size of a spacecraft that can enter hyperspace. Because of these problems, the experts were predicting an end to the rapid expansion that had previously characterized Earth's emergence as an interstellar civilization.

In 2105, a research ship traveling through the far reaches of the Tau Ceti starsystem discovered a huge alien artifact. Entire scientific communities came to study the artifact and, several years later, the purpose of the great machine was discovered. It was a hyperspace booster. It had the capability to "push" spacecraft not tens but thousands of light-years. Since the booster itself did not enter hyperspace, ships up to the mass limit could travel a thousand lightyears with minimal power.

Years of research continued. Why had the aliens abandoned the booster? Where had they gone? The scientists were unable to say. The booster contained a mapping system depicting millions of stars, but very few of them had received any special mention.

Finally, the control system was deciphered and test flights were made. They proved the machine to be fully functional and technician's knowledge of the control system, adequate enough to allow regular use.

The Second Stellar Expansion started.

You are in a cluster of stars known as the Local Group. It is impossible to communicate with Earth because travel using the booster is strictly one-way. Up until 40 years ago, small capsules containing the latest news and technical examples used to arrive every month from the Home
Clustedr. Then one day they stopped. There was no indication that there was anything wrong in the Home Cluster. The ensuing panic and fear in the Local Group nearly destroyed civilization; as it is, the LG has been divided into two mutually hostile governments, set on the brink of war. Fortunately, 20 years ago, a second hyperspace booster was discovered at the planet Diftalpa, right in the Local Group. The second booster is currently being towed to Cetus Amicus, where it will be studied in greater detail. It is hoped that in the near future it will be a two-way communication between the Local Group and the Home Cluster ... if the Local Group doesn't destroy itself first.

*Who You Are*

The Local Group has been divided into two governments, the Federated Worlds (FW) and the United Democratic Planets (UDP). Although trade and travel continue between the two governments, the situation is deteriorating rapidly.

Almost 8 years ago, you "retired" from the Federated Worlds Special Forces (FWSF), an organization whose function is to gather intelligence data and perform covert operations within the United Democratic Planets. Now you carry the persona of a free trader from Vrommus Prime. Your cover is quite airtight. Occasionally, the FWSF provides you with money and special equipment, but only to send you out on a mission. Not all of your crew is even aware that you are anything else but a trader. So during your travels and missions, you're going to have to earn a living.

---------- GETTING STARTED ----------

This manual is broken up into 8 major sections. They are: INTRODUCTION, GETTING STARTED, PLAYING UNIVERSE II, FILE CONTROL, FLIGHT, STARPORT, DRYDOCK, and APPENDIX.

*Introduction* contains the background history on which the game is based.

*Getting Started* explains the game warranty and repair policies.<! I skipped the game warranty & repair section and the paragraphs dealing with how to set up Universe II on your Macintosh, Ibm or Zenith. D.F.>

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*Playing Universe II* is a guide to the way the systems on your ship work in concert. It details the functions of the various systems available for your spacecraft, your crew and what to do with them, interstellar commerce, the on-board computer, astrogation, warfare, energy and time, and your mission as a deep-cover agent for the Federated Worlds.

*File Control* explains how to create a new player file, check your disks for any errors, delete old player files, and save current player files.

*Flight* describes the workings of each of the various sections involved in operating your spacecraft.

*Drydock* describes all of the various services available at the orbital drydocks, including the Labor Mart, new parts, new supplies, and even purchasing a totally new spacecraft.

*Starport* explains how to use the text parser, a user interface which allows you to type in sentences to move about the starports, talk with other characters in the game, and find special clues to help you finish successfully. It also describes the Transaction Terminal, which enables you to buy and sell products, exchange ores for currency, accept and discharge passengers, and send your crew to a technical school to increase their grade.

*Appendix* is a convenient collection of tables and data needed to play Universe II. It also includes a glossary, instructions on using the Universe electronic bulletin board, and an index. <| I cut the index because I didn't try to match the page numbers of the actual documentation, and I cut the bit about the Universe BBS because you use have to have an account based on your purchase of the game. |> We suggest that you read THE STORY SO FAR ... and PLAYING TIPS. Following that, you should read the entire PLAYING UNIVERSE II chapter to understand the ideas behind each of the program sections. Then, you only need to read the sections in FLIGHT, DRYDOCK, and STARPORT as you need them.

Enjoy!

RUNNING UNIVERSE II ON YOUR COMPUTER

APPLE II

System Requirements

Apple //e with a 128K 80 column board or Apple //c, 2 disk drives, optional Apple Mouse.

*Starting Omnitrend's UNIVERSE II*

Universe II is distributed on five disk sides labeled A,B,C,D, and E. To run Universe II, place disk A into drive 1 and turn on the computer. Disk A must not be write protected.

The 128K 80 column board must be enabled so that the double hi-resolution graphics are active. See the 80 column text card manual for more information on enabling the double hi-resolution graphics.

*Using the Menus With a Mouse*

If you have a mouse connected to your computer, you can use it for selecting menu entries. To display a menu, point to its name on the white bar at the top of the screen and press the mouse button. Hold the button down and move the pointer to highlight the entry you wish to select. Once the pointer is positioned correctly, release the button.

You may often see a window on the screen in which there will be one or two buttons. A button is a rectangle with a word in it such as "Continue". You may click that button by pointing to it with the mouse and pressing the button.

*Using the Menus Without a Mouse*

Too use the menus without a mouse, press the ESC (escape) key in the upper left corner of the keyboard. This will enable you to use the arrow keys to select the items in the menus. To move the pointer in a certain direction, just use the four arrow keys. When the item you want is highlighted, press the RETURN key.

You may also use the key equivalents to select menu entries in the game. When you pull down a menu, you will see the apple character followed by a letter next to every menu entry. To select an entry, press either apple key (located on either side of the space bar) and the letter for
that function. The *apple* key works in the same way that the shift key works, so you should press the *apple* key first and hold it down while you press the letter. It is not necessary to pull down a menu to use the key equivalents.

You may often see a window on the screen in which there will be one or two buttons. A button is a rectangle with a word in it such as "Continue". To press a button with the keyboard, just press the key that corresponds to the first letter of the word in the button. For example if the word in the button is "Continue" the you may press the "C" on the keyboard to press it. Note that buttons override menu entries, so if a menu function's key equivalent was "C" and the button "Continue" were on the screen, pressing "C" would "click" the button instead of selecting the menu function.

You may use either upper or lower case letters when using the keyboard.

*Making Backups*  
We suggest that you make backups of disk sides A, D, and E. The disk with side A is copy protected, so you will need to... (<| get a cracked copy. (I left out the mailing instructions, etc.) For those of you with Unidisks, you may want to consider buying this program... |>)

OmniTrend Software is offering a free game update for Unidisk 3.5 owners. When your original game disks have been received, we will mail you a 3.5" version of the game, which fits entirely on one disk. <| more mailing instructions that I left out... |>  

**PLAYING TIPS**  
These are a few playing tips to help you get started with Universe II.

* Check the vidscomm frequently. Many of your assignments and clues will come from listening to vidscomm messages. Don't forget that the government affiliation of the planet you are orbiting will determine which vidscomm messages you receive.

* There is a drydock nearby. When you are starting the game, take advantage of the drydock above Axia to obtain additional supplies and parts.

* There is a starport nearby. When you are starting the game, go down to the Axia starport and pick up some products. Check the planet chart and the routine chart so you will know what products to buy and where to bring them. Hint: Zeath is a good place to bring products from Axia.

* Be patient. It takes some time to become familiar with Universe II.

* Use the Save & Continue feature. By frequently backing up your game, you can see whether a particular strategy works before committing yourself to it.

* Check your ship's status frequently. Go into C&S every so often and check your ship's damage levels, supplies and crew. Chances are someone will get a promotion.

* Check if anyone is locked-on. When you are orbiting a planet and ready to send shuttles or ore-processors down to the surface, you are rather vulnerable to enemy attacks. Make sure that no one is shooting at you before launching landers.

* Talk to people. It's a good idea to talk to everyone you meet in a drive section, such as the sutter, then it is primarily suited for mining.

* Check in. Check into the FWSF headquarters on Vromus Prime every so often. Admiral Breshellah may have something important.

* Plan ahead with crew. You may find that it will save you money to purchase low grade crew early in the game, so that when you need high grades, you won't have to send anyone to expensive technical school.

* Don't purchase too quickly. When you are at a starport waiting to buy something, watch a single brand of product to get an idea of what a good price is. Many times, buying the first product you see won't yield much profit, especially when you are paying premium price for it.

* Check part requirements. When purchasing a complicated system such as an ore processor, make sure that you have all of the accessories for using it (ex., pilots, marines, engines, resource scanner, programs, etc.) before leaving the drydock. This will eliminate many unnecessary trips.

* What to do first. When you begin the game your Agora class spacecraft is in the Hope star system, but not around any planet in Do. Do a solar transfer to Axia, get into a low orbit, take the orbital shuttle down to the starport, get products and passengers for the planet Zeath, and then go there. From there, it's up to you!

This section of the manual illustrates the functions of the various components (or *systems*) of a state-of-the-art spacecraft. There are several different types of systems. They are: Drive, Energy, Command & Support (C&S), Scanning, Lander, Weapon, and Mining. Notice that each spacecraft design available to you has these seven sections in it. The capacity of each of the sections determines the spacecraft design's primary goal. For example, ore processors and the ramcoop may only be placed in the mining section. If a spacecraft has a large mining section, such as the sutter, then it is primarily suited for mining.

**SPACECRAFT SYSTEMS**

All systems have several common characteristics. They are:

* **Damage Points (DP)** -  
This is a measure of the amount of damage that a part can take before it is destroyed. The higher the damage point level, the more likely the part will survive an attack. Damaged parts can be brought back to their original damage point level by an engineer or by the repair crew at a drydock.

* **Size** -  
The measurement of a part's bulk. The larger the part, the more room it will take to fit it in a section.

* **Visibility** -  
The measurement of how likely a part is to be his during an attack. This is based upon two factors: the part's size and the visibility modifier of the spacecraft section the part is inside. To calculate the part's visibility, the appropriate section's visibility modifier is added to the part's size. For example, if you have a hyperdrive of size 5 in an Angora class spacecraft, its visibility would be 3, because the visibility modifier for the drive section is 2. This means that the drive section is concealed enough so that anything inside of it "appears" smaller to the outside than it really is and thus presents less of a target. The actual visibility of a part may never go below 1.

* **Sophistication** -
This is the same as the sophistication of the drydock where the part was purchased. Only high-grade engineers and high sophistication drydocks can repair the most sophisticated parts. Typically, the sophistication parts are the best (and costliest).

In addition, some systems have the following characteristics:

*Partial operation* - Any system marked as such will operate at a fraction of its normal efficiency if damaged. The percentage of efficiency is calculated by dividing the current dp level of the part by its maximum dp level. For example, if a sub-light drive with 15 dp maximum and 500 gravities of acceleration is reduced to 11 dp, then its top acceleration is reduced to 367 gravities (.734 and .734 * 500 = 367). Note: partial operation will affect all of a part's functions adversely.

*Constant drain* - If a system has the note "constant drain" in the Parts List, it will consume power even if it has been severely damaged, although it will stop draining if it is removed or destroyed.

** Drive Systems **

Hyperdrive -

Used for interstellar travel. The only way to move from one starsystem to another is to use the hyperdrive. The hyperdrive is too inaccurate to use for moving from planet to planet.

Sub-light Drive -

Used to travel between planets within a starsystem. Unable to propel your spacecraft faster than light, the sublight is too slow to be used for moving between starsystems.

Gravity Generator -

Generates gravity for environmental and protective purposes. The gravity generator will also protect you from acceleration caused by the sub-light drive.

** Energy Systems **

Converter -

A power generator that transforms Ore IV into energy units.

Accumulators -

Store energy units made by the converter. This system is primarily used when another system, such as the hyperdrive, requires a large amount of energy at a rate much faster than the convertor can produce. Essentially a large collection of batteries.

Ore Storage -

Holds the 4 different types of ore (I-IV).

** Command and Support Systems (C&S) **

Bridge -

The command center of your ship. If the bridge is destroyed, the game ends.

Crew Quarters -

The living quarters and off-duty stations for your crew.

Computer -

The central computer for your spacecraft. It is very powerful, but not a true machine intelligence.

Autodoctor -

An automatic medical repair unit used for raising you and your crew's health percentage.

Hibernaculum -

A cold-storage unit for transporting passengers. The process is dangerous and you should expect to lose a certain percentage of the passengers upon revival.

Vidcomm -

The video communications device for your spacecraft. In this game it is limited to receive only. Messages are stored by repeater units in orbit around all of the habitable planets, so you won't miss any messages that you might need.

Cargo Hold -

Stores cargo that you purchase down at the starports or that you capture from enemy vessels.
Running a complex starship of the 24th century requires the aid of many skilled technicians. Although you are initially provided with a few crewmen, as you expand your ship you will find the need to hire more. Each crewman has a number of characteristics on which they should be judged. Hiring the right crewman can make the difference between winning and losing.

The characteristics for each crewman are:

**Health** -
A measurement of a crewmember's ability to perform his duty. If the health percentage reaches 0, the crewmember dies. Reduced health may result from battle damage, injury when moving dangerous cargo, and changing watch. A crewman with a health percentage of less than 70% may die of untreated injuries during any watch. This is especially true for older crewmen.

**Age** -
In the time period that Universe II depicts, a crewman's age runs from 20 to 130. All crewmen automatically retire when they reach 130. On a dossier, the promotion date is also the birthdate. Age primarily determines a crewman's ability to resist death from injuries. Older crewmen are more likely to die from untreated (below 70% health) injuries.

**Specialty** -
Every crewman has a specialty, which they may not switch. They are:
- **Captain** - The supreme authority on a spacecraft. Captains are invariably asomugenated and technically always on duty.
- **Astrogator** - The person responsible for getting the spacecraft from one place to another. An astrogator’s grade is especially important for hyperspace jumps. The higher grade astrogators will break the ship out of hyperspace much closer to the habitable zone of a starsystem, thus saving a great deal of time and energy.
- **Gunner** - The gunner is an expert on all the various forms of weaponry that your ship may carry. A superior gunner has a greater accuracy with missiles and more skill in using ECM's.
- **Pilot** - The pilot is the person who flies the orbital shuttles, ore processors, and the assault capsules. He must be at least grade 10. Higher-grade pilots’ ships will receive less damage when descending through the atmosphere. In addition, when an assault capsule is on the ground, the pilot mans the cannon and the higher grades are better shots. Pilots also move cargo to and from the cargo hold.
- **Miner** - They are the crewmen who land on habitable and airless worlds to mine the various ores. They are required to launch ore processors. The higher-grade miners (15 and above) will recover even more ore than the assistant ore processors indicated for the mining site. Since miners work in gangs, it is important to realize that their grades are averaged and that it is the average which determines a particular ore processor's ore recovery rate.
- **Marine** - Marines are used in two circumstances: boarding & ground assaults. When boarding an enemy spacecraft, the marine works as an individual, neutralizing enemy marines, providing cover fire or capturing control panels. During ground assaults, the marines move as a squad, neutralizing enemy ground squads and attacking enemy defense stations. All marines are outfitted with various types of exosuit armor and...
portable cannons. As a marine's grade rises, his ability to move and his accuracy of fire improve.

Engineer - the fix-it man for your ship. Engineers are very expensive to keep, being the highest paid of all the specialties. As an engineer's grade rises, his speed and ability to repair the various ship-board systems improves.

Grade - A measurement of a crewman's knowledge of his specialty. Grades run from 1 to 20, grade 20 being the highest. Once a crewmember has been hired, his grade will rise once a year. To speed things up, a crewman can be left at a technical school, where it will take much less than a year per grade (and several thousand credits)!

Promotions - Promotions happen once a year, on the crewman's birthday. A promotion increases the crewman's grade and income. Once a crewmember's grade reaches 20, promotion day only signifies his next birthday.

Income - Income is based on the crewman's grade and specialty. The pay scales are:

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Base Income</th>
<th>Raise Per Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captain</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Astrogator</td>
<td>15,000</td>
<td>750</td>
</tr>
<tr>
<td>Gunner</td>
<td>10,000</td>
<td>600</td>
</tr>
<tr>
<td>Pilot</td>
<td>7,000</td>
<td>250</td>
</tr>
<tr>
<td>Miner</td>
<td>6,000</td>
<td>300</td>
</tr>
<tr>
<td>Marine</td>
<td>4,000</td>
<td>1300</td>
</tr>
<tr>
<td>Engineer</td>
<td>19,000</td>
<td>1000</td>
</tr>
</tbody>
</table>

Crew can be paid when entering a drydock, in the Pay Day section. Any crew member which has not been paid in over 60 days will quit.

Watch - Watch determines which part of the day the crewman is on duty. The day is broken up into three 8 hour watches. Astrogators and gunners stand regular watches. Pilots, miners, marines, and engineers have special watches: They only work when their duties are needed. You as the captain, have undergone a process called asomnigenation. Asomnigenation alters the body's chemistry and makes it unnecessary for you to sleep. Astrogators and gunners can also be asomnigenated. Anyone who is asomnigenated is on a "full" watch and are always available.

**Provisions**

One provision includes enough food, water, etc. to keep one person alive for one day. Usually it is convenient to think of the provisions supply in terms of days, that is, with the current complement of crew, how long before they starve. To calculate the number of provision/days, divide the number of provisions by the current number of crew.

COMMERCE IN THE LOCAL GROUP

In the Local Group, the basic unit of currency is the credit. The credit has been fixed by the Interworld Trade Comission, at the famous Meeting of 2167, as being equivalent in value to one unit of Ore IV. Since Ore IV is a common substance, but tedious to refine, it provides a stable monetary base.

Your primary goal, as an interstellar merchant, is to earn money. The four sources of revenue available to you are: trading, passenger transport, mining, and orbital piracy.

**Trading**

The object of trading is to buy an item on a world where it is commonplace and relatively inexpensive and bring it to a world whose sophistication is from 1 to 10 points lower. Suddenly, your product becomes state-of-the-art and highly desirable. Multiply your profit times the 10 products you can carry per trip and you have a sizable amount of credits.

Certain products are even more marketable. Not only will food/spice, lifeforms, narcotics, and jewelry sell at a starport 10 sophistication points lower than the point of purchase, they can be sold at starports up to 10 sophistication points higher than the point of purchase. This reflects the fact that these product types have a more universal appeal and that they are not as dependent on local technology.

Products have several characteristics. They are:

- **Name**
  - This is the product's brand name.

- **Type**
  - The product's classification. Almost every culture has product types which are illegal to import. In the appendix is a list of the cultures and their illegal product types.

- **Cargo Size**
  - A measurement of the product's bulk.

- **Sophistication**
  - A measurement of the product's complexity. This figure is always the same as the product's planet of origin. At best, products appeal to a range of 20 sophistication points. This reflects the fact that products too simple for the buyer have been out-moded (no one buys grindstones anymore) and products that are too complex do not have the other supporting technologies required (an ancient Egyptian would not have any use for a television set).

- **Price**
  - The value of a product is based upon its sophistication and its original manufacturer's price (a figure you will never know exactly). Note that products up for sale at their planet of origin or on planets outside of the sophistication's range of appeal will be worth 0 credits.

**Mining**

Mining is a fairly straightforward way of earning money. It requires at least one ore processor, a mining squad, a resource scanner, a scanner program, and patience. In addition, depending on how intent you are in the pursuit of ore, you may need some assault capsules and their supporting technologies required (an ancient Egyptian would not have any use for a television set).

**Passenger Transport**

At every starport in the Local Grou there are people waiting for flights to other planets. You, as a merchant, are continually hopping from planet to planet. Equipped with a hibernaculum, you can carry these people for a fair amount profit, which is based on the distance and sophistication of the destination from your current starport.
**Orbital Piracy**

In many of the less-developed star systems, complete anarchy in orbit is the rule. Properly outfitted, you can profit from this situation.

Capturing another spacecraft, though, is not a simple process. You need to select a suitable target, scan it, and destroy its entire complement of crew and marines, all without destroying the ship. If it isn't possible to destroy all of the marines, you will have to send over some of your own and hope the can secure the ship.

Once the target ship is captured, you will be able to take all of the credits, ore, and products on board... if you survive.

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**THE ON-BOARD COMPUTER**

In order to operate, your spacecraft must be equipped with an on-board computer. The computer controls many of the other systems on your ship.

The speed of the computer is measured in "tevops per minute" (trillions of operations per minute). Program size is measured in the number of operations which must be executed in a complete run. So, to find the amount of time it takes for a program to completely run, divide the program's size (tevops) by the computer's tevops per minute figure. This will give you the time in minutes.

The following is a list of the programs available for your computer:

- **Hyperspace Navigation** - Calculates the course, energy, time, and distance required to make a hyperspace jump. This program must be available for the hyperdrive to work.

- **Normalspace Navigation** - Calculates the course, energy, and time required to move your ship anywhere within a star system. This program must be available for the sub-light drive to work.

- **Autodoctor** - Controls the autodoctor. This program must be available for the autodoctor to work.

- **Hibernaculum** - Controls the freezing and thawing of passengers in the hibernaculum. This program must be available for the hibernaculum to work.

- **Solar/Planetal Scanner** - Interprets the data gathered by the solar/planetal scanner. This program must be available for the solar/planetal scanner to work.

- **Resource Scan** - Interprets the data gathered by the resource scanner. This program must be available for the resource scanner to work.

- **High Definition Scan** - Interprets the data gathered by the high definition scanner. This program must be available for the high definition scanner to work.

- **Shuttle Guidance** - Controls the ascent and descent of orbital shuttles. This program must be available to launch orbital shuttles.

- **Ore Processor Guidance** - Controls the ascent and descent of ore processors. This program must be available to launch ore processors.

- **Missile Track** - Aims and launches missiles at a target object. This program must be available to launch missiles.

- **EBW Track** - Aims and fires the EBW at a target object. This program must be available to fire the EBW.

- **ECM** - Controls the ECM unit. This program must be available for the ECM to function.

- **Athena IRS** - The information retrieval system program. This program contains hundreds of important facts and figures which can be recalled by typing a key word.

When you sell a computer, all of the programs you have purchased for it will be lost. Once a program has been purchased, there is no way to remove it short of selling the computer.
Apple II Computer Info

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**VIP Professional uses the Apple // keyboard as follows:**

- **[Arrow key]**: Move the cell indicator one cell
- **[Shift][Arrow key]**: Move to previous or next page
- **[Closed Apple][Right]**: Page right  
- **[Closed Apple][Left]**: Page left
- **[Open Apple][Up]**: Move the cell indicator to Al
- **[Open Apple][Down]**: End (Bottom right of worksheet)
- **[Open Apple][letter]**: Execute macro  
- **[Closed Apple][Esc]**: Break and return to Ready mode from data entry
- **[Delete]**: Delete character before cursor  
- **[Open Apple][Delete]**: Delete character under cursor
- **[Open Apple][Tab]**: Back out of current entry or sub-menu
- **[Open Apple][Tab]**: Tab to end of current data or empty block
- **[Closed Apple][Escape]**: Break and return to Ready mode from data entry

**DATA ENTRY**

To play this game, you need the following programs:

```plaintext
vc
ah
runtime
ve.page
vc.gun
vcshapes.obj
vc.pic
vc.shapes
map
start
sound
```

To play this game, you need the following programs:

```plaintext
vc
ah
runtime
ve.page
vc.gun
vcshapes.obj
vc.pic
vc.shapes
map
start
sound
```

You can tell friendly commies because they have a little "f" at the lower right corner of their hut--[this does NOT mean that all others are bad little commies; it just means you have'nt converted them to good little commies yet or they're undecided little commies].

To play this game, you need the following programs:

```plaintext
vc
ah
runtime
ve.page
vc.gun
vcshapes.obj
vc.pic
vc.shapes
map
start
sound
```

---

**DATA ENTRY**

Data can be entered in label or value form. A Label consists of text used for headings and other static information on the worksheet. A Value consists of numbers and formulas. While entering data you may press [Escape] or [Closed Apple][Escape] to return to Ready mode. Pressing [Return] will post the entry to the worksheet. Edit mode is entered if an error is detected while keying data.

**Labels:**

A label is initiated using a letter, a label prefix or an otherwise unused punctuation mark. A label prefix adds special meaning to the label, or allows characters usually used as values to be used as labels. The Worksheet Global Label-prefix and Range Label-prefix commands control defaults.

The Label prefixes are:

- `^` Left justified
- `_` Right justified
- `\` Repeating label

**Values:**

A value is a cell entry which contains the numbers, operators, cell references, and functions fundamental to your sheet.

The characters which begin a value entry are:

- `0-9`, ` `, `+`, `-`, `@`, `#`, and `$`
The commands available which set the display format for values are:

- **@ROUND(value,places)**...Rounds value to left or right places of the decimal
- **@MOD(value-1,value-2)**...Finds remainder after division of the values
- **@SQRT(value)**...Yields the square root of value
- **@LOG(value)**...Yields the base 10 logarithm of value
- **@LN(value)**...Yields the natural logarithm of value
- **@EXP(value)**...Yields value raised to exponential power
- **@ABS(value)**...Yields absolute value
- **@AND#**...Logical And
- **@OR#**...Logical Or
- **@IF(condition,value-1,value-2)**...Returns the first value if condition is true, else the second value.
- **@FALSE**...Always false (0)
- **@TRUE**...Always true (1)
- **@ISERR(value)**...True if value is undefinable, otherwise false
- **@ISNA(value)**...True if the value is not available, otherwise false
- **@RAND**...Yields a random number distributed between 0.0 and 1.0

The rules for calculation are as follows:
1. Parenthesized groups are calculated first.
2. An order of precedence takes place among operators. This means operands of operators of higher precedence are evaluated first.
3. All else being equal, operators are taken from left to right.

Math functions:

- **@YEAR(serial-date)**...Yields the calendar year from a serial date
- **@VAR(range)**...Finds the variance of range members
- **@STD(range)**...Finds the standard deviation of range members
- **@MAX(range)**...Finds the maximum value of range members
- **@MIN(range)**...Finds the minimum value of range members
- **@AVG(range)**...Finds the average of range members
- **@SUM(range)**...Adds the items in the range
- **@MONTH(serial-date)**...Yields the calendar month from a serial date
- **@DAY(serial-date)**...Yields the calendar day from a serial date
- **@DATE(Year,Month,Day)**...Converts serial format to calendar format
- **@TODAY**...Changes today's date to serial format
- **@FV(payment,interest,number-of-terms)**...Future value of ordinary annuity
- **@PV(payment,interest,number-of-terms)**...Present value of ordinary annuity
- **@PMT(principal,interest,number-of-terms)**...Calculates mortgage payment per term for an ordinary annuity
- **@IRR(best-guess,cash-payment-series)**...Calculates approximate internal rate of return for cash payments made at regular intervals using your guess at the answer
- **@NPV(initial-payment,interest-rate,series-of-future-cash-flows)**...Calculates net present value of a cash flow series

Logic functions:

- **@TRUE**...Always true (1)
- **@FALSE**...Always false (0)
- **@ISERR(value)**...True if value is undefinable, otherwise false
- **@ISNA(value)**...True if the value is not available, otherwise false
- **@RAND**...Yields a random number distributed between 0.0 and 1.0
- **@PI**...Yields the value of Pi
- **@RANDBETWEEN**...Yields a random number distributed between 0.0 and 1.0

Financial functions:

- **@PV(payment,interest,number-of-terms)**...Future value of ordinary annuity
- **@FV(payment,interest,number-of-terms)**...Present value of ordinary annuity
- **@PMT(principal,interest,number-of-terms)**...Calculates mortgage payment per term for an ordinary annuity
- **@IRR(best-guess,cash-payment-series)**...Calculates approximate internal rate of return for cash payments made at regular intervals using your guess at the answer
- **@NPV(initial-payment,interest-rate,series-of-future-cash-flows)**...Calculates net present value of a cash flow series

Math functions:

- **@ABS(value)**...Yields absolute value
- **@EXP(value)**...Yields value raised to exponential power
- **@INT(value)**...Yields the integer portion of value
- **@LN(value)**...Yields the natural logarithm of value
- **@LOG(value)**...Yields the base 10 logarithm of value
- **@SQRT(value)**...Yields the square root of value
- **@MOD(value-1,value-2)**...Finds remainder after division of the values
- **@ROUND(value,places)**...Rounds value to left or right places of the decimal
- **@COS(angle in radians)**...Yields the cosine of angle
- **@SIN(angle in radians)**...Yields the sine of angle
- **@TAN(angle in radians)**...Yields the tangent of angle
- **@ACOS(angle in radians)**...Yields the arc cosine of angle
- **@ASIN(angle in radians)**...Yields the arc sine of angle
- **@ATAN(angle in radians)**...Yields the arc tangent of angle
- **@ATAN2(first value, second value)**...See manual for differences.

Other functions:

- **@CHOOSE(x,set-of-values)**...Tests logical expressions or performs lookup
- **@HLOOKUP(x,range,offset)**...Performs horizontal table lookup
- **@VLOOKUP(x,range,offset)**...Performs vertical table lookup
- **@COUNT(range)**...Counts the number of items in the range members
- **@SUM(range)**...Yields the sum of range members
- **@MIN(range)**...Yields the minimum value of range members
- **@MAX(range)**...Yields the maximum value of range members
- **@STDEV(range)**...Yields the standard deviation of range members
- **@VAR(range)**...Yields the variance of range members
- **@ASIN(sine of angle in radians)**...Yields the arc sine of angle
- **@ACOS(cosine of angle in radians)**...Yields the arc cosine of angle
- **@SIN(angle in radians)**...Yields the sine of angle
- **@COS(angle in radians)**...Yields the cosine of angle
- **@TAN(angle in radians)**...Yields the tangent of angle
- **@ACOS(angle in radians)**...Yields the arc cosine of angle
- **@ASIN(angle in radians)**...Yields the arc sine of angle
- **@ATAN(angle in radians)**...Yields the arc tangent of angle
- **@ATAN2(first value, second value)**...See manual for differences.
- **@IF(condition,value-1,value-2)**...Returns the first value if condition is true, else the second value.

Operator precedence:

- **+**...Addition
- **-**...Subtraction
- *****...Multiplication
- **/**...Division
- **^**...Exponentiation
- **+**...Make Positive
- **-**...Negation
- **>=**...Greater or Equal
- **<=**...Less or Equal
- **<>**...Not Equal
- **<**...Less Than
- **>**...Greater Than
- **>=**...Greater or Equal
- **<=**...Less or Equal
- **<>**...Not Equal
- **<**...Less Than
- **>**...Greater Than

1. Parenthesized groups are calculated first.
2. An order of precedence takes place among operators. This means operands of operators of higher precedence are evaluated first.
3. All else being equal, operators are taken from left to right.
the ability to program VIP Professional.

Auto-execute macros are built by attaching the macro to the digit zero.

Each time you reload the worksheet, the macro is automatically executed.

Entering macros:
1. Construct the macro in an empty worksheet cell starting with a label-prefix.
2. Name it with Range Name Create, using [Backslash] and a letter, e.g.: \Q.
3. Use it by pressing [Open Apple] and letter of macro, e.g.: [Open Apple][Q].

Keyboard commands are entered in macros enclosed in braces as shown:

{[Up]......Up one cell} {[Down]......Down one cell}
{[Right]......Right one cell} {[Left]......Left one cell}
{[Home]......Move Home} {[End]......Move to End of data}
{PgUp}......Pages up {[PgDn}......Pages down
{Del}......Deletes {[Esc]......Escape
{Bs}......Backspaces {[Edit]}......Edit function
{Name}......Name function {[Abs]}......Absolute function
{GoTo}......Express function {[Window]}......Window function
{Query}......Query function {[Table]}......Table function
{Calc}......Recalculate function {[Graph]}......Graph function
{[?]........Fauses for input until [Return] is pressed}
{[?]}........Pauses for input until [Return] is pressed


/X Commands:
/XI(condition)- Uses if-then condition
/XG(location)- Goes to a location and continues macro
/XC(location)- Returns from subroutine. Used with /XC
/XK Quits macro execution
/XM(location)- Disables protection of worksheet cells
/XL(message)-(location)- See /XL
/XN(message)-(location)- Displays prompt in the control panel, accepts a label or number from keyboard & puts it in location

Ranges are specified using an anchor and a free cell. Ranges are always rectangular in shape.

With movement keys:
1. Move the cell indicator to the start cell of the range and press [.].
2. Move the cell indicator to the end cell. Use any movement key.
3. Enter the range.

Explicit addressing:
Type the cell address of the anchor cell. Type [.] then the address of end cell. Enter the range.

With Range Names:
1. In response to a command prompt, type in a range name. Press [F3] to choose from a list of existing range names.

Changing the Start Cell:
Press [. ] to rotate the start cell to the next corner in a clockwise direction.

[Delete], [Escape] and [Closed Apple][Escape] may be used during range creation to backstep the process. [Escape] "unexpands" the range and returns to the anchor cell. [Delete] unexpands the range and returns to the current cell. [Closed Apple][Escape] ends ranging.

These commands are used to rearrange your worksheet once some data has been entered. Copy duplicates the contents of one cell or range to others and is useful for proliferating data through the sheet. Move rearranges sheet data.

bels and formulas. Copying labels or plain values is the most straight forward. First a "From" (source) range or cell is specified followed by a destination "To". It is important to note that Copy erases the previous contents of the cell. When copying formulas you should be aware of absolute, relative and mixed cell addresses. If you use an absolute cell address the formula is transferred to the new cell still referencing the same locations. With a relative cell address the formula values change according to their new location. Mixed cell addresses in a formula are a combination of absolute and relative references. The absolute part of a mixed cell address remains the same and the relative part changes.

Move transfers the contents of a cell or range to a new location. Moving cell entries is just like picking them up from one location and placing them at another. Remember the destination will be overwritten. These are powerful commands and should be used with care.

The menu is organized in a hierarchy of commands. Start by typing [/]. Menus commands may be chosen by either using the arrow keys then [Return] or by typing the first letter of a selection. To retreat to the previous menu level press [Esc]. To exit directly type [Closed Apple][Escape]. The Professional's most powerful commands are accessed through the menu tree.

WORKSHEET

?Governs large-scale changes affecting the worksheet
?Global    Affecting entire worksheet
?Format    Sets default display for worksheet values
?Label-prefix Sets default alignment for worksheet labels
?Column-width Sets column width for all worksheet columns
?Recalculation Controls calculation sequencing
?Protection Enables protection of worksheet cells
?Default    Sets default values for directory and printer
?Directory   Sets current Directory
?Printer     Sets Print configurations
?Update     Saves updated Default commands
?Status     Displays status of Default commands
?Insert      Inserts columns or rows
?Delete      Deletes columns or rows
?Column-width Changes the width of one column
?Erase       Erases worksheet content and goes to initial settings
?Titles      Creates or erases worksheet titles
?Window      Splits or clears split window
?Status      Displays worksheet settings and available memory
?Range       Governs Range menu and range-specific commands
?Format      Sets display format for range values
?Label-prefix Sets default alignment for range labels
?Erase       Erases contents of range cells, keeps formats
?Name        Governs range naming
?Labels      Names one-celled ranges using label cells
?Protect     Protects range cells when global protection is enabled
?Unprotect   Turns off protection of range cells
?Input       Limits movement to input cells which are unprotected

APPLE II COMPUTER DOCUMENTATION RESOURCES (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 1156 of 1262
A file ending in "prn" contains printer ready information, "gph" a graph, and "wks" a worksheet.

File
- File management except for saving graph and print files
- Retrieve: Retrieves a worksheet file
- Save: Saves a worksheet file
- Combine: Combines entire-file or named-range of saved worksheet
- Extract: Extracts and saves a portion of current worksheet file
- List: Lists all files of a specified type on disk
- Import: Brings standard ASCII print files to current worksheet
- Directory: Changes current disk and directory (prefix)

These commands allow for the controlled printing of a worksheet and the saving of a print file. Printing of graphs is done separately by the GraphPrint program.

Printer
- Sends prepared copy to printer
- Range
- Selects a range for printing
- Line
- Adds a line between printings
- Page
- Adds the rest of a page between printings
- Options
- Governs print options
- Header
- Creates a header
- Footer
- Creates a footer
- Margins
- Sets margin widths
- Borders
- Selects rows and columns from the worksheet as borders
- Set-up
- Adds control characters to manage printing
- Page-length
- Sets the number of lines per page
- Other Options
- Commands for documentation and formatting
- As-Displayed
- Prints worksheet as is
- Cell-formulas
- Prints the cell contents of all non-blank cells
- Options
- Formatted
- Prints according to the options chosen
- Unformatted
- Prints without headers, footers or page breaks.
- Clear
- Selectively cancels print specifications
- Align
- Informs VIP that the paper is aligned in the printer
- Go
- Executes the print of print file save

Graphics are featured on the VIP Professional making use of the Apple II's colors and screen resolution. Here are the tools available to create your picture of a thousand words:

Type
- Select Bar, Stacked-Bar, Pie, Line or XY Graph style
X
- Specifies the X range
A-F
- Choose data ranges
Reset
- Selectively cancel graph settings
View
- Draw most recent graph on screen
Save
- Save graph in graph file
Name
- Governs commands for naming graph settings
Create
- Names a group of graph settings
Use
- Retrieves and draws a graph using named graph settings
Delete
- Cancels one group of named graph settings
Reset
- Cancels all groups of named graph settings
Options
- Governs commands for graph options
Legend
- Creates legends
Format
- Sets format for XY and Line graphs
Grid
- Displays or removes grid lines
Color
- Uses color for contrast between data ranges
B&W
- Uses patterns to contrast data ranges
Data-labels
- Uses a range to act as labels for data points
Titles
- Choose main, X or Y axis titles for a graph
Scale
- Sets scale to automatic or manual, chooses a skip factor
Format
- Chooses format for scale numbers

These commands govern database creation and use. Common operations used in conjunction with a database are query, sort and statistical analyses.

Fill..............Fills a range sequentially given a set increment
Query.............Uses criteria to search for information in database
Sort.............Sorts database using primary and/or secondary key fields
Table...........Creates tables to show affects of changes in input cells
Distribution....Finds frequency distribution for a range of values
WAPABBS is, of necessity, a long and complex program. This discussion will attempt to trace the execution of the program from the start through the end of initialization. Following this is a discussion of the subroutines (lines 30-910).

Line 10 sets up HIMEM and certain of the key variables. Change SL if your Micromodem is not in slot 3. Execution then jumps via line 100 to line 20000. Lines 20000-20999 initialize the program. They check to see if the two machine language routines, ABBSL.OBJ and ABBBS.OBJ, are in place; they are BLOADed if necessary. The next lines turn off TRACE, initialize the Micromodem, and hang up the telephone.

Lines 20040-20050 and 20070-20080 set up the variables for some of the PEEKs and POKEs and initialize the bytes as required. Lines 2040 and 20400 are two subroutines, at 30 and 32, which are discussed below. The cumulative effect of these two routines is to set Apple's "+" vector, located at 53F5. Line 20900 sets up DOS commands as strings in order to save space. Line 20100 sets up the two strings of allowable commands.

Line 20110 says how many messages are allowed in the system at any one time. Many arrays are dimensioned with MS as a subscript.

Line 20120 gives the SYSOCR's userid and $15 value. It also dimensions array variables. Line 20130 reads in the file names.

Lines 20140-20250 read in the Messages file. If the file is the Messages file, the first 4 records are skipped, since they contain the same information as the message header, which was printed by the routine at line 200. Upon exit, the file is closed. On entry, F is the number of the file; upon exit A$ and Z are changed.

The number of days in each month (change this during leap years!) and line 20999 says "READY" and returns execution to line 110, which passes control on to line 1800.

SUBROUTINES

Line 20200 loads USERS.OBJ into memory. Lines 20510-20540 load STARTUP into memory. Line 20530 makes editing simpler. To list a line in a form that is easy to copy with the right-arrow key, do a GOSUB 33:LIST [line number] and the screen will be cleared, the margins will be set to eliminate the extra spaces, and the line will be listed.

Lines 50-55 update the date string, DA$. If you do not have a CPS Multifunction Card, DA$ will not be changed.

Lines 200-240 print the Message Header for a number of routines. On input, Z is the message number. On exit, Z is the date the message was entered; L is also changed.

Lines 300-350 print most files. After drive 2 is selected (if necessary), the file is read a line at a time. Because MOM I is in effect, there is no specific output of the line. Every second carriage return is converted into a space if the 80-column mode is in effect. If the file is the Messages file, the first 4 records are skipped, since they contain the same information as the message header, which was printed by the routine at line 200. Upon exit, the file is closed. On entry, F is the number of the file; upon exit A$ and Z are changed.

Lines 300-350 print most files. After drive 2 is selected (if necessary), the file is read a line at a time. Because MOM I is in effect, there is no specific output of the line. Every second carriage return is converted into a space if the 80-column mode is in effect. If the file is the Messages file, the first 4 records are skipped, since they contain the same information as the message header, which was printed by the routine at line 200. Upon exit, the file is closed. On entry, F is the number of the file; upon exit A$ and Z are changed.

Lines 400-490 ask the user how far back he wishes to search for messages. "$A" will retrieve all messages or summaries; a Return retrieves only those since the user's last call. Entry of a number will retrieve all messages within that number of days, where "$O" will retrieve only those messages entered today. "$D" are calendar days, thus to a caller at 12:05 a.m., a message entered 10 minutes before would be one day ago. If no messages are found (i.e., if F = MS), line 20390 goes to line 300. Upon exit, J is set to the date you are searching for (YYYYMMDD.HH), K is the relative message (in date order) that was the oldest message within the chosen number of days. A$, B$, J, and Z$ are changed.

Line 500 sets up the ABBBS to write to File F, Record R.
Lines 600-630 call a machine language routine that takes a userid such as WAP001 and converts it to the record number in the USERS file. The record number and AS is the numeric portion of the userid.

Lines 700 open the Messages and Users files as Random-Access files. Lines 800-810 set the file type for input. R and K cannot interrupt execution, SPEED is set to the maximum, the modem is turned on, all files are closed, delay after Returns is turned off, lowercase-to-uppercase translation is turned on, drive 1 is selected, the "WAPABBS" flag is cleared, 80-column mode is cleared, and WAPABBS waits for a call. Once a call has been received, the CALL command has been satisfied and the ONEXIT vector is entered here. If you enter SYSOP, you can change the startup file, look at the "TO SYSP" file, and check on the number of callers. This routine, at line 3000, will return you to the "COMMAND?" level.

To bypass the startup questions, you may enter a ctrl-S, which will automatically log you onto the ABBS. Others cannot use the ABBS while you are using it. I am aware that while ctrl-S relieves you from having to enter your password, it does not check the date you last called in, and so the "Last Call" value will be whatever it was for the previous caller.

You may signal your willingness to chat with users by entering "IN" or unwillingness by entering "OUT". If you enter a ctrl-C, the ABBS will quietly turn off the modem and return to BASIC.

Line 1040 is the first thing that your users will see when they call up. Asking for a return is necessary so that people with acoustic couplers have some time to get their dial tone before they need to change something. Experience has taught me not to delete this line. If the user enters a number here, it will become the delay after carriage return when linefeed insertion and delay after carriage returns are enabled. Users requiring linefeeds or carriage return delays after carriage returns, or overall speed delays. Read your Micromodem manual for a detailed description of how linefeed insertion and delay after carriage returns work.

Line 1100 converts a user's name to the form WAPxyz by WAPABBS because otherwise the ABBS prompt will not match or parity error problems may occur. User names are case sensitive, and thus the name-to-number routine, at line 3400, treats the USERS file as a Random-Access file and looks up only that number-to-name routine.

Line 1100 converts userid's in the form WP0xyz to WAPxyz because otherwise the "TO SYSP" file, and check on the number of callers. This routine, at line 3000, will return you to the "COMMAND?" level.

To bypass the startup questions, you may enter a ctrl-S, which will automatically log you onto the ABBS. Others cannot use the ABBS while you are using it. I am aware that while ctrl-S relieves you from having to enter your password, it does not check the date you last called in, and so the "Last Call" value will be whatever it was for the previous caller.

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Line 1100 converts a user's name to the form WAPxyz by WAPABBS because otherwise the ABBS prompt will not match or parity error problems may occur. User names are case sensitive, and thus the name-to-number routine, at line 3400, treats the USERS file as a Random-Access file and looks up only that number-to-name routine.

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To bypass the startup questions, you may enter a ctrl-S, which will automatically log you onto the ABBS. Others cannot use the ABBS while you are using it. I am aware that while ctrl-S relieves you from having to enter your password, it does not check the date you last called in, and so the "Last Call" value will be whatever it was for the previous caller.

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Lines 5200-5240 print particular message numbers. The SYSOP can read any message number just by entering the number to the user. Lines 5210-5215 ask the user to delete a message. The actual deleting is done by a subroutine beginning at 5320. On entry to the subroutine, J is the message number to be deleted. The "From" portion of the message summary is made equal to EMPTY *. Note that the message numbers of the DA(MS) array and all other message numbers are moved up one in the array. On exit, R, L, S, and B5 are changed; note that KK is reduced by one. For more information about the DA(MS) array, see the section "Editing." Lines 5400 (*E) calls the Enter Message subroutine at 5401-5680. This is one of the most important routines in WAPABBS, and you should consider studying it carefully.

After making sure that space is available for the message (line 5401), ctrl-C/ctrl-K recognition is disabled. J is set to the message number at the top of the available number stack. The user is asked to designate the recipient. Lines 5420-5460 handle the response. (Note that line 5460 handles the "C" response.) Beginning with line 5470, the entry of the message summary, lowercase is allowed. WAPABBS treats lowercase as lowercase only during entry of a message or its summary; at all other times, lowercase is converted by the ABBS into uppercase.

Following the summary, the user enters the text of the message one line at a time. After he has entered a null line or the tenth line of text, ALLOWLC is turned off and the user is asked whether he wants to save the message. If he answers anything but "N," the messages are written to disk from the M9(13) array. After writing to disk is complete, the message summary is entered into memory using the "S" routine. Note that these two steps must be done after the user has approved the message, because if the user had begun to enter a message to ALL and had gotten cut off, a partially entered message would still have the text of someone else's old -- and perhaps confounding -- message in the first five lines; your message is saved. FG(J) is set to 0 so that the message will not be retrieved by the flagging process, which may be underway if the Message Entry was entered from the "L" routine rather than with "F." If the user elects not to save the message, he is presented with three options: edit the message, cancel it, or re-enter it from scratch. Cancelling the message cancels the printing of the message, but it returns to the top of the available number stack. The user is asked to enter the name. Lines 5800-5840 (**) list out the full text of messages much in the same way as "S" lists out summaries. JJ is 0 to distinguish "L" from the flagged listing printed out by the "S" command, which enters at line 5810. KK is used as the index into the DA(MS) array to get the actual number of the message. Each time the DD subroutine tells the user that the SYSOP sees all messages, whereas others can see messages for themselves, from themselves or for all. After listing the message in line 5830, the user is offered the opportunity of deleting the message. If the user answers yes, the "Entry" subroutine at 5401 is called. In any event, WAPABBS goes back to line 5840 to list out the next message.

Lines 5900-5930 (**F) Flush old messages from the files. Only the SYSOP can flush messages. Lines 5900-5920 print a message to people who fail to sign on successfully after three attempts. You should change this program to suit your situation. Line 5920 allows up to 9 messages to be sent to you by people without passwords. This is necessary to keep from overwriting the first character of the first message to you. (Also, without a limit certain unpleasant people might try to fill up your disk space with garbage.)

Lines 5930-5940 (**F) are a security section. In order to access remote certain system data, a caller must know your password, but even then they must first run the gauntlet of three or so questions to which you AND ONLY YOU should know the answers. If the answers are correct, the user is given the option of deleting the message if it is to him.

The actual uploading process is done by line 10120. When the user sends a line consisting of only a blank (End of File), uploading ends. A line having the character .i.e, anything other than the shortest valid BASIC assignment language program line, is ignored. Each valid line is written to disk as it comes in, so that it need not be stored in memory. When upload is completed, the last few lines are written (the second is as a safety precaution) and upload is concluded.

Downloading (lines 11000-11120) is automatic for a user with an Apple and a Micromodem. After offering the user a choice of files available (note that the first record of UPLOAD2 is the number of files available for downloading.) Line 11060 actually begins the downloading process. A ctrl-R is sent to the user's Micromodem to begin the "F" routine. After the Flush Messages line, the user is asked whether he wants to save the message if it is to him. Lines 11090-11120 print a sign-off message prior to hanging up the telephone. Lines 22000-22060 print a message to people who fail to sign on successfully after three attempts. You should change this program to suit your situation. Line 22060 allows up to 10 messages to be sent to you by people without passwords. This is necessary to keep from overwriting the first character of the first message to you. (Also, without a limit certain unpleasant people might try to fill up your disk space with garbage.)
the keyboard will cause a jump to line 45000, which shuts down the modem and returns to BASIC.

AND IF YOU NEED HELP
If you require further assistance with this program, write to:
Thomas S. Warrick
ABBS SYSOP
c/o International Apple Core
908 George Street
Santa Clara, California  95050
You may also try writing me through Washington Apple Pi at Post Office Box 34511, Bethesda, Maryland, 20817, although this address may change in the future. In either case, please enclose a self-addressed, stamped envelope. (If you are a member of Washington Apple Pi, you will get our journal, which will have our current address. Membership will also entitle you to use our ABBS, which will allow you to send messages to me directly.)

SELF-IMPROVEMENTS
This program is intended to be tinkered with and improved upon. If you make any improvements or modifications, please pass them on to your fellow Apple users through the address above. An IAC member club using WAPABBS should send its name and address, its SYSOP’s name, and the club ABBS phone number so that you can be informed of updates and revisions of this program as they become available.

ADVANCED PHASE
1.  DIVIDE GROUP:TAKES UNIT AND SPLITS IT AS ORDERED INTO TWO GROUPS.
2.  TRANSFER GROUP:FORMS A LARGER GROUP BY COMBINING TWO SMALLER GROUPS WITHIN THE SAME HEX.
3.  TRANSFER AIR:FERRY STRENGTHS BETWEEN LUFTFLOTTE GRUPPES IN THE IMMEDIATE AREA.
4.  CHECK MAP:TACTICAL DISPLAY WITH SCROLLING OVER THE ENTIRE FIELD WITH UNIT IDENTIFICATION IF DESIRED.
5.  CHECK STRATEGIC MAP:STRATEGIC DISPLAY OF THE ENTIRE PLAYING FIELD.
6.  BUILD FACTORY:WHAT IT SAYS; YOU GET A LIST OF CITIES AND SUPPLIES WITH WHICH TO WORK.
7.  BUILD UNIT:CITIES HAVE FACTORIES AND MEN; HERE YOU CHOOSE THE OUTPUT TO PUT INTO ACTION IN THE FOLLOWING PHASE.

N.  NAVAL MOVEMENT: I HAVEN’T SEEN IT VALIYET.
ONCE YOU HAVE FORMED YOUR COMBAT GROUPS THEN IT IS TIME TO PLOT YOUR MOVE.

AXIS MOVE
DEPOT SUBMOVE
AUTO MOVE:
WATCH IT GET THE SUPPLIES TO THE NEXT LOCATION FOR YOU
MANUAL MOVE:
YOU GET THE SUPPLY PACKET THERE YOURSELF
DISTRIBUTE:
SUPPLIES ALL UNITS IN THE PRESENT HEX
TERRAIN:
SHOWS THE TERRAIN UNDERNEATH
ALL UNITS ON THE BOARD
SUPPLY SCAN:
YOU GOT ME
BUILD A RAIL:
EXTEND A PRESENT RAIL NETWORK

This is a complicated program and many of the algorithms take much time to complete. If the screen goes blank during any stage in the game for an unseeming amount of time, don’t worry. If you are the curious type, from the main page, play a saved game, then cat with the original disk in the drive. Choose all your options then hit <SPACE> to play.

ADJUSTMENT PHASE
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SUPPLY SCAN:
YOU GOT ME
BUILD A RAIL:
EXTEND A PRESENT RAIL NETWORK
MOVE COMBAT SUBMOVE

1-6: MOVE THE UNIT IMMEDIATELY

GET UNIT: MOVE THE UNIT ON WHICH THE CURSOR IS POSITIONED

REPLACE: REFORM PREVIOUSLY SPLIT UNITS INTO A MORE POWERFUL, LARGER GROUP.

TAC PLOT: MOVEMENT PROGRAMMING FOR THE UPCOMING COMBAT PHASE

XRAIL: MOVE BY RAIL IMMEDIATELY

ABORT: CLEAR ALL DECISIONS AND START FRESH WITH THIS UNIT

NEXT UNIT: FINISHED WITH THIS UNIT, CONTINUE

STATUS INDICATORS:

S->SU UNIT NEARBY
M—MOVED IN THIS PHASE
N—NO MORE MOVES ALLOWED
U—UNCOMMITTED, NO SU UNIT NEARBY
QUIT: END MOVE WITH ALL UNITS AUTOMATIC ENTRENCHMENT OF ELIGIBLE UNITS

AIR OPERATIONS SUBMOVE

1-6: FLY IN THAT DIRECTION IN PREPARATION FOR A FURTHER ACTION, RANGE IS 4 HEXES

BOMB CITY: ONLY AN ENEMY CITY

GROUND ATTACK: AGAINST ENEMY SU UNITS

ABORT: START THIS LUFTWAFFE UNIT'S MOVE FRESH

QUIT: DONE WITH ALL LUFTWAFFE UNITS

COMPUTER PROCESSING OF COMBAT

SAVE GAME? X)IT GAME? IF YES SEE SU STATUS?

This is an incomplete document, if you come across any improvements please post a revised version. It will be appreciated. I will improve it as time goes by.

DOS TOYESKI CALL SATAN'S HOLLOW----> 409/744\6477

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DECIDE TO TRY THEIR EFFECTS.

DROP (B):
USED TO DROP ITEMS THAT YOU NO LONGER WANT. IF YOU WISH TO FIND IT AGAIN, YOU MUST REMEMBER WHERE YOU DROPPED IT. YOU CANNOT FIND ARMOR OR SHIELDS IF YOU DROP THEM.

EAT (E):
USED TO EAT FOOD, WHEN YOU ARE HUNGRY. EATING AND DRINKING ARE VITAL AND DAMAGE WILL RESULT IF YOU IGNORE HUNGER AND THIRST.

EXTINGUISH (Y):
PUTS OUT A LIT TORCH. A TORCH MUST BE OUT IF YOU WISH TO STORE IT IN YOUR PACK.

FACTS (ESC):
THIS SHOWS INFORMATION ABOUT YOUR CHARACTER, SUCH AS LEVEL, EXPERIENCE, AND TREASURE. MOST IMPORTANTLY, IT LISTS YOUR VITAL SPOTS AND HOW MUCH DAMAGE THAT PART CAN TAKE. IF A PART OF YOUR BODY IS HIT FOR MORE DAMAGE THAN IT CAN HOLD, YOU WILL BE KILLED.

FETCH (F):
TRANSFERS AN ITEM FROM YOUR PACK TO YOUR HANDS. IF BOTH YOUR HANDS ARE FULL, YOU WILL HAVE TO PUT SOMETHING YOU ARE CARRYING IN YOUR PACK.

FOOTSTEPS (NO ABBR):
TURNS OFF THE SOUND YOU MAKE WHEN YOU WALK.

FORCE (X):
IF YOU USE THIS COMMAND, YOU WILL SWING WITH GREATER STRENGTH. HOWEVER, YOU WILL ALSO BE MORE LIKELY TO MISS YOUR TARGET COMPLETELY.

GET (G):
PICK UP AN ITEM FROM THE FLOOR OF THE KAIV. IT WILL PICK UP THE 1ST ITEM FOUND. IF THERE ARE SEVERAL OBJECTS, YOU WILL HAVE TO USE SEVERAL GET COMMANDS, OR YOU CAN USE THE NAME OF THE ITEM YOU DESIRE (SUCH AS GET SWORD). GET PUTS THE ITEM IN YOUR PACK.

HELP (Q):
LISTS ALL ABBREVIATIONS AND CHOICES OF TARGETS ON MONSTERS.

HIDE (N):
ALL THE INFORMATION ABOUT YOUR CHARACTER, SUCH AS THE NAME OF YOUR CHARACTER, WHICH ITEMS YOU ARE CARRYING, AND YOUR VITAL SPOTS. MOST IMPORTANTLY, IT LISTS YOUR VITAL SPOTS AND HOW MUCH DAMAGE THAT PART CAN TAKE. IF A PART OF YOUR BODY IS HIT FOR MORE DAMAGE THAN IT CAN HOLD, YOU WILL BE KILLED.

HIT (H):
MUST BE DRUNK. EACH HAS A CERTAIN TIME FOR WHICH IT IS EFFECTIVE. FOR FIGHTING, IT ALLOWS YOU TO HIT ANY TARGET ON THE FOE, BUT YOU MUST SPECIFY WHICH TARGET. NOT ALL CREATURES HAVE ALL TARGETS - FOR EXAMPLE, FIGHTERS DON'T HAVE FORELEGS.

INVENTORY (@):
SHOWS ALL OF THE ITEMS YOU ARE CARRYING.

LIGHT (L):
LIGHTS A TORCH, IF YOU HAVE BOTH A TORCH AND A FLINT & STEEL.

MOVE (M):
FOR MOVEMENT, YOU MUST ALSO SPECIFY A DIRECTION (N, S, E, W). IF YOU WISH TO MOVE MORE THAN ONE STEP, ENTER THE # OF STEPS TO MOVE AS WELL.

PICK (P):
IF YOU HAVE A PICK, YOU CAN USE THIS TO DIG A PATH THROUGH A WALL. THIS IS USEFUL IN CASE OF A CAVE-IN.

QUIT (NO ABBR):
USED TO END THE GAME. NOTHING WILL BE REMEMBERED, UNLESS YOU USE THE SAVE COMMAND FIRST.

REMOVE (O):
TAKES OFF WORN ITEMS, SUCH AS ARMOR OR RINGS, AND STORES THEM IN YOUR PACK. IF YOU ARE WEARING MORE THAN ONE ITEM, YOU SHOULD SPECIFY WHICH YOU WISH TO REMOVE.

RUN (R):
USED TO ATTEMPT TO ESCAPE FROM A FOE. REGARDLESS OF WHETHER OR NOT IT WORKS, THE OPPONENT GETS A FREE STRIKE.

SAVE (NO ABBR):
ALL THE INFORMATION ABOUT YOUR CHARACTER, SUCH AS THE NAME OF YOUR CHARACTER, WHICH ITEMS YOU ARE CARRYING, AND YOUR VITAL SPOTS. MOST IMPORTANTLY, IT LISTS YOUR VITAL SPOTS AND HOW MUCH DAMAGE THAT PART CAN TAKE. IF A PART OF YOUR BODY IS HIT FOR MORE DAMAGE THAN IT CAN HOLD, YOU WILL BE KILLED.

SOUND (NO ABBR):
TRANSFERS AN ITEM FROM YOUR PACK TO YOUR HANDS. IF BOTH YOUR HANDS ARE FULL, YOU WILL HAVE TO PUT SOMETHING YOU ARE CARRYING IN YOUR PACK.

STORE (S):
PICK UP AN ITEM FROM THE FLOOR OF THE KAIV. IT WILL PICK UP THE 1ST ITEM FOUND. IF THERE ARE SEVERAL OBJECTS, YOU WILL HAVE TO USE SEVERAL GET COMMANDS, OR YOU CAN USE THE NAME OF THE ITEM YOU DESIRE (SUCH AS GET SWORD). GET PUTS THE ITEM IN YOUR PACK.

SWAP (J):
EXCHANGE THE CONTENTS OF YOUR RIGHT AND LEFT HANDS.

USE (U):
ACTIVATES MAGIC RINGS AND WANDS. SEE THE DESCRIPTION OF MAGICAL ITEMS, BELOW.

WEAR (W):
PUT ON ARMOR OR RINGS.

FOR FIGHTING, IT ALLOWS YOU TO HIT ANY TARGET ON THE FOE, BUT YOU MUST SPECIFY WHICH TARGET. NOT ALL CREATURES HAVE ALL TARGETS - FOR EXAMPLE, FIGHTERS DON'T HAVE FORELEGS.

WANDS:
ALWAYS OFFENSIVE WEAPONS. A CREATURE MAY BE ABLE TO EVADE THE SPELL. SOME WANDS CAN BE USED ON INANIMATE OBJECTS, SUCH AS WALLS.

POTIONS:
MUST BE DRUNK. EACH HAS A CERTAIN TIME FOR WHICH IT IS EFFECTIVE. FOR FIGHTING, IT ALLOWS YOU TO HIT ANY TARGET ON THE FOE, BUT YOU MUST SPECIFY WHICH TARGET. NOT ALL CREATURES HAVE ALL TARGETS - FOR EXAMPLE, FIGHTERS DON'T HAVE FORELEGS.

HAZARDS:
TO AVOID A TRAP, HIT ANY KEY BEFORE THE TRAP IS FULLY SPRUNG, AND YOU MAY ESCAPE.

POOLS:
SHOWN ON THE MAP, BUT THERE IS NO WAY TO DETERMINE IF THEY ARE ACID OR MERELY WATER.

SLIMY FLOORS & PITS:
NOT SHOWN ON THE MAP, AND POTENTIALLY HARMFUL.

CLIFFS:
MARKED ON THE MAP, THEY CAN BE CLIMBED, BUT YOU MAY FALL. ON THE OTHER HAND, IF YOU STEP OFF OF A CLIFF, SERIOUS DAMAGE WILL RESULT.

CAVE-INS:
IF YOU ARE TRAPPED BY A CAVE-IN, YOU CAN OFTEN PICK YOURSELF OUT. CAUTION IS ADVISED, BECAUSE YOU MAY UNDERMINE THE ENTIRE STRUCTURE OF THE KAIV!
WINDS:
WILL MERELY BLOW OUT YOUR TORCH, WHICH CAN BE EASILY RE-LIT WITH A FLINT & STEEL.

THE GHOST:
OCCASIONALLY, YOU MAY HEAR A GHOSTLY VOICE SAY "GO AWAY!" YOU WILL BE TELEPORTED TO ANOTHER PART OF THE KAIV.

THE LADY:
YOUR LUCK CAN TURN BAD OR BE IMPROVED AT THE WHIM OF THIS VOICE, WHO WILL TELL YOU IF SHE LIKES OR DISLIKES YOU.

MAGIC CREATURES:
SOME OF THE FOES YOU ENCOUNTER WILL HAVE THE ABILITY TO PARALYZE YOU, TURN YOU TO STONE, OR DRAIN EXPERIENCE LEVELS. IF YOU SEE THE WORD "SAVE" WHEN FIGHTING ONE OF THESE CREATURES, YOU MUST HIT A KEY AND HOPE FOR THE BEST.

DENIZENS OF THE KAIV:
THIS IS A LIST OF THE CREATURES THAT YOU MAY ENCOUNTER. THEY ARE LISTED ROUGHLY IN ORDER OF THE LEAST TO THE MOST POWERFUL.

DIREWOLVES:
FAST AND DEADLY.

COROGNS:
CAN TURN YOU TO STONE, BUT CAN BE AVOIDED IF YOU HAVE A MIRROR.

GRIFFONS:
HUGE AND VERY DEADLY.

WYVERNES:
SIMILAR TO DRAGONS, BUT NOT AS CRAFTY. IT HAS HARD SCALES FOR ARMOR.

LORDS:
MAGNIFICENT FIGHTERS, ARMED WITH LEGENDARY SWORDS AND WEARING PLATEMAIL AND WAR HELMETS.

TROLLS:
TOUGH ARMOR. THEY HATE ALL NON-TROLLS.

GARGOYLES:
CAN PARALYZE, AND HAVE A THICK, LEATHERY HIDE.

OGRES:
STUPID, BUT VERY DANGEROUS.

WARRIORS:
WEARING HAUBERKS AND CHAIN MAIL HELMS, AND CARRYING FINE SWORDS, THEY ARE LESS TREACHEROUS THAN THE FIGHTERS, BUT THEY TAKE WHAT THEY WISH.

GOBLINS:
CARRY MACES AND WEAR LEATHER ARMOR.

COCKATRICES:
CAN TURN TO STONE THOSE WHO FEEL THEIR BREATH OR BITE.

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Apple II Computer Info

MAKES YOU INVISIBLE
R/TELEPORTATION;
MOVE TO RANDOM PLACE

R/HEALING;
SPEEDS UP NATURAL HEALING

R/LIGHT;
GIVES LIGHT WITHOUT A TORCH

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W/FEAR;
CAUSE VICTIMS TO RUN IN PANIC

W/FIRE;
BLOWS UP THINGS

W/LIGHTNING;
ZAPS OPPONENTS

W/PARALYZATION;
TURN FOES TO STATUES

W/WITHERING;
YEECH!

SOFTDOCS WRITTEN BY SAUL OF FRED THANKS TO THE LITERATE PIRATE * FRED
SOFTWARE - JANUARY 1984

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Getting Started

WASTELAND
Supplied by: Blue Adept
Cracked by: The Saltine
for
The Crackforce

The first thing you must do before playing Wasteland, is copy sides 1-4 using
CopyA or a similar program. Remove write protect tabs from sides 1-4 and you are
ready to begin.

Insert the boot disk, turn on your computer, and the game will automatically
load. You will then see the title screen with two options at the bottom: 'Start'
and 'Utils'. Press S to start gameplay, or U for utilities.

Utilities Menu

To use and option, press the first letter, or use arrows to choose:

Copy Since the Crackforce removed all copy protection from Wasteland there is no
need to use this option. It will not work because it assumes you have an
original, so use CopyA or Fast Copy to copy sides 1-4. You need not copy side 0,
the boot side, because it is not used after the game is started.

Utilities Menu

Restart Automatically restarts your party near the Ranger Center. Use this
command if your party is hopelessly stuck somewhere, or if you want to start the
game over with the same characters. To restart, save the game where you are.
Copy all sides with CopyA or Fast Copy. Insert the Boot disk (disk 0), reboot,
select U at the menu, then select R at the next menu. Next, insert the old side
1 when the message "Please put side 1 in drive 1." Then insert the new copy of
side 1 when you see "Please put destination Wasteland character disk in drive
1." Now you're ready to start over with your old characters - minus all the
items and cash they were carrying.

Print
Prints all of your characters' statistics.

Start
Starts the game. You're asked "Use last saved game (y/n)?" Choose Y if you want
to start where YOU last saved the game with the Save command. Choose N and
you'll start where the COMPUTER last saved the game (Which happens anytime you
answer "yes" to "Enter new location?"). With either choice, you'll be prompted
to insert one or more disk sides. If you're new to the game, you'll start in the
Ranger center.

IMPORTANT: Wasteland is a dynamic game, and it's very important that you
understand how it keeps track of and saves the game. As you play, the game
constantly changes, and permanently updates those changes to the disk. Once you
change something, it's changed forever! If you pick up an item from a spot, you
can't return to that spot and find it there again. If you kill the wrong person,
you can't go away and then come back hoping to find him or her alive.

The game is divided up into many locations. Any one of the following could be a
location: a floor in a building, a section of a desert, a path in a sewer. In
the course of your adventure, you'll often be asked "Enter new location (Y/N)?"
If you answer "yes," the game will save and changes to that location, and your
party's status. If you switch to another location by viewing a disbanded party,
the statuses for all the parties are saved on whatever disk side you end up on.

If you use the Save command, your location and party status is saved to side 1.
The next time you load Wasteland, and answer "yes" to "Use last saved game?" and
pick up where you left off. However, if you are your computer shuts down before
you can use Save, then answer "no" when asked "Use last saved game?" The program
will search for the place where it was last saved. This way, you are unlikely to
lose any important items you've acquired.

What can you do if a character dies? Don't save the game, shut the computer off
and reboot. Answer "no" when asked "Use last saved game?" Your characters will
now come back alive, but without the items they acquired since the last time you
saved.

Time and Distance
The maps in Wasteland vary in scale. The large desert map contains the various
city maps, which, in turn, contain building maps or whole underground levels of
sewers and hideouts. In combat, distances may seem a bit off for the map you're
on, but these are tactical distances and are valid in combat only.

Because of the difference in scale of the maps, time passes differently on them.
Though a single keystroke on the computer will move you one space north in both
the desert and in a building, the amount of time that each move takes is
different. The game takes this into account for healing and deterioration
purposes. Remember that time passes for characters in the main party as well as
for any disbanded characters who are not moving. If you disband a character and
send him off to find a doctor to help a wounded comrade, the seriously-wounded
character will still bleed away.

If you want time to pass without moving your party, press <ESC>.

Selecting Options
Whenever you need to select an option, just press the first letter in that
command (The one exception is unequip, in this case press E.)
Whenever you're selecting from a menu that appears along the bottom of the
screen, you have two choices:
1) press the first letter of the command, or
2) use the left or right arrow keys to highlight the command, and press
   <RETURN>.
Whenever you need to select an item, skill or attribute from a list, simply
enter its number. To scroll through a list, you have three options: Use the up
and down arrows, left and right arrows, or I and K keys. An item or skill number
with a "_" next to it (i.e. "6_"), marks the end of the list. Movement Commands

Use the following commands to move your party around:

I     Move up
J     Move left
K     Move down
L     Move right
Spacebar  Toggles view of party roster on and off

Ranger Center
When you're in the Ranger Center, you see the following options at the
bottom of the screen:
Create  Creates a character.
Delete  Deletes a character.
Start   Starts you outside of the Ranger Center.

Non-Combat Commands
At any time, except during combat, you can use the following commands by
pressing the first letter of the option:

Use
Use a skill, item, or attribute.
Enc
Encounter - call up combat commands.
Order
Establish a new party Order.
Disband
Disband - break up the party in two or more groups. This command is also used to
permanently dismiss a Non-Player Character from your party.
View
Switch the View between two or more groups.
Save
Save the game. Refer above for an explanation of saved games in Wasteland.
<SHIFT>-#
Call up the Use command for a specific character.
<CTRL>-S
Use the first skill listed for the character in the first party slot.
<CTRL>-R
Reorder a character's skills or possessions. You must first select a character
from the roster and view either the skill or possession menu before using this
command.

Combat Commands
Run     Move party or individual character one space.
Use     Use a skill, item, or attribute.
Hire    Hire a Non-Player Character to join your party.
Evade   Evade an attack.
Attack  Attack an enemy.
Weapon  Change weapons.
Load/unjam  Unjam and/or Load a weapon.
<CTRL>-A
Show list of encounter groups to attack. Will only work with player characters,
not hired NPC's provided your foes are within range of your weapons.

To speed up the combat message scrolling rate, press the up arrow or <CTRL>-K.
To slow it down, press the down or <CTRL>-J.

Viewing Characters
Enter a number from 1 to 7 to view that character's statistics. Here are some
options that you can use while in this mode.

From the first screen:

Pool
Pool cash. Pools all the party's loot and gives it to the character you're
viewing.

Div cash
Divide cash. Divides the cash evenly among the characters.

From the second (Item) screen:
Enter any item number for the following choices: (When prompted Y?N, the Y will
be highlighted. Press <RETURN> to accept the option).
Unjam weapon. (Only shows if you used a jammed weapon.)

Drop
Drop an item.

Trade
Trade an item.

unEquip
Equip or unequip an item.

<CTRL>-R
Reorder items.

From the third (Skill) screen

<CTRL>-R
Reorder skills.

-END-

Unjam weapon. (Only shows if you choose an ammo clip that's appropriate for your currently-equipped weapon.)

Reload
Reload weapon. (Only shows if you choose an ammo clip that's appropriate for your currently-equipped weapon.)

Drop
Drop an item.

Trade
Trade an item.

unEquip
Equip or unequip an item.

<CTRL>-R
Reorder items.

War in Middle Earth - tips on playing the game

You can send your people to different locations on the map, and in some places you'll meet other character (Go to Buckland and meet Merry. go to Bree and gain Aragorn. go to the forest and meet a couple elves, get to Rivendell and gain Gandalf, Legolas, Boromir, Gimli."

You can also get special objects which are located in locations here and there around the game. This is the tough part of the game. Send a character (or group, in case they get attacked) to the location and then zoom in so you have a closeup (Seeing the characters walk). this part is slow and a pain, but then you can pick up items. Get more items, and you can start controlling forces of humans, rangers, calvary, dwarves, and elves.

I found a way to get going fairly well. Send your hobbits straight to Buckland and get Merry. While they're travelling, have the two forces of yours to the far south (Faramir and 200 rangers, Eomer and a bunch of Calvary) come up and join with your hobbits. After you've given the commands, hit the hourglass and turn stuff up to "very hasty". When your hobbits get to Buckland and get Merry, go sit in the middle of the forest there (in the square east of Buckland there is a nice staff which someone can use as a weapon). Have them sit and wait in the middle of the forest (so the Nazguls don't get you) until your Rangers and Calvary come up from the south. Join them together, go get Aragorn, and head east to the forest.

By this time, the Nazguls have all vanished. When you exit the forest and cross the river before Rivendell, they will re-appear, and will wipe out your party under most circumstances. This is where your Faramir/Rangers and Eomer/Calvary come in. Use the combat command to have all your characters "withdraw", while you let the calvary "Charge" and the rangers "Engage" or "Charge".. nine nazguls are no match for 300+ battle troops. I lost about 17 altogether.

From that point, things get a bit easier. You can walk around without fear of the Nazguls and locate some objects to get some troops. Look in these locations for some helpful objects:

South of Ost-In-Edhil (South of Buckland)
North of Erebor (far east, where the Dwarves are parked). Dwarven hammer.

South of Mt. Gram. (north of Rivendell). Mithril Armour, Red Arrow, Black flask. Red Arrow is important, as it gets humans in on the action.

North of White Towers (east of Buckland/ Hobbiton). Healing potion.

Forlond (Northwest of Hobbiton). Palantir, which tells you where to find other things. South of Forlond.
West of Annunimas (due north from Hobbiton). Gold Sceptre, gets more humans in on the action.

Also look at Michel Delvins, Tuckborough, Grey Havens, Belegost, and there is also a dagger west of the Barrow Downs (east of Buckland).

It is an enjoyable game if you can get into it, and have something to read for the slow parts of the game. The word protection doesn't pop up too often, but is a pain in the ass. I modified my game to work on a hard drive to speed
things up.

The Byter

To instruct your people to go to a location, get to the small map (not the big, overall one). USE the red arrow (click on it), then point and click on the character group you want to redirect, and point and click to the location you want them to go to.

When you get into combat, the combat options will appear.

OK, these are the dox for War in Middle Earth.

There are 3 different screen levels. The top level shows the whole map of Middle Earth. This game is icon oriented. The 3 icons to the side are

- orb - tells status off all forces on map
- load/save - loads/restores saved game
- magnify - allows you to go to the next map level down
- hourglass - changes rate at which time goes by

At the middle level, the icons go as follows

- orb - tells status of selected party
- map - goes to top map level
- magnify - allows you to go to the next level down
- hourglass - changes rate at which time goes by

At the scene level, the icons are

- orb - tells status of party on the screen
- map - goes to middle level map
- hand/bottle - gets/puts things down

I assume as I haven't seen the dox is to get the ring to Mt. Doom. To do so, you have all the good forces at your disposal. The blinking forces are yours to do as you wish. The non-blinking ones are either your enemies or neutral forces. Neutral forces go under your command at different times of the game or when you get certain magical objects to those groups.

The best way to learn how to play is just dive in. At first be careful of the Nazgul. They'll kick yer ass quickly if they get to Frodo. You would be best going to Bree first via Bombadil's house.

To see what a certain place is, just click on it. If it is important at all, the game will tell you so. You can play the game militarily forgetting the books altogether, or you can play it following the book (which is probably safest at first).

At some point in time, the protection scheme will ask you for coordinates to a particular place. What follows is a list of places and what I believe to be their coordinates.

<table>
<thead>
<tr>
<th>Place</th>
<th>Coordinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harad Road</td>
<td>G7</td>
</tr>
<tr>
<td>Nurn</td>
<td>F8</td>
</tr>
<tr>
<td>Barad-Dur</td>
<td>E8</td>
</tr>
<tr>
<td>Mt. Doom</td>
<td>E8</td>
</tr>
<tr>
<td>Carach Angren</td>
<td>E8</td>
</tr>
<tr>
<td>Cirith Ungol</td>
<td>E8</td>
</tr>
<tr>
<td>Minas Morgul</td>
<td>E8</td>
</tr>
<tr>
<td>Durthang</td>
<td>E8</td>
</tr>
<tr>
<td>Dagorlad</td>
<td>D7</td>
</tr>
<tr>
<td>Morannon</td>
<td>D7</td>
</tr>
<tr>
<td>Pelargir</td>
<td>F7</td>
</tr>
<tr>
<td>Linhir</td>
<td>F6</td>
</tr>
<tr>
<td>G lorem bel</td>
<td>E5</td>
</tr>
<tr>
<td>Pinnath Gelin</td>
<td>E5</td>
</tr>
<tr>
<td>Anfalas</td>
<td>F5</td>
</tr>
<tr>
<td>Brech</td>
<td>E6</td>
</tr>
</tbody>
</table>
explore it to find out. That's about it! Hope you like it. It's a very complicated game; just

THE SUMMONS FROM MOEBIUS

Annuminas B4 7) Orders of Enlightenment
Hobbiton B4 5) Making Your Way in the World 6) Defending Yourself
Waymeet B4 3) Objects of the Realm 4) The World Above
Tuckborough C4 1) The Summons From Moebius 2) The World Below
Michel Delvins B4
Forlond C2 Table of Contents
Belegost B3
White Towers B4
Hobbiton B4
Annunias B4

Windwalker may have been designed primarily as entertainment, but the
While Windwalker does not represent a specific historical or geographic
perspective, you will discover an adventure that embraces the philosophy and culture
of the Orient. The influence of works including "Chinese Mythology," "I Ching, The
Book of Changes," and "Chinese Herbal Medicine" become evident as you interact with
the diverse characters, and pursue the intriguing rewards of the game.

The Making of Windwalker...

As Windwalker's development cycle was winding down, ORIGIN's art director
asked the game's author, Greg Malone, to provide samples of his research materials to
use in documentation and packaging. What the art director received was astounding,
and provides great insight into the author's attention to detail and commitment to
authenticity during the making of Windwalker.

Realistic, player-controlled martial arts maneuvers provide the focus for the
fast-action sequences in Windwalker. Texts such as "Ninja: Warrior Ways of
Enlightenment" and "Zen in the Martial Arts" were the primary sources used to
identify the weapons and tactics employed by the fighting men of the ancient Orient.
Books could not, however, provide the detailed imagery needed to accurately depict
the intricate movements in the varied disciplines of the martial arts. Greg went the
extra mile, tracking down experts, and shooting hours of video tapes and hundreds of
still photographs of the live models in action. These images were then digitized and
incorporated into the real-time, combat graphics.

As you explore the lands of Windwalker, you will be taken by the Oriental
flavor of the visuals - the character icons, the architecture, the flora and the
fauna - in this unique world. Only Greg's painstaking research and the knowledge he
acquired through books like "The Archaeology of Ancient China," "Oriental Art: A
Handbook of Styles and Forms," and "The Japanese Garden: Islands of Serenity" could
bring such vivid imagery to the computer screen.

While Windwalker does not represent a specific historical or geographic

THE MYSTIC RUNES OF WINDWALKER

Table of Contents
1) The Summons From Moebius 2) The World Below
3) Objects of the Realm 4) The World Above
5) Making Your Way in the World 6) Defending Yourself
7) Orders of Enlightenment

 HEXAGRAM 35: Earth below, Fire above.

Progress. The sun rises above the earth. So does the enlightened person reveal
virtue. Conditions favorable for progress. Help others through cleverness and
virtue. - I Ching

Greetings to you, my disciple. I am Moebius, called the Windwalker. I walk
the boundaries of Time, Space, and Thought as an observer of the ways of humanity.
You seek training and enlightenment. To this end I send you into the world of
turmoil to bring forth justice.

Good must always give way to evil, evil to good; that is the Way. In my
travels I have found a new evil in the realm of Khantun. Not since the rebellion of
KaiMen have I witnessed such a blight. Enter that realm, dispel darkness, and, if you can, gain enlightenment.

The goal is distant, the test arduous. At times it may prove more practical to avoid the distraction than to face it.

So long as you use your wits and cleave to the Way, your karma will sustain you in this world. Should you fail in correct persistence, dark spirits will carry your spirit away to face the Mirror of Truth, and you failure will come back to mock you forever.

Now heed my teachings, that you may gain enlightenment.

**THE WORLD BELOW**

(Stanza 23: Mountain above, Earth below.)

Deterioration. The weak earth cannot support the mountain. The realm deteriorates. Enlightened people stabilize their lives through generosity towards less fortunate. — I Ching

How revered is Choa Ti, the Harmonious Emperor! His wise policies brought peace for all his subjects. He opened the way for trade with the distant land of Nubia. In Choa Ti’s reign of three score years no foreigner has dared to invade Khantun. Achieving venerable age, Chao Ti governed with the mandate of Heaven.

Yet evil always lurks; it is the Way. One of the Emperor’s Warlords, Zhurong, recently returned from a mission to Nubia. Though he was ordered only to explore, the ambitious Zhurong turned to conquest. He pillaged Nubia’s principal city and kidnapped the Ivory Princess, daughter of the Kind of Nubia.

The princess, once heiress to a continent, now inherits only sorrow as Zhurong’s slave.

Zhurong returned to Khantun filled with ambition and dark purpose. He has conspired with the court alchemist, Shen Jang, to overthrow Emperor Chao Ti. Together the two usurpers have imprisoned the Emperor and his wife as hostages. Zhurong has seized the ornate Nightingale Throne.

Since the tyrant Zhurong rules without the mandate of Heaven, thousands have resisted his rule; before many witnesses, his troops massacred the protesters. Zhurong, with discussion of the vent and the gates, lies that the massacre never happened. Even more than his blood thirst, this contempt for truth shows he is unfit to rule. To cut off further resistance, Zhurong has conscripted most able-bodied men to work the faraway jade mines.

Meanwhile, the crazed alchemist has brought forth evil spirits to take possession of Khantun’s holy shrines. At each new moon, evil spreads across the land like a rising river.

The priests and monks are sworn to non-violence; the cowed peasants make no resistance; some protesters have fled to the hills and caves, but they cannot organize. You alone, my disciple, must overthrow Zhurong, defeat Shen Jang and his evil spirits, and restore the Harmonious Emperor to his Nightingale Throne.

Learn now the nature of this realm, that you may move freely in it.

**The Realm of Khantun**

The island of Khantun rise from the Boundless Ocean like the shells of sea turtles. Some islands, large as continents, hold villages and even the Imperial palace. Smaller islands stretch from them like the beads of a jade necklace.

The climate is fair through most of the realm. Storms may arise at times. The enlightened person seeks shelter indoors, to avoid the peril of lightning strikes.

As you visit these lands, mark the passage of time. As night succeeds day, so do the phases of the moon mark the passage of the month.

I place you in this realm upon a full moon night. As the moon wanes toward new, beware. Of late, the nights of the new moon, when the sky is at its darkest, have brought terrors upon the populace.

In the body of a humble fisherman, you begin your test in the small fishing village of Xiang Loh. Only a few people survive here. Speak with them to learn your first task. You may procure supplies at the merchant’s store. Search for medicine to meet the needs of health, and pray at the holy shrine to restore your spirit.

**Travellers’ Tales of the Realm**

As part of the test, I give you no more information about the world than the residents of Khantun know themselves. In this isolated village citizens know of the further reaches of Khantun’s geography only as mysterious places mentioned by passing sailors.

To the northeast, across the inner reaches of the Boundless Ocean, lies the Emperor’s Celestial Palace. Here Zhurong sits upon his usurper’s throne, and the mad alchemist pursues his unholy researches. Here the Emperor and his wife lie imprisoned.

None may enter the Palace, save for harmless monks. Even Zhurong dares not anger the heavenly realm by refusing them admittance. The guards arrest and imprison all other entrants.

Beyond the Palace lies the Monastery of the Sanctified Order of the Enlightenment Khisa. In this peaceable place monks take vows to silence and practice the regimen that leads to enlightenment.

By beyond the land of the monastery no traveller goes — partly because legend claims that across the ocean lies the Isle of the Dead. This mysterious realm is an island shrouded in perpetual storm. Here monsters dwell and demons roam freely. A mortal traveller cannot hope to survive for long without magical protection.

Past the lands of Khantun lies areas you cannot hope to visit during your test. Beyond the reach of maps lies the continent of Nubia. Far across the ocean in an unknown direction are the Imperial Jade mines. Your test will not take you to these distant lands.

**Personages of the Realm**

Here I share with your descriptions of persons and creatures relevant to your task.

**The Imperial Court**

The Harmonious Emperor, Choa Ti

Choa Ti ascended to the throne after decades of chaos under the Fifteen Mad Emperors. In the “Thousand Beautiful Days” that followed he restored authority, expunged corruption, regulated the currency, created schools, established the civil bureaucracy, and resurrected the Imperial state ceremonies.

The duration of peace is his reign has never been equalled in the long history of Khantun. The Emperor remains handsome in his venerated old age. His rich garments depict dragons and mystic symbols.

The third and fourth fingernails on each of his hand have grown to no less than nine inches long!

Overthrown in his 62nd year of his glorious reign, the Emperor now lies in a cell in the prison tower of the Celestial Palace.

The Empress, Cheng Sing

Once a mere concubine, Cheng Sing so rose in the Emperor’s esteem that, many decades ago, he officially recognized their marriage. The people call her “Beloved Nightingale” for her melodious voice, and the Nightingale Throne is named for her. She is famous for her collection of jade, gifts from the people and from foreign potentates.

Cheng Sing blessed the Imperial dynasty with many heirs, but Zhurong has murdered them or exiled them to the jade mines. Cheng Sing herself is believed to be held captive with her husband.

The Warlord Zhurong

There is no more awesome warrior in Khantun than the Warlord. He has mastered the supremely difficult Two Swords Art and moves with such speed that he can pluck flies from the air. He was a promising leader in Khantun’s defending army. Yet his mastery brought with it ambition and arrogance; he revels in his swordsmanship.

As you would heed the Warlords’ twin swords, disciple, heed the twin perils of pride and cruelty, or you can be no more than Zhurong himself.

The Imperial Alchemist, Shen Jang
The fire elemental, a spectral form whose touch imparts burning pain. The rarity of their ingredients forces them to charge high prices for their services.

Practitioners of the arcane rites of alchemy, these respected tradesmen ways to influence natural law -- in other words, they learn the ways of magic. These animist magicians seek truth through contact with nature. By protracted study of the laws of the wilderness these wizened man and women deduce thescrolls of past ages. Their monastery library holds the lore of ancient scholars.

In the Monastery of the Enlightened Khisa, monks devote much effort to copying the scrolls of past ages. Their monastery library holds the lore of ancient scholars.

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Kuafu, the Jailer

All too many an unfortunate soul has been placed under the custody of Kuafu, the pitiless jailer of the Imperial Prison. However, though quick to brag on how escape-proof his prison is, Kuafu's vigilance is often in question considering his penchant for long naps punctuated by shrill snoring.

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Concubines

Though these lovely ladies remain loyal to the Emperor, Zhurong has made them his love-slaves. They are trained in the gentle arts of song, formal dance, and conversation. The concubines serve, unofficially, as central coordinators for gossip and rumor in the court.

The Nubian Princess

Formerly the Ivory Princess of the kind of the distant land of Nubia, she now leads the life of a captive, kidnapped by the deceitful Zhurong during his recent mission of conquest to her homeland. Few can learn from her since she only speaks her native tongue and refuses to learn the language of Khantun.

People of Devout Ways

Priests

These monks have devoted their lives to maintaining a holy shrine. Skilled in ritual and serene in outlook, they can bless the incense you use to send your prayers skyward. But beware of priests possessed by Shen Jang's evil spirits. You must exorcise these spirits to heal the priests and restore harmony.

Monks

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And the astral demon, a malign demigod of profound cunning and limitless contempt for truth. These demons are possessing and desecrating the shrines of Khantun. You must exorcise them from those who they possess. I will explain how momentarily.

Objects of the Realm

Do not neglect the details of correct living, for your mission tests your resourcefulness as well as your prowess. In the form of a fisherman, you will require money to purchase food and supplies. You may earn money by procuring goods a merchant desires, or as a reward for heroism. If fortune smiles upon your venture, you may also discover wooden chests of money and belongings. These may be washed ashore on beaches or hidden in the depths of caverns.

The currency of Khantun, a small brass coin, also purchases other important items:

- Health elixirs that can heal all bodily damage.
- Incense for prayers of restoration.
- Other potions of various natures.
- Parchment, ink, and heron-quill pens, useful for copying scrolls.
- Maps of Khantun and environs.
- The sextant, a navigational instrument that uses the position of the sun, stars, and landmarks to determine your position. The sextant serves no purpose indoors.

Fishing Boats

Khantun is a land set upon the water. The Boundless Ocean provides food, travel, commerce, and defense from invaders. Several kinds of ships ride its waters:

- Large craft with hulls of weathered oak and mighty sails, these noble ships now serve the tyrant Zhurong. Their iron cannons fire metal spheres whose impact can break bones and send the passengers of the target vessel flying into the cold waters.
- Imperial Warships

The "sacrilegious sea pirates" now serve the tyrant Zhurong. Their iron cannons fire metal spheres whose impact can break bones and send the passengers of the target vessel flying into the cold waters.

Pirate Skiffs

At sea as on land, scurrilous rogues wait to plunder the innocent. These skiffs, no larger or sturdier than the fishing boats they rob, travel outside normal fishing lanes.

Aboard pirate skiffs ride merciless thieves and assassins. They assault their victims first with a barrage of shuriken, the dishonorable throwing star of the ninjas. Assassins even leap overboard and swim over to attack you. If you can defeat a pirate crew, you may take control of their vessel and use it as your own. But no disciple on the path of honor may use their lethal shuriken. The enchantments rely on talismans and on mantras, chants the improve concentration and activate the realm's magic. All such enchantments drain the spirit of exorcism allows you to cast a fiery trace of demonic influence from the possessed. Special prayer of exorcism allows you to cast a fiery trace of demonic influence from the possessed.

Shamans seek truth through nature. They study the ways of animals and the physical realm. Attuned to the rhythms of the world, these solitary teachers have discovered the spiritual things that work on the physical form. The enchantments rely on talismans and on mantras, chants to inspire concentration and activate the realm's magic. All such enchantments drain the spirit of exorcism allows you to cast a fiery trace of demonic influence from the possessed. Special prayer of exorcism allows you to cast a fiery trace of demonic influence from the possessed. Shamas seeks truth through nature. They study the ways of animals and the physical realm. Attuned to the rhythms of the world, these solitary teachers have discovered the spiritual things that work on the physical form. The enchantments rely on talismans and on mantras, chants to inspire concentration and activate the realm's magic. All such enchantments drain the spirit of exorcism allows you to cast a fiery trace of demonic influence from the possessed. Special prayer of exorcism allows you to cast a fiery trace of demonic influence from the possessed.

Shamans create talismans that embody their enchantments. But to use a talisman, you must have the shaman bind it to your spirit. This requires a ritual of divination, wherein the shaman examines marks on the shell of a sea turtle. Reasonably enough, shamans refuse to carry these shells with them, so you must provide one. Special care must be taken by the practitioner of talismanic magic that he not let his Spirit become drained to depletion. A depleted Spirit will surely result in death.

Levitation sends the caster high in the air to gain a brief overview of his surroundings. The caster cannot move laterally while levitating, so the spell's use is limited. However, it can be useful to know who -- or what -- awaits you around the next turn.

Invisibility renders other insensible to the caster's presence.

Water-walking allows the caster to travel across the sea as though walking on dry land.
Involvulnerability, most powerful of enchantments, renders the caster immune to bodily harm.

Idolatry

Scholars exert much ingenuity to deduce the ways of the ancient people called the Nahai. Many generations ago these primitive people built colossal granite idols on some of the islands of Khantun. Little other evidence of the Nahai remains; they vanished from history before the scholars could learn how they erected the idols. The idols depict pagoda-like entities that gaze into eternity. The Nahai evidently worshipped the idols as symbols of their tribal spirit. Through rituals of music, feasting, and their mysterious "tantric dance," the Nahai supposedly secured the blessing of their deities.

Alchemy

In truth lies immortality. Alchemists of Khantun believe that in immortality lies truth, and so they seek elixirs that preserve and prolong life. Alchemy combines the rarest herbs and metallic elements in potions that benefit the body and spirit -- at least the alchemists claim. Some of their ingredients seem unlikely at best and dangerous at worst, such a cinnabar, powered gold, and rat badders. And yet infinite are the paths of Truth. The alchemist's patient quests have produced several elixirs that may help you in your quest. Consult with medicine men to learn of these. No alchemist has yet distilled the Elixir of Everlasting Life. All seek a missing ingredient, the legendary Peach Seed of Immortality. They believe this to belong to the God of Luck; but thus far no one has been lucky enough to find him.

Making Your Way in the World

In the course of your quest you may travel the whole realm of Khantun. You will face obstacles and adversaries. Through cleverness and courage you may overcome them. You will not only restore the Emperor of his throne, but you will also achieve enlightenment. As my disciple, you serve the Way of Truth and Understanding. Serve, in this case, by example; let no one who witnesses your actions doubt that you follow the Way. Here I summarize the cardinal virtues of my disciples.

The Way of the Disciple

A clear and Receptive mind -- Most curious are the ways that people think and act at times. And yet, in all their way, seek peace and enlightenment. Since every disciple captures some aspect of the Truth, respect and learn from the practices of others.

Unstained honor -- Live honorably among the people. Steal nothing. Show generosity toward the unfortunate. Never flee from a just battle. Revere your elders, and respect the common people. Live cleanly to achieve enlightenment, as the tree must root in clean soil to grow straight and tall.

Never aggressive, yet ready to defend -- Maintain your physical health as much as your spiritual health, for the enlightened person often meets those who mock enlightenment and would gladly extinguish it. However, note well the vice of aggression. The aggressive disciple poisons his spirit through pride and reliance on force; study Zhurong for an object lesson in these dangers. You must not attack without provocation.

Always seeking understanding -- Be tolerant of the ignorant, but show no mercy toward ignorance. The darkness of ignorance waits always to overwhelm the world; the light of understanding flickers without constant care. Peruse the lore of past times, copy scrolls as you will, and examine their messages for clues to enlightenment.

Resolve until the deed is done. The test is complex and requires many days. You will face obstacles that are formidable. Do not despair. As the seed is carried far and then falls at last to fertile ground, you may not yet have found all the tools you require to overcome the obstacle. Search widely throughout Khantun. Do not delay for long at any one obstacle, but seek its solution elsewhere.

Your MISSION requires cleverness and rewards adroit solutions.

Know Yourself

Seek enlightenment first through self-knowledge. Learn your capacities by ranking them in the four traditional attributes, or qualities, of the disciple. As your teacher, I help you visualize your attributes by presenting them as rows on the abacus, the traditional calculating device. Each row of bead on its wire represents one of your attributes. Your current status is each attribute is shown by the position of the beads. The more beads that slide along the row away from their symbol, the weaker that attribute becomes.

As you rise in my Order, you grow stronger in your attributes. The beads grow weightier and slide less quickly, giving you greater stamina in each attribute. Your attributes and their symbols:

Body, symbolized by the mighty ox, represents your health and vigor. Your body attains its maximum strength and power by lack of spirit slumber and by lack of the many other perils of life. When the beads of the body wire all slide away from the ox symbol, your physical form has expired. The Spectre of Death will try to claim you.

Spirit, is represented by the lightning bolt, for this is the life force, the chi. This universal force animates your form as the lightning enlivens the night sky. Your strength of spirit governs the casting of magic. When you cast a spell, you expend a certain amount of your life force, and a bead slides down the wire. When all the spirit beads slide to the right, your enchantment fails. You can regain spiritual energy through prayer of through certain rare elixirs. But, be forewarned, my disciple... to let one's spirit become depleted is to surrender one's life to the Spectre of Death. Caution is urged in the use of magical efforts.

 Honor, is represented by the smouldering incense urn. The honor from your actions goes forth and drifts among men as the smoke from this urn.

Karma, the spiritual consequence of your actions, is represented by the symbol of yin and yang. The ancient glyph shows that good and evil, the positive and the negative, are intricately related.

In this test karma shows how many times I allow you to face the Spectre of Death. Each time your body or spirit perishes, I shall steal you away from the Spectre of Death -- but a karma bead slides down the wire.

If all of your karma beads come to rest away from the urn symbol, the common people will be less friendly, and your task will grow more difficult. The successful disciple strives to maintain perfect honor.

The Mirror of Truth. I dare not reveal the fate they plan for you.

Journeying

You will travel by land, where you may either walk or run; and on the sea, where you may swim or sail. Do not attempt to board another's boat, unless it be a dishonest pirate ship whose pilot has fled.

Not that by exertion you can speed your normal passage over land or water. But be moderate in this, for it saps your strength.

You will travel by land, where you may either walk or run; and on the sea, where you may swim or sail. Do not attempt to board another's boat, unless it be a dishonest pirate ship whose pilot has fled.

Unstained honor -- Live honorably among the people. Steal nothing. Show generosity toward the unfortunate. Never flee from a just battle. Revere your elders, and respect the common people. Live cleanly to achieve enlightenment, as the tree must root in clean soil to grow straight and tall. Your strength of spirit governs the casting of magic. When you cast a spell, you expend a certain amount of your life force, and a bead slides down the wire. When all the spirit beads slide to the right, your enchantment fails. You can regain spiritual energy through prayer of through certain rare elixirs. But, be forewarned, my disciple... to let one's spirit become depleted is to surrender one's life to the Spectre of Death. Caution is urged in the use of magical efforts.

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If all of your karma beads come to rest away from the urn symbol, you have failed this test. The Spectre of Death passes you on the taunting demons of World of Truth. I dare not reveal the fate they plan for you.
Though the enlightened person respects privacy, a healthy curiosity about one's surroundings is correct. Enter buildings that offer open doorways. Examine the scrolls, cabinets, and shelves that you find. You cannot know whether one may hold something that aids you in your mission.

**DEFENDING YOURSELF**

The enlightened disciple never attacks. However, you will certainly need to defend your life and honor in combat. Hereafter, my advice.

**Training**

Before you being your test, I offer you the chance to train your defensive skills. First unarmed, then with a staff, you will face some of the opponents you will encounter in the world: thieves, assassins, guards, and yet more dangerous foes. Be aware, though, that those whom you will train against may be far less aggressive than those whom you will defend against in the world.

The enlightened person takes every opportunity to gain self-knowledge. Learn well your defensive maneuvers and your opponents' patterns of aggression before you venture forth.

**Unarmed Defense**

Master the four blows: punch, high kick, front kick and roundhouse kick. The punch and front kick are quickest to land, but the other kicks are deadly and can stagger your opponent. Some masters follow a high kick with a punch for doubled effectiveness. Blows aimed at the opponent's head yield best results, but these are the hardest to land. Strikes to the midriff prove more practical in close quarters. Lightly toward away from the opponent. For very rapid closing, use handsprings; for rapid distancing, use cartwheels. The opponent seldom expects these adroit maneuvers. You can escape a deadly thrust, or close within the foe's guard to deliver a thrust of your own. The handspring itself is an attack, as well. At all times strive to time your attacks with suddenness of the falcon. Strike after opponent has completed his attack, and before he can prepare another.

**Defending with a Staff**

The staff, symbol of spiritual transcendence, served also as protection for your physical form. With its long reach you may strike from a safe distance. Master the three staff blows: the high swing, the low jab, and the front thrust. You can also fruitfully employ all the kicks described above. You can, and should, employ the fronts and low jabs, quick and easy to use, form the foundation of staff technique. High swings take longer, but their effect when landing is most rewarding. Use these with finesse, especially while the opponent is stunned.

**Concentration; Intuition**

The disciplined mind can shut out distractions. Employing concentration, you may speed your perceptions so that each exchange of blows seems to proceed at your chosen pace. In this state of concentration you may gauge the situation and choose your next maneuver when you are ready. The opponent has not time to make more than a single move in response. By careful consideration you may suit each maneuver precisely to the requirements of combat. But the trained fighter also knows that value of surrendering to the moment. Replying on your intuition, you let your chi, your inner spirit, guide your blows. This method is practical when your confidence is your defensive skill is high and provides great internal satisfaction to the intuitive one.

**Reflecting on your Experience**

In the flurry of combat one seldom mutes the perspective needed for learning. I grant you the ability to review each combat after it is completed. If you reflect on your experience, you may learn your strengths and avoid repeating your mistakes. The enlightened person reflects on his experience in combat. Try to discern the techniques each enemy employs, and develop your own maneuvers to counter them.

**Your Opponents' Fighting Styles**

You will discover during your training, or soon after you being your test, that your opponents fight with different techniques and patterns. For example, the clever thief often feigns a high, swinging stab, then suddenly turns it into a short thrust.

**Fleeing Combat**

In desperate straits you may flee combat. Flight from a fair battle brings dishonor upon you. You will suffer a blot upon your honor, and a bead will slide to the right on the abacus of your abilities.

### THE ORDERS OF ENLIGHTENMENT

(Hexagram 19: Lake below, Earth above.)

Promotion. The receptive earth about reflects in the lake beneath. So it is the enlightened person willing to teach and learn from others. Exceptional progress through persistence. - I Ching

I mark my disciple's degrees of enlightenment by these ranks, called orders. You will achieve greater enlightenment through persistent effort, generosity toward others, defeat of injustice, and achievement of your goals. I shall reward you spiritual growth with greater prowess in the world below. Recall the abacus of your abilities. As the enlightened life grows rich, so each bead upon the abacus gains in value according to your Order. Thus, when you are hurt or cast magic, the beads slide away less often than before.

Take pride in your increases only as they let you pursue your path with more certainty. The Way is not pride, but humble regard for one's fellows and harmony with all.

Remember, there are many things I have not told you. They are there for you to learn, as part of your test. Now Process! The path of the disciple lies before you.

**The Order of the Windwalker**

The Orders of Earth | The Orders of Water
---|---
1. Mongoose | 1. Barracuda
2. Badger | 2. Manta
3. Boar | 3. Octopus
5. Lion | 5. Dolphin

**The Orders of Air | The Orders of Fire**

1. Raven | 1. Viper
2. Owl | 2. Cobra
3. Heron | 3. Crocodile
4. Falcon | 4. Python
5. Condor | 5. Hydra
6. Phoenix | 6. Dragon

**AUTHOR'S AFTERWORD**

Since the release of HEXBIUS, the predecessor to WINDWALKER, I’ve given much thought as to the direction of scope the WINDWALKER should take. Always foremost in
my mind has been the desire to provide the player with both pleasurable and intellectually stimulating experience. In such a way, I have sought to share, in part, the personal joy that I take in the quest for knowledge and understanding about the world around us and the inhabitants therein.

A common theme woven into WINDWALKER's story involves the interaction of the player character with persons of differing viewpoints and experiences from his own. Perhaps lessons about living in our own real world may be drawn from these game experiences, though just having fun and high adventure are worthy rewards alone to the imaginative mind. If 'story morals' are transparent to the player, so too might be the other hidden lesson to be found in WINDWALKER, i.e. that expanding one's awareness of the world around us should be a source of great personal pleasure and a challenging end goal within itself.

Finally, though the player character in WINDWALKER is given 10 karma beads, or game lives, within which to accomplish the story objectives, we can only be sure of one opportunity to fulfill our own personal dreams in this world. So, whether you are 13 or 30, just starting your life quest, or already well along the path, seek to increase your awareness of the intricate beauty and diversity that this life and the people you meet in it have to offer. There is no greater treasure to be found, no any greater source of both amusement and entertainment!

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BIBLIOGRAPHY
Select TRAIN if you want to practice your combat skills. Refer to the sections on Combat for more details instructions. Should you wish to stop training during combat, press the RETURN key. This will return you to the presence of Moebius.

Venturing Forth
Select VENTURE FORTH when you wish to begin an adventure in the world of Khantun. If there is an adventure in progress previously saved under a different player’s name, you will be given the option to abandon it and begin a new adventure using your name. Otherwise, you will continue the adventure in progress. Any previously saved adventures must be abandoned before a new adventure can be started. Refer to Special Options for assistance.

PLAYING THE GAME
The Adventure Display
When adventuring, the following display is shown:
Its Mech, interrupting because of a picture...

Boot the game
When in an adventure there is the background that is called the Travel Window. That face is you, which is known as the Player Character (PC) Icon. Where your name is displayed is known as PC’s Name. That Blank Black Bar on the bottom of the Travel Window is for System Messages. The first set of beads on the top right is the PC’s Body attribute. The second set of beads on the top right is the PC’s Spirit attribute. The third set of beads on the top right is the PC’s Honor attribute. The fourth set of beads on the top right is the PC’s Karma attribute. Right below the fourth set of beads is the PC’s Current Order of Enlightenment.

Moving About in the World
To move over land or water, press one of the direction keys listed below. Note that there are two identical sets of directions keys for either right or left-handed play.

<table>
<thead>
<tr>
<th>Left Handed Play</th>
<th>Right Handed Play</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESC - Special Options</td>
<td>DEL - Special Options</td>
</tr>
<tr>
<td>TAB - Interact</td>
<td>RTN - Interact</td>
</tr>
<tr>
<td>Q - Northwest</td>
<td>I - Northwest</td>
</tr>
<tr>
<td>W - North</td>
<td>O - North</td>
</tr>
<tr>
<td>E - Northeast</td>
<td>F - Northeast</td>
</tr>
<tr>
<td>A - West</td>
<td>K - West</td>
</tr>
<tr>
<td>S - PASS</td>
<td>L - PASS</td>
</tr>
<tr>
<td>D - East</td>
<td>J - East</td>
</tr>
<tr>
<td>Z - Southwest</td>
<td>- - Southwest</td>
</tr>
<tr>
<td>X - South</td>
<td>- - South</td>
</tr>
<tr>
<td>C - Southeast</td>
<td>/ - Southeast</td>
</tr>
<tr>
<td>OA - Fast move</td>
<td>OA - Fast move</td>
</tr>
</tbody>
</table>

The arrow keys may be used in place of the North, South, East and West keys. To rest in place for one turn, press the PASS key.

Press and hold the Open-Apple key along with the desired direction key to move the PC at a quicker, though fatiguing pace.

The Combat Display
When in combat, the following display is shown:
Its me again Mech, another picture.
Boot the game and get into a fight.  The background at the fight is the Combat Window.  The dude on the left side is the Player Character (PC).  The d00d on the right side is the Combat Opponent.

Defending in Combat

Using the space bar to toggle between Concentration and Intuition modes.  The PC's maneuvers in combat are controlled using the following keys:

<table>
<thead>
<tr>
<th>Bare handed</th>
<th>With staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>I - High Kick</td>
<td>I - High Kick</td>
</tr>
<tr>
<td>O - Punch</td>
<td>O - High Swing</td>
</tr>
<tr>
<td>K - Back Kick</td>
<td>K - Back Kick</td>
</tr>
<tr>
<td>L - Front Kick</td>
<td>L - Front Kick</td>
</tr>
<tr>
<td>. - Cartwheel</td>
<td>. - Thrust</td>
</tr>
<tr>
<td>, - Handspring</td>
<td>, - Low Jab</td>
</tr>
</tbody>
</table>

Commands for Both Bare handed and With staff

- TAB - Break and run
- RTN - Break and run
- A - Step Forward
- Z - Scoot Forward
- S - Step Backward
- X - Scoot Backward
- SB - Switch between Concentration and Intuition Modes.

INTERACTING WITH THE WORLD

Your Possessions

Whenever you wish to examine or use one of your possessions, press RETURN, following by the PASS key (S or L). You will be presented with a list of the items that you currently possess. Select the item you wish to examine or use. For example, when you wish to sleep, you should select the Straw may from your possessions. When you are hungry, you may eat by selecting Food.

Inhabitants of Khantun

When you wish to interact with an inhabitant of Khantun, press the RETURN key followed by the direction to the person or creature you wish to interact with. When speaking to people, you may discuss different topics. Listed under these topics are the keys words you know. When you ask someone about a key word and you hear a chiming sound, you have had another key word added to one of your topic lists. It is advisable to occasionally converse with persons you have spoken with before, using the new words you learn -- they may have new things to tell you.

Inanimate Objects

To interact with or examine an object in the world, move up to the object and "bump" against it. If the object is something that can be examined, a message will appear telling you what you have found. For example, bumping into a scroll on a table will result in the scroll being opened and its contents revealed. Bumping into a doorway will cause you to pass through the door into or out of the building. When you wish to board a sailing vessel that you own or have taken in battle, bump into the front end of the craft. When you wish to disembark from the craft, you can drop anchor by selecting that from your inventory.

SPECIAL OPTIONS

Special Options List

While travelling in Khantun, press the ESC or TAB key to display the Special Options list. The options are:

- Save - This will save the adventure in progress for later recall.
- Recall - This will recall the adventure from the previous save.

Save and Quit - This command will automatically save the game and prepare the computer to be turned off. This command must be issued to end your game session. Failure to use this command will cost the PC one karma bead on the next recall/restart.

Abandon - This will abandon the adventure in progress and erase it permanently, allowing a new adventure to be started.

Sound on/off - This will switch the game sound on or off.

TROUBLESHOOTING

If the game fails to start properly, perform the following sequence:

1) Turn the computer off.
2) Make sure the computer and its parts are properly installed.
3) Reinsert the WINDWALKER disk, side 1, label-side up, into the drive.
4) Turn the Computer on.

If this sequence fails to start the game, you probably have either a hardware or software problem. If possible, try starting the game on another computer to verify the problem, or, consult your software dealer for assistance, or try d/l'ing it again, may be a bad download.

"Check the Magnetic Disk" message

If during play you get a "Check the Magnetic Disk" message on your screen, make sure that you have the correct disk properly inserted in the disk drive when the drive door is closed. All characters information is saved to Magnetic Disk 4, which can be copied to permit the play of more than one simultaneous games.

End of Documentation
To land on the carrier, you must approach it flying into the wind (from the right). Use the 3-D view to line up the flashing white artificial horizon indicator with the deck of the carrier.

Just as you clear the edge of the carrier's deck, stall the plane to allow it to drop so that its "arrester hook" can catch one of the four arresting cables on the deck.

Landing an airplane on the deck of a carrier requires a great deal of skill and nerves of steel. It may take you a few practice runs before you feel comfortable, but this practice will pay off later when the heat is on and you have to land under fire.

Once you have landed safely, taxi your plane to the elevator. Then, push the joystick button to activate the elevator and lower your plane for repairs, refueling and a new load of weapons. If you taxi too far and miss the elevator, simply turn your plane around and position it over the elevator again.

**HELLCAT WEAPONS**

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**Machine Guns**

Your Hellcat is equipped with three .50 caliber machine guns on each wing. These guns can be fired while in flight by pressing button 0. Use your machine guns for shooting down enemy planes and strafing islands.

**Bombs**

Equipped with thirty 100 lb. bombs, your Hellcat can do heavy damage to barracks and machining gun dug-outs on enemy islands. After selecting "bombs" from the Weapons menu, you can drop bombs while in flight by pressing button 1.

**Rockets**

Designed for use on more substantial targets such as large anti-aircraft guns, 15 of these 5 inch rockets can be carried by your Hellcat. Once you've selected "rockets" from the Weapons menu, you can fire rockets while in flight by pressing button 1.

**Torpedoes**

Once an enemy ship's guns have been disabled, you'll be able to make a torpedo run on the ship in an attempt to sink it. After selecting "torpedo" from the Weapons menu, you can release the torpedo by pressing button 1.

**NOTE:** You must approach the enemy ship flying low over the water when you release the torpedo. It is important to have the ship well in your sight before releasing the torpedo so as not to allow the torpedo to run out of energy before hitting its target.

**CONTROL PANEL**

Your Hellcat's control panel with its various instruments and gauges is displayed at the bottom of your screen.

Weapon counter: indicates what type of weapon you are carrying and how many you have left.

Hellicat counter: how many Hellcats left. You earn an extra plane each time you are promoted in rank.

Oil pressure gauge: indicates the condition of your engine. When your Hellcat is damaged by gunfire, the engine will begin to smoke. The more damage your plane sustains, the more smoke it will emit and the lower the oil pressure will drop. When oil pressure begins to get critically low, a red light will blink on the gauge. If the oil pressure drops too low, the engine will...
seize and you will crash. Each time you return to your carrier and descend into the hold, your plane will be repaired, restoring oil pressure to full.

3-D view: provides a three dimensional view of the world from your cockpit. This view is especially helpful when attempting to guage the distance between your Hellcat and an oncoming ship, plane of other target.

In the center of the view is a flashing white cursor which serves as an artificial forizon indicator. This indicator is useful for sighting targets and landing on your carrier.

Fuel gauge: indicates how much fuel you have left. When the fuel level begins to get critically low, a red light will blink on the gauge. If the plane runs out of fuel in flight, you will crash. Each time you return to your carrier and descend into the hold, your plane will be refueled, restoring the level to full.

Score counter: take a guess!

Enemy plane counter: take another one!

**FLYING THE MISSIONS**

You start the game with three Hellcats. You will receive one additional Hellcat every time you earn a promotion in rank.

**Mission Objectives**

You will be briefed on each mission’s objective before you begin it. Bonuses will be awarded as each objective is accomplished. An additional bonus will be awarded upon successful completion of an entire mission.

The two major objectives that a mission may entail are:

**ISLANDS**

Targets on islands include barracks, soldiers, machine gun dug-outs and large anti-aircraft guns. For an island to be neutralized, all barracks, soldiers and guns must be destroyed.

**SHIPS**

Enemy ships must be sunk to be neutralized.

During some missions, you will also encounter the following:

**FIGHTER PLANES**

It is not necessary to shoot down all fighter planes in an area in order to complete a mission.

**TORPEDO PLANES**

To defend your carrier, it is necessary to either shoot down torpedo planes or destroy their torpedoes once dropped (with bullets bombs or rockets). When a torpedo plane is sighted, an arrow will appear in the 3-D view indicating its position relative to you.

**HIGH SCORES**

Once you have finished the game, you will have the opportunity to save your score to disk if your score is among the top ten. You will be prompted to enter your name. Your rank will be recorded automatically.
Please make a point of reading through the Salvation-Wings User's Guide at least once before you go 'exploring'. Salvation-Wings is a very large and capable program, and you may miss—or even misuse—some of its many features if you don't know all the details.

We recommend most strongly that you use the Installer program on the Supreme.B disk to install Salvation-Wings, MiniWings, and/or MicroWings. There are some Wings-specific files that must be in the correct folders in order for things to work correctly. The Installer scripts on the Supreme.B disk will assure that everything is copied to where it should be.

Also, please be aware that Salvation-Wings and MiniWings make extensive use of 'resources', which are special parts of certain files. You must use a GS/OS-based copy utility in order to be sure that files with resources ar copied correctly. Salvation-Wings does this perfectly, and so does the Finder. Please, do not use any ProDOS 8-based copy utility to handle any Salvation-Wings files!

[End of update.]
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Apple II Computer Info

'WIZPLUS' TO EDIT YOUR CHARACTERS TO HAVE THIS EQUIPMENT....

WERE TIGERS - POISON YOU.

*** WIZARDRY 3 ITEM LISTING ***

This file lists all the unusual items in Wizardry III. Most of them you can not buy from Boltac's trading post...

Listed next to each entry, is the item register number that you can change with a sector editor:

E903 ORB OF EARTHIN  EA03 NEUTRAL CRYSTAL
EB03 CRYSTAL OF EVIL  EC03 CRYSTAL OF GOOD
ED03 SHIP IN BOTTLE  EE03 STAFF OF EARTH
EF03 MELODY'S AIR  F003 HOLY WATER
F103 ROD OF FIRE  F203 GOLD MEDALLION

F303 ORB OF MHUUZFES (AND NO, I DID SPELL IT CORRECTLY)

F403 BUTTERFLY KNIFE  F503 SHORT SWORD
F603 BROAD SWORD  F703 MACE
F803 STAFF  F903 HAND AXE
FA03 BATTLE AXE  FB03 DAGGER
FC03 FLAIL  FD03 ROUND SHIELD
FB03 HEATER SHIELD  FF03 MAGE'S ROBES
0004 CURRASS  0104 HAUBERK
0204 BREAST PLATE  0304 PLATE ARMOR
0404 Sallet  0504 POTION OF DIOS
0604 LATUMOFIS POTION  0704 SHORT SWORD
0804 BROAD SWORD +1  0904 MACE +1
0A04 BATTLE AXE +1  0B04 NUNCHAKAS
0C04 DAGGER +1  0D04 KATANO SCROLL
0E04 CURRASS +1  0F04 HAUBERK +1
1004 BREAST PLATE +1  1104 PLATE ARMOR +1
1204 HEATER +1  1304 RASCINET
1404 IRON GLOVES  1504 RADIUS POTION
1604 MALIUS' POTION  1704 SHORT SWORD -1
1804 BROAD SWORD -1  1904 MACE -1
1A04 DAGGER -1  1B04 BATTLE AXE -1
1C04 MARGOAZ'S FLAIL  1D04 BAG OF JEMS
1E04 WIZARD'S STAFF  1F04 FLAMETOUNGE
2004 HEATER SHIELD -1  2104 CURRASS -1
2204 HAUBERK -1  2304 BREST PLATE -1
2404 PLATE ARMOR -1  2504 Sallet -1
2604 SIFIC PHILOR  2704 GOLD RING
2804 SALAMANDER RING  2904 SERPENT'S TOOTH
2A04 SHORT SWORD +2  2B04 BROAD SWORD +2
2C04 BATTLE AXE +2  2D04 IVORY DAGGER (GOOD)
2E04 EBONY DAGGER (EVIL)  2F04 AMBER DAGGER (NEUTRAL)
3004 MACE +2  3104 MITHRIL GLOVES
3204 DIADO AMULET  3304 CURRASS +2
3404 HEATER +2  3504 DISPLACER ROBES
3604 HAUBERK +2  3704 BREST PLATE +2
3804 PLATE ARMOR +2  3904 ARMET
3A04 WARGAN ROBES  3B04 GIANT'S CLUB
3C04 BLADE OF CUISINART  3D04 SHEPHERD CROOK
3E04 UNHOLY AXE  3F04 ROD OF DEATH
4004 GEM OF EXCORCISM  4104 BAG OF EMERALS
4204 BAG OF GARNETS  4304 BLUE PEARL
4404 RUBY SLIPPERS  4504 NECROLOGY ROD
4604 BOOK OF LIFE  4704 BOOK OF DEATH
4804 DRAGON'S TOOTH  4904 TROLLKIN RING
4A04 RABBIT'S FOOT  4B04 THIEF'S PICK
4C04 BOOK OF DEAMONS  4D04 BUTTERFLY KNIFE
4E04 GOLD TIARA  4F04 MANTIS GLOVES

That is all of 'em....you can use the program by 'DATAMOST' called
******** WIZARDRY #3 MONSTERS ********

THE FOLLOWING IS A LIST OF MONSTERS. THE WORDS IN PARENTHESES SHOW
THE STATE OF THE MONSTER WHEN IT IS NOT CLEARLY SEEN.

THE LIST GOES IN THE ORDER OF HARDNESS. (LARGER NUMBER = HARDER
MONSTER)

LEVEL 1
---
1= GUARIAN RAIDER (CORSAIR)
2= GUARIAN GUARD (CORSAIR)
3= POLTERGEIST (UNSEEN ENTITY)
4= CRAWLING KELP (STRANGE PLANT)
5= GUARIAN PRIEST (CORSAIR)
6= GUARIAN MAGE (CORSAIR)
7= DUSTER (SHADOWY FIGURE)
8= LARGE SNAKE (ANACONDA)
9= GUARIAN CAPTAIN (CORSAIR)
10= MOAT MONSTER (GIANT SERPENT)
11= GIANT SLUG (SLIMY THING)
12= HIGH CORSAIR (CORSAIR)

LEVEL 2
---
1= HOBGOBLINS
2= GOBLINS
3= NINJA (MAN IN BLACK)
4= DARK STEED

NOTE: 95% OF LEVEL 3 MONSTERS EXIST ON LEVEL 2 THEREFORE, THOSE
MONSTERS HAVE NOT BEEN LISTED IN THE LEVEL 2 CATEGORY.

LEVEL 3
---
1= DUSTER
2= MAN IN LEATHER
3= VULTURE (STRANGE BIRD)
4= LOOTER
5= NIGHT
6= WITCH (WOMAN IN ROBES)
7= PRIEST
8= CRUSADER
9= PIXIE (TINY FIGURE)
10= LEPRECHUAN (TINY FIGURES)
11= ENGLAL TIGER (STRANGE ANIMAL)
12= MAN AT ARMS
13= DWARF FIGHTER (MAN AT ARMS)
14= CENTAUR
15= UNICORN (STRANGE ANIMAL)
16= WERE VULTURE
17= WERE TIGER
18= 2-HEADED SNAKE
19= STRANGLER VINES
20= GIANT LEECH
21= ASTER
22= GIANT ANT
23= KOMODO DRAGON
24= MUMMY
25= BANSHEE

---EXPERIENCE TABLES---

NOTE: FORMAT IS FROM LEVEL #/TO LEVEL #

<table>
<thead>
<tr>
<th></th>
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APPLE II COMPUTER INFO

9/10 78060 85825 81946 70227
10/11 134586 147974 141286 121081
11/12 232044 255127 234596 208760
12/13 400075 439874 419993 359931
MORE: 289709 320000 304132 260639

BISHOP   RANGER   LORD   NINJA "3" ZERO CHARACTER PASSWORDS

1/2 1200 1250 1300 1450
2/3 2107 2192 2280 2543
3/4 3692 3845 4000 4461
4/5 6477 6745 7017 7826
5/6 11363 11833 12310 13729
6/7 19935 20759 21596 24085
7/8 34973 36419 37887 42254
8/9 61356 63892 66668 74129
9/10 107642 112091 116610 130050
10/11 188845 196650 204578 228157
11/12 331307 345000 358908 400275
12/13 581240 605263 629663 702236
MORE: 438479 456601 475008 529756

END EXPERIENCE.

--------------- END FILE 1 OF 5 -----

-- MAZE EDITOR --

MOVEMENT KEYS: Q W E A S D
Z X C

SET FEATURE KEYS: "F" SECRET DOOR
"M" WALL
"D" DOOR
Q,E,Z,C ERASE

DIRECTION SET KEYS: "I" UP
"J" LEFT
"K" RIGHT
"H" DOWN

NOTAE: TO CREATE A FEATURE:

<1> POSITION CURSOR WITH MOVEMENT KEYS
<2> SELECT POSITION OF FEATURE WITH DIRECTION KEYS
<3> SELECT FEATURE WITH FEATURE KEYS

EGO GESSE: TO INSERT A DOOR FACING "SOUTH", POSITION CURSOR, PRESS "M" AND THEN PRESS "D".

-----END SET FILE-----

"1" INITIALIZATION OF SCENERIO

ROOM FOR 500 RECS ON STANDARD FORMAT

1> ENTER VALUES
2> CHANGE SCENERIO NAME
3> INSERT BLANK DISK INTO DRIVE 2, FORMAT SCENERIO

NOTAE:
INITIALIZED SCENERIO CONTAINS ONLY BASIC SET-UP, AND NO ACTUAL "DATA" (EG. PLAYERS, MONSTERS, ITEMS) IS WRITTEN TO DISK, IT MUST BE WRITTEN OR COPIED FROM ANOTHER SCENERIO.

"2" SCENERIO COPY ROUTINES

1> ENTER COPY OBJECT FROM MAIN MENU
2> SOURCE START REC = (START COPYING AT RECORD #7 ON SOURCE)
3> DESTINATION START REC = (START COPYING AT RECORD #7 ONTO DESTINATION SCENERIO)

"3" ZERO CHARACTER PASSWORDS

NOTAE:
ERASES ALL CHARACTERS' PASSWORDS

"4" RECOVER FROM USER BACK-UP

NOTAE:
SETS ALL CHARACTERS ON BACKUP C REATED FROM OPTION MENU DURING BOOT PHASE TO "IN" POSITION IN THE "INN"

"**" END

NOTAE HENF:
ENTERS USER INTO COMPILEING AND LINKING ROUTINES TO ACCESS SCENERIOS WITH "OTHER" FORMATS

---- END FILE 1 OF 5 -----

WIZARDRY SCENERIO EDITOR EDITOR ERRATA FILE 2 OF 5
DATED: 4.13.81 THANKS TO THE BIG M

EDITORS:
A> PLAYERS   E> EXPERIENCE
B> MONSTERS   F> MAZES
C> ITEMS    G> MONSTER IMAGES
D> TREASURE TABLES  H> ENCRYPT MESSAGES

A> PLAYERS

----------

THIS EDITOR IS USED TO RE-CREATE CHARACTERS IN THEIR TRUE IMAGE. THESE IMAGES ARE STORED IN THE "IMAGE.GEN" FILE ON TRACKS A-E WHICH IS WHERE THE COPY PROTECTION IS IN FULL FORCE.

CHARACTERS CREATED FROM SCENERIO ARE STORED ON AN EASY ACCESS FILE, AND BACKED UP ON ANOTHER FILE WHICH IS PROTECTED AGAINST ACCIDENTAL MODIFICATION. IT IS FROM THIS FILE THAT THIS EDITOR READS, SO BE CAREFUL.

SPELLS:
A SPELL CREATION ROUTINE IS INCLUDED IN THIS EDITOR, BUT DUE TO COPYRIGHT PROCEDURES, YOU THE USER WILL NOT HAVE ACCESS TO THIS INFORMATION UNTIL THE TIME COMES WHEN MR. WOODHEAD WISHES TO MODIFY THE SPELLS IN A LATER SCENERIO NOT FORE SEEN AT THE PRESENT DATE.

NOTAE:
FILE 5 INCLUDES ALL OF THE CLAUSES AND BY CLAUSES WHICH APPLY TO THE USERS GROUP IN RESPECT TO THE EDITOR AND MARKETING OF SCENERIOS CREATED BY THE EDITOR. (SEE FILE 5 CLAUSE 2A)

B- MONSTERS

----------

PERTINENT INFORMATION:

"QMAGIC":
# OF MAGICAL SPELLS A MONSTER CAN CAST IN A CERTAIN ENCOUNTER:
(MONSTERS CAN CAST ALL SPELLS TO BE DEFINED ONLY BY DICE ROLL)

"HCLER":

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# OF CLERICAL, 'PRIEST' SPELLS A MONSTER CAN CAST IN AN ENCOUNTER :
"IBID"

"M-RES" : MAGIC RESISTANCE (RESISTANCE TO PLAYER-CAST SPELLS"

"CHUMNUM" : NUMBER OF COMPANIONS IN MONSTER PARTY

"CHUM-PROB" : PERCENTAGE CHANCE OF A SIN SINGLE MONSTER (OR A GROUP WHERE APPLICABLE) OF NOT ATTACKING (GOOD ONLY!)

"PIC ": PICTURE TO BE DISPLAYED WHEN MONSTER APPEARS (SEE CHART FILE 1)

"ENC 1-9" : NUMBER OF TIMES OBJECT CAN BE EQUIPPED TO A CHARACTER BEFORE "BREAKING"

"SPELL" : SPELL ITEM CAN CAST (PART OF SPECIAL POWERS)

SPECIAL POWER= HEALING, INCREASED DAMAGE, SPELL, OR PROTECTION

NOTAE: OPTION 'N' FROM THE PROTECTIONS EDITOR (PROTECT AGAINST ENCHANTED) IS NOT USED IN ANY CURRENT SCENARIO. WHEN IT IS, THAT OPTION WILL BECOME OPERATIONAL.

ALL OTHER INFORMATION ON THIS SUBJECT IS FELT TO BE SELF EXPLANATORY, AND THEREFORE NOT EXPLAINED HERE.

D-TREASURE TABLES

EXPLANATION OF INPUT PROMPTS:

"INBOX" : DETERMINES IF TREASURE IS TO BE FOUND IN A CHEST

"TRAPS" : EDIT POSSIBLE TRAPS IN THE CHEST. IF MORE THAN 1 SELECTED TRAP CHOSEN AT RANDOM, IF ALL SELECTED, CHEST WILL BECOME A MIMIC (SEE BELOW & LIST IN FILE 1)
Welcome to the World of Wizardry

Wizardry

This is part 1 of 2. Spells are in part 2

Written
by
Andrew Greenberg & Robert Woodhead

Published
by
Sir-tech Software

Documentation
Some Other Guy

Thanks
Beowulf and the Strata Crackers gang

Scenario #1

Proving Grounds of the Mad Overlord is the first Wizardry scenario and is designed to introduce you to Wizardry, give you practice playing, and allow you to "build" characters up to 7th level or so.

The evil wizard Werdna has stolen a valuable item from the treasure rooms of the mad overlord Trebor. He has placed it somewhere deep in the dungeons of Trebor's castle, and left fearsome monsters there to guard it. Your mission is to develop characters powerful enough to explore the deeper levels of the dungeon and recover the item.

It is rumored that a "control center" exists somewhere in the dungeon, and that this control center allows explorers easy access to the deeper levels of the dungeon where the item may be found. Thus a logical first step would be to find this facility.

Good Luck, and may your Gods be with you!

Welcome to the World of Wizardry

Wizardry is unlike any other game you have played on your Apple II computer. Using all the power and sophistication of the Pascal language, we have been able to create the most challenging fantasy war game available for any personal computer.
Wizardry is a huge program - in fact, at 14,000 lines of code, it may be the largest single micro-computer game ever created. The entire Wizardry game system, including the programs used to create the extensive Wizardry databases, comprises almost 25,000 lines of code, and is the result of over one man year of intensive effort.

The result is a game that simply could not have been written in BASIC. Wizardry lets you create a control a number of adventurers, who go off on expeditions in search of loot and glory. The more successful a character or group is, the more powerful they become. Each character is specialized. Some are good fighters, some can cast magical spells of many types, and some are good at defeating the many traps that guard the goodies. As a character becomes more powerful, he may gain some general abilities, but in all cases, cooperation is the key to success.

From one to six players can adventure at a time, with each one controlling one or more characters. Over the course of many, many adventures, the characters may be able to fully map out the maze and wrest from it the arcane items that are carefully guarded in the more inaccessible depths. However, this can take quite a lot of playing. Fortunately, additional scenarios with greater perils and rewards are available, you may explore caverns, crumbling ruins, or even chart out the unmapped and unknown mysteries of the huge world of Wizardry.

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Adventure Inn
Temple of Cant
Holtac's Trading Post
Edge of Town

NOTES
A FEW WIZARDRY FEATURES

Multi-Player: Wizardry allows up to six characters to adventure at a time, and many more can be stored on diskette.

Complete Castle: All adventures start and end in the Castle. Features provided include Tavern, Hotel, Temple, and Trading Post.

Specialized Characters: All Wizardry characters are unique individuals. They can be of five races and eight classes, have differing abilities, cast spells, fight, etc.

50 Spells: Spells are used to invoke supernatural aid. There are 50 that can be cast, and they vary in power and effects. Certain characters can learn certain spells, and certain magic items can also cast spells.

Hundreds of Magic Items: Magic Items and mundane items can be bought, sold, or found in the maze. Many cast spells, or give the user special abilities. Magic items can have over 100 different attributes, such as who can use them, who they can be used against, who they protect the user from, and on.

Hundreds of Monsters: Monsters travel in groups, like characters do, and in many cases have similar abilities, like spell casting. Monsters also guard treasures, and may be found with other, compatible monsters. For example, a lair might contain a Frost Dragon, 4 evil Bishops and 9 Bushwackers.

3D Maze: The maze is displayed in 3D perspective, just as you would see it if you actually were in a maze looking in a particular direction. Many tricks and traps are to be found in the maze, such as Stairs, Pits, Chutes, Dark areas, Rotating Rooms, Elevators, Teleportors, and even areas where Magic does not work.
Special Goodies:
In certain places in the maze unusual events and objects, unique in themselves, may be found. The adaptable nature of the database allows us to program "Specials" which may only happen once! What they are, we aren't saying.

This manual is designed to teach you how to play Wizardry. Only rarely, however, will we reveal information about the internal workings of the Wizardry game system. This is in direct contrast to other game systems where all the rules are visible. Part of the fun of Wizardry is experimenting to find out the best methods for handling various situations.

The best way to learn how to play Wizardry is to go through the manual in order and actually try out the options described. With this idea in mind, get out your Wizardry diskette and we will start the game.

You will notice there are labels on both sides of the diskette. This is because Wizardry is such a large program that we have to use both sides of the diskette. However, you only have to flip the diskette once each time you turn on the computer.

Place the diskette with the label marked "BOOT THIS SIDE" facing up into the disk drive. Turn on your computer. If you have one of the older Apples without the autostart ROM you will have to boot by entering a 6 CTRL-P or PR#6 command. Otherwise, the disk will start and in a few seconds the Logo Page will appear.

Press RETURN to continue. You will then be presented with three options:
S)Start the Game.
U)tility Options.
T)itle Page.

To select an option, press the letter of the desired option. Option T will just replot the title page. Option S starts the game proper. Option U is used to access two special facilities described below.

Assuming you pressed S, the disk will hunt around for a few seconds and then you will be presented with a message that says:

PUT SCENARIO IN DRIVE 1, PRESS RETURN

This is when you flip the diskette. Open the drive door, take out the disk, flip it so the label that says "SCENARIO" is up, carefully place it back in the disk drive, close the drive door, and press RETURN.

If this is done correctly, the disk will whirl for a few seconds and then the "CASTLE" will appear. You are now in the game proper. If something goes wrong, the INSERT message will be repeated.

Congratulations, you have just completed the first step towards hours, days, months, even a lifetime of challenge and adventure!

SPECIAL UTILITY OPTIONS

First of all, we suggest that you read the rest of the manual before you read this description of the utility options.

Pressing U for Utility Options presents you with a page containing five more options:
R)ecover accidentally lost characters.
T)ransfer characters to a new scenario.
B)ackup characters.
C)hange character names.
L)eave utility options.

If something awful happens while playing a game that causes the Apple to crash, such as a power failure, it is possible that the current party of adventure's might be lost in the maze. Option R lets you recover these characters. Pressing R will prompt you to flip the diskette and will then search for lost characters and restore them. However, since it is possible to cheat by turning off the Apple if the party is in trouble, using this option adds 10 years to the age of any character restored by it.

After you have conquered the initial scenario you will probably want to move on to another. Option T lets you move characters from one scenario to another. You will be asked to flip the diskette and a list of all the characters on the diskette will be displayed. Choose a character by pressing its letter. If it has a password you will have to enter it. It will then be removed from that scenario.

Next, you will be asked to put in the scenario side of another Wizardry diskette. This done, that character will be placed on that scenario if there is room for him and if there is not already a character of that name on that scenario disk. If he cannot be placed then you will be asked to put the original scenario back so that he can be restored.

Note that some powerful magic items will only work on one scenario. When you try to move a character with these items, you will be told what they are, and you will not be able to transfer the character. If this happens, either sell or give away the items and then try the move again.

B)ackup characters lets you make a record of your characters status by transferring them to any scratch disk you may have. The scratch disk must be either a DOS 3.3 or Pascal formatted disk, and any data on it is destroyed. If your Wizardry disk ever becomes unreadable, you can return it and the backup for regeneration. See the inside back over of the manual for details.

C)hange character names lets you rename your character. The main use for this option is to prevent name conflicts when transferring characters between scenarios.

GET...READY

Once you have started the game, you will be placed in the Castle, which will be discussed later. However, if this is your first time in the game you will have to create some characters to play with. To do this, you will need to get to the training grounds.
One of the options in the Castle is the Edge of Town. Press E and you will see a list of further options, among them TRAINING GROUNDS. Press T and you will be taken there.

The Training Grounds allow you to create a new character and prepare him for use. Before we go into the various options available, it is a good idea to learn exactly what a character is.

A character is your alter-ego in the world of Wizardry. Like anyone, he has skills, abilities, and possessions. You control him by telling the computer what you want him or her to do. All the parameters and information about your character is kept on the Scenario Disk until you wish to use him, and after you finish a game, it is returned and updated. Thus, you can continue to play with him over many sessions, and the more you play, the more capabilities he gets, and the more challenging and interesting the game becomes.

There are six basic characteristics a character has. They are:

- **STRENGTH**  
- **IQ**  
- **PIETY**  
- **VITALITY**  
- **AGILITY**  
- **LUCK**

Based on the 6 characteristics, your character may become one of eight classes. Each class has certain prime requisites, or minimum scores in certain of the characteristics for qualification. Each class also has many abilities, advantages, and disadvantages which other classes may not have. When you are first starting out, you will probably only be able to qualify for one of the first four classes. Later, as you become more powerful, you may qualify for entry into a better class. The classes are:

- **Fighter:** 
  - A basic man at arms. Fighters need a minimum strength of 11. Fighters have high hit points. They can use any armor and weapons, and are very good at combat.

- **Mage:** 
  - The sorcerers. Mages need a minimum IQ of 11. Mages have poor hit points. They can use any staff or magical staff as a weapon, and cannot use any armor except for leather armor and use priests’ weapons. They use both magical and priestly spells, although they do not learn them as fast as the other classes. While they start learning mage spells immediately, they must reach the fourth level of ability before priest spells and the ability to dispell becomes theirs. Mages must be of Neutral alignment.

- **Priest:** 
  - The holy men. Priests need a minimum piety of 11. Priests have hit points almost as good as fighters, and may use any armor or shield. Priests may not wear helmets, and must use specifically consecrated weapons such as staffs and cudgels. Priests do not fight as well as fighters but they can throw priestly spells. Additionally, Priests have the ability to Dispell! Some monsters in the maze, collectively termed the "Undead" are animate only through the power of the bishop. These monsters can sometimes be forced from the normal planes of existence back to the abyss where they were summoned from. Priests may not be of Neutral alignment.

- **Thieves:** 
  - Thieves require an agility of 11. Thieves get better hit points than mages, but are not as good at combat. They can use daggers or short swords as weapons, can wear leather armor and use a shield. Thieves are very good at circumventing the noxious traps that may be between a party of players and some loot. Thieves may not be of Good alignment.

- **Bishops:** 
  - Bishops are a combination of priest and mage, and have advantages and disadvantages of both. Bishops have hit points intermediate to both, can wear leather armor and use priests’ weapons. They use both magical and priestly spells, although they do not learn them as fast as the other classes. While they start learning mage spells immediately, they must reach the fourth level of ability before priest spells and the ability to dispell becomes theirs. Bishops also have the ability to identify the nature of magical items, but cannot identify the item only by the hefty charge levied for that service in the castle. However, there are some disadvantages to having a bishop inspect an item. If the bishop is not very careful, he may touch the item by accident. This will cause an Edge of Town to be done, and if the item is cursed, the bishop will be forced to use it. Like priests, bishops may not be Neutral.

- **Samurai:** 
  - Samurai are fantastic fighters, and can use all fighter weapons and armor. Their hit points start out better than a fighter, but in the long run a fighter will have better hit points. At the fourth level of ability they slowly begin to acquire magical spells. Samurai cannot be of Evil alignment.

- **Lords:** 
  - Lords are a combination of fighter and priest. They have the hit points and abilities of fighters but at the fourth level of ability they gain priestly spells, and the ability to dispell. Lords must be of Good alignment.

- **Ninjas:** 
  - Ninjas are inhuman fighting machines. They can use any weapons or armor, but work best without any! When fighting without protection with their bare hands, they can cause havoc and destruction, and may even kill the strongest opponent with a single blow. Their great training gives them a lower hit point pool. They start with lower hit points. At the fourth level of ability Class they reach higher and higher levels of ability. However, they get hit points as does a Thief and gain no spells. Finally, they must be Evil.

There are many other statistics and abilities you must be aware of. These are:

**ALIGNMENT:**
- Alignment describes your character’s outlook towards the world, and his general ethical status. The possibilities are GOOD, NEUTRAL, or EVIL. Note that some classes have alignment restrictions and be aware that GOOD characters will not be allowed to adventure with EVIL characters. Thus Lords and Ninjas will never adventure together, but a NEUTRAL Samurai could go with either. Alignment must be chosen when a character is created and cannot be changed through any normal process. Thus, you should be careful in choosing it.

**EXPERIENCE POINTS AND LEVEL OF ABILITY:**
- Experience points are awarded for killing monsters, each survivor gets some experience points. When the total reaches a certain value, you attain the next level of ability when you rest up in the next inn. The higher level you are, the more you need to earn to get to the next level, up to level 13 when it
becomes a constant amount. The amount needed varies depending on your class. Each time you make the next higher level, you gain more hit points, you may gain new abilities or better old ones (like fighting ability) and you six characteristics may change. Usually they will go up, but sometimes they will decline. The older you are, the more chance of a decline! If you are able to throw spells, you may learn new ones and you will probably gain the ability to cast more of them. Since your characteristics are generally rising, you will probably get them high enough to qualify for a better class.

**AGE:**
Age is simply how old you are! After 50 you start getting more and more feeble.

**Gold:**
The amount of gold you have to spend.

**Equipment:**
The items you have. These may be mundane armor and weapons, or magical items of some sort. You can buy or sell them, trade them to others, use them, or find them in the maze.

**Armor Class:**
It is a measure of how well protected you are. This measure includes armor and other things like hinderance and AGILITY. Bare skin is AC 10. A Sherman tank is about AC -10. The abbreviation AC is often used to denote Armor class.

**Hit Points:**
The amount of damage you can sustain before death. Each time you are hurt, a certain number of hit points are deducted. You can recover lost hit points, up to your maximum, by resting in the castle, or by the means of magical spell, potion or device. The abbreviation HP will often be used in place of hit points.

**Spell Books:**
These are a set of small books each player has in which he records the spells he knows.

**Spells Left:**
These tell you how many spells of each LEVEL OF POWER and class (magical or priestly) you can throw. There are seven LEVELS OF POWER, and the higher the LEVEL, the more devastatingly effective the spell is. Resting up in the Inn will restore a player so that he can cast all the spells he is entitled to. Thus, the smart spell caster rests up after each expedition.

**Status:**
This records what the player's status is. Most often he will be OK. However, he could be ASLEEP, AFRAID, PARALYZED, POISONED, STONED, DEAD, ASHES, or LOST FOREVER, to name a few. When a character is not ok, he can be cured either by application of a spell or by hauling him back to the castle and paying for the service at the temple.

There are many more characteristics which are stored but you never see. Now that you know what a character is all about, you can start creating one. The main page of the TRAINING GROUNDS has three options:
on diskette, you will have the option of creating him (which really means you are back at the first option, silly goose).

Once you have gained access to a character, you may do any of the following:

D)ELETE:
eradicates your character.

R)EROLL:
is equivalent to deleting and then creating character again.

C)HANGE CLASS:
lets you change your character into a character of another class. You will be told which classes you qualify for, and you may press a letter to switch to that class. If you do so, the character becomes a first level character of the new class with zero experience points, but he gets the following advantages:

- he keeps his maximum hit points
- he keeps the knowledge of the spells he may have learned in the previous class, and may cast one spell for each spell he knows. Additionally, he may learn new spells of levels in which he already knows one or more spells, but not any spells of other levels. The net effect is to give him some of the abilities of his previous class(es).

S)ET NEW PASSWORD:
lets you alter the password of the character. You'll be asked to enter the new password twice to make sure it is correct.

I)NSPECT:
lets you see all of your character's statistics and abilities. You will be shown the character's class, level, alignment, characteristics, hit points, gold, experience, spells left and items, and you will have the option to look at his spell books. This page of information can be reached from many places and will let you do different things when displayed from different places. The only option available from the Training Grounds is the ability to R)EAD SPELL BOOKS. Pressing R lets you choose if you want to read M)AGE or P)RIEST spell books. Pressing either will then display the names of the spells of that class that your character knows. Programs to print these spells will be available in the future.

Options available in other areas include:

T)RADING:
lets you trade items and gold to members of the party your character is adventuring with. Pressing T will display a list of the characters in the party, and prompt for the number of the character you want to trade with. Then you will be asked how much gold you want to give. You can enter an amount or press RETURN to skip giving gold. Then you will be asked which item you want to give. Again, you can press RETURN or enter the number of one of your items. The process of giving items will repeat until you press RETURN.

E)QUIPPING:
lets you decide what of your characters possessions he will wear. A list of your weapons, armor, shields, and so on, will be displayed, and you may choose which, if any, you want to wear. Note however, that if you have found a cursed item you will be forced to wear it if you equip. That's why it is a good idea to have items I)dentified.

CASTING S)PELLS
lets you cast various spells useful to the party. Some, like curative spells that restore hit points, ask what party member is to receive the spell.

U)SE AN ITEM:
lets you use items to cast spells.

I)DENTIFYING is done only by Bishops and lets them attempt to divine the true nature of an item.

L)EAVE
returns to wherever you were before you inspected.

Third Training Ground Option
There is one last option in the Training Grounds. Type in *ROSTER and press RETURN. You will display a list of all the existing characters. Displayed are name, class, alignment, hit points and status (dead, alive, etc.). You must press L to L)EAVE this page.

Lastly, by just pressing RETURN on the main page, you can move to the castle. (This is really an option so they lied; there are four options.)

GET...SET

The castle is the starting and ending point of all expeditions. There you can rest, create parties, get help from the gods, buy and sell equipment, or go to any other part of the game.

There are five main options in the castle. These are:

THE A)DVENTURERS INN
G)IGAMESH'S TAVERN
THE TEMPLE OF C)ANT
B)OLTAC'S TRADING POST
THE E)DGE OF TOWN

To enter any of these, just press the first letter of the name of the place you want to go.

Normally, the first stop at the beginning of a session is always G)igamesh's Tavern, where you can create a party. At the top of the screen there is a display of the current party, with space for six players. Displayed are position number, name, Alignment, and Class, Armor class (AC), Current Hit Points, and Status of each character. Alignment and class are displayed in the form A-CCC where A is the first letter of the character's alignment (G, N, or E) and CCC are the first three letters of the character's class. If the character is OK, then the status area will display his maximum hit points.

In the tavern you may:
A) DD A MEMBER TO THE PARTY
R) EMVE A MEMBER FROM THE PARTY
#) TO INSPECT A MEMBER
or PRESS RETURN TO EXIT

A) DD:
will ask you to enter a character's name and password and will add him or her to the party. Characters cannot be added if they are marked on expedition (see below) or if they are of incompatible alignment. Characters who are not OK can be added so that they can be taken to the maze where spells can be cast on them.

R) EMVE:
asks you for the number of the person and removes him from the party.

#) means you can press any valid player # to inspect that player. A page full of information about that character will be displayed, and you will be able to:
R) ead his spell books, E) quip him with armor and weapons, T)rade items and gold to other characters, or L) eave and return to the Tavern.

Finally, just pressing RETURN takes you back to the marketplace of the castle where you can go anywhere else.

Important Note:
When your character joins a party, his record on diskette is marked as "On Expedition." Normally, when you leave an expedition, are lost forever, or just leave the game, the mark is changed back to "Available." However, if you turn off the computer, or RESET it, all knowledge of things that have happened to your character since you joined the party will be lost, and the computer will think he is still out on an expedition. The only way to recover a character like this is to use the Utility functions recovery program previously mentioned. The reasons for marking characters is that it:
1. Prevents cheating by Reset when you run into some monsters you don't think that you can handle
2. Provides compatibility with versions of Wizardry for multi-Apple networks, such as that provided by the Corvus Constellation.

An accidental power failure or RESET press will happen once in a blue moon, and you should never have to worry about this at all.

A) VENTURER'S INN:
is a place where any weary adventurer can get a place to rest and recover from his exertions, and all for a modest charge. When you enter, you will be asked for the number of the character who wishes to enter the Inn, or you may press RETURN to leave the Inn.

Once inside, a character may rest in the stables overnight, or use one of several types of rooms. Overnight resting allows the character to regain his spells, but does nothing to restore hit points. The other rooms let you regain hit points at a certain rate per week, and the more expensive the room, the faster the rate of healing. Remember, AGE is important in this game, so you do not want to spend too much time in a bed! As you rest you will see a week by week plot of your hit points going up and your gold supply going down. It will end when you are fully healed or when your gold runs out, or if you press any key.

After using the Inn, a check is make to see if you have attained the next level of ability. If you do, then your Maximum hit points will increase, your characteristics may change, and you may learn new spells and gain the ability to cast more of the older spells. If you have not made the next level, you will be told how many points you need to get there.

Whenever a party brings back characters who are dead, paralyzed, or otherwise unfit, they are removed from the party by the castle guards and taken to the TEMPLE OF C)ANT. The sole exceptions are POISONED characters who will get well on their own, and characters that are LOST forever, who will be buried. Upon entering the temple (press "C") you will be asked who you want to help, and if the priests of the temple can help him, they will tell you what donation is required, and ask who will pay. If a party member can afford the fee, then the sycophants will go to work. If the character is anything but dead or blown to ashes, success is assured, but otherwise there is a chance that the temple's best efforts will be to no avail! A good VITALITY usually means that they will be able to succeed, but old, infirm, characters may be in big trouble. Dead characters who fail to be raised from the dead are reduced to ASHES! There is still hope because for a larger fee, it is sometimes possible to resurrect a person from ashes, but if this attempt fails, the character is dead forever and can never be restored by any means!

The commercial center of the castle is owned by a friendly dwarf named Boltac. However, like all dwarfs, Boltac likes gold and will sell you your own armor if he can. Also, since he is a monopoly, he tends to do pretty well. Press B to enter his trading post. After you have indicated who is to enter (by pressing a number), you will be able to:
B)UY AN ITEM
S)ELL AN ITEM
have an item U)NCURSED or I)DENTIFIED, or
L)EAVE.

B)UYING an item lets you see a list of items for sale and their prices. You can scroll F)ORWARD or B)ACKWARD through the inventory. 
P)URCHASE an item by entering a number after pressing P
return to the S)TART of the list -- or --
L)EAVE the shelves.

If you attempt to buy something that the character cannot use (for example, a mage buying plate mail) you will be asked to confirm the purchase.
S)ELLING an item will display the items you have, along with the price that will be paid for it, which is generally half the buying price. Unidentified items are only worth one gold piece.
U)NCURING and I)DENTIFYING:
also list your items and ask which you want uncursed or identified. Items which
are cursed are both detrimental and sticky! If you have a cursed sword, for
example, not only will it refuse to fight well, but it won’t let you put it
down! However, the curse does not take effect until you change your equipment,
so before you do that, it's a good idea to get it identified.

Identification is the same as the BISHOP ability. When you find an item in the
maze, you know what it looks like but not what it is! By getting it identified
you can sell it, get rid of it if it is detrimental, or trade it to someone who
could use it. Both of these services cost a variable amount, depending on the
power of the particular item.

Note:
Boltac's is a true store and keeps an inventory of items for sale. While
mundane items are available in unlimited supply, magical items are not. It is
possible for Boltac to run out of stock! If this happens, the only way for him
to replenish his stock is by selling him items you have found in the maze!

To go anywhere else you have to go to the E)DGE OF TOWN. There you can go to
the T)RAINING GROUNDS, back to the C)ASTLE, into the M)AZE, or L)EAVE the game. If you go to the training grounds, your party is disbanded.

GO...

The most important part of the game of Wizardry is adventuring. After you have
gathered together in a party, purchased or traded for the best equipment you
can afford, and rested up to restore hit points and spells, it is time to leave
the safe, but expensive, confines of the castle and enter the unsafe, but
possibly lucrative, corridors of the maze.

As soon as you enter the maze from the castle, you will be placed in the camp.
Being in camp means that you have stopped somewhere and set up a strong guard
against monsters, so that members of the party can trade, equip new items,
record, and so on. You will see a display of the characters in the party much
like that seen in the castle, and a list of options.

You can inspect any character by pressing his number, just like in the Tavern.
In addition to the options available in the Castle, you will be able to: CAST S)PELLS and U)SE ITEMS.

When inspecting a character, if you press S, you will be asked what spell you
want to cast. You must enter the name of the spell that can be cast in camp
(see Spells and Items) and that you know how to cast, and that you have a spell
point left to use to cast it. Remember that for each level of power of spells
for both magical and priestly spells, you are given a number of spells you can
cast. Say you have five first-level, three second-level and one third-level
priestly spells. If you know (have in your spell books) three first-, one
second- and one third-level spell, that means that you can cast any of your
three first-level spells five times, or two once and one three times, or any
combination. You have the ability to cast any of your first-level spells five
times, since you know only one second-level spell you can throw only it, but
you can do it three times, and you can cast your third-level spell one time.

Note that it is possible to be able to throw spells of the second or higher
level, but not know any spells of that level!

For many of the camp spells, especially curative spells, you will be asked who
is to be the object of the spell. The characters and their numbers will be
displayed and you press the number of the character who is to receive the
spell.

Some magic items, such as scrolls or wands, can cast magic or priestly spells
as well. By USING those items you can cast the spell at no cost to you. Again,
you may be asked who is to receive the spell. Also, there is a chance that the
item will lose its magic powers. Scrolls are only good for one application, but
a wand may last for 2D or 3D!

The other options in the camp are: E)QUIP THE ENTIRE PARTY, R)ORDER THE PARTY,
and L)EAVE THE CAMP.

E)QUIP does the same as the equip that you can do in the inspect page, but it does it
for everyone in the party. It is very handy the first time you go into the
maze.

R)ORDER
lets you select the order in which the players will march through the maze.
When fighting monsters, only the first three characters can attack with
weapons, and in turn be physically attacked by monsters. Thus, it is a good
idea to have the weaker and less armored characters in the rear. You will be
asked for the number of the character who is to go into first position, the
number of the character who is to go in the second position, etc.

D)isbanding the party is useful if your party is totallylost or so weakened
that your chances of getting to the castle are remote. Disbanding your party
essentially leaves your characters in the maze waiting until a new party can
rescue the disbanded members. The status of disbanded characters is similar to
characters who have been slaughtered in the maze. The difference is that
disbanded characters are still alive and retain all of their possessions.

Additionally, there is no chance the monster will snack on them. Disbanded party
members can be located using the KANDI spell and rescued when found by
the T)RAINING GROUNDS, back to the C)ASTLE, into the M)AZE, or L)EAVE the game.

I)nspection. The I)nspect area option is described later on in the manual. Your
disbanded haracters will age 1/2 year as the have to wait around for someone to
come and get them.

L)EAVE lets you break camp and go into the maze. This is where the real adventure
begins.

Once in the maze, a HI-Resolution graphics display is used. The information
about your characters is at the bottom of the screen. In the top left corner is
a 3D Hidden Surface display of where you are in the maze. To the right of it is
information about which spells are active at the time, such as protection or
light.

Above that is a short list of your option keys, and between the maze display
and the status information is a blank area where messages may appear. At some
locations you will find special objects such as messages, pits, stairs, etc. When you move onto one of those squares a message to that effect will appear. When you enter the maze from the city, you are at the bottom of a set of stairs.

Wizardry uses a 3D perspective plot of the maze as you would see it if you were actually there. You will see the walls of the maze extending into the distance. By using a spell such as MILWA you can light up the maze so that you can see further, and also see secret doors.

Try to get a good idea of the relationship between a top view (a map) and the 3D perspective view. Mapping is an essential part of Wizardry, and the use of the 3D display makes it more challenging and interesting.

While moving around, your options are:

- F - moves you forward a step in the direction you are facing
- L - turns you left
- T - lets you kick through a door if it is right in front of you
- S - updates the status area
- C - enters the camp
- I - lets you toggle quick plotting of the maze. See the LAMILWA spell description for more information.

As an aid to quick movement, the W-A-D cluster of keys can be used in place of the F-L-R arrangement. If you place your left hand above the S key you will see that your middle three fingers fall onto the W-A-D cluster. To move in any direction, press with the finger that points to that direction. To turn left, press the leftmost finger (A). To turn right, press the rightmost finger (D). And to go forward, press the center (W). With a little practice you will find this arrangement to be very handy and natural, as you can keep the fingers of your left hand on the keys at all times, and use the leftmost two fingers of the right hand to press K.

As you move through the maze you may find many interesting things, and messages and questions may appear. You may also encounter monsters, in which case, combat may ensue.

It is a good idea to keep a map of the maze. This lets you get back to the exit. Also, be aware that there are secret doors which you rarely see, but you can get through by trying to Kick it. If there is a door where you Kick, you’ll go through. Otherwise, you’ll stub your toe!

As was mentioned above, the I)nspect option lets you search the maze for the bodies of slain adventurers. When an entire party is wiped out (no one makes it back to the castle and the cemetery is displayed) the bodies may or may not be eaten by the monsters. The most likely consequence is that a body will be stripped of some gold and equipment and left where it fell. Less likely is that it may be dragged to another location in the maze, perhaps even lower down. Least likely, but an increasing chance the deeper you are in the maze, is that the body will be devoured. The RANDI spell may be used to locate dead adventurers.

When you I)nspect, a search is made for all dead bodies in the same area as the party. A body is in the same area if you can get to it without going through a door. So, it must be in the same room or corridor as you are. If bodies are found, they will be displayed with a number to the left. You can press "P" to pick up or "L" to leave. When you press "P", you will be asked for the number of the character to pick up. When a character is picked up he is added to the party, and so if the party is six strong, you cannot pick up any more party members.

Once back in the castle, the normal Temple donations can be used to obtain the correct spells for revival of the characters.

A direct consequence of this is that any character you don't want any more because he died and is lost somewhere in the maze, has to be deleted via the Training Grounds. If you do not delete him, space will be wasted on disk and may not be available to others. Also, since the dead characters are taken away from the party by the guards when the party returns to the castle, it is a good idea to strip them of items of gold before returning to the castle. If the character cannot be raised from the dead, and is dead forever, the Temple will sacrifice all he has to the gods, because he obviously did something to deserve not being restored!

COMBAT....

Without some sort of challenge, Wizardry would just be a game of mapping. And after all, who gathers all the money in the maze together so that characters can get it all in nice packages? That's right, it's the job of the hardworking, and hopefully luckless, monsters. Thus, every so often your party will encounter monsters. They may be wandering around like you, or they may be inhabitants of a room that you have just entered. In any case, since monsters do not generally like the habits, morals, and taste in armor and weaponry of characters, and because they really do like the smell and taste of a good "leg of adventurer", it is likely that a fight will take place.

When you have encountered monsters, a message to that effect will appear. In a few seconds that will be replaced with a display of the monsters that are opposing you, as well as a full color picture of the monsters.

For each group of monsters, and there can be four of them, you will be told the group number of the monsters, how many there are, what they appear to be, and, in parentheses, how many are able to attack the party.

It is interesting to note that you do not always know exactly what the monsters are! Most of the time you will be told what they look like, and later on in the melee you will find out what they really are. There is a small chance that if your party is of GOOD alignment (no evils and at least one good character), the monsters you meet may be friendly and will invite you to pass. If not, however, combat will ensue. Combat consists of a series of rounds, during which each
character and monster can do a single activity. First, the computer decides what the monsters are going to do. You may notice monsters moving forward in order to attack you. Monsters in group 1 are the closest to you, so they have the best chance of being able to physically attack you, and physical attacks by characters have a better chance of hitting them. Spells can be cast without penalty by any monster in any group which has the ability to cast spells, thus spell casting monsters will generally hang back, where it is harder for your fighters to attack them. Similarly, the first 3 characters in your party automatically defend the second three (if any). This means that the second three cannot be attacked physically. It also means that they cannot physically attack the monsters.

**COMBAT OPTIONS**

After the monsters have made their decisions, it is time for you to select the activities your characters will engage in. In the area where the active spells were displayed, a list of options will be presented for each character. Just as in other areas of Wizardry, options can be selected by pressing a single key. The options are:

- F - Fight a monster. If more than one group of monsters oppose the party, you will have to press the number of the group you want to fight.
- P - Parry. You use your weapon as a tool of defense. Makes you harder to hit.
- S - Spell. You enter the spell you wish to cast and if you can cast it, you may be asked which group or person you wish to cast it on.
- U - Use an item. A list of items that can cast a spell are displayed and you can use an item by pressing the number of the desired item. Or, you can press RETURN to try another option. You may be asked the further questions needed to direct the spell to the proper recipient.
- R - Run! Using this option causes the entire party to try to run. There is a chance your party won't get away, which is dependent on depth in the maze, party size, etc. If you don't get away, the monsters may chase you through several rooms, so running can get you lost!
- D - Dispell. This option is only available to Priests, and high level Bishops and Lords. It works only against "Undead" (Zombies, Mummies, Skeletons, Wraiths, etc.), and causes some of them to disintegrate. The effectiveness of Dispelling depends on how powerful the dispeller is and how resistant the dispellees are. Like Fight, you have to specify the group you are attempting to dispell.

If you make an error entering the activities you want your characters to perform, there are several ways you can make a correction. If the option requires special information, such as group number, you can press RETURN to cancel the selection and make another. If, however, the computer is now asking for options for the next character, you can press "B" to go Back to the beginning and re-enter activities for all the characters.

After you have selected activities for all the characters, you will be given one last chance to change your mind. At this point, you can press RETURN to commence fighting out the round, or press "B" to go back and re-enter the activities all over again.

When all this is done, the computer will mediate the combat. Actions as they occur will appear in the message area. It may be that your character will be killed or incapacitated before he has a chance to do what you wanted him to. At the end of the round the statues are replotted. Dead or incapacitated characters are shifted to the back of the marching order. Monster groups totally destroyed will disappear and the other groups will shift up. (If you are fighting three groups and you kill off group 1, then the second and third group would shift up to become the first and second group.) Remember that the number after the monster name in parentheses is the number of live monsters that are active. For example:

```
7 BUSHWACKERS (4)
```

means there are seven live Bushwhackers of which only four are able to fight.

Perhaps you cast a Katino spell and three fell into a coma?

This entire process repeats itself until either all of the party is dead (in which case it is off to the cemetery as you have made a tasty snack for the monsters), or all the monsters are dead, in which case all the survivors get the loot and experience.

Reminder:

Dead or Incapacitated characters are not left in the maze, but are automatically carried by surviving party members. Only when the entire party is slaughtered are characters strewn about the maze. It is these unfortunates who can be searched for via the Inspect option and the Kandi spell.

The experience each character gets will be plotted where the monsters names were listed, and the gold and items found, if any, will plot in the message area.

However, there might be one slight problem! The treasure may be in a chest, which you will have to open. And there may some sort of trap in the chest. However, chests can hold a lot more loot.

If a treasure chest is found, you will have to try to open it. A chest will be displayed, and you will have the following options. Each will ask you who is doing the action, and you will have to enter the number of that person.

- O - Open the chest. If you think the chest is not trapped, then just open it! But, if it is trapped, watch out!
- I - Inspect the chest. There is a chance that inspecting the chest will set off the trap (if there is one), but the chance is much lower for Thieves. If you inspect you will be told what you think the trap is. But it may not be that at all! Each person can inspect only once.

- C - CALFO spell. This spell is a priestly spell that determines the correct trap 95% of the time. Only a character that knows the CALFO spell, and has the spell points to cast it may use this spell.
- D - Disarm the trap. You will have to enter what trap you think it is, and had better not make any spelling mistakes. If you enter the wrong trap name, and the trap goes off, you may be in big trouble.
L - Leave the chest alone. You don't get the loot but you don't set off any traps either.

After the chest has been opened, the loot will be distributed evenly between surviving characters, and any items found will be distributed randomly. It is a good idea to leave one or two of your item slots open so that you get your fair share.

After the combat, it may be a good idea to CJAMP and cast a few restorative spells if anyone got hurt. Otherwise, it's onward, ever onward!

TIPS FOR BEGINNERS
- Balance your party. When first starting out, have a party of 2 fighters, a priest, a thief, and 2 mages. This is the strongest party you can make out of level 1 to 3 characters.
- Remember that "Discretion is the better part of Valor." A good motto for beginning adventurers might be "He who lives to fight another day." It is inevitable that you will eventually meet a group of monsters tougher than you are. If party members start dropping right and left, run for it.
- Use your spell casters wisely. When fighting monsters, have them use "KATINO" to knock out the opposition so you can slit their throats. Of course, this may not work against some monsters, and these you should run from until you are more powerful.
- If anyone gets hurt, or if you use any spells, get out of the maze as fast as you can and recuperate. The best way to build up character is to dash into the maze, fight one encounter and run out again.
- Make accurate maps, and check them constantly. Be wary of nasty tricks designed to create inaccurate maps. Maps are especially useful if you are running away from monsters a lot.

-END- 1 of 2

MAGIC...

The acquisition and use of magic items is of paramount importance to the successful adventurer. A good magic item can be worth any price in certain situations.

Magic items range from one-use potions and scrolls to some of the most powerful artifacts known. Some are available in the Trading Post, but most of the really important ones can only be found in the depths of the maze, usually guarded by fearsome monsters.

Magic items may do many things. Generally they will do one or more of the following:
- Cast a spell
- Alter armor class
- Alter fighting ability
- Protect against certain monsters
- Work better against certain monsters
- Give the user special abilities
- Be usable only by certain characters

There are some magic items that will do other things. These capabilities will only come to light when they are used.

When magic items are first found in the maze, their true nature is not known. Only Bishops or the Trading Post can identify them. Even so, some items may have hidden attributes. Some items are Cursed. When you have a cursed item in your possession and you equip, you will be forced to use it! This usually has detrimental consequences, especially when your sword decides not to fight anymore!

When a Bishop inspects an item, he takes a chance that he will touch it. If this happens he is forced to equip, and if it is cursed, too bad.

While some items can cast spells, most spell casting is done by Mages, Priests and the like. There are 50 spells, divided into Mage and Priest categories. Each category is further divided into seven levels of power. The higher the level of the spell, the more potent it is. Each spell has a "power word" required to cast it, and when asked what spell is to be cast, this word must be entered. Following is a complete description of all the spells. For each spell, the name, translation, level, type of spell and area of effect are given. The type of spell refers to when the spell can be cast (Combat, Camp, or anytime).

PRIEST SPELLS
LEVEL 1 PRIEST SPELLS

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Level</th>
<th>Type of Spell</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>KALAKI</td>
<td>BLESSINGS</td>
<td>1</td>
<td>COMBAT</td>
<td>THE PARTY</td>
</tr>
</tbody>
</table>

KALAKI reduces the AC of all party members by one, and thus makes them harder to hit.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Level</th>
<th>Type of Spell</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIOS</td>
<td>HEAL</td>
<td>1</td>
<td>ANY TIME</td>
<td>1 PERSON</td>
</tr>
</tbody>
</table>

DIOS restores from one to eight hit points of damage from a party member. It
will not bring dead back to life.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADIOS</td>
<td>HARM</td>
<td>1</td>
<td>COMBAT</td>
<td>1 MONSTER</td>
</tr>
</tbody>
</table>

BADIOS causes one to eight hit points of damage to a monster, and may kill it. It is the reverse of DIOS. Note the BA prefix which means "not".

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>MILWA</td>
<td>LIGHT</td>
<td>1</td>
<td>ANY TIME</td>
<td>ENTIRE PARTY</td>
</tr>
</tbody>
</table>

MILWA causes a softly glowing light to follow the party, allowing them to see further into the maze, and also revealing all secret doors. See also LOMILWA. This spell lasts only a short while.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>PORFIC</td>
<td>SHIELD</td>
<td>1</td>
<td>COMBAT</td>
<td>CASTER</td>
</tr>
</tbody>
</table>

PORFIC lowers the AC of the caster considerably. The effects last for the duration of combat.

**LEVEL 2 PRIEST SPELLS**

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATU</td>
<td>BLESSING &amp; ZEAL (?)translation uncertain</td>
<td>2</td>
<td>COMBAT</td>
<td>ENTIRE PARTY</td>
</tr>
</tbody>
</table>

MATU has the same effects as KALKI but at double the strength.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALFO</td>
<td>X-RAY VISION</td>
<td>2</td>
<td>LOOTING</td>
<td>CASTER</td>
</tr>
</tbody>
</table>

CALFO allows the caster to determine the exact nature of a trap on a chest 95% of the time.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANIFO</td>
<td>STATUE</td>
<td>2</td>
<td>COMBAT</td>
<td>1 GROUP OF MONSTERS</td>
</tr>
</tbody>
</table>

MANIFO causes some of the monsters in a group to become stiff as statues for one or more melee rounds. The chance of success, and the duration of the effects, depend on the power of the target monsters.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>MONTINO</td>
<td>STILL AIR</td>
<td>2</td>
<td>COMBAT</td>
<td>1 GROUP OF MONSTERS</td>
</tr>
</tbody>
</table>

MONTINO causes the air around a group of monsters to stop transmitting sound. Like MANIFO, only some of the monsters will be affected, and for varying lengths of time. Monsters and Party members under the influence of this spell cannot cast spells, as they cannot utter the spell words!

**LEVEL 3 PRIEST SPELLS**

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOMILWA</td>
<td>MORE LIGHT</td>
<td>3</td>
<td>ANY TIME</td>
<td>ENTIRE PARTY</td>
</tr>
</tbody>
</table>

LOMILWA is a MILWA spell with a much longer life span. Note that when this spell, or MILWA are active, the Q option while moving through the maze is active. If QUICK PLOTTING is on, only the square you are in, and the next two squares will plot. Normally, you might see five or six squares ahead with LOMILWA on. Quick Plotting lets you move fast through known areas. Note that it will be turned off when you enter camp or combat mode.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIALKO</td>
<td>SOFTNESS/SUPPLE (?)exact translation difficult</td>
<td>1</td>
<td>ANY TIME</td>
<td>1 PERSON</td>
</tr>
</tbody>
</table>

DIALKO cures paralysis, and removes the effects of MANIFO and KATINO from one member of the party.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>LATUMAPIC</td>
<td>IDENTIFICATION</td>
<td>3</td>
<td>COMBAT</td>
<td>ENTIRE PARTY</td>
</tr>
</tbody>
</table>

LATUMAPIC makes it readily apparent exactly what the opposing monsters really are.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bamatu</td>
<td>PRAYER</td>
<td>3</td>
<td>COMBAT</td>
<td>ENTIRE PARTY</td>
</tr>
</tbody>
</table>

BAMATU has the effect of MATU at twice the effectiveness.

**LEVEL 4 PRIEST SPELLS**

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIAL</td>
<td>HEAL (MORE)</td>
<td>4</td>
<td>ANY TIME</td>
<td>1 PERSON</td>
</tr>
</tbody>
</table>

DIAL restores 2 to 16 hit points of damage, and is similar to DIOS.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADIAL</td>
<td>HURT (MORE)</td>
<td>4</td>
<td>COMBAT</td>
<td>1 MONSTER</td>
</tr>
</tbody>
</table>

BADIAL causes 2 to 16 hit points of damage in the same way as BADIOS.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>LATUMOFIS</td>
<td>CURE POISON</td>
<td>4</td>
<td>ANY TIME</td>
<td>1 PERSON</td>
</tr>
</tbody>
</table>

LATUMOFIS makes it readily apparent exactly what the opposing monsters really are.
LATONOFIS makes a poisoned person whole and fit again. Note that poison causes a person to lose hit points steadily during movement and combat.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAPORFIC</td>
<td>SHIELD (BIG)</td>
<td>4</td>
<td>ANY TIME</td>
<td>ENTIRE PARTY</td>
</tr>
</tbody>
</table>

MAPORFIC is an improved PORFIC, with effects that last for the entire expedition.

**LEVEL 6 PRIEST SPELLS**

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>LORTO</td>
<td>BLADES</td>
<td>6</td>
<td>COMBAT</td>
<td>1 GROUP</td>
</tr>
</tbody>
</table>

LORTO causes sharp blades to slice through a group, causing 6 to 36 points of damage.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>MADI</td>
<td>HEALING</td>
<td>6</td>
<td>ANY TIME</td>
<td>1 PERSON</td>
</tr>
</tbody>
</table>

MADI causes all hit points to be restored and cures any condition but death.

**LEVEL 5 PRIEST SPELLS**

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADIALMA</td>
<td>HURT (GREATLY)</td>
<td>5</td>
<td>COMBAT</td>
<td>1 MONSTER</td>
</tr>
</tbody>
</table>

BADIALMA causes 3 to 24 hit points of damage.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>LITOKAN</td>
<td>FLAME TOWER</td>
<td>5</td>
<td>COMBAT</td>
<td>1 GROUP</td>
</tr>
</tbody>
</table>

LITOKAN causes a pillar of flame to strike a group of monsters, doing 3 to 24 hit of damage to each. However, as with many spells that effect entire groups, there is a chance that individual monsters will be able to avoid or minimize its effects. And some monsters will be resistant to it.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>KANDI</td>
<td>LOCATION</td>
<td>5</td>
<td>CAMP</td>
<td>1 PERSON</td>
</tr>
</tbody>
</table>

KANDI allows the user to locate dead bodies of other characters. It tells on which level, and in which rough area the dead one can be found.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>DI</td>
<td>LOCATION</td>
<td>5</td>
<td>CAMP</td>
<td>1 PERSON</td>
</tr>
</tbody>
</table>

DI causes a dead person to be resurrected. However, the renewed character has but one hit point. Also, this spell is not as effective or as safe as using the Temple.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADI</td>
<td>DEATH</td>
<td>5</td>
<td>COMBAT</td>
<td>1 MONSTER</td>
</tr>
</tbody>
</table>

BADI gives the affected monster a coronary attack. It may or may not cause death to occur.

**LEVEL 7 PRIEST SPELLS**

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALIKTO</td>
<td>THE WORD OF DEATH</td>
<td>7</td>
<td>COMBAT</td>
<td>ALL MONSTERS</td>
</tr>
</tbody>
</table>

MALIKTO causes 12 to 72 hit points of damage to all monsters. None can escape or minimize its effects.

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>KADORTO</td>
<td>RESURRECTION</td>
<td>7</td>
<td>ANY TIME</td>
<td>1 PERSON</td>
</tr>
</tbody>
</table>

KADORTO restores the dead to life as does DI, but also restores all hit points. However, it has the same drawbacks as the DI spell. KADORTO can be used to resurrect people even if they are ashes!

**MAGE SPELLS**

<table>
<thead>
<tr>
<th>Spell Name</th>
<th>Translation</th>
<th>Spell Level</th>
<th>Spell Type</th>
<th>Area of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADI</td>
<td>LITTLE FIRE</td>
<td>1</td>
<td>COMBAT</td>
<td>1 MONSTER</td>
</tr>
</tbody>
</table>

BADI gives the affected monster a coronary attack. It may or may not cause death to occur.
HALITO causes a flame ball the size of a baseball to hit a monster doing from 1 to 8 hit points of damage.

**Spell Name**: MOGGREF  
**Translation**: BODY IRON  
**Spell Level**: 1  
**Spell Type**: COMBAT  
**Area of Effect**: CASTER

MOGGREF reduces the casters AC by two. The effect lasts the entire encounter.

**Spell Name**: KATINO  
**Translation**: BAD AIR  
**Spell Level**: 1  
**Spell Type**: COMBAT  
**Area of Effect**: 1 GROUP

KATINO causes most of the monsters in a group to fall asleep. KATINO only affects normal animal or humanoid monsters. The chance of the spell affecting an individual monster, and the duration of the affect is inversely proportional to the power of the monster. While asleep, monsters are easier to hit and successful strikes do double damage!

**Spell Name**: DUMAFIC  
**Translation**: CLARITY (difficult to translate)  
**Spell Level**: 1  
**Spell Type**: CAMP  
**Area of Effect**: NOT APPLICABLE

DUMAFIC informs you of the party’s exact displacement from the stairs to the castle, vertically, and North and East, and also tells you what direction you are facing.

**LEVEL 2 MAGE SPELLS**

**Spell Name**: DILTO  
**Translation**: DARKNESS  
**Spell Level**: 2  
**Spell Type**: COMBAT  
**Area of Effect**: 1 MONSTER GROUP

DILTO causes one group of monsters to be enveloped in darkness, which reduces their ability to defend against your attacks.

**Spell Name**: SOPIC  
**Translation**: GLASS  
**Spell Level**: 2  
**Spell Type**: COMBAT  
**Area of Effect**: CASTER

SOPIC causes the caster to become transparent. This means that he is harder to see, and thus his AC is reduced by four.

**LEVEL 3 MAGE SPELLS**

**Spell Name**: MAHALITO  
**Translation**: BIG FIRE  
**Spell Level**: 3  
**Spell Type**: COMBAT  
**Area of Effect**: 1 MONSTER GROUP

MAHALITO causes a firey explosion in a monster group, doing 4 to 24 hit points of damage. As with other similar spells, monsters may be able to minimize the damage done.

**Spell Name**: MOLITO  
**Translation**: SPARK STORM  
**Spell Level**: 3

MOLITO causes sparks to fly out and damage about half of the monsters in a group. Three to 18 hit points of damage are done with no chance of avoiding the sparks.

**LEVEL 4 MAGE SPELLS**

**Spell Name**: MORLIS  
**Translation**: FEAR  
**Spell Level**: 4  
**Spell Type**: COMBAT  
**Area of Effect**: 1 MONSTER GROUP

MORLIS causes one group of monsters to fear the party greatly. The effects are the same as a double strength DILTO spell.

**Spell Name**: DALTO  
**Translation**: BLIZZARD BLAST  
**Spell Level**: 4  
**Spell Type**: COMBAT  
**Area of Effect**: 1 MONSTER GROUP

DALTO is similar to MAHALITO except that cold replaces flames. Also, 6 to 36 hit points of damage are done.

**LEVEL 5 MAGE SPELLS**

**Spell Name**: MAHALITO  
**Translation**: FROST  
**Spell Level**: 5  
**Spell Type**: COMBAT  
**Area of Effect**: ALL MONSTERS

MAHALITO is similar to MAHALITO except that all monster groups are affected.

**LEVEL 6 MAGE SPELLS**

**Spell Name**: MADALTO  
**Translation**: FROST  
**Spell Level**: 5  
**Spell Type**: COMBAT  
**Area of Effect**: 1 MONSTER GROUP

An improved DALTO, causing 8 to 64 hit points of damage.

**Spell Name**: LAKANITO  
**Translation**: CLARITY  
**Spell Level**: 6  
**Spell Type**: COMBAT
Area of Effect: 1 MONSTER GROUP

All monsters in the group affected by this spell die. Of course, there is a chance that some of the monsters will not be affected.

- Spell Name: ZILWAN
- Translation: DISPELL
- Spell Level: 6
- Spell Type: COMBAT

This spell will destroy any one monster that is of the Undead variety.

- Spell Name: MASOPIC
- Translation: BIG GLASS
- Spell Level: 6
- Spell Type: COMBAT

This spell duplicates the effects of SOPIC for the entire party.

- Spell Name: HAMAN
- Translation: CHANGE
- Spell Level: 6
- Spell Type: COMBAT

This spell is indeed terrible, and may backfire on the caster. First, to even cast it, you must be of the thirteenth level or higher, and casting it will cost you one level of experience. The effects of HAMAN are random, and usually help the party.

LEVEL 7 MAGE SPELLS

- Spell Name: MALOR
  - Translation: APPORT
  - Spell Level: 7
  - Spell Type: COMBAT and CAMP

This spell's effects depend on the situation the party is in when it is cast. Basically, MALOR will teleport the entire party from one location to another. When used in melee, the teleport is RANDOM, but when used in camp, where there is more chance for concentration, it can be used to move the party anywhere in the maze. Be warned, however, that if you teleport outside of the maze, or into an area that is solid rock, you will all be lost forever, so this spell is to be used with the greatest of care. Combat use of MALOR will never put you outside of the maze, but it may move you deeper in, so it should be used only in panic situations.

- Spell Name: MAHAMAN
  - Translation: GREAT CHANGE
  - Spell Level: 7
  - Spell Type: COMBAT

The same restrictions and qualifications apply to this spell as do to HAMAN. However, the effects are even greater. Generally these spells are only used when there is no other hope for survival.

- Spell Name: TILTOWAIT
- Translation: (untranslatable)
- Spell Level: 7
- Spell Type: COMBAT

The effect of this spell can be described as similar to that of a nuclear fusion explosion. Luckily the party is shielded from its effects. Unluckily
TO BEGIN USING WIZIPRINT, YOU MUST FIRST ADAPT IT TO YOUR COMPUTER.
BOOT UP THE DISK AND A TITLE PAGE WILL APPEAR, PRESS [RETURN] TO CONTINUE.

AFTER HITTING [RETURN] THE NEXT SCREEN SHOWS THE CURRENT VALUES OF THE FIVE SYSTEM PARAMETERS. EACH PARAMETER MUST BE MODIFIED TO YOUR SYSTEM. THE DEFAULT VALUES MAY BE USED BY HITTING [RETURN].

THE FIVE PARAMETERS ARE AS FOLLOWS:

A: SELECTS THE SLOT IN WHICH YOUR PRINTER INTERFACE RESIDES. SELECT THE SLOT IN WHICH YOUR PRINTER CARD IS IN. DO NOT WORRY ABOUT WHAT TYPE OF PRINTER CARD YOU HAVE, AS THE PROGRAM SUPPORTS MOST APPLE COMPATIBLE PRINTERS.


C: SOME PRINTER AND PRINTER CARDS NEED SPECIAL CODES TO PROPERLY OPERATE WITH YOUR COMPUTER. THESE CODES TELL THE PRINTER TO DO CERTAIN THINGS, SUCH AS 80 COLUMN PRINTING. THIS OPTION HAS A DEFAULT OF [CTRL-180N]. IT IS RECOMMENDED THAT THE FIRST TIME YOU USE WIZIPRINT, YOU LEAVE THE DEFAULT ALONE. IF YOUR PRINTER DOES NOT COOPERATE WITH THE PROGRAM THEN CHANGE THIS OPTION TO A BLANK FIELD. THIS IS DONE BY HITTING [SPACE BAR] THEN [RETURN]. IF THIS ALSO DOES NOT WORK THEN CHECK YOUR PRINTER AND PRINTER CARD MANUALS FOR THE NECESSARY CONTROL CODES AND REBOOT. MANY OF THESE CODES CANNOT BE DIRECTLY TYPED ON AN APPLE KEYBOARD, SO THEIR DECIMAL EQUIVALENTS (CHECK MANUALS) ARE USED. WIZIPRINT USES [SHIFT-N] ON THE APPLE II+ AND [SHIFT-6] ON THE IIE TO CONTAIN DECIMAL EQUIVALENTS. THIS IS ALL EXPLAINED IN THE PRINTER OR PRINTER CARD MANUAL. CONSULT THEM FOR ANY PROBLEMS. IN CASE IT ISN'T OBVIOUS TO YOU, THE PRINTER MUST BE SET UP FOR 80 COLUMNS.

D: ALLOWS YOU TO CUSTOMIZE YOUR PRINTOUT BY INCLUDING YOUR NAME. THE PROGRAM ACCEPTS NAMES UP TO 40 CHARACTERS IN LENGTH.

E: THIS FEATURE NOTES THE CURRENT DATE. USING THE DATE FEATURE IS A PRETTY GOOD IDEA IF YOUR TEAM IS ENTERING THE DUNGEON EVERYDAY AND CONSTANTLY CHANGING STATISTICS. THE PROGRAM ACCEPTS STRINGS UP TO 9 CHARACTERS IN LENGTH. FOR ONCE A DAY EXCURSIONS, IT MAY BE BEST TO USE THE DAY-MONTH-YEAR (09-APR-84) FORMAT. FOR VETERAN PLAYERS, IT MAY BE BEST TO USE THE DAY-MONTH-FORAY STRUCTURE.

AFTER THE PARAMETERS ARE CHANGED, THE PROGRAMS OFFERS THE OPTION OF SAVING THE FORMAT TO DISK AS NEW DEFAULT VALUES. IT IS RECOMMENDED THAT THIS BE DONE EACH TIME, AS IT HELPS KEEP TRACK OF THE FORAY NUMBER.

THE MAJOR OPERATIONS

ONCE YOU HAVE SELECTED ALL THE PARAMETERS, THE PROGRAM WILL ASK YOU TO INSERT ANY WIZARDRY SCENARIO DISK IN DRIVE 1. FIRST, REMOVE THE WIZIPRINT DISK AND PUT IT AWAY. INSERT THE WIZARDRY DISK WITH THE SCENARIO SIDE UP, INTO DRIVE 1 AND PRESS [RETURN]. WIZIPRINT WILL AUTOMATICALLY LOAD ALL THE CHARACTERS ON THAT DISK INTO MEMORY AND SORT THEM IN ORDER OF THEIR LEVELS. THE FULL ROSTER WILL BE LISTED ON THE SCREEN. BESIDES EACH CHARACTER NAME WILL APPEAR A LETTER FROM A TO T. FOUR OPTIONS MAY NOW BE SELECTED:

[\*]: TO PRINT OUT THE ENTIRE ROSTER

[LETTER]: TO PRINT OUT A SPECIFIC CHARACTER'S STATISTICS. AFTER THE CHARACTER IS SELECTED, IT'S NAME IS TOSSSED INTO THE RIGHT COLUMN. A GOOD TECHNIQUE IS TO SELECT THE CHARACTERS IN THE SAME ORDER AS THEY NORMALLY APPEAR IN THE ADVENTURE PARTY. THIS MAKES FOR QUICK & EASY REFERENCING.

[RETURN]: HITTING THIS KEY PrinterS OUT ALL THE STATISTICS OF THE CHARACTERS LISTED IN THE RIGHT HAND COLUMN, IN THE ORDER THEY WERE SELECTED.

[ESCAPE]: ALLOWS YOU TO CHANGE SCENARIO DISKS, THEN LOAD A NEW ROSTER FOR PRINTOUT.

*** NOTE ***
WHILE WIZIPRINT IS RUNNING IT FREQUENTLY ACCESES THE DISK TO RETRIEVE THE VITAL STATISTICS OF EACH CHARACTER. DO NOT REMOVE THE SCENARIO DISK FROM DRIVE 1 UNTIL, WIZIPRINT IS COMPLETELY FINISHED PRINTING.

TO ALL SYSOPS:
FEEL FREE TO PUT THIS FILE ON YOUR BOARD AS LONG AS IT REMAINS UNEDITED!

WIZIPRINT DESIGNED BY (NONE OTHER THAN) ANDREW GREENBERG & ROBERT WOODHEAD
You can stop drawing any time by pressing escape.  

Resume does not resume the first stage of a drawing if you interrupt it.  

Saving without parameters makes it so the program will not know where a picture came from (the coordinates, magnification, mode, etc.) when you load it again.  

The program is text based (you use a modified version of my Conch Shell command line), with commands to switch to and from the graphics screen. The mouse is used only for specifying points on the set. Both 320 and 640 modes, and dithering are supported, though the latter format still needs work.  

The following are commands specifically related to fractal generation. Note that the program begins in graphics mode, so if you need to see to type, you must use the GRAFOFF command to get the text screen.  

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSLOAD</td>
<td>load just the picture</td>
</tr>
<tr>
<td>SLOAD</td>
<td>load just the picture</td>
</tr>
<tr>
<td>SAVE filename</td>
<td>save picture and parameters with the mouse</td>
</tr>
<tr>
<td>LOAD filename</td>
<td>load picture and parameters</td>
</tr>
<tr>
<td>QUIT</td>
<td>exit the program</td>
</tr>
<tr>
<td>FREAK</td>
<td>does something freaky</td>
</tr>
<tr>
<td>BOZO</td>
<td>starts drawing</td>
</tr>
<tr>
<td>C Clear</td>
<td>clears the screen</td>
</tr>
<tr>
<td>GS</td>
<td>starts drawing for dweebists</td>
</tr>
<tr>
<td>RESUME [x y]</td>
<td>resumes, with optional coords</td>
</tr>
<tr>
<td>MAXWELL [num]</td>
<td>sets or prints the maximum dwell</td>
</tr>
<tr>
<td>ESCAPE [num]</td>
<td>sets or prints the escape radius</td>
</tr>
<tr>
<td>MSUSE</td>
<td>makes the pointer visible and waits</td>
</tr>
<tr>
<td>MAG [num]</td>
<td>magnifies around the last point</td>
</tr>
<tr>
<td>JULIA</td>
<td>switches to Julia mode</td>
</tr>
<tr>
<td>MANDEL</td>
<td>switches to Mandel mode</td>
</tr>
<tr>
<td>TRIGGER [num]</td>
<td>don't fiddle with this</td>
</tr>
<tr>
<td>320</td>
<td>sets 16-color mode</td>
</tr>
<tr>
<td>640</td>
<td>sets 4-color mode</td>
</tr>
<tr>
<td>PAL num</td>
<td>selects from 16 palettes</td>
</tr>
<tr>
<td>DITHER [0 or no 0]</td>
<td>turns dithering on/off</td>
</tr>
</tbody>
</table>

Notes:  

1) "MAG 0" resets the default view; "MAG num" means magnify num times around the last point specified (with the mouse) or the last point drawn.  

2) Dwell times are the number of iterations before the equation \( Z = Z^2 + C \) grows beyond the escape radius. Defaults are: Escape = 4 (2 squared); Maxwell = 100.  

3) Saving without parameters makes it so the program will not know where a picture came from (the coordinates, magnification, mode, etc.) when you load it again.  

4) Palette 5 is the dithering palette. It still needs work.  

5) Resume does not resume the first stage of a drawing if you interrupt it.  

6) You can stop drawing any time by pressing escape.

---

**Information on Fractals:**  
For more info on fractals, try the book, "The Beauty of Fractals," by Peitgen and Richter, or any of a number of books by Mandlebrot himself. These books will show you neat areas to look at and do Julia sets of, and will explain the theory in more detail than I can here. Please feel free to experiment as much as possible, and to e-mail me at wogg9743@usa.cso.uiuc.edu with any and all comments and suggestions.

Addendum—shell commands also supported

**Explanation:**  
Type "GO" when the blank screen first appears. The program will first tile the screen (a time saver), filling in the parts which are all one dwell. Then it will fix what was not caught before. When it finishes (or you abort), type "mouse." The pointer will appear. Move the pointer to an interesting area and press the button. Now type "mag 2." That part will be magnified two times around the point you specified. You may want to do a "cls" first, so you can see better.  

Now pick another point with "mouse," clear the screen, and type "julia." Typing "go" will start a drawing of the Julia set for that point.  

If you escape from drawing at any point during the second stage of drawing, the coordinates of the last point plotted will appear on the text screen. This and all numeric output is in hexadecimal. You may specify values in either decimal or hexadecimal, however, using a "$" before the number to specify the later.

Type "quit" to exit the program.  

**Addendum—shell commands also supported:**

**Apple II Computer Info**

Documentation:

- **Apple II Computer Documentation Resources (a2_docs_documentation.msw)**
- **DOCUMENTATION woggle**

**Explanation:**

- Type "GO" when the blank screen first appears. The program will first tile the screen (a time saver), filling in the parts which are all one dwell. Then it will fix what was not caught before. When it finishes (or you abort), type "mouse." The pointer will appear. Move the pointer to an interesting area and press the button. Now type "mag 2." That part will be magnified two times around the point you specified. You may want to do a "cls" first, so you can see better.

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**Information on Fractals:**

For more info on fractals, try the book, "The Beauty of Fractals," by Peitgen and Richter, or any of a number of books by Mandlebrot himself. These books will show you neat areas to look at and do Julia sets of, and will explain the theory in more detail than I can here. Please feel free to experiment as much as possible, and to e-mail me at wogg9743@usa.cso.uiuc.edu with any and all comments and suggestions.

Addendum—shell commands also supported

**But wait, there's more! Woggle also gives you a MS-DOS/UNIX-like command line.**

**Commands --**

- `* * *`

**Notes:**

1) "MAG 0" resets the default view; "MAG num" means magnify num times around the last point specified (with the mouse) or the last point drawn.

2) Dwell times are the number of iterations before the equation \( Z = Z^2 + C \) grows beyond the escape radius. Defaults are: Escape = 4 (2 squared); Maxwell = 100.

3) Saving without parameters makes it so the program will not know where a picture came from (the coordinates, magnification, mode, etc.) when you load it again.

4) Palette 5 is the dithering palette. It still needs work.

5) Resume does not resume the first stage of a drawing if you interrupt it.

6) You can stop drawing any time by pressing escape.
Apple II Computer Info

CD .. same as CD..
CREATE <FILENAME> [FTYPE] create FILENAME of type FTYPE
MKDIR <FILENAME> [FTYPE] same as CREATE

notes:

<FFILENAME> is any legal filename
[FTYPE] is one of many supported three letter file types
or a hex constant beginning with $ the default value is DIR
[ATYPE] is a SRC subtype (CCOM, etc.) or a hex constant starting
with a $ the default value is SRC

Wildcards, by the way, are legal. More precisely, the use of the = sign as a
wildcard is allowed. Do not use the Unix *, as it has a different meaning in the
GS/OS environment. You should only use the * to mean the boot volume name.

Also, in the CD and PREFIX commands, you can use the double dot (cd ..) form,
though normally its use will lead to an error.

Other than that, experiment. Bug reports are appreciated. Also, remember that
in the future I will be releasing new and better versions of Conch Shell, but only if
you send me monetary incentives. Otherwise, I will write the new versions, and give
them to my friends, but I sure as hell won't distribute them among the general
public.

Note to major software houses --

This product is currently Shareware. However, if you are interested in
including it in any bundled software package, you must first contact me and agree on
a one-time-only fee or a percentage of profits deal, perhaps both. Please remember
that more and more current and powerful versions of this program, with more and more
unix-like commands, will be forthcoming. If you would like to market my program
commercially under your label, I could provide you with a substantially improved
version than that which is generally available, thus making the product saleable. If
the price is right, of course. I'm not greedy, but....

THE SOUTH POLE...........(312) 677-7140

***** Castle Wolfenstein II Maps *****

Here are the maps for Castle Wolfenstein II.
They only tell you how to get where you are going and not what
is in the rooms because it changes in every castle.

LEVEL 1      LEVEL 2

S = start    ^ = up elevator

[d] down elevator

[^] = H I T L E R

[ ] = MOVEMENT gun

[ ] = 1-2-3-4-5 = pass (respectively)

[ ] = 1-9 = used for combination lock

[ ] = R = reset bomb  F = bandages

[ ] = E = drop bomb  T = tools

[ ] = M = bribe guard : = switch weapons

This program is take bomb to Hitler & drop

Written by T H E  P E E L E R

Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 1202 of 1262
+++                                    ::::::::::
::::::::::          ::::::::::          EPYX        ::::::::::
Word Fair                    ::::::::::          Presents                                ::::::::::
By: Carl Steadman               ::::::::::                                :::::::::
:::.                   Presents           . . . :::::::
:::.                            . . . .        E S . . :::::::::
:::.                      . . . .          A M . . . .      :::::::::
:::.            . . . .         D     G . . . .           :::::::::
Further documentation is available in the program.

Happy word hunting!

EDITOR'S NOTE: There is the possibility that you will get a DISK FULL error on this program when it attempts to save data to disk. When UpTime is pieced together we put as much information as possible on the disk. If you should get a DISK FULL error copy the UpTime disk onto another disk and delete some of the files (not the ones listed below).


Files needed:
WORD FAIR
MARGARINE.SAV
RECRUITMENT.SAV

---

World Games Docs

By: \[\[icro \[\[ack

Events:
-------
Weightlifting- RUSSIA
Barrel Jumping- GERMANY
Cliff Diving- MEXICO
Slalom Skiing- FRANCE
Log rolling- CANADA
Bull riding- UNITED STATES(#1)
Caber toss- SCOTLAND
Sumo wrestling- JAPAN

Weightlifting:

The Snatch Method-
[ ] To bend down and grasp the bar, pull the joystick BACK.
[ ] To begin lifting the bar, push the joystick FORWARD.
[ ] During the lift, pull the joystick BACK to drop underneath the bar and "snatch" it over your head.
[ ] To stand up from the squatting position, push the joystick FORWARD.
[ ] When two or more judges' lights in front of the platform turn WHITE, pull the joystick BACK to lower the weights back down to the floor.

The Clean Jerk-
[ ] To grasp the bar, pull the joystick BACK.
[ ] To begin lifting the bar, push the joystick FORWARD.
[ ] During the lift, pull the joystick BACK to "clean" the bar and drop into a squat with the bar resting on your chest.
[ ] To stand up from the squatting position, push the joystick FORWARD.
[ ] To "jerk" the bar above your head, pull the joystick BACK again.
[] To straighten your legs and complete the lift, push the joystick FORWARD one more time.
[] When two or more judges' lights in front of the platform turn WHITE, pull the joystick BACK to lower the weights to the floor.
Scoring: The winner is the lifter who successfully lifts the greatest weight. At least two of the judges must give white success lights for a lift to be considered successful. The judges vote on the accuracy of your timing. Two "hesitant" white votes mean your timing was poor. Three quick white votes mean your timing was perfect.
Timing: As the weight increases, timing becomes more critical. The right moment to clean the bar to your chest is easy to judge at lower weights, but extremely difficult as the Clean and Jerk approaches 200kg. After you clean the bar, wait the right amount of time to gather your strength for the final lift. Too short and the lifter isn't ready, too long and his strength gives out. The key to learning the timing is practice.
Strategy: The key to strategy in weightlifting is knowing when to increase the weight and how much to increase it. Know your limits and those of your opponents out of the competition—but make sure you can lift the weight before you take the gamble!

Barrel Jumping: ------------
[] To choose the number of barrels to jump, move and hold the joystick LEFT or RIGHT. Press the FIRE BUTTON to continue.
[] Your skater appears on the ice ready to start. Press the FIRE BUTTON to begin skating.
[] To move the skaters legs, move the joystick LEFT and RIGHT alternating in rhythm with the movement of his legs.
[] To skate faster, maintain your joystick movements in rhythm with his legs.
[] To jump, press the FIRE BUTTON. The green flag indicates a good take-off point for most jumps.
[] To prepare for landing, pull the joystick BACK.
[] Each player is allowed three attempts.
Scoring: The winner is the skater who clears the greatest number of barrels in one of their attempts with a successful landing.
Strategy: Build up as much speed as possible before jumping. The length of the jump depends on the speed at take-off. The timing of the jump is also important. If you jump too soon, you may not clear the last barrel—but if you jump too late, you may crash into the first barrel.

Cliff Diving: ------------
[] To select the height of your dive, push the joystick FORWARD or pull BACK. Press the FIRE BUTTON to prepare for the dive.
[] Your diver will appear on the ledge you selected. Press the FIRE BUTTON to start the dive.
[] To arch your back during the dive, push the joystick FORWARD.
[] Before you enter the water, pull the joystick BACK to straighten out and complete the swan dive.
[] To avoid hitting the bottom surface under the water, move the joystick LEFT immediately after entering the water.
[] Each player is allowed three attempts.
Scoring:
Each diver is scored on the style and height of his dive. Smoothly executed swan dives score the highest style points. The highest scores are obtained with perfect swan dives from the highest ledge on "La Quebrada," while barely missing the rocks at the foot of the cliff.
Wind:
The wind velocity for each dive is indicated by the length of the arrow at the top of the screen. The stronger the wind, the longer you must keep your divers arched to avoid the rocks.
Strategy:
The Depth of the water varies as waves go in and out. Try to time your dive in order to enter the water at its maximum depth. To achieve a better score, try to barly miss hitting the rocks near the foot of the cliff by arching your back as long as necessary during the dive. Also remember, that holding the joystick LEFT, RIGHT, FORWARD, or Back at the time of your leap adds extra velocity in that direction.

Slalom Skiing: ------------
[] To start skiing down the course, press the FIRE BUTTON.
[] Control your skiers turns by moving the joystick LEFT or RIGHT to turn in that direction.
[] Press and hold the FIRE BUTTON as you move the joystick to increase your speed and turning sensitivity.
[] Complete the course by passing through each gate. A gate is two flags of the same color—you must pass between each pair of flags.
[] The gates alternate colors, so you must ski between blue flags, then red flags. Missing a gate adds a five second penalty.
Scoring: The winner is the skier who successfully completes the course with the fastest time. You will be disqualified if you fall. If you collide with a gate head on, you'll "wipe-out." Strategy: Sharp turns slow you down. Try to use moderate turns as often as you can, timing each turn to position yourself for the next gate. As you pass through one gate, you should be setting up your approach for the next gate down the hill.

Log Rolling: ------------
[] You may compete against another person or the computer.
[] When "Press your Fire Button" appears on either half of the screen, the player whose name appears on that half must press the joystick FIRE BUTTON. The next player does the same. This begins the event.
[] To move the lumberjack's legs, move the joystick LEFT and RIGHT. Stay in rhythm with the log or you may lose your balance.
[] To slow the rolling of the log from forward or backward, and change its direction, press the FIRE BUTTON while running.
[] Each player gets three attempts.
Scoring: The winner is the last lumberjack to remain on the log. A scoring bonus is awarded to the winner based on the balance of the two contestants. A balance meter is displayed at the bottom of the screen. You score points whenever your balance is better than your opponent's. Scoring also depends on the length of the log.
Sumo Wrestling:

Your strength and speed will usually win the event. Be careful not to run any farther as this will conserve as much energy as possible. The player who learns how to reach the top will be the winner.

Strategy:

Make your opponent lose his balance by stopping the log and changing the direction of the log's rotation quickly back and forth. Finish off your opponent by rolling the log rapidly in the direction that will cause him to fall off.

Bull Riding:

To choose which bull you want to ride, move the joystick FORWARD or BACK. The bulls are named (from easiest to hardest) Ferdinand, Elmer, Bob, Tornado and Earthquake.

To respond to the bull's movements, move the joystick as follows:

- BUCK: If the bull is bucking, move the joystick LEFT or RIGHT, in the direction that the bull is moving.
- SPIN: Pull the joystick BACK to stay on the bull when it is spinning.
- HALT: Move the joystick LEFT or RIGHT in the opposite direction that the bull is moving.

Scoring: Scoring is based on the style and length of the ride. The length of a ride is eight seconds. Riding harder bulls is worth more points. The highest scores, ride Earthquake if you dare.

Strategy: To anticipate the bull's moves correctly. Quick response to each move is the key to finishing a ride. The practice mode allows another player to control the bull's actions. Use this to develop a fast response to all of the moves a bull can make.

Controlling the bull with the joystick in practice mode:

- FORWARD: 360 Degree spin.
- FORWARD WITH FIRE BUTTON PRESSED: 540 degree spin.
- CENTER JOYSTICK: The bull bucks and runs.
- BACK: The bull halts suddenly. Guaranteed to throw the toughest hombre.

Caber Toss:

To run with the caber, move the joystick LEFT and RIGHT in rhythm with the athlete's feet. To gain speed, increase the temp of the rhythm smoothly.

To plant your feet and throw the caber, press and hold the FIRE BUTTON.

As the caber pivots in your hand, release the FIRE BUTTON to complete the throw. If you release too soon or too late, the caber may not flip correct.

Scoring: The caber must flip over completely for a legal toss. The toss that travels the farthest distance wins the event.

Strategy: The secret to longest throws is building up your speed before the toss, while conserving as much energy as possible. The player who learns how to reach top speed the fastest will usually win the event. Be careful not to run any farther than necessary to build up your speed. Long runs with a heavy caber will sap your strength.

Sumo Wrestling:

Silver Medal = 3 points
Gold Medal = 5 points
Bronze Medal = 1 point
Scoring: The winner is the lifter who successfully lifts the greatest weight. At least two of the judges must give white success lights for a lift to be considered successful. The judges vote on the accurarcy of your timing. Two hesitent white votes mean your timing is poor. Three what quick votes mean your timing was perfect.

Timing: As weight increases, timing becomes more critical. The right moment to clean the bar to clean the bat to your chest is easy to judge at lower weights, but extremely difficult as the clean and jerk approaches 200kg. After you clean the bar, wait the right amount of time to gather your strength for a final lift. Too short and the lifter isn't ready, too long and his strength gives out. The key to timing is practice.

Strategy: The key to strategy in weightlifting is knowing when to increase the weight--and how much to increase it. Know your limits and those of your opponents. A sudden 60kg increase may knock your opponents out of the competition—but make sure you can lift it before you gamble!

BARREL JUMPING

To choose the number of barrels to jump, move the joystick left or right and press the fire button. (or press j - k then return key)

Your skater appears on the ice ready to start. Press the fire button (return key) to begin skating.

To move the skaters legs move the joystick left - right (or j-k) altering in rythum with the movement of the skaters legs.

To skate faster, maintain your joystick movements or keystrokes in rythum with his legs.

To jump, press the fire button (or Return) key. The Flag indicates a good take-off point for most jumps.

To repair for a landing, pull the joystick back (M)

Each player has 3 attempts

SCORING: The winner is the skater who clears the largest number of barrels in one of his attempts and lands successfully.

STRATEGY: Build up as much speed as possible before jumping. The length of the bar depends on the speed at take-off. The timing of the jump is also important. If you jump too soon, you may not clear the barrel—but if you jump too late you may crash on the first barrel.

CLIFF DIVING

To select the height of your dive, push forward or pull back (I,M) Press the fire button (or return key) to prepair to dive.

Your diver will appear on the ledge you selected. Press the firebutton (return key) to start the dive.

Before you enter the water, pull the joystick back (M) to straighten out and complete the swan dive.

To avoid hitting the bottom surface under water, move the joystick left (J) immediately after entering the water. Each player is allowed 3 attempts

SCORING: Each diver is scored on the style and height of the dive. Smoothly executed swan dives score the highest style in points. The highest scores are obtained with perfect swan dives from the highest ledge on "LA QUEBRADA" while barely missing the rocks in front of the cliff.

WIND

The wind velocity for each dive is indicated by the length of the arrow at the top of the screen. The stronger the wind, the longer you have to keep your divers back arched to avoid the rocks.

STRATEGY:
The depth of the water varies as waves go in and out. Try to time your dive in order to enter the water at maximum depth. To achieve a better score, try to barely miss the rocks near the cliff by arching your back as long as necessary during the dive. Also remember that holding the joystick forward, left, right, or back (I, J, K, M) at the time of your leap adds extra velocity in that direction.

Salom Skiing

To start skiing down the course, press the fire button (or Option key). 115

Control your skier's turns by moving joystick (left or right) or K, J. Press when you see **PRESS YOUR BUTTON**(appears on either half of the screen) to begin the event. The next player does the same.

To move the lumberjacks legs, continuously move the joystick left-right (J, K) when the log is moving. The player whose name appears on that half must press the joystick fire button (option key) to begin the event. The next player does the same.

To clear the race course, press the fire button (option key) while running.

Each player is allowed 3 attempts

Scoring: The winner is the skier who successfully completes the course with the fastest time. You will be disqualified if you fail. If you collide with a gate head on you will wipe out.

Startagey: Sharp turns slow you down. Try to use moderate turns as often as you can, timing each turn to position yourself for the next gate. As you pass through one gate, you should be setting up for approach for the next one downhill.

LogRolling

You may compete against another person or the computer. When you see: **PRESS YOUR BUTTON**(appears on either half of the screen), the player whose name appears on that half must press the joystick fire button (option key) to begin the event. The next player does the same.

To move the lumberjacks legs, continuously move the joystick left-right (J, K) when the log is moving. The player whose name appears on that half must press the joystick fire button (option key) to begin the event. The next player does the same.

To clear the race course, press the fire button (option key) while running.

Each player is allowed 3 attempts

Scoring: The winner is the lumberjack to remain on the log. A scoring bonus is awarded to the winner based on the balance of the two contestants. A balance meter is displayed at the bottom of the screen. Your scoring also depends on the length of the event; if you take too long to dismount off your opponent you’ll receive a lower score.

Balance: Establish a rhythm with your lumberjacks legs; if you don’t build speed at the correct rate he may lose his balance. The computer keeps balance meters (shown on bottom of the screen) for both players. When a lumberjack is off-balance, his arms extend to help him recover.

Strategy: Make your opponent lose his balance by stopping the log then changing the direction of the logs rotation quickly back and fourth. Finish off your opponent by rolling the log rapidly in the direction that will cause him to fall off.

Bull Riding

To choose which bull you want to ride, move the joystick forward or back (or press keys I-M). The bulls are named (from easiest to hardest) Ferdinand, Elmer, Bob, Tornado and Earthquake.

Press the fire button (return key) to start the event.

To stay on the bull respond to his movements as follows:

BUCK: If the bull is kicking move joystick left-right (J, K) in the direction the bull is moving.

SPIN: Pull the joystick back (M) to stay on the bull when its spinning around.

HALT: Move joystick left or right (J, K) in the opposite direction the bull is moving (i.e., if the bull faces left move joystick right (K))

Scoring: Scoring is based on the style and length of the ride. The length of a ride is eight seconds. Riding harder bulls is worth more points. For the highest scores ride earthquake. (if you dare!)

Strategy: Try to anticipate the bulls moves correctly. Quick response to each move is the key to finishing each ride. The Practice mode allow another player to control the bulls actions. Use this to develop a fast response to all moves a bull can make.

Move the joystick forward (I) for a 360 spin. The bull makes a full circle.

When the joystick is returned to the center (or I is released) the bull bucks and runs.

Bull: The bull's legs are wide apart. It is difficult for you to stay on the bull.

Caber Toss

To run with the caber, move the joystick left and right (J, K) in rhythm with the athlete's feet. To gain speed, increase the tempo of the rhythm smoothly. Avoid running past the white line. If you do you drop the caber and are judged a fault.

To plant your feet and throw the caber press and hold the firebutton (or option key)

As the caber pivots in your hand, release the firebutton (option key) to complete the toss. If you release too soon or too late the caber may not flip correctly.

Scoring: A toss is measured from the white line to the tip of the caber that touches the ground first, and the caber must completely flip over for a legal toss. The toss that travels the furthest distance wins the event.

Strategy: When you start out, the caber will be tilting forward. As it continues to rotate forward, walk towards the white line, keeping the caber tilted forward a bit. When you are close to the white line, start running maximum speed until the caber is almost in a vertical position. Before the caber touches the ground, run towards the white line, keeping your belt. Then release the firebutton (or release the option key)

Sumo Wrestling

Press the firebutton (option key) to begin the event and go into the crouch.

Control you wrestler by repeatedly moving or pressing the keys as indicated for the wrestling moves (indicated below).

The computer maintains stamina and balance factors for each wrestler.

Release the fire button (option key) to let go of your opponent's belt.

The first wrestler to leave the ring or touch any part of his body with the ground loses the match.

CONTROLS

| No fire button |

Up(I) towards right (K) Forward push S.E.(I) Forward slap South (M) Slap S.W. (N) Backward slap West (J) Backward push.

[ holding fire button/option key]
Scoring: Scoring is based on reaction time - both yours and that of your opponent. The player who can execute moves the quickest will get the highest scores. If you throw your opponent to the ground or throw him out of the ring you will receive enough points to win. The shorter the match the higher the score.

Strategy: Timing is important to success in the sumo ring. When you preform a move with the fire button (return key) pressed, be sure to release the button (or press the return button) at the proper time to complete the move successfully. You can learn the timing through practice. Also keep in mind that the Utchari is a good strategic move. Try using it when your about to be pushed out of the ring.

Events:
-------
Weightlifting - RUSSIA
Barrel Jumping - GERMANY
Cliff Diving - MEXICO
Slalom Skiing - FRANCE
Log rolling - CANADA
Bull riding - UNITED STATES (#1)
Caber toss - SCOTLAND
Sumo Wrestling - JAPAN

Weightlifting:
--------------
The Snatch Method-
[] To bend down and grasp the bar, pull the joystick BACK.
[] To begin lifting the bar, push the joystick FORWARD.
[] During the lift, pull the joystick BACK to drop underneath the bar and "snatch" it over your head.
[] To stand up from the squatting position, push the joystick FORWARD.
[] When two or more judges' lights in front of the platform turn WHITE, pull the joystick BACK to lower the weights back down to the floor.

The Clean Jerk-
[] To grasp the bar, pull the joystick BACK.
[] To begin lifting the bar, push the joystick FORWARD.
[] During the lift, pull the joystick BACK to "clean" the bar and drop into a squat with the bar resting on your chest.
[] To stand up from the squatting position, push the joystick FORWARD.
[] To "jerk" the bar above your head, pull the joystick BACK again.
[] To straighten your legs and complete the lift, push the joystick FORWARD.
by arching your back as long as necessary during the dive. Also remember, bull is moving.

Better score, try to barely miss hitting the rocks near the foot of the cliff.

Strategy: The Depth of the water varies as waves go in and out. Try to time your entry into the water at the correct rate he may lose his balance. The computer keeps balance information. If you jump too soon, you may not clear the last barrel—but if you jump to late, you may crash into the first barrel. Bonus is awarded to the winner based on the balance of the two contestants.

Cliff Diving: The length of the event; if you take too long to finish off your opponent, you’ll receive a lower score.

Strategy: Build up as much speed as possible before jumping. The length of the jump depends on the speed at take-off. The timing of the jump is also important. If you jump too soon, you may not clear the last barrel—but if you jump to late, you may crash into the first barrel.

Barrel Jumping: To select the height of your dive, push the joystick FORWARD or pull BACK Press the FIRE BUTTON to prepare for the dive.

[1] Your skater appears on the ice ready to start. Press the FIRE BUTTON to begin skating.
[2] To move the skaters legs, move the joystick LEFT or RIGHT. Press the FIRE BUTTON to continue.
[3] To choose the number of barrels to jump, move and hold the joystick LEFT or RIGHT. Press the FIRE BUTTON to continue. Each player is allowed three attempts.

Log Rolling: To slow the rolling of the log from forward or backward, and change its direction, press the FIRE BUTTON while running.

Each player gets three attempts. Scoring: The winner is the skier who successfully completes the course with the fastest time. You will be disqualified if you fall. If you collide with a gate head on, you’ll “wipe-out.”

Strategy: Sharp turns slow you down. Try to use moderate turns as often as possible. Timing: As the weight increases, timing becomes more critical. The right moment to clean the bar to your chest is easy to judge at lower weights, but extremely difficult as the Clean and Jerk approaches 200kg. After you clean the bar, wait the right amount of time to gather your strength for the final lift. Too short and the lifter isn’t ready, too long and his strength gives out. The key to learning the timing is practice.

Strategy: The key to strategy in weight lifting is knowing when to increase the weight—and how much to increase it. Know your limits and those of your opponents is of the utmost importance. But make sure you can lift the weight before you take the gamble!

Slalom Skiing: To start skiing down the course, press the FIRE BUTTON. Control your skier’s turns by moving the joystick LEFT or RIGHT to turn in the opposite direction. Each player is allowed three attempts.

Strategy: The key to strategy in slalom skiing is knowing how to turn the skier at its maximum speed. To achieve a better score, try to barely miss hitting the rocks near the foot of the cliff by arching your back as long as necessary during the dive.

Bull Riding: To choose which bull you want to ride, move the joystick FORWARD or BACK. The bulls are named (from easiest to hardest) Ferdinand, Elmer, Bob, Tornado and earthquake.

Press the FIRE BUTTON to start the event. To respond to the bull’s movements, move the joystick as follows: BUCK: If the bull is bucking, move the joystick LEFT or RIGHT in the opposite direction that the bull is moving. SPOKE: If the bull is BACK to stay on the bull when it is spinning. HALT: Move the joystick LEFT or RIGHT in the opposite direction that the bull is moving.

Balance: Establish a rhythm with your lumberjack’s legs; if you don’t build speed at the correct rate he may lose his balance. The computer keeps balance meter for both players. When a lumberjack is off-balance, his arms extend to help him return. Strategy: Make your opponent lose his balance by stopping the log, then changing the direction of the log’s rotation quickly back and forth. Finish off your opponent by rolling the log rapidly in the direction that will cause him to fall off.

Slalom Skiing: To start skiing down the course, press the FIRE BUTTON. Control your skier’s turns by moving the joystick LEFT or RIGHT to turn in the opposite direction. Each player is allowed three attempts.

Strategy: The key to strategy in slalom skiing is knowing how to turn the skier at its maximum speed. To achieve a better score, try to barely miss hitting the rocks near the foot of the cliff by arching your back as long as necessary during the dive. Also remember, that holding the joystick LEFT, RIGHT, FORWARD, or Back at the time of your leap adds extra velocity in that direction.

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Scoring: Scoring is based on reaction time—both yours and that of your opponent. The player who can execute moves the quickest will get the highest scores. If you throw your opponent to the ground or push him out of the ring, you’ll receive enough points to win the match. The shorter the match, the higher the points.

Strategy: Timing is important to success in the sumo ring. When you perform a move with the FIRE BUTTON pressed, be sure to release the button at the proper time to complete the move successfully. You can learn the timing through practice. Also keep in mind that the Utchari is a good strategic move. Try using it when you’re about to be pushed out of the ring.

Medals:
- Gold Medal = 5 points
- Silver Medal = 3 points
- Bronze Medal = 1 point

Sumo Wrestling:

[] Press the FIRE BUTTON to begin the event and go into the crouch.
[] Control your wrestler by repeatedly moving the joystick as indicated for the following wrestling moves:

```
FOREARM /
\BACKWARD PUSH<-------------------------> FORWARD PUSH /
\   / SLAP SLAP FORWARD SLAP /
\   /BACKWARD SLAP SLAP FORWARD SLAP
```

[] Press and hold the FIRE BUTTON to attempt to grasp your opponent’s belt. Then perform one of the following moves by repeatedly moving the joystick in the direction indicated, while still holding the button down.

```
UTCHARI /
\BACKWARD FULL<------------------------> FORWARD GRAB /
\   / TRIP LEFT SNATCH TRIP RIGHT
```

[] The computer maintains stamina and balance factors for each wrestler.
[] Release the FIRE BUTTON to let go of your opponent’s belt.
[] The first wrestler to leave the ring or touch the ground with any part of his body but the feet loses the match.
World Tour Golf

World Tour Golf comes with a full set of clubs and tees, so you don't need any of these. What you DO need is your trusty computer and its keyboard. (You can also use a joystick. See your Command Summary Card for instructions on booting World Tour Golf. Look there also for any keystroke commands unique to your computer. On all machines, the keyboard equivalent of the joystick button is the return or enter key - we refer to these controls throughout the manual as simply the button. When the title screen appears, press any key to go to the activity menu.

Playing Golf

The activity menu is the nerve center of the program. Use it to get to the many selection screens that make World Tour Golf both realistic and challenging. But for now, how about a few holes at Pebble Beach?

The Quick Way to Play

To get to the first tee, press the Button (joystick button or return key) five times. This moves you through various menus (described later), and sets up a one-player round. A message describing "playing conditions" appears, giving you a general idea of the prevailing wind and green speed. The next screen that appears is your scorecard. It lists each player's scores and player handicap (relative difficulty of equalize scores). In addition, for each hole the par (target score), yardage, and hole handicap (relative difficulty of equalize scores), are displayed. For now only one player, "J.S nicklaus," is listed. You will be able to add more players later.

Play Golf!

Pressing any key puts you on the first tee. The left half of the screen shows a birds eye view of the hole. You will hit your first shot from the tee. Aim down the fairway to the green. The terrain which surrounds the fairway and green is the tough, where you'd rather not hit your ball, if you can possibly help it. The right half of the screen displays a golfer's eye-view of the hole and gives you important game information.

Club Selection

Before you hit the ball, be sure you are using the right club. You have fourteen to choose from:

* Three Woods (A driver, a 3-wood, and a 4-wood)
* Ten Irons (2 through 9-iron, wedge and sand wedge)
* One Putter

Golf clubs are numbered according to their length and the distance they can hit the ball (A 4-iron will knock the ball farther than a 5-iron). Woods hit farther than irons. The table below lists the maximum range for each type of club:

<table>
<thead>
<tr>
<th>Club</th>
<th>Max Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver</td>
<td>240 yds</td>
</tr>
<tr>
<td>S.Wedge</td>
<td>180 yds</td>
</tr>
<tr>
<td>4 Wood</td>
<td>220 yds</td>
</tr>
<tr>
<td>3 Iron</td>
<td>195 yds</td>
</tr>
<tr>
<td>Wedge</td>
<td>165 yds</td>
</tr>
<tr>
<td>5 Iron</td>
<td>215 yds</td>
</tr>
<tr>
<td>7 Iron</td>
<td>165 yds</td>
</tr>
<tr>
<td>S.Wedge</td>
<td>155 yds</td>
</tr>
<tr>
<td>8 Iron</td>
<td>135 yds</td>
</tr>
<tr>
<td>9 Iron</td>
<td>125 yds</td>
</tr>
</tbody>
</table>

Higher-numbered clubs have more loft-that is, they hit the ball higher in the air and therefore a shorter distance. If you want to hit a ball over a hill or tree, you will want to use a club with a high loft (a 9-iron or wedge, for example).

At the beginning of each hole you are automatically assigned your driver. In most cases, this is the club you will want to use for the tee shot. On shorter holes (par3 for example) or holes with obstacles near the tee, you may want to use a shorter club.

Select a club by pressing the up and down arrow keys, or by moving your joystick up or down. To determine a clubs range, press the spacebar and an arc will appear. This shows the spot where a perfectly hit ball would come to rest on a windless day.

Aiming Your shot

On the left hand side of the screen, a crosshair indicates the direction your shot is currently aimed. World tour golf automatically positions the crosshair on a straight line between the ball and the hole. Sometimes however, you will not want to hit your ball straight towards the hole. To adjust your aim, press the left and right arrow keys (or move the joystick to the right or left). The crosshair will move and the point of view window adjusts accordingly. Always check the wind direction and speed shown in the point of view window. If the wind is blowing more than 2 or 3 miles per hour, you may need to aim into the wind to compensate.

Hitting the ball

And now its time to hammer that little white ball! Press the button once to bring up the Swing Meter, which appears in the lower right-hand corner of your screen. Press the button a second time to start your backswing. Press a third time to begin your downswing and strength of the shot.

To hit the ball full strength, press the key when the meter reaches the 100% position. To hit the ball a shorter distance, press the key before the 100% point. You can also overswing, which may hit the ball farther than the clubs maximum range, but may also result in an erratic shot.

Press a fourth time to actually hit the ball! Exactly when you hit the ball determines the accuracy of your shot. To hit the ball straight ahead, press the key when the swing meter is pointing down. If you hit the ball before the meter reaches this position causes your shot to slice (curve to the right). The farther away from the straight-down position your hit occurs, the more extreme the curve. A hook or a slice shortens the distance of a shot. If you're not in the mood to play dexterity games, use the number keys on the top of the keyboard to hit perfectly straight shots of varying strength as shown in the command summary card.

Hazards

The following hazards are encountered in any game of golf:

Trees: When your ball hits a tree, it may be slowed down by foliage of it may bounce off in any direction. To hit out from the trees, use a club with a high loft ( hit to hit over them ), or use a club with a very low loft in the hope of hitting under them. You can also aim around trees, hitting your ball with a hook or slice so that it will curve back into the fairway.

Hills

If your ball hits a hill, it will bounce off. If there is a hill directly in

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They normally would. On a fast green, they normally would. On a fast green, they
back out gracefully, hit esc.

Dry green is fast. On a slow green, expect your putts to go only 2/3 as far as
removes the typing if you make an error. Press the button when you're finished.
The speed of the green also affects your putting. A wet green is slow, while a
default by hitting the button, or type in an alternative. The backspace key
the point of view window. In some cases, you must type in a command from the keyboard. You are provided
slopes. The direction in which the arrows point of the green is also shown in
reference card) to move from any menu to the next higher menu.

A symbol on the green indicates the severity of the slope. A brace (}) indicates
describes each item as it is highlighted. Use esc. (or its equivalent; see your

On a flat green, line up the crosshair to define a straight line between your
ball and the hole. Watch out for a sloping green because the ball will curve in
the direction of the slope. Thus, if the green slopes downward, compensate by
positioning the crosshair above the hole.

A symbol on the green indicates the severity of the slope. A brace (}) indicates
a slight slope; arrows of increasing sharpness indicate moderate and severe
slopes. The direction in which the arrows point of the green is also shown in
the point of view window.

The speed of the green also affects your putting. A wet green is slow, while a
dry green is fast. On a slow green, expect your putts to go only 2/3 as far as
they normally would. On a fast green, they normally would. On a fast green, they
will go 30% farther. In a single session on one course, all greens have the
same speed. Wind has no effect of putting.

Putting is slightly different from other shots because you only press the button
time. The first press brings up the swing meter, the second starts your
backswing, and the third determines the strength of the shot. The distance
between the ball and the crosshair on the green is seven feet.

You can also use the number keys to putt the ball the following distances:

<table>
<thead>
<tr>
<th>Key</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4ft.</td>
</tr>
<tr>
<td>1</td>
<td>15ft.</td>
</tr>
<tr>
<td>2</td>
<td>30ft.</td>
</tr>
<tr>
<td>3</td>
<td>45ft.</td>
</tr>
<tr>
<td>4</td>
<td>60ft.</td>
</tr>
<tr>
<td>5</td>
<td>75ft.</td>
</tr>
</tbody>
</table>

If you have a very short putt (under 3 feet), and your partners agree that it's a
gimme (a shot so easy, no one could miss), press G and the game automatically
sinks your putt. You can also press T for Tap if you are within 4 feet of the
hole. This controls the strength of the shot, but still requires you to aim.

Once your ball is sunk, the result appears in the upper right-hand area of
the screen.

Par means you have completed the hole in the allotted number of shots

Other indicates that you failed to achieve a double bogie

After you have completed a hole, you return to the scorecard screen. Press any
button or key to go to the next hole.

Customizing your Game

Now that you have a feel for golf, its time to get acquainted with some of the
ways you can customize the game.

Using the menus

All the menus work the same. Use the arrow keys (or the joystick) to move the
highlight up and down or right and left. Press the button (return key or
joystick) to select the highlighted item. The box at the bottom of the screen
describes each item as it is highlighted. Use esc. (or its equivalent; see your
reference card) to move from any menu to the next higher menu.

In some cases, you must type in a command from the keyboard. You are provided
with a default selection in the box at the lower right of the screen. Accept the
default by hitting the button, or type in an alternative. The backspace key
removes the typing if you make an error. Press the button when you're finished.
To back out gracefully, hit esc.

The activity Menu

From the activity menu, you can choose to play, practice, or construct a golf
course.

The play Options Menu

Number of players allows you to play up to four people. Type of play includes
stroke play, (any number may play) or match play (2 some or 4some only). In
stroke play, the player with the lowest score after golfing 18 holes is the
winner. In match play, you win or lose on every hole. Robot players allows you
to assign a computer opponent to 1 or more of the player positions. Accept
options tells the program that you have set the play options and are ready to
select a player.

The Show Players Menu

On the left side of the screen, you see the players present statistics. Either
accept the players as they are, by selecting accept players, or change any of
their statistics by selecting change players which brings up the edit players
menu.

The Edit Players Menu

From this menu you can change the players names, handicaps or attributes. A
players handicap is subtracted from his total strokes to arrive at his net
score. Use this feature to balance players of different abilities. Players
attributes are what distinguishes one golfer from another. If you want to change
the default values, select attributes. This takes you to the player attributes
menu.

The player Attribute Menu

You can change a robot players attribute as well as those of a human one (not
all attributes are available on all machines). Adjust player attributes as
follows:

* Drive distance gauges a players strength. The average distance a player hits a
driver can be adjusted from 100 to 300 yards. This in turn affects the maximum
distance all the other clubs are capable of hitting. The games default distance
is 240 yards.

* Drive accuracy is the percentage (1% to 99%, with a default value of 90%).
Accuracy affects your shot consistency as well as the likelihood of flubbing a
shot.

* Drive tendency reflects each players tendency to hook or slice.

* Recovery skill is a players ability to get out of bad lies. The better your
recovery skill, the better your chance of getting out of a rotten lie without
flubbing the shot.

When you have finished press accept player. You can select a course to play on.

Load a course and play
-------------------------------------------------

The left side of the screen lists the courses on the disk. To load a course
from a different disk, use change disk or change drives and follow the on-screen
prompts. Delete permanently erases a course from the disk. Once you've loaded a
course, you know what to do -Play Golf!

IV. PRACTICE, PRACTICE, PRACTICE

To hone your skills, you can practice without actually playing. Select Practice
from any course. Putting Green lets you practice putting on greens of varying
slopes. Driving Range lets you hit shots from the tee with any club, and
measures the distance of each shot. You will use to finish the hole. Draw Terrain returns you to the draw terrain menu.

V. GOLF COURSE CONSTRUCTION

To build the course of your dreams, select Construct from the Activity menu.
This takes you immediately to the course edit menu.

The course edit menu

The left half of the screen shows miniature diagrams of the first nine holes on
the course. For now, all of these holes are blank, that is, totally rough with
no fairway. The right half of the screen contains the course edit functions.

* Load lets you load an existing course of hole from disk. You can then alter it.
(Note: first-time users may want to load a pre-existing course to practice on
before tackling a blank course). This menu also lets you erase the current
course.

* Save lets you save either an entire course or move holes around within an
existing course.

* Hole edit is where you actually create new holes or make existing ones more
to your liking.

When you press Hole Edit, a thick frame appears around the first hole on the
left side of the screen (Press the spacebar to toggle back and forth from the
right and left halves of the screen. This is also the case in most other
construction screens.) Use the cursor keys or joystick to move the frame to the
to the hole you want to create or modify. If you move the frame downward long enough,
the back nine holes appear. When you have chosen a hole, press the button. On a
blank hole, this takes you to the draw terrain menu. These are described below.

The draw Terrain menu

There are two steps to constructing a hole. Use the draw terrain (fairways,
rough, and water). Later on, you will place the tee, green and various hazards.

When drawing the terrain, you work on the left hand side of the screen with a
block representation of the hole. Don't worry about the angular look of the
drawing; the program smooths and details the image for you later.

Selecting draw terrain places a thick cursor on the left half of the screen. Use
the arrow keys to move the cursor, then press the button to drop a square "tile"
of fairway on the hole. When you have placed as many tiles as you wish, press
ESC or the spacebar to return to the menu.

Press the button repeatedly on change terrain to change the drawing terrain from
grass to rough to water, and back to grass again. Clear hole fills the
entire hole with the terrain with which you are working. Preview hole allows you
to see the hole as it appears once it has been smoothed and detailed. You can
clear the hole while previewing, but the first time you drop a tile, the
blocky image will return.

Several keyboard shortcuts are available to make drawing the hole easier. See
your Reference Card for details.

The finish Hole menu

After you have outlined the basic shape of the hole, complete it by placing
objects and defining features such as green slope.

Selecting Finish Hole from the Draw Terrain menu takes you to the finish hole
menu. The left half of the screen shows the hole you have just designed. The
right half contains the functions you use to transform this hole into one which
will rank among golfdoms finest.

Place Objects allows you to place objects (green, tee, bunkers, trees, etc.) on
the hole. Clear objects removes all objects. Set features takes you to the menu
you will use to finish the hole. Draw Terrain returns you to the draw terrain
menu, in case you need to make adjustments. Course Edit takes you back to the
course edit menu.

Placing Objects Selecting place objects from the finish hole menu takes you to the
object type menu. Toggle to the type of object you wish to place on the hole
and press the button. Press the left and right arrow keys to reveal the
variations for that object type. Press F to flip the object horizontally. Press
the up arrow key, to return to the object type menu.
When you have chosen an object to place on the hole, press the button and that object appears on the left side of the screen. Move the object around the hole with the cursor keys or joystick. Hit the button to drop the object. Once dropped, an arrow appears that you use to pick up and move any object on the hole. To pick up position the arrow over the object and hit the button. To remove an object, pick it up and press the spacebar.

You can place up to 50 objects on a single hole, but you cannot overlap them or place more than one tee or green on a hole. Once you have positioned the tee and the green the program calculates the distance of the hole and its par. If you have created a dialog hole, place a par maker (in the other category) at the bend of the dialog to obtain a more accurate distance calculation. Remember that a hole is not playable unless both a tee and a green have been placed. (Note: You may notice that the length of the hole varies from time to time as you play. This is because the program periodically adjusts the placement of the pin on the green just to make the game a little more challenging.)

You can use several keyboard shortcuts when placing objects on a hole. Your command summary card has the details.

**Setting Features**

Choose set features from the finish hole menu to set the hole difficulty and green slope, and put in skyline features. When you select Hole Difficulty, you must rate difficulty on a scale of 1 to 99 (with 99 being the most difficult). The program then automatically assigns handicaps to each hole based on the relative difficulty ratings you have designated. A hole handicap is a measure of its difficulty relative to other holes on the course. The most difficult hole on the course receives a handicap rating of 1. The second most difficult is assigned a rating of 2, etc. Since you won't know how difficult a hole is until you've played it, you may want to come back and do this later.

Green Slope lets you set the direction and severity of the greens slope. Skyline lets you drop hills, etc. into the background. Exit takes you back to the finish hole menu. Saving a hole or course

First, you will need a formatted (initialized) disk. To save a completed hole or course, return to the course Edit menu and select save. Course edit returns you to the course edit menu.

**Quick Save**

Save a course under its current name from any of the main construction menus (draw terrain, finish hole, course edit) by pressing 5. Use the save menu to save a course under a different name.

**END**

---

The fire in the great stone fireplace crackled warmly drawing flickering tongues of light across the faces of the men and women gathered in the Tavern. One dude that was cloaked and hooded, hunched over a picture of brew in the corner and seemed really stoned as the storyteller by the fire began to tell his story.

"In the beginning, the four major lands of Deldain were ruled independently. Lord Solrain ruled over the town of Nisondel, Lord Mirrh over Cestonia, Lord Estrine over Arveduin and Lord Denethenor over Mystenor. Usually there was peace ya know, sure sometimes a few little friendly rivalries and an occasional skirmish with the dudes over at the Isles of Bregadal, but in general all was really cool and peaceful."

He poured some brew in a glass...

"Now even then, Lord Denethenor was pretty good at magic and shit, and he really got off into studying the DARK side of mysticism. He got really good man and then he started to get greedy. Like he wanted more than his 1/4th share of Deldain and all the wealth and power that went with it. That's when the shit hit the fan."

The storyteller took a deep sigh and drank a log swallow of his brew!

"The first that Lord Denethenor attacked was Lord Mirrh, ruler of Cestiona, who was like geographically right in the middle. Now he and Lord Estrine were tight and they joined together to fight lord Denethenor. Lord Solrain was chicken-shit and stayed out of it all. Mirrh and Estrine destroyed the Castle Denethena, but didn't have any effect on the heavy duty stuff of that evil dude Denethenor. With his evil magic still growing and getting more powerful, he forced Mirrh and Estrine back to their own lands and put a shitload of spies and monsters of his own creation all over their property. Lord Estrine, whose castle is closest to Mystenor, was a prisnor in his own castle. The only land to escape the ravages of the war is here in Nisondel, and I can promise ya, knowing that evil asshole Denethenor, it's just a matter of time before he comes here to Nisondel starting his bullshit."

He took another long swallow of his brew and continued...

"Now it's been rumored for a long time now, that it doesn't matter how large or powerful it is, no army will ever defeat Lord Denethenor and his awesome magic. Instead, it's supposed to be one single dude all alone with magic and weapons more powerful than his. A lot of brave dudes have gone out to try to kick his ass and none of them ever came back here to Nisondel. It's really a bummer cuz you see, Denethenor gets stronger and his stinky shit spreads even more. That chicken-shit dude Lord Solrain can't fight worth doodleysquat. If Denethenor comes here we're doomed."

The men and women nodded and agreed with the story teller. As awful as it sounded, they knew he was telling the truth. Then there was a movement in the corner and the dewd with the cloak that seemed really stoned came to the fireplace. He threw back his hood and the other people stared at him. He was of medium height, skinny and had a real young baby looking face.

"Well," he said, "so this Denethenor dewd has loads of green huh? Maybe I'll go and check him out. I need some extra cash," he said rubbing his hands over the heat of the fire."
The storyteller bust out in hearty laughter... "HAHAHAHA! You! Defeat Lord Denethenor? HAAHAH! You don't even look like a warrior or even a Magician... You look more like a thief! Matter of fact, are you the thief that's been stealing shit from around here lately?"

Some of the other people looked at the guy with hostility while the rest checked to make sure they still had their wallets and stuff. The young dude just smiled and said, "Maybe I'm young and maybe I'm even a thief. Maybe that's what it takes to kick this dudes ass." He laughed under his breath. "After all, how many old farts have tried it and never returned? In my profession (whatever that might be), I've gotten out of more one-piece situations than any three warriors on. Most townspeople are friendly and are willing to share advice. You have enough gold to buy the bare minimum when you first start out. If you pick up a little by robbing travelers and monsters before you find your way to the 1st town then you can buy more.

You may only have one character at a time so after you create him take some time to identify your allies and save valuable information. Make an attempt to converse with everyone to keep a journal of the things people say to you and who says it even if sometimes you have to) be prepared to take the consequences. Most townspeople just mind their own business. But the Rebel Underground Network has heard that you were coming and in most towns there will be Freedom Fighters that will help you along the way. Converse with everyone to identify your allies and save valuable information. Make an attempt to be friendly because no one likes Lord Denethenor and you can have valuable allies that you can rely on later.

Keep a journal of the things people say to you and who says it even if it is from your own townspeople. When you step into a town or Castle Boundry, you are expected to behave in a civilized manner. If you act different from the other people there (and sometimes you have to) be prepared to take the consequences. Most townspeople just mind their own business. But the Rebel Underground Network has heard that you were coming and in most towns there will be Freedom Fighters that will help you along the way. Converse with everyone to identify your allies and save valuable information. Make an attempt to be friendly because no one likes Lord Denethenor and you can have valuable allies that you can rely on later.

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These little short dudes can only strike a few hits but are known more for being able to pass thru stone walls.

These are the silly twits... They'll walk into a light barrier and whacko! No more Worrgrecs... hehehe!

They can give you a pretty good whack with a handaxe, but they LOOK more fierce than they really are.

Warriors are some of the few humans that you'll meet outside of civilization. As a rule they aren't so tough but if they get going in the right direction they can be pretty fierce.

Magic users can be either Good or Bad. (Mostly bad)... They can cast spells that will throw opponents for long distances... As a friendly tip, never get caught in a fight between two mad wizards.

As the name implies, the sea traveler will often be found running from a school of these. Yes! They can do to you here what they can do to you in real life...

The dudes are pirates. They pull shit unsuspecting merchant ships and wayfarers like yourself. (Not me, I'm too smart!) They can take some of your goodies if you let them.

They hang out the maizes until dark and then they're everywhere. They're really pains in the ass!

Dangerous mothers. They're almost never alone and ya have to really use your wits... Also, they are vicious (sp) critters that'll rip ya up.

:\!

Shit! They have four arms and they can really confuse you when you fight them. It's better to just take a long range cannon and wipe 'em out.

They look like ostriches and they can be just as fierce... Best to avoid them if your hits are low.

These are the monsters that originate in the water, but they can also live on land. There's no way to get away from them other than finding a good strong door and hiding.

Oherwise known as Turkey-dragons. They have wings but they cannot fly. Dosen't matter, they can still kick ass. They have the ability to temporarily blind you and put you in a world of trouble.

Devilish little dudes. The best tip I can give is that their most powerful weapon is similar to one of the spells that you will learn...

One of the most fierce of the things that Lord Denethenor has conjured up. They can fly and they'll chase what they're after across either land or water... <BEWARE>

The evil asshole himself! No ou how awesome this dude is cuz he dosen't (F) around... If he hears that you're coming to challange him, he won't just sit and wait for ya he'll come after you and conjure up all sorts of shit to do you in... If you get close to this dudes realm, that's the time to be MOST CAUTIOUS! And that's my warning o ya!

-END-
Hints for the Wrath of Denethenor by the Nudge

Don't get lost, go to the Gargoyle!
Pass through with Netrelon
Ask lord Mirriz, he might be able to help you
Speak to the Backwoods hermit of torches
The Bank of Deledain knows who they work for
Doors are so charming
FireTrench can take you a long way
Ekit Nisondel on a western Island
Look for a different way out of the Dark
Silver reflects
Find a harbour & take to the seas
Sorlain, Mirriz, & Estrine are the real conspirators
A mages intelligence echoes in the staying power of his spells
Use Wethrir wisely - master it before learning higher powers
There is but one spell that will still the waters
Don't get caught in a field of light
One of Limbar's warriors will help you
The Wizards of CastleDrawn will help you
Demons can smell their pray
That's why he's the Lord
Limbar will get me out
Someday the truth will be revealed & they will praise him
You can't hide from a demon!
I've got a Specer's Atlas
Look in the stone
You are doomed
With 4q
All magic is released by the spoken word
The very words which cast the illusion will dispell the source
So it is written...
Look even beyond Cestiona
Lost? Find a scroll
Demon Glow can easily be cast or dispelled
But why? (ed. Good question!!)
I'm afraid your boss isn't too hospitable to strangers
Seek a Western exit
Don't bother with the Hotel Pescara; they don't take drifters
I know something you don't!
The Demon's glow is just a form of magic
Across the channel!
Have you heard the truth?
I've got friend's coming to get me out
Take me with you! I can show you the Western door!
Limbar's nothing more than a Lunatic
Many treasures lie in the hole
There's lots of gold to be had
The citizens of En Siev have dug in
Every spell drains energy from the wielder
Look beneath the ruins of En Siev
Isn't this a great condo?
Move in you own dimension with Monsrol
En Siev is a heathen city
I've seen the Graveyard at Shadowmere
Go in at Midnight, come out at Mystenor
Learn Hexerei in CastleDrawn
Things can change at midnight

I hate raw fish
Ask of Clien at Karibae
The seven towers of Castle Denethena have darkened
I know of CastleDrawn; sanctuary of magic
I crossed Death Meadow!
You'll find Janai in the isles of Bregalad
He used his ower only in defense - seek Bhui in the Dungeon
Seek our Lord Mirriz
Have you learned Specere
Seek help of it or imprisoned unjustly
Open your eyes and the myth will vanish
Death Meadow is impassable - but you must cross
If it won't open, pass through
One of Limbar's warriors knows something
You ski?
Castle Denethena was rebuilt
Clien is on the Lake
A more powerful spell is more tiring
Not so! I've seen the castle
His old castle in Mystenor is completely deserted
Estrine's men destroyed the castle
You won't find him there
It's on an isle surrounded by magic
He fled from his castle to build a remote fortress
2 false entrances, 1 trap: Look south & pass between the caves
Report all suspicious persons
You're not one of them, are you?
The Banshee is flogged
Learn of his castle in Swain's
Enter the hole only with great w8ill
I helped to capture Donovan
All will perish
Janai waits beyond the meadow
Mirriz and Sorlain are the true evil; kill them!
Denethenor lives and you, you shall die
I am Bhui. I know the power of Resonim - speak the word to a wavy light
LaVince is also a disciple
Remove Mirriz from his throne and claim his rule
The name is engraved on a secluded pub
Don't be afraid to use your magic when needed
Ask of Donovan at the Penitentiary
The true exit from the mountain swims in a sea of light
I'm the wealthiest man here!
Stage tricks are but simple spells
You'll always find Aligre near a stage
Seek Shadowmere in Bregalad
You must visit Bregalad someday
There's more than one way to leave Mount Restorn
The crossover occurs at midnight
Search the isles for the amphitheatre
Look south of the mountain
Ever been to the mountain?
Take caution with blanket spells; you may strike a friend
The blanket spell is most draining, but so deadly
Lethren concentrates all your power on a single foe
Remember, Denethor's evil grew from his abuse of the death spells
Like Wethrir, it will shatter upon striking an object
Our Lord has a thing for sharks
Our vault is protected by magic
You will die a fool
All but one passage to Mystenor is useless
You must pass the mountain
The trail is visible only under close inspection
Comb the northern ridge
Red Sands is the link between Shadowmere and Sorie Gulch
The most obvious is rarely the safest
The walls of Mystenor have no passage
Search the Northern ridge for the Mountain
The circular river refuses all but the most experienced
Overcrowded? Never! Just keep death row moving
Look for the door in the graveyard
The cavern is only visible in still waters
The fools shall perish
Hemlock can't be found in the wild
Limbar shall rule all
You must pass Mount Restorn
Don't kill the benevolent one
The gate to Restorn is locked by magic
I didn't know the grenade was armed
65 mph isn't that fast
Forget the legend of Donovan - it's a fool's tale
This is the Crossing point: Red Sands
These are the walls of Sorie Gulch - within which the mystical river is fed
I guard the entrance to the mystical circular river...
I will not allow your passage!
Welcome to the seven towers of Castle Denethena: Enjoy!
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X.Jump

These are two "use" files for ACOS which act similar to ON X GOTO.

The following set up MUST be followed when using X.JUMP

use "a:x.jump",x <- set x to any variable, with a number from 1-64
goto qscan <- jump to this label if x=1
goto subs <- jump to this label is x=2
. etc

The set up for X.JUMP2 is the same, except the number may be from 0-63.

Ending Comments:

Make sure you have the correct amount of labels after the use, so that you
don't get a syntax error.

X.Jump is faster than the normal " if x=43 goto label". However you may not
notice the difference if your running over 1 mhz, or if your jumping to low
numbers. But overall it is faster.

If you have any questions or comments give my board a call.
The source code of this external was included and is fully documented. This code was written with Merlin Pro. Nothing particularly special, but, if you have a thought, please contact me at any of the previous addresses.

--- Equates
Getnxt equ $380 ; get next byte from the program
Goblcomm equ $386 ; engulf the comma
Mdmslot equ $e00 ; where MacOS keeps the modem slot * 16
ASnd equ $c088 ; the base of the ACTA send byte
ARcv equ ASnd ; the base of the ACTA receive byte
Stats equ $c089 ; the base of the SSC status byte
IntPage equ $bf80 ; the interrupt vectors in ProDOS
MLI equ $bf00 ; the ProDOS Machine Language Interface

--- SetInt
* Sets up the necessary interrupts to receive
* chars. from the modem. Because of this, the modem echo
* must be OFF, and the card must use interrupts.

SetInt ldx #$00 ; set-up offset into buffer and interrupt page
loop lda IntPage,x ; get the byte from the ProDOS page
inx ; up the pointer
lda IntPage,x ; get the next 1
sta buffr1,x ; and store it
:done jsr MLI ; call the ProDOS MLI and ask it to...

--- Send
* This routine send the user's string to the modem.

Send jsr Goblcomm ; who needs the comma?
ldx Mdmslot ; load with offset to slot number
loop jsr Getnxt ; get the next char. from the program
sta ARcv,x ; send the char. to the modem
pha ; store off the char. that was sent

--- checkrsp
* This routine sets up an infinite dummy loop
* The interrupt handler stores off each character in a buffer.
* Once done, ($8d found) it proceeds on to find a match.

checkrsp ldx #$00 ; set offset to zero
loop lda buffr2,x ; get the last-known byte
cmp #$8d ; is it return?
Apple II Computer Info

beq search          ;yes, whoopy! start the search
bne loop            ;no, then keep checking always....
IntHndlr cld         ;yeah, we'll take the interrupt
sta $0a             ;put in it's place
lda $03             ;get the id
sta All:Parms+1     ;move it back...
and #$00001000      ;the address of All:Parms
lda buffers2,x      ;store the byte in the buffer....
inx cld             ;it's been ushered off to the buffer
ldy #$00            ;set offset into the damn string
sty $03             ;store the initial id as zero
lda #>table         ;the high-byte of the start addr. of the table
sta $00             ;the high byte is there, forever
lda #<table         ;the low-byte of the start addr. of the table
sta $01             ;the low-byte is there, forever
loop lda ($00),y    ;get the byte from the table
pla                 ;get that last char. back
cmp $02             ;compare it.....
bmi found           ;if it's MSB is 1, we got ourselves a winner...
jmp loop2
sta $02             ;the place to compare
jmp loop2
lda buffers2,x      ;get the char. to compare
bmi setit           ;if it's negative, we found next adr.
jmp upzer
jsr upzer
jmp :loop

found lda $03       ;get the id
sta $0a             ;put it in 's place
Deall lda buffrl    ;get the low-byte of the addr
sta All:Parms+1     ;move it back...
da All:Parms+2      ;store it back
jsr $bf00           ;re-install the interrupt handler
dfb $40             ;allocate interrupt
da All:Parms        ;the address of All:Parms
rts                 ;now, we're done
All:Parms dbf $01   ;1 parameter
d all:Parms         ;the addr. of Macos's routine, pluse 1 byte
rts                 ;and I'm outa here

---Search
* Now to match the modem's response with the right code.
* This routine employs binary searching. Not that I
* think it matters. This routine isn't time-intensive;
* however, for a complete discussion see the docs.

search jsr Deall     ;clear interrupt,so Macos doesn't maiss anything
ldy #$00            ;set offset into the damn string
sty $03             ;store the initial id as zero
lda #>table         ;the high-byte of the start addr. of the table
sta $00             ;the high byte is there, forever
lda #<table         ;the low-byte of the start addr. of the table
sta $01             ;the low-byte is there, forever
loop lda ($00),y    ;get the byte from the table
pla                 ;get that last char. back
cmp $02             ;compare it.....
bne doneloop        ;no, than take care o' it...
increment lda ($00),y ;up the char. back
ora $00             ;run a generic operation to set flags
bmi found           ;jif it's MSB is 1, we got ourselves a winner...
sav /blank/x.call
jmp loop2

doneloop lda #$00    ;reset the comparison counter to 0
:loop lda ($00),y    ;get the byte
ora #$00            ;dummy flag-setter
bmi setit           ;jif it's negative, we found next adr.
jsr upzer
jmp loop2
setit jsr upzer      ;up one more byte
inc $01             ;up the id counter
lda $03             ;make sure we're not done....
cmp $1c             ;jis it done
beq error           ;yes, we have a problem
jmp loop2
otherwise, yall can continue looping
upzer inc $01       ;up the low-byte
pha                 ;save the a-register
lda $01             ;get that low-byte
beq ruphi           ;jif it's zero, go ahead and up the low-byte
rts                 ;otherwise, go back young man..
jmp loop2
otherwise, yall can continue looping
ruphi inc $00       ;up the low-byte
rts                 ;and return
error lda #$08       ;Missing Data Error
jmp $392             ;that's it...I'm outa here
When Xenocide is loaded, plug your mouse in for some heavy action. You will come to the startup menu. The top left corner of your menu is to calibrate your joystick. (Note: Joystick Optional). The right top corner is to view the high scores. It gives you the option of erasing the high scores. You can clear the high scores by pressing ‘C’. The bottom left corner gives you the option of turning stereo ON or OFF. The bottom right corner is simply to start your mission.

**-- Key Commands --**

- [Esc]: Pauses game play
- [< or > - lowers and raises the system volume
- [Ctrl-J]: selects joystick control
- [Ctrl-K]: selects keyboard control
- [Ctrl-Q]: quits game and returns you to the startup menu
- [S]: Toggles sound ON and OFF
- [M]: Toggles warning sound ON and OFF
- [Spacebar]: Launch nuclear bomb (Hovercraft level only)
- [Spacebar]: Select and option (Cave & Bio-lab levels only)

**-- Using The Keyboard ---**

7 8 9  ->  up/left  up  up/right
4 5 6  ->  left center right
1 2 3  ->  down/left down down/right

Note: It is not necessary to hold down keys. Once the key is pressed you will continue to move in that direction until another key is pressed. Holding down a key will disable the [Open-Apple] and [Option] keys and you will not be able to fire.

**--- Fire Controls ---**

Button 0 - [Open-Apple]
Button 1 - [Option]

**Hovercraft level:**

- [Spacebar]: Launch nuclear bomb
- [Open-Apple]: Fire fireball
- [Option]: Fire missile

**Cave levels I & II:**

- [Spacebar]: Select option
- [Open-Apple]: Fire lasers/auto blaster
- [Option]: Throw grenade/fire sonic wave
- [Open-Apple]: Refuel/fill oxygen tank (only when at a refueling bay)

**Bio-lab level:**

- [Spacebar]: Select option
- [Open-Apple]: Fire lasers/flame thrower
- [Option]: Throw grenades/drop land mines

**Hints & Suggestions**

1. Try shooting at rocks and walls in the cave levels-some have bombs and keys behind them.
2. If you fly by a refueling bay, make sure that you land even if you don’t need the fuel or ammunition-if you happen to die later then you will start back at the last bay that you landed. Now we wouldn’t want that, now would we?
3. When advancing into the Bio-lab, be sure to get a full supply of ammunition and grab the options that will be most valuable to you in the Bio-lab (Regro Shield!)
4. Option boxes in the Bio-lab are not as plentiful as those in the caves, so use them more prudently.

**--- Levels ---**

**The Hovercraft Level:**

The object of the hovercraft level is to avoid hitting large rocks and aliens, pick up as many ammunition canisters as possible and get to the docking station which will take you to the next level before running out of fuel. At the start of the hovercraft level you will see a road before you. The ammunition canisters you are to collect will be found along the road and the docking station will be found somewhere along the way. Since a hovercraft hovers above the ground using its anti-gravity pads, it is not necessary to stay on the road. However, if you wander too far off the road you may never find the docking station.

Along the way you will encounter strange alien life forms that you can avoid or shoot. If you happen to hit one at slow speed you will run it over but fast speed will damage your hovercraft. If you hit one of the rocks at low speed it will stop you but at higher speeds it will do massive damage to your hovercraft. Hitting to many objects will destroy your hovercraft!

The ammunition canisters are very important because they will determine the amount of ammunition you will be able to carry in the following levels. To get a canister simply run over it with your hovercraft. (hitting canisters will not harm your hovercraft). Once you hear the “alert” voice you will be near the docking station and a red dot will be shown on the radar screen showing the distance and direction to the station. To dock simply run into the docking station and you will be taken to the cave level.

**Cave level I:**

You have now left your hovercraft and put on a jetpack to travel through the treacherous cave level. The cave level has two basic objectives: to collect five bombs that will be required in the Bio-lab to destroy the moon and to find the docking pad that will take you to the next level. The bombs are placed secretly throughout the cave and there will always be five of them. You cannot continue to the next level until you have collected all five bombs.

As in the hovercraft level, you have a set amount of fuel and ammunition capacity. However, for each ammunition canister that you have collected your maximum ammunition capacity will be raised. You will start out with maximum fuel and ammunition, but as the game progresses you will run out of fuel and undoubtedly ammunition. Thus, it is important that you land at the refueling bays located throughout the cave whenever possible to replenish your fuel and ammunition. It is possible to travel back up the cave all the way to your starting position, but you may not go back to your previous level. This makes it easy to clear out a portion of the cave then fly back to the closest
refueling bay and refuel. Also, if you happen to die in a cave level then your next life will begin at the last refueling bay that you landed on.

Although there are many things that you must beware of in the cave level, there are also very rewarding things as well. For example, Option Pods (shown as pulsating blue spheres) provide you with the different options that are listed at the bottom right-hand corner of your screen. When you collect a blue option you will be able to activate the first item on the options list. To activate the option, simply press the spacebar and it will turn from light blue to yellow, indicating that the option is active. If you collect a second blue option pod and you have not yet used the first option, the indicator light will advance to the next option in the list. You may still collect options while one is activated, but you cannot have two or more options at the same time. If you have an active option, then collecting more options will move the light blue indicator down the list as before, but this time skipping over the activated option. For example, if the Auto Blaster option is in yellow, or active and the sonic wave option in light blue, collecting one or more option pod will now make Mega Shield a light blue option. Be careful, however, for if you have Regro Shield in light blue (waiting to use it when your shield runs low) and you run into an option pod, then Flesh Freeze will now be in light blue and you will have lost the ability to activate Regro Shield. This could make even a bad day seem enjoyable!

Once you are at the end of the cave and have collected all five bombs, land on the docking pad (marked with blinking arrows) and press button 0 on your joystick. This will advance you to the next level.

Cave level II:
There are a few differences between Cave level I and II. Most notable is the fact that your travel will take you through an underwater environment. The following is a list of the differences that you will experience.

1. You will sink if you are not swimming.
2. The fuel indicator becomes an oxygen indicator, the refueling bays will now give oxygen supplies instead of fuel.
3. There are no more bombs to collect in Level II, but there are locked doors that must be opened with keys, which are hidden throughout the cave. To pick up a key simply run into it. To open the door just touch the keyhole in the door after picking up a key. Note, however, that a key may only be used once.
4. The bomb indicator becomes the key indicator and will keep track of how many keys you have.

Once you are at the end of Level II cave, land on the docking pad (marked with blinking arrows), press button 0 on the joystick and you will be taken down to the Bio-lab. When you get to the Bio-lab your shield will be repaired and you will have the same options and ammunition.

Bio-lab level:
The objective of the Bio-lab level is to destroy the moon you are on by dropping all of the five bombs that you collected in the cave level into nuclear storage ports that are located throughout the laboratory and teleport off to the moon.

The screen view is one in which you, the player, are looking down from above the floorplan of the laboratory. You will notice that there is no indicator or fuel, as you are now able to walk around the laboratory.

Once you have explored the Bio-lab and have placed all of the five bombs, then you should go to the central control room and activate the teleporter (by running into the computer terminal) and then moving to the teleporter pad. You will then be teleported to your ship where you will be outfitted for your next mission, or given the win sequence if you have destroyed the final moon.

--- Using The Joystick ---

To use the joystick simply point the joystick in the direction you wish to move. Press button 0 to fire Fireballs, Lasers and Flame Throwers and also to refuel. Press button 1 to fire Missiles, Grenades, Sonic Waves, and land Mines.
FOR 10 TURNS, DURING WHICH ENDURANCE LEVEL WILL RETURN TO FULL STRENGTH AND 4 POINTS OF DAMAGE WILL BE HEALED.

P - PURCHASE. CHECKS EXPERIENCE POINT LEVEL TO SEE IF A NEW LEVEL HAS BEEN REACHED, IF SO CHARACTER IS AWARDED MORE HIT POINTS. ALSO, PURCHASE GOODS.

IN TRADING POSTS THE FOLLOWING IS AVAILABLE:

(A) ARMORY SHOP
(W) WEAPONS SHOP
(M) MAGIC SHOP
(/) CHARACTER STATUS
(SFC) EXIT

MISCELLANEOUS COMMANDS:

Q - QUIT AND SAVE. SAVES CURRENT GAME STATUS TO DISK.

W - WEAPON SELECTION. CHANGES WEAPON IN HAND

S - SPELL. ALLOW YOU TO CAST SPELLS.

Z - CHANGE TEXT AND MOVEMENT DELAYS.

TO CAST SPELLS:

TO CAST SPELLS, THE MAGIC USER MUST HAVE A XIPHOID AMULET IN THEIR POSSESSION.

OTHER IMPORTANT KEYS:

O - REST & HEAL. PUTS PLAYER IN TRANCE
The World of Arroya

Ten thousand southern suns have passed since the Archmage Szhaalin tore the very heart from the demon lord Xyphus and hid it in the Arroyan continent. His life's work done, the mighty Szhaalin vanished into the western wilderness, while the gravely wounded demon lord sunk into caverns beneath the Earth to languish in eternal pain. Legend has it that pieces of the demon's heart fell to the soil and formed small, sword-shaped amulets of violet crystal from whence all magic springs, and in the very bowels of the Earth itself lies the actual heart—a gemstone the size of a human head.

'Tis said that when the demon lord bled, tribes of goblins sprang from the droplets of ichor—the Cotico, the Malakee, the Maripo, the Sedento, the Masanti, and the dread Azulus with their companion posed by this landscape. All of Arroya was forbidden to human kind by the beasts and monsters that still dwell there. Poisonous serpents and oversized vermin roam the plains, while all manner of the dead—that-walk are to be found in the hills and forests. All the men that have ventured into the lost continent have vanished without a trace, save for occasional survivors sprouting half-mad ramblings that gave birth to legends among the Arroyan Dwarves that there are, indeed, numerous tunnels in the underworld, but none has found the solution to the mystery.

Some thirty years ago a conqueror was born. Some men say that Das is the descendant of the great wizard Szhaalin, while others scoff at such talk, calling it the foolish tales of old women...I tell ye that there is much wisdom in the tongues of the aged ye what ye will. In his short lifetime Das has overrun most of the known world, aye, and has brought it to order and justice, albeit with the edge of the sword and the purification of the torch. It is said that men need a strong leadeer to follow, one who holds little in esteem save might and force. Das is such a one, a man to be reckoned with, a mover of continents and oceans. Perhaps such a ruler is needed before poets and painters can render the beauty which abounds in this world...

The progress of Das has come to a halt at the borders of Arroya. While his legions were easily capable of subduing the civilized world, they came not prepared to face the tribes of goblins and the forces of demonic magic that hold sway in the lost continent. Only through the use of mercenary troops recruited from the nomadic bands of humans, elves, and dwarves that live on the costal plains of Arroya can victory come to Das. It is told in song that a small band of wizards and warriors, no more than four strong, can slay the long-suffering demon lord Xyphus and open the lost continent to subjugation. As long as Xyphus lives, no matter how sorely wounded, his demon minions shall roam the land and Arroya shall never fall to mortal hand. Das has promised suzerainty over the Central Steppes of Arroya to the one that slays the demon lord. None have managed to claim the reward...

The kingdom waits.

The Geography of Arroya

The Lost Continent of Arroya is a subtropical wilderness consisting of vast plains and sweeping forests dotted with lakes and crisscrossed with swif-flowing rivers. The inland Sea of Mithral is populated with rather large serpents and krakens, rendering it impossible to cross unless one has wings. There are several major mountain ranges around the continent, as well as a few small mountains and dormant volcanos.

At certain times of the year, some rivers can be crossed, but the flow of their flow is such that there are no clearly marked fords. There are also rumors of underground rivers and lakes, but no one who has ventured underground has survived long enough to map them. Many of the rivers are surrounded by dismal swamps inhabited by some rather unpleasant creatures. While the marshes can be crossed, it is rather slow going.

The Korayan Mountains in the eastern part of Arroya are so tall and steep that they have traditionally been considered to be an insurmountable barrier. These mountains are the home of the fierce Korayan Falcon and the famed Spider People of Selcham Pass, a particularly nasty tribe of four-armed mutant orcs.

But perhaps the most striking aspect of Arroya is the northeastern part—the Enchanted Plains. These are broad expanses of sand and sawgrass where inexplicable forces seem to be at work. There are areas of these plains that no human can cross, yet monsters roam about them freely. Philosophers have debated the reasons for such phenomena over the centuries, but none has found the solution to the mystery posed by this landscape.

There are also rumors of large areas of underground tunnels and caverns, where it is said the one-time great Demon civilization still resides. There may be some truth to these rumors, as not very many Demons are spotted above ground...Nevertheless, it is common knowledge among the Arroyan Dwarves that there are, indeed, numerous tunnels in the southwest of the continent, come quite large, while others are so narrow that only a human child can pass through them.

Outposts

Through the Lost Continent there are scattered forts and trading posts. These are the only signs of the human presence in the lands of Arroya, save for the Conqueror, who serves them. In these forts you can rest, be healed by skilled conjurors (at no charge) and purchase supplies. Most of the forts are hard pressed by the local tribes of goblins, orcs, and Demons. Often you will be called upon by the commanders of these garrisons to carry messages to other, similar outposts.

The trading posts are scarce and hard to find. These wilderness stores are manned by those who can live with either side in the great war, and who pledge allegiance to no ruler. They are permitted to exist in Das because they aid his troops and scouts, while local tribes find them to be the only source of good metal weapons and armor. Healing services are provided at the trading posts as well, at no charge to the wounded character.

Character Races & Professions

There are three races in Arroya from which player characters can be recruited. They are Elf, Human, and Dwarf. Each race has its strengths and weaknesses, some of which may not become apparent until later in...
Elves are small people, averaging perhaps five feet in height. They are very quick and agile, and are most at home in the woods. They are good fighters and spell casters, although they tend to tire quickly if using heavy weapons.

Humans - The Human is the only true Arroyan race from which characters may be recruited. For hundreds of centuries they were slaves of the Demon civilization, and their numbers diminished yearly under the harsh treatment they received at the hands of their cruel masters. The slave race of Humans eventually died out, but not before runaways had escaped into the mountains and formed small outlaw bands that still survive till this day. The Humans of Arroya hate Demons above all else and will fight them to their dying breath.

The Human stands between five and a half and six and a half feet tall, usually weighs 150-250 pounds, and is at his or her best wielding heavy weapons. They are not as hardy as Dwarves, but a lot tougher than Elves.

Dwarf - The Dwarves of Arroya are recent arrivals to the Lost Continent. They first touched her shores a paltry two hundred years ago in search of precious metals. The dwarves are a race of miners, and thrive in rocky, mountainous terrain. They are also at home underground and are valued for their acute sense of direction in subterranean passages. They have no love for Demons or any of the goblin tribes that inhabit Arroya, and are handy in a fight.

The tallest dwarf stands but four feet from head to toe. They are uniformly stocky, usually outweighing their Elven counterparts. Common wisdom is that a dwarf can stand three blows for every two another race receives in a fight. However, they have very short legs and are not fond of running, a trait which makes them laggards on any race.

Professions

There are two classes of player characters in Xyphus: Fighter and Spellcaster.

The Fighter can use any weapon except the Xiphoid Amulet, but may not cast spells or use magic other than in the form of magical weapons and armor enchantments.

The Spellcaster can fight a little, using clubs or maces, but is unable to wield an edged or advanced weapon. A spellcaster can, however, cast spells, provided that he or she possesses a Xiphoid Amulet. There are no restrictions on the armor that a spellcaster may use, but both armor and spells are expensive in Arroya and gold is scarce.

Character Creation

One may have up to four characters in Xyphus, although that number is not required. To create characters, simply type in their names when asked to do so by the program, and choose their professions. Depending on their race and profession, they will be given their proper hit points, skill factors and movement abilities.

You may then have up to four characters in Xyphus, although that number is not required. To create characters, simply type in their names when asked to do so by the program, and choose their professions. Depending on their race and profession, they will be given their proper hit points, skill factors and movement abilities.

Should you succeed in winning the game with a party of four, you might consider tackling it with fewer player characters...

Playing the Game

The game Xyphus consists of six separate scenarios, each one tougher than the previous one. The average playing time of a scenario ranges from 3 – 12 hours, depending on the skill of the player. There are three components to playing Xyphus, the Master Disk, the Scenario Disk, and the Game Disk. The Game Disk must be created by you. The game is always played on the Game Disk you create. Any number of Game Disks can be created with characters unique to that game.

To begin boot the Master Disk. You will be presented with two choices:

(A) - CREATE NEW GAME DISKETTE (B) - CONTINUE EXISTING GAME

Select (A). You will then be asked to enter the number of characters (1-4) for this game. Using four characters is recommended the first time through. Less than four makes for a very difficult game.

Once you have selected the number of characters in your party, you will then be asked: ENTER THE NAME OF CHARACTER 1. Upon naming your first character, you will be asked: SELECT RACE: H)UMAN D)WARF E)LF.

Choose your race carefully and remember that balanced parties are the key to success in Xyphus.

Upon choosing the character race, you will be asked: SELECT F)IGHTER OR SPELLCASTER. Choose the profession you wish that character to be.

Finally, you will be shown the character as it exists and asked: CHARACTER OK? (Y OR N). Type "Y" if you are satisfied with the character or "N" if you wish to start over.

Repeat the sequence for the remaining characters in your party.

Once you have created your party, you will be asked: ENTER NUMBER OF DISK DRIVES (1 OR 2)? Type in the appropriate number.

If you have one disk drive, you will be told to put a blank diskette in the drive. This will be your Game Disk. Press the spacebar to continue here, and to the Scenario Disk.

You will be told to insert the Scenario Disk at the appropriate times. Be patient, there is a lot of data on the Scenario Disk and you will have to swap disks a number of times. The program will always tell you when to do so.

If you do have two disk drives, you will be told to put a blank in Drive two and the Scenario Disk in Drive one. The program will then create your Game Disk.

Once you have created your Game Disk, you will always use it to play Xyphus. Each time you boot up the Master Disk, choose the (B) CONTINUE EXISTING GAME option and insert your Game Disk when asked to do so.

NOTE: During the play of Xyphus there will be pauses after battles and victories to allow you to read displayed messages. The computer is waiting for a keypress. Pressing the spacebar will continue the game.

Controls

Xyphus can be played with the keyboard (Macintosh users should see special instructions). The map in Xyphus is based on a system of hexagons, thus you may move any of your characters in any of six
directions - Northeast, East, Southeast, Southwest, West, and Northwest. The keys to use are:

Y - Northeast
H - East
B - Southeast
V - Southwest
F - West
T - Northwest
G - Remain for one turn in the same spot.

NOTE: Should you wish to move the entire party as a group instead of moving your characters, simply hold down the CTRL key while pressing the key for your chosen direction. Common sense should tell you that any party can only move as quickly as its slowest member. This is true for Xyphus.

Combat

The keys for combat are the same as for movement. Combat takes place when a player character moves next to a creature and then chooses to strike at it by attempting to move through it. Should you attempt to fight something using group movement capability (holding down the CTRL key in conjunction with a direction key), your party may move, but will refuse to engage in combat.

Other Important Keys

0 - Rest & Heal. This command will put the player character into a trance of approximately 10 moves, during which his or her endurance level will return to full strength and 4 points of damage will be healed. However, a character in a trance is extremely vulnerable and will be unable to defend against an attack until he or she awakens.

P - Purchase. The purchase command serves two very important functions. Whenever it is invoked, the current Experience Point total of the character is checked to see if a new level has been reached. If so, you will be advised of the advancement and your character will be awarded extra Hit Points. It is a good practice to hit "P" whenever you enter a trading post or a fort, regardless of whether you intend to purchase anything or not.

Also, whenever you enter a trading post or a fort, you have the option of purchasing new weapons, spells, or armor. Pressing the "P" key will enable you to do so. You will then be shown a menu:

(A) ARMORY SHOP
(W) WEAPONS SHOP
(M) MAGIC SHOP
(/) CHARACTER STATUS
(BPC) EXIT

Choosing any of the above options will in turn lead to a new menu. Entering the Weapons, Armor, or Magic shop will show you a list of available merchandise and the current prices for each item. You may choose to buy whatever you can afford.

Finally, when your party has completed assigned tasks in the scenarios and are all gathered in the destination fort, selecting "P" will end the current scenario and move the party to the next one.

Choosing (/) - Character status - will provide the following two or three screens of information (This option may be chosen at any time during the game):

First Screen:

HIT POINTS:
The amount of damage your character can take.

MAXIMUM HIT POINTS:
Your character's full potential if unwounded.

LEVEL:
This is the measure of your character's experience and expertise.

ENDURANCE LV:
This is the indicator of your character's level of fatigue.

WEAPON-IN-HAND:
Tells what weapon the character has ready to use.

ARMOR CLASS:
This tells you what type of armor the character is wearing.

GOLD OWNED:
The amount of gold the character possesses.

EXPERIENCE:
This figure shows how much experience the character has earned as a result of victories in battles and gold found.

Second Screen:

SPELLS OWNED:
(if the character is a Spellcaster)

Third Screen:

WEAPONS OWNED:
SELECT ONE (This screen permits the character to change the weapon-in-hand).

Permanent Status Display

During actual game play, there are always four lines of information displayed at the bottom of the screen. The information shown is:

CHARACTER NAME/PROFESSION RACE/HIT POINTS: ENDURANCE (1-100)
WEAPON-IN-HAND

On occasion, such as during combat or when a spell has been cast, special messages will be shown in this window. When you have finished reading such a message, press the spacebar to continue.

Miscellaneous Commands

There are four other important commands to remember while playing Xyphus. They are:

Q - Quit and save. Pressing "Q" will save the current game status to your Game Disk, allowing you to attend to frivolities such as eating, sleeping, or being social.

W - Weapon Selection. Pressing "W" will allow you to change the weapon-in-hand, and costs the character one movement turn.
S - Spell. This command allows you to cast spells, and will be discussed in the file on Spellcasting.

Z - Change text delay and movement delay. The text delay is the amount of time that special messages are displayed on the screen. The movement delay is the amount of time taken for response to a selected directional move. Pressing "Z" will get the message: ENTER TEXT DELAY (1-9) CURRENT VALUE IS X; followed by: ENTER MOVEMENT DELAY (1-9) CURRENT VALUE IS X. Play with these values until you have found the right ones for you.

Movement, Endurance, & Dexterity Factors

Each character and creature in Xyphus is rated for movement, endurance, and dexterity. What this means is that each creature will move better on certain types of terrain and worse on others, as is the case for the different races of player characters.

Furthermore, depending on the weapon used, each character or creature will strike more frequently during the length of a fight, or less often. For example, a Dwarf wielding a two-handed longsword, will not strike nearly as frequently as an Elf using a hunting knife. (He will do a lot more damage per blow, however). Different monster types will strike at different rates as well.

Finally, each character and creature is rated for endurance. That means that depending on the weapon being used and the spell being cast, the player will tire out more quickly or at a slower pace. The effects of fatigue on player characters is that there will be reduced damage on blows struck or the character may cease to be able to fight at all, and fatigued Spellcasters may not be able to cast some of the more demanding spells.

Armor & Weapons

Metal is very scarce in Arroya - The Dwarves are the only true miners and smiths in the whole land and there are only a few of them. A warrior's wealth is often measured by the armor and weapons he or she owns. There is no plundering of corpses for weapons. In fact, when possible, the weapons and armor are buried with the corpse in accordance with the dictates of Arroyan culture. However, weapons which are lost and have no rightful owner may be claimed by any Arroyan. Legends tell of many magical weapons which are scattered about the Lost Continent.

The Arroyan warrior uses only one kind of armor, and only the most powerful of warriors have full suits. The armor consists of a padded jerkin of cloth, covered with a leather tunic that protects the waist and hips. The tunic is in turn covered with a hauberk of chain mail that covers the torso and protects the arms. Finally, a breastplate of polished bronze is placed over the hauberk. Most Arroyans, however, cannot afford this much armor and they must collect it piece by piece. Fortunately, each component of the armor does provide an additional degree of protection as it is accumulated. Custom (and practicality) dictates that a warrior first purchase a shield, then begin building his or her armor collection. No armorer will sell armor to a warrior without a shield.

Should a warrior manage to purchase a full suit of armor, there is yet another way of increasing his or her armor class. This is through the purchase of an enchantment available through any armorer. The enchantment is a two-part affair called the Veils of Szhaalin. The first part is called the Inner Veil, and must be in place before the second part - the Outer Veil - can be purchased.

Weapons

There are many types of weapons available in Arroya, some of which cannot be purchased anywhere. The forts and trading posts in different parts of the continent may offer weapons particular to that locale as well as common weapons such as swords, maces, and morningstars. Many of the special weapons are outlawed in other parts of the Lost Continent and may be confiscated by garrison commanders there. (The program will take care of these simply by eliminating them when you move to a new scenario).

Many of the creatures found in Arroya are enchanted by nature, and may only be wounded with magical or silver weapons. Most Lost Continent veterans will tell you that if the creature seems unusual, it will probably require the use of a special weapon to destroy it.

At some time your party may come across enchanted weapons useable either by Fighters or Spellcasters. Be thankful and grab them! Some of these weapons will last throughout the campaign, while others will vanish when their enchantment is used up. Be warned that there are cursed weapons around...

SPELLCASTING & MAGIC AND MONSTERS ARE IN FILE #2. THEY WILL BE RELEASED AS SOON AS POSSIBLE...
Spellcasting & Magic

The source of magic in Arroya is governed by some fairly strict rules. To begin with, the source of magic is the Xiphoid Amulets - small, sword-shaped, violet gemstones that are found in the wilderness of the Lost Continent. Legend says that these stones are pieces of the Heart of Xyphus, torn from the breast of the Lord of Demons by the great wizard Szhaalin thousands of years ago. Legend also says that the Heart itself still exists and must be found before Xyphus can be slain.

What is known about the Xiphoid Amulets is that they seem to be the catalyst for the casting of spells. Once a Spellcaster has purchased a magic scroll or spell, he or she has that spell memorized and can use it forever - PROVIDED THEY HOLD IN THEIR HAND A XIPHOID AMULET WITH WHICH TO FOCUS AND MAGNIFY THE ENERGY THAT BRINGS INTO BEING AN ACTUAL SPELL. Without the amulet, the spell is nothing more than a meaningless chant.

Another known fact about the Xiphoid Amulets is that they shatter. They do so when their power has been consumed. There is no getting around the fact that the amulets are finite, and that they wear out. Thus, the Spellcaster that conserves his or her spells usually lives to raise children and discuss philosophy late into the evening.

One last fact about the amulets: They can and are often used as weapons. They are small and do very little damage, but they do affect normal and enchanted beings alike.

The casting of a spell is not an easy task for the Spellcaster. Regardless of the success or failure of a spell, it requires a great deal of concentration and energy from the magic user. The amount of endurance necessary to cast a particular spell is noted on the lists of spells throughout the game.

The wizards of Arroya commonly use a dozen spells, although rumors circulate about the existence of scrolls with unknown spells etched on them in magical writing that fades after a short time. Should a player encounter one of these scrolls, he must determine its effect and purpose through experimentation. The well-known spells are:

**Attack Spells**

Abeja - This spell produces a profusion of livid welts to appear on the recipient, severe enough to slay small creature and wound humans gravely. This spell has a high probability of succeeding, although it will only work on normal living creatures.

Matamosca - This spell delivers a sharp blow to its recipient, causing about as much damage as the Abeja spell. It has a relatively good chance of being cast successfully, but will not affect Demons and certain types of enchanted beings.

Bendicca - This spell only affects shapechangers and lycanthropes. It causes a great deal of damage on the life force of the dormant shape of the creature, e.g. if a werewolf in its human shape is the recipient of a Bendicca spell, its latent wolf shape will suffer the damage. The spell has a good probability of being cast successfully.

Hela - This spell is a staple of the Demon-fighter's bag of tricks. It causes an area of intense cold to briefly materialize around its recipient, causing serious damage. This spell does not always work, but is successful more often than not.

Tirayama - This spell is only effective against Undead creatures such as Zombies and Liches. This spell does not always work, but is relatively successful for the skilled Spellcaster.

Tirayela - This spell is similar to the Hela spell in its effect, i.e., its damage is rendered by intense cold. However, it is not effective against Demons or certain enchanted creatures. Furthermore, it is an extremely difficult spell to cast correctly and often does not work.

**Hindrance Spells**

Cuiega - This spell works against all normal (not enchanted or Undead) creatures, and renders them blind for a limited period of time.

Piedra - This spell paralyzes its victims. It works against shapechangers and lycanthropes only.

Lubrika - This spell slows down Demons by turning the ground beneath their feet into extremely slippery clay. Unfortunately, the effects of the spell are rather short-lived.

Cieno - This spell slows down Undead creatures by turning the ground beneath their feet to a fine powdery substance. The effects do not last very long.

**Healing Spells**

Sana - Sana is a high-powered healing spell that will completely cure an injured character, even if that character has been poisoned.

Goza - Goza will cure some damage to all members of a party, but is ineffective where poison is concerned.

Other Spells

("Thanx to the Archer <")

These spells were not listed in the manual nor can you buy them from a trading post:

**Attack Spells**

Sling Of A Sage - This spell seems to cause a small amount of damage to one creature. It seems to have a high probability of succeeding.

Magic Firebow - Seems to affect all monsters and has a high probability of succeeding. To my knowledge it has not been tried on
enchanted beings.

Tree - This is the only spell or weapon, for that manner, that will harm a Treant. It usually destroys them with one try.

Demonda - This spell does an extreme amount of damage to Demons and will usually kill them.

Astral Fence - This spell will protect all the characters in a party from being attacked by monsters, but there is no guarantee that it will be cast correctly.

Star Burst - This is the only known effective weapon or spell that will cause harm to Glass Gods.

Hindrance Spells

Lycod - This spell seems to paralyze the recipient. It only seems to work on shapechangers and lycanthropes.

Casting Spells

Unlike a fighter who must be next to an opponent in order to strike a blow, the Spellcaster may strike from a distance. To cast a spell, simply type "S" when it is the Spellcaster's turn. You will be shown a list of spells available to that character, of which one may be selected. If you decide not to use a spell, press the spacebar to return to the game.

As a Spellcaster advances in level due to experience point gain, his or her effective range for casting spells will increase. So will the probability for successful casting of a spell. Practice makes perfect, even in magic.

IFI ANYONE FINDS ANY OTHER SPELLS NOT LISTED HEREIN, CALL THE SOUTH POLE [312] 677-7140

FILE #3 WILL BE THE DESCRIPTION OF ALL THE MONSTERS WITHIN XYPHUS.

THE PENGUIN/T-MEN

Usage: yankit t[vs]|x[vs]|i[vs] archive.shk [file1 file2 ...]

Options:
- t - just get a table of contents on the archive
- x - extract files
- i - integrity check; looks like it's extracting, but doesn't write anything
- v - verbose mode; combine with one of the first three
- s - force overwrite of existing files (doesn't prompt)
- f - force overwrite of existing files (doesn't prompt)
- d - don't use GS/OS sessions

If "archive.shk" is "-", then YankIt will read from stdin instead of a file.

v1.2 changes:
- (very slightly) more speed
- misc tweaks

v1.1 changes:
- new 'f' flag
- fixes two bugs in LZW uncompression

v1.0 features:
- supports uncompressed, LZW-I, and LZW-II storage
- extracts forked files
- works under APW/Orca, Gno, and ProSel-16 shells
- handles other compression methods and non-file archives (e.g. disk archives) in a reasonable manner
- silently ignores Binary II headers, so it will extract .BXY files
- "usually" faster than GS/ShrinkIt (see benchmarks for discussion)
- uses only two pages of DP space, making it ideal for running in the background

Info

The "read from stdin" feature allows you to do things like:

cat foo.shk | yankit tv -
or
yankit tv - < foo.shk

under Gno to get a listing of the files in foo.shk (why you'd want to do this is beyond me, but I imagine situations will arise).

** NOTE: the current version of the GNO shell doesn't appear to support this correctly. YankIt will appear to hang, but is actually trying to read from the keyboard. If this happens, just hold down a key until it quits (it's trying to read 48 characters). Orca 1/O redirection appears to work, but supposedly pipes will not because they don't work correctly with binary data.

YankIt will always prompt you before overwriting existing files. YankIt prompts are of the form

message (Y/N/Q)? N
Pressing 'Y' or 'N' does something appropriate. Pressing RETURN accepts the default (which will appear under the cursor; in this case it's 'N'). Pressing 'Q' or ESCAPE will answer 'N' to the question and then exit the program. Note that you don't need to hit RETURN; YankIt (which uses the console driver in raw mode) reacts to the first key hit.

Other prompts will appear when you try to extract files compressed in a format that YankIt doesn't handle (such as UNIX compress), and when you try to extract a disk archive. In both cases, you will be given the option of ignoring the record or to extracting it into a file. If the problem is the compression format, it will be extracted as raw data (which could then be passed to a utility like "uncompress").

(note: YankIt does not and never will extract a disk archive to a disk. Use GS/ShrinkIt to do disks.)

Comparison with NuLib

YankIt has features that NuLib doesn't, including:
- ability to handle resource forks
- the integrity check actually does something useful (NuLib's doesn't verify the CRCs)
- smaller and MUCH faster (100% assembly)

However, NuLib has features like:
- can create NuFX archives and compress as well as uncompress
- handles Binary II
- SQ/USQ uncompression and UNIX 16-bit compression/uncompression
- variety of display modes
- lots of other misc features, like the ability to delete files from archives, extract based on partial filename matches, and view files without having to extract them into a file.
- available as source code, and very portable

YankIt is intended as a quick & dirty way to extract files from archives created by ShrinkIt. It is not intended to replace ShrinkIt nor is it a prelude to a Super Duper New and Improved compression program. It was written primarily with Gno in mind. software becomes commonly used.

If you ask me to add a new feature, be prepared to answer the question, why can't you just use GS/ShrinkIt to do that?

Comparison with GSHK

YankIt has features that GSHK doesn't, including:
- ability to handle resource forks
- the integrity check actually does something useful (GSHK's doesn't verify the CRCs)
- smaller and MUCH faster (100% assembly)

However, GSHK has features like:
- can create NuFX archives and compress as well as uncompress
- handles Binary II
- SQ/USQ uncompression and UNIX 16-bit compression/uncompression
- variety of display modes
- lots of other misc features, like the ability to delete files from archives, extract based on partial filename matches, and view files without having to extract them into a file.
- available as source code, and very portable

YankIt is intended as a quick & dirty way to extract files from archives created by ShrinkIt. It is not intended to replace ShrinkIt nor is it a prelude to a Super Duper New and Improved compression program. It was written primarily with Gno in mind.

If you ask me to add a new feature, be prepared to answer the question, why can't you just use GS/ShrinkIt to do that?

Some (rather crude) benchmarks (Apple //gs at 2.5MHz, GS/GS 5.0.4, GSHK 1.0.4, ZipGS 8/16K, and a development version of YankIt):

Moria GS is:
- MORIA 1134 block shell executable
- MORIA.CONFIG 6 block text file
- MORIA.CONG 128 block text file
- MORIA.IIIGS.INFO 10 block text file

YankIt was timed with "show time; yankit ... ; show time". GS/ShrinkIt was timed with a stopwatch. All times should be considered +/- 2 seconds.

Unpacking Moria GS packed with LZW-I (368K) from /ram5 to /ram5:
- GS/ShrinkIt 1:42 With Zip: 0:51
- YankIt 1:10

Unpacking Moria GS packed with LZW-II (348K) from /ram5 to /ram5:
- GS/ShrinkIt 1:38
- YankIt 1:07

Unpacking Moria GS packed with LZW-I (368K) from an InnerDrive to /ram5:
- GS/ShrinkIt 1:42 With Zip: 0:50
- YankIt 1:09

(and now the interesting one...) Unpacking Moria GS packed with LZW-I (368K) from AppleDisk 3.5" to /ram5:
- GS/ShrinkIt 1:49 With Zip: 1:00
- YankIt 1:36

YankIt's uncompress routines are faster than GSHK's, but GSHK will read the entire archive into memory if it can instead of grabbing 32K chunks. This makes it faster than YankIt when I/O with a slow device is involved (especially if that device's I/O causes the processor to slow down to 1MHz temporarily).

On the other hand, YankIt's total memory usage is known at load time (somewhere in the neighborhood of 80K for buffers and code). It also uses very little DP space, and doesn't require any tools that aren't resident in ROM. Generally, YankIt is a win when you need to conserve memory and you're running off of a fast hard drive (which should be a common situation for people using Gno).

Known bugs/glitches:

ShrinkIt has never done the same thing twice when it comes to disk archives. Some versions set the uncompressed thread EOF, some set it to an apparently meaningless value, some don't set it at all. ShrinkIt v3.03 didn't follow the NuFX spec as far as setting the value of storage_type properly. GSHK sets the file_sys_id, P8 ShrinkIt doesn't.

Rather than try to deal with this in an elegant way, I have settled on dealing with it as best I can and just warning you that you may see something like:

Name Kind Typ AuxTyp Archived Format Size Un-Length SHELL Disk --- 800k 13-Feb-92 21:38 LZW-II 97% 395264

Note that YankIt does not attempt to convert pathnames to something appropriate for the target file system (so don't unpack HFS archives onto ProDOS disks). This will likely be fixed with the System 6.0 JudgeName call once the system software becomes commonly used.

YankIt and ECP-16 don't get along (I'm using v0.18). I don't know why.

Bug me at fadden@uts.amdahl.com.

NuLib is available (for now) on the OCF disaster cluster: tornado, avalanche, plague, monsoon, and headcrash.berkeley.edu via anonymous FTP in pub/Apple2.

For the statistically minded, YankIt is about 6000 lines of heavily commented assembly. Not a major undertaking, but hardly a trifle.

Thanks go to the volunteer guinea^H^H^H^H^H^H^Hbeta testers (you know who you are). Special commendation to Jerry Penner, Bug Hunter Extraordinaire, for finding a couple of nasty ones.

That's all, folks...
TOWER OF BABEL ??

In the interest of fostering compatibility among communications programs, part of the Professional-YAM manual is reproduced here to minimize the Electronic Tower of Babel.

The YMODEM Protocol is supported by the public domain programs YAM (CP/M), YAM(CP/M-86), YAM(CCPM-86), rb/sb (Unix, Berkeley Unix, Venix, Xenix, Coherent, IDRIS, Regulus) as well as Professional-YAM. These programs have been in use since 1981.

The protocols described below are enhancements to Ward Christensen's XMODEM protocol, and are public domain.

The 1k packet length capability described below may be used in conjunction with the Batch Protocol, or with single file transfers identical to the XMODEM/CRC protocol except for minimal changes to support 1k packets.

To complete this tome, Ward Christensen's original protocol document and John Byrns's CRC-16 document are included for reference.

CONTENTS

1. TOWER OF BABEL ??............................................   1
2. XMODEM PROTOCOL ENHANCEMENTS.................................   3
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Figure 10. Receiver and Sender Both have CRC Option.........  19
2.1 CAN-CAN Abort

CRC-16 should be used with the k option to preserve data integrity. In that case, it's better to packets are used with batch transmission, the file length transmitted.

If the line is so bad that ten attempts are insufficient, there is a significant danger of undetected errors. In that case, it's better to packets are used with batch transmission, the file length transmitted.

If 1024 byte packets are being used, it is possible for a 128 byte file to "grow" to 1024 bytes on CP/M because the allocation granularity is 1k. When 1024 byte packets are used with batch transmission, the file length transmitted in the file name packet allows the receiver to discard the padding.

YAM recognizes a sequence of two consecutive CAN (Hex 18) characters without modem errors ( overrun, framing, etc.) as a transfer abort command. The check for two consecutive CAN characters virtually eliminates the possibility of a line hit aborting the transfer. YAM sends five CAN characters when it aborts a XMODEM protocol file transfer, followed by five backspaces to delete the CAN characters from the remote's keyboard input buffer (in case the remote had already aborted the transfer).

Chapter 2 (cont)
over phone lines. The k option may be used with batch file transmission, or with single file transmission.

Chapter 3

XMODEM Protocol Enhancements

Figure 1. 1024 byte Packets

<table>
<thead>
<tr>
<th>SENDER</th>
<th>RECEIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;foo.bar open x.x minutes&quot;</td>
<td>s -k foo.bar</td>
</tr>
<tr>
<td>STX 01 PE Data[1024] CRC CRC</td>
<td>ACK</td>
</tr>
<tr>
<td>STX 02 PD Data[1024] CRC CRC</td>
<td>ACK</td>
</tr>
<tr>
<td>STX 03 FC Data[1000] CPMEOF[24] CRC CRC</td>
<td>ACK</td>
</tr>
<tr>
<td>EOT</td>
<td>ACK</td>
</tr>
</tbody>
</table>

Figure 2. Mixed 1024 and 128 byte Packets

<table>
<thead>
<tr>
<th>SENDER</th>
<th>RECEIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;foo.bar open x.x minutes&quot;</td>
<td>s -k foo.bar</td>
</tr>
<tr>
<td>STX 01 PE Data[1024] CRC CRC</td>
<td>ACK</td>
</tr>
<tr>
<td>STX 02 PD Data[1024] CRC CRC</td>
<td>ACK</td>
</tr>
<tr>
<td>SOH 03 FC Data[128] CRC CRC</td>
<td>ACK</td>
</tr>
<tr>
<td>SOH 04 FB Data[100] CPMEOF[28] CRC CRC</td>
<td>ACK</td>
</tr>
<tr>
<td>EOT</td>
<td>ACK</td>
</tr>
</tbody>
</table>

Chapter 3 (cont)

YMODEM Batch File Transmission

The YMODEM Batch protocol is an extension to the XMODEM/CRC protocol that allows 0 or more files to be transmitted with a single command. The batch file mode used by XMODEM is unsuitable because it does not permit full pathnames, file length, file date, or any other attribute information to be transmitted. Such a restrictive design, hastily implemented with only CP/M in mind, would not have permitted extensions to current areas of personal computing such as Unix, DOS, and object oriented systems.

As in the case of single a file transfer, the receiver initiates batch file transmission by sending a "C" character (for CRC-16). The sender opens the first file and sends packet number 0 with the following information[1].

Only the pathname (file name) part is required for batch transfers. To maintain upwards compatibility, all unused bytes in packet 0 must be set to null.

Pathname The pathname (conventionally, the file name) is sent as a null terminated ASCII string. This is the filename format used by the handle oriented MSDOS(TM) functions and C library fopen functions. An assembly language example follows:

```
DB 'foo.bar',0
```

No spaces are included in the pathname. Normally only the file name stem (no directory prefix) is transmitted unless the sender has selected YAM's f option to send the full pathname. The source drive (A:, B:, etc.) is not sent.

--------
1. Only the data part of the packet is described here.

Chapter 3 (cont)

Filename Considerations:

+ File names should be translated to lower case unless the sending system supports upper/lower case file names. This is a convenience for users of systems (such as Unix) which store filenames in upper and lower case.

+ The receiver should accommodate file names in lower and upper case.

+ The rb(1) program on Unix systems normally translates the filename to lower case unless one or more letters in the filename are already in lower case.

+ When transmitting files between different operating systems, file names must be acceptable to both the sender and receiving operating systems. If directories are included, they are delimited by /; i.e., "subdir/foo" is acceptable, "subdir\foo" is not.

Length The file length and each of the succeeding fields are optional[1]. The length field is stored in the packet as a decimal string. The file length does not include any CPMEOF (^Z) characters used to pad the last packet.

If the file being transmitted is growing during transmission, the length field should be set to at least the final expected file length, or not sent.

The receiver stores the specified number of characters, discarding any padding added by the sender to fill up the last packet.

Mod Date A single space separates the modification date from the file length.

The mod date is optional, and the filename and length may be sent without requiring the mod date to be sent.

The mod date is sent as an octal number giving the time the contents of the file were last changed measured in seconds from Jan 1 1970 Universal Coordinated Time (GMT). A date of 0 implies the modification date is unknown and should be left as the date the file is received.

This standard format was chosen to eliminate ambiguities arising from transfers between different time zones.

--------
1. Fields may not be skipped.

Chapter 3 (cont)
Two Microsoft blunders complicate the use of modification dates in file transfers with MS-DOS(TM) systems. The first is the lack of timezone standardization in MS-DOS. A file's creation time can not be known unless the timezone of the system that happened to write the file is known. Unix solved this problem (for planet Earth, anyway) by stamping files with Universal Time (GMT). Microsoft would have to include the timezone of origin in the directory entries, but does not. YAM gets around this problem by using the z parameter which is set to the number of minutes local time lags GMT. For files known to originate from a different timezone, the -zt option may be used to set the timezone as the timezone for an individual file transfer.

The second problem is the lack of a separate file creation date in DOS. Since some backup schemes used with DOS rely on the file creation date to select files to be copied to the archive, backdating the file modification date could interfere with the safety of the transferred files. For this reason, Professional-YAM does not modify the date of received files with the header information unless the d parameter is non zero.

Mode A single space separates the file mode from the modification date. The file mode is stored as an octal string. Unless the file originated from a Unix system, the file mode is set to 0. rb(1) checks the file mode for the 0x8000 bit which indicates a Unix type regular file. Files with the 0x8000 bit set are assumed to have been sent from another Unix or similar system which uses the same file conventions. Such files are not translated in any way.

Serial Number A single space separates the serial number from the file mode. The serial number of the transmitting program is stored as an octal string. Programs which do not have a serial number should omit this field, or set it to 0. The receiver's use of this field is optional.

The rest of the packet is set to nulls. This is essential to preserve upward compatibility. After the filename packet has been received, it is ACK'ed if the write open is successful. The receiver then initiates transfer of the file contents according to the standard XMODEM/CRC protocol. If the file cannot be opened for writing, the receiver cancels the transfer with CAN characters as described above.

1. Not necessarily that of the transmitting system!
2. If, perchance, this information extends beyond 128 bytes (possible with Unix 4.2 BSD extended file names), the packet should be sent as a 1k packet as described above.

Chapter 3 (cont)

After the file contents have been transmitted, the receiver again asks for the next pathname. Transmission of a null pathname terminates batch file transmission. Note that transmission of no files is not necessarily an error. This is possible if none of the filenames requested of the sender could be opened for reading.

In batch transmission, the receiver automatically requests CRC-16.

The Unix programs sb(1) and rb(1) included in the source code file RBSB.QQQ (rbsb.sh) should answer questions about YAM's batch protocol.

Figure 3. Batch Transmission Session

<table>
<thead>
<tr>
<th>SENDER</th>
<th>RECEIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;sending in batch mode etc.&quot;</td>
<td>C</td>
</tr>
<tr>
<td>ACK</td>
<td>C</td>
</tr>
</tbody>
</table>

Figure 4. Filename packet transmitted by sb

--rw-r--r-- 6347 Jun 17 1984 20:34 bbcsched.txt
00 0100FF62 62637363 6865642E 74787400 [bbcsched.txt]
10 36333437 20333331 34373432 35313320 | 3314742513 |
20 31303336 34340000 00000000 00000000 | 100644 ....... |
30 00000000 00000000 00000000 00000000 |
80 000000CA 56

Chapter 4

XMODEM PROTOCOL OVERVIEW

8/9/82 by Ward Christensen.

I will maintain a master copy of this. Please pass on changes or suggestions via CBRS/Chicago at (312) 545-8086, CBRS/CMPUG (312) 849-1132 or by voice at (312) 849-6279.

4.1 Definitions

| <soh> | 01H |
| <eot> | 04H |
| <ack> | 06H |
| <nak> | 15H |
| <can> | 18H |
| <cb> | 43H |

4.2 Transmission Medium Level Protocol

Asynchronous, 8 data bits, no parity, one stop bit.

The protocol imposes no restrictions on the contents of the data being transmitted. No control characters are looked for in the 128-byte data messages. Absolutely any kind of data may be sent - binary, ASCII, etc. The protocol has not formally been adopted to a 7-bit environment for the transmission of ASCII-only (or unpacked-hex) data, although it could be simply by having both ends agree to AND the protocol-dependent data with 7F hex before validating it. I specifically am referring to the checksum, and the block numbers and their ones-complement.

Those wishing to maintain compatibility of the CP/M file structure, i.e. to allow modemming ASCII files to or from CP/M systems should follow this data format:

+ ASCII tabs used (09H); tabs set every 8.
+ Lines terminated by CR/LF (0DH 0AH)
+ End-of-file indicated by Z, 1AH. (one or more)
+ Data is variable length, i.e. should be considered a
The expected one, in which case everything is fine; or then sent, ensuring the other end will see it.

Synchronizing: If a valid block number is received, it will be: receive subroutine, specifying a 1-second timeout, and ideas.

data), it must wait for the line to clear. See "programming tips" for interpreted.
to <nak> a block for any reason (invalid header, timeout receiving completing sending a block, to ensure no glitches were mis-
timeout for each character and the checksum. If the receiver wishes tosses any characters in its UART buffer immediately upon
Once into a receiving a block, the receiver goes into a one-second subroutine, to wait for the line to clear. Recall the sender
immediately, in case the sender wasn't ready. This would save the
The receiver has a 10-second timeout. It sends a <nak> every time it times out. When the receiver wishes to <nak>, it should call a "PURGE" subroutine, looping back to PURGE until a timeout occurs.

Chapter 4 (cont)
+ The last block sent is no different from others, i.e. there is no "short block".

Figure 5. XMODEM Message Block Level Protocol
Each block of the transfer looks like:

SOHblk #255-blk # Data cksum

in which:
SOH = 01 hex
blk # = binary number, starts at 01 increments by 1, and wraps 0FFH to 00H (not to 01)
255-blk # after going thru 8080 "CMA" instr, i.e. each bit complemented in the 8-bit block number. Formally, this is the "ones complement".
cksum = the sum of the data bytes only. Toss any carry.

4.3 File Level Protocol
4.3.1 Common_to_Both_Sender_and_Receiver
All errors are retried 10 times. For versions running with an operator (i.e. NOT with XMODEM), a message is typed after 10 errors asking the operator whether to "retry or quit".

Some versions of the protocol use <can>, ASCII ^X, to cancel transmission. This was never adopted as a standard, as having a single "abort" character makes the transmission susceptible to false termination due to an <ack> <nak> or <soh> being corrupted into a <can> and cancelling transmission.

The protocol may be considered "receiver driven", that is, the sender need not automatically re-transmit, although it does in the current implementations.

4.3.2 Receive_Program_Considerations
The receiver has a 10-second timeout. It sends a <nak> every time it times out. The receiver’s first timeout, which sends a <nak>, signals the transmitter to start. Optionally, the receiver could send a <nak> immediately, in case the sender was ready. This would save the initial 10 second timeout. However, the receiver MUST continue to timeout every 10 seconds in case the sender wasn’t ready.

Chapter 4 (cont)
Once into a receiving a block, the receiver goes into a one-second timeout for each character and the checksum. If the receiver wishes to <nak> a block for any reason (invalid header, timeout receiving data), it must wait for the line to clear. See "programming tips" for ideas.

Synchronizing: If a valid block number is received, it will be:
1. the expected one, in which case everything is fine; or
2. a repeat of the previously received block. This should be considered OK, and only indicates that the receivers <ack> got glitched, and the sender re-transmitted
3. any other block number indicates a fatal loss of synchronization, such as the case of the sender getting a line-glitch that looked like an <ack>. Abort the transmission, sending a <can>

4.3.3 Sending_program_considerations
While waiting for transmission to begin, the sender has only a single very long timeout, say one minute. In the current protocol, the sender has a 10 second timeout before retrying. I suggest NOT doing this, and letting the protocol be completely receiver-driven. This will be compatible with existing programs.

When the sender has no more data, it sends an <eot>, and awaits an <ack>, resending the <eot> if it doesn’t get one. Again, the protocol could be receiver-driven, with the sender only having the high-level 1-minute timeout to abort.

Here is a sample of the data flow, sending a 3-block message. It includes the two most common line hits - a garbaged block, and an <ack> reply getting garbaged. <xx> represents the checksum byte.

Figure 6. Data flow including Error Recovery

<table>
<thead>
<tr>
<th>SENDER</th>
<th>RECEIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;soh&gt; 01 FE -data- &lt;xx&gt; ---</td>
<td>&lt;--- &lt;ack&gt;</td>
</tr>
<tr>
<td>&lt;soh&gt; 02 FD -data- xx ---</td>
<td>(data gets line hit) &lt;--- &lt;nak&gt;</td>
</tr>
<tr>
<td>&lt;soh&gt; 02 FD -data- xx ---</td>
<td>&lt;--- &lt;ack&gt;</td>
</tr>
<tr>
<td>&lt;soh&gt; 03 FC -data- xx ---</td>
<td>&lt;ack gets garbaged &lt;--- &lt;ack&gt;</td>
</tr>
<tr>
<td>&lt;soh&gt; 03 FC -data- xx ---</td>
<td>&lt;--- &lt;ack&gt;</td>
</tr>
<tr>
<td>&lt;soh&gt; 03 FC -data- xx ---</td>
<td>&lt;--- &lt;ack&gt;</td>
</tr>
</tbody>
</table>

Chapter 4 (cont)
4.4 Programming Tips
+ The character-receive subroutine should be called with a parameter specifying the number of seconds to wait. The receiver should first call it with a time of 10, then <nak> and try again, 10 times.

After receiving the <soh>, the receiver should call the character receive subroutine with a 1-second timeout, for the remainder of the message and the <cksum>. Since they are sent as a continuous stream, timing out of this implies a serious like glitch that caused, say, 127 characters to be seen instead of 128.

+ When the receiver wishes to <nak>, it should call a "PURGE" subroutine, to wait for the line to clear. Recall the sender tosses any characters in its UART buffer immediately upon completing sending a block, to ensure no glitches were mis-interpreted.

The most common technique is for "PURGE" to call the character receive subroutine, specifying a 1-second timeout[1], and looping back to PURGE until a timeout occurs. The <nak> is then sent, ensuring the other end will see it.
Modem Protocol is 128 bytes or 1024 bits, the message polynomial will be of order \( X^{1023} \). The \( \text{hi} \) order bit of the first byte of the message block is the coefficient of \( X^{1023} \) in the message polynomial. The \( \text{lo} \) order bit of the last byte of the message block is the coefficient of \( X^0 \) in the message polynomial.

Chapter 5
XMDEM/CRC Overview

1/13/85 by John Byrns -- CRC option.

Please pass on any reports of errors in this document or suggestions for improvement to me via Ward's/CBBS at (312) 849-1132, or by voice at (312) 885-1105.

---

1. These times should be adjusted for use with timesharing systems.

Chapter 5 (cont)

The CRC used in the Modem Protocol is an alternate form of block check which provides more robust error detection than the original checksum. Andrew S. Tanenbaum says in his book, Computer Networks, that the CRC-CCITT used by the Modem Protocol will detect all single and double bit errors, all errors with an odd number of bits, all burst errors of length 16 or less, 99.997% of 17-bit error bursts, and 99.998% of 18-bit and longer bursts.

The changes to the Modem Protocol to replace the checksum with the CRC are straightforward. If that were all that we did we would not be able to communicate between a program using the old checksum protocol and one using the new CRC protocol. An initial handshake was added to solve this problem. The handshake allows a receiving program with CRC capability to determine whether the sending program supports the CRC option, and to switch it to CRC mode if it does. This handshake is designed so that it will work properly with programs which implement only the original protocol. A description of this handshake is presented in section 10.

Figure 7. Message Block Level Protocol, CRC mode

Each block of the transfer in CRC mode looks like:

\[
\text{SOH}\text{blk #}\text{<255-blk #>\text{<--128 data bytes-->\text{<CRC hi>\text{<CRC lo>}}}}
\]

in which:

- \text{SOH} = 01 hex
- \text{blk #} = binary number, starts at 01 increments by 1, and wraps 0FFH to 00H (not to 01)
- \text{<255-blk #>} = ones complement of blk #.
- \text{CRC hi} = byte containing the 8 hi order coefficients of the CRC.
- \text{CRC lo} = byte containing the 8 lo order coefficients of the CRC. See the next section for CRC calculation.

5.1 CRC Calculation

5.1.1 Formal Definition

To calculate the 16 bit CRC the message bits are considered to be the coefficients of a polynomial. This message polynomial is first multiplied by \( X^{16} \) and then divided by the generator polynomial \((X^{16} + X^{12} + X^5 + 1)\) using modulo two arithmetic. The remainder left after the division is the desired CRC. Since a message block in the Modem Protocol is 128 bytes or 1024 bits, the message polynomial will be of order \( X^{1023} \). The \( \text{hi} \) order bit of the first byte of the message block is the coefficient of \( X^{1023} \) in the message polynomial. The \( \text{lo} \) order bit of the last byte of the message block is the coefficient of \( X^0 \) in the message polynomial.

Chapter 5 (cont)

5.2 CRC File Level Protocol Changes

5.2.1 Common_to_Both_Sender_and_Receiver

The only change to the File Level Protocol for the CRC option is the initial handshake which is used to determine if both the sending and the receiving programs support the CRC mode. All Modem Programs should support the checksum mode for compatibility with older versions. A receiving program that wishes to receive in CRC mode implements the mode setting handshake by sending a \( \text{<C>} \) in place of the initial \( \text{<nak>} \). If the sending program supports CRC mode it will recognize the \( \text{<C>} \) and will set itself into CRC mode, and respond by sending the first block as if a \( \text{<nak>} \) had been received. If the sending program does not support CRC mode it will not respond to the \( \text{<C>} \) at all. After the receiver has sent the \( \text{<C>} \) it will wait up to 3 seconds for the \( \text{<soh>} \) that starts the first block. If it receives a \( \text{<soh>} \) within 3 seconds it will assume the sender supports CRC mode and will proceed with the file exchange in CRC mode. If no \( \text{<soh>} \) is received within 3 seconds the receiver will switch to checksum mode, send a \( \text{<nak>} \), and proceed in checksum mode. If the receiver wishes to use checksum mode it should send an initial \( \text{<nak>} \) and the sending program should respond to the \( \text{<nak>} \) as defined in the original Modem Protocol.

After the mode has been set by the initial \( \text{<C>} \) or \( \text{<nak>} \) the protocol follows the original Modem Protocol and is identical whether the checksum or CRC is being used.

5.2.2 Receive_Program_Considerations

After the mode has been set by the initial \( \text{<C>} \) or \( \text{<nak>} \) the protocol follows the original Modem Protocol and is identical whether the checksum or CRC is being used.
There are at least 4 things that can go wrong with the mode setting handshake.

1. the initial <C> can be garbled or lost.
2. the initial <soh> can be garbled.
3. the initial <C> can be changed to a <nak>.
4. the initial <nak> from a receiver which wants to receive in checksum can be changed to a <nak>.

The first problem can be solved if the receiver sends a second <C> after it times out the first time. This process can be repeated several times. It must not be repeated too many times before sending a <nak> and switching to checksum mode or a sending program without CRC support may time out and abort. Repeating the <C> will also fix the second problem if the sending program cooperates by responding as if a <nak> were received instead of ignoring the extra <C>.

Chapter 5 (cont)

It is possible to fix problems 3 and 4 but probably not worth the trouble since they will occur very infrequently. They could be fixed by switching modes in either the sending or the receiving program after a large number of successive <nak>s. This solution would risk other problems however.

5.2.3 Sending_Program_Considerations

The sending program should start in the checksum mode. This will insure compatibility with checksum only receiving programs. Anytime a <C> is received before the first <nak> or <ack> the sending program should set itself into CRC mode and respond as if a <nak> were received. The sender should respond to additional <C>s as if they were <nak>s until the first <ack> is received. This will assist the receiving program in determining the correct mode when the <soh> is lost or garbled. After the first <ack> is received the sending program should ignore <C>s.

5.3 Data Flow Examples with CRC Option

Here is a data flow example for the case where the receiver requests transmission in the CRC mode but the sender does not support the CRC option. This example also includes various transmission errors. <xx> represents the checksum byte.

Figure 9. Data Flow: Receiver has CRC Option, Sender Doesn’t

<table>
<thead>
<tr>
<th>SENDER</th>
<th>RECEIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;---</td>
</tr>
<tr>
<td>&lt;---</td>
<td>times out after 3 seconds,</td>
</tr>
<tr>
<td>&lt;----&lt;nak&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;----&lt;ack&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;----&lt;ack&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;----&lt;ack&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;----&lt;ack&gt;</td>
<td></td>
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<tr>
<td>&lt;----&lt;ack&gt;</td>
<td></td>
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<tr>
<td>&lt;----&lt;ack&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;----&lt;ack&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;----&lt;ack&gt;</td>
<td></td>
</tr>
</tbody>
</table>

Figure 10. Receiver and Sender Both have CRC Option

<table>
<thead>
<tr>
<th>SENDER</th>
<th>RECEIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;---</td>
</tr>
<tr>
<td>&lt;---</td>
<td>&lt;C&gt;</td>
</tr>
<tr>
<td>&lt;---&lt;soh&gt;</td>
<td>01 FE -data- &lt;xxxx&gt; ---</td>
</tr>
<tr>
<td>&lt;---&lt;ack&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;---&lt;ack&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;---&lt;ack&gt;</td>
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<td>&lt;---&lt;ack&gt;</td>
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<td>&lt;---&lt;ack&gt;</td>
<td></td>
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<tr>
<td>&lt;---&lt;ack&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;---&lt;ack&gt;</td>
<td></td>
</tr>
<tr>
<td>&lt;---&lt;ack&gt;</td>
<td></td>
</tr>
</tbody>
</table>

Technical questions about Professional-YAM and requests for evaluation copies for magazine reviews may be directed to:

Chuck Forsberg
Omen Technology Inc
17505-V Sauvie Island Road
Portland Oregon 97231
Voice: 503-621-3406
Modem: 503-621-3746 Speed: 1200,300
Compuserve: 70715,131
Source: TCE022

More information about Professional-YAM may be obtained by calling Telegodzilla at 503-621-3746. Hit RETURNs for baud rate detection.

A version of this file with boldface, underlining, and superscripts for printing on Epson or Gemini printers is available on Telegodzilla as "YMODEME.DOC" or "YMODEME.DQC".
19200HST is a utility program written with Turbo Pascal 5.0 using routines from ProKit by Samuel Smith. 19200HST is released as a free program. No donations are requested for it's use. The authors are not responsible for any damage that might be caused by the use of this program. Please use this program at your own risk.

The purpose of 19200HST is to aid owners of USRobotics Courier HST modems in setting up for optimum speed. This program is designed for callers only. Although I run my BBS with the settings from 19200HST, I would recommend that Sysops follow the instructions for their specific BBS package on modem settings. Registered PCBoard sysops have a similar program called PCBMODEM that should be used instead of this program.

This program will lock your serial port at 19200. This setting may only be effective on 286 and 386 systems. Some multi-tasking software may not be able to handle this setting. If you find that you are having trouble with aborted downloads after running this program through the terminal program and type AT74 followed by the ENTER key to reset the modem to its factory settings. Using these settings along with protocols designed for error correcting modems such as DSZ's Ymodem-G and Xmodem-1K-G or Qmodem's version of Ymodem-G I have achieved file transfer speeds in the 1100 - 1150 cps range on a regular basis using both 286 and 386 systems.

HOW IT DOES IT:
-------------
19200HST starts by giving the suggested dipswitch settings, which are as follows:

- 1 UP 2 UP 3 4 5 6 7 8 9 10
- UP UP DN DN UP UP DN UP UP

These settings will do the following to your modem:
1 UP - DTR is controlled by software
2 UP - Send verbal result codes
3 DN - Result codes are displayed
4 DN - Local echo of commands is suppressed
5 DN - Auto Answer Suppressed
6 UP - Do not force carrier detect
7 UP - Single phone line connection (RJ-11)
8 DN - AT command set enabled
9 UP - Hang up when escape code is sent
10 UP - Load from NRAM in power up

If you are having trouble with aborted downloads after running this program, it will reset your modems internal NRAM settings to the original factory defaults.

Next it sends the following settings to the modem's non-volatile memory:

ATS?&7=6E00M0X7
S7=60 - Number of seconds modem waits for carrier
K0 - Local echo off
M0 - Speaker Off (can be overridden by putting M1 in your modem program's initialization string)
X7 - Result code option (OK, CONNECT, RING, NO CARRIER, ERROR, CONNECT, NO DIAL TONE, BUSY, NO ANSWER, RINGING, VOICE)

Once this string is received it sends the following additional settings:

AT&T4H3&R2&S1&B1&K0&W

&K0 - Disable data compression (override with &K1 in modem initialization string)
&W - Write these settings to non-volatile RAM (NRAM).

If you want to override any of the NRAM settings that I have written in the program, you can either do so by placing the replacement commands in the modem initialization string, or by going into the terminal mode of your modem software and typing those commands followed by AT4W. It is highly recommended that you use a high performance protocol driver such as DSZ by Chuck Foreseburg. The registered version of DSZ includes YMODMEN-G and Xmodem-1K-G protocols which should yield the highest possible CPS ratings under this setup. The current versions of many popular modem programs have built-in versions of Xmodem-1K-G (called Ymodem-G in some versions) which will yield excellent speed, but won't allow batch mode downloading that true Ymodem-G from the DSZ program features.

Zmodem will give 1000-1100 cps on properly configured systems. Zmodem is featured in non-registered versions of DSZ that are available on most BBS systems. Avoid using Zmodem, Ymodem, Xmodem, Kermit, Jmodem or other protocols that rely on software error checking when you are connected to another HST at the fixed 15200 bps rate. These protocols will give you between 400-900 cps. One reason I wrote this program was that I see people night after night calling with HST modems improperly configured and getting transfer speeds of 400 cps.

SUPPORT:
--------
As stated above, this is a free program. You will probably use it once, then throw it away and forget all about me. That's fine, but at least when you call my BBS at 19200 you won't be getting 400 cps! Updates to 19200HST are always available on my BBS, The Ledge PCBoard, which is listed at the top of this file. Although you can't download from my file directory on the first call, you can do so by placing the replacement commands in your modem software and typing those commands followed by AT4W. My support door DOES have Xmodem-1K-G (Ymodem-G) so if you are looking for a place to test...come on!
merchantability, or fitness for a particular purpose. In no
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You are licensed to use this software on a trial basis for a
period of fourteen days. If after the trial period, you wish to
continue using ZAPCODE, you must purchase a permanent license
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license costs only $19.95 - See section entitled "Purchasing
ZAPCODE" for details.)

You are granted a limited license to copy ZAPCODE only for the
trial use of others subject to the agreement described above, and also the following:

- ZAPCODE must be copied in unmodified form, complete with the
  following files and only the following files:
  - ZAPCODE.COM  - ZAPCODE program
  - ZAPCODE.DOC  - ZAPCODE program documentation
  - INVOICE.DOC  - Invoice for permanent license
  - ASP.DOC     - Association of Shareware Professionals Info.
  - EPSFX.PMF   - Printer driver: Epson FX Series
  - HPLJ.PMF    - Printer driver: Hewlett Packard LaserJet
  - IBMcolor.PMF - Printer driver: IBM Color Printer
  - IBMProng.PMF - Printer driver: IBM Proprinter
  - TSHP341.PMF - Printer driver: Toshiba P321SL/P341SL
  - TSHP351C.PMF - Printer driver: Toshiba P351C Color Printer

- No fee, charge or other compensation may be accepted or
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- ZAPCODE may not be distributed in conjunction with any other
  product or service without a specific license to do so from
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Electronic bulletin board operators (Sysops) may post ZAPCODE
for downloading by their users without written consent only when
the above conditions are met. A fee may be charged for access to
the BBS as long as no specific fee is charged for access to the
ZAPCODE files.

ZAPCODE is distributed in a self-unarchiving format. If your BBS
uses a specific archive program for distributing programs, you
may re-archive the ZAPCODE files using it. However, ONLY the
files described above may be placed in the ZAPCODE archive.

Disk vendors and other Shareware distribution companies which
market diskettes containing Shareware programs for profit MUST
obtain written consent from Morton Utilities, Morton
International. Permission is usually given; please write for
details.

You are not allowed to modify this software under any
conditions. You are, however, encouraged to create and
distribute your own printer drivers using the extension "PMF".
These may not, however, be placed in the ZAPCODE archive.

TRADEMARKS

ZAPCODE is a trademark of Morton Utilities, Morton
International.

IBM PC, XT, AT, and PS/2 are registered trademarks of
International Business Machines.
ZAPCODE, simply put, is a printer control utility. With it, you can send control codes to your printer to activate or deactivate any of its options and features. Pop-up ZAPCODE at any time to, for example, reset your printer, turn on condensed print, or advance the page. ZAPCODE can also be used to automatically enter printer codes into your word processor, spreadsheet, or any other program. This is great for word processors that don't support all of your printer's features but allow you to embed printer control codes inside your documents. Simply pop-up ZAPCODE, select the desired printer option(s), and then let ZAPCODE enter the printer codes for you, just as if you had typed them at the keyboard. ZAPCODE can even be used to print envelopes, as a dialing directory, and even as a crude keyboard macro program. ZAPCODE is ideal for all types of printers including dot-matrix, laser, and even plotters. Additional features include:

- Stand-alone running for those times when memory residency might not be desirable.
- Support for any parallel printer attached to LPT1 to LPT3, and any serial printer attached to COM1 to COM4.
- Completely customizable printer drivers. You can easily modify the included printer drivers to suit any desired configuration, or even create your own.
- Memory resident activation over most applications, including those graphics-based.
- Customizable window colors and activation hotkey.
- Capability of multiple installations for those systems which require support for more than one printer.
- Uninstallation of memory resident copies for those times when the extra RAM is needed.

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ZAPCODE consists of the following files:

- ZAPCODE.COM - ZAPCODE program
- ZAPCODE.DOC - ZAPCODE program documentation
- INVOICE.DOC - Invoice for permanent license
- ASP.DOC - Association of Shareware Professionals Info.
- EPSFX.PMF - Printer driver: Epson FX Series
- HPLJ.PMF - Printer driver: Hewlett Packard LaserJet
- IBMColor.PMF - Printer driver: IBM Color Printer
- IBMProprinter.PMF - Printer driver: IBM Proprinter
- TSP341.PMF - Printer driver: Toshiba P341SL
- TSP351C.PMF - Printer driver: Toshiba P351C Color Printer

All printer drivers end in the extension "PMF" (Printer Make File). Printer drivers have been included for some of the more popular printers. If your printer is not yet supported, you can easily build your own driver or customize one of the given. This will be covered shortly in the section "Using The PMF Editor".

System Requirements

To use ZAPCODE you need:

- IBM PC, XT, AT, PS/2, or compatible computer
- A parallel or serial printer
ZAPCODE is distributed under the Shareware marketing system. The Shareware concept allows you, the user, to use a program on a trial basis to determine if it meets your needs. If you find the program useful and wish to continue using it, you are required to pay a license or registration fee to the author.

If you received ZAPCODE through a distribution service and paid a small fee (usually $3 to $5), this does not constitute payment for ZAPCODE. You have simply paid for the distribution service. The $3.00 or $5.00 or whatever pays for the diskette, duplications and handling and does NOT constitute payment for the programs contained on the diskette.

ZAPCODE license and registration costs $19.95. The file "INVOICE.DOC" contains an invoice which you may print and use for this purpose. Registering ZAPCODE gets you:

1. The latest version of ZAPCODE without the Shareware notice.
3. All of the latest printer drivers. We're always creating new drivers for more printers. If yours isn't currently supported, we'll create it for you FREE. Just mention it to us on the invoice.
4. Six months support plus we'll notify you of any program updates and new products.

The Shareware system is dependant upon honest people. If you use a Shareware program and have not paid with the author after the evaluation period, you are helping to destroy the viability of the Shareware concept. If you appreciate the ability to try software, before you buy it, then we encourage you to register EVERY Shareware program you use. Registration of Shareware products ensures the existence of quality, low-cost software.

The $3.00 or $5.00 or whatever pays for the diskette, this does not constitute payment for the programs contained on the diskette. (C) Copyright 1990 Morton Utilities, Morton Intl.

To get ZAPCODE up and running, simply log into the drive and directory containing ZAPCODE and type:

ZAPCODE <Enter>

A window will be displayed containing a list of all printer drivers in the current directory. Use the following keys:

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UpArrow</td>
<td>Move selection bar up one file</td>
</tr>
<tr>
<td>DnArrow</td>
<td>Move selection bar down one file</td>
</tr>
<tr>
<td>PgUp</td>
<td>Move selection bar up one page</td>
</tr>
<tr>
<td>PgDn</td>
<td>Move selection bar down one page</td>
</tr>
</tbody>
</table>

Use the UpArrow, DnArrow, PgUp, PgDn, Home, and End keys to select a PMF.

Press the Enter key to use the selected PMF in stand-alone mode. Consequently, ZAPCODE will not be installed in memory.

Press the "I" key to install ZAPCODE and the specified PMF in memory. To confirm memory resident installation, a window is displayed containing printer setup, program activation, and memory information. The default hotkey for ZAPCODE is Ctrl-Alt-Z. That means, to activate ZAPCODE, hold down the Ctrl and Alt keys and press "Z".

You may install as many copies of ZAPCODE as available memory will allow. If you have installed more than one copy and each shares the same hotkey, press the hotkey once to activate the copy installed last. Press it again to activate the copy installed prior to that, and so on.

Press the "U" key to uninstall ZAPCODE from memory. If you have installed more than one copy, the last copy installed will be uninstalled. Uninstalling again will cause the copy installed prior to that one to be uninstalled. If you have loaded other memory resident utilities after ZAPCODE, it is possible that ZAPCODE will not be able to uninstall itself. When this happens, the message "Cannot uninstall" is displayed.

Press the "E" key to edit the selected PMF. The "PMF Editor" allows you to easily create and edit printer drivers. See "Using The PMF Editor" for instructions.

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Press the "A" key to create a new PMF. A window will be displayed prompting for the PMF filename to create. Once you enter a filename, the "PMF Editor" is invoked and you can begin building your new printer driver.

Command Line Switches

All of the above functions can be performed by use of command line switches. The complete syntax for ZAPCODE is:

```
```

"filename" is the name of the printer make file. It is not necessary to type the ".PMF" extension.

/1 installs ZAPCODE and the specified PMF in memory.

/U uninstalls the last installed copy of ZAPCODE.

/E invokes the PMF editor. You must also specify the name of the PMF you wish to edit. If the PMF does not exist, it will be created.

If you wish to have a PMF loaded automatically each time you boot up, you may include ZAPCODE as an entry in your
When ZAPCODE is activated, a window is displayed containing the printer options. A bar highlights the currently selected option. The description window contains a description of the selected option. Another window contains a list of keys that can be used to control ZAPCODE. They are:

- **UpArrow** - Move selection bar up one option
- **DnArrow** - Move selection bar down one option
- **PgUp** - Move selection bar up one page
- **PgDn** - Move selection bar down one page
- **Home** - Move selection bar to first option
- **End** - Move selection bar to last option
- **Insert** - Send the selected option to keyboard
- **Spacebar** - Send reset code sequence to printer
- **Slash (/)** - Manually enter codes to send to printer
- **Esc** - Exit ZAPCODE

Use the UpArrow, DnArrow, PgUp, PgDn, Home, and End keys to select a printer option.

Press the Insert key to send the control codes for the selected option to the keyboard. Use this feature to enter printer codes into your word processor, spreadsheet, or any other program. ZAPCODE can be configured to enter codes in a variety of formats including decimal and hexadecimal. This feature defaults off and you must use the "PMF Editor" to activate it. (See "Using The PMF Editor" for instructions.)

ZAPCODE is memory resident. Pressing the Insert key when ZAPCODE is stand-alone or when this feature is off causes the speaker to beep and has no effect.

Press the Enter key to send the control codes for the selected option to the printer. When done, the message "Codes Zapped" will be displayed if the operation was successful. If your printer is off-line or turned off, an error message will be displayed and you will be prompted for necessary action.

Press the Spacebar to send the reset codes to the printer. This is a string of control codes used to restore all printer options to their power-on defaults. Some printers provide a control code for doing just this, while with others, each option must be restored individually. If there are no reset codes configured, this function has no effect.

Sending Printer Codes Manually

Pressing the Slash (/) key causes a window to be displayed in which you may enter codes to send to the printer. The codes may be entered in any of three formats:

- **Decimal** - eg. 255
- **Hexadecimal** - eg. 0FFh
- **ASCII** - eg. "&k4s"

Codes must be separated by a comma or a space. Codes entered in hexadecimal format must be preceded by a numeric digit and end with the character "h". Codes entered in ASCII format must be enclosed in quotation marks. AS YOU ENTER CODES, THE WINDOW WILL PAD ONCE YOU HAVE REACHED THE RIGHT MARGIN. This allows you to enter an unlimited number of codes.

Example: 27,"&o2e5",0C5h

While entering codes, use the following keys to edit and control ZAPCODE:

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>PgUp</td>
<td>Display previous page of instructions</td>
</tr>
<tr>
<td>PgDn</td>
<td>Display next page of instructions</td>
</tr>
<tr>
<td>F1</td>
<td>Display syntax help window</td>
</tr>
<tr>
<td>Esc</td>
<td>Abort</td>
</tr>
</tbody>
</table>

Use the LeftArrow, RightArrow, Insert, and Delete keys to edit what you have entered. Press F1 to display a window containing information about the syntax that must be used while entering codes. Once you have entered the necessary parameter(s), the control codes for that option along with the missing parameter code(s) will be sent to the printer.

The "Enter Missing Parameter(s)" (EMP) Window

Some printer options require that a parameter or parameters be entered before they can be activated (eg. Set Tabs). Selecting one of these options causes a window to be displayed prompting you for the missing parameter(s). This window is identical to the window used for entering codes in a variety of formats including decimal and hexadecimal. This feature defaults off and you must use the "PMF Editor" to activate it. (See "Using The PMF Editor" for instructions.)

ZAPCODE is memory resident. Pressing the Insert key when ZAPCODE is stand-alone or when this feature is off causes the speaker to beep and has no effect.

Press the Enter key to send the control codes for the selected option to the printer. When done, the message "Codes Zapped" will be displayed if the operation was successful. If your printer is off-line or turned off, an error message will be displayed and you will be prompted for necessary action.

Press the Spacebar to send the reset codes to the printer. This is a string of control codes used to restore all printer options to their power-on defaults. Some printers provide a control code for doing just this, while with others, each option must be restored individually. If there are no reset codes configured, this function has no effect.

Sending Printer Codes Manually

Pressing the Slash (/) key causes a window to be displayed in which you may enter codes to send to the printer. The codes may be entered in any of three formats:

- **Decimal** - eg. 255
- **Hexadecimal** - eg. 0FFh
- **ASCII** - eg. "&k4s"
Apple II Computer Info

at the bottom containing status information and a list of keys that can be pressed to control editing. They are:

E   -   Edit the selected code
A   -   Add a new code after the selected
D   -   Delete the selected code
M   -   Move the selected code
C   -   Configure other options

The PMF filename and memory usage are displayed in the lower left corner. This memory amount reflects the number of bytes the PMF would use when installed in memory (using the */I* switch). This amount does not include the 17K bytes ZAPCODE itself uses.

Edit Printer Code

Press "K" to edit the selected printer code. A window will be displayed containing the printer code name, description and actual codes in decimal. Use the following keys during editing:

UpArrow   -  Move to previous field
DnArrow   -  Move to next field
LeftArrow  -  Move cursor left one character
RightArrow -  Move cursor right one character
Ins        -  Toggle insert/overwrite entry modes
Del        -  Delete character under cursor
Enter      -  Finish editing and save changes
Esc        -  Abort without saving changes

Press Alt-A to add an EMP window at the current cursor location. You may press Alt-A only when the cursor is in the codes field.

Press Alt-E to edit the EMP window at the current cursor location. The box character symbolizes an EMP window. You may press Alt-E only when an EMP window symbol is displayed at the current cursor location.

* Adding An EMP Window *

To add an EMP window, place the cursor at the position within the codes that the "missing parameter" codes should be inserted. Then press Alt-A. A window will then be displayed in which you may enter the EMP instruction text. The following keys can be used while entering instruction text:

UpArrow   -  Move cursor up one line
DnArrow   -  Move cursor down one line
LeftArrow -  Move cursor left one character
RightArrow -  Move cursor right one character
Ins        -  Toggle insert/overwrite entry modes
Del        -  Delete character under cursor

Backspace  -  Delete character left of cursor
PgDn       -  Move to previous page of instruction text
PgUp       -  Move to next page of instruction text
Enter      -  Finish entering EMP instruction text
Esc        -  Abort

Use the UpArrow, DnArrow, LeftArrow, RightArrow, Insert, Delete, and Backspace keys to edit the instruction text. If you need additional pages to enter instructions, press the PgDn key. The PgUp key allows you to move back to previous pages. Press Enter to finish and save the new EMP. Press Esc to abort without saving.

You may create as many EMP windows for a printer option as you like. When the printer option is then later used, each EMP window will display and prompt in the order it is found in the control codes. For example, if you defined the following:

"Hello *,EMP#1," My name is "EMP#2", ",13,10

When this option is printed, the following happens:

1. "Hello " is sent to the printer.
2. EMP window #1 is displayed and you are prompted for "missing parameter" codes. Let's assume you respond by typing "everybody." (quotations marks included).
3. "everybody." is sent to the printer.
4. " My name is " is sent to the printer.
5. EMP window #2 is displayed and you are prompted again. Let's assume you respond by typing "John Doe".
6. "John Doe" is sent to the printer.
7. "," is sent to the printer.
8. Character 13 (carriage return) and 10 (linefeed) are sent to the printer.

Your printer would have printed the following:

Hello everybody. My name is John Doe.

EMP windows allow you to do all sorts of great things. Use an EMP window to prompt for the tab stops in a "Set Tabs" control code sequence. Use one to prompt for the recipient's address for printing envelopes. Examine the included PMF's for examples.

* Editing An EMP Window *

To edit an EMP window, place the cursor on the EMP window symbol and press Alt-E. A window will be displayed containing the instruction text. Follow the same rules for editing an EMP as you did for adding.

* Deleting An EMP Window *

To delete an EMP window, place the cursor on the desired window symbol and press the delete key. You will be prompted for confirmation before the window is actually deleted. Attempting to type over the EMP window symbol will also delete it. ZAPCODE will ask you to confirm before it does so.

Add Printer Code

To add a printer code, press "A". A window will be displayed in which you may enter the name, description, and printer codes.
Follow the same rules for adding a printer code as you did for editing. When finished, the code will be added immediately after the one that was selected when the "A" key was pressed.

Delete Printer Code

To delete the selected printer code, press "D". You will be prompted for confirmation before the code is actually deleted.

Selecting any of the serial ports (COM1 to COM4) will present further configuration windows allowing you to select baud rate, data parity, number of data bits, and number of stop bits.

Baud rate can be any of the following: 300, 1200, 2400, 4800, 9600, 19200, or 38400 bps. Data parity can be either Odd, Even, None, Space, or Mark. The number of data bits can be either 7 or 8 and the number of stop bits can be either 1 or 2.

* Printer Reset Codes *

This option allows you to configure the printer reset codes. The printer reset codes can be sent by pressing the spacebar from ZAPCODE's main window.

Selecting this option causes a window to be displayed containing the current reset codes for the PMF. Use the following keys:

LeftArrow - Move cursor left one character
RightArrow - Move cursor right one character
Ins - Toggle insert/overwrite entry modes
Del - Delete character under cursor
Backspace - Delete character left of cursor
Enter - Finish and save changes
Esc - Abort without saving changes

Use the LeftArrow, RightArrow, Insert, Delete, and Backspace keys to edit the reset codes. Press F1 to display a window containing information about the syntax that must be used. Press Enter to finish and save changes. Press Esc to abort without saving changes.

* Printer Name *

This option allows you to enter/edit the printer name. A window is displayed containing the printer name for the PMF. Use the following keys:

LeftArrow - Move cursor left one character
RightArrow - Move cursor right one character
Ins - Toggle insert/overwrite entry modes
Del - Delete character under cursor
Backspace - Delete character left of cursor
Enter - Save changes made
Esc - Abort without saving changes

Use the LeftArrow, RightArrow, Insert, Delete, and Backspace keys to edit the printer name. Press Enter to save new printer name. Press Esc to abort without saving.

* Port Setup *

This option allows you to select and configure the printer port. A window is displayed containing the current port assignment.

Your choices are:

LPT1: Parallel 1
LPT2: Parallel 2
LPT3: Parallel 3
COM1: Serial 1
COM2: Serial 2
COM3: Serial 3
COM4: Serial 4
the UpArrow and DnArrow keys to select desired window. As you select each window, it is displayed in the upper left corner. Press Enter to confirm selection. Press Esc to end.

After selecting a window, you will be prompted to select a new background color. Use the UpArrow and DnArrow keys to select desired color. As you select each color, the window will be updated to reflect it. Press Enter to confirm selection. Press Esc to return to part selection.

After selecting a background color, you will be prompted to select a new foreground color. Use the UpArrow and DnArrow keys to select desired color. As you select each color, the window will be updated to reflect it. Press Enter to confirm selection. Press Esc to return to background color selection.

* Keyboard Setup *

The "Keyboard Setup" option allows you to tailor the way ZAPCODE sends printer codes to the keyboard. The following options allow you to customize ZAPCODE to work with virtually any program:

- Code Format
- String Prefix
- String Suffix
- Code Prefix
- Code Suffix
- Code Delimeter

"Code Format" is the format each code is expressed in. The following formats are available:

- Decimal 3 character ................... 005,015,255
- Decimal with digit start .......... 5,0F,FF
- Hexadecimal 3 character .......... 005,015,255
- Hexadecimal without digit start .... 5,F,FF
- Hexadecimal 2 character .......... 05,0F,FF
- Hexadecimal 3 character .......... 005,00F,0FF
- ASCII

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The examples to the right demonstrate how three codes (5, 15, and 255) are expressed when that format is used. "Hex with digit start" means that a numerical digit (0-9) must always lead the number. This is the format ZAPCODE prefers to accept hexadecimal numbers in. The last format, "ASCII", causes each code to be entered as its ASCII character equivalent. Thus, the following codes:

72 101 108 108 111

would yield their ASCII equivalents:

Hello

The NUL code (character 0) can be used to define special keys and key combinations. For example, the following codes:

0 59 65 66 67 0 19

translate into:

F1 A B C Alt-R

Codes 0 and 59 define the F1 function key. Codes 65, 66, and 67 define keys "A", "B", and "C" respectively. Codes 0 and 19 define the Alt-R key combination. See Appendix D for a complete list of special keys and the codes needed to define them.

There aren't many programs that you would use the "ASCII" format for entering printer codes into. However, it does add to ZAPCODE's functionality in that it allows you to create keyboard macros. You could, for instance, create a PMF dedicated to this cause entirely. To use one of the macros, you would simply pop-up ZAPCODE, select it, and voila!

"String Prefix", "String Suffix", "Code Prefix", "Code Suffix", and "Code Delimeter" are used to specify what comes before, after, and in the middle of each individual code and the entire string of codes. Each of these is sent to the keyboard as an "ASCII" format string. This means you may use special keys and key combinations in them. "String Prefix" specifies what comes before the entire string of codes. "String Suffix" specifies what comes after the entire string of codes. "Code Prefix" specifies what comes before each individual code. "Code Suffix" specifies what comes after each individual code. "Code Delimeter" specifies what comes between each individual code. If three codes were sent, they would look like this:

SP, CP, Code1, CS, CD, CP, Code2, CS, CD, CP, Code3, CS, SS

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Consider the following example:

- Code Format = Decimal 3 character
- String Prefix = "PPPOS"
- String Suffix = 13,"QQ"
- Code Suffix = (nothing)
- Code Delimeter = (nothing)

The above configuration can be used to enter codes into Lotus 1-2-3. Lotus 1-2-3 requires that each code be expressed as a three digit decimal number and that each is prefixed by the backslash character ".". The "String Prefix" moves 1-2-3 to the "Setup string:" option. The "String Suffix" moves 1-2-3 out of the "Setup string:" option and back to the spreadsheet. With this configuration, all that is needed to do is:

1. Pop-up ZAPCODE.
2. Select desired printer option.
3. Press the Insert key.
4. Goto step 2 if more.
5. Press Esc key.

You may also use the "Send to keyboard" feature to insert printer codes into ZAPCODE itself. For instance, you might want to create two PMF's for your printer. One would contain a definition for each individual printer option. The other might contain entire setup strings which might combine individual printer options. To create this second PMF, you could use the first to insert the codes into the PMF Editor. The "Keyboard
Apple II Computer Info

PMF Syntax and Guidelines

PMF commands and their usage. The keyword identifies what is being defined, while the arguments define it. Appendix A contains a complete list of all PMF commands and their usage.

The PMF consists of commands which tell ZAPCODE the following:

- 1. Keywords must be in all capital letters.
- 2. Keywords may start at any location within the line.
- 3. Comments may be used by placing a semicolon before the comment text.
- 4. Blank lines are permitted.
- 5. The equals sign (=) is not necessary but may be used to enhance the clarity of the PMF.
- 6. Arguments may be entered in any of three formats:

- Decimal eg. 255
- Hexadecimal eg. OFFh
- ASCII eg. "XYZ"

Arguments must be separated by a comma or a space. Arguments entered in hexadecimal must be preceded by a numeric digit and end with the character "h". Arguments entered in ASCII must be enclosed in quotation marks. To use the quotation mark in an ASCII argument, you must define it twice.

The following page contains an example PMF:

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<table>
<thead>
<tr>
<th>PMF for Printer XYZ</th>
</tr>
</thead>
</table>

1. *Compressed Print* ;Option name
2. *This command selects 16.7" characters per inch (cpi).* ;Option description
3. OFFh ;Control codes
4. *Set Horizontal Tab Stop(s)* ;Option name
5. *This command allows you to set* ;Option description
6. *horizontal tab stop.* ;Control codes
7. 27,44h ;Start of EMP
8. *Enter locations you wish to set a* ;Comment text
9. "horizontal tab stop at in ascending* ;Comment text
10. "order. You may set up to 28.* ;Comment text
11. "* ;Comment text
12. "Example: Entering 10,20,40 would* ;Comment text
13. "set three tab stops, at locations* ;Comment text
14. "10, 20 and 40.* ;Comment text
15. 0 ;End of EMP
16. 0,0 ;NULL code
17. * ;Comment text
18. *Select NLQ Print* ;Option name
19. *Activate Near Letter Quality (NLQ)* ;Comment text
20. "characters printed in NLQ* ;Comment text
21. "are crisper and more like the* ;Comment text
22. "characters produced by a type-* ;Comment text
23. "writer.* ;Comment text
24. 27,120,1 ;Control codes

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The Printer Make File (PMF)

The PMF is simply an ASCII text file which you may edit using a line editor (such as EDLIN) or a word processor. The PMF Editor allows you to easily customize and create your own PMF's without regard to PMF syntax or structure. You may, however, do the same by simply text editing the PMF. This section and appendixes A, B, and C describe the PMF structure, syntax, and conventions in detail.

The PMF consists of commands which tell ZAPCODE the following:

- Printer Name
- Printer Port and Setup
- Printer Reset Codes
- Activation Hotkey
- Window Colors
- Keyboard Setup
- Printer Option Names
- Printer Option Descriptions
- Printer Option Control Codes

Each command consists of a keyword and a number of arguments. The keyword identifies what is being defined, while the arguments define it. Appendix A contains a complete list of all PMF commands and their usage.

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The following is a complete list of all PMF commands. Provided with each is its description, usage, and an example:

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
<th>Usage</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRINTER</td>
<td>Names the printer for which the PMF is created. Up to 29 characters can be used.</td>
<td>PRINTER [printer name]</td>
<td>PRINTER &quot;XYZ Printer&quot;</td>
</tr>
<tr>
<td>PORT</td>
<td>Defines the port for which the printer is connected.</td>
<td>PORT [port:baud,parity,data,stop]</td>
<td>PORT &quot;COM2:9600,N,8,1&quot;</td>
</tr>
<tr>
<td>KCPREFIX</td>
<td>Defines &quot;Code Prefix&quot;. Up to 30 characters can be used. Special keys and key combinations may be defined by preceding each with a NUL code (0).</td>
<td>KCPREFIX [code1, code2,... code30]</td>
<td>KCPREFIX &quot;ABC&quot;,13,0,80,27,&quot;DEF&quot;</td>
</tr>
<tr>
<td>KSSUFFIX</td>
<td>Defines &quot;String Suffix&quot;. Up to 30 characters can be used. Special keys and key combinations may be defined by preceding each with a NUL code (0).</td>
<td>KSSUFFIX [code1, code2,... code30]</td>
<td>KSSUFFIX &quot;ABC&quot;,13,0,80,27,&quot;DEF&quot;</td>
</tr>
<tr>
<td>COLOR</td>
<td>Defines alternate color(s) for one of ZAPCODE's windows. You may use as many color commands as there are windows.</td>
<td>COLOR [window, color1, color2,... color7]</td>
<td>COLOR 2,0,0,0,0,0,0,30</td>
</tr>
<tr>
<td>NAME</td>
<td>Defines the name of a printer option. All printer option names are placed in the selection window in the order they appear in the PMF. Up to 35 characters can be used to name printer options.</td>
<td>NAME [option name]</td>
<td>NAME &quot;Set Horizontal Tab Stop(s)&quot;</td>
</tr>
</tbody>
</table>
This appendix contains the Shift Mask and Hotkey tables used for defining an alternate activation hotkey. (See the ACTIVATE Command in Appendix A for a discussion.)

To activate ZAPCODE, a combination of shift keys along with a hotkey must be depressed. The shift keys are the Ctrl, Alt, LeftShift, and RightShift keys, while the hotkey can be any other. To setup your own, you'll need to substitute a value from the Shift Mask Table for the argument "shiftmask" and substitute a value from the Hotkey Table for the argument "hotkey". The Shift Mask and Hotkey tables are on the next page.

Example: To change the activation key sequence to Alt-P, you would substitute 8 for "shiftmask" and 25 for "hotkey".

ZAPCODE consists of eight windows in which any of seven colors can be changed. This appendix outlines the window numbers and their color assignments. (See Appendix A for a discussion of the COLOR command.)

To change a window color, you must substitute the desired window number for the argument "window", and a color value for one of the arguments "color1", "color2", etc. depending on which window part you want to change. The Window Color Assignment Table (on the next page) lists each window number and its part assignments.

To calculate the actual color value that must be substituted, you must use the following formula:

\[ \text{colorvalue} = (\text{background} \times 16) + \text{foreground} \]

The table below contains the background and foreground color values which must be substituted in the equation above.
**COLOR TABLE**

<table>
<thead>
<tr>
<th>Value</th>
<th>Name</th>
<th>Dec</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Black</td>
<td>0</td>
<td>Light Blue</td>
</tr>
<tr>
<td>1</td>
<td>Blue</td>
<td>9</td>
<td>Light Blue</td>
</tr>
<tr>
<td>2</td>
<td>Green</td>
<td>10</td>
<td>Light Green</td>
</tr>
<tr>
<td>3</td>
<td>Cyan</td>
<td>11</td>
<td>Light Cyan</td>
</tr>
<tr>
<td>4</td>
<td>Red</td>
<td>12</td>
<td>Light Red</td>
</tr>
<tr>
<td>5</td>
<td>Magenta</td>
<td>13</td>
<td>Light Magenta</td>
</tr>
<tr>
<td>6</td>
<td>Brown</td>
<td>14</td>
<td>Yellow</td>
</tr>
<tr>
<td>7</td>
<td>White</td>
<td>15</td>
<td>High-intensity White</td>
</tr>
<tr>
<td>8</td>
<td>Gray</td>
<td>16</td>
<td>Gray</td>
</tr>
</tbody>
</table>

For example, to change the selection bar color to yellow on blue, you would use the following equation:

\[
\text{colorvalue} = (1 \times 16) + 14
\]

This would yield 30 for the \texttt{colorvalue} argument. Thus your \texttt{COLOR} statement would be:

\[
\text{COLOR 2,0,0,0,0,0,30}
\]

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**WINDON COLOR ASSIGNMENT TABLE**

<table>
<thead>
<tr>
<th>Window</th>
<th>(1) Installation Window</th>
<th>(2) Main Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>Border</td>
<td>1. Border</td>
<td>1. Border</td>
</tr>
<tr>
<td>Title</td>
<td>2. Title</td>
<td>2. Title</td>
</tr>
<tr>
<td>Memory amounts</td>
<td>5. Memory amounts</td>
<td>5. Memory amounts' labels</td>
</tr>
<tr>
<td>N/A</td>
<td>7. N/A</td>
<td>7. Selection bar</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Window</th>
<th>(3) Enter Codes to Send Window</th>
<th>(4) Syntax Help Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>Border</td>
<td>1. Border</td>
<td>1. Border</td>
</tr>
<tr>
<td>Title</td>
<td>2. Title</td>
<td>2. Title</td>
</tr>
<tr>
<td>Input area</td>
<td>3. Input area</td>
<td>3. Help text</td>
</tr>
<tr>
<td>N/A</td>
<td>5. N/A</td>
<td>5. N/A</td>
</tr>
<tr>
<td>Help text</td>
<td>6. Help text</td>
<td>6. N/A</td>
</tr>
<tr>
<td>N/A</td>
<td>7. N/A</td>
<td>7. N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Window</th>
<th>(5) EMP Window</th>
<th>(6) Printer Reset Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>Border</td>
<td>1. Border</td>
<td>1. Border</td>
</tr>
<tr>
<td>Titles</td>
<td>2. Text</td>
<td>2. Text</td>
</tr>
<tr>
<td>Input area</td>
<td>3. N/A</td>
<td>3. N/A</td>
</tr>
<tr>
<td>Instruction text</td>
<td>4. N/A</td>
<td>4. N/A</td>
</tr>
<tr>
<td>More indicator</td>
<td>5. N/A</td>
<td>5. N/A</td>
</tr>
<tr>
<td>Help text</td>
<td>6. N/A</td>
<td>6. N/A</td>
</tr>
<tr>
<td>Help text</td>
<td>7. N/A</td>
<td>7. N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Window</th>
<th>(7) Codes Zapped Window</th>
<th>(8) Printer Error Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>Border</td>
<td>1. Border</td>
<td>1. Border</td>
</tr>
<tr>
<td>Text</td>
<td>2. Text</td>
<td>2. Printer port name</td>
</tr>
</tbody>
</table>
F8  0.66  Alt-Y  0.21
F9  0.67  Alt-U  0.22
F10 0.68  Alt-I  0.23
Shift-F1 0.84  Alt-O  0.24
Shift-F2 0.85  Alt-P  0.25
Shift-F3 0.86  Alt-Q  0.26
Alt-Q  0.16  Alt-U  0.19
Alt-U  19
F9 . ains 5s3q,138t  Alt-I  4
F10. ains 6s3q,138t  Alt-Hyp  6
Shift-F1 7 0.99  Alt-=  7
Shift-F2 8 0.99  Alt-W  10 6
Shift-F3 9 0.99  Alt-E  11 7

The object of the game is to change the color of all the cubes by jumping on them with your man. If you jump off the edge or run into the snake you will lose a man.

The commands for movement are [I] for up and left, [O] for up and right, [K] for down and left and [L] for down and right. You may change a variety of things such as gamespeed, sound and joystick/keyboard control by choosing change from the start-up screen. The only other commands to be noted are:

[CONTROL]-[Q] to stop the play of the game and place you at the start-up screen
[CONTROL]-[O] to toggle the joystick on and off.

If you are playing Zippy Zombi with a monochrome monitor some sets increase in difficulty, as the color change will not be apparent.

Files Needed:

ZIPPY ZOMBI
ZOMBI.SH
ZOMBI.OBJ
ZOMBI.PIC
ZZSCORES
---IC
---
1. ACKNOWLEDGMENTS

2. ROSETTA STONE

3. YET ANOTHER PROTOCOL, AGAIN?

4. ZMODEM Protocol Design Criteria
   4.1 Throughput
   4.2 Integrity and Robustness
   4.3 Ease of use
   4.4 Ease of implementation

5. PACKETIZATION
   5.1 Link Escape Encoding
   5.2 Header Packet Information
   5.3 Binary Header Packet
   5.4 HEX Header Packet
   5.5 Binary Data Packets
   5.6 HEX Data Packets

6. PROTOCOL TRANSACTION OVERVIEW

7. STREAMING TECHNIQUE

8. ATTENTION SEQUENCE

9. PACKET/FRAME TYPES
   9.1 ZRQRINIT
   9.2 ZRINIT
   9.3 ZSINIT
   9.4 ZACK
   9.5 ZFILE
   9.6 ZFERR
   9.7 ZNAK
   9.8 ZABORT
   9.9 ZFIN
   9.10 ZPOS
   9.11 ZDATA
   9.12 ZEOF
   9.13 ZCRC
   9.14 ZCRYPT

9.16 ZCOMPL

10. Transaction

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12. TABLES

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Figure 2. Transmission Time Comparison
Figure 3. Y/ZMODEM Header Information usage

1. ACKNOWLEDGMENTS

Encouragement and suggestions by Stuart Mathison, Thomas Buck, John Wales, Ward Christensen, and Irv Hoff are gratefully acknowledged.

2. ROSETTA STONE

Here are some definitions which reflect the current vernacular in the computer media. The attempt here is identify the file transfer protocol rather than specific programs.

Frame A ZMODEM frame consists of a header packet and 0 or more data packets.

Response Time This is the maximum expected delay between the receiver sending a packet to the transmitter and receiving the beginning of a response from the transmitter.

XMODEM refers to the original 1979 file transfer etiquette introduced by Ward Christensen's 1979 MODEM2 program. It's also called the MODEM or MODEM2 protocol. Some who are unaware of MODEM7's unusual batch file mode call it MODEM7. Other aliases include "CP/M Users's Group" and "TERM II FTP 3".

YMODEM refers to the XMODEM/CRC protocol with the throughput and/or batch transmission enhancements described in YMDEM.DOC.

ZMODEM is a second generation streaming protocol for text and binary file transmission between applications running on microcomputers and mainframes.

3. YET ANOTHER PROTOCOL, AGAIN?

Since its development half a decade ago, the Ward Christensen modem protocol has enabled a wide variety of computer systems to interchange data. There is hardly a communications program that doesn't at least claim to support this protocol now called XMODEM.

Advances in computing, modems and networking have spread the XMODEM protocol far beyond the close coupled micro to micro...
environment for which it was designed. These applications have exposed some weaknesses.

+ The short block length causes throughput to suffer when used with timesharing systems, packet switched networks, satellite circuits, and buffered (error correcting) modems.
+ The 8 bit arithmetic checksum and other aspects allow line impairments to interfere with dependable, accurate transfers.
+ Only one file can be sent per command. The file name has to be given twice, first to the sending program and then again to the receiving program.
+ The transmitted file accumulates as many as 127 extraneous bytes.
+ The modification date of the file is lost. ZMODEM is optimized for best throughput where line hits occur infrequently. This assumption markedly reduces code complexity and memory requirements.

4. ZMODEM Protocol Design Criteria

The design of a file transfer protocol is an engineering compromise between conflicting requirements:

4.1 Throughput

ZMODEM is designed for optimum performance with minimum degradation caused by delays introduced by packet switched networks and timesharing systems.

ZMODEM is optimized for best throughput where line hits occur infrequently. This assumption markedly reduces code complexity and memory requirements.

4. ZMODEM Protocol Design Criteria (cont)

4.1 Throughput (cont)

It is assumed that many transfers will originate from a timesharing system connected to a packet switched network. ZMODEM provides features to allow for simple, efficient implementation on timesharing hosts.

File transfers begin immediately regardless of which program is started first, no 10 second delay.

4.2 Integrity and Robustness

All packets are protected with 16 bit CRC.

4.3 Ease of use

File names need be entered only once. Wild Card names may be used with batch transfers. Minimum keystrokes required to initiate transfers. ZMODEM steps down to X/YMODEM if the other end does not support ZMODEM.

Kermit Sliding Windows ("SuperKermit") improves throughput over networks at the cost of increased complexity. SuperKermit state transitions are encoded in a special language "wart" which requires a C compiler. The SuperKermit C code requires full duplex communications and the ability to check for the presence of characters in the input queue, precluding its implementation on some operating systems.

A number of extensions to the XMODEM protocol have been made under the collective name YMODEM.

+ YMODEM-k reduces the overhead from transmission delays by 87 per cent compared to XMODEM, but network delays can still degrade performance.
+ The handling of files that are not a multiple of 1024 or 128 bytes is awkward, especially if the file length is not known, or changes during transmission.
+ YMODEM-g is essentially insensitive to network delays. Because it does not support error recovery, YMODEM-g must be used hardwired or with a link level protocol.

Another XMODEM "extension" is protocol cheating, referred to as "Turbo Download" and OverThruster. These improve XMODEM throughput at the expense of error recovery.

The ZMODEM Protocol is proposed as a means of addressing the weaknesses described above while maintaining as much of XMODEM's simplicity and prior art as possible.

4. ZMODEM Protocol Design Criteria

The design of a file transfer protocol is an engineering compromise between conflicting requirements:

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File names need be entered only once. Wild Card names may be used with batch transfers. Minimum keystrokes required to initiate transfers. ZMODEM steps down to X/YMODEM if the other end does not support ZMODEM.

4.4 Ease of implementation

ZMODEM accommodates a wide variety of systems:
+ Microcomputers that cannot overlap disk and serial i/o
+ Microcomputers that cannot overlap serial send and receive
+ Computers and/or networks requiring XON/XOFF flow control
+ Computers that cannot check the serial input queue for the presence of data without having to wait for the data to arrive.

Although ZMODEM provides "hooks" for multiple "threads", ZMODEM is not intended to replace link level protocols such as X.25. ZMODEM provides a near optimal general purpose application to application file transfer protocol to be used with link level protocols such as X.25, MNP, Fastlink, etc.

5. PACKETIZATION

ZMODEM uses packets somewhat different from those used in...
X/YMODEM. X/YMODEM type packets are not used for the following reasons:

+ Block numbers are limited to 256
+ No provision for variable length blocks
+ Line hits corrupt protocol signals, causing failed file transfers. In particular, modem errors sometimes generate false block numbers, false EOTs and false ACKs. False ACKs are the most troublesome as they cause the sender to lose synchronization with the receiver.

State of the art X/YMODEM programs such as Professional-YAM overcome some of these weaknesses with clever proprietary code, but a newer protocol is still useful.

+ It is difficult to determine the beginning and ends of X/YMODEM blocks when they are corrupted by line hits. This discourages rapid error recovery.

5.1 Link Escape Encoding

ZMODEM achieves data transparency by extending the 8 bit character set (256 codes) with escape sequences based on the ZMODEM data link escape character ZDLE[1].

Link Escape coding permits variable length data packets. It allows the beginning of packets to be detected without special timing techniques, facilitating rapid error recovery.

Link Escape coding does add some overhead. The worst case, a file consisting entirely of ZDLE characters, would incur a 50% overhead. The particular ZDLE character was chosen after examining the character distributions of many types of files used with personal computers.

The ZDLE character is special. ZDLE represents a control sequence of some sort. If a ZDLE character appears in the data sent within a binary packet, it is prefixed with another ZDLE. An escaped ZDLE is counted once in the CRC.

1. This and other constants are defined in the zmodem.h include file. Please note that constants with a leading 0 are octal constants in C.

5. PACKETIZATION (cont)

5.2 Header Packet Information

All ZMODEM frames begin with a header packet which may be sent in binary or HEX form. ZMODEM uses a single routine to recognize HEX Header Packets. This particular character was chosen because it does not appear often in many types of files likely to be transferred with this protocol. In addition, no known timesharing system uses it for editing.

5.2 Header Packet Information

5.1 Link Escape Encoding (cont)

The current value for ZDLE is exclamation point (!). Use of a printing character as ZDLE allows application programs to recognize HEX Header Packets. This particular character was chosen because it does not appear often in many types of files likely to be transferred with this protocol. In addition, no known timesharing system uses it for editing.

5.2 Header Packet Information

5.2 Header Packet Information

5.2 Header Packet Information

5.3 Binary Header Packet

A binary header packet is only sent by the sending program to the receiving program.

A binary header packet begins with the sequence ZPAD, ZDLE, SBIN.

The frame type byte is ZDLE encoded.

The four position/flags bytes are ZDLE encoded.

A two byte CRC of the frame type and position/flag bytes is ZDLE encoded.

0 or more binary data packets will follow depending on the frame type.

The function zsbhdr transmits a binary header packet. The function zgethdr receives a binary or hex header packet.

5.4 HEX Header Packet

The receiver sends responses in hex header packets.

Hex encoding is required to support XON/XOFF flow control. Use of Kermit style encoding for control and paritied characters was considered and rejected because of increased possibility of interacting with some timesharing systems's line edit functions. Use of HEX packets from the receiving program allows control characters to be used to interrupt the sender when errors are detected. Except for header packet types that imply data packets to follow, a HEX header packet may be used in place of a binary header packet.

A hex header packet begins with the sequence ZPAD, ZDLE, ZHEX. The zgethdr routine synchronizes in the ZPAD-ZDLE sequence. The extra ZPAD allows other parts of the program to detect a ZMODEM packet and then call _zgethdr to receive the packet.

The type byte, the four position/flag bytes, and the CRC thereof are sent in hex using the character set 0123456789abcdef. Upper case hex digits are not allowed; they would false trigger X/YMODEM programs.

5. PACKETIZATION (cont)
5.4 HEX Header Packet (cont)

A carriage return, line feed, and XON are appended to the HEX header packet but are not considered to be part of it. The CR/LF aids debugging from printouts. The XON releases the sender from spurious XOFF flow control characters generated by line noise, a common occurrence.

Note: With ZMODEM and YMODEM Batch, the sending program provides the file name, but not with XMODEM.

0 or more HEX data packets will follow depending on the frame type.

The function zshhdr sends a hex header packet.

5.5 Binary Data Packets

Binary data packets immediately follow the associated binary header packet. A binary data packet contains 0 to 1024 bytes of data. Recommended length values are 256 bytes below 4800 bps, 1024 above 4800 bps or when the data link is known to be relatively error free.

No padding is used with binary data packets. The data bytes are ZDLE encoded and transmitted. A ZDLE and frameend are then sent, followed by two ZDLE encoded CRC bytes. The CRC accumulates the data bytes and frameend.

The function zsbdata sends a binary data packet. The function zrbdata receives a binary data packet.

5.6 HEX Data Packet

The format of HEX data packets is not currently specified. These would be used for server commands, etc.

6. PROTOCOL TRANSACTION OVERVIEW

As with the XMODEM recommendation, ZMODEM timing is receiver driven. The transmitter should not time out at all, except to abort the program if no packets are received for an extended period of time, say one minute.

To start a ZMODEM file transfer session, the sending program is called with the names of the desired file(s). The sending program sends the string "rz^M"* and a single HEX ZRQRINIT packet with data = 0. The "rz" followed by carriage return activates a ZMODEM receive program or command if it were not already active. If the receiving program receives the ZRQRINIT packet, it totally ignores it as the sending program will be responding to the RINIT packet sent by the receiver. The sending program should also ignore this packet type, which would be an echo of its own packet.

6. PROTOCOL TRANSACTION OVERVIEW (cont)

Since the ZRQRINIT sequence contains no exotic control characters, it can be accepted by the application program as a command to begin ZMODEM receive. The sequence prints as:

```
 rz^M**1B00000000000000^M^J
```

where ^M represents CR and ^J represents LF.

The sending program awaits a command from the receiving program to start file transfers. If a "C" or NAK is received, an XMODEM or YMODEM file transfer is indicated, and file transfer(s) use the X/YMODEM protocol.

When the ZMODEM receive program starts, it immediately sends a ZRINIT packet to initiate ZMODEM file transfers. The receive program resends the ZRINIT packet at response time intervals for a suitable period of time (40 seconds typical) before falling back to X/YMODEM protocol. If the receiving program receives a ZRINIT packet, it is an echo indicating that the sending program is not operational.

If the receiving program receives a ZRQRINIT packet, it ignores it.

Eventually the sending program correctly receives the ZRINIT packet.

The sender may respond with an optional ZCRYPT packet, which the receiver acknowledges with a suitable frame. (Details to be worked out later)

The sender may respond with an optional ZSINIT frame to set the receiving program's Attention string. The receiver sends a ZACK packet in response.

The sender then sends a ZFILE packet containing the file name, file length, modification date, and other information identical to that used by YMODEM Batch.

The receiver may respond to this with a ZGETCRC packet, which requires the sender to perform a CRC on the file and transmit same with a ZCRC packet. The receiver may use this information to determine whether to accept the file or skip it.

The receiver may respond with a ZSKIP packet, which causes the file to be passed over.

6. PROTOCOL TRANSACTION OVERVIEW (cont)

A ZRPOS packet from the receiver initiates transmission of the file data starting at the offset in the file specified in the ZRPOS packet. Normally the receiver specifies the data transfer begin at offset 0 in the file.

The receiver may start the transfer further down in the file. This allows a file transfer interrupted by a loss or carrier or system crash to be completed on the next connection without requiring the entire file to be retransmitted. If downloading a file from a timesharing system that becomes sluggish, the transfer can be interrupted and resumed later with no loss of data.

The sender sends a ZDATA header packet (with file position) followed by one or more data packets.

The receiver compares the file position in the ZDATA header with the number of characters successfully received to the file. If they do not agree, a ZRPOS error response is generated to force the sender to the right position within the file.

A data packet terminated by ZCRCGO and CRC does not elicit a response unless an error is detected; more data packet(s) follow immediately.

ZCRCQ data packets expect a ZACK response (with the file offset) if no error, otherwise a ZRPOS response (with the last good file offset). Another data packet continues
immediately. ZCRCQ packets are not used if the receiver does not indicate FDX ability with the CANFDX bit.

ZCRCW data packets expect a response before the next frame is sent. If the receiver does not indicate overlapped I/O capability with the CANOVIO bit, the sender uses the ZCRCW to allow the receiver to write its buffer before sending more data.

A zero length data packet may also be used as a sending idle packet to prevent the receiver from timing out in case data is not immediately available to the sender.

In the absence of fatal error, the sender encounters end of file. If the end of file is encountered within a frame, the frame is closed with a ZCRCW data packet which does not elicit a response except in case of error.

The sender sends a ZEOF packet with the file ending offset equal to the number of characters in the file. The receiver compares this number with the number of characters received. If the receiver has received all of the file, it closes the file and responds with ZRPOS. Otherwise the receiver sends ZRPOS with the current file offset, forcing the sender to send the missing data.

### 6. PROTOCOL TRANSACTION OVERVIEW (cont)

After all files are processed, any further protocol errors should not prevent the sending program from returning with a success status.

The sender closes the session with a ZEXIT header packet. The receiver acknowledges this with its own ZEXIT packet.

When the sender receives the acknowledging packet, it sends two characters, "OO" (Over and Out) and exits to the operating system or application that invoked it. The receiver waits briefly for the "O" characters, then exits whether they were received or not.

### 7. STREAMING TECHNIQUE

ZMODEM allows a choice of data streaming method methods selected according to the limitations of the sending program operating environment, receiving program operating environment, and the transmission channel(s).

If the computers can overlap serial I/O with disk I/O, the sender begins data transmission with a ZDATA header and continuous ZCRCW data packets. When the receiver detects an error, it sends the Attn sequence and a ZRPOS packet to force the sender back to the correct position within the file.

At the end of each transmitted packet, the sender checks for the presence of a error packet from the receiver. To do this, the sender may sample the reverse data stream for the presence of a ZPAD character.

If the reverse data stream cannot be sampled without entering an I/O wait, the receiver can interrupt the sender with a control character, break, or combinations thereof, as specified in the ZSINIT frame sent by the sending program.

If the receiver cannot overlap serial and disk I/O, it uses the ZRPOS packet to specify a buffer length which the sender will not overrun before sending a ZCRCW packet.

### 8. ATTENTION SEQUENCE

The receiving program sends the Attn sequence whenever it detects an error and needs to interrupt the sending program.

The default Attn string value is empty (no Attn sequence). The characters in the Attn string are terminated with a null. Two characters perform special functions:

- \335 Sends a break signal
- \336 Pauses one second

### 9. PACKET/FRAME TYPES

The numeric values for the values shown in boldface are given in zmodem.h.

#### 9.1 ZRQRINIT

Sent by the sending program to call up the receiving program.

P0...P3 are zero.

#### 9.2 ZRINIT

Sent by the receiving program.

ZF0 and ZF1 contain receiver capability flags:

- `#define CANFDX  1 /* Rx can send and receive FDX */`
- `#define CANOVIO 2 /* Rx can receive during disk I/O */`
- `#define CANBRK  4 /* Rx can send a break signal */`
- `#define CANCRY  8 /* Receiver can decrypt */`

ZFP and ZF1 contain the size of the receiver's buffer in bytes, or 0 if overlapped I/O is allowed.

#### 9.3 ZSINIT

Sender sends capability flags (none currently defined) followed by a binary data packet terminated with ZCRCW.

Data contains the Attn string, maximum length 32 bytes. The ZSINIT is only sent to programs that indicate the ability to overlap serial data and disk I/O (CANOVIO).

#### 9.4 ZACK

Acknowledgement to ZSINIT header packet or ZCRCW data packet.

ZF0 to ZF3 contain file offset.

#### 9.5 ZFILE

This packet indicates the beginning of a file transmission attempt.

ZF0 and ZF1 contain special file processing flags:

- + ZBIN This is a binary file

A ZCRCW data packet follows with file name, file length, modification data, and other information described in a later chapter.

### 9. PACKET/FRAME TYPES (cont)

#### 9.6 ZSKIP
Apple II Computer Info

9.7 ZNAK
Indicates last packet header was garbled. (See also ZRPOS).

9.8 ZABORT
Sent by receiver to terminate batch file transfers when requested by the user.
Sender initiates a ZFIND sequence[1].

9.9 ZFIN
Sent by sending program to terminate ZMODEM. Receiver responds with ZFIN.

9.10 ZRPOS
Sent by receiver to force file transfer to resume at file offset given in ZP0...ZP3.

9.11 ZDATA
ZP0...ZP3 contain file offset. One or more data packets follow.

9.12 ZEOF
ZP0...ZP3 contain file offset. Sender reports End of File.

9.13 ZFERR
Error in reading or writing file, equivalent to ZABORT.

9.14 ZCRC
Request (receiver) and response (sender) for file CRC.
ZP0 and ZP1 contain 16 bit file CRC.

9.15 ZCRYPT
Negotiation for encryption.

1. Or ZCOMPL in case of server mode.

9. PACKET/FRAME TYPES (cont)
9.16 ZCOMPL
Server request now completed.

10. Transaction
A simple transaction, one file, no errors, overlapped I/O:

<table>
<thead>
<tr>
<th>Protocol</th>
<th>ZRINIT</th>
<th>ZFIN</th>
<th>ZFIN</th>
<th>O0</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZFILE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZRPOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZDATA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZEOF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ZRINIT
Sent by the receiver in response to ZFILE, makes the sender skip to the next file.

9.7 ZNAK

11. PERFORMANCE
Some tests of ZMODEM protocol performance have been made. A PC-AT with SCO SYS V Xenix or DOS 3.1 was connected to a PC with DOS 2.1 either directly at 9600 bps or with dial-up 1200 bps modems. The ZMODEM software was configured to use 1024 byte packet lengths above 2400 bps, 256 otherwise.

Because no time delays are necessary in normal file transfers, per file negotiations are much faster than with YMODEM, the only observed impediment being the time required by the program(s) to update logging files.

During a file transfer, a short line hit seen by the receiver usually induces a CRC error. The interrupt packet is usually seen by the sender before the next packet is sent, and the resultant loss of data throughput averages about half a packet. At 1200 bps this is about .75 second lost per hit. At 10-5 error rate, this would degrade throughput by about 9 per cent. The throughput degradation increases with the channel delay, as the packets in transit through the channel are discarded on error.

A longer noise burst that affects both the receiver and the sender's reception of the interrupt packet usually causes the sender to remain silent until the receiver times out in 10 seconds. If the round trip channel delay exceeds the receiver's 10 second timeout, recovery from this type of error may become difficult.

11. PERFORMANCE (cont)
Noise affecting only the sender is usually ignored, with one common exception. Spurious XOFF characters generated by noise stop the sender until the receiver times out and sends an interrupt packet which concludes with an XON.

In summation, ZMODEM performance in the presence of errors resembles that of XPC and SuperKermit. Short bursts cause minimum data loss. Long bursts (such as pulse dialing noises) often require a timeout error to restore the flow of data.

12. TABLES
Figures are calculated for round trip delay times of 40 milliseconds and 5 seconds. A 102400 byte randomly distributed binary file is sent at 1200 bps 8 data bits, 1 stop bit. The calculations assume no transmission errors. For each of the protocols, only the per file functions are considered. Processor and I/O overhead are not included. YM-k refers to YMODEM with 1024 byte packets. YM-g refers to the YMODEM "g" option. ZMODEM uses 256 byte packets for this example. SuperKermit uses maximum packet size, 8 bit transparent transmission, no run length compression.

Figure 1. Protocol Overhead Information

<table>
<thead>
<tr>
<th>Protocol</th>
<th>dump</th>
<th>XMDOER</th>
<th>YM-k</th>
<th>YM-g</th>
<th>ZMODEM</th>
<th>S-Kermit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round-Trips</td>
<td>803</td>
<td>103</td>
<td>5</td>
<td>5</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>Time@40ms</td>
<td>32s</td>
<td>4s</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Time@5s</td>
<td>4015s</td>
<td>515s</td>
<td>25s</td>
<td>25s</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Chars-Ovhd</td>
<td>4803</td>
<td>603</td>
<td>503</td>
<td>2000</td>
<td>7460</td>
<td></td>
</tr>
</tbody>
</table>
If directories are included, they are delimited by /; i.e., "subdir/foo" is acceptable, "subdir\foo" is not.

13. ZFILE FRAME FILE INFORMATION (cont)

Length The file length and each of the succeeding fields are optional[1]. The length field is stored as a decimal string counting the number of data bytes in the file.

With ZMODEM, the receiver uses the file length only for display (progress reporting) purposes; the actual length is determined by the data transfer.

Modification Date - A single space separates the modification date from the file length. The mod date is optional, and the filename and length may be sent without requiring the mod date to be sent.

The mod date is sent as an octal number giving the time the contents of the file were last changed measured in seconds from Jan 1, 1970 Universal Coordinated Time (GMT). A date of 0 implies the modification date is unknown and should be left as the date the file is received.

This standard format was chosen to eliminate ambiguities arising from transfers between different time zones.

Two Microsoft blunders complicate the use of modification dates in file transfers with MS-DOS(TM) systems. The first is the lack of timezone standardization in MS-DOS. A file's creation time can not be known unless the timezone of the system that wrote the file[2] is known. Unix solved this problem (for Planet Earth, anyway) by stamping files with Universal Time (GMT). Microsoft would have to include the timezone of origin in the directory entries, but does not.

Professional-YAM gets around this problem by using the z parameter which is set to the number of minutes local time lags GMT. For files known to originate from a different timezone, the -zT option may be used to specify T as the timezone for an individual file transfer.

13. ZFILE FRAME FILE INFORMATION (cont)

Only the pathname (file name) part is required for batch transfers.

Pathname The pathname (conventionally, the file name) is sent as a null terminated ASCII string. This is the filename format used by the handle oriented MS-DOS(TM) functions and C library fopen functions. An assembly language example follows:

```assembly
DB 'foo.bar',0
```

No spaces are included in the pathname. Normally only the file name stem (no directory prefix) is transmitted unless the sender has selected YAM's f option to send the full pathname. The source drive (A:, B:, etc.) is never sent.

Filename Considerations:
+ File names should be translated to lower case unless the sending system supports upper/lower case file names. This is a convenience for users of systems (such as Unix) which store filenames in upper and lower case.
+ The receiver should accommodate file names in lower and upper case.
+ The rb(1) program on Unix systems normally translates the filename to lower case unless one or more letters in the filename are already in lower case.
+ When transmitting files between different operating systems, file names must be acceptable to both the sender and receiving operating systems.

If directories are included, they are delimited by /; i.e., "subdir/foo" is acceptable, "subdir\foo" is not.
Mode - A single space separates the file mode from the modification date. The file mode is stored as an octal string. Unless the file originated from a Unix system, the file mode is set to 0. rb(1) checks the file mode for the 0x8000 bit which indicates a Unix type regular file. Files with the 0x8000 bit set are assumed to have been sent from another Unix (or similar) system which uses the same file conventions. Such files are not translated in any way.

Serial Number - A single space separates the serial number from the file mode. The serial number of the transmitting program is stored as an octal string. Programs which do not have a serial number should omit this field, or set it to 0. The receiver's use of this field is optional.

The file information is terminated by a null. If only the pathname is sent, the pathname will be terminated by two nulls.

The length of the file information packet, including the trailing null, must not exceed 1024 bytes; a typical length is less than 64 bytes.

More information may be obtained by calling Telegodzilla at 503-621-3746.

UUCP sites can obtain the nroff/troff source to this file with

```
  uucp omen!usr/caf/public/zmodem.mm /tmp
```

A continually updated list of available files is stored in
```
    /usr/spool/uucppublic/FILES.
```

The following L.sys line calls Telegodzilla (Pro-YAM in host operation). Telegodzilla waits for carriage returns to determine the incoming speed. If none is detected, 1200 bps is assumed and a greeting is displayed.

```
  in:--in: uucp 1
```

```
14. MORE INFORMATION (cont)
```

In response to "Name Please:" uucico gives the Pro-YAM "link" command as a user name. The password (Giznoid) controls access to the Xenix system connected to the IBM PC's other serial port. Communications between Pro-YAM and Xenix use 9600 bps; YAM converts this to the caller's speed.

```
  link ord: Giznoid
  in:--in: uucp
```

A demonstration version of Professional-YAM is available as YAMDEMO.LQR (A Squeezed Novosiecki library). This may be used to test ZMODEM and YMODEM implementations.

Unix programs supporting the YMODEM protocol are available on Telegodzilla in the "upgrade" subdirectory as RRBSH.SHQ (a Squeezed shell archive). Most Unix like systems are supported, including V7, Sys III, 4.2 BSD, SYS V, Idris, Coherent, and Regulus.

A version for VAX-VMS is available in VRBSH.SHQ, in the same directory.
Apple II Computer Documentation Resources (a2_docs_documentation.msw)
DOCUMENTATION FOLDER -- www.textfiles.com/apple/ -- 18 September 2000 -- 1260 of 1262

Apple II Computer Info

DOCUMENT zonkers

Zonkers
By: J. D. Holdeman

Rules of the Game:

Zonkers is a game of chance and strategy for up to nine players. Players begin each turn rolling six dice, adding points as follows:

- 1 or 2-1's: 100 points each
- 1 or 2-5's: 50 points each
- 3-1's: 1000 points
- 4-1's: 2000 points
- 5-1's: 5000 points
- 6-1's: 10000 points
- 3 of a kind (all except 1's): 100 times face value
- 4 of a kind (all except 1's): 200 times face value
- 5 of a kind (all except 1's): 500 times face value
- 6 of a kind (all except 1's): 1000 times face value

After each roll you may keep all points earned in the current turn and stop, or you may set aside one or more counters and re-roll all the remaining dice. The option to stop is only available after you have rolled 500 or more points in a single turn to "open".

NOTE: In the following example the digit columns represent:
Dice face value---Number rolled---Points

For example, a sequence of rolls for a player during his first turn might be as follows:

Roll 1:
1---2---200
3---1---0
4---1---0
6---2---0

Player sets aside, say, both 1's for 200 points, and rolls four dice.

Roll 2:
2---3---200
3---1---0

In this example, the player must set aside all three 2's (as there are no other counters), for an additional 200 points, and roll the one remaining dice as he does not yet have 500 total points.

Roll 3:
5---1---50

If no new counters appear on any roll (for example, if neither a 1 nor a 5 had come up on the 3rd example roll), you have rolled ZONKERS, and all points earned previously in that turn are lost. If, in any turn, all the dice—including those set aside—are counters, you must roll all six dice again. If no new counters appear, you have Zonked; otherwise you may either stop or set aside one or more dice and roll again.

In the three example rolls, all dice have come up counters, so the player must roll six dice again. If he rolls ZONKERS all points earned in this turn are lost. If any counters are rolled, the player will have 500 or more points and may choose to take the points earned and stop rolling. Also, if he stops this turn with 500 or more points before rolling Zonkers, he may choose to stop at any time in his next turn as he no longer needs to 'open'. However, if he continues and rolls ZONKERS at any time, all points earned in the current turn are lost.

The game continues until a score of 10,000 or more points is reached by any player (unless a lower limit is set at the beginning of the game.) At this point, all other players get one more turn to try to top this score. The player with the most points after all have rolled is the winner.

Game Operation.

Zonkers may be played either from the keyboard or with a joystick. Prompts of "Press <return>..." may be answered by pressing any key or either paddle button. Responses requiring (y/n) may be entered from the keyboard or with either joystick/paddle button. Where button 0 (open-apple) = "yes" and button 1 (solid-apple) = "no".

Dice selection can be made by entering the number of dice of each face value that you want to keep from the keyboard, but may often be made with the buttons also: i.e. button 0 will select all counters rolled for each face value, and button 1 will choose none. The keyboard must be used to select a number between all and none. Pressing the <Esc> key in response to the "Choose # of dice...") prompt will restart the selection process, but will not give the opportunity to stop rolling.

If only one player is selected, a computer player named "Apple" will be added. "Apple" will always choose to keep all counters rolled in any turn, and will stop rolling if only one or two dice remain (provided of course that he has enough points to "open", or that it is not the last turn in the game with another player leading).

Files needed:
ZONKERS

---
The main menu lets you vary the printing of the picture in many ways. You can change any option shown on the menu by selecting its number. The current values are shown on the right on the menu, and you can decide to go ahead and print it that way— all you have to do is press [return].

1) white dots depending on the graphic you are printing you may want to remove the colors of the dots on the printout most plots and graphics look best with the white dots. Black But Digitized Pictures look better with white dots.

2) printout is: this may be either upright or rotated. When Zoom Grafix prints rotated the printout is always turned 90 degrees (i.e. Upside down) the [f] command from the picture menu toggles between these.

3) Size: The size setting controls how many dots the printer prints for each dot on the screen the smallest picture is 1 x 1, each point on the screen printed as a single point on the printout. Guess what 2 x 2 does??? you can also mix values.

4) Zoom window this is the Zoom part of Zoom Grafix, and it lets you zoom in, selecting what part of the screen is to be printed.

The four #s are the values of the top, bottom, left and right edges of the current Zoom window, which is shown on the picture with a flashing box. With the Apple II high-res screen, there are 192 dots from top to bottom of the screen, numbered starting with 0 at the top down to 91 at the bottom. Horizontally there are 280 dots, numbered starting with 0 at the left to 279 at the far right.

When the current Zoom window is less then the whole screen you’ll be given a chance to easily set it back to the full screen. Of course, if the full screen won’t fit on the paper width, it will be clipped off.

As you set the values the box will change. Remember you can always go back and change it.

5) left margin just a way to override the automatic centering. I wouldn’t suggest fooling around with it unless necessary.

6) Print width this value is preset for the printer you are using but can be reset if you are using wider or narrower paper. This is not the width of the paper itself is the width of the widest line Zoom Grafix should print. Zoom Grafix will not permit setting too large.

7) Delay this option will allow you to change the delay from the original set-up. This is especially important when printing dark areas. Printers with buffers need a longer time to cool, because the delay must be long enough for the buffer to empty, also time is needed for the print head to cool. To make a delay while printing simply press the [spacebar] and press again to resume printing.

8) Printer takes you to the printer/interface etc. menu, but does not clear the picture.

9) Line or form feeds does the obvious.

10) Intensity unless you have a shitty Apple Silentsky don’t worry about this. Hmmm I won’t either! (no offense to you Silentsky owners.)

Hint

Instead of using a delay select to have unidirection printing which will only print from left to right—not from left to right to...
left...this should give the delay necessary.

FINIS