

For The Serious User Of Personal Computers

COMPUTIST

Issue 56

June 1988

USA \$3.75

Canada & Mexico \$7.00

All Others \$8.75

🍏 RDEX Features:

- **Apple IIgs Secret Weapon**—By Guillermo Castano de la Serna
- **5 Second Fastboot into Locksmith 6.0 Fastcopy**—By B. Dudley Brett
- **The Product Monitor**—By Jeff Hurlburt
- **Taking the grind out of Championship Wrestling**—By Bill Jetzer
- **Making some improvements to The Nibbler**—By Don Druce

🍏 RDEX Softkeys:

🍏 2400 AD 🍏 40' Graphics Studio 🍏 Accolade Comics 🍏 Aesop's Fables 🍏 American People 🍏 Animal Hotel 🍏 Applewriter IIe 🍏 Arcade Album #1 🍏 Arctic Antics 🍏 Ballblazer 🍏 Bard's Tale II: The Destiny Knight 🍏 Bard's Tale IIgs 🍏 Cat'n Mouse 🍏 Championship Wrestling 🍏 Charlie Brown's 1,2,3's 🍏 Cobra Cavern 🍏 Color Me 🍏 Create With Garfield 🍏 David Winfield's Batter Up! 🍏 Destroyer 🍏 Disk Optimizer II 🍏 Dragonworld 🍏 Electronic Arts Software 🍏 En Vacances 🍏 En Ville 🍏 Fantavision gs 🍏 Fight Night 🍏 Forbidden Castle 🍏 G.I. Joe 🍏 Garfield Double Dares 🍏 General Manager 🍏 Goonies 🍏 GraphicWriter 2.0 🍏 Gutenberg, Sr. 🍏 Hacker II 🍏 Hardball 🍏 Hardball gs 🍏 Infiltrator 🍏 James Bond 007: A View to a Kill 🍏 Keyboard Kadet 🍏 Kids on Keys 🍏 Lazer Maze 🍏 Le Demenagement 🍏 Le Francais par Ordinateur: 🍏 Leisure Suit Larry in the Land of the Lounge Lizards 🍏 Les Sports 🍏 Lion's Workshop 🍏 Microzine #21 🍏 Microzine #22 🍏 Milliken Word Processor 🍏 Millionair II 🍏 Multiscribe v2.0 🍏 Multiscribe v3.0 🍏 Multiscribe IIgs v3.01c 🍏 Paris En Metro 🍏 Pitfall II 🍏 Racter 🍏 Railroad Works 🍏 Rambo: First Blood Part II 🍏 Realm of Impossibility 🍏 Same or Different 🍏 Sea Dragon 🍏 Sea Strike 🍏 Shanghai 🍏 ShowOff 🍏 Shutterbug 🍏 Silent Service IIgs 🍏 Snoopy to the Rescue 🍏 Snoopy's Reading Machine 🍏 Snoopy's Skywriter Scrambler 🍏 Space Quest I 🍏 Space Station 🍏 Spy Hunter 🍏 Spy's Adventures in Europe 🍏 Spy's Adventures in North America 🍏 Stephen King: The Mist 🍏 Story Maker 🍏 Street Sports Basketball 🍏 Sub Battle Simulator 🍏 Super Sunday Football 🍏 Talking Text Writer 🍏 Type! 🍏 Un Repas Francais 🍏 Voodoo Island 🍏 Where in Europe is Carmen Sandiego 🍏 Winnie the Pooh 🍏 Winter Games 🍏 Winter Games gs 🍏 Wordzzzearch 🍏 World Games gs

IBM RDEX: Softkey: ■Execu-Vision ■MS Word ■PC-Draw ■Zork I & II

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Publisher-Editor: Charles R. Haight
Graphics Editor: Ben R. Haight
Circulation: Karen Fitzpatrick
Advertising, call: (206) 474-5750
Publisher: SoftKey Publishing
Printing: Valco Graphics & Printing

● Address all advertising inquiries to: COMPUTIST; Advertising Department; PO Box 110816; Tacoma, WA 98411

● Mail all RDEX letters to:
COMPUTIST
Apple-RDEX or IBM-RDEX
PO Box 110846-K
Tacoma, WA 98411

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U.S.—\$32 U.S. 1st Class—\$45
Canada/Mex.—\$45 Other Foreign—\$75

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■ What's a Starter Kit?

The Starter Kit is a disk with most of the programs (previously published in COMPUTIST) that you need to get started with disk "snooping" and "converting". This includes SUPER IOB v1.5 (with STANDARD.CON, FAST.CON, SWAP.CON and NEWSWAP.CON), CAPTURE (a routine to convert Applesoft controllers into EXECutable text files), DISKEDIT (for direct disk viewing and editing), the NIBBLER (for viewing raw data from the disk in nibblized form), the CORE DISK SEARCHER (to find byte patterns on the disk), the DOS ALTERER (to make custom DOS changes) and CHECKSOFT and CHECKBIN (to generate the checksums that we print so you can compare and check for errors in your typing).

■ Where's my Starter Kit?

If you are a new subscriber, you will receive the Starter Kit automatically. If you are renewing, ask for the Kit at the same time and it will be sent to you at no charge.

■ Starter Kit for \$1

If you are a current subscriber but you're not ready to renew, then send one dollar for the package and postage and we'll put the Starter Kit in the package and sent it to you. You do have to be a subscriber. We'll let everyone know when there are significant updates or changes to the the Starter Kit.

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Softkey for *More Stickybears*. In step 14, the instructions that set up the IOB and call RWTS should be JSR (\$20) rather than JMP (\$4C). The correct code at \$300 is: 300: 20 E3 03 20 D9 03.

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Softkey for *Car Builder*. In step five, the instructions that set up the IOB and call RWTS should be JSR (\$20) rather than JMP (\$4C). The correct code at \$300 is: 300: 20 E3 03 20 D9 03.

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Readers Data

For serious users of Apple computers: II, II+, //c, //e, IIs, Macintosh

New COMPUTIST readers using Apple IIs are advised to read this page carefully to avoid frustration when attempting to follow a softkey or entering the programs printed in this issue.

What is a softkey, anyway?

Softkey is a term which we coined to describe a procedure that removes, or at least circumvents, any copy-protection on a particular disk. Once a softkey procedure has been performed, the resulting backup copy can usually be copied by the normal copy programs (for example: COPYA, on their DOS 3.3 System Master disk).

Commands and control keys

In any article appearing in COMPUTIST, commands which a reader is required to perform are set apart by being in boldface and on a separate line. The **RETURN** key must be pressed at the end of every such command unless otherwise specified. Control characters are specially boxed. An example of both is:

6 **CP**

Press **6** Next, place one finger on the **CP** key and then press **P**. Remember to enter this command line by pressing **RETURN**.

Other special combination keypresses include **RESET** or **RESET**. In the former, press and hold down **CP** then press **RESET**. In the latter, press and hold down both **CP** and **CP** then press **RESET**.

Special requirements

Special prerequisites for COMPUTIST articles, programs and softkeys are usually listed at the start under:

■ Requirements:

Software recommendations

- ✓ Applesoft program editor such as *Global Program Line Editor (GPLE)*.
- ✓ Sector-editor such as *DiskEdit* (in the *COMPUTIST Starter Kit*) or *ZAP* from *Bag of Tricks*.
- ✓ Disk-search utility such as *The Inspector*, the *CIA* or the *Core Disk Searcher* (in the *COMPUTIST Starter Kit*).
- ✓ Assembler such as the *S-C Assembler* from S-C software or *Merlin/Big Mac*.
- ✓ Bit-copy program such as *Copy II Plus*, *Locksmith* or *Essential Data Duplicator (EDD)*.
- ✓ Text-editor (that produces normal sequential text files) such as *Applewriter II*, *Magic Window II* or *Screenwriter II*.
- ✓ *COPYA*, *FID* and *MUFFIN* from the *DOS 3.3 System Master* disk are also useful.

Super IOB and Controllers

This powerful deprotection utility (in the *COMPUTIST Starter Kit*) and its various Controllers are used in many softkeys. (It is also on each Super IOB Collection disk.)

Reset into the Monitor

Softkeys occasionally require the user to stop the execution of a copy-protected program and directly enter the Apple's system monitor. Check the following list to see what hardware you will need to obtain this ability.

Apple II+, //e, compatibles: 1) Place an Integer BASIC ROM card in one of the Apple slots. 2) Use a non-maskable interrupt (NMI) card such as *Replay* or *Wildcard*.

Apple II+, compatibles: 1) Install an F8 ROM with a modified reset-vector on the computer's motherboard as detailed in the *Modified ROM's* article (*COMPUTIST #6* or *Book Of Softkeys III*) or the *Dual ROM's* article (*COMPUTIST #19*).

Apple //e, //c: Install a modified CD ROM on the computer's motherboard. Cutting Edge Ent. (Box 43234 Ren Cen Station-HC, Detroit, MI 48243) sells a hardware device that will give you this important ability but it will void an Apple //c warranty.

Recommended literature:

- ✓ *Apple II Reference Manual*
- ✓ *DOS 3.3 manual*
- ✓ *Beneath Apple DOS*, by Don Worth and Pieter Lechner, from Quality Software
- ✓ *Assembly Language For The Applesoft Programmer*, by Roy Meyers and C.W. Finley, from Addison Wesley

Keying in Applesoft programs:

BASIC programs are printed in a format that is designed to minimize errors for readers who key in these programs. If you type:

10HOME:REMCLEAR SCREEN

The LIST will look like:

10 HOME : REM CLEAR SCREEN

...because Applesoft inserts spaces into a program listing before and after every command word or mathematical operator. These spaces usually don't pose a problem except in line numbers which contain REM or DATA commands. There are two types of spaces: those that have to be keyed and those that don't. Spaces that must be typed appear in COMPUTIST as delta characters (Δ). All other spaces are there for easier reading. NOTE: If you want your checksums (See **Computing checksums**) to match up, you must key ONLY the Δ spaces after DATA statements.

Keying In Hexdumps

Machine language programs are printed in COMPUTIST as hexdumps, sometimes also as source code. Hexdumps are the shortest and easiest format to type in. You must first enter the monitor:

CALL -151

Key in the hexdump exactly as it appears in the magazine, ignoring the four-digit checksum (\$ and four digits) at the end of each line. A beep means you have typed something that the monitor didn't understand and must, therefore, retype that line.

When finished, return to BASIC with:

3D0G

BSAVE the program with the filename, address and length parameters given in the article.

The source code is printed to help explain a program's operation. To key it in, you will need the *S-C Assembler* or you will have to translate pieces of the source code into something your assembler will understand (see table of *S-C Assembler* directives in *COMPUTIST #17*).

Computing checksums

Checksums are 4-digit hexadecimal numbers which tell if you typed a program exactly as it appears in COMPUTIST.

There are two types of checksums: one created by the *CHECKBIN* program (for machine language programs) and the other created by the *CHECKSOFT* program (for BASIC programs). Both appeared in *COMPUTIST #1* and *The Best of Hardcore Computing*. An update to *CHECKSOFT* appeared in *COMPUTIST #18*.

If the published checksums accompanying program listings and hexdumps do not match those created by your computer, then you typed the program incorrectly. The line where the first checksum differs has an error.

CHECKSOFT instructions:

LOAD filename

BRUN CHECKSOFT

Get the checksums with: **&** and correct the program line where the checksums differ.

CHECKBIN instructions:

CALL -151

BLOAD filename

Install *CHECKBIN* at an out of the way place

BRUN CHECKBIN, A\$6000

Get the checksums by typing the Starting address, a period and the Ending address of the file followed by a **Y**.

SSS.EEB **Y**

Correct the lines at which the checksums differ.
..... RDEd

EXchange



etc... who want all their software backed up and COPYA-able



when writing a letter to...

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David G. Alexander

It appears that there was a mistake in my proposed softkey for *Car Builder* that appeared in COMPUTIST #52.

In step five, the instructions that set up the IOB and call RWTS should be JSR (\$20) rather than JMP (\$4C). The correct code at \$300 is: 300:20 E3 03 20 09 03.

Please note that the same mistake applies to the softkey for *More Stickybears* in COMPUTIST #26.

Bill Hughes

Softkey for...

Type!

Broderbund

I cannot claim responsibility for this entire technique. I recently received my updated version of *Copy II Plus* (ver.8). The method on *Copy II Plus* will make a usable copy, but still leaves the disk with a foreign checksum. In order to make the copy work, the nice folks at Central Point found you need to change three bytes. By combining known techniques, and the sector edit, it is possible to get a completely deprotected copy. Here is the method I used.

1 Boot your DOS 3.3 system disk.

2 Tell DOS to ignore checksum and epilog errors and use COPYA to copy the disk.

POKE 47426,24
RUN COPYA

3 Make the following sector edits to the copy you just made.

Trk	Sct	Byte(s)	From	To
\$00	\$0A	\$2D-2F	?	EA EA EA

Carl D. Purdy

I am having trouble. I have a copy of Broderbund's *Arcade Machine*, which is out of print at this time. I use the *Arcade Machine* to teach and I don't want to lose my copy. I tried the softkey in COMPUTIST #10. I followed the softkey as printed several times trying to get a good copy of *Arcade Machine*. I used *Wildcard* to get into the monitor. After

I made the copy, I used a write-protect tab to cover the write-protect slot. Without turning the machine off, I booted the copy I had made. It worked!! However, when I tried to boot from a cold start, as when I first turned the machine on, I get a graphic screen with lines on it and the machine hangs up. Help. What can I do now. I am new at this and am trying to teach my self.

I am also trying to backup a program called *Magic Spells* by Learning Co. I could use some help there as well.

Guillermo Castano de la Serna

Visit Monitor, Apple IIs Secret Weapon

I was reading COMPUTIST #53 and encountered an incredible piece of information. The article was called "Upgrading to the 2.0 IIs ROMs?", basically it described the good and bad points regarding the upgrade.

Well a very good enhancement is the ability to drop any time we want into the monitor using a classic desk accessory called "Visit Monitor". Remember all those modifications done in the past to the system ROMs, to language cards and to the mother-board itself, changes made by some of the brighter hackers in the Apple kingdom, for the only purpose of resetting into the monitor, something that was lost together with the step and trace commands when the Apple II was "upgraded" to the II plus. It is nice to know that even in this time when the computer industry has focused their efforts on the "user", Apple revived something for the Programmer (read Hacker, a species in danger of extinction).

The upgrade for the New ROMs is free and if you own a IIs you should consider it. It's true that some programs might not work after the upgrade, but their new versions will. And in the future many more programs definitely will not work with the old ROMs.

Once you Upgraded your system, in order to install the new Classic Desk Accessories, (CDA for short), you should get into the monitor and press "#, [RETURN]". This will turn on two hidden CDAs, Memory Peeker and Visit Monitor.

Now let's try a common scenario:

You have a protected disk, and you want to make a copy of it, for personal use, of course.



1 Boot the machine with the disk and wait until you hear the disk drive arm move to another track. Now press **ESC**. You are on the Desk Accessories menu. Select "Visit Monitor" and at last you are in the monitor.

2 The drive's motor might be on, so lets turn it off:

COES

3 Move the RWTS to a safe place:

1900<B800.BFFFM

4 Using **Y RETURN** get back to the CDA menu, select Quit, and you are back in the program, but since you turned off the disk drive you have time to press **RESET** a couple of times to get into the monitor. Boot a disk without the hello program and save the RWTS. Use *Super IOB 1.5* and make a copy of the original program.

5 The new copy seems to boot perfectly but all of a sudden the machine hangs. A signature of some sort is being used. What can we do?

6 Get back to the CDA menu and again select "Visit monitor".

7 Clear all memory with zeros:

800:00 N 801<800.BFFFM

8 Return to the program and "Quit".

Y

9 If all goes well, you should hear the bell indicating that the program encountered a "BRK" instruction. If you are in graphics, select text (**CO51 RETURN**), and there it is; the location or a location inside the subroutine that checks for the ID of the diskette. Study it, find it on the disk and disable it and now you have a deprotected copy done by you, something to be proud of.

David L. Perez

Softkey for...

American People

Focus Media Inc.

Requirements

- Apple IIe
- One disk drive
- One blank disk
- Super IOB 1.5*
- DOS 3.3 48K slave disk

American People is an educational program of the trivial pursuit type. It begins by asking for the players' names and continues with a lot of disk accessing.

I had been unable to backup this program using conventional methods and decided to try my hand at the IOB/RWTS. I decided on this after noticing the DOS prompt at the lower left hand corner.

I booted the original and after I was sure that DOS was in, I hit **RESET**. After a couple of attempts, I got the Applesoft prompt. I then entered the monitor, and typed A56EG to see, if by chance, what I was reading would work. Bingo, I got the disk catalog. I then moved the RWTS to a safe place, in order to boot a DOS with which to save the protected RWTS.

After booting the slave disk, I saved the RWTS to this disk. I use RWTS.XXX as the name because I can load the RWTS without having to rename the file on the *Super IOB 1.5*. After saving the protected RWTS, I ran the *Super IOB* and followed the prompts to copy the original to my slave disk. That is all she wrote. It is now unprotected.

1 Boot the original *American People* disk. When you are sure DOS is in hit **RESET**.

2 Enter the monitor:

CALL-151

3 Move the RWTS to a safe place.

1900<B800.BFFFM

4 Boot your 48K slave disk.

C600G

5 Save the RWTS to the slave disk.

BSAVE RWTS.XXX,A\$1900,L\$800

6 Install the *Super IOB 1.5* swap controller and replace the IOB disk with your slave disk and enter:

RUN

7 Follow the prompts to copy *American People* to the slave disk.

The Twit

Softkey for...

Infiltrator

Mindscape

In *COMPUTIST #47* there is a softkey for *Infiltrator* by Mindscape. It doesn't work on my copy, so after many hours of snooping around, I have come up with the following softkey:

1 Boot your DOS 3.3 system disk.

2 Tell DOS to ignore checksum and epilog errors and use *COPYA* to copy both the front and back of the disk.

POKE 47426,24

RUN COPYA

3 Make the following sector edits to the copy you just made.

Trk	Sct	Byte(s)	From	To
\$00	\$03	\$42	38	18
\$00	\$08	\$EA-EC	20 00 02	EA EA EA

You should now have a *COPYA*-able disk!

A.P.T. for...

Lady Tut

?

Requirements

- A cracked version of *Lady Tut*
- A disk-search utility, such as *Tricky Dick*

I recently acquired a copy of *Lady Tut*, and soon discovered a few problems:

- ▶ I could not reset into the monitor.
- ▶ I was annoyed at waiting for the title music to finish playing before I could start the game.
- ▶ I got a gun, but ran out of bullets.

I can never put up with these types of irregularities in games, so I have attacked the disk to try to correct the problems. I have come up with the following:

To reset into the monitor

Search the disk for 4C 46 83 and replace with 4C 59 FF.

To skip the title music

Search for 4C B0 7C 20 98 7C E6 11 and replace with 4C B0 7C EA EA EA E6 11

For an Infinite Amount of Bullets

Search for A5 0A 38 E9 01 and replace with A5 0A 38 EA EA

Steve Rodgers

I have learned a lot from *COMPUTIST* over the past few years, and now with the new format, i.e. RDEX, there is even more info now than before.

I would like to contribute a softkey for *Story Maker* by Scholastic. This works for the ProDOS version, either 64 or 128k.

Softkey for...

Story Maker

Scholastic

1 Boot your DOS 3.3 system disk.

2 Tell DOS to ignore checksum and epilog errors and use *COPYA* to copy the disk.

POKE 47426,24

RUN COPYA



3 Copy the "Maker" and "Picture" disks. The picture disk is now deprotected, though there is still a little to do with "Maker".

4 Boot your Apple ProDOS Utility disk, format a blank disk with any volume name you want.

5 Copy all the files from your duplicate disk of "Maker" onto the disk you just formatted. You should now have a COPYA version of *Story Maker!*

Joseph P. Karwoski

Softkey for...

Winter Games

EPYX

Recently I was asked to make a back-up copy of *Winter Games*. I decided to deprotect the copy, and since *Winter Games* is an older game, I thought there would be no problem. I decided that I would get the softkey from one of my COMPUTIST back issues. I could not find a softkey for it, so I was on my own.

I decided to reread all of the softkeys for EPYX programs (I have a program that lists all of the programs, issue numbers, pages, and company names for all of the issues that I have.) In COMPUTIST #50, I found an article by Edward Teach that gave me all of the information that I needed. Thanks, Ed! I also want to thank COMPUTIST for a super magazine!

1 Boot your DOS 3.3 system disk.

2 Tell DOS to ignore checksum and epilog errors and use COPYA to copy both sides of the disk.

POKE 47426,24
RUN COPYA

3 Use a sector editor to change the following on the front side of the disk.

Trk	Sct	Byte(s)	From	To
\$00	\$05	\$95-97	4C 00 06	18 EA EA

4 Write the sector back to the disk.

If your disk is not the same, search for 00 06 and replace it with 18 EA EA.

Jason Fuller

☺ I would like to know who makes *Trak Star* and *Senior Prom v.30* and how to reach them. Also, please let me know what discount mail order place might carry it.

I have seen these pieces referred to several times in your excellent magazine. They sound like very useful items of hardware, but I have

been unable to find them anywhere.

☺ *Trak Star* is available from Midwest Microsystems (913 676-7242), 10308 Metcalf suite 355, Overland Park, KS 66212, for \$99.95 plus \$3 shipping. *Senior Prom* is available from Cutting Edge Enterprises (317 743-4041), 43234c Ren Cen Station, Detroit, MI 48243.

..... RDEXed

Jan Recourt

Thanks to Mr. Foerster and Mr. Gaunt for the tip on how to print the Starter Kit DOCs.

Playing Tips for...

Ultima IV

Origin

The black stone is in the black gate by black moons. When you are in a town, village, or castle, Peer at a gem or Cast View to see how far you can walk around the town without leaving the town. Many times there are people at the edge of the town who have interesting things to tell. In that way you can find Katrina in Magincia. The Wheel is in the Sea of Heroes.

☺ The APT in COMPUTIST #48, for the "Unusual Balloon Ride", doesn't work for me. I am at the end of the game in the cave of the STYGLIAN ABYSS, but I don't know how to find or to enter the last room. I passed all of the eight rooms with the lizards and demons, and entered the big room at the end with the altar(?) in the middle, but now what? I know the word of passage and I have all the rest needed to finish the game. Who can help me?

☺ Who knows a way to make *Multiscribe gs* print for a printer other than Imagewriter or Laserwriter? I have an Epson 80 M III.

M.J. Howard

Softkey for...

Microzine #21

Microzine #22

Scholastic

Here's a crack your readers may find useful, thanks to Jack Moravetz, COMPUTIST #52.

Jack said his *Microzine #22* wasn't protected, but mine sure was. Apparently, Scholastic used the same protection scheme on numbers 21, 22, and 23. Using Jack's method, I was able to deprotect numbers 21 and 22.

1 Boot your DOS 3.3 system disk.

2 Tell DOS to ignore checksum and epilog errors and use COPYA to copy both sides of the disk.

POKE 47426,24
RUN COPYA

3 Boot *Copy II Plus*, and from the utilities menu select CHANGE BOOT PROGRAM.

4 Insert side one of the copy, press return, and highlight the HELLO file. Press G and the boot program is now HELLO.

This bypasses the original boot programs that checked for an original disk and than ran HELLO.

Or, if you don't have *Copy II Plus*, you can copy all of the files onto an initialized DOS 3.3 disk. Omit the original boot programs as follows: On *Microzine #21*, omit file TY.0. On *Microzine #22*, omit file XMGPR1.

Also, here's a tip for harried parents whose kids just can't seem to complete some of the *Microzine* adventures. This is for any *Microzine* that can be cataloged (see steps 1,2,3 above), even if the copy does not boot. Get out the trusty *Copy II Plus* and VIEW FILES from the utility menu. Then highlight TEXT and insert the disk. Choose some long files and clues. Answers will sometimes show up as you scroll through the text.

If you don't let the kids see you do this, they will think you're the greatest when you come up with answers to their obscure questions. Sometimes my boys think their mother is a genius!

Warren W. Power

Not so happy with Copy II Plus v8.1

I've recently read several articles praising the virtues of Central Point Software's *Copy II Plus 8.1*. All of these articles fail to mention an important fact brought out on page 3 of the Manual Addendum: "The Bit Copy program can work with any 3.5 inch drive except for the Unidisk 3.5 inch." This fact is not mentioned anywhere on the outside of the package, so the only way you can find this out is to purchase the software.

I have an Apple IIgs with one 3½" and two 5¼" drives chained together and plugged into the computers drive port. I purchased *Copy II Plus 8.1* with the hope of finding a good block editor for 3½" drives. When I tried out the program, not only did I find that the 3½" bit copy program didn't work, but the 3½" block editor and the 3½" disk map portions of the program were also inoperable.

I agree that *Copy II Plus* is an excellent bit copy program for 5¼" disks, and it may be just



as good for 3½" disks, but I'll never know. I suggest that before you run out and buy the program, be sure it works with your system.

By the way, if you're looking for a good block editor, I'd like to recommend *ProSel* by Glen Bredon.

Jerry Suchar

† Softkey for...

Kids on Keys

Spinnaker Software

If the softkey in COMPUTIST #47 doesn't work on your version, try making the following sector edits:

Trk	Sct	Byte(s)	From	To
\$14	\$0E	\$9D-9E	8F 88	53 43

Softkey for...

Shutterbug

Lion's Workshop

Animal Hotel

Same or Different

Learning Technologies, Inc.

The protection sounded like a nibble count that resulted in a reboot if it failed.

Using *Copy II Plus* sector editor set to scan for 8C C0, I started to read the disk at track S03, sector \$00, past the normal DOS. I found this pattern in only one sector. I then read the sector and examined it using the disassembler. I found a disk read (LDY C08C,X) followed by CPY #\$FF, followed by a BNE. I changed the BNE to an RTS, rebooted the disk and met with a workable non-protected disk.

The protection for all of these disks is the same. It just lies on different tracks and sectors. Here are the instructions, step by step:

1 Copy the disk using a sector copy or a bit copy program.

2 Get out sector editor and make the following changes:

Shutterbug

Trk	Sct	Byte(s)	From	To
\$0D	\$03	\$8A	D0	60
		\$8B	D8	EA

Animal Hotel

Trk	Sct	Byte(s)	From	To
\$10	\$05	\$8A	D0	60
		\$8B	D8	EA

Lions Workshop

Trk	Sct	Byte(s)	From	To
\$05	\$02	\$8B	D0	60
		\$8C	D8	EA

Same or Different

Trk	Sct	Byte(s)	From	To
\$06	\$04	\$8A	D0	60
		\$8B	D8	EA

3 Write the Sector back to disk.

The Overlord & The Nimrod

Softkey for...

GraphicWriter 2.0

?

Requirements

- Apple IIgs with 512K or more
- Copy II Plus*

GraphicWriter 2.0 is one of the first real Desk-top Publishers to come out for the Apple IIgs. It packs a lot of powerful features into one disk and performs very quickly compared to other programs of its type.

Although this is the version with "the final print routines," you had better hope that the routines will be upgraded, because right now they are mighty slow. See Brian Troha's article in COMPUTIST #50, page 20, to get a little bit more info.

GraphicWriter can be backed up by using *Copy II Plus 8.2* and the *GraphicWriter* parm entry. This simply sector copies the whole disk except for track \$4F, which contains the bad blocks that are checked for. *Copy II Plus* bit-copies this track and then the track works fine.

However, it is not cracked, and \$4F must be bit-copied every time the disk is copied in order to get a working backup (the backup crashed once, so even this isn't a good method.)

The best way to go about making a backup is to crack it.

Cracking the Program

Using Brian A. Troha's extremely helpful disassembly of *GraphicWriter 1.1's* protection, and also his suggestions for cracking the then-unreleased 2.0, we managed to crack *GraphicWriter 2.0* without much trouble. The protection had been moved, but the routine itself was the same except for the removal of one byte.

A major problem was that the *Copy II Plus* disassembler didn't disassemble correctly.

Simply following the object code was the next approach, and it did the trick. So, using the *Copy II Plus* sector editor, we read in track \$471.

Disassembling from byte \$76, we see the following code:

(Note that this is not the disassembly you will get with *Copy II Plus*, but if you follow the opcodes you will see that these commands are really there.)

```

1167:A2 02 20      LDA #S2002
116A:22 00 00 E1   JSL $E10000
116E:22 EA 0C 00   JSL $000CEA
1172:8D D7 00      STA $00D7
1175:C0 00 00      CPY #$0000
1178:F0 03         BEQ $117D BRA $0
117A:...Protection-patch will go here
11C9:...If the check is good it goes here.

```

```

11CA:A9 54 5D      LDA #S5D54
11CD:48            PHA
11CE:A9 AA D5      LDA #SD5AA
11D1:8F 6A 0F E1   STA $E10F6A
11D5:AD DB 00      LDA $00DB
11D8:48            PHA
11D9:AD D9 00      LDA $00D9
11DC:48            PHA
11DD:A2 02 10      LDX #S1002
11E0:22 00 00 E1   JSL $E10000
11E4:68            PLA
11E5:AB            PLB
11E6:6B            RTL

```

Notice that this code is almost exactly the same as the code which Brian Troha shows. The idea is to force the program to branch right over the actual check to the end, which is where the program goes if the check passed. This is accomplished by calculating the length of the code to be skipped over and using that displacement with a BRA (Branch Always) statement. In this case, the length of the code to be skipped was \$50 bytes, which is one byte shorter than the displacement for earlier versions of *GraphicWriter*.

So, the final crack is quite simple. Just overwrite the BEQ to the protection with a BRA to the "check was good" section.

Final Result:

Block	Byte(s)	From	To
\$471	\$79	F0 03	80 50

That's it! *GraphicWriter 2.0* should work perfectly.

If, on the off chance that the protection has been moved or even slightly changed, search the disk for the string, C0 00 00 F0 03. This is a CPY #\$0000 and the branch to the protection (BEQ). Just change the BEQ to a BRA and figure out the displacement to reach the "good" section of the routine. Getting a disassembly of the block will help greatly in this.



Playing Tips for...

Space Quest

Sierra On Line

- There is a keycard on a dead body.
- There is someone who knows the name of a care.
- You can't go anywhere without opening the Bay Doors.
- Orat doesn't like water. He doesn't like spider droids either.
- When Orat is taken care of, he'll leave you a necessary "part" of the puzzle
- There is a secret passage between two arcs.
- Plug up the geyser and get some points.
- You can't turn off a laser beam, but you can short it out.
- Time the acid drops or you will fry.

See next issue for more.

Ⓞ Anyone have info on *HardBall*? It does bad block checks on blocks \$2EF, \$2F2, and \$2F3; also, the checks must be done through the Tool Box because there is no evidence of a direct call to any suspicious ProDOS disk routines.

A few other items to discuss. We just picked up a book called "Programming the 65816, Including the 6502, 65C02, and 65802," and it's terrific for both quick references and detailed discussions about IIGs machine language functions.

Also, we are very annoyed that people are sending in *Copy II Plus* parms without giving that program any of the credit. Sure, it's good to have those cracks, because not everybody owns or uses *Copy II Plus*; nevertheless, the least these people could do is explain where the cracks came from. It is very suspicious when one person sends in nine or ten unexplained IIGs softkeys for programs which have only been out a few months.

Bard's Tale was cracked in COMPUTIST #51. For some reason, we can't get into the dungeon. The bar on Rahkir street should give an option to drink wine and thus send you to the dungeon, but it doesn't. *Bard's Tale* was cracked using a recent COMPUTIST softkey, so check out the bar on Rahkir to see if yours is working correctly. If not, try *Copy II Plus* or something else to crack it.

Tip: When using a program that uses more than one disk (for example, *Deluxe Paint*), you can save time between disk switches by doing the following:

Boot the *Deluxe Paint* disk. To load a picture from the Bonus Art Disk, first leave *Deluxe Paint* in the drive and use the "open" command. A catalog of files will appear. Take out the *Deluxe Paint* disk and insert the Bonus Art Disk. Now click "disk" and the drives will be searched once instead of three times.

By the way, there is a picture on the Thexder disk called Thexder.Pic. We found this picture to be the same as a picture used in Fantavision GS. What's up with that????

Finally, we've got a few words to say about the inclusion of the IBM RDEX. We don't care about how to crack IBM programs. We don't need that in this magazine, especially if the length of the Apple section is going to be compromised. MacIntosh is all right (it's Apple at least,) but we would rather not see any IBM or very little.

B. Dudley Brett

Here are some softkeys, a correction and an extension of Greg Poulos article in COMPUTIST #53.

I have included softkeys for *Multiscribe v3.0* by Styleware, and *Multiscribe v2.0* by Scholastic. Both of these are now protected; the original was not. I am also including a crack (maybe only a preliminary one) of *Gutenberg Sr.* by Micromation from your Most Wanted List, and a softkey of *Talking Text Writer*.

I tried out Greg Poulos' article on the use of the Electronic Arts loader by attempting to make a fast boot disk with *Locksmith 6.0 Fastcopy* as the boot program. As I was doing so, I noted some errors in Greg's article, corrected them and completed the job. In the course of doing so, I found out that *Locksmith* would not work without DOS 3.3 RWTS also being loaded, so I adapted Greg's method to load in RWTS, as well as *Locksmith*, and attached a memory move to ensure RWTS landed up in its proper location.

The entire technique, I believe, should be of interest to COMPUTIST readers, especially if a linear, well written and understandable presentation is given. Let's face it. Some writers have brilliant ideas, but sometimes lack the communication skills to present an orderly explanation. A reader is faced with ambiguity and the necessity to read over and over through a tangled web to glean the threads of logic. I must say that Greg's article was not of the aforementioned ilk, though I did catch one error. The fact I could correct this error speaks highly of the explicit documentation Greg presented.

Softkey for...

Multiscribe v3.0

Styleware

Upon receiving the update of *Multiscribe v3.0*, I noted that copies would not boot properly, indicating that copy protection had now been added to this popular word processor.

Fully expecting to have to spend much time and effort to deprotect this ProDOS program,

I was pleasantly surprised and successful in just 10 minutes. I used a byte search facility (*CIA Tracer*), looked for disk access and the read byte sequence: BD 8C C0. Strange disk access was apparent in track \$0F, sectors \$0D and \$0C. Unusual compares following byte reads suggested some sort of nibble check routine.

Reading through this routine showed that if no error was encountered, before exiting, the accumulator is loaded with \$00, the carry is cleared and exit is made via RTS. If an error does occur, however, the accumulator is loaded with \$01, the carry flag is set, and then an RTS is made. For the closest examination of this routine, sector \$0C shows this code clearly. At each CMP operation, an error branches to location \$xx4E where the fatal exit is made. On the other hand a no error situation falls through to \$xx4A and a kindly exit.

In order to defeat the nibble check, I decided to just place a return from subroutine before the nibble check, making sure to clear the carry and to store \$00 in the accumulator first. The obvious place to do this is at the first read byte.

1 Copy with any fast sector copier.

2 Use a sector editor to make the following edits:

Trk	Sct	Byte(s)	From	To
\$0F	\$0D	\$F3-F6	BD 8C C0 10	A9 00 18 60

Softkey for...

Multiscribe v2.0

Scholastic, Inc.

Scholastic, Inc. distributes, along with excellent documentation to be used by students and teachers, this fine word processing program. Following the usual Scholastic approach, *Multiscribe v2.0* is now protected, but not too extensively.

A search with a nibble editor discovers that address and data epilogs have been changed from DE AA to FF FF on all tracks. The easiest approach is to copy with COPYA, after turning off epilog errors in DOS 3.3, then format a blank ProDOS disk, and transfer all files to the latter.

1

RUN COPYA

C

70

CALL-151

B925:18 60

B988:18 60

C

RUN

ignore data epilog
ignore address epilog

This will produce a disk which can be cataloged, but not booted.



2 Format a ProDOS disk using /MULTISCRIBE as the volume name.

3 Use *Fliter* or equivalent to transfer all files from the *COPYA* disk to your formatted disk.

4 Only the program boot side was protected. Use a fast sector copy program to copy all other sides.

Softkey for...

Talking Text Writer

Scholastic, Inc.

Talking Text Writer is an educational word processor that uses synthesized speech to help children learn to read and write. It requires an *Echo Plus* speech synthesizer board for the IIe or *Cricket* speech synthesizer for the IIc. It is a ProDOS based program and requires 128K memory.

Both program disks, the Write disk and the Read disk are protected, whereas the File Disk Maker disk and Sample File disk are not. All disks can be easily copied with a fast sector copy program such as *Locksmith 6.0 Fastcopy*, though the program disks require sector edits before they can be booted.

I started to search the Write disk for unusual disk access by locating all occurrences of BD 8C C0 (with *CIA Tracer*). This led me to take a closer look at track \$1E, sector \$03 and track \$04, sector \$05. On both sectors, I noted that disk access was primarily done via the MLI of ProDOS. This can be recognized by a JSR to SBF00 (20 00 BF) followed by a code byte and a parameter list address. I also noted, on both sectors, that any error (the carry flag is set if an error occurs) results in a branch to \$30E8. At this location, the code 4C 00 C6 (JMP \$C600) results in a reboot.

After much deliberation, I decided that all that was happening was the normal loading of files into memory, and that nothing too strange was occurring. However, on track \$1F, sector \$03, after two files were loaded, a nibble check was made, starting at \$309B and if not passed a branch was made to \$30E8 and instant death. I, therefore, tried replacing byte \$9B from BD to 60 (RTS), and booted the disk. It worked! Here then is the softkey for the Write disk and also for the Read disk (The same routine is found but at a different location).

1 Copy all sides with a fast sector copy program.

2 Make the following sector edit on the Write disk.

Trk	Sct	Byte(s)	From	To
\$1F	\$03	\$9B	BD	60

3 Make the following sector edit on the Read disk.

Trk	Sct	Byte(s)	From	To
\$1E	\$0D	\$9B	BD	60

For those who dislike the sector edit method, and prefer to make direct edits to the ProDOS file containing the protection code, an alternate softkey could be accomplished.

Alternate Method

1 Boot up ProDOS and exit to BASIC.

2 Place the appropriate TTW disk in drive 1.

PREFIX,D1
BLOAD TST1

3 List the file.

CALL-151
3000L

4 Explore!

5 Make the edit, replacing BD with 60 then save the file.

309B:60
BSAVE TST1,A\$3000,L\$FA

6 Do unto the other program disk what thou hast done to the first!

Softkey for...

Gutenberg, Sr.

Micromation, Ltd.

This powerful word processor enjoys the reputation of being the epitome of both excellence of control over what can be placed on a page and difficulty of use. Probably the main reason it has stayed on the Most Wanted List is because most computer users favor a simpler, though less capable processor. I wished to try my skill at removing its protection, but I was unable to track down an original disk after searching for several months. In the past week, however, I managed to obtain a backup made by the original disk's copy function. Perhaps the same protection is on the backup (This I cannot as yet verify).

Starting to explore this backup, it soon became apparent that the disk was almost normal. It could be copied by *Locksmith 6.0 Fastcopy*, but showed read errors on tracks \$00 to \$02 in a few sectors. It does not have a normal catalog, nor normal DOS 3.3, so trapping the RWTS and using a swap controller or *Demuffin Plus* was out. However, perhaps *COPYA* could be used after turning off some error traps. I immediately tried this, and obtained a bootable *Gutenberg Sr.*

Step-By-Step

1 Use *COPYA* without epilogue checks to copy the disk.

RUN COPYA
70

C

B942:18

B925:18 60

B988:18 60

C

RUN

Turn off checksum errors

Turn off data trailer check

Turn off address trailer check

Back to basic

5 Second Fastboot into Locksmith 6.0 Fastcopy

Greg Poulos' article (COMPUTIST #53, pp.27-29) was welcome indeed, as I had long wished to be able to place useful utilities on a disk that would boot relatively quickly. I had tried John Weigley's method (COMPUTIST #51, pp.26,27) but could not, lacking specific enough instruction, gain any success. Thus, I hoped that Greg's approach might be the answer.

After some effort, I was victorious in producing a reasonably fast boot disk (5 seconds) with *Locksmith 6.0 Fastcopy* as the booted file. I should also mention that, unlike others who had trouble in capturing *Locksmith* (COMPUTIST #43 and #49), I was successful. In order to complete the production of making this boot disk, one must have first successfully completed the exercise of producing the *Fastcopy* program as a "stand alone" DOS 3.3 file.

In the process of using Greg Poulos' method, I did run into some snags, and since they seem to be related to errors in Greg's article, I thought a structured how-to article might be of benefit to COMPUTIST readers. Thus follows a cookbook recipe on how to have your very own fast boot *Locksmith 6.0 Fastcopy* disk.

1 Format a DOS 3.3 disk (Why use *Locksmith* to format?) This is quickest!

2 Copy track \$00 of any Electronic Arts disk to the formatted disk (I used *Seven Cities of Gold*).

3 Make the following sector edit:

Trk	Sct	Byte(s)	From	To
\$00	\$00	\$04-12	A9 00 8D F2 03	2C E9 C0 A9 18
			A9 C6 8D F3 03	85 3E A9 09 20
			49 A5 8D F4 03	00 0C 20 00 18

This translates in disassembly to:

2C E9 C0 BIT \$C0E9 Turn on drive
A9 18 LDA #S18 Page no. for special loader



```

85 3E STA $3E Store $18 in loc. $3E
A9 09 LDA #$09 Track no. for special loader
20 00 0C JSR $0C00 E.A. Load from track $09
20 00 18 JSR $1800 Execute loader at $1800

```

4 Now add the special loader program.

Trk	Sct	Byte(s)	From	To
509	\$0F	\$00	?	A9 20 85 3E A9 20 20 00 0C A9 30 85 3E A9 21 20 00 0C A9 50 85 3E A9 22 20 00 0C 2C E8 C0 A9 00 85 3C A9 50 85 3D A9 FF 85 3E A9 59 85 3F A9 00 85 42 A9 B6 85 43 20 4A FF A9 00 85 47 20 3F FF 20 2C FF 4C 00 20

This hex code in disassembled form would look like this:

```

00: A9 20 LDA #$20 Address of LS Fastcopy
02: 85 3E STA $3E Store $18 in loc. $3E
04: A9 20 LDA #$20 Track no. for LS
06: 20 00 0C JSR $0C00 Read in track $20
09: A9 30 LDA #$30 2nd half of Locksmith
0B: 85 3E STA $3E
0D: A9 21 LDA #$21 Track no. for 2nd half
0F: 20 00 0C JSR $0C00
12: A9 50 A9 #$50 Address of DOS 3.3 RWTS
14: 85 3E STA $3E
16: A9 22 LDA #$22 Track with RWTS
18: 20 00 0C JSR $0C00
1B: 2C E8 C0 BIT $C0E8 Turn off drive
1E: A9 00 LDA #$00 Low 1st byte of RWTS
20: 85 3C STA $3C
22: A9 50 LDA #$50 High 1st byte of RWTS
24: 85 3D STA $3D
26: A9 FF LDA #$FF Low last byte of RWTS
28: 85 3E STA $3E
2A: A9 59 LDA #$59 High last byte of RWTS
2C: 85 3F STA $3F
2E: A9 00 LDA #$00 Low byte of destination
30: 85 42 STA $42
32: A9 B6 LDA #$B6 High byte of destination
34: 85 43 STA $43
36: 20 4A FF JSR $FF4A Start memory move
39: A9 00 LDA #$00
3B: 85 47 STA $47
3D: 20 3F FF JSR $FF3F
40: 20 2C FF JSR $FF2C End memory move
43: 4C 00 20 JSR $2000 Execute LS 6.0 Fastcopy

```

My original plan was to load *Locksmith* into tracks \$20 and \$21. After doing so I found that *Locksmith* needed the DOS 3.3 RWTS from \$B600 to \$BFFF. Thus, I eventually decided to place RWTS on track \$22 and have the special loader retrieve it from that track and place it in memory starting at \$5000. Then the loader would make a memory move, transferring RWTS to \$B600.

5 Clear memory and enter the following BASIC program.

```

FP
10 REM WRITE HI-RES PICTURE OR BINARY FILE
20 POKE 768,32: POKE 769,227: POKE 770,3: POKE
771,76: POKE 772,217: POKE 773,3: POKE
47083,0: POKE 47088,0: POKE 47090,0: POKE
47091,0: POKE 47092,2
30 HOME: INPUT "TRACK#:#:" : X: INPUT "# OF
SECTORS:#" : Y: PRINT : PRINT : PRINT
"INSERT DISK..." : GET PPS
40 T1 = X: TF = Y: S1 = 15: M1 = 32: MF = M1 + Y + 1: T
= T1: S = S1: M = M1: LT = X + INT ( Y / 16 ): GOSUB
110
50 S = S - 1: IF S < 0 THEN 80
60 M = M + 1: IF M > MF THEN END
70 GOSUB 110: GOTO 50
80 T = T + 1: IF T > LT THEN 100
90 GOTO 60
100 PRINT "--ERROR--" : END
110 POKE 47089,M: POKE 47084,T: POKE 47085,S:
CALL 768: RETURN

```

Checksums

10	- \$BADD	70	- \$9351
20	- \$4BF2	80	- \$700C
30	- \$C7C1	90	- \$0CB4
40	- \$D08D	100	- \$D74F
50	- \$CE11	110	- \$928B
60	- \$4738		

Note the changes in line 40 from Greg's original applesoft program. The original (MF = 2 * Y - 1) only works on a 34 sector file, and results in only 12 sectors being read from the 23 sector LS file. My algorithm (MF = M + Y + 1) will work for all file lengths. Likewise in line 80 of Greg's program the conditional statement declares IF as a variable, and does not define it. The conditional statement is changed by renaming IF with LT and declaring LT in line 40 as the last track which should be read (LT = X + INT (Y / 16)). The program will now work!

6 Save the program on a different disk. **SAVE E.A. WRITE**

7 Now boot DOS 3.3 and load *Locksmith*.

BLOAD LOCKSMITH 6.0 FASTCOPY,A\$2000

8 Now write *Locksmith* to your prepared E.A. boot disk.

LOAD E.A. WRITE

Never run E.A. WRITE on the same disk as you saved it! Put your prepared E.A. boot disk into the drive and:

RUN

Type **32** when prompted for the track and **23** when prompted for sectors. (Be careful here!)

9 Now write the RWTS to the disk.

CALL-151

2000<B600.BFFF

Move RWTS into place

C

RUN

Type **34** when prompted for the track and **10** when prompted for sectors.

Now place the new boot disk in the drive, boot and enjoy!

Softkey for...

Milliken Word Processor

Milliken

Requirements

- System Master (COPYA)
- Any Sector Editor

The *Milliken Word Processor* is an educational tool designed to aid students to concentrate upon composing rather than handwriting and neatness. It includes a single sided protected program disk and a COPYA-able file data disk.

The Protection

After reading Larry Rando's softkey in *COMPUTIST #39*, page 7 for *Discovery*, another Milliken program, I decided to test for any similar copy protection. Using a sector editor, I checked for altered epilog bytes on sectors \$02 and \$03 of track \$00. Sure enough, the *Word Processor* had the same altered byte (DF AA instead of DE AA) in exactly the same places mentioned by Larry. I was not able, however to locate the nibble count on sector \$0A. At this point, I decided to proceed further by copying the disk with *COPYA*, first disabling the read error checking routine (B942:18 60). I then changed the epilog byte DF to DE by sector edits of sectors \$02 and \$03. A test boot quickly produced an Applesoft prompt, a new surge of disk activity, another prompt, then another. After counting six prompts, I decided this was going nowhere, and shut down with **RESET**.

Perhaps a similar reboot routine to the *Discovery* disk was being used here. However, using *CIA*'s trace facility, I could not locate SC600 anywhere on the disk. (4C 00 C6 stands for reboot). There had to be a reboot somewhere, so I then decided to see if the programs on the disk might give clues.

Booting normal DOS 3.3, I cataloged the *COPYA*'d disk and listed the short hello program, *OLD BOOT*. In it's two lines, all it did was to set *MAXFILES* and *BRUN BOOTLING*. After bloading this program, I checked its location in memory (CALL-151...*AA60.AA73), and found it started at \$8CA0 with a length of \$25B bytes.



Listing starting at \$8CA0 quickly brought results. At \$8CA0 there was a JMP \$8D56. Looking there I noted 2 lines further a backward JSR \$8CA3 at \$8D5C. This subroutine from \$8CA3 to the RTS at \$8D38 was the nibble count routine, containing much busy activity with the soft switches in the C ROM, accessing the disk drive with a few CMPs and checking for legal bytes.

I really didn't want my copy to do all this, so reading past the JSR at \$8D5C I noted that at \$8D61 there was a branch to \$8D73, taken only if the nibble routine was passed. Further, just before \$8D73 there was a very cute little bit of code replacing one byte, and effectively changing the instruction JSR \$C000 with JSR \$C600. This was the reboot which I could not find with a sector editor! The next step was now obvious. Instead of jumping through the nibble count subroutine, just jump forward to the position at \$8D73 for the continuation of the program. I again took out CIA and searched for the sequence 20 A3 8C (the fatal JSR to the nibble count). This was found, with identical surrounding code in two places on track \$19, sectors \$08 and \$0A. After changing 20 A3 8C to 4C 73 8D, a boot of the disk produced only one Applesoft prompt and the title page. All was fine after this.

Step by Step

- 1 Boot your DOS 3.3 system disk.
- 2 Tell DOS to ignore checksum and epilog errors and use COPYA to copy the disk.

POKE 47426,24
RUN COPYA

- 3 Make the following sector edits to the copy you just made.

Trk	Sct	Byte(s)	From	To
\$00	\$02	\$9E	DF	DE
	\$03	\$35	DF	DE
		\$91	DF	DE
\$19	\$08	\$C0-C2	20 A3 8C	4C 73 8D
	\$0A	\$C0-C2	20 A3 8C	4C 73 8D

Softkey for...

En Vacances
En Ville
Le Demenagement
D.C. Heath & Co.

■ Requirements

- Means of resetting into the monitor
- A fast copy program-Disk muncher, etc.

D.C. Heath and Company has consistently provided quality text books and support

materials to schools, and has now published some excellent tutorial programs for the Apple II family of computers. I have reviewed three of these: *Le Demenagement*, *En Vacances*, and *En Ville*. All are excellent programs at the high school level.

The Protection

When approaching the deprotection of educational software, I almost always prefer to use a method that will allow me to access any file later on. Using a faster DOS or bypassing slow loading hi-res credit pages may be desirable. Thus, even though a bit copier may be used to produce a backup, this would not be the desired method, as the copy protection invariably is still extant. My preference leads to a liberal use of FID, DEMUFFIN PLUS, COPYA and Super IOB. With D.C. Heath disks, the copy protection can be removed fairly easily, though not in an elegant fashion. I have discovered two methods.

First, boot any DOS 3.3 disk and try to catalog the D.C. Heath disk. If a catalog appears, you are in for an unpleasant surprise. Try FIDing these files to an initialized disk, or even trap the RWTS and use *Demuffin Plus* and try again, no chance! Your only recourse is to Method 2, described later in this article. However, if you cannot catalog the disk, believe me, you are in luck! The VTOC has simply been moved to another track, usually track \$16, rather than the normal \$11. To find out, POKE -21503,22 and catalog again. If this does not work, either poke any number from 4 to 34, one after another, into the Apple, or use CIA's tracer function to locate the VTOC. Once you have found the correct VTOC track, consult Method 1.

Method 1

- 1 Use *Disk Muncher*, or any fast copier that will ignore read errors, and copy the D.C. Heath disk. Do not worry about any read errors; they are just nibble count tracks!

- 2 Boot DOS 3.3 AND POKE -21503,x where x is the VTOC track (usually 22, rather than normal DOS 17).

- 3 Insert the copied disk and enter:

CATALOG

- 4 Load HELLO, and later MENU, unlock and save after changing one line which will CALL a location in DOS that performs the nibble count. This line is at the beginning of the program (I found it in line 6, 8 or 10), and includes the BASIC statement "CALL 44331". Delete this command before saving the program. I have also found on the second side of D.C. Heath programs, that a similar MENU program will have the same call. Check for this, and expedite its removal, but note that there are

enough differences in the two MENU programs to require that the same program not be saved on both sides, just to save time for lazy persons!

- 5 Do not change the DOS to your favorite fast DOS. Remember that the catalog is on a different track. So write down: POKE-20503, x in a safe location, and use it any time you have the desire to make alterations to the disk.

Method 2

- 1 Initialize enough disks with DOS 3.3 (sides) to hold all files.

- 2 Boot the D.C. Heath disk, and trap the reset when the menu appears. This may be done by hitting **RESET** several times, or using a modified F8 ROM, or any other method of choice.

- 3 Catalog the disk, and then LOAD (or BLOAD) each file on the disk. For binary files, upon BLOADing them, you will have to get the address and length by going into the monitor (CALL-151) and then typing AA60L. The address for BSAVEing will be at \$AA72.AA73 and the program length will be at \$AA60.AA61. Remember, the values are stored lo-byte, hi-byte.

- 4 One after another, SAVE or BSAVE each file on your initialized disk. Remember to use the correct address and length for all binary files. Be grateful that no text files are used on your disk.

When you finish transferring the files, you will have a completely deprotected disk. If you are impatient, you might even wish to replace the DOS 3.3 on the disk with a fast DOS such as *Diversi-DOS* or *Pronto-DOS*.

Brandon LaCava

Softkey for...

Disk Optimizer II

AAJS Computer Products

■ Requirements

- Disk Optimizer II disk
- Formatted DOS 3.3 disk
- A way to force entry into the monitor

Disk Optimizer II is a very good program made by AAJS Computer Products, Inc. It allows you to format disks in:

- ProDOS
- DOS 3.3 w/o DOS
- DOS 3.3 w/DOS
- Pascal
- Any of the above formats in 35, 36, and 40 tracks



• DOS 3.3 with a file table that will hold 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, 98, or 105 files.

To make it a single file, I started out by booting up the *Disk Optimizer II* disk. You may note the short boot up. This quick span of time gave me a hint of how short the program is.

After the program loaded up, I entered the monitor using my *Wildcard*. After a bit of searching around the monitor, I found the start of the program at \$800. I listed through the memory until I found a bunch of garbage which signified the end of the program at \$1B5B. I then moved this program to \$6000, and booted up a DOS 3.3 disk with a very short hello program. I moved the program back to it's original starting place at \$800. To find the length of the program, I subtracted the original starting address (\$800) from the ending address (\$1B5B). The result was \$135B. I then BSAVED the file.

- 1 Boot *Disk Optimizer II* disk.
- 2 Force entry into the monitor.
- 3 Move program to safe memory:

6000<800.1B5BM

- 4 Boot DOS 3.3 disk.

C600G

- 5 Enter the monitor again.

CALL-151

- 6 Move program back to \$800.

800<6000.735CM

- 7 Save file.

BSAVE DISK OPTIMIZER,A\$800,L\$135B

Andrew Swartz

Softkey for...

Silent Service IIgs

MicroProse

Requirements

- Silent Service gs v925.01*
- A block editor (I use *Copy II Plus 8.2*)
- A 3 1/2" disk copier (I use *Copy II Plus* utilities)

- 1 Copy disk with any copier.
- 2 Make the following edits:

Block	Byte(s)	From	To
\$1CA	\$1E6	??	60

Put your original in a safe spot!

Brian A. Troha

Softkey for...

Hacker II

Activision

Requirements

- 512K Apple IIgs
- 3 1/2" disk copier
- 3 1/2" disk editor
- Copy II Plus v8.x*

After sending in my original disk, I had to wait almost two months for a version of *Hacker II* that's compatible with the new IIgs ROMs. So when it did get back to me, I thought I would back it up in case I had to send the original back again. I made a copy of the program disk and received a read error for block 7 (same old Activision disk protection). Then I booted *Copy II Plus v8*, entered the sector editor (in the 3 1/2" disk bitcopy program) and tried to apply the patches printed in past *COMPUTIST #48* and *#50*. The disk protection routines have been moved around, but they are easy to find. Search the disk for C9 01 00 D0 06. Here's what the code looks like:

Block \$3C1 & \$459

```
3C: JSL 00B7EA Check for bad block 7
40: CMP #0001 Was it a bad block?
43: BNE 4B (+06) No, then skip flag set
45: LDA #0001 Yes, then load pass value
48: STA 5103 and store it in the flag
```

Block \$3BC & \$454

```
7A: LDA 5301 Load flag
7D: BEQ 91 (+13) Anything but zero will pass
```

Very much like the old version, and the same edits (in different places) will work.

Step By Step

- 1 Copy the disk (ignore error on block 7)

- 2 Make the following edits to the copy:

Block	Byte(s)	From	To
\$3BC	\$7D	F0 13	EA EA
\$3C1	\$3C	22	AF
	\$43	D0 06	EA EA
\$454	\$7D	F0 13	EA EA
\$459	\$3C	22	AF
	\$43	D0 06	EA EA

- 3 Write the blocks back to the copy.

Softkey for...

Sea Strike

BPI Software, Inc.

Requirements

- 512K Apple IIgs
- 3 1/2" disk copier
- 3 1/2" disk editor

Cracking *Sea Strike* was easy, thanks to Stephen Lau and his softkey for *Tower of Myraglen* in *COMPUTIST #53*, pg 19. A search for the "from" bytes listed in the article was successful. Making a similar type of edit will produce a working copy of the master disk.

After checking the code around the patch you will find a call to the actual disk check. With this information in mind I made a minor addition to Mr. Lau's patch.

Although I chose a different type of edit (simply to show there are many ways to do the same thing), please note that both this edit and the one Mr. Lau showed will work. After a thorough "play testing" I found everything to work, including the saving of the high scores.

The same or similar type of procedure should work on other releases from BPI Software.

Here is the actual softkey for *Sea Strike*:

- 1 Copy the disk (ignore error on block 7).

- 2 Make the following edits to the copy:

Block	Byte(s)	From	To
\$58E	\$0B	22	AF
	\$0F	C9 0B 00 F0	EA EA EA EA
		03 A9 00	EA A9 0B

- 3 Write the block back to the copy.

Softkey for...

ShowOff

Broderbund

Requirements

- 512K Apple IIgs
- 3 1/2" disk copier
- 3 1/2" disk editor

ShowOff (SOF) is a new presentation program from Broderbund that can make 16 color, bar graphs and pie charts. The package contains two disks, the *SOF* program disk and a slide show disk to "Show off" your presentation. You can also use the *Printshop IIgs* data disks for extra "stickers", which are little picture graphics. I was happy to note that the program runs under ProDOS 16 rather than ProDOS 8, as ProDOS 16 programs seem easier to crack.



The first thing you will notice when making a copy is that you will receive no read errors (hint, hint). You can now boot the copy and everything will load in. Then, just before you begin, *SOF* asks you to place the master disk in the drive. Ah, you say, another key disk system and another disk laying around.

Well, all of this is leading up to a point. With no read errors and a key disk system, you should be thinking 20-21 nibble count. That is, the program is doing a nibble count on tracks \$20 and \$21 of the 3.5" disk. So the first thing that popped into my mind was search for A2 20 A0 01. When doing so, you will find one occurrence on block \$17C. Here is the disassembly (as it is on the disk) with a brief description:

```

48: PHB
49: PHK
4A: PLB
4B: LDA 001EF2
4F: PHA
50: JSL 000354
54: PLA
55: JSR 0024      Go to the nibble count
58: LDA 001E1A    Load the pass/fail flag
5C: BEQ 63 (+05) Zero means check passed
5E: JSR 00AE      Print "INSERT MASTER..."
61: BRA 55 (-0E) Always back the the check
63: JSL 0003E3
67: PLB
68: RTL          Return to main program
69: LDA #0000     Load a pass value
6C: STA 001E1A    Store in pass/fail flag
70: PHP          Patch will go here!
71: SEP #30      8-bit Accum.
73: LDX #20      Track $20
75: LDY #01      Side one
77: JSR 0057     Do the nibble count
7A: BCS 91 (+15) Carry set on read error
7C: JSR 0076     Compare to bench marks
7F: BCS 91 (+10) Carry set, then failed
81: LDX #21      Now for track $21
83: LDY #01      Side one
85: JSR 0057     Do the nibble count
88: BCS 91 (+07) Carry set on read error
8A: JSR 0092     Compare to bench marks
8D: BCS 91 (+03) Carry set, then failed
8F: PLP          Must have passed
90: RTS          Return to sender
91: LDA 001E1A    Failed, so mess up flag
95: INC          Anything but zero fails
96: STA 001E1A    Store it back in flag
9A: PLP          It failed, but
9B: RTS          Return anyways
9C: STX 0129     Here's the nibble count
9F: STY 012A
A2: PHY
A3: PHX
A4: PEA 0000
A7: PEA 014C

```

```

AA: JSL 0003F5   Count them up
AE: STA 012B
B1: PLA
B2: PLA
B3: PLA
B4: PLA
B5: PLA
B6: PLA          Pull all extra values
B7: LDA 012B
BA: RTS
BB: STX 012C     Check values for track $20
BE: STY 012D     Store as two 8-bit values
C1: PHP
C2: REP #30      Switch to 16-bit Accum.
C4: LDA 012C     Load as one 16-bit value
C7: CMP #1F40    Compare to low end
CA: BCC D4 (+08) Too low, failed the check
CC: CMP #2009    Compare to high end
CF: BCS D4 (+03) Too high, failed the check
D1: PLP
D2: CLC          Check passed for track $20
D3: RTS          Return to sender
D4: PLP
D5: SEC          Check failed, set carry
D6: RTS          Return to sender
D7: STX 012C     Check values for track $21
DA: STY 012D     Store as two 8-bit values
DD: PHP
DE: REP #30      Switch to 16-bit Accum.
E0: LDA 012C     Load as one 16-bit value
E3: CMP #1DB0    Compare to low end
E6: BCC F0 (+08) Too low, failed the check
E8: CMP #1E79    Compare to high end
EB: BCS F0 (+03) Too high, failed the check
ED: PLP
EE: CLC          Check passed for track $21
EF: RTS          Return to sender
F0: PLP
F1: SEC          Check failed, set carry
F2: RTS          Return to sender

```

If you were to change the 08 (PHP) at byte \$70 to a 60 (RTS) you would have working version. The first thing the protection routine will do is to jump to the actual disk check. However, instead of doing a disk check, the flag is set to pass then the code returns to the sender. The sender now checks the flag for a pass condition (which was just set) then returns to the machine program. To crack *SOF* (eliminate the KEY DISK check) follow these simple steps:

- 1 Make a copy of both disks.
- 2 Make the following edits on the program disk:

Block	Byte(s)	From	To
\$17C	\$70	08	60

- 3 Write the block back to the disk. Store the original disks in a safe place.

Softkey for...

Cobra Cavern

BPI Software Inc.

Requirements

- 768K Apple IIGs
- 3 1/2" disk copier
- 3 1/2" disk editor

Cobra Cavern uses the same type of protection as *Sea Strike* and *Tower of Myraglen*. When searching the disk for C9 0B 00 F0, I found three different occurrences. After checking the routines out, I found you really need to change only two of the checks. Once again credit goes to Stephen Lau and his softkey for *Tower of Myraglen*. The method used to make an unprotected backup is:

- 1 Copy the disk (ignore error on block 7).
- 2 Make the following edits to the copy:

Block	Byte(s)	From	To
\$235	\$1DE	22	AF
	\$1E2	C9 0B 00 F0	EA EA EA EA
		03 A9 00	EA A9 0B
\$3F3	\$01F	22	AF
	\$023	C9 0B 00 F0	EA EA EA EA
		03 A9 00	EA A9 0B

- 3 Write the blocks back to the copy.

Softkey for...

Bard's Tale IIGs

Electronic Arts

Requirements

- 512K Apple IIGs
- 3 1/2" disk copier

After getting a hold of the *Bard's Tale* program disk, I searched COMPUTIST back issues for a softkey. I discovered one softkey and two corrections. Well, I examined the code in the file BURGER and found this to be the disk check code (which is nibble counting on tracks \$20 and \$21). The softkey deals with making the check return as a passed check. I loaded the system file to find the call to the check and disable it there. After a quick look for 20 00 XX 90 I found 20 00 A0 90 2B at \$21FA. I came up with a patch that will keep the same checksum, clear the carry and always branch over the fail code.

How did I come up with the patch? I started out by thinking how to overwrite a three byte instruction and still clear the carry. So let's start with 18 (clear carry) and then maybe loading the accumulator with some value to balance the checksum. Now you have A9+00+18 which is



C1 and the original code is equal to C0 when added together. We overshot it by one, well I knew that 80 is branch always and is less than branch carry clear. Subtract one from S10 (\$90-\$80) and you have \$0F, simply replace the zero in the load accumulator instruction with S0F and everything works out. To have *Bard's Tale* skip the disk check and always continue running use these steps:

1 Boot into BASIC from ProDOS.

2 Enter the following:

BLOAD BARD.SYSTEM, A\$2000, TSYS

CALL-151

21FA.21FD

(make sure the code listed is 20 00 A0 90)

21FA:A9 0F 18 80

C

BSAVE BARD.SYSTEM, A\$2000, TSYS

Store the original and play off the backup!

Softkey for...

Aesop's Fables

UNICORN, Inc.

■ Requirements

- 768K Apple IIGs
- 3½" disk copier
- 3½" disk editor

Aesop's Fables (AF) is an educational program that teaches basic reading comprehension skills. The program makes use of limited speech and nice graphics with mouse control. *Aesop's Fables* comes on two 3½" disks and uses nibble counting (on tracks \$20 and \$21) on the program disk for copy protection. Being an educational program, it is meant to be used by younger children, and the fact that kids can make mistakes shows the need for backups. It is very important for educational software developers to realize this and produce unprotected programs for use with kids.

When a copy of *AF* is made and booted the copy comes up with the "BAD DISK" message. If anything, Unicorn should have used a key disk system. Searching for A2 20 A0 01 you would find the copy protection on block \$349 and it looks like:

```
B4: SEP #30      8 bit Accum
B6: LDX #21      Track $21
B8: LDY #01      on side one
BA: JSR 73AF     Check for the original
BD: BCS FA (+3B) On error goto FA
BF: CPX #B0
C1: TYA
C2: SBC #1D      Compare to 1DB0
C4: BCC F2 (+2C) Too low then goto F2
C6: CPX #78
C8: TYA
C9: SBC #1E      Compare to 1E78
CB: BCS F6 (+29) Too high then goto F6
```

```
CD: LDX #20      Track $20
CF: LDY #01      on side one
D1: JSR 73AF     Check for original
D4: BCS FA (+24) On error goto FA
D6: CPX #40
D8: TYA
D9: SBC #1F      Compare to 1F40
DB: BCC F2 (+15) Too low then goto F2
DE: CPX #08
DF: TYA
E0: SBC #20      Compare to 2008
E2: BCS F6 (+12) Too high then goto F6
E4: LDA #00      Everything passed
E6: PHA
E7: JSL 007472    Print "...."
EB: LDA #00
ED: XBA
EE: PLA
EF: PLP
F0: PLB
F1: RTL          Return to sender
F2: LDA #0A      Load "bad disk" value
F4: BRA E6 (-10) Branch back to print "...."
F6: LDA #14      Load "bad disk" value
F8: BRA E6 (-14) Branch back to print "...."
FA: LDA #1E      Load "bad disk" value
FC: BRA E6 (-18) Branch back to print "...."
```

If you change the LDX #21 (A2 21) at B6 to BRA E4 (80 2C) then *Aesop's Fables* no longer checks for the original and continues to load. The only thing left is to make the change permanent. Try these easy steps:

1 Copy the 3½" disk.

2 Make the following edits to the copy:

Block	Byte(s)	From	To
\$349	\$B6	A2 21	80 2C

3 Write the block back to the copy.

Softkey for...

Multiscribe IIGs 3.01c

Styleware

■ Requirements

- 512K Apple IIGs
- 3½" disk copier
- 3½" disk editor

Multiscribe gs (and the 128K version) has been upgraded to the new 3.0 version, which includes a spell checker and thesaurus. Plus a few other enhancements like the ability to read Appleworks wordprocessor files directly. Styleware has also added one more thing: copy protection. They will sell you an unprotected version for an extra \$20. There are other worthwhile things you could spend this money

on, like a subscription renewal, another program, and many more worthwhile items.

One thing you will notice is when you run *Multiscribe* from a hard disk, the copy protection is bypassed. However, with 3½" disks you need to drag out the original each time you want to write anything. I don't like to dig out my originals just for a key disk type of protection, it leaves one more disk laying around (and always in the way). So I booted *Copy II Plus v8* and made a copy of both the program disk and the utilities disk. Both disks copied without errors, so I assumed that Styleware was using a nibble count like they did for *TopDraw*. It turns out that I was right, yet another version of the now standard 3½" disk nibble count. Using the 3½" bit copy program (*Copy II Plus v8*), I went to the sector editor and scanned the disk for A2 20 A0 01. Here is what you will find on block \$538:

```
0D4: PHB
0D5: PHK
0D6: PLB
0D7: LDA 01F275
0DB: PHA
0DC: JSL 00039E    On a hard disk? (I think)
0E0: PLA
0E1: BCC F6 (+13) No, then do 3.5" disk check
0E3: PHA
0E4: PEA 0001      Yes, then set up for printing
0E7: PEA 0000      "PROTECTION FAILED"
0EA: PEA 020D
0ED: JSL 0224F2    Print the message
0F1: PLA
0F2: SEC
0F3: BRL 140 (+4A) Continue with program anyways
0F6: JSL E100A8    ProDOS 16 MLI call
0FA: 0021          Call number for ???
0FC: 000126       Parm location in memory
0FF: 00           End of MLI call
100: JSR 0078      Do the disk check
103: INC 0128
106: STZ 012C
109: LDA 012A      Load "local" flag
10C: BNE 125 (+19) Failed, try again
10E: JSL 000424    Passed
112: BRL 140 (+2B) Set flags and continue
```

At 140 there was the following:

```
140: LDA #0000     Set flags to pass
143: STA 05,S
145: LDA #0000
148: STA 07,S
14A: PLB
14B: RTL          Return to sender
```

The actual disk check at 191 looks like this:

```
191: SEP #30      8 bit wide Accum.
193: LDX #20      Track 20 of
195: LDY #01      side one
197: PHY
198: PHX
```



199: PEA 0000
 19C: PEA 0134
 19F: JSL 00045F *Do the nibble count*
 1A3: STA 0126 *Equals zero if no errors*
 1A6: TX 0124 *Store half of the returned value*
 1A9: STY 0125 *Store the second half*
 1AC: PLA
 1AD: PLA
 1AE: PLA
 1AF: PLA
 1B0: PLA
 1B1: PLA *Pull all extra values*
 1B2: LDX #21 *Now for track 21 of side one*
 1B4: LDY #01
 1B6: PHY
 1B7: PHX
 1B8: PEA 0000
 1BB: PEA 0134
 1BE: JSL 00045F *Do the nibble count*
 1C2: STA 0127 *Equals zero if no errors*
 1C5: STX 0122 *Store half of the return value*
 1C8: STY 0123 *Store the second half*
 1CB: PLA
 1CC: PLA
 1CD: PLA
 1CE: PLA
 1CF: PLA
 1D0: PLA *Pull all extra values*
 1D1: REP #30 *16 bit wide Accum.*
 1D3: LDA 0126 *Have any errors?*
 1D6: BNE 1F5 (+1D) *Yes, the return*
 1D8: LDA 0122 *Load value for track 21*
 1DB: CMP #1DB0 *Compare to low end*
 1DE: BMI 1F5 (+15) *Too low, then return*
 1E0: CMP #1E79 *Compare to high end*
 1E3: BPL 1F5 (+10) *Too high, then return*
 1E5: LDA 0124 *Load value for track 20*
 1E8: CMP #1F40 *Compare to low end*
 1EB: BMI 1F5 (+08) *Too low, then return*
 1ED: CMP #2009 *Compare to high end*
 1F0: BPL 1F5 (+03) *Too high, then return*
 1F2: STZ 012A *Everything passed, set flag*
 1F5: RTS *Return to sender*

Now that you know where everything is, it's time to bypass the disk check and set the flags to pass. Here is what I changed; the JSL at DC is changed to LDA, the conditional branch is changed to a branch always to 109. I changed the LDA at 109 to STZ, because 012A is suppose to have a value of zero. Lastly, I changed the conditional branch at 10C to two NOP's, so the code falls through to the BRanch Long to the pass code. There you have it, no disk checks and all the flags are set to pass. Now you no longer need a KEY DISK!, this is what we set out to eliminate in the first place, remember? The edits in a step by step method:

1 Copy both disks (program and utilities).

2 Make the following edits on the copied program disk:

Block	Byte(s)	From	To
\$538	\$DC	22	AF
	\$E1	90 12	80 26
	\$109	AD	9C
	\$10C	D0 19	EA EA

3 Write the block back to the disk. Store the originals in a safe place.

Bug in the Softkey for...

Destroyer

Epyx

When I listed the bytes to crack *Destroyer*, it seems that I missed a few (quite a few) required edits. These edits bypass all 10 nibble counts on the disk. Here is the complete list:

Block	Byte(s)	From	To
\$3D	\$5D	E2 30	80 38
	\$97	B0 0C	C2 30
\$267	\$1D1	A2 20	80 32
\$268	\$05	B0 0C	C2 30
\$26E	\$B9	A2 20	80 32
	\$ED	B0 0C	C2 30
\$272	\$131	A2 20	80 32
	\$165	B0 0C	C2 30
\$273	\$13D	A2 30	80 32
	\$171	B0 0C	C2 30
\$278	\$7C	A2 20	80 32
	\$B0	B0 0C	C2 30
\$27D	\$1D3	A2 20	80 32
\$27E	\$07	B0 0C	C2 30
\$284	\$128	A2 20	80 32
	\$15C	B0 0C	C2 30
\$28A	\$64	A2 20	80 32
	\$98	B0 0C	C2 30
\$295	\$119	A2 20	80 32
	\$14D	B0 0C	C2 30

Make sure your copy has each change. Now you should have a cracked copy of *Destroyer*. I hope this hasn't caused problems for anyone.

Ronald Mundell

A.P.T. for...

2400 AD

Origin Systems

To get money the easy way you must first create your character and save to the player disk. Then, use your sector editing program.

The character data is located at track \$22, sector \$00, starting at byte \$BF (through \$C4). After several changes, I attempted to change

those bytes to EA's. I was then able to spend the money.

Other attributes including strength, IQ, etc., are stored as hex values (i.e. 25=\$19). These are arranged in pairs by max value and current status. Bytes seem to be paired as follows: CE/D6, D0/D8, D2/DA, D4/DC. These are the main attributes. There are other things to do with time clicks, and somewhere is the Social Demerits value.

Playing Tips for...

2400 AD

Origin System

All of the text files are open to reading with *Copy II Plus View Files* option. A lot of helpful dialogue is there for the viewing.

A.P.T. for...

Ultima V

Origin

The following is a list of bytes to edit and what they do.

Armaments

Track \$03, Sector \$01, Bytes \$00-\$2C:

00 = Leather Helm	01 = Chain Coif
02 = Iron Helm	03 = Spiked Helm
04 = Small Shld	05 = Lg. Shld
06 = Spiked Shld	07 = Magic Shld
08 = Jeweled Shield	09 = Cloth
0A = Leather	0B = Ring Mail
0C = Scale	0D = Chain
0E = Plate	0F = Myst. Armor
10 = Dagger	11 = Sling
12 = Club	13 = Flaming oil
14 = Main Gauch	15 = Spear
16 = Throwing Axe	17 = Short Swd
18 = Mace	19 = Morn. Star
1A = Bow	1B = Arrows
1C = Crossbow	1D = Quarrals
1E = Long Swd	1F = 2H. Hammer
20 = 2H. Axe	21 = 2H. Swd
22 = Magic Bow	23 = Silver Sword
24 = Magic Axe	25 = Glass Swd
26 = Jewel Swd	27 = Inv. Ring
28 = Prot. Ring	29 = Regen Ring
2A = Amulet/Turning	2B = Sp. Collar
2C = Ankh	

Spells

Track \$03, sector \$01: Bytes \$40-6F; in the order in which they appear in the Book of Lore.

Scrolls

Track \$03, sector \$01, Bytes \$70-\$7A.



Reagents (If you want them)

Track \$03, sector \$01, Bytes SA0-??.

Potions

Track \$03, sector \$01, Bytes \$7B-\$7F.

Food

Track \$03, sector \$04, Bytes \$80-\$81 (max 99 99).

Gold

Track \$03, sector \$04, Bytes \$82-\$83 (max 99 99).

Keys, Gems, Torches

Track \$03, sector \$04, Bytes \$84-\$86.

Attributes

Start on Track \$03, sector \$05, Bytes \$80-\$FF; end in sector \$04, Bytes \$00-\$7F.

The Names are listed first; after the last name: Sadju, the attribute for your character begins; Bytes 80-8F. The section for each name ends with FF. With *Copy II Plus*, two lines of Hex are devoted to each name. The attributes for the first name begin:

```

80    00 = In the Party. FF = not with the
      party
81    Sex? 3E = M, 3D = F?
82-83  ??
84-8F  Str, Int, Dex, Magic Points
88-89  Hit Points
8A-8B  Max Hit points
8C-8D  Experience points
8E     Level
8F     End file (FF)

```

Playing Tips for...

Ultima V

Origin

If you enter Jhelom, you have to fight the Shadow Lord of Fear, and you must kill him to survive.

Softkey for...

Sub Battle Simulator

EPYX

I used Jim S. Hart's *California Games* softkey and was able to crack *Sub Battle Simulator* (At least it works so far).

1 Boot your DOS 3.3 system disk.

2 Tell DOS to ignore checksum and pilog errors and use *COPYA* to copy both sides of the disk.

POKE 47426,24
RUN COPYA

3 Make the following sector edits which are from Jim S. Hart's softkey in *COMPUTIST #52*, pg. 19:

Trk	Sct	Byte(s)	From	To
\$00	\$05	\$00	?	A9 FC 85 F0 A9 EE 85 F1
				A9 EE 85 F2 A9 FC 85 F3
				A9 E7 85 F4 A9 EE 85 F5
				A9 FC 85 F6 A9 E7 85 F7

4 Replace all bytes up to and including \$79 with EA's (or on *Copy II Plus*, enter the Text of lower case 'j')

5 Write the sector back to disk.

The 5 1/4" version seems to be a little mixed up for some of the key commands when used on the IIGs.

Bug in the Softkey for...

2400 AD

Origin Systems

Concerning Jerome Thelia's softkey for *2400 AD*, in *COMPUTIST #51*, page 20, in Line 1060, the last POKE statement reads: POKE 474829,213:GOSUB 230. Change this to read: POKE 47829,13:GOSUB 230. I was able to piece this together from the *Ultima IV* controller in *COMPUTIST #28*.

Jack R. Nissel

Softkey for...

Lazer Maze

Avant-Garde

Requirements

- The original *Lazer Maze* disk
- A blank initialized disk
- Demuffin Plus*
- A way to reset into the monitor

1 INITIALize a disk.

INIT HELLO
DELETE HELLO

2 Boot the *Lazer Maze* disk and when the Applesoft prompt appears reset into the monitor.

3 Move the RWTS to a safe place and boot your blank initialized disk.

6800<B800.BFFFF
C600G

4 Put in your *Demuffin Plus* disk.

CALL-151
BLOAD DEMUFFIN PLUS, A\$803
FF59G *if you hear a beep ignore it*

B800<6800.6FFFF
A851G
803G

5 Put in your original disk and copy all of the files to your blank initialized disk.

You can put fast DOS on your copy if you want to.

Softkey for...

Railroad Works

CBS Software

Requirements

- The original *Railroad Works* disk
- A blank initialized disk
- Demuffin Plus*
- A way to reset into the monitor

1 INITIALize a disk.

INIT HELLO
DELETE HELLO

2 Boot the disk.

3 When the Applesoft prompt appears reset into the monitor.

4 Move the RWTS to a safe place by entering:

6800<B800.BFFFF

5 Put in your blank initialized disk and enter:

C600G

6 Put in your *Demuffin Plus* disk and enter:

C600G
CALL-151

BLOAD DEMUFFIN PLUS, A\$803
FF59G *If you hear a beep ignore it*
B800<6800.6FFFF
A851G
803G

7 Put in your original disk and copy all of the files to your blank initialized disk.

You can put fast DOS on your copy if you want to. When I put *Diversi-DOS* on my backup of *Railroad Works* it would not boot properly, however, putting *Pronto-DOS* on it worked fine.

Softkey for...

Pitfall II

Activision

Requirements

- The original *Pitfall* disk
- A blank disk



□ Super IOB v1.5

In COMPUTIST #41 there was a controller for *Pitfall* and *H.E.R.O.*. When I tried it on my original of *Pitfall* the drive would grind while trying to read track \$00, sector \$0F and not be able to read past track \$01, sector \$04. I added a line, (1005 POKE 47426,24), to the controller and it worked fine. If you have the controller from COMPUTIST #41 just add line 1005 to it, if you don't have it then type it in as shown below.

1 Insert the controller into *Super IOB* and copy your original disk.

2 Format the backup disk when asked.

Controller

```

1000 REM PITFALL II
1010 TK = 0:ST = 0:LT = 1:CD = WR
1020 T1 = TK:GOSUB 490
1030 GOSUB 430: IF (ST > 0 AND ST < 4) OR (ST >
11 AND ST < 15) THEN RESTORE:GOSUB 170:
GOSUB 190:GOSUB 210:GOTO 1040
1035 GOSUB 230
1040 GOSUB 100:ST = ST + 1: IF ST < DOS THEN 1030
1050 IF BF THEN 1070
1060 ST = 0:TK = TK + 1: IF TK < LT THEN 1030
1070 GOSUB 490:TK = T1:ST = 0:GOSUB 230
1080 GOSUB 430:GOSUB 100:ST = ST + 1: IF ST < DOS
THEN 1080
1090 ST = 0:TK = TK + 1: IF BF = 0 AND TK < LT THEN
1080
1100 IF TK < LT THEN 1020
1110 TK = 1:LT = 35:ST = 15:LS = 15:CD = WR:FAST
= 1
1120 RESTORE:GOSUB 170:GOSUB 190:GOSUB 210:
GOSUB 490:GOSUB 610
1130 GOSUB 230:GOSUB 490:GOSUB 610: IF PEEK
(TRK) = LT THEN 1150
1140 TK = PEEK (TRK):ST = PEEK (SCT):GOTO 1120
1150 HOME:PRINT "COPYDONE":END
5000 DATA 222,171,237,170
5010 DATA 170,213,171
5020 DATA 170,213,235

```

Checksums

1000	- \$356B	1090	- \$AF51
1010	- \$182A	1100	- \$2A86
1020	- \$23F6	1110	- \$A199
1030	- \$B042	1120	- \$AEA6
1035	- \$3809	1130	- \$A83D
1040	- \$62F8	1140	- \$35DA
1050	- \$033A	1150	- \$0F01
1060	- \$2845	5000	- \$7358
1070	- \$4715	5010	- \$B4DD
1080	- \$5D1F	5020	- \$7DCD

Softkey for...

Ballblazer

Epyx/Lucasfilm

■ Requirements

- The original *Ballblazer* disk
- A sector editor
- A blank disk
- A fast copy program that can ignore errors or *COPYA*

Thanks to Greg Poulos for his softkey in COMPUTIST #53. The only difference was that bytes \$F9 and \$FA on track \$00, sector \$00 were different on my disk. In case your original was the same as mine, this is what to do.

1 Copy the disk with a fast copier (ignoring the error on track \$01) and skip to step 2, or do the following:

1a Boot your DOS 3.3 system disk and enter:

```

POKE 47426,24
RUN COPYA

```

2 Make the following sector edits to the copy.

Trk	Sct	Byte(s)	From	To
\$00	\$00	\$F8-FA	4C 6E 08	20 41 0B
	\$06	\$41-4B	00 00 00 00 00	A9 D7 8D F0 03
			00 00 00 00 00	A9 F9 8D F1 03
			00	60

3 Write the sector back to the copy.

Softkey for...

Realm Of Impossibility

Electronic Arts

■ Requirements

- The original *Realm of Impossibility* disk
- A blank disk
- Super IOB v1.5*

The controller for *Earth Orbit Station* in COMPUTIST #53, by Bob Wilson, will also work on this EA release. If you don't have COMPUTIST #53 just type in the controller below, install it into *Super IOB* and run it. NOTE: This game will not run on the IIGs.

Controller

```

1000 REM REALM OF IMPOSSIBILITY
1010 TK = 0:LT = 35:ST = 15:LS = 15:CD = WR:FAST
= 1:MB = 55
1020 GOSUB 490:GOSUB 610: IF TK = 1 THEN T1 =
TK:TK = PEEK (TRK):GOSUB 310:TK = T1

```

```

1030 GOSUB 490:GOSUB 610: IF PEEK (TRK) = LT
THEN 1050
1040 TK = PEEK (TRK):ST = PEEK (SCT): IF TK = 6
THEN TK = 7:MB = 151
1045 GOTO 1020
1050 HOME:PRINT "COPYDONE":END
5000 DATA 6^CHANGES
5010 DATA 1,10,82,24
5020 DATA 1,10,83,96
5030 DATA 1,10,84,72
5040 DATA 1,15,0,24
5050 DATA 1,15,1,96
5060 DATA 1,15,2,221

```

Checksums

1000	- \$356B	5000	- \$3661
1010	- \$99DD	5010	- \$5711
1020	- \$17C5	5020	- \$3260
1030	- \$5B83	5030	- \$5F61
1040	- \$24C3	5040	- \$0AEA
1045	- \$A200	5050	- \$5B72
1050	- \$9FA4	5060	- \$C15F

Softkey for...

Goonies

Datasoft

■ Requirements

- The original *Goonies* disk
- A blank disk
- Super IOB v1.5*
- A sector editor
- COMPUTIST #44 or *The Zorro/Goonies* controller from COMPUTIST #44

The controller for *Goonies*, in COMPUTIST #53, by Stephen Lau, would not work on my copy. The drive head would bang. First, I tried to make a copy using the controller from COMPUTIST #44 and then run this copy through Mr. Lau's controller, but every time it read the first 7 or 8 tracks and then begin to write, it would drop into the monitor. I made the sector edits manually and that did the trick.

Now how about *Zorro* Mr. Lau?

In case I have confused anyone this is what to do.

1 Insert the *Zorro/Goonies* controller from COMPUTIST #44 into *Super IOB*, run it and copy your original *Goonies* disk.

2 Make the following sector edits to the copy.

Trk	Sct	Byte(s)	From	To
\$00	\$05	\$33-35	40 B9 0C	D5 D5 D5
\$06	\$0B	\$A3-A5	6C D0 00	EA EA EA
		\$AA-AB	B0 F7	EA EA
\$0E	\$0A	\$A3-A5	6C D0 00	EA EA EA
		\$AA-AB	B0 F7	EA EA
\$14	\$0B	\$31-33	6C D0 00	EA EA EA



3 Write each sector back to the disk before going on to the next sector.

Softkey for...

Sea Dragon

Adventure International

Requirements

- The original *Sea Dragon* disk
- A sector editor
- A blank disk
- A fast copy program that can ignore errors

The controller in COMPUTIST #14 would not work on my copy, the drive head would bang while trying to read track \$00. I tried to add a POKE 47426,24 but the controller would die at track \$16. However I found another way.

1 Copy the original disk and ignore a read error on track \$22.

2 Make the following sector edits to the copy:

Trk	Sct	Byte(s)	From	To
\$00	\$03	\$36-37	EA EA	D0 0A
		\$3F-40	00 D0	AA F0
\$15	\$0E	\$E7	A9	60
\$19	\$08	\$25	A2	60
	\$0E	\$00	4C	60

3 Write each sector back to the disk before going on to the next sector.

Softkey for...

Garfield Double Dares

Random House

Requirements

- The original *Garfield Double Dares* disk
- A blank disk
- COPYA

1 Boot your DOS 3.3 system disk.

2 Tell DOS to ignore checksum and epilog errors and use COPYA to copy the disk.

POKE 47426,24
RUN COPYA

3 Make the following sector edit to the copy you just made.

Trk	Sct	Byte(s)	From	To
\$00	\$03	\$42	38	18

4 Write the sector back to the copy.

Softkey for...

Winnie The Pooh

Sierra On-Line

Requirements

- The original *Winnie The Pooh* disk
- 2 blank disks
- COPYA

1 Boot your DOS 3.3 system disk.

2 Run COPYA and copy both sides of the original disk.

3 Make the following sector edit to side 1 of the copy you just made.

Trk	Sct	Byte(s)	From	To
\$0F	\$0E	\$3B-3D	20 17 0A	EA EA EA

4 Write the sector back to the copy.

Softkey for...

Wordzzzearch

Mindplay

Requirements

- The original *Wordzzzearch* disk
- A blank disk
- Any fast copy program that will ignore errors

1 Copy your original disk and ignore a read error on track \$14.

2 Your copy should work with no changes needed.

Softkey for...

Cat'n Mouse

Mindplay

Requirements

- The original *Cat'n Mouse* disk
- A blank disk
- Any fast copy program that will ignore errors

1 Copy your original disk and ignore a read error on track \$10.

2 Make the following sector edit:

Trk	Sct	Byte(s)	From	To
\$01	\$01	\$00	A2	60

3 Write the sector back to the copy.

Softkey for...

Charlie Brown's 1,2,3's

Random House

Requirements

- The original *Charlie Brown's 1,2,3's* disk
- 2 blank disks
- COPYA

I must have a different version of this title than the one shown in COMPUTIST #47 because my disk does not ask you to type in a name at the beginning of the program (on either side.) If your disk is like mine this softkey should work for you.

1 Boot your DOS 3.3 system disk.

2 Tell DOS to ignore checksum and epilog errors and use COPYA to copy both sides of the disk.

POKE 47426,24
RUN COPYA

3 Make the following sector edit to each side of the copy you just made.

Trk	Sct	Byte(s)	From	To
\$00	\$03	\$42	38	18

4 Write the sector back to the copy.

A.P.T. for...

Kung-Fu Master

Data East

The APT for *Kung-Fu Master*, sent in by Darryl Higga, in COMPUTIST #53 showed the byte to be changed at location \$F8 on track \$12, sector \$0C.

On my disk it was at location \$F9. By doing a little experimenting I found that the maximum number of men you can get is 128 (hex \$80).

However, if you wrote to the disk to get the maximum number and then tried to play a 2 player game, after the first player was done with his first man the disk would reboot to the demo mode (this is the same thing it would do if you put in a number larger than hex \$80). I wound up putting in a hex \$40 so each player would have 64 men. I'm sure that this should be more than enough.

Ⓞ Has anyone been able to get *One On One*, *Earth Orbit Station*, or *CardWare* to run on the IIGs? If you have been able to get any of these, or any other titles, that didn't originally work on the IIGs to run properly please write in and tell us how you did it.



Jeff Hurlburt

The PRODUCT MONITOR

Ratings

★★★★★	SUPERB
★★★★	EXCELLENT
★★★	VERY GOOD
★★	GOOD
★	FAIR
☹	POOR
☹☹	BAD
☹☹☹	DEFECTIVE

Alternate Reality: The Dungeon

by K Jordan & D Pinal

\$29.95 DataSoft/Electronic Arts



Requires:

- 64K Apple II series
- one 5 1/4" drive
- joystick optional

As you may recall, in the *Alternate Reality* "origins" edition (*The City*) you were snatched by aliens and dumped in The City of Xebec's Demise. With *The Dungeon* your quest to regain Earth and/or exact vengeance upon your kidnappers continues, though, for now, you must be content with mastering the city's labyrinthine underground. Whether new to *Alternate Reality* or a *City* veteran, the stronger you become here, the better your chances in *The Palace (Alternate Reality III)* and some four or five additional scenarios sure to follow.

Unless transferring from *The City*, you begin with randomly assigned Strength, Endurance, Skill, Hit Points, etc. plus some food, water, and enough money to purchase a second-rate weapon at the nearby shop. A little further, just around the bend, is a "well-lighted

area" where you will find a bar & grill and the Retreat, just the place to rest your weary bones and recoup some lost hit points.

While all of this can seem very large and dangerous to a beginner; you are actually in a small relatively 'safe' corner of the 64x64 upper level. (Below are other, 32x32 and 16x16, levels.) Accessed via extensive *City* Sewer passages are uncounted mazes, strange "blink mine" fields, the goblin realm, poisoned ice caves, and other challenging hazards. Curative fountains, a Weapons Enchantress, guild halls, and the like are here too, but, naturally, harder to find.

Playing very much like a single-character version of *Bards Tale* or *Realms of Darkness*, *Dungeon* offers a well-drawn 3-D perspective forward view showing brick walls, doors, arches, etc., plus any *Dungeon* denizens encountered. Combat entails trading blows with partially-animated opponents via menu commands; but, unlike most such adventures, you are well-advised to at least attempt non-hostile interchange on many occasions. The Healer, for example, can cure a host of ailments, several characters are satisfied with offering advice, paupers are looking for a handout, etc.. Whoever (or whatever), such dealings almost always impact your Good or Bad "orientation". (Yes, you CAN prosper as a 'dark side' type.) Depending upon orientation, involvement in feuds, and guild membership, one adventurer's "monster" will frequently be another's good buddy. "Neutral", of course, is the least healthful status possible.

Running the gamut from 'easy' giant bats and slime mold, through valkyries, ice demons, and enemy arch mages, *Dungeon* monsters are well differentiated according to kinds of attack and vulnerabilities (air, fire, water, cold, etc.), goodies carried, and certain special attributes. The mighty Flame Sword, for instance, is worthless against a Phoenix, thieves often carry cursed weapons, and wolfbite transfers nasty diseases. Slurping up valuable possessions during combat is the devourer's forte; and (hint!) the dangerous doppelganger will always attack with a duplicate of your current primary weapon. (BUT, he can't switch during combat; you can!)

Monster killing yields better weapons, assorted wands, scrolls, "eyes" and other magical implements plus "experience"—the latter being your sole route to permanent attribute improvements. Death or QUITting without a SAVE (e.g. when you become lost) carries only a mild penalty. You are "rejoined" with all your stuff (as of the last SAVE), but minus a few points on some attribute. Winning through to the *Dungeon's* exit is, to be sure, a rough, long-play proposition. Yet, with carefully maintained maps, a character who has progressed beyond "beginner" status has good prospects for success.

Offering an extraordinarily rich adventuring environment, the sequel is a vast improvement over *City*, with larger hires script, more detailed graphics, and smoother, easier access to status/information displays. Speed and sound are adequate; and, all in all, I doubt that a more entertaining collection of adversaries or situations exists anywhere. Notable weaknesses are SAVE, which ends play (forcing a restart to continue a session), and the handling of new characters. Even given first class documentation, the game is MUCH TOO ROUGH on new guys—bordering, to put it bluntly, on "defective". If, once you 'get into it', *The Dungeon* were not so immensely enjoyable, I'd recommend that newcomers simply forget it; but it is, so don't!

Maniac Mansion

by Lucasfilm

\$34.95

Activision



Requires:

- 128K Apple II series
- one 5 1/4" drive
- joystick recommended
- second drive optional

Ever since a meteor crashed to earth just outside town nearly twenty years ago, there have been hints of strange happenings at the old Fred Mansion on the hill. Now, your girlfriend, Sandy the cheerleader, has disappeared and you are certain she is the unwilling guest of demented Dr. Fred and his looney-tune assistants. (What if those rumors of "mind control experiments" are true?!) Obviously, there isn't a moment to lose in mounting a rescue. Before this night is over, YOU must crack the riddle of *Maniac Mansion!*

Fortunately, you are able to recruit two fellow teenagers for your midnight sortie. Selected from among six candidates (a photographer, writer, musician, physics nerd, etc.), your helpers each have special attributes and skills which, in fact, produce modifications in the game scenario. For example, a physics type might be able to repair equipment; and a musician can play certain instruments found in the mansion. Along with variations in the responses of Dr. Fred's henchmen and other factors, this amounts to a different game for each new team-up.

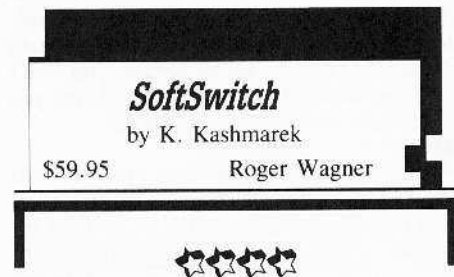
As in the popular *Kings Quest* series, characters move against a shifting double-hires backdrop and can manipulate certain objects. However, this time you control three



characters, one at any given time. With on-screen point-and-click movement, plus a fifteen-item 'command palette' ("OPEN", "READ", "USE", etc.) to provide a simple, responsive interface, your teens can spread out to search the laboratories, offices, basement, (attic, kitchen, gameroom, ...), cooperate to spring hidden panels, and even rescue teammates who may be nabbed and tossed into Dr. Fred's dungeon-like storeroom.

Meanwhile, nefarious doings are afoot. Every so often the game interrupts your activities to insert an animated "cut scene" showing the actions and dialog of the mad doctor, his associates, or Sandy. Besides locating potential adversaries, these supply valuable clues and, to some extent, pace the adventure. So, in one scene you might tune-in on a weird, tentacle-shaped alien pattering about the attic; and, in another, discover that Dr. Fred is on the verge of some scientific brilliancy which, alas, requires that Sandy be divested of her brain! (At this point I tried to force a delay by shutting off the juice to Fred's nuclear reactor. It worked. Sadly, by the time his beastie managed to restore power an unstoppable meltdown was in progress!)

Cute, and packed with neat little puzzles, *Maniac Mansion* features colorful artwork, realistic animation, and adequate sound. The simple command pallet interface is well-suited to the 'medium' difficulty level encountered; and, along with the illustrated manual and hint-packed poster, makes for quick, easy startup. Movement speed is a slight weakness, too slow by half; in addition to which the game treats your joystick like a four-way switch. So, positioning is more trouble than it should be on an Apple. Pacing, however, rates an "excellent". Though a GAME SAVE is available, most scenarios are easily playable at a single sitting. One player or (sharing characters) several can participate, for many hours of midnight 'mad scientist'-bashing fun.



■ **Requires:**

- 768K Apple IIgs
- one 3 1/2" drive

Ever wished you could put an application on hold and do some quick file diddling with *Copy II Plus*? Maybe you've simply wanted to capture a double-hires display or save a fall-back position in a game which refuses to restore

killed-off characters? These and other wish list capabilities have suddenly become reality, thanks to a super new utility from Roger Wagner Publishing.

Installed by booting a specially patched ProDOS 16 diskette, *Soft Switch* is a classic desk accessory which, along with *Control Panel* and other CDA's, is accessed from the IIGS Desk Accessory Menu. While the new RWP package (*Soft Switch* plus assorted utilities) offers several impressive capabilities, its major function is to permit capture and switching of up to three NON-ProDOS 16 programs. (According to the publisher, ProDOS 16 programs are too large, given the current 1.2 Mbyte 'standard' IIGS configuration.) Basically, then, *Soft Switch* uses ProDOS 16 'smarts' to make life easier in the 128K-or-smaller realms of ProDOS 8, DOS 3.3, and 'wierd DOS' variants.

Booting a typical installer diskette puts *Soft Switch* in the CDA menu and ends up running Apple's ProDOS 8 *Desktop*. The normal "CMD-CTRL-ESC" sequence goes to the CDA menu and selecting *Soft Switch* produces a double-hires B&W display with four mini-screens. The top screen shows the exited application (i.e. the desktop program). Pressing "I" puts *Desktop* into Workspace 1—now, the leftmost bottom screen matches the one on top—and, viola!, *Desktop*, frozen at the moment of exit, is available for future switching. Returning to the desktop, you may startup another program, put it in Workspace 2, switch to your Workspace 1 *Desktop* copy, and startup/save still another program! The user is free to switch to and from any of the saved programs, clear and update workspaces; and may maintain two or more copies of a program (e.g. an adventure at different stages).

Generally, any non-ProDOS 16 program, protected or not, which can be interrupted via "CMD-CTRL-ESC" is a candidate for switching. Unfortunately, a few products—*Deathlord*, for example—are so booby-trapped that any interruption produces a bomb-out upon return. However, though you cannot put a ProDOS 16 program into a workspace, one may be started-up. If it follows correct QUIT procedures and doesn't bomb for lack of memory, you can arrange to wind up back at *Desktop* with *Soft Switch* and its workspaces in tact. The manual, among the best RWP has produced, discusses *Soft Switch* usability and special exceptions for several popular products.

Beside permitting the user to hop from program to program, *Soft Switch* also allows viewing, lifting, and pasting hires, double-hires, and text frames from program to program. For instance, a game display might be moved to a graphics utility. Text screens, traditionally a problem for those involved in preparing documentation, are captured as easy-to-work-with B&W double-hires frames. Any of these

may be saved to disk, and other frames loaded, using the *Screen Manager* included with *Soft Switch*.

Among the more powerful capabilities available to *Soft Switch* users is an option to save and load whole workspaces to and from disk via the *Keepsake* utility. Each such file gobbles 269 blocks; but, in return, you can save and restore positions in utilities, arcades, and other applications which normally offer no SAVE option. Statistics packages and in-house design aids, for instance, can be 'frozen' at a point of immediate readiness, resulting in great time savings.

After a few weeks with *Soft Switch*, I'm still finding nifty new applications AND a few places where things could be improved. For starters, there is no compelling reason for allocating 133K to "48K" or "64K" programs which don't access any Bank 1 memory. Nor should ALL ProDOS 16 programs be denied switching because SOME are too large. As to *Soft Switch*'s screen lifting/pasting functions, the up-front menu is no substitute for status information somewhere on viewed screens. Though 'workable', the current approach hardly qualifies as "user friendly".

Finally, while Apple's *Desktop* is very handy, the buggy *Show Text* accessory needs to be fixed, AND some means provided for starting double-hires color programs IN COLOR. At present, to start programs like *Dazzle Draw*, one must exit *Desktop* (e.g. to BASIC.SYSTEM), do a CTRL-RESET, then boot with PR#6. (NOT a CMD-CTRL-RESET, unless you don't mind losing *Soft Switch*.)

Soft Switch is one of those rare software products which, in significantly enhancing machine performance, also imposes higher programming standards. Thus far, IIGS users have tolerated the shutting down of CDA access, booby-trapped returns, and sloppy ProDOS QUITs. Clearly, this situation is about to change. Even given current limitations, *Soft Switch* offers so many powerful benefits that compatible products become, automatically, a good deal more attractive. Supplied with comprehensive, well organized documentation, this Roger Wagner package belongs at the TOP of your "Necessity" list!

FAST FRAMES

The Monster of Ivalose Strikes Again

Set in the distant future, *Omnitrend's Universe II* (\$69.95, for 256K Apple IIgs) is an ambitious space trading/espionage/combat epic utilizing B&W double-hires text and graphics. Display resolution is good, the text



adventure sections hold your interest, and the mouse-driven windows/menus format makes for a decent spaceship captaining simulation. All of which could be a good deal of fun, if only the program wouldn't BOMB!

Launched over a year ago, *Universe II* has yet to achieve 'stable orbit'. The original multi-5¼" version was so slow and cumbersome as to be unplayable; so I requested the 3½" edition. Speed improved (especially with RAM disk); but now the game locked-up! (during trade activities on a particular planet, Ivalose). So, back went the game along with a note describing the bug. When the latest release arrived and proved to run even faster, there was 'joy in Mudville'— though some concern about a note explaining they had fixed the problem in the COMBAT routines?! Sure enough, the the same old bug is alive and well on Ivalose. This does NOT inspire great confidence in ones prospects for completing the adventure.

Programmer Tools

Desktools (\$19.95, from 360 Microsystems) is a collection of three IIGS classic desk accessories aimed chiefly at programmers. ASCII.DA is a 4K scrollable Apple-specific table showing decimal and hex code values along with each character as it appears (in 80-column mode) under "standard firmware", "mousetext firmware", and when "hardware generated" via a direct write to screen memory. Accepting mouse or keyboard inputs, CALC.DA (28.5K) supplies trig, exponent, etc. functions, and separately viewable eight-location memory. Its big feature is conversion and calculations among decimal, hex, and binary bases (but, no AND, XOR, shift and other logic functions). REF816.DA uses 9.5K to provide quick access to 65816 instructions info. Selecting "Mnemonic" or "Opcode" produces a table; and, a few cursor moves later, you have addressing mode, ASSEMBLER SYNTAX, instruction length, and opcode, all in one place. A mnemonic reference produces information for ALL opcodes/addressing modes!

Supplied on a 3½" distribution diskette with TEXT file update and manual, the CDA's are easily moved to the DESK.ACDS folders of target application diskettes. Rendered entirely in 80-column TEXT, *Desktools* puts nuts-and-bolts programmers a handy "CMD-CTRL-ESC" away from some very juicy stuff.

Demons:1 Questmaster:0

First in the new Questmaster picture-text adventure series, *Dondra* (\$49.95, for 64K Apple II series) sends you off to recover a magical prism needed to oppose a powerful demon. This trans-dimensional meanie threatens all Dondra, a planet offering OZ-type

landscapes, but not much in the way of OZ-type adventure.

Supplied with classy illustrated manual, the game features good hires artwork and, given a dearth of puzzles, adequate parsing. Play, however, consists mainly of opportunities to test your ESP and/or hone your 'learning by dying' technique. For instance, turning a corner and getting gobbled by a dragon is the way you eventually learn that an unlabeled vial contains the invisibility potion you SHOULD have taken to keep from getting gobbled! Even with a cheatsheet supplied by Spectrum, the few deviations I tried led, almost without fail, to yet another unavoidable fatal trap. Still, without the countless traps and additional deadly hazards invoked via a realtime game clock, one would assuredly fall victim to a storyline with all the punch of *Visi-Calc*. Notwithstanding the eaglebat-riding cutie on the box, *Dondra* is so burdened by design flaws and weighty themes that it never gets off the ground.

Misty Towers and Midnight Mayhem

As the USA's number one consulting detective, when an old college friend begs you to do something about a ghost disrupting her marriage preparations, you're on the first jet to merry olde England. In Infocom's *Moonmist* (\$39.95, for 48K Apple II series), you arrive at Tresyllian Castle in time to hug Tamara, size-up her fiancé, Lord Jack, dress for the evening meal, and interview some of the other guests. You have until dawn to track down the mysterious "White Lady" (a for real ghost?), locate a hidden treasure, and nail a murderer!

This one is loaded with secret passages, dark allusions to Uncle Lionel's checkered past, native artifacts, legends of unrequited love, i.e., the 'whole nine yards'. Featuring Infocom's usual fine parsing, the text adventure comes in FOUR 'flavors': same locale and cast, but new puzzles, clues, and solutions. Supplied with map, manual, glow-in-the-dark iron-on, and other vital background goodies, *Moonmist* delivers several evenings of mystery-cracking entertainment.

VENDORS

ACTIVISION P.O. Box 7287, Mountainview, CA 94039 (800-227-9759, in California call 415-940-6044)

ELECTRONIC ARTS 1820 Gateway Drive, San Mateo, CA 94404 (415-571-7171)

INFOCOM 125 Cambridge Park Drive, Cambridge, MA 02140 (800-262-6868)

INTELLICREATIONS/DATASOFT 19808 Nordhoff Place, Chatsworth, CA 91311 (818-886-5922)

OMNITREND P.O. Box 3, West Simsbury, CT 06092 (203-658-6917)

ROGER WAGNER 1050 Pioneer Way, Suite P, El Cajon, CA 92020 (619-442-0522)


SPECTRUM-HOLOBYTE 2061 Challenger Dr., Alameda, CA (415-522-3584)

360 MICROSYSTEMS 12272 Fox Hound Lane, Orlando, FL 32826-3668 (305-275-6418)

Victor Lee

Recently I acquired an Integer BASIC ROM card for my Apple IIe, but I do not know how to reset into the monitor with it.

I would appreciate it if you can mail me a few short instructions on how to use it to reset into the monitor. (I must have missed the COMPUTIST issue in regards to using an Integer BASIC ROM card to reset into monitor.)


 It's been a long time since I saw an Integer BASIC ROM card. The way I remember it, there's a switch on the back of the card that determines if the card will grab control when you press reset. There is also a solder jumper on the card that determines whether the card F8 ROM or the motherboard F8 ROM is used to service the reset interrupt. Look for a white circle on the lower center of the card with an "F8" printed next to it. (Not the "F8" next to the ROM.) The solder jumper should be soldered to enable the card F8 ROM (the non-autostart ROM). Then the switch on the card will select or deselect the card whenever reset is pressed. Use a slot that allows the switch to be accessed from the back of your computer.

..... RDEXed

Spectrum Lord

Data Disks cause Appleworks Crash

While using Appleworks v2.0, the program crashed and I found that the "Data disk" was the cause. I booted up version 1 and had the same problem while using the same data disk. I formatted a new data disk and I no longer have Appleworks crashes. Don't bother testing the old data disk for errors because you won't find any, the data disk will work fine until you try to save files and then CRASH.

 Hope you saved that data disk, you may need it later. I'd say the bug was in Appleworks and that the size of your file or perhaps the number of files on your data disk is causing the bug to surface. We'll let you know if anyone writes with an explanation or fix, but in the meantime, I suggest you write to Open-Apple. They've printed a great deal of information about Appleworks and their forte is problem solving. A one year, first class subscription is \$28.

Open-Apple
P.O. Box 11250
Overland Park, KS 66207



Jack R. Nissel

Softkey for...

Snoopy's Skywriter Scrambler Snoopy's Reading Machine Snoopy to the Rescue

Random House

- 1 Boot your DOS 3.3 system disk.
- 2 Tell DOS to ignore checksum and epilog errors and use *COPYA* to copy both sides of the disk.

POKE 47426,24
RUN COPYA

- 3 Make the following sector edits to the copy you just made.

Trk	Sct	Byte(s)	From	To
\$00	\$03	\$42	38	18

Softkey for...

Arctic Antics

Epyx

- 1 Boot your DOS 3.3 system disk.
- 2 Tell DOS to ignore checksum and epilog errors and use *COPYA* to copy the disk.

POKE 47426,24
RUN COPYA

- 3 Make the following sector edits to the copy you just made.

Trk	Sct	Byte(s)	From	To
\$00	\$0B	\$51-52	D0 F4	EA EA
		\$5A-5B	D0 4C	EA EA
		\$63-64	D0 43	EA EA
		\$76-77	D0 F4	EA EA
		\$7A-87	A0 07 BD 8C C0	EA EA A9 FC 85
			10 FB 99 F0 00	F0 85 F3 A9 EE
			EA 88 10 F4	85 F1 85 F2

Softkey for...

Super Sunday Football General Manager

Avalon Hill Games

- 1 Boot your DOS 3.3 system disk.
- 2 Place a blank disk in the drive and enter:

INIT HELLO DELETE HELLO

(Put this disk to the side, you will use it later)

- 3 Boot the original *Super Sunday Football* disk and after your drive reads the first 3 tracks reset into the monitor.

- 4 Move the RWTS to a safe location.
1900<B800.BFFFM

- 5 Put your slave disk in the drive and boot it.

- 6 Insert your IOB disk and save the RWTS.

BSAVE RWTS.SUPER SUNDAY MANAGER,A\$1900,L\$800

- 7 Install the controller listed below into *Super IOB* and copy the original *Super Sunday Manager's* disk to the slave disk.

- 8 When asked, enter N, so as not to format the disk while running the controller.

Controller

```

1000 REM SUPER SUNDAY GENERAL MANAGER
1010 TK = 3:ST = 0:LT = 35:CD = WR
1020 T1 = TK:GOSUB 490:GOSUB360:ONERR GOTO 550
1030 GOSUB 430:GOSUB 100:ST = ST + 1:IF ST < DOS
    THEN 1030
1040 IF BF THEN 1060
1050 ST = 0:TK = TK + 1:IF TK < LT THEN 1030
1060 GOSUB 490:TK = T1:ST = 0:GOSUB 360
1070 GOSUB 430:GOSUB 100:ST = ST + 1:IF ST < DOS
    THEN 1070
1080 ST = 0:TK = TK + 1:IF BF = 0 AND TK < LT THEN
    1070
1090 IF TK < LT THEN 1020
1100 HOME:PRINT "COPY DONE":END
10010 IF PEEK(6400) < > 162 THEN PRINT CHR$(4)
    "BLOAD RWTS.SUPER SUNDAY GEN MANAGER,
    A$1900"

```

Checksums

1000	- \$356B	1060	- \$90D8
1010	- \$3565	1070	- \$98DD
1020	- \$E1E8	1080	- \$7422
1030	- \$F7E9	1090	- \$2DB2
1040	- \$D35A	1100	- \$1A55
1050	- \$E85B	10010	- \$A846

- 9 Boot your DOS 3.3 system disk.
- 10 Put the copy you just made into the drive and enter the following:

```

FP
10 PRINT CHR$(4) "BRUN BOOT"
SAVE HELLO

```

You can put fast DOS on this copy if you want to.

Softkey for...

Street Sports Basketball

Epyx

- 1 Boot your DOS 3.3 system disk.
- 2 Tell DOS to ignore checksum and epilog errors and use *COPYA* to copy the disk.

POKE 47426,24
RUN COPYA

- 3 Make the following sector edits to the copy you just made.

Trk	Sct	Byte(s)	From	To
\$00	\$05	\$42-43	D0 F4	EA EA
		\$4B-4C	D0 3D	EA EA
		\$54-55	D0 34	EA EA
		\$67-68	D0 F4	EA EA
		\$6B-78	A0 07 BD 8C C0	EA EA A9 FC 85
			10 FB 99 F0 00	F0 85 F3 A9 EE
			EA 88 10 F4	85 F1 85 F2

? I am having a problem using the *New Swap Controller* with my IIGs. After the prompt to insert the disks and press return, when I press return I drop into the monitor. I can go back to the Applesoft prompt by typing 3D0G and pressing return or by pressing control/reset. Typing RUN and pressing return at this point will start everything all over again but it will again drop into the monitor. Using the old *Swap Controller* I have the same problem about half of the time that I try to use it but when I do, after I get back to the Applesoft prompt, type RUN and press return everything works normally. I was wondering if anyone else with a IIGs was having the same problem and if so how were they able to solve it.

Bill Jetzer

Softkey for...

Hardball

Accolade

Requirements

- Sector Editor
- 1 blank disk
- Super IOB*

The protection used on *Hardball* is quite clever. Somehow, it makes the boot code in ROM load in all 16 sectors of track \$00, instead of just 1. By using a bit copier, you can get a copy to boot, but only so far. It has a routine which checks if the disk is a copy, which even a bit copier can't bypass. It also uses non-standard sector interleaving.



To deprotect *Hardball*, you must first type in the controller at the end of the article, install it into *Super IOB*, and run it. It will copy tracks \$00-\$0E (*Hardball* only has data on these tracks), re-arranging the sectors into a new order.

For some reason, when the sector interleaving was left the way it was on the original, it took about three times as long to load the game. With the new sector interleaving, you will notice almost no difference from original to copy. Below is a chart of the new sector interleaving.

```
Old- 0 1 2 3 4 5 6 7 8 9 A B C D E F
New- 0 8 1 9 2 A 3 B 4 C 5 D 6 E 7 F
```

After a little experimentation, I determined that the maximum number of sectors that the boot code in ROM can load from a normal DOS 3.3 disk is 6. For this reason, a new routine had to be created to load in the rest of track \$00. After studying track \$00, sector \$00 of the DOS 3.3 system master disk, I came up with the following routine. It will load all of track \$00 into memory at \$B000, turn on the hi-res screen, and skip over the routine which checks if the disk is a copy. Start your sector editor and read in track \$00, sector \$00 and make the following changes:

Trk	Sct	Byte(s)	From	To
\$00	\$00	\$00	?	01 A5 27 C9 09 D0 18 A5 2B 4A 4A 4A 4A 09 C0 85 3F A9 5C 85 3E 18 AD 48 08 6D 49 08 8D 48 08 AE 49 08 30 26 BD 38 08 85 3D CE 49 08 AD 48 08 85 27 CE 48 08 A6 2B 6C 3E 00 02 04 06 08 0A 0C 0E 01 03 05 07 09 0B 0D 0F B0 0F A5 2B 8D 43 B2 A9 20 85 E6 20 F2 F3 AD 57 C0 AD 52 C0 AD 50 C0 AD 81 C0 AD 81 C0 4C 74 B0

Now, change the sector read order on the disk by reading in track \$00, sector \$0F and making the following changes:

Trk	Sct	Byte(s)	From	To
\$00	\$0F	\$B9	?	02 04 06 08 0A 0C 0E 01 03 05 07 09 0B 0D

That's it! You have now deprotected *Hardball*.

Controller

```
1000 REM HARDBALL
1005 DIM ST(15): FOR X=0 TO 15: READ ST(X): NEXT X
1010 TK=0:ST=0:LT=15:CD=WR
1020 T1=TK:GOSUB 490:S=0
1030 ST=ST(S):GOSUB 430:GOSUB 100:S=S+1:
IF S < DOS THEN 1030
1040 IF BF THEN 1060
```

```
1050 S=0:TK=TK+1:IF TK < LT THEN 1030
1060 GOSUB 490:TK=T1:ST=0
1070 GOSUB 430:GOSUB 100:ST=ST+1:IF ST < DOS
THEN 1070
1080 ST=0:TK=TK+1:IF BF=0 AND TK < LT THEN
1070
1090 IF TK < LT THEN 1020
1100 HOME:PRINT:PRINT "DONE-WITH-COPY":END
2000 REM SECTOR-READ-ORDER
2010 DATA 0,8,1,9,2,10,3,11,4,12,5,13,6,14,
7,15
```

Checksums

1000	- \$356B	1060	- \$EBCF
1005	- \$1C12	1070	- \$E3CA
1010	- \$4ACD	1080	- \$6377
1020	- \$F17E	1090	- \$0251
1030	- \$BE28	1100	- \$646E
1040	- \$8C79	2000	- \$093E
1050	- \$9CAE	2010	- \$77BD

Taking the Grind out of Championship Wrestling

■ Requirements

- Sector Editor

If you have *Championship Wrestling* from Epyx, I am sure you have wondered about the grinding. From the time you boot it up to the time you start wrestling, it grinds 5 times. In addition, it grinds between rounds and when you see the records. In fact, in a typical game, it can grind 20 times or more! That's a lot of wear and tear on your disk drive.

The Problem

After a few hours of disassembling, I found out why it grinds so much. When *Championship Wrestling* clears the screen, it puts a space (\$A0) in all the locations from \$400 through \$7FF (the text screen), instead of using the monitor's HOME subroutine. There are, however, some locations, called screenholes in that memory area that aren't displayed on the screen. All semi-normal RWTS subroutines use some of these screenholes for storing variables, and *Championship Wrestling's* RWTS, being semi-normal, is no different. This is where the problem occurs. When the screen is cleared, these variables are all set to \$A0.

The Procedure

If you haven't already deprotected *Championship Wrestling*, type in the controller at the end of this article, install it into *Super IOB 1.5*, and run it. You need only copy the front side with the controller.

The reason that *Championship Wrestling* doesn't use the HOME subroutine in the monitor is that it uses the language card, which occupies the same addresses as the monitor routines. All that has to be done to get rid of the grinding is to create a routine which swaps in the \$D000-\$FFFF ROM, sets the text windows, does the HOME, and selects the language card again. Start your sector editor, read in track \$07, sector \$09 of the front side, and make the following changes:

Trk	Sct	Byte(s)	From	To
\$07	\$09	\$06	?	AD 81 C0 AD 81 C0 20 3C FB 20 58 FC AD 83 C0 AD 83 C0 60

You may now play *Championship Wrestling* without all the annoying and potentially damaging grind!

Controller

```
1000 REM CHAMPIONSHIP WRESTLING
1010 TK=0:LT=35:ST=15:LS=15:CD=WR:FAST=1
1020 POKE 47426,24:GOSUB 490:GOSUB 610
1030 GOSUB 230:GOSUB 490:T1=TK:TK=PEEK(TRK)-1:RESTORE:GOSUB 310:TK=T1:GOSUB 610
1040 IF PEEK(TRK)=LT THEN 1060
1050 TK=PEEK(TRK):ST=PEEK(SCT):GOTO 1020
1060 HOME:PRINT "COPYDONE":PRINT "THE*BACK*SIDE*HAS*NO*COPY*PROTECTION":END
5000 DATA 6*CHANGES
5010 DATA 0,5,102,169
5020 DATA 0,5,103,231
5030 DATA 0,5,104,133
5040 DATA 0,5,105,244
5050 DATA 0,5,106,208
5060 DATA 0,5,107,14
```

Checksums

1000	- \$356B	5000	- \$3651
1010	- \$2544	5010	- \$C4FA
1020	- \$B5FB	5020	- \$7F19
1030	- \$8E11	5030	- \$630B
1040	- \$A65D	5040	- \$4274
1050	- \$1855	5050	- \$A9A0
1060	- \$1F54	5060	- \$9BC9

Ralph L. Jones

This is from Ralph L. Jones, of 2607 13th Street, Garden City, GA 31408, and I would like to thank Clay Ruth for his solution to my problem with the *Graphic Grabber*.

I knew what was needed, but did not know of a simple way to do it. Although I don't fully understand his solution, it works great. I would like to write to him, and ask for an explanation of the workings of the patch.



② Another item of general interest: Does anyone know the status of the International Apple Core. Are they in bankruptcy? They don't answer any mail, use care in any dealings with them.

Derek Raven & Steven Tyler

Softkey for...

Millionaire II

Blue Chip

■ Requirements

- 3 blank disk sides (1 formatted for ProDOS)
- COPYA from DOS 3.3 System Master
- A reliable file copier, such as Copy II Plus

This softkey was found more by accident than anything else. *Millionaire II* would not bit copy for us using *Copy II Plus*. Nor could we view any sectors with a sector editor. We wanted to find the initial first bytes that went to memory to at least get some idea of what they did. Being more familiar with Commodore protection than Apple, we decided to try and copy anything that would copy with a standard disk copier that did not abort on errors, to dig out as much of the code as possible. So *COPYA* was used with *POKE 47426,24*. After it seemed to copy something, we scanned the disk with a sector editor to see if anything was intact. We found the directory track and it seemed to be still intact. We decided to file copy all of the files on the disk. If booted up fine when we ran it.

We expected much more of a hassle from *Millionaire II*, but it seems that the programs don't even check the protection on the disk.

This softkey MAY also work for Blue Chip Software's other games. Any help in getting this to work properly from within a subdirectory (without having to hardcode the pathname into the files) would be greatly appreciated.

Note that you will be copying the front side of *Millionaire II* twice.

Step-By-Step

1 Boot up your DOS 3.3 System Master and enter the following to copy the front side of *Millionaire II*:

```
POKE 47426,24
RUN COPYA
```

2 File copy all programs from the backup disk from step 1 to the formatted ProDOS disk.

3 Copy side 2 of the original *Millionaire II* disk to the last disk side using any disk copy program.

George T. Miller

Playing Tips for...

Deathlord

Electronic Arts

In order to "pay my dues", I offer the following advanced playing techniques for the new game *Deathlord* by Electronic Arts.

Electronic Arts has recently released a new game, *Deathlord*, by Al Escudero and David Wong. It is an excellent game in the tradition of *Ultima* with excellent graphics and playability and is a map maker's delight! With the advertised 157 dungeon levels in the game and thousands of sites on many continents, *Deathlord* should keep you busy for hundreds of happy hours. I hope the following techniques make your quest even more enjoyable as well as less frustrating! However, be forewarned that they have gone out of the way to make us play by the rules! While this probably, at least in theory, enhances the enjoyment of playing the game in the long run, in the short run it is quite frustrating.

The game comes on two double sided 5 1/4" floppy disks which are, of course, copy protected. Hopefully, some of you *Super IOB* experts will solve this problem in short order. In the meantime, the character disks apparently use a modified DOS or have modified formatting of the tracks which make them unreadable to the usual sector editors. This effectively keeps our hands out of the cookie jar when it comes to editing our characters.

Fortunately, we can use characters from *Ultima III*, any *Wizardry* scenario, or *Bard's Tale I*. These transfer with an apparent maximum level of 5 but this is very adequate for survival with good values for most character attributes. I am quite happy with my transferred characters. You could, if you want super characters, use character editors for the old games to create super characters and then transfer them. Beginning with new characters would be quite a challenge. The good news is that *Deathlord* has the most powerful low level spells I have ever encountered in any FRP game! They are very effective and make survival much more likely!

The only complaint I have, at present, is in learning all of the oriental sounding spells. It definitely adds color, but would be much easier if the spells had more easily remembered names. You can always use the ? and have the list displayed, but it takes longer than typing in a name.

There are a few problems. Although the manual states that the backup function will allow you to backup your character roster to another disk, they do not tell you that your party is not

backed up by this function...only the ones SHOWING on the roster! Thus after spending several hours choosing my best characters from all of my old games, assembling a party of adventurers, and backing them up to another scenario using the backup function, I inevitably had them butchered by an early encounter with strong monsters. I tried to restore them from the backup disk only to get the message that there was no party on the disk! The only remaining options were to use the character utility to disperse the party (dead) and assemble another group to earn enough gold to restore them, or repeating the task of converting characters from old games. At 500 gold pieces each for resurrections, I chose the latter.

Another problem is advancement, which in itself is not difficult and the opportunities are frequent below level 8 or 9. The problem is the high cost of living in the Kingdom of Kodan! Although the rewards of battle are substantial, by the time you replenish the food supply for a group of hungry adventurers and your supply of expensive lock picks (which break easily and often), you barely have enough gold to advance more than one or two of your characters! It is frustrating to have several characters with one or more advancement levels earned but too little gold to pay the tuition at the academy! Since each character can only carry one of each type item, you cannot get rich by loading up empty slots with goodies to resell to the local merchants. Also, the merchants will not buy anything that is not normally on their inventory, which makes it impossible to sell most good items obtained in battle.

A third problem is intercontinental travel which requires a ship, at 10,000 gold pieces! You can steal one, but be prepared to battle the entire crew of up to 32 mad sailors. These sailors, by the way, can summon help from adjacent boat crews! Even if you can pull it off, you will be marked as a criminal and the guards will meet you at the gates next time you try to enter town. Even my level 14 characters cannot survive more than two or three successive encounters with the city guards!

Take heart, there are solutions! Not only can you readily recover from disaster, you can also erase your criminal record, amass great wealth and become master of your own fleet of ships. Here's how...

1 Make three sets of scenario disks. Mark them 1,2, and RESTORE.

2 Create your party on disk 1. Boot the game and select Play.

3 While you are still on the 'outside', save the game using the Q command. Replace disk 1 with disk 2 and again save the game. Then repeat the operation with the RESTORE disk. You are now ready for anything! NEVER save to the RESTORE disk unless you are on the outside! In fact, unless you want to save



additional ships, it would be advisable to place a write protect tab on the RESTORE disk.

The purpose of the RESTORE disk is to enable you to erase your criminal record and to replace treasures you have already taken. (The game keeps a record of your activities and once a chest is opened and its contents taken, it remains empty on future entries into the area.)

The purpose of disk 2 is to recover from your most recent FATAL error with minimum time wasted. Whenever you enter a town, dungeon, another quadrant of the map, etc. the game is saved. Whenever you enter some important battles, the game is saved also (without warning). This means that if you pick a lock and suddenly are attacked by some awesome monster and survival is impossible, simply cutting off the computer and rebooting will not save you. You will find yourself in the midst of the same battle, and if some of your characters are already dead, you will have to disperse the party, reorganize it, and then pay the price of resurrections. A great waste of time and gold... However, if you save to both disks 1 and 2 before you enter an area, you can simply reboot using scenario disk 2, then save to disk 1 and get on with the game as if nothing had ever happened.

4 The only practical way to get a ship is to steal one from the marina in Tokugawa. This will probably require level 6 characters of the Shisi, Genkai, and Mahotsukai magic user classes capable of using level 3 spells and power ratings of about 18. If you are going to tackle this, you may as well become rich in the process. Using the following technique (as often as you like), you can end your financial problems forever!

a) Camp outside and restore your characters to maximum hit points and power. If possible have maximum food for each character (100). Save the game to both disks 1 & 2 in case you fail.

b) Enter Tokugawa. Go to the merchant at the marina and murder him. Pick the lock on the door behind the merchant and enter the storeroom. Quickly get the first gold on the bottom row and step to the bottom row. (This will prevent the guard from entering until you are ready.) Check your gold supply for the party leader and transfer any gold he has to another party member (You cannot have more than 10,000 gold pieces per character and you will get more than 10,000 gold pieces in this room). Get the gold from about half of the chests and then transfer it to someone else. Get the remaining gold.

c) Hold down the spacebar until maximum power and hit points are restored to your characters (you'll need them). Exit the store room. You will have to battle one group of guards. If you have survived thus far, go to a pier between two ships on the top row (to prevent other guards from approaching). Hold

down the spacebar again until your characters are at maximum strength. Attack a ship.

d) If you have survived, you now have a ship and over 10,000 gold pieces to your credit but also a criminal record. Exit Tokugawa in the ship and sail east two squares. Exit the ship with the B command. To save your ship on the outside, re-enter the city. The guards will rush out to attack you. Exit the city before they can catch you.

e) To erase your criminal record and restore the gold to the ship merchant's storeroom, place your RESTORE disk in the drive. Enter the city. The guards will now ignore you. Replace disk 1. Exit the city. You are now a wealthy ship's captain with a new city to plunder at will! Re-enter the city. Put in disk 2 and exit the city and save to disk 2 and relax. Repeat this until at least four of your characters have 10,000 gold and you should not have to worry about spending money for a long time.

If you wish to save your extra ships, there is a nice cove directly north of Kawa which is very convenient for your own private shipyard. Clues for the game keep saying ships get stolen. I have not lost one yet and suspect that this is to cover them if you happen to enter a city by ship and forget and exit by foot and lose a ship because it is not saved with the city. (I once lost a horse that way in *Ultima IV*.) However, backups may be desirable.

5 If you should for any reason be attacked by the guards on entering a town or city, the above technique (4e) should correct the problem.

A Word of Caution: The authors have tried to enforce playing by the rules, I would not be surprised that restoring things by the above technique may penalize you somewhere down the line because the fact that you have performed some task may have also been erased. This may eventually make it necessary to disperse your group and start over on new scenario disks. However, if this happens, having a powerful group of characters and accurate maps should reduce the time necessary to a minimum and prove well worth the effort.

6 Building experience...The Yakuza Guild of Kawa seems to be designed as a training ground for adventurers. I have noticed that many dungeon monsters once killed, seem to be gone forever. I seem to find many less on return visits. However, the Yakuza Guild seems to have an unlimited supply of monsters. This is the place to spend a lot of time building your characters as you can literally battle for hours with good rewards. (A step into the fire pits on the second level will transport you to the treasure rooms!) The Yakuza Guild can be found by searching the east wall of the west tower's north-south passage approximately 16 squares south of the north end. (Another

problem, the search F function often requires two or more tries to reveal a secret door. If you strongly suspect a secret door into an area, try several times to search each possible square.) Map well!

Ⓢ If anyone discovers how to enter a mausoleum I would like to hear from you.

Tim Furry

Softkey for...

Electronic Arts software

EA

Requirements

- Fast copier that ignores errors
- Three sides of disks
- A sector editor

These steps can be used to deprotect almost any recent Electronic Arts software and are relatively simple!

1 Copy all three sides onto the disks and put the 'ARCHIVE' and 'MISSION' disks away.

2 Using a sector editor, make the following changes to the boot disk:

Trk	Sct	Byte(s)	From	To
\$01	\$0F	\$00	4C 69 A0	18 60 DD
		\$6F	4C 69 A0	18 60 DD
	\$0C	\$00	4C	60

NOTE: This crack only will run on a IIc or IIe (I think) not a IIgs. If anyone has found a way to make any version run on a IIgs please let me know.

Ⓢ If anyone has hints for the water maze, *Marble Madness*, a list of all the required items and who wants them, *Hacker*, or a way to get *Certificate Maker* to run on a IIgs give me a call or drop a line. Also, I need a way to get unlimited time on IIgs *Marble Madness* (Hint, hint Mike Horton).

Jeff Root

Softkey for...

Applewriter IIe

It seems that *AppleWriter IIe* uses a fairly normal DOS 3.3. However, upon startup, the program checks the disk to see if it has the "proper" volume marks in the address header. Any nibble copier will reproduce this 'protection', so a user can back up his copies without trouble.



To begin, I started, as usual, with Don Lancaster. *Enhancing Your Apple II and Ie, Volume 2* contains a complete disassembly script of *AppleWriter Ie*. The information I needed was there.

So, if you will get out your third or higher backup copy of *AppleWriter Ie*, I will show you one way to eliminate this problem.

- 1 Copy *AppleWriter Ie* with *COPYA*.
- 2 Patch *AppleWriter*.

UNLOCK OBJ.APWRTIIF
BLOAD OBJ.APWRTIIF, A\$2300
CALL-151
3B04:EA EA EA
BSAVE OBJ.APWRTIIF, A\$2300, L\$30D2
LOCK OBJ.APWRTIIF

Now, boot this copy of *AppleWriter Ie* (which should be labeled as a patched version).

Note that this patch will only work for the "F" version of *AppleWriter Ie*; any other versions or releases will need their own similar patches. See *Enhancing Your Apple II & Ie* for further details. Also note that Don's STERTCHIFIER and CLARIFIER patches will also eliminate this "protection", but you will lose the help screens if you don't also use the RESTORIFIER patch.

Betta B. Goode

Softkey for...

Le Francais par Ordinateur:
Les Sports
En Ville
Paris En Metro
Le Demenagement
Un Repas Francais
 D.C. Heath & Company

I noticed in *COMPUTIST #52* that there was a softkey for deprotecting *Le Francais par Ordinateur*. Since I had deprotected several of these programs by D.C. Heath and Company several months ago, I was interested to see if the deprotection plan was the same. It was not. Some of your readers might be interested in viewing my method of making an archival backup disk that works.

These disks are all in DOS 3.3 format and are easily copied. When you boot the disk, however, you are presented with a screen message telling you that you have a defective disk. This is accomplished by calling to location 44331 (\$A2DB).

To remove this protection, first, make a copy of the disk, ignoring all read errors on

track \$22. Make all changes to the copy, not to the original disk. Use any reliable sector editor and search the disk for 8C 34 34 33 33 31. Replace the 8C (the Applesoft token for "CALL") with B2 (the "REM" token) On some disks, this occurs more than once.

This still leaves the disk with disk protection (it cannot be cataloged), but at least it can be run. This is not all bad on educational software. The program is still protected and files cannot be accessed or tampered with by adventurous or mischievous students.

However, if you must, each disk can be further deprotected by searching for 00 11 0F 03. If these are found on the first 4 bytes (\$00-03) of a sector, then that sector, regardless of where it is located, should be copied to track \$11, sector \$00.

IMPORTANT: This must not be done until you have discovered which file is accessing the information contained in track \$11, sector \$00. Once you have found the sector map for the file which is accessing the information presently contained in track \$11, sector \$00, then exchanges can be made and the file sector map can be changed accordingly.

Daryl C. Keppler


I cannot begin to express my displeasure regarding the last issue of *COMPUTIST#52*. I flinched when several pages of the magazine were dedicated to printing RDEX softkeys for the MacIntosh. At least the MacIntosh is an Apple product so I could grudgingly accept it. I cannot, however, accept your publishing RDEX's for the IBM.

I have supported your efforts since the beginning, when other magazines wouldn't publish your advertisements. Specifically back to *HARDCORE #2*. Although I cannot use approximately 95% of what you publish, I continue to subscribe because I believe in what you are attempting to do. I quote "...soaring to new heights of freedom... Hardcore computing for Apple-users worldwide..." I draw your attention to the phrase Apple-users.

The \$32 I pay to support your organizational ideals is I feel, money well spent. I do not, nor will I support your migration into the MS-DOS world. Let them suffer the pains that we have suffered with you and your publication over these years. But not, I repeat not, in this magazine.

There are five more issues left in my current subscription. I will continue to support your efforts in the Apple world, but if you persist in exploring the world of the MS-DOS, I shall not renew.

Sign this letter "Not amused".

 Hang in there with us a little longer, Mr. Keppler. The purpose of expanding the RDEX

to cover other computers is not to reduce the Apple coverage. Nor will it take away any pages of the *Apple RDEX*. The purpose is to expand the reader base and thereby the stability of the magazine.

There are less than 6000 readers who support the *Apple RDEX* and *COMPUTIST* by paying the annual dues of \$32. More subscribers would lower the cost of printing and printing is the largest single cost we have. It dwarfs even the mailing costs, which, by the way, went up \$259 with the latest increase from USPS.

I once calculated that if we had 50,000 paid subscribers, the cost for a 1 yr subscription would be less than \$10. It's the total number of copies in a press run and not the number of pages that has the greatest affect on the per issue price.

With that many subscribers, we could even go bi-monthly. Wouldn't it be great to get *COMPUTIST* every 2 weeks, instead of every month?

So expanded coverage can mean more subscribers and more subscribers means lower costs and better service. I guess what I'm trying to say is; the magazine can only get better with more subscribers.RDEXed

Thomas V. Rapheld

Softkey for...

2400 A.D.
 Origin

2400 A.D. has a fairly simple protection. The address prologue bytes are different for even and odd tracks. Even tracks use D5 AA 96 and odd tracks use D5 AA AD. Using the *Senior Prom* or any copy program which allows you to alter the address prologue bytes, copy each track one at a time altering these bytes as described above.

For those beginners, this protection was discovered within two minutes of first turning the computer on. When the first attempt of copying the program with normal parameters fails, one should automatically alter your copy program's Address Prologue bytes to D5 AA 96 and the Data Prologue bytes to D5 AA AD. This will deprotect a lot of very simple protection tricks.

For *2400 A.D.* track \$00 was read, however, track \$01 failed to read. This was a dead give away. Immediately using a nibble editor, one can see that the Address Prologue bytes on each track alternated as mentioned above. If you are not sure of what an Address or a Data Prologue byte is, please read *Beneath Apple DOS* and/or *Beneath Apple ProDOS*.

Keith Parker

Softkey for...

Dave Winfield's Batter Up!

Avant-Garde Publishing

Requirements

- COPYA
- Sector Editor

- 1 Boot your DOS 3.3 system disk.
- 2 Tell DOS to ignore checksum and epilog errors and use COPYA to copy the disk.

POKE 47426,24

RUN COPYA

- 3 Make the following sector edits to the copy you just made.

Trk	Sct	Byte(s)	From	To
\$00	\$03	\$42	?	18

† Softkey for...

Leisure Suit Larry in the Land of The Lounge Lizards


Sierra On-Line

Requirements

- COPYA
- Sector Editor

- 1 Copy all sides.
- 2 On side "A" of disk 1 make the following change with your sector editor.

Trk	Sct	Byte(s)	From	To
\$02	\$08	\$0B	20 00 FF	EA EA EA

 One of our readers says there is another check somewhere else. Has anyone figured it out?..... RDEXed

David Lavender

Playing Tips for...

Wrath of Denethenor

Sierra On-Line

- Doors are charming.
- To dispell wavy light seek Bhui in the dungeon of Castle Mirrih.
- To get past water traps use Netrelon.
- To use a scroll, say Specere.

- To increase brain power go to the reigning monarch.

Playing Tips for...

Ultima IV

Origin

- The Silver Horn is on an island near Skara Brae.
- To get reagents inexpensively, when the merchant asks for money just give her one gold piece. All reagent merchants are blind and won't know the difference.
- To get ships, go to the harbor. At the abyss, go two spaces west from the entrance and press the space bar until you see one or two ships. Then go west and south until you reach the north part of the island the serpent castle is on. Exit from your boat. The pirate ships should be in a line adjacent from the north coast. You can now attack them from land and take over as many ships as you need!
- To enter the hidden city of Cove without using a boat, go to Latitude F' K'' Longitude H' A'' and use the blink spell in the eastern direction.

Playing Tips for...

2400 A.D.

Origin

- To get to terminals you need a passcard with the code 0977 on it.
- Access code for all terminals is ACCTRM followed by # of levels it is underground minus two.
- There are three deactivation codes for the Control Console.
- Password for Spider is MADEIT.
- You need three devices to get into Authority Complex: a Plasma Rifle, a Field Dispenser, and a Transporter Guidance Device.

⊕ I am stuck in Wrath of Denethenor. I have tried to go to Arveduin, but I always am sent to an island. I can't seem to find a way to the mainland. I have also tried to go to Mystenor at midnight using many dimension doors, but I always go to the place I would normally. If anyone out there has a little compassion I would greatly appreciate some help.

Dr. Leigh Rowan-Kelly

I have some IIGs copy routines for you to include. All of them require a plain copy of the original disk and then editing as follows: (I used Zap from Bag of Tricks 2 with Blocks set to 63F).

Softkey for...

Fantavision GS

Broderbund

Block	Byte(s)	From	To
\$2B	\$8E-8F	20 03	80 38
	\$C8-CC	EB 98 E5 01 EB	A9 01 EB A9

Softkey for...

40' Graphics Studio

?

Block	Byte(s)	From	To
\$31	\$4C-4D	D0 42	EA EA
	\$51-53	38 E9 40	82 93 00

Softkey for...

Hardball GS

Accolade

Block	Byte(s)	From	To
\$32C	\$1EE-1EF	?	18 60
\$32F	\$FF-100	?	18 60

Softkey for...

Winter Games GS

Epyx

Block	Byte(s)	From	To
\$61E	\$A5-A6	?	18 60

Softkey for...

World Games GS

?

Block	Byte(s)	From	To
\$07	\$A2-A3	?	18 60

Sorry I didn't take a note of what the original values were in the bytes altered for the last 4, but I think they are OK anyway.

⊕ I tried the Shadowkeep routine and mine would not work, although all the steps appeared OK. I get nothing when I boot the final disk except a drop out into the monitor. Is it possible that there is a mistake with the last bit of code to be entered at step 15 where the 4C 59 FF is entered at bytes \$0F onwards?

I had a copy of Create With Garfield loaned to me, and I deprotected it by just running a straight Swap Routine with Super IOB 1.5 and then just updating the DOS to a Fast-DOS. I didn't have to do anything else so I guess that means that particular copy was an older version.



Ⓟ Does everyone know about the bugs in *Bard's Tale* gs and *Shanghai* gs? Well, if you have had trouble with Garth's Equipment Shoppe in *Bard's Tale*, in the sense of getting nothing but a message telling you there has been an error loading the file Inventory, then you can fix that easily.

Transfer the file called Inventory to your character disk in order for it to be found by the program. Whoever wrote the code forgot to include the correct prefix and it remains set on the last disk accessed. I don't know about any other bugs because I updated my ROM to the new one and *Bard's Tale* is one of the casualties. (Along with *Music Studio* and *Reader Rabbit* that won't run at all.)

Graphicwriter, *Topdraw* and *Multiscribe* gs seem to have a few bugs and fall over occasionally. *Shanghai* keeps telling me when I win that it can't find the correct pathway for the Dragon Picture, but if you set the pathway in the first instance by loading a file (drag down the File Selector, and select Load a File, then just Cancel and Close the MenuBar) you will find it works quite well.

Ⓟ I would also like to see any information on the newer Infocom Games (*Bureaucracy*, *A Mind Forever Voyaging*, etc.) that have a Data side of the disk that has only the D5 AA A0 marks and no other and looks to be quite strange. Any helpers?

Larry Rando

Softkey for...

Color Me
Mindscape

■ Requirements

- 128K Apple IIe or IIc
- DOS 3.3 System Master (COPYA)
- Sector Editor

Color Me is a double hi-res drawing program that has many features similar to *Dazzle Draw*. *Color Me* also comes with data disks that are full of ready made double hi-res pictures that can be printed.

The protection scheme used in *Color Me* is quite different than any other protection scheme that Mindscape uses. Trying to copy the disk did not work, so my next step was to disable DOS's read error checking routine (ie: B942:18) and use COPYA to copy the disk. The disk copied successfully without any errors.

When I booted the program, it seemed to be reading in data but suddenly rebooted. I got out my *Copy II Plus* and did a trivial search for 4C 00 C6 (JMP SC600); this routine is the first code executed when a disk is to be booted.

I found the routine on track \$00, sector \$08. Examining the code before the JMP SC600 led me to something that resembled protection code.

NOTE: The BNE's \$168F are a series of checks while loading a certain portion of the program in memory.

Finally we want to apply the patches so it will skip the protection part of the loader and you will have a perfect COPYA version of *Color Me*.

- 1 Boot your DOS 3.3 system disk.
- 2 Tell DOS to ignore checksum and epilog errors and use COPYA to copy the disk.

POKE 47426,24
RUN COPYA

NOTE: To deprotect the *Color Me* data disks (eg: *Tink Town*, etc.) just do steps 1 and 2.

- 3 Use any sector editor and make the following changes to the boot side:

Trk	Sct	Byte(s)	From	To
\$00	\$08	\$24-25	D0 69	EA EA
		\$29-30	D0 64	EA EA
		\$39-40	D0 54	EA EA
		\$47-48	D0 46	EA EA
		\$54-55	D0 39	EA EA
		\$5D-5E	D0 30	EA EA
		\$6C-6D	D0 21	EA EA
		\$7B-7C	D0 12	EA EA

- 4 Write it back out to disk.

Next is a guide in deprotecting other Mindscape disks. Mindscape disks normally use the same protection, especially on their interactive text adventures which are written in Pascal.

Softkey for...

Stephen King's: The Mist
James Bond 007: A View to a Kill
Racter
Rambo: First Blood Part II
Forbidden Castle
Voodoo Island
Keyboard Kadet
Mindscape

- 1 Boot your DOS 3.3 system disk.
- 2 Tell DOS to ignore checksum and epilog errors and use COPYA to copy the disk.

POKE 47426,24
RUN COPYA

- 3 Make the following sector edits to the copy you just made.

Trk	Sct	Byte(s)	From	To
\$00	\$00	\$1B-1D	20 00 0B	EA EA EA

- 4 Write it back out to disk.

Mindscape Tip: Use a sector editor with a search function (eg. Copy II Plus) and search for 20 00 0B, it could be anywhere on the disk but is usually somewhere on track \$00, sector \$00. If you do find it just replace it with EA EA EA.

That's it! You now have easily deprotected the majority of the programs Mindscape released.

Greg Poulos

Softkey for...

Bard's Tale II:
The Destiny Knight
Electronic Arts

The original disks can be copied with any copy program. You may get errors on track #06 (the nibble count track), pay no attention to it. As Steve and Rod Smith stated in COMPUTIST #24, almost all of Electronic Arts protection schemes are initiated with a 4C 69 xx where xx is the page that it resides. In *Destiny Knight*, the boot code is at \$A000, so there will be a 4C 69 A0. If you put an 18 60 there, it will override the protection code, but there's a checksum routine. If in the monitor, you add \$4C + \$69 and then that result with \$A0, you will get \$DD, which is the number needed for balance. So the only sector edits needed were these.

- 1 Copy all 4 sides of *Bard's Tale: Destiny Knight* with any fast copier that ignores errors.

- 2 Edit the following bytes on the boot side.

Trk	Sct	Byte(s)	From	To
\$01	\$0F	\$00-02	4C 69 A0	18 60 DD

Softkey for...

Shanghai
Activision

Shanghai, like *Destiny Knight*, is copyable with any fast copier. It performs a nibble count to check for the presence of the original disk. The disk can be cataloged. The last file it loads before doing the nibble count is the file "SHANG". When SHANG is first run, it does



a few things. First, it sets up the reset vector so that if reset is pressed, the computer will hang. Second, it JSR's to a location that reads in data for the nibble count routine. Third, it JSR's to \$9551. This is where the bytes are compared for the nibble count. All I did was change all the Branch if Not equals that came after compare statements in the subroutine at \$9551, and *Shanghai* worked perfectly.

1 Copy *Shanghai* with any fast copier.

2 Boot a normal DOS.

3 Insert your *Shanghai* copy and BLOAD the file called "SHANG"

BLOAD SHANG

4 Enter the monitor and make the following changes:

CALL-151

957E:DO ED

958B:EA EA

95A4:EA EA

3D0G

5 Save "SHANG" back to disk.

BSAVE SHANG, A\$7C00, L\$1C00

Additional Shanghai Crack

If the above softkey for *Shanghai* doesn't work on your version, make these changes to "SHANG":

9560:EA EA

9569:EA EA

957E:EA EA

Resave the file "SHANG".

Softkey for...

Dragonworld

Telarium

In a previous COMPUTIST, there was a softkey for *Dragonworld* that DID NOT work on my version. My version was slightly different, as it was COPYA-able from the start. Here's my softkey.

1 Copy all the sides with any fast copier.

2 Boot a normal DOS.

3 Bload the file "IO".

BLOAD IO

4 Make the following changes to defeat the nibble count.

CALL-151

1CC1:A9 00 EA

5 Save "IO" back to disk.

BSAVE IO, A\$A00, L\$15E5

Softkey for...

Fight Night

Accolade

1 Copy the original, ignoring errors on track \$22 (nibble count track).

2 Run a sector editor and edit the following.

Trk	Sct	Byte(s)	From	To
\$0E	\$00	\$2E	F0	D0

Jean Philippe Bernard

A few months ago a new French software company was opened for Apple IIe and Apple IIgs Computers. As the manager of this company, I couldn't sleep at all, thinking of you - the software crackers - but also remembering my own past with my Apple IIe Computer!

I realized three things, and I don't think anybody will disagree:

1) The best software needs the best protection schemes on it and the best protection-policy is all-new protection for each new software product.

2) The best software-protectors are the best software-crackers!

3) The best software crackers all read...COMPUTIST!

That is the reason why I am writing to you now, calling to your readers talents. I have got a very interesting job for many of them! We would be very pleased to receive any well protected software for protection evaluation (by our own experts!) As a software company also needs software, I am also calling for programmers! So if you dare, write now to this address:

Second Sight Software
ATTN: Jean Philippe Bernard
5 Square Clement Marot
78150 Le Chesnay, France

Thanks to all of you who listened.

James A. Hodge

Softkey for...

Spy Hunter

Sega

Requirements

- Apple II, IIe, or IIc
- Super IOB
- The original disk
- A blank disk

Spy Hunter is an Apple implementation of an arcade game by Bally. It has slick graphics and seems to be a pleasant game. I prefer to help friends back up their games, as opposed to playing the games, so all I can say is that the controller I created seems to produce a working copy. To solve SEGA'S protection scheme, I used the sector editor in Copy II Plus. The patch option is a quick way to get an idea about a protection method. I found that if the address and data epilogs were ignored, sectors could be read into the editor. The hi-res disk scan was also useful in determining that *Spy Hunter* was "breakable", and that there was probably valid information on tracks \$00 and \$02 through \$11. *Trax*, from the *Bag of Tricks* disk, told me that the epilog values \$DE and \$AA had been switched around, so reading the disk with *Super IOB* was simply a matter of switching them back.

Once I had a normalized disk I edited track \$00, sector \$00 so the disk would boot it's DOS then stop. When I booted, it broke, leaving me in the monitor. Typing COE8 turned off the disk drive, and I could then trace the code. The code was very compact, since it was only two sectors worth of data. The code had a reasonably standard Read Address routine and Post-nibble routine. It also had three lines of code to turn off the disk drive and loop forever. Tracking back from there it was easy to find where to place a patch so it didn't jump to those fatal three lines of code.

The de-protected disk seems to boot in about two-thirds the time of the original. The disk, when CATALOGed, shows three files, but their track/sector lists are on tracks that the original never used, so all three can be deleted. The VTOC can be sector edited to show tracks \$00 through \$0D and \$11 in use. Then the rest of the disk can be used to store other files. There is a bit of mystery in sector \$00 on track \$02. There is an ASCII string that says: "BSAVE SPY10/11,A\$200,LSBC00,D2". The first four bytes should be the address and length bytes if that is the start of a binary file, but they are not. The only way it could be BLOADed would be with a 64K DOS. What it's doing there, I don't know. Oh, well. So much for the technical trivia. The controller that follows will produce a COPYA-able version of *Spy Hunter*.

Controller

```
150 RESTORE
1000 REM SEGA SPY HUNTER CONTROLLER
1010 TK=0:LT=1:ST=15:LS=15:CD=WR:FAST=1
1020 TA=GOSUB 170:GOSUB 490:GOSUB 610
1025 GOSUB 310
1030 GOSUB 230:GOSUB 490:GOSUB 610:IF PEEK
(TRK)=LT THEN 1050
1040 TK=PEEK (TRK):ST=PEEK (SCT):GOTO 1020
1060 TK=2:LT=18:ST=15:LS=15:CD=WR:FAST=1
```




```

1070 T1 = TK: GOSUB 170: GOSUB 490: GOSUB 610
1080 GOSUB 230: GOSUB 490: GOSUB 610: IF PEEK
(TRK) = LT THEN 1100
1085 RESTORE
1090 TK = PEEK (TRK) : ST = PEEK (SCT) : GOTO 1070
1100 HOME : PRINT "COPY" DONE" : END
2000 DATA 170,222,170,222
2010 DATA 6* CHANGES,0,7,87,222,0,7,96,170,
0,7,197,222,0,7,206,170
2020 DATA 0,0,88,234,0,0,89,234

```

Checksums

150	- \$D625	1070	- \$2827
1000	- \$14BA	1080	- \$0FB9
1010	- \$D7DC	1085	- \$7476
1020	- \$0F2B	1090	- \$D780
1025	- \$5060	1100	- \$6C93
1030	- \$65F9	2000	- \$52A9
1040	- \$5C23	2010	- \$2406
1060	- \$EBBB	2020	- \$5CE7

Softkey for...

Arcade Album #1

Penguin

■ Requirements

- Apple II, Iie, or Iic
- Super IOB
- The original disk
- A blank disk

The Penguin game disk originally looked like it would be easy. The *Copy II Plus* hi-res disk scan showed the disk was a DOS 3.3 type format. The sector editor read in sectors on track \$00 with the only patch needed being to ignore the epilogs. But then...it choked on track \$01. It turned out that the odd numbered tracks were formatted differently than the even numbered tracks. I decided to look at their DOS. I used the *Copy II Plus* manual sector copy option to make a disk I could edit without risk. I then edited track \$00, sector \$00 to boot the DOS and break. Once in the monitor, I examined the Penguin DOS and found the RWTS looked fairly standard, with only a few modifications. Being basically lazy, I felt that the RWTS swap was the easiest way to copy the disk.

There is a way to get the RWTS without altering the original disk. Get into the monitor (CALL-151). Enter the following command to move the disk controller code down:

6600<C600.C6FFM

Then, if you have a mini-assembler handy, enter the following code:

```

66F8:PHA
LDA #0
STA 84C

```

PLA

JMP 801

If you don't have a mini-assembler, enter the following hex values:

66F8:48 A9 00 8D 4C 08 68 4C 01 08

Now, "boot" the disk by executing the command:

6600G

The disk drive will sound like it normally does during booting, but you will get dumped into the monitor when the break instruction is reached.

First turn off the drive:

COE8

Move the Penguin RWTS down in memory to a safe location.

4000<B800.BFFF

Boot a slave disk to get a "normal" DOS 3.3 into memory, and enter:

BSAVE PENGSTUF,A\$4000,L\$FFF

The rest of the job of making a *COPYA*-able copy is simple. Enter the following controller into *Super IOB* (I used version 1.5), make sure PENGSTUF is available, and follow the prompts.

The friend I broke this disk for showed me softkeys for *Spy's Demise* (COMPUTIST #25, pg. 7) and *The Spy Strikes Back* (COMPUTIST #8, pg. 6). Neither of them were any help in breaking the disk, but they would allow making the files SD and SSB on the disk BRUNable with a standard DOS. I didn't waste too much time trying to make *Thunder Bombs* (the third game on this disk, contained in files TBA and TBB) an independent file. Having a broken disk seemed to be enough.

Controller

```

1000 REM PENGU IN GAMES (SD,SSB,TB) CONTROLLER
1010 TK = 0:LT = 35:ST = 15:CD = WR:FA = 1
1020 T1 = TK: GOSUB 360: GOSUB 490: GOSUB 610
1025 GOSUB 310
1030 GOSUB 360: GOSUB 490: GOSUB 610: IF PEEK
(TR) = LT THEN 1050
1035 RESTORE
1040 TK = PEEK (TR) : ST = PEEK (SC) : GOTO 1020
1050 HOME : PRINT "COPY" DONE" : END
2000 DATA 2* CHANGES,0,0,253,222,0,2,158,222
10010 PRINT CHR$ (4) "BLOADPENGSTUF,"A$1900"
: POKE 7997,0: REM $BE3D

```

Checksums

1000	- \$356B	1035	- \$6B0E
1010	- \$587A	1040	- \$3537
1020	- \$0921	1050	- \$EFB6
1025	- \$E22E	2000	- \$CA6C
1030	- \$B21A	10010	- \$FDDD

Softkey for...

Destroyer & G.I. Joe

Epyx

■ Requirements

- Apple II, Iie, or Iic
- Super IOB
- The original disk
- A blank disk

The protection scheme used for *Destroyer* is similar to that used on Epyx *G.I. Joe* disk, but there are a couple of additional twists.

The *Destroyer* disk is formatted with a non-standard sector interleave, and uses FF FF instead of DE AA epilogs. Simply copying *Destroyer* to a normalized disk (with *Super IOB*) will not create a working copy. Trust me, I know. When my first copy didn't work, I took a deeper look at the original with the nibble editor in *LockSmith 6.0*. The D option displayed the sector order. The original needs to be read with the *Destroyer* interleave, and written using the normal DOS 3.3 interleave. The sector interleave tables in *Destroyer* need to be edited to reflect the new interleave.

The other major difference from the *G.I. Joe* disk was that code located at \$B700 needed to be de-scrambled by the last section of the protection code at \$BB00. The key value is read from the disk, and after it's successfully read, it's exclusive OR'ed with the \$B700-\$B7FF code. To determine the key value, I used the de-scramble code at \$BB7A as a subroutine for a little machine language routine. I "decoded" \$B700 and used the monitor LIST routine to display what I had. My routine then re-coded the \$B700 area, changed the trial key value, looped back and tried again. The key turned out to be E7. I altered some of the existing code to store E7 in location \$F4, and then branch to the de-scramble routine.

In the controller, line 10010 saves the stock DOS interleave in an area that is generally unused (\$BCE0-\$BCEF). The first commands in lines 1020 and 1030 then change the interleave to *Destroyer* or standard. The first four sector edits take care of the protection, and the remaining edits rework the two interleave tables (one is used by the first stage boot, and the other is used for all other disk access).

That's all it takes to produce a *COPYA*-able copy of *Destroyer*. I also included the controller for *G.I. Joe* which is easier than the softkey used in COMPUTIST #33, page 22.

Controller

```

1000 REM EPYX DESTROYER CONTROLLER
1010 TK = 0:LT = 35:ST = 15:LS = 15:CD = WR:FAST
= 1

```

```

1020 T1=TK:FOR I=0 TO 7:POKE 49080+I*2,I:
POKE 49081+I*2,I+8:NEXT:GOSUB 170:
GOSUB 490:GOSUB 610
1025 GOSUB 310
1030 FOR I=0 TO 15:POKE 49080+I,PEEK (48352
+I):NEXT:GOSUB 230:GOSUB 490:GOSUB
610:IF PEEK (TRK)=LT THEN 1050
1035 RESTORE
1040 TK=PEEK (TRK):ST=PEEK (SCT):GOTO 1020
1050 HOME:PRINT "COPY^DONE":END
2000 DATA 255,255,255,255
2010 DATA 24^CHANGES,0,5,23,231,0,5,25,244,
0,5,28,208,0,5,29,92
2020 DATA 0,0,78,13,0,0,79,11,0,0,81,7,0,0,
82,5,0,0,84,1,0,0,85,14
2030 DATA 0,0,87,10,0,0,88,8,0,0,90,4,0,0,
91,2
2040 DATA 0,9,185,13,0,9,186,11,0,9,188,7,
0,9,189,5,0,9,191,1,0,9,192,14
2050 DATA 09,194,10,0,9,195,8,0,9,197,4,0,
9,198,2
10010 FOR I=0 TO 15:POKE 48352+I,PEEK (49080
+I):NEXT
    
```

Checksums

1000 - \$356B	2000 - \$23D7
1010 - \$2544	2010 - \$4E85
1020 - \$402E	2020 - \$1BAA
1025 - \$855F	2030 - \$6427
1030 - \$FE03	2040 - \$DB13
1035 - \$7640	2050 - \$F276
1040 - \$091E	10010 - \$A174
1050 - \$71E7	

Controller

```

1000 REM FAST GI JOE
1010 TK=0:LT=35:ST=15:LS=15:CD=WR:FAST=1
1020 T1=TK:GOSUB 170:GOSUB 490:GOSUB 610
1025 GOSUB 310
1030 GOSUB 230:GOSUB 490:GOSUB 610:IF PEEK
(TRK)=LT THEN 1050
1035 RESTORE
1040 TK=PEEK (TRK):ST=PEEK (SCT):GOTO 1020
1050 HOME:PRINT "USE^THIS^CONTROLLER^TO^DO^
SIDE^2^ALSO":END
2000 DATA 255,255,255,255
2010 DATA 2^CHANGES,0,1,26,208,0,1,27,90
    
```

Checksums

1000 - \$356B	1035 - \$208E
1010 - \$2544	1040 - \$AF2C
1020 - \$524D	1050 - \$40DE
1025 - \$91E4	2000 - \$A48C
1030 - \$A47D	2010 - \$764C

Bob Urman

While working with *Walt Disney Comic Maker & Card/Party Shop*, everything goes along smoothly while making the backup but

if you have to reconfigure the printer-the program goes into DOS and hangs (crashes!)

R OOPs! Does anyone have a fix for this?
..... RDEXed

Michael J. Basford

Softkey for...

Space Quest I

Sierra On-Line

This is similar to the softkey for *Black Cauldron*, also by Sierra On-Line. I suspect that many other Sierra programs can be cracked in this fashion.

1 Copy all the disks (both sides of disk one) with *Locksmith Fastcopy* or a similar fast copy.

2 Use *Copy II Plus* to search for C9 C9 D0 D0. I found it on track \$0B, sector \$03. Change the bytes C9 C9 to 29 00 and you have an un-protected program.

SOLO7

Softkey for...

Space Station

Hesware

Requirements

- Super IOB V1.5
- A blank disk notched to use side 2

This program uses the same type of protection used for *Operation Frog*, by Scholastic. Please refer to softkeys in *COMPUTIST #44* and *#46* for an explanation of the protection. The controller edits side 1. When you copy side 2, delete the lines that do the sector edit.

1 Install the controller in Super IOB 1.5 and copy side 1.

2 Delete the edit and copy side 2.

**1025
2010
RUN**

Controller

```

1000 REM SPACE STATION
1010 TK=0:LT=35:ST=15:LS=15:CD=WR:FAST=1
1020 GOSUB 170:GOSUB 490:GOSUB 610
1025 GOSUB 310
1030 GOSUB 230:GOSUB 490:GOSUB 610:IF PEEK
(TRK)=LT THEN 1050
1035 RESTORE
1040 TK=PEEK (TRK):ST=PEEK (SCT):GOTO 1020
    
```

```

1050 HOME:PRINT "COPY^DONE"
1060 PRINT "IF^YOU^FINISHED^COPYING^SIDE^1":
PRINT "THEN^DELETE^LINES^1025^&^2010,":
PRINT "FLIP^BOTH^DISKS^TO^SIDE^2^AND^RUN^
AGAIN"
1070 END
2000 DATA 255,255,255,255
2010 DATA 1^CHANGES,0,5,172,24
    
```

Checksums

1000 - \$356B	1040 - \$DFA8
1010 - \$2544	1050 - \$746F
1020 - \$C219	1060 - \$28B3
1025 - \$2980	1070 - \$0DE1
1030 - \$1C19	2000 - \$A329
1035 - \$141E	2010 - \$3691

Don Druce

Improving The Nibbler

In *COMPUTIST #19*, there is a program called *The Nibbler* by Ray Darrah. This is an excellent program, well worth typing in. As far as I am concerned, this program alone is worth the price of a subscription.

While I certainly do not have the programming ability of Mr. Darrah, I do tend to set my hand at certain tasks. After using the program for a while, I felt that I could improve the screen a little, and save my memory a lot, by inserting some of the standard search bytes on screen.

I, therefore, modified the program (see attached printout) to provide this information. I think that if your readers have already typed in this program, they might appreciate the changes. If they do not have this program in their utilities, I suggest that they dig out *COMPUTIST #19*, or order a back issue, and add this program to their arsenal.

Change or add the following lines to THE NIBBLER.

```

850 PRINT "BY^RAY^DARRAH/MODIFIED^BY^DON":
VTAB 23:HTAB 9:INVERSE:PRINT "PRESS^ANY^
KEY^TO^BEGIN":NORMAL
901 REM MY TITLES
902 POKE 1408,4:POKE 1409,53:POKE 1410,1:
POKE 1411,1:POKE 1412,57:POKE 1413,54
903 POKE 1414,22:POKE 1415,15:POKE 1416,12:
POKE 1417,45:POKE 1418,20:POKE 1419,18:
POKE 1420,11:POKE 1421,45:POKE 1422,19:
POKE 1423,5:POKE 1424,3:POKE 1425,45:
POKE 1426,3:POKE 1427,8:POKE 1428,11:
POKE 1429,45
904 POKE 1430,4:POKE 1431,5:POKE 1432,1:POKE
1433,1:POKE 1434,5:POKE 1435,2
    
```



```

905 POKE 1442,4: POKE 1443,53: POKE 1444,1:
  POKE 1445,1: POKE 1446,1: POKE 1447,4
906 POKE 2006,4: POKE 2007,5: POKE 2008,1: POKE
  2009,1: POKE 2010,5: POKE 2011,2
910 PRINT "SLOT=>" PEEK (47081) / 16: PRINT
  "DRIVE=>" ^ ^ PEEK^ (47082); ^ SPC^ (^ 20); ^
  VTSC "

```

Checksums

850 - \$FC91	904 - \$E286
901 - \$95BC	905 - \$D578
902 - \$2E89	906 - \$B7F0
903 - \$F241	910 - \$8539

I This program is included in the "Starter Kit" that new subscribers receive automatically. RDEXed

Tony B. Campbell

Softkey Addendum for...

Animate
Broderbund

I would like to comment on Greg Poulos's *Animate* softkey in *COMPUTIST* #49. Mine was protected in the same fashion, but there were more edits to be done.

On side 1, track \$09, sector \$01, there was a 4C9E81 to be NOPed. On side 2, track \$05, sector \$06, there was a 6CF203 to be NOPed. It runs fine. Not all of his edits were present, the two edits on side two, track two, were not present.

Edward Teach

I always wanted to "coin" a word. Mr.RDEXed how about from now on instead of calling articles "incomplete softkeys" how does "half-keys" strike you? As an example, I have been working on *The Movie Monster* game. I know the protection resides in track \$00, sector \$05. In three different places values are read from the disk and stored in locations \$F0 - \$FF, and around \$00, I believe. The code then jumps to \$B700. The problem is that I cannot seem to get the code into \$B700 intact. Anyone care to help? I did manage to back up the disk using *EDD 4*, pre-analyze, then set 00 = 90. I slowed down the duplicate drive and kept the track length. If you do not get a "." then recopy the track.

Also, it seems that Electronic Arts has finally changed their protection scheme. I recently got a non-working copy of *Chuck Yeagers Flight Simulator*. The sector headers are read out of a table and then 410 nibbles are

read, a read to the header table then 410 more nibbles. It seems that there are only 4 or 5 sectors per track. Interesting, but I am not yet good enough to decipher more.

Finally, a great product has been added to my collection, *Intercept 1.2*. This magic program will automatically "ADD" your title page to a disk. Did you ever tire of searching for their hi-res page. I simply created my own page, saved it as a 34 sector binary file, then ran *Intercept*. This program searches the cracked disk for free sectors, packs your picture, saves it on the cracked disk and then rewrites the loader to call the new title page on boot.

Softkey for...

Spy's Adventures In North America
Polarware

In *COMPUTIST* #52, Jack Moravetz gave his softkey for this disk. Since I have an older version, the softkey did not work. As usual, I still found something in the article useful. The last line of the controller Jack gives computes the first byte of the header and pokes it in memory when needed. I will file this away in my memory and use it in some future crack.

The ProDOS version on my *Spy's* disk was 1.1 (1983-84). The disk as it came out of the package was COPYA-able. But, as usual the copy would not run. What I do with this kind of problem is to search the disk for \$C08C (read the disk). I found this at track \$06, sector \$06. Here is a small section of the code:

```

0837 BD 8C C0 LDA $C08C Read a byte
083A 10 FB BPL $0837 Byte yet?
083C C9 FF CMP #$FF Was it a FF?
083E D0 50 BNE $0890 No, jump to bad read

```

Later in the code.

```

0889 BD 88 C0 LDA $C088,X Turn off drive
088C 18 CLC Clear carry
088D A9 00 LDA #$00 Acc = 00
088F 60 RTS All OK return
0890 CE DE 57 DEC $57DE Alter memory
0893 F0 03 BEQ $0898 Memory zero?
0895 4C 22 57 JMP $5722 Loop to start
0898 BD 88 C0 LDA $C088,X Turn off drive
089B 38 SEC Set carry
089C A9 FF LDA #$FF Acc = FF
089E 60 RTS Return

```

What this routine does is to check the disk for certain bytes. If the proper bytes are not found it eventually sets the carry flag, loads the accumulator with an \$FF and returns to the program. There it dies a horrible death in the land of the endless loop.

To deprotect this, all that has to be done is to change the DEC, SEC and LDA instructions to normal values.

Trk	Sct	Byte(s)	From	To
\$06	\$06	\$95-97	4C 22 57	EA EA EA
		\$9B	38	18
		\$9D	FF	00
\$07	\$90-93	CE DE 56		EA EA EA
	\$95-97	4C 22 56		EA EA EA
	\$9B	38		18
	\$9D	FF		00

Write these back to the disk.

I would like to thank Polarware for their help with a problem I had. I called them since the clues to Dr. X's location were numbers instead of letters when I ran the game on my II plus. They suggested that I pull my Thunderclock out and try the program again. This did the trick, and yes, I do own the original even if they did not ask.

Softkey for...

Spy's Adventures In Europe
Polarware

I really like companies that change protection from version to version and from title to title. Polarware is a fine example of this. It really makes it more of a challenge for people with our particular hobby. Actually, I ran across this deprotection almost by accident. Someone wise once said it is sometimes better to be lucky than good.

I had tried to find the nibble/signature check with no luck, also I could not find any disk access (\$C08C or \$C0EC) outside of the ProDOS file.

What I ended up doing was to disable the memory wipe routine (301:00N301<300.3FFM) and then tried to locate code in memory. After finding what looked like good code I typed the memory location with a "G" after it and ran the code. This still did not help much. Then scanning around I saw:

```

0875 68 PLA
0876 95 00 STA $00.X
0878 E8 INX
0879 E0 04 CPX #$04
087B D0 F8 BNE $0875
087D 98 TYA
087E F0 FE BEQ $087E
0880 60 RTS

```

I have no idea what this code does! But it is easy to see that if the loop at \$087E is taken, the code can never get out of the loop. This code is from the file SP which loads at \$4302 (the "FO FE" is at \$58B0 and \$58B1). On my disk this is at track \$13, sector \$01.

Trk	Sct	Byte(s)	From	To
\$13	\$01	\$7E-7F	F0 FE	EA EA



Stanley Planton

† Softkey for...

Create with Garfield

DLM

■ Requirements

- 64K Apple II computer
- Blank disks
- System Master
- A utility that will format \$23 tracks
- OR a method of formatting a DOSless data disk

I recently purchased *Create With Garfield* at a close-out sale, and brought it home for the kids to enjoy. After watching child #2 insert disks SIDEWAYS into the drive, I resolved to make a backup of the disk. Some time later, having tried *Copy II Plus*, *Locksmith*, *EDD*, discovering that it seemed to have synchronized tracks, nibble counting, an added track, and still being without a reliable backup, I decided to spend some more time trying to deprotect the program. Early efforts with *COPYA* and *Super JOB* producing little other than loud noises from the disk drive and entertaining error messages, I determined upon FID as the most likely tool of choice. The following will produce a "mostly" unprotected version of *Create With Garfield*. When returning to the main menu from the print menu it will bomb, since the program is still looking for its protected format. Perhaps someone can use this method to find out how to change the last vestiges of protection.

The version I purchased is identified by a 1986 copyright date. Upon analysis the disk shows \$23 tracks, with most of the sync bytes changed from FF to BF. Within the sectors, header bytes remain normal at D5 AA 96 and D5 AA AD, but epilog bytes have been changed from DE AA to AA DE xx. Tracks appear to be synchronized, and show a suspicious uniformity in length. If your disk matches this description, then proceed with the softkey. There are apparently several versions of this program in circulation, and protection may vary!

1 Since the original disk has \$23 tracks, it is helpful to make the copy have the same number of tracks. If you have a method of initializing a blank disk with \$23 tracks, do so.

INIT GARFIELD
DELETE GARFIELD

2 If you cannot format a \$23 track disk with DOS, then format a DATA DISK (no DOS) instead as a target disk. You will have to boot DOS, then switch disks and "RUN GARFIELD" in order to use the program.

Those of us who use IBMs are familiar with this procedure...

3 Insert the System Master disk and BRUN FID.

4 Press **RESET** to stop the program.

5 Enter the monitor:

CALL-151

6 Tell DOS to ignore epilogs, checksum errors, and read errors, then restart FID:

B988: 18 60

B98A: 00

B925: 18 60

B942: 18

803G

7 Select the wildcard option "=" when asked for filename and no prompting, and copy the files from the original *Garfield* disk to your formatted blank (\$23 track or \$22 track).

That concludes this partial softkey. There are several "interesting" files, including one entitled "FILLER". The boot program, as mentioned above, is named GARFIELD, and is very short; all it seems to do is mess with the reset vectors and get the title and menu screens up and running. If you want to be able to **RESET** out of *Create With Garfield*, load the GARFIELD program, delete the line that POKES to location 1012, and resave the file.

Softkey for...

Where in Europe is Carmen

Sandiego

Broderbund

■ Requirements

- Two disks notched for two-sided use
- COPYA*
- Copy II Plus* or other ProDOS utility
- ProDOS

The recently-introduced *Where in Europe is Carmen Sandiego* follows the two previous disks in the series, and carries on the search for the notorious crime ring in another area of the world. Unfortunately, the three *Carmen* disks are formatted and copy-protected in three different fashions, preventing the user from using them together. It would have been nice if the folks at Broderbund had given us disks that would allow the interchange of data!

The *Europe* disk is sold in a modified ProDOS format, with most of the protection seeming to be in changed epilog bytes. When examined, the address and data headers are normal, at D5 AA 96 and D5 AA AD, but the address epilog bytes have been written as E7 F9 FE, and the data epilog bytes seem to vary among several different values.

To normalize the disk to standard ProDOS, follow these steps:

1 Format both sides of a disk for ProDOS; use a short volume name, and put this disk aside for later use.

2 Boot up DOS 3.3 and run *COPYA*.

RUN COPYA

3 Press **RESET** and enter the monitor:

CALL -151

4 Tell DOS to ignore errors and epilog bytes.

B988:18 60

B98A:00

B925:18 60

B942:18

3D0G

70

5 Restart *COPYA*. and copy both sides of the Broderbund disk to the other blank disk.

RUN

The result of step #5 will be a disk or disks that contain normal ProDOS files. Track \$00 will be a little weird on the copies, which is why we made the ProDOS disk and set it aside.

6 Copy all the game files from the copy you just made to the ProDOS formatted disk, and RENAME the final product to match the original Broderbund volume names. Side 1 is named CARMEN.EUROPE, and side 2 is named SIDE2. DO NOT copy their messed-up ProDOS!

7 Copy a "normal" ProDOS to the CARMEN.EUROPE side.

I haven't run into a secondary protection check yet, so the above may be enough to get you a working copy of *Where in Europe is Carmen Sandiego*, at least until they change the protection scheme!

Michael Javorka

Softkey for...

Stephen King: The Mist

Mindscape/Alert

■ Requirements

- Apple II or compatible
- DOS 3.3 System Master disk
- One blank disk
- A sector editor (I use the one in *Copy II Plus*)

This all-text adventure is quite easily deprotected. The game itself isn't too bad. It plays pretty close to the short story of the same name, but it still has a poor ending, as if there may be a sequel or continuation.



- 1 Boot your DOS 3.3 system disk.
- 2 Tell DOS to ignore checksum and epilop errors and use *COPYA* to copy the disk.

POKE 47426,24
RUN COPYA

- 3 Make the following sector edits to the copy you just made.

Trk	Sct	Byte(s)	From	To
\$00	\$0C	\$94-96	4C 00 C6	EA EA EA

The sector edit stops the reboot function. Now you can save all the wear and tear on your original that comes from all the (very slow) disk accessing.

Softkey for...

Accolade Comics

Accolade

■ Requirements

- An Apple II or compatible
- A copy program that ignores errors (I use *Copy II Plus* disk copy)
- Six blank disk sides
- A sector editor

I saw this software on the *Most Wanted List* and figured I would try my hand at it. I'm pretty new at cracking and I don't know much about machine language so I figured that if one deprotection procedure works on an Accolade game, why not try it on another. I don't know the intricacies of it, but just follow the steps below and it should work.

I first copied the disk with a normal copy program and got an error on track \$22 (usual for Accolade games). When I booted the copy I got the title and all the rest of its propaganda. I pressed a key to start the game, it accessed the disk and grinded to a halt. Something needed to be changed.

I first scanned the disk for the hex string A0 09, the protection used on *Law Of The West*. I found it in five places. As far as I know, only three of these have to be changed. The first two that need changing I found on track \$11, sector \$2, bytes \$B6 and \$B7 and on track \$20, sector \$8, bytes \$12 and \$13. I changed the first byte in each to 18 and the second byte in each to 60. These two pieces of code are exactly alike, so I figured they had to be important. I wrote the sectors back to the disk and booted it up again. This time it got past the title screen but hung up when the screen cleared to white and the little watch icon appeared. The disk drive constantly accessed the disk. I knew I had missed something.

The next A0 09 that I changed was found on track \$07, sector \$0D, bytes \$B8 and \$B9, but the difference here is that in byte \$B7 there

is a JSR to memory location \$9A0 (BD A0 09). I changed all three bytes to EA's (NOP), wrote it back to the disk and booted again.

Ta-da! It boots perfectly. You now have a deprotected version of *Comics* (a very stupendous game - but then maybe I'm biased since I'm a comic book collector at heart!)

- 1 Copy side A of *Comics*, ignoring the read error on track \$22.

- 2 Make the following sector edits (to Side A only):

Trk	Sct	Byte(s)	From	To
\$07	\$0D	\$A7-A9	BD 3F BD	EA EA EA
\$11	\$02	\$B6-B7	A0 09	18 60
\$20	\$08	\$12-13	A0 09	18 60

- 3 Copy the other five sides with a normal copy program.

As a note of interest, one of my friends has a II plus and he tried this softkey. It did not work on his machine. I have a Laser 128EX and it works just fine. There you go. Have fun Private Spy!

Have fun with the games and keep supporting COMPUTIST. This magazine is very good. Keep the submissions coming, and when the time comes, be sure to renew your subscription. If anyone would like to contact me, write to me at this address:
2318 Catasauqua Rd., Apt. V-8, Bethlehem, PA 18018.

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- Algeblaster Davidson & Associates
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- Apple Super Pilot ?
- Artificial Intelligence Scholastic
- Balance of Power Mindscape
- Bandits Sirius Software
- Bank Street Filer Broderbund
- Bank Street School Filer Sunburst Communications
- Barron's Computer SAT ?
- Battlegroup SSI
- Battlezone Atarisoft
- Brain Bank The Observatory
- Burgertime ?
- Calendar Crafter Hgs MECC
- Captain Goodnight ?
- Certificate Library Vol. 1 ?
- Championship Baseball ?
- Chuck Yeager's Advanced Flight Trainer Electronic Arts
- Colossus IV Firebird

- Creature Venture Softsmith Co.
- Cross Clues Science Research
- Cross Country Rally Softsmith Co.
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- David's Midnight Magic ?
- DB Master V4.0 Stoneware
- Deathlord Electronic Arts
- Deep Space Sir Tech
- Dome Bookkeeping Systems Dome Accounting
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- Joust Atarisoft
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- Magic Spells The Learning Company
- Marble Madness GS Electronic Arts
- Mathblaster Davidson & Associates
- Maxi Golf Thunder Mountain
- Micro League Baseball Micro-league Sports
- Microzine \$#24-25 Scholastic
- Mr. Do Datasoft
- Mr. Pixel's Cartoon Kit Mindscape
- Ms. Pac-Man Atarisoft
- Never Ending Story Datasoft
- Odin Odesta
- Peeping Tom Microlab
- Pensate Penguin
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- PFS File & Report Hgs Software Publishing Corp.
- Pirates Microprose Software
- Prime Plotter Primesoft Corp.
- Print Master Unision World
- Pro-Football Sports Judge
- Publisher Springboard
- Quiz Castle Didatech Software
- Rescue On Fractalis Epyx
- Ruski Duck Softsmith Co.
- Scrabble Electronic Arts
- Snoggle Broderbund
- Space Eggs Sirius
- Space Journey Mindscape
- Stellar 7 Penguin Software
- Success with Typing v1.2 Scholastic Software
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- Think Tank Living Video
- Tower of Myraglen II (Hgs) ?
- Toy Shop Broderbund
- Ultima V Origin Systems
- Visiblend Microlab
- Wheel of Fortune ?
- Where in the USA is Carmen San Diego Broderbund
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COMPUTIST

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THE A.S.P. (Against Software Protection)

Softkey for...

PC-Draw

?

Originally submitted to Whit Wyatts BBS. Please note that these unprotect procedures involve from 4 hours to 40 or more hours of single stepping through code and figuring out the intent of the original code. So I would appreciate it when you pass this on to other boards you do not alter this or try to take credit for my lost sleep.

If you have a hard disk or want to create a backup copy that is not tied into the PC-Draw diskette (in case your only copy goes bad) this patch will remove the copy-protection completely.

As always this is for your personal peace of mind only, it is not meant to bypass any copyrights. You are, by law, bound by your purchase license agreement.

If you have a hard disk and want to put the program on such why should you be tied to a floppy. You had to give up a lot of "Big Macs" to get your hard disk.

This write up assumes that you are familiar with DEBUG.

1 Format a equal number of DOS 2.0 or 2.1 disks as system disks. Label each of the 2.x formatted disks the same as each one of the original 'PC-Draw' disks.

2 Copy the files from the original disks to the 2.X formatted disks on a one-for-one basis, using the 'COPY' command. Place the original disks in a safe place, we don't need them any more.

3 Place 'disk 1' in the 'A' drive.

RENAME DIAGRAM.EXE DIAGRAM DEBUG DIAGRAM

4 You now need to NOP a range of several instructions. First you should see the following code at address:

```
CS:B2C1 EBF7 JMP B2BA
      B2C3 EBOA JMP B2CF
```

If you don't, you may have a different version so don't proceed any farther. First do a search for the following code:

```
S CS:100 L EFFF CD 13 72 21
```

```
CD13 INT 13
7221 JB ZZZZ Where ZZZZ is an address,
      mine was "B2C6"
```

DEBUG will return the address where the string is found in the form "XXXX:YYYY".

My address was 8F1:B2A1. Enter the following to change "INT 13" to "STC" and "NOP", this will force a jump to the NOP's to be entered later.

```
E YYYY F9 90
```

My 'YYYY' was 'B2A1'

5 Use the address at 'ZZZZ' above to do the following.

```
E ZZZZ 90 90 90 90 90 90 90 90 90
```

Again my 'ZZZZ' was 'B2C6'. There are 9 (nine) NOP's.

6 Save the changes and quit DEBUG

W

Q

Rename DIAGRAM.EXE

Note: PC-Draw is now completely unprotected. If you want to use 'PC-Draw' from hard disk or RAM disk you must use the correct 'ASSIGN=', since 'PC-Draw' appears to have drives hard coded.

Mike Basford

Softkey for...

MS Word

Microsoft

The protection scheme for MS Word is quite good. The last track is formatted with 256 byte sectors. One sector, however, has an ID that says it is a 1K sector. If you try to read it as a 256 byte sector, you'll get a sector not found. You can read it as a 1K sector with a guaranteed CRC error, and you will get the data and other sector overhead from 3+ sectors. They read it as 1K, and use the bytes after the first 256 for decryption. These bytes constitute the post-amble of the sector, the inter-sector gap, and the preamble to the next 256 byte sector. If it's not formatted with the correct inter-sector gap, the decryption key is different and the incorrectly decoded program bombs.

The best way around this is to modify the MWCOPY program so it will let you make more than one copy. The following mods will allow unlimited backup copies (and you can leave the write protect tab on your master disk).

We will copy MWCOPY to another disk, using another name (MWCP) so you'll know it's the special version, and then modify MWCP.

1 Insert the master disk in drive A and a disk with DEBUG on it in drive B.

```
COPY MWCOPY.COM B:MWCP.COM
B:DEBUG MWCP.COM
```

```
E103
```

```
XXXX:0103 0x.00
```

```
E148
```

```
XXXX:0148 A5.A7
```

```
E194
```

```
XXXX:0194 02.04
```

```
E32a
```

```
XXXX:032a 1C.1E
```

```
E32e
```

```
XXXX:032E 1C.1E
```

```
E3372
```

```
XXXX:3372 01.03
```

```
ECFE
```

```
XXXX:0CFE CD.90 26.90
```

```
XXXX:0D00 5B.90
```

```
E4AB
```

```
XXXX:04AB 1B.84
```

```
E69A
```

```
XXXX:069A C1.B9 38.FF 28.B9
```

```
E7B3
```

```
XXXX:07B3 A2.5F 08.E9
```

```
E66F
```

```
XXXX:066F E5.D8
```

```
XXXX:0670 94.29 90.FF 29.B9
```

```
E3375 This allows copying to harddisk.
```

```
XXXX:3375 48.4A
```

```
W
```

Writing 332D bytes.

```
Q
```

```
MWCP
```

Try making a copy. Just follow the prompts in the program, except when they ask you to remove the write protect tab. Leave the write-protect on the master.

Softkey for...

Zork I

Zork II

Infocom

1 Put your ZORK I or II disk in drive A and a blank disk in drive B. Be sure that your original is WRITE-PROTECTED!!!

Diskcopy A: B: Ignore the errors on tracks 1-3!

2 Take out the ZORK disk and insert a DOS disk in A.

```
DEBUG
```

```
R CS
```

```
:0000
```

```
R DS
```

```
:0040
```

```
R IP
```

```
:7C00
```

```
R ES
```

```
:0000
```

```
L 0:7C00 0 0 8
```

```
G = 0:7C00 0:7C32
```

```
G 0:7C44
```

Don't take a shortcut here!

```
R ES
```

```
:04C5
```

```
G 0:7C46
```

```
E 7C0:007C 02 08
```

IBM Reader's Data EXchange IBM

```

W 800:0000 1 8 8
E 07C0:007C 03 04
G 0:7C44
R BX
:0000
G 0:7C46
E 07C0:007C 02 08
W 04C5:0000 1 10 8
E 07C0:007C 03 04
G 0:7C44
R BX
:0000
E 07C0:007C 02 08
W 04C5:0000 1 18 8
E 0:7C41 B8 08 02
W 0:7C00 1 0 8
Q
    
```

Take out your new disk in drive B and write-protect it. It is now DISKCOPY-able.

Softkey for...

Execu-Vision

?

If you have a hard disk or want to create a backup copy that is not tied into the Execu-Vision diskette (in case your only copy goes bad) this patch will remove the copy-protection completely.

1 Format 4 system disks under 2.0 or 2.1. Label each one according to the original 'Execu-Vision' diskettes.

2 Copy the files from the original diskettes to the corresponding 2.X formatted diskette. Place the original 'Execu-Vision' diskettes back in the manual we will no longer use them.

3 Place the disk labeled 'Program Disk' in the A drive.

```

Rename EV.EXE EV
Rename CREATE.EXE CREATE
DEBUG EV
    
```

4 Here are the changes you need to make.

```
S 1000:0 L EFFF 83 3E 0C 00 00
```

DEBUG will respond with: 1000:XXXX where 'XXXX' is an address.

```
U 1000:XXXX
```

You should see:

```

1000:XXXX 833E0C0000 CMP WORD PTR [000C], -00
      YYY 747F      JZ ZZZZ ; Where ZZZZ is
                        a jump on zero.
    
```

```

E 1000:YYYY EB 7F
W
Q
    
```

5 Change the file name again.

```
Rename EV EV.EXE
```

6 Do the next file.

```
DEBUG CREATE
```

Follow the exact same procedures as in step 4.

```
Rename CREATE CREATE.EXE
```

7 Put the 'Intro Demo Disk - Drive A' into drive 'A'.

```
Rename T.EXE T
DEBUG T
```

Follow the exact same procedures as in step 4.

```
Rename T T.EXE
```

Note: now all of 'Execu-Visions' copy-protection is removed, and you may DISKCOPY the unprotected disks as required. Since the program is compiled BASIC I did not remove the drive assignments. If you want to load it to a RAM or hard disk you will need to do the correct 'ASSIGN A='; 'ASSIGN B=' steps.

As a further note: the programs 'SETUP.COM' and 'S.COM' load resident and disable INT 5 (shift-print screen). If you don't want shift-prtsc disabled remove that program from the AUTOEXEC.BAT.

IBM RDEX END

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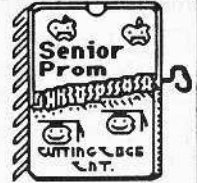
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