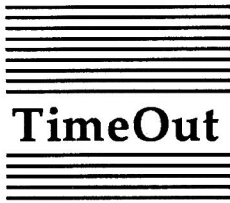




TimeOut DeskTools II

by Dan Verkade,
Glenn Clawson
and
Randy Brandt



TimeOut DeskTools II™

Powerful Desk Accessories for AppleWorks™

by

Dan Verkade,

Glenn Clawson,

and

Randy Brandt

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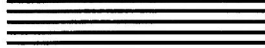
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Chapter 1



**Welcome to TimeOut
DeskTools II**

TimeOut DeskTools II™ is part of the TimeOut AppleWorks™ enhancements series. All of the products in this series work *inside* AppleWorks and are quickly and easily accessed.

Because TimeOut DeskTools II is integrated with AppleWorks, you can use these new applications without leaving AppleWorks. This makes TimeOut DeskTools II quick and easy compared to other AppleWorks enhancements.


About this manual

The remainder of this manual is divided into two main sections. Chapter 2 describes how to install TimeOut and the rest of the chapters describe each DeskTools II application.

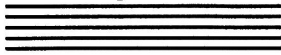
If you haven't already installed TimeOut on your AppleWorks Startup disk, you will need to read all of chapter 2 *Installing TimeOut*. If TimeOut is already installed on your copy of AppleWorks, read only the section *Copying Applications to the TimeOut Applications Disk* on page 9.

If you're not already familiar with AppleWorks, you may want to refer to your AppleWorks manuals before starting.

Note: This manual assumes that you are familiar with AppleWorks and the AppleWorks method of doing things (e.g. selecting menu options, answering questions, loading files, escaping, etc.) If you're not, please refer to the appropriate sections of your AppleWorks manuals.



Chapter 2



Installing TimeOut

TimeOut DeskTools II is provided on both 5.25-inch and 3.5-inch disks. Before using your *TimeOut DeskTools II* disk, please take a moment to make a backup copy of the disk you will be using. Since the disks are not copy-protected, you may use any standard disk duplication program such as *Filer*, *System Utilities*, *Copy II Plus*, *Diversi-Copy*, or Beagle Bros' *TimeOut FileMaster*. Be sure to write-protect and safely store your original disk so you don't accidentally overwrite it. (Use the backup copy when using TimeOut DeskTools II). Please do this now.

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TimeOut Compatibility

TimeOut is the controlling program that modifies AppleWorks and makes it possible for you to use applications like TimeOut DeskTools II from *inside* AppleWorks. TimeOut applications are actually integrated into the AppleWorks environment, unlike other AppleWorks enhancements you may be familiar with. This revolutionary advancement makes them more powerful, faster and easier-to-use.

TimeOut is compatible with AppleWorks versions 2.0 and later. If you have an earlier version, contact your dealer about getting an update. You must also have the USA version. TimeOut does not work with foreign language versions of AppleWorks.

TimeOut is compatible with most enhancements to AppleWorks including *Super MacroWorks*, *AutoWorks*, *Applied Engineering's desktop expander*, *Checkmate's desktop expander*, and the *Pinpoint accessories*.

If you are installing TimeOut with other AppleWorks enhancements, we recommend that you install TimeOut last. The only exceptions are if you are also using AutoWorks or the Pinpoint desktop accessories. Install these after installing TimeOut. Always install Pinpoint last.

The Big Picture

Once your backup copy has been made, you will need to install TimeOut DeskTools II so it can be used with AppleWorks. There are three steps to the installation process:

1. **Read Notes.** These notes indicate any changes or additions to your instruction manual.
2. **Update AppleWorks.** AppleWorks must be updated with TimeOut. TimeOut is an AppleWorks patch program that allows you to run TimeOut applications* inside of AppleWorks. Installing TimeOut only needs to be done once. If you have already installed TimeOut on your AppleWorks program, you can skip this step.
3. **Copy files to TimeOut applications disk.** A TimeOut applications disk is any disk that contains all of the TimeOut applications* you will be using. It can be a 5.25-inch disk, a 3.5-inch disk, a RAM disk, a hard disk, or any other ProDOS device. It can also be a subdirectory on any of these devices. If you do not own any other TimeOut applications and will only be using TimeOut DeskTools II, you may use your backup copy of TimeOut DeskTools II as your TimeOut applications disk.

**WHAT IS A TIMEOUT APPLICATION? A TimeOut application is simply a program that runs inside AppleWorks. The programs on the DeskTools II disk are TimeOut applications (i.e. Area Codes, Calculator+, Clipboard Viewer, etc).*

Read Notes

Boot your TimeOut DeskTools II disk by placing it in your boot drive and turning your computer off and back on or by pressing Control-Open-Apple-Reset.

Soon the title screen will appear. It contains a menu with the following options:

1. Read NOTES (Manual Updates)
2. Update AppleWorks (Apply TimeOut)
3. Copy files to TimeOut applications disk
4. Start up AppleWorks
5. Quit to BASIC

Select Read NOTES. This will inform you of any changes to TimeOut DeskTools II that have been made since this instruction manual was printed.

After you have read the NOTES, you will return back to the TimeOut startup screen.

Update AppleWorks

Select Update AppleWorks to apply TimeOut to your copy of AppleWorks. You may skip this step if you have already applied TimeOut to AppleWorks.

Sorting the TimeOut Menu

You must now specify whether or not you would like TimeOut to sort the list of TimeOut applications in the TimeOut menu. The names will be sorted alphabetically if you specify *Yes*. Otherwise, they will appear in the same order as they do in the disk catalog. By specifying *No*, you decide the order of the names in the TimeOut menu by placing them on your TimeOut applications disk in the order that you want.

Multiple TimeOut Applications Disks

If you are using 5.25-inch disks and have several TimeOut applications that will not all fit on one disk, you may want to indicate `Yes` to multiple applications disks. This allows TimeOut to list applications from more than one disk in a TimeOut menu.

If you cannot fit all of your TimeOut applications on one disk, you could also use the `Add applications` feature in TimeOut Utilities (see page 90) to create multiple TimeOut menus. Using this feature, each applications disk will have its own menu.

NOTE: Don't confuse multiple applications disks with multiple menus. The multiple applications disk feature is designed to allow 5.25-inch users to put applications from different disks into the same TimeOut menu. The multiple menu feature is designed to allow the use of more than 30 TimeOut applications and to allow adding applications at any time while using AppleWorks.

Location of TimeOut Applications

The next step is to indicate what the location of the TimeOut applications disk will be. This information is used by TimeOut (while you're in AppleWorks) to determine where to look for the TimeOut applications (such as TimeOut DeskTools II). The TimeOut applications disk is the disk that will contain all of your TimeOut applications. This can be a hard disk, a RAM disk, a floppy disk, or any ProDOS disk device.

You select the location of your TimeOut applications disk from the following menu:

1. AppleWorks STARTUP disk
2. Slot and Drive
3. ProDOS directory

If you have a hard disk or a 3.5-inch disk, you may want to place your TimeOut applications in the same directory or subdirectory with your AppleWorks STARTUP program. This helps you to avoid disk swapping by combining AppleWorks and TimeOut applications on the same disk.

If you have more than one disk drive, you may want to dedicate one drive to your TimeOut applications. You may specify either Slot and Drive or ProDOS directory to indicate where the TimeOut applications will be. For more information on ProDOS directories, see the section in your AppleWorks manual called "ProDOS, prefix for filenames."

Location of AppleWorks

The next step is to indicate where your AppleWorks STARTUP program is so TimeOut can be installed. You may specify either Slot and Drive or ProDOS directory. After indicating the location of AppleWorks, insert your AppleWorks disk (the STARTUP side if you are using 5.25-inch disks) and press any key to apply TimeOut to AppleWorks.

Note: This is a one time modification. If you add more TimeOut applications later, you don't need to modify AppleWorks again.

Re-installing TimeOut

After you have already installed TimeOut, if you need to change the applications disk location or the order of the menu, you can re-install TimeOut by following the same steps for initial installation. This will only work if you have not installed any other AppleWorks enhancement programs since you installed TimeOut. If you have, then you may need to completely reconfigure AppleWorks.

Copying Applications to the TimeOut Applications Disk

If TimeOut DeskTools II is your only TimeOut application, you may want to use your backup copy of the TimeOut DeskTools II disk as your TimeOut applications disk. If so, skip this step.

To copy the DeskTools II files to your TimeOut applications disk, select `Copy files to TimeOut applications disk` from the main menu.

Now, specify the location of the TimeOut applications disk (destination disk). You will need to specify either the slot and drive or the ProDOS pathname of the applications disk.

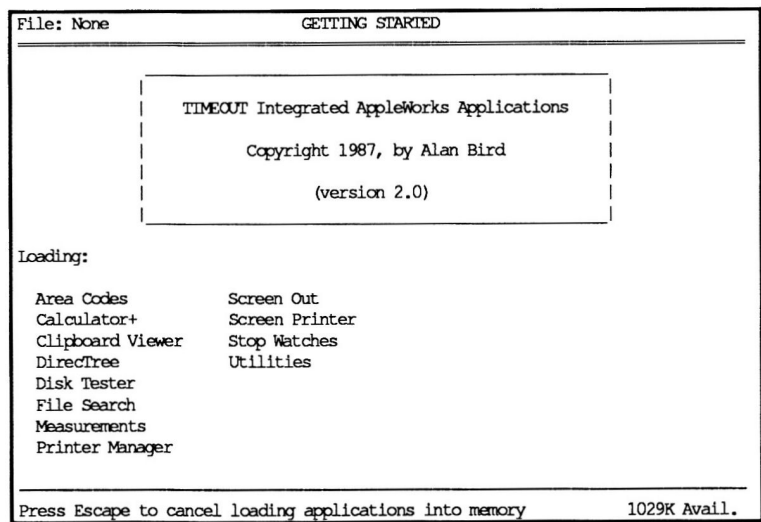
Once the destination disk has been specified, insert the destination disk in its drive and press the Space Bar. Any TimeOut applications already on the destination disk will be listed on the right half of the screen. As each TimeOut application is copied from the source disk to the destination disk, the name will be highlighted on the left and right sides of the screen.

When all the files have been copied, press the Space Bar to return to the main menu.

Start up AppleWorks

After you have applied TimeOut to AppleWorks and have created a TimeOut applications disk, you are ready to start up AppleWorks. Either boot your AppleWorks disk or select `Start up AppleWorks` from the main menu. If you have not already indicated the location of AppleWorks, you will need to do so now.

When you start up AppleWorks with TimeOut installed, you should see the TimeOut title screen before you reach the AppleWorks main menu. TimeOut will scan your TimeOut applications disk looking for TimeOut applications.



Note: If you receive a message indicating that TimeOut is getting errors trying to load the TimeOut applications, it means that TimeOut is unable to find the applications. At this point you must either insert your applications disk (if you have not already done so) and try again or specify a different location. If you have inserted your applications disk and are still getting errors, you either do not have any applications on the disk or

your disk has been damaged. You may need to create a new applications disk.

If you do not see a TimeOut title screen, you have not installed TimeOut correctly. Go back to page 6 and start over.

As TimeOut identifies each TimeOut application, they are listed on the screen. An asterisk ("*") before the application name indicates that it is memory-based. You may press Escape at any time to prevent memory-based applications from loading into memory (see page 88 for an explanation of memory-based applications). This doesn't affect your ability to use them, it just makes them disk-based.

If you have specified that you are using multiple TimeOut applications disks, insert each disk and answer Yes when asked Read another TimeOut applications disk? Answer No when the last applications disk has been read.

Accessing TimeOut Applications

While you are using AppleWorks, you may call up the TimeOut menu at any time by holding down the Open-Apple key and simultaneously pressing the Escape key. A menu similar to the following will appear (you may have fewer or more applications than this):

TimeOut Menu	
1.	Area Codes
2.	Calculator+
3.	Clipboard Viewer
4.	DirecTree
5.	Disk Tester
6.	File Search
7.	Measurements
8.	Printer Manager
9.	Screen Out
10.	Screen Printer
11.	Stop Watches
12.	Utilities

Use the Up and Down arrow keys or type a number to select an application, then press Return (press Escape if you don't want to make a selection). If your applications are not memory-based, be sure your TimeOut applications disk is in the drive when you press Return. Otherwise, you will be prompted to insert your TimeOut applications disk. If you are using multiple applications disks, be sure to insert the correct one.

Memory usage

You will notice with TimeOut installed that you have less desktop memory for your AppleWorks documents. TimeOut itself takes up some of the memory.

Memory-resident TimeOut applications also take up desktop memory. If you are short on desktop memory, reconfigure your applications so they are disk-based.

However, for maximum speed, make your TimeOut applications memory-based or run them from a RAM disk.

Control-Reset Patch

When you install TimeOut on your AppleWorks Startup disk, TimeOut makes a patch to AppleWorks so that Control-Reset will take you to the Main Menu instead of the machine-language monitor.

This patch is only added for use in the event that AppleWorks hangs or crashes. We do not recommend using it as a means of getting to the Main Menu!

Chapter 3

Area Codes

by Dan Verkade

Area Codes allows you to find area codes for major cities in the United States and Canada. You may also enter an area code to find all of the major cities using that code. A bonus feature is the Open-Apple C command which lists all states with their two-character state abbreviation. Area Codes contains listings for well over 500 major cities.

Using Area Codes

1. Press Open-Apple Escape and select `Area Codes` from the TimeOut menu. You will see this prompt at the bottom of your screen:

Type entry or use OA commands

2. Press Open-Apple A to see a handy chart showing all 50 states (and the District of Columbia) with their two-character state codes. You may use Open-Apple H to print the chart.
3. Press Open-Apple C for a listing of the capital cities of all 50 states and their area codes. Area Codes will display 12 cities at a time; press the Space Bar to see more. Press Escape if you wish to exit.
4. Press Open-Apple L for a listing of all cities contained in Area Codes. These cities are in alphabetical order by state. Press Escape if you wish to exit.

5. Press Open-Apple ? if you need help.
6. Press the Space Bar to return to the Area Codes menu.
7. Let's search for a city. Enter `San Diego` (or `die`; partial matches work as well) and you'll see this listing:

```
San Diego California (CA) 619
```

8. Press the Space Bar to return to the Area Codes menu.
9. Now search for a state. Enter `wyo` to see this:

```
All cities Wyoming (WY) 307
```

At the bottom of the screen you will see this prompt:

```
See all cities within this state? No Yes
```

10. Press `Y` to see all of Area Codes' cities in Wyoming. They will all have the same area code. Once all of the cities in a state have been displayed, Area Codes will return to the main prompt. If you wish to continue looking for matches, you must answer `No` to the `See all cities...` prompts.

11. Press the Space Bar to return to the Area Codes menu.
12. Enter `calif` to see this message:

```
** City name needed ** California (CA)
```

This message means there are multiple area codes in the state, so a specific city is needed to determine the area code. At the bottom of the screen you will see this prompt:

```
See all cities within this state? No Yes
```

13. Selecting `No` will continue looking for other occurrences of `calif`. Select `Yes` to see all of the cities in the state. If there are more than will fit on the screen, the prompt `more...` will appear in the lower right corner. Press the Space Bar to see more, or press `Escape` to re-enter a city, state, or area code.
14. Now try entering an area code. To find area codes of the rich and famous, enter `213` or `407`.

Unlisted Numbers

If you enter a city, state, or area code that Area Codes does not recognize, the message not found will be displayed. For example, entering North Pole will display,

NORTH POLE not found



Chapter 4



Calculator+

by Dan Verkade

Calculator+ is a multi-functioned RPN (Reverse Polish Notation) calculator which includes basic math, scientific, and financial functions.

It handles numbers with up to 16 places of significance and exponents of 10 to + or - the 255th power. Decimal precision is selectable and you can optionally choose to force scientific notation at all times.

A number may be imported from the Spreadsheet and results can be entered into your applications at the current cursor position.

A set of 14 mathematical and physical constants is provided.

Numbers may be entered and displayed in decimal or hexadecimal.

Trigonometric functions, logarithms, and present and future values can all be computed with Calculator+. Trigonometric functions can be expressed in degrees, radians, or gradians.

Using Calculator+

Calculator+ uses Reverse Polish Notation (RPN) as its method of entering data, as opposed to algebraic data entry. Algebraic data entry is probably the method you are used to; the calculation data and operators are entered in the order they should be performed, with parentheses indicating operations which need to be performed first.

Tutorial on RPN and stacks

To evaluate the equation $(1 + 2) * (3 + 4)$ using algebraic logic, solve the parenthetical values first. This gives you $3 * 7$, which then results in a final answer of 21. Algebraic equations generally move left-to-right except for certain exceptions such as parentheses.

Using the RPN system, segments of the numeric data are entered first and then the operators are entered to act upon the data. As data is entered, it accumulates on a four-place stack.

The first number entered is placed on the top of the stack in the X position. When another X is entered, the first X is moved down the stack into the Y position. The Y value is moved to Z, and Z is moved to T. The T value is lost.

You can see all four stack positions with Calculator+; they are always displayed in a window titled `Stack` in the upper left corner of the screen.

Let's observe this process occurring. Follow these steps and watch the stack.

1. Press Open-Apple Escape and select `Calculator+` from the TimeOut menu. The stack window should look like this:

```

  Stack
  |-----|
  | X: 0   |
  | Y: 0   |
  | Z: 0   |
  | T: 0   |
  |-----|

```

If it doesn't, select option #1, `Stack`, from the menu, and press `C` to clear the stack. See the reference section for further details about the Stack options. If there is not one zero on each line, select option #13, `Options`, and press `F` two times to change the format to floating.

2. Select option #2, `Enter`. Three choices appear at the bottom of the screen: `X`, `Exp`, and `Import`. Select `X` by pressing the `X` key. See the reference section for further details on the `Enter` functions.
3. Enter `1` and press `Return`. The number is displayed at the top right of the screen and in the `X` position of the stack window.
4. Enter `2` and press `Return`. Observe the stack window, noticing that the `1` you entered previously is now in the `Y` position and the `2` you just entered is the new `X`.

NOTE: If you wish to change X without affecting the other positions on the stack, press Open-Apple Return after entering the number.

5. Exit the `Enter` function by pressing `Return` or `Escape`.
6. Now that we have data on the stack, we can perform a calculation. Think of the stack positions as variables. `X` is equal to 2 and `Y` is equal to 1. Select option #3, `x + y` to add the variables. The result is 3. It is displayed in the result window and is also our new `X` value. Because `Y` has been combined with `X`, the previous `Z` is moved into `Y` and `T` is moved to `Z`. `T` is set to 0. Are you starting to figure out why they call this "Reverse Polish Notation"?

Calculations are always performed on the uppermost values on the stack. When a function (a fancy name for a mathematical operation) operates on only one variable, that variable will always be X. When two variables are required, they will always be X and Y. For example, the addition function always adds X to Y, never X to Z or X to T.

Functions will always return their result into X. If no other variable was involved, the stack will remain unchanged except for X. If two variables are involved (always X and Y), the result will be in X and the remainder of the stack will move up by one position to take the place of Y. T will always be set to 0.

7. Let's continue solving the equation. Select `Enter`, press `Return`, and enter the numbers `4` and `3`. The stack should now look like this:

```

Stack
-----
| X: 3
| Y: 4
| Z: 3
| T: 0
-----

```

8. Select option #3, $x + y$. X becomes 7 and Z moves up to Y. Now the stack looks like this:

```

Stack
-----
| X: 7
| Y: 3
| Z: 0
| T: 0
-----

```

←old X + old Y
←old Z

9. Select option #5, $x * y$, to multiply X by Y. The result (21) is placed in X and displayed in the result window.

Did you notice how easy it was to add and then multiply in steps 8 and 9? As equations become longer and more complex, RPN becomes more efficient than the algebraic approach. It may seem awkward

to use a stack at first, but with practice you will eventually find RPN to be quicker and more intuitive than the algebraic method.

Reference

In this section, all Calculator+ options are described. The order corresponds to the Calculator+ menu.

Stack

These options are for stack manipulation.

The stack is saved when you exit from Calculator+ and remains intact as long as you do not quit AppleWorks. When Calculator+ is selected from the TimeOut menu the previous stack will be restored. Use the `Clear` option if you wish to reset it to 0.

Prior

Recalls the stack as it was immediately after the last `Enter` or after the last stack `Save` (see below). It can be useful for trying different operations on the same data.

Roll

Rolls or rotates the stack one position. The stack always rolls down in this manner: $X \rightarrow Y, Y \rightarrow Z, Z \rightarrow T, \text{ and } T \rightarrow X$. This is useful in complex calculations.

$X \leftrightarrow Y$

Exchanges X and Y. This is useful in complex calculations. By using stack rolls and exchanges of X and Y the stack items can be reconfigured into any order.

LastX

Replaces the current X with the last X entered from the `Enter` option. The old X gets overwritten and the stack does NOT roll.

Save

Saves the current stack for later recall. The stack is recalled using the `Prior` option discussed above. This was provided as a means of saving the results of an intermediate calculation.

Clear

Clears the stack to all 0's. `Prior` and `LastX` will still recall their respective information; they do not get cleared.

Enter

These options allow different ways of entering data for your calculations.

X

Allows the entry of data onto the stack. Up to 16 digits may be entered. To enter a negative number, the minus sign (-) must be the first symbol entered. A decimal point may also be entered. In hex mode, discussed later, A-F are also valid symbols while a minus sign or a decimal point are not allowed. Pressing `Return` accepts the new X and prompts for another value. Pressing `Return` without having entered a value or pressing `Escape` will exit this option. Pressing `Open-Apple Return` will replace X with the entered value without rolling the stack.

Exp

Forces the X value on the stack to have the base 10 exponent as entered here. For example, if X contains a 2 and you enter 5 using `Exp`, X will become $2 * 10^5$ or 200000. If X contains a 2 and you enter 18 using `Exp`, X will become $2 * 10^{18}$ which would be represented

as 2.0 e 18. Valid exponents are between -255 and +255; exponents outside of this range won't be accepted. Exponents entered while in hexadecimal mode will be ignored. For more information on exponential notation see Format, below.

Import

Defines X with the value of the Spreadsheet cell highlighted when Open-Apple Escape was pressed to activate TimeOut. Don't import from a blank cell; a random number will be returned.

x + y

Adds X to Y. The result (sum) is returned in X and the stack is bumped up one level, bringing a zero into T.

x - y

Subtracts Y from X. The result (difference) is returned in X and the stack is bumped up one level, bringing a zero into T.

x * y

Multiplies X by Y. The result (product) is returned in X and the stack is bumped up one level, bringing a zero into T.

x / y

Divides X by Y. The result (quotient) is returned in X and the stack is bumped up one level, bringing a zero into T.

Constants

Fourteen useful constants are provided in this menu. Selecting a constant from the menu places that constant into X and bumps the stack down one level. T is lost. The constants are as follows:

Pi	3.141592653589793
Speed of light	2.9979250 e 8 m sec-1
Electron charge	1.6021917 e 19 C
Avogadro's number	6.022169 e 26 k mole-1
Planck constant	6.626196 e 34 J-sec
Rydberg constant	1.09737312 e 7 m-1
Gas constant	8.31434 e 3 J-k mole-1K-1
Boltzmann constant	1.380622 e 23 J K-1
Gravitational constant	6.6732 e 11 N-m ² kg-2
Faraday constant	9.64867 e 7 k mole-1
Electron charge to mass ratio	1.7588028 e 11 C kg-1
Compton electron wavelength	2.4263096 e 12 m
Compton proton wavelength	1.3214409 e 15 m
Compton neutron wavelength	1.3196217 e 15 m

Math

Several additional mathematical operations are found in this menu.

x ^ 2

X to the power of 2 (x squared). This function multiplies X by itself. The result is returned into X; the rest of the stack remains unchanged.

x^y

X to the power of Y. This function multiplies X by itself Y - 1 times. For example, 4 to the power of 3 is $4 * 4 * 4 = 64$. The result is returned into X and the stack bumped up one level. T becomes 0.

$1/x$

One (1) divided by X. Only X is changed; the remainder of the stack is unaffected.

Square root (x)

Square root of X. The result times itself will be equal to X. Only X is changed; the remainder of the stack is unaffected.

Cube root (x)

Cube root of X. The result times itself and then times itself again will be equal to X. Only X is changed; the remainder of the stack is unaffected.

Factorial (x)

Factorial of X (symbolized by $x!$). Any decimal value is first truncated and any negative is dropped, making X a positive integer. X is then multiplied by all of the positive integers less than X. For example, if X is 4.32, the result will be 24 (4 times 3 times 2 times 1). If X is 2, the result is 2 (2 times 1).

+ / -

Inverts the sign of X. The rest of the stack remains unchanged.

Programming

There are eight options in the Programming menu. They all work in both the decimal base and the hexadecimal base. This menu remains after the operation is performed since several of the programming functions may need to be repeated. Use Escape to return to the Main menu.

Any fractional part of the X value will be lost after performing a Programming operation.

Set size

This option selects the integer size in bytes. All of the Programming options operate on an integer. The results of these operations can vary depending on the size of this integer. If the current X value requires a greater number of bytes than what you select, the excess bytes to the left will be filled with zeros. Try this example:

1. Select the hexadecimal base. See Options for information.
2. Enter the number `FF8000`.
3. Select `Programming` from the Main menu.
4. Select `Set size` and enter the number `2`.
5. Notice the X value changed to `8000`.

The integer size is selectable between one and eight bytes and is displayed at the bottom of the Programming menu. After leaving the Programming menu, the integer size returns to its default of eight bytes.

x AND y

Performs a logical AND on all of the bits in the integer. The result is returned in X; Y does not change.

x OR y

Performs a logical OR on all of the bits in the integer. The result is returned in X; Y does not change.

x EOR y

Performs a logical Exclusive OR on all of the bits in the integer. The result is returned in X; Y does not change.

Shift x left

Moves every bit one position to the left. A zero is moved into the right-most bit and the left-most bit is lost.

Shift x right

Moves every bit one position to the right. A zero is moved into the left-most bit and the right-most bit is lost.

Roll x left

Moves every bit one position to the left. The left-most bit is carried around into the right-most bit.

Roll x right

Moves every bit one position to the right. The right-most bit is carried around into the left-most bit.

Scientific

Trigonometric and logarithmic functions are provided in this menu. The trigonometric functions can be expressed in degrees, radians, or gradians. The default expression is radians. See "DRG" under "Options" for more information.

The functions of the various options are briefly explained here; a more exhaustive explanation of the derivation and uses of trigonometry and logarithms is beyond the scope of this manual.

Inverse

Inverts the next single scientific function. For example, the sine of 45 degrees is .7071. The inverse sine of .7071 is 45 degrees. If you know the sine is .7071 and want to determine the degrees, make sure that the DRG option is set to degrees and enter `.7071` for X. Then select the `Scientific` menu, choose `Inverse`, and then select `sine(x)`. The result is 44.999, which you should be able to safely round up to 45 degrees. 45 degrees is referred to as the arcsine of .7071.

The inverse of a cosine is called an arccosine, the inverse of a tangent is called an arctangent, and the inverse of a logarithm is called an antilogarithm. If you understand that, you're better off than most people.

After selecting the `Inverse` option, the word `Inverse` appears in the left corner of the result window to remind you that the next selected operation will be inverted. After that operation, `inverse` is cancelled. You may select `Inverse` a second time to cancel it without using a scientific function.

Sin (x)

Returns the trigonometric sine of X. Only X changes; the remainder of the stack is unaffected. The result may be in degrees, radians, or gradians (see "Options" for more information). Follow this option with `1 / x` from the `Math` options to calculate the secant.

Cos (x)

Returns the trigonometric cosine of X. Only X changes; the remainder of the stack is unaffected. The result may be in degrees, radians, or gradians (see "Options" for more information). Follow this option with `1 / x` from the `Math` options to calculate the cosecant.

Tan (x)

Returns the trigonometric tangent of X. Only X changes; the remainder of the stack is unaffected. The result may be in degrees, radians, or gradians (see "Options" for more information). Follow this option with $1 / x$ from the `Math` options to calculate the cotangent.

Ln (x)

Returns the natural logarithm of X. Natural logarithms have a base of approximately 2.718, which is also referred to as "e". These logs are primarily used in higher mathematics. As with the trigonometric functions, this function changes only X and the rest of the stack remains unchanged.

Base-2 log (x)

Returns logarithms with a base of 2. Only X is changed; the remainder of the stack is unaffected.

Log (x)

Logarithms of base 10, also known as the common logarithms. Only X is changed; the remainder of the stack is unaffected.

Log y (x)

Logarithms of x for any base y. The result is returned in X and the stack is bumped up one level, bringing a zero into T.

Note: The inverse function is unavailable with this option. The inverse of this function can be achieved by using $x ^ y$.

Financial

Eight financial functions are provided by this menu.

They work just like the previously described functions; all numbers are entered, and then the operation is performed. In some functions,

more than one answer is returned; when this occurs, the extra information will be pushed onto the stack. This may replace numbers you've entered earlier, so be sure to follow instructions carefully for each function.

The PIY (Periods in a year) option must be set properly in order to get the correct results. This number is the divisor for dividing the annual interest rate among the periods. It is described in detail in the section on "Options". All of the examples below use the default setting of 12, which means that the annual interest rate is divided among the 12 months in a year.

Interest rates are always entered in terms of percent; in other words, to enter 5 1/2 percent, enter 5.5, not .055.

Before using the financial functions, set decimal places to 2 so that the results will be accurate to the nearest cent. See "Format", below, on changing decimal places.

The financial functions require many numbers to be entered. If you enter a couple of numbers and then make a mistake, remember that you can change X without affecting the rest of the stack if you press Open-Apple Return instead of Return.

Amortization

Returns the information needed to create loan amortization schedules. If you know the annual interest rate, the term in monthly periods, and the payment amount, the amortization information for any period of the loan can be quickly calculated.

Here's a sample amortization schedule. This is for a five-month, \$1000.00 loan at 12% annual interest.

<u>Period</u>	<u>Payment</u>	<u>Principal</u>	<u>Interest</u>	<u>Balance</u>
				1000.00
1	206.04	196.04	10.00	803.96
2	206.04	198.00	8.04	605.96
3	206.04	199.98	6.06	405.98
4	206.04	201.98	4.06	204.00
5	206.04	204.00	2.04	0.00

Calculator+ can derive the information for any month in the table. Here's how to use the amortization function to get the information for the third month of the loan:

1. Select option #2, `Enter` and press `Return` to enter `X`.
2. Enter the monthly payment amount, `206.04`, and press `Return`.
If you're creating a new schedule and don't know your payment amount, first use the `Payment` function described in the next section.
3. Enter the annual interest rate, `12`, and press `Return`.
4. Enter the total length of the loan in months, `5`, and press `Return`.
5. Enter the number of the month for which you want information, `3`, and press `Return`.
6. Press `Return` to leave the `Enter` option. The stack should look like this:

```
Stack
|-----|
| X: 3.00 | ←month to eval
| Y: 5.00 | ←length of loan
| Z: 12.00 | ←interest rate
| T: 206.04 | ←monthly payment
|-----|
```

7. Select option #11, `Financial`.
8. Now select option #1, `Amortization`, and press `Return`. The result window will contain `405.98`. This is the balance owed on the loan after the third payment has been made. The stack window should look like this:

```
Stack
|-----|
| X: 199.98 | ←principal payment
| Y: 6.06   | ←interest payment
| Z: 594.02 | ←total principal paid
| T: 24.10  | ←total interest paid
|-----|
```

`X` contains the amount of the payment which will be applied to principal, `Y` contains the amount of the payment which will be applied to interest, `Z` contains the total principal paid to date

(including the amount from period 3) and T contains the total interest paid to date (including the amount from period 3).

Note: The amortization function destroys the stack. Use the Save Stack option, or use Memory variables if you need to preserve the stack data.

Payment

Calculates the periodic payment required on a loan. You must enter the loan amount, the annual interest rate, and the number of periods in the loan.

For example, assume \$1000 is borrowed for five months at twelve percent annual interest. Here's how to calculate the payment:

1. Select option #2, `Enter`, and press `Return` to enter `X`.
2. Enter the amount, `1000`, and press `Return`.
3. Enter the interest rate, `12`, and press `Return`.
4. Enter the number of periods, `5`, and press `Return`.
5. Press `Return` to leave the `Enter` option.

The stack should look like this (T is not used):

```
Stack
|-----|
| X: 5.00 | ←length of loan
| Y: 12.00 | ←interest rate
| Z: 1000.00 | ←loan amount
| T: 0.00 |
|-----|
```

6. Select option #11, `Financial`.
7. Now select option #2, `Payment`. The payment amount of 206.04 is shown in the result window and in the X position on the stack.

Periodic Deposit

Finds the total amount available in a fixed rate investment (such as a savings account), provided that an equal amount is added to the investment each period.

For example, suppose you decided to save fifty dollars every month to buy your spouse a twenty-fifth wedding anniversary gift. You think the local bank is a good place to save it; their annual interest rate is five and a half percent. You've been married 21 years. Here's how to calculate if you'll be shopping for the present at K-Mart or at Tiffany's:

1. Select option #2, `Enter`, and press `Return` to enter `X`.
2. Enter the periodic deposit, `50`, and press `Return`.
3. Enter the annual interest rate, `5.5`, and press `Return`.
4. Enter the length of investment in months, `48`, and press `Return`.
5. Press `Return` to leave the `Enter` option. The stack should look like this:

```

Stack
-----
| X: 48.00          | ←length in months
| Y: 5.50          | ←interest rate
| Z: 50.00         | ←periodic deposit
| T: 0.00          |
|                  |

```

6. Select option #11, `Financial`.
7. Now select option #3, `Periodic deposit`, and press `Return`. The result window will contain `2677.64`. This could buy a little trinket at Tiffany's or a huge present at K-Mart; take your pick!

Note: The Periodic deposit function assumes that the deposits are made at the beginning of each period and left in the investment until the end of the last period. It will be inaccurate in other cases.

Lump-sum deposit

Calculates the amount of an investment at the end of its life providing that a one-time amount (a Lump-sum) was invested.

Given the Lump-sum in `Z`, the annual interest rate in `Y`, and the number of periods in the life of the investment, the amount at the end of the periods will be returned in `X`.

Let's modify the Periodic deposit example; instead of investing \$50 per month for 48 months (a total of \$2400), let's calculate the result if the full \$2400.00 is invested immediately in a lump sum:

1. Select option #2, `Enter`, and press `Return` to enter `X`.
2. Enter the lump sum, `2400`, and press `Return`.
3. Enter the annual interest rate, `5.5`, and press `Return`.
4. Enter the length of investment in months, `48`, and press `Return`.
5. Press `Return` to leave the `Enter` option. The stack should look like this:

```
Stack
|-----|
| X: 48.00 | ←number of months
| Y: 5.50  | ←interest rate
| Z: 2400.00 | ←lump sum deposit
| T: 0.00  |
|-----|
```

6. Select option #11, `Financial`.
7. Now select option #4, `Lump-sum`, and press `Return`. The result window will contain `2989.08`, an increase of `311.44` over the same \$2400 investment made with periodic deposits. Buy yourself something with the \$311.44!

Present value functions

Present value functions are used to solve problems dealing with the value of money over a period of time.

The values can be found in financial tables, but with `Calculator+`, you don't need to bother with the tables. Since the tables generally use whole numbers for the interest rates, you need to interpolate for in-between amounts. With `Calculator+`, no interpolation is necessary, you can use any interest rate with up to 16 significant digits.

IMPORTANT: Present value tables are usually based on a particular interest per period, so set `PIY` to "1" in order to match the tables. See "Options" for more details of the `PIY` function.

All four of the present value functions are used in the same manner:

1. Enter the periodic interest rate and press Return.
2. Enter the number of periods and press Return.
3. Press Return to leave the Enter option.
4. Select option #11, Financial.
5. Select one of the present value functions.

Present value 1

Calculates the present value of one dollar due in n periods, discounted at r compound interest rate.

$$Pv = 1 / ((1 + r) ^ n)$$

Future value 1

Calculates the future value of one dollar at the end of n periods at r compound interest rate.

$$Fv = (1 + r)^n$$

Present annuity

Calculates the present value of a one-dollar annuity based on n periodic contributions of one dollar each to be received, or paid, each period discounted at r compound interest rate. To state it another way, this is the amount that must be invested today at a compound interest rate of r in order to receive n periodic receipts in the future of one dollar each. This is the formula for an ordinary annuity. To distinguish between an ordinary annuity and an annuity due you need to consult a good financial or accounting text.

$$PV_0 = \frac{1 - \frac{1}{(1 + r)^n}}{r}$$

Future annuity

Calculates the future value of a one-dollar annuity based on n periodic contributions of one dollar each plus the accumulated compound interest at the rate of r . This is the formula for an ordinary annuity.

$$FV_0 = \frac{(1 + r)^n - 1}{r}$$

Help

Provides help for all of the financial functions. Select option #9, `Help`, and then select a function. At the bottom right of the screen you'll see which stack variables are used for that function and what information they should contain. This display will remain on the screen while you go to the `Enter` menu and enter the data. Remember to start with the last item because each new entry pushes the stack entries down one position.

Memory

Four memory variables are available for storing values from intermediate calculations. These memory locations are displayed in the status window. The memory locations are saved when you exit from Calculator+ and remain intact until you exit AppleWorks.

When you select this option, you are given a choice of operations to perform; once you select one, a menu listing the four memory variables appears. Choose the variable you wish to modify.

Selecting `Clear` will set all four of the memory variables to zero.

Overwrite

Overwrites the memory value with the `X` value on the stack. Since you cannot clear memory locations individually, overwrite is provided to make changes.

Add

Adds the X value on the stack to the memory variable.

Subtract

Subtracts the X value on the stack from the memory variable.

Recall

Enters the memory variable on the stack as X. All of the other stack positions are bumped down one level; any T value is lost.

Clear

Sets all memory locations to zero. You are not given the choice to select individual memory variables with `Clear`.

Options

These options all add flexibility to Calculator+. They control formatting of the numbers, trigonometric function expression, the number base (decimal or hexadecimal) and the number of periods assumed to be in one year. Select option #13, `Options` to access a menu with four choices:

Format

Three display format choices are available: floating decimal point, fixed decimal, and forced scientific (exponential) notation.

Floating uses up to 16 digits as necessary to express the values. Floating will not use any more digits than it needs to express a value and will switch to scientific notation when necessary. Floating will never use trailing zeros and will only use leading zeros in fractional expressions less than 1 when 16 places of precision are not required. If greater than 16 places of precision are required to correctly represent a number Floating will automatically shift to scientific notation and round to 16 places. A

few examples should help you to understand what to expect from Floating.

2 is expressed as 2

2,000,000,000,000,000 is expressed as 2. e 18

.000123451234512345 is expressed as 1.234512345123450 e- 4

Decimal fixed allows you to force the precision. If the precision is exceeded, numbers will be rounded to the selected precision. Numbers will be held internally to the maximum possible precision, but they will only be displayed according to user selected precision. Greater display precision can be selected at any time; internal precision is never lost.

In this format, very large or very small numbers will not force Calculator+ to switch to scientific notation. If the number is too large to be properly displayed in the selected precision, 4 pound signs, ####, will be displayed. If the number is too small to be properly displayed in the selected precision, zero with as many zeros to the right of the decimal as are in the selected precision will be displayed. If zero is displayed, increasing the precision may allow the number to be displayed. If #### is displayed because the number is too large, decreasing the precision may allow the number to be displayed. Switching to Floating or Scientific will always allow the number to be displayed in an observable form.

After selecting `Decimal fixed`, you will be asked how many decimal places (precision) you require. Enter a number from 0 to 9.

Decimal fixed is especially useful for fixing to 2 places to show financial calculations to the nearest cent.

Scientific forces all numbers to be displayed in scientific notation, even if they can be properly displayed without it.

Scientific or exponential notation expresses very large or very small numbers as a base number (or mantissa) multiplied by 10 raised to some power (or exponent).

$$\text{Number} = \text{Mantissa} * 10 ^ \text{exponent}$$

The mantissa is always a number between 0 and 10 and can be negative.

In scientific notation, the exponent always shows the number of decimal places that must be moved if the number were to be displayed in its normal non-exponential form. Positive exponents move the decimal to the right and negative exponents move the decimal to the left. Calculator+ allows exponents between -255 and 255. Exceeding these values causes an overflow message to appear in the result window. In scientific notation,

245 would be expressed as $2.45 * 10^2$
-245 would be expressed as $-2.45 * 10^2$
.0245 would be expressed as $2.45 * 10^{-2}$
-.0245 would be expressed as $-2.45 * 10^{-2}$

In Calculator+, 245 would be expressed as 2.45 e 2 if using scientific notation. The "e" stands for exponent.

DRG

Trigonometric functions can be displayed in Degrees, Radians, or Gradians. These are all ways of expressing angular measure. The current setting is displayed in the status window.

The change will not become effective until you repeat your calculation. In other words, if you are displaying a function in degrees and use DRG to change to radians, your X value will not change with your selection. You will need to re-key the calculation that got you to your answer to see it in the new angular measure. Sometimes you can use the `Prior` option from the Stack menu to restore the needed values and then repeat the function.

DRG affects only the trigonometric functions and their inverses.

Degrees displays trigonometric functions in degrees. There are 360 degrees in a circle and 90 degrees in a right angle. 1 degree is 1/360th of a circle.

Radians displays trigonometric functions in radians. There are 2pi radians in a circle and pi/2 radians in a right angle. 1 radian is 1/2pi of a circle.

Gradians displays trigonometric functions in gradians (grads). There are 400 grads in a circle and 100 grads in a right angle. 1 grad is 1/400th of a circle.

Base

You have your choice of two bases: decimal (base 10) or hexadecimal (base 16). The manual up to this point has assumed you were working in decimal. The formatting choices (Floating, Decimal fixed, and Scientific) only work in decimal. Hexadecimal has a format of its own.

The current base is displayed in the Status window.

Decimal forces display to decimal. This is the default option unless changed by configuring Calculator+ with TimeOut Utilities.

Hex converts the display to hexadecimal notation. After selecting hex, you will be given the choice as to whether you want the stack to display in hex or in decimal. If you choose decimal, only the result window will display hex.

Hex always displays in integer form. Any existing fractions are rounded, not truncated. The fractional part is still stored internally and won't be lost when converting back to decimal, however, read the section for option #9, *Programming*, for an exception to this rule.

The hex display is accurate for 8 bytes less one bit (a total of 63 bits). The 64th bit is used for the sign.

Sixteen digits (two for each byte) are always displayed, so you generally will see leading zeros.

Hex is signed using two's complement arithmetic. Mathematically, this means $0000000000000000 - 0000000000000001 =$
 $FFFFFFFFFFFFFFFF$. 8000000000000000 is the largest positive value and $7FFFFFFFFFFFFFFFFF$ is the largest negative value.

While entering hex values from the keyboard, neither the minus sign (-) nor the decimal point are allowed.

PIY

Compound interest is always expressed in Calculator+ as an annual interest rate. However, interest periods (intervals at which interest is accrued and added to the principal) are not always one year apart. This option allows you to compensate for that.

For example, a contract may call for interest at 8% compounded annually while another might specify interest at 8% compounded semi-annually. In the first instance, the rate is 8% for one interest period of a year; in the second instance, the rate is 4% for each interest period of six months. If the interest rate were for 8% compounded quarterly, the rate per period (quarter) would be 2% and for 8% compounded monthly, the rate per period (months) would be .667%.

Calculator+ converts annual interest to monthly interest periods by dividing the annual interest by the PIY factor of 12. If you want annual interest compounded yearly, change the PIY factor to 1. For semiannual compounding, change the PIY to 2. For quarterly compounding, change the PIY to 4. For daily compounding, change the PIY to 365.

Compounding can make a large difference over the life of an investment or loan. For example, if you put \$100 in the bank today at 12% annual interest compounded yearly, at the end of one year's time you would have \$112. Interest on the principal of \$100 is calculated one time:

$$\$100 + (\$100 * 12\%) = \$112.$$

Now, if you took that same \$100 and put it in the bank at 12% interest compounded monthly for one year, you would end up with \$112.68, because 1% interest was added every month. At the end of the first month, you would have \$101:

$$\$100 + (\$100 * 1\%) = \$101$$

Then the next month, your interest rate would be calculated on the \$101, to give you \$102.01:

$$\$101 + (\$101) * 1\% = \$102.01$$

If the answer is expressed in scientific notation, only the mantissa portion will be written into the Spreadsheet. You will have to manually do the decimal conversion.

You can also exit Calculator+ by pressing Open-Apple Q or by pressing Escape from the main menu. In those cases, you will not be given the option of inserting your results into the current file.

Error Conditions

When you attempt impossible calculations, the message `Error` will appear in the result window and Calculator+ will attempt to restore the stack to the last entry. If it can't, use the `Prior` option in the `Stack` menu to restore it, or simply re-key your data.

These are the possible errors:

1. Dividing by 0.
2. Attempting to obtain the square root of a negative number.
3. Attempting to obtain the cube root of a negative number.
4. Attempting to evaluate an inverse trigonometric function outside of the range of $-1 < 0 < 1$.
5. Attempting to perform a logarithmic function on 0 or a negative number.
6. Certain illogical sequences in the financial functions.

Configuring Calculator+

To change some of the Calculator+ defaults, follow these steps:

1. Press Open-Apple Escape and select `Utilities` from the menu.
2. Press Return to select `Configure`.
3. Select `Calculator+` from the configuration menu.
4. The format choices are displayed. Change them as you prefer.

The configuration defaults are only used when Calculator+ is first accessed from the TimeOut menu. Each time you leave Calculator+ the current display options and stack are preserved for the next time the application is used.

Calculator+ and TimeOut UltraMacros

The TimeOut UltraMacros `<cell>` command (Open-Apple -) may be used to read the Calculator+ result window into macro 0 at any time.

Chapter 5

Clipboard Viewer

by Dan Verkade and Randy Brandt

Clipboard Viewer displays the information that is currently on the clipboard. It also allows you to erase the clipboard, or selectively delete some of the information.

Using Clipboard Viewer

1. Press Open-Apple Escape and select Clipboard Viewer from the TimeOut menu. If there is information on the clipboard, the type will be displayed.
2. Press the Space Bar to view the data, or press Escape if you just wanted to check the type.

Viewing and deleting varies slightly among the applications. Escape and Open-Apple Q can always be used to exit, though. If you press Escape, you will have the opportunity to erase the clipboard data and free the Desktop memory for use by your files.

Word Processor

Word Processor information is viewed just like an AppleWorks help screen. The cursor keys always scroll the screen because there is no cursor in the text.

All carriage returns are visible, just as in the Open-Apple Z "zoom" mode of AppleWorks. Specific printer options are not displayed; a DeskTools II message is shown for all options:

```
"-----Printer option"
```

Here's how to delete Word Processor lines from the clipboard:

1. Press Open-Apple D. The first screen line will be highlighted.
2. Use the cursor keys to move to the first line you wish to delete.
3. Press Return to anchor the highlighted row, and then use the Up and Down arrow keys to highlight the block to delete. You may press Escape to return to step 2.
4. Press Return to delete the highlighted lines.

Spreadsheet

Spreadsheet information is viewed just as if you were in the Spreadsheet. Press Open-Apple D to delete. You will be given the choice of deleting row or columns. After deleting from the clipboard the spreadsheet information on the clipboard will be recalculated.

Should you delete all of the rows or columns from the spreadsheet clipboard, the spreadsheet form will remain on the screen, but it will be blank. You must press Escape to exit the blank form.

Data Base

Data Base records are viewed in single record layout. The cursor keys can be used to change records. The first 18 categories of each record are displayed; that should be enough for you to identify the record.

Delete one record at a time by pressing Open-Apple D and following the prompts. You cannot delete from the clipboard if only one record is left.

Graphics

Clipboard Viewer cannot display graphics information, but will alert you when graphics information created by a TimeOut application is on the clipboard. If TimeOut graphics are on the clipboard, a message will be displayed telling you the type of graphics information. This could be GS graphics, Hi-res, Double Hi-res, or Bit mapped. Your only options are erasing the clipboard or quitting.

Configuration

Clipboard Viewer contains one configurable option. If you are using an Applied Engineering Expanded Clipboard, answer **Yes** to the question. To configure the Clipboard Viewer, follow these steps:

1. Press Open-Apple Escape to call up the TimeOut menu.
2. Choose **Utilities**.
3. Press Return to select **Configure**.
4. Select **Clipboard Viewer** and make your configuration choice.
5. Press Open-Apple Q to exit.

Downloaded from www.Apple2Online.com

Chapter 6

DirerTree

by Dan Verkade

DirerTree will display all of the files on your disk in a tree format, making it easy to scan multiple subdirectories in seconds. You can even print the complete tree for a handy reference.

AppleWorks data files are marked by the Open-Apple symbol so they can be quickly spotted. Pressing Return with an AppleWorks file highlighted automatically loads that file to the Desktop.

Note: DirerTree is limited to displaying 4096 files per drive.

Using DirerTree

Press Open-Apple Escape and select `DirerTree` from the TimeOut menu. DirerTree displays a file card with the prompt:

Display a directory of:

1. The current disk
2. A different disk

If you wish to see a directory of the current disk, select option 1. If you wish to change disks, select option 2.

Selecting option 2 to change disks will give you a file card with a list of all the available disk drives. Select the disk you wish to use and press Return.

The previous file card will now be displayed with the selected disk as the current disk. Selecting option 1, The current disk, will move you to the main menu of DirecTree.

On its main menu, DirecTree displays three choices for selecting the group of files to be displayed:

1. View AppleWorks files
2. View all files
3. View files containing...

and optionally, depending on the configuration of DirecTree,

4. Quick recall of last disk
5. Cancel quick recall

View AppleWorks files

This option shows only AppleWorks data files (AWP, ASP, ADB) and directory files (DIR). Use this to quickly locate AppleWorks files that you wish to load to the Desktop.

View all files

Take a wild guess. If you have a very large disk drive packed with files, only the first 4096 will be displayed.

View files containing...

This option allows you to enter a string which is then compared to the file names on the current disk; in fact, the full pathname for each file is checked. If the string is found anywhere within the pathname, that file will be displayed. A slash ("/") may be included as well. For example, a find string of L/TO would find

all file names beginning with "TO" in subdirectories ending with "L".

If you have more than 4096 files on your disk, using different string selections with this option will enable you to see all files.

Quick recall of last disk

This option and option five, detailed below, are available only when DirecTree is configured for them. See the Configuration section at the end of this chapter for more details.

This option will recall the last file selection made using options one, two, or three. Instead of reading the disk again, the information is pulled out of Desktop memory. Reading the disk can be time consuming, especially on disks with many files. Recalling them from Desktop memory is very fast.

This option is especially useful when you have several files you wish to load into AppleWorks. See the procedure for loading multiple files at the end of the section, "Viewing The Directory".

If you have already viewed files, the name of the last disk viewed will be shown to the right of option 4, Quick recall of last disk. If you have since changed disks, DirecTree will still attempt to recall the last disk. If it isn't available, an error will be reported.

Note: Option one, two, or three must have been used first before option four, Quick recall of last disk, will operate.

Cancel quick recall

Using the quick recall feature requires a minimum of 8K of Desktop memory, and more depending on the number of files on the disk you're using; the more files, the more memory required.

Selecting Cancel quick recall will release this desktop memory for use by AppleWorks. It will also erase the information

from the last disk read. This will render option four, Quick recall of last disk, inoperable until another option one, two, or three has been performed.

Viewing the directory

DirecTree will attempt to read the current disk drive as selected in AppleWorks. If a ProDOS path name has been selected, DirecTree will try to read a drive using that pathname. If a drive using the AppleWorks drive name or path name cannot be found, the message,

```
Unable to read disk drive
```

will appear on the screen. If this happens, use Escape to go back to the AppleWorks Main Menu, and look at the upper left corner of the screen. The current disk drive or path name will be displayed there.

There are generally three reasons why DirecTree would not be able to read the drive listed here. The first reason is that the drive listed does not exist. If that is the case, simply select a drive you do have using AppleWorks option #5, Other activities, from the Main Menu, and choose option #1, Change current disk drive or ProDOS prefix. The second reason is that the selected drive or ProDOS path name exists, but there is no disk in the drive. That is easily remedied by placing a disk in the drive. The third possibility is that your drive exists, and there is a disk in the drive, but the volume name of the disk does not match the path name selected by AppleWorks. If this is the case, using AppleWorks, either change the path name to that of the disk (if you know it) or using AppleWorks change to the drive name which contains your unknown disk, or insert the proper disk into the drive, whose path name matches that selected by AppleWorks.

When starting DirecTree, you may see the message,

```
Please wait...
```


at the top of your screen. This occurs while DirecTree is checking your disk drives, looking for a selected path name. It may take a second or two for DirecTree to find it.

When DirecTree is able to read a disk, you will be presented with three menu choices. Each option shows a different selection of files. The details of these choices are described below. For now, to view a disk, select 1. All files. You will see a message telling you that DirecTree is reading the directory of your disk, then you should see a display of files similar to the one shown below.

```
.PRODOS                SYS
.APLWORKS.SYSTEM       SYS
.SEG.00                SYS
.SEG.RM                SYS
.SEG.PR                SYS
.SEG.EL                BIN
.SEG.M0                $00
.SEG.M1                $00
.TIMEOUT               DIR
  ..TO.UTILITIES       BIN
  ..TO.DIRECTREE       BIN
.PERSONAL              DIR
*  ..REUNION.LET       AWP
*  ..CARLOAN           ASP
*  ..PHONELIST         ADB
.BUSINESS              DIR
*  ..AMORTIZATION      ASP
  ..RECEIVABLES       DIR
*    ...DOMESTIC       ADB
*    ...FOREIGN        ADB
```

All entries are preceded by one or more periods. These periods indicate the subdirectory level of the file. All of your root directory entries are those preceded by one period. If an entry is preceded by two periods, it is two levels in from the disk volume, and one level in from its root entry. Three periods are 3 levels in from volume, and two levels in from its root entry. DirecTree will display up to eight levels deep. Levels deeper than eight will be ignored. Should you have levels deeper than sixteen, DirecTree will halt with a warning message and will not be able to proceed any further. In other words, DirecTree is useless on disks with greater than sixteen levels; you will get no display at all.

Tip: Subdirectories are a tremendous asset toward organizing your disk. However, the more "shallow" you can keep your levels of subdirectories, the better response time you will receive from your disk drive. DirecTree displays up to eight levels, but if you are using eight levels, you are working with a severe degradation in disk performance. Two to four levels is probably adequate for most disk filing tasks.

Indentation also occurs as files are displayed at the various levels within your disk. This indentation is a graphic help for getting a feel for the particular depth of your file. The varying depths may remind you of a tree branching out, some branches longer than others and some branches growing branches of their own. That is why this format is called a tree structure.

Bear in mind that the full path name of your file is the particular file name shown in DirecTree preceded by all the previous levels of pathnames. In the above example, assuming the disk volume name is /DATA, the file CARLOAN has a full path name of /DATA/PERSONAL/CARLOAN. This full path name is always displayed at the bottom of the screen. The very first name in this full path name is the volume name of your disk.

Notice the file name. You probably are already familiar with these. DirecTree will always capitalize the whole file name. Additionally, AppleWorks allows the use of space within your file name; DirecTree will replace this space with a period.

The file type three-letter abbreviation is also displayed. The definitions of these file types can be found in a good manual on ProDOS. Unknown or less common file types are shown as \$xx, where xx represents the file's ProDOS file type. The three most important file types to know about are AWP, ASP, and ADB. These represent AppleWorks word processor, spreadsheet, and data base files, respectively. These AppleWorks files are always called out by the use of the Open-Apple symbol in the left margin. If your system cannot display the Open-Apple symbol an upper case "A" in inverse video mode will be displayed in its place. This makes it easy to pick out AppleWorks data files when scrolling through DirecTree.

While displaying the tree of files several keys are active.

Using the Up and Down arrow keys will move the cursor and scroll the screen to see all of the files in the tree. You can scroll forward and backwards.

Pressing the Open-Apple key in conjunction with the Up and Down arrow keys will move the display up or down one whole screen.

If you are moving forward through the filenames, use Open-Apple with the Down arrow; the cursor jumps to the bottom of the screen, and then, when you press both keys again, to the bottom of the next screen.

If you are moving back to the first filename, use Open-Apple with the Up arrow; the cursor jumps to the top of your screen, and then, when you press both keys again, to the top of the previous screen.

The Left arrow and Right arrow keys move the cursor through filenames of the same level. They may be used alone or with the Open-Apple key; their function remains the same with or without the Open-Apple key. Left arrow moves down, Right arrow moves up. If the next filename of the same level is not shown on the current screen, the screen will scroll to that filename to give you an indication of how far the next filename was.

Pressing Open-Apple P will print the tree to your printer (more on this later).

Pressing Return will load the highlighted file onto the AppleWorks desktop. Only AppleWorks data files can be loaded. When you load a valid file, you will see the various screens you would normally use to load a file onto the desktop moving by very rapidly. You may load only one file at a time. To load another file, DirecTree will have to be called again from the TimeOut menu.

Follow this procedure for loading more than one file when using the quick recall option.

1. Select option one, two, or three to see the directory.
2. Move the cursor to the file you want to load.
3. Press Return. This will load the selected file into AppleWorks.
4. Call DirecTree again from the TimeOut menu and use option four, Quick recall of last disk.
5. Repeat steps two, three, and four until all files are loaded.
6. Use option five, Cancel quick recall, if you need extra Desktop memory.

DirecTree will not load a file if:

- The file is not an AppleWorks data file.
- If the path name is too long. You are limited to a thirty character path name. Note that you could not type in a longer path name into AppleWorks manually, either.
- If the AppleWorks desktop already has twelve files on it.

If one of the above conditions is found DirecTree will display an error message explaining why the file was not loaded.

Printing

As mentioned above, pressing Open-Apple P while in the display screen will allow you to print the file tree to your printer. It will be printed in the same format as shown on your screen except that the AppleWorks data files will not be marked. Also, the disk volume name will be printed along with any criterion selection at the top of each page.

The last line printed will tell you the number of blocks free, blocks used, and total blocks. These figures are for the whole disk, not the current tree.

There are two printing choices. `Screen` will print only what is shown on the current screen. `All` will print every file in the current tree.

Tips and Tricks

Each file displayed requires a small amount of Desktop memory. If there isn't enough Desktop memory, you won't be able to see all of the files. Leaving DirecTree will restore the Desktop memory previously used. You then will need to either remove some files from the Desktop or use DirecTree's option #3, `Text string matches`, to restrict the number of files shown at one time.

Tip: As a rule of thumb, 1k of Desktop memory can hold information for about 40 files. If you know you are very low on desktop memory, free some up before using DirecTree.

Configuring DirecTree

DirecTree's one configurable option is the use of the quick recall feature, options four and five in the main menu.

Configure DirecTree by selecting `Configure` in the `TimeOut Utilities` option and then selecting `DirecTree`. Answer `Yes` if you wish to use these options.

Answering `No` will save Desktop memory; when leaving DirecTree the amount of available Desktop memory will remain unchanged. Options four and five will not appear on the main menu when `No` has been selected.

Answering `Yes` makes the quick recall options available and uses a minimum of 8K of Desktop memory. Option five makes this memory available again. See the instructions for these options.

Chapter 7

Disk Tester

by Randy Brandt

Disk Tester lets you test a disk to make sure that it can be read and written to. It also displays the number of free blocks on a disk.

Using Disk Tester

1. Press Open-Apple Escape and select `Disk Tester` from the `TimeOut` menu. A display similar to this will be seen:

```
File: DeskTools II Doc          DISK TESTER          Escape: Review/Add/Change
-----
                                Disk name      /FILES
                                Total blocks   1600
                                Blocks free    660

                                1. Run read test
                                2. Run read/write test
                                3. Read another disk

                                TimeOut Disk Tester Copyright 1988 by Randy Brandt (v1.0)
-----
Type number, or use arrows, then press Return          1247K Avail.
```

The first part of the screen shows the name of the disk, its size, and how much space is still available on it. That's what we usually use Disk Tester for, because we get tired of guessing which way AppleWorks rounded off the blocks to get its less accurate kilobyte count.

2. Press Return to select `Run read test`.

Disk Tester will attempt to read every block on the disk in the currently selected AppleWorks data drive. You may interrupt it by pressing Escape. If errors are found, it will stop and wait for a keypress. It will then continue checking the rest of the disk.

This option can be used if you have trouble loading an AppleWorks file. If no errors appear, either the file itself or the disk's directory is damaged. If a read error occurs, the disk is physically damaged or has defective data on it. Neither option is particularly appealing, but inquiring minds want to know!

Run read/write test

This option works just like the previous one, except that blocks are also written back to the disk, making it a slower but more detailed test. While the read test will work with write-protected disks, this test requires that the write-protect notch be uncovered.

Read another disk

Select this option to read another disk in the current AppleWorks data drive.

Chapter 8

File Search

by Glenn Clawson

File Search is a utility that allows you to quickly search for a sequence of characters in AppleWorks files on disk.

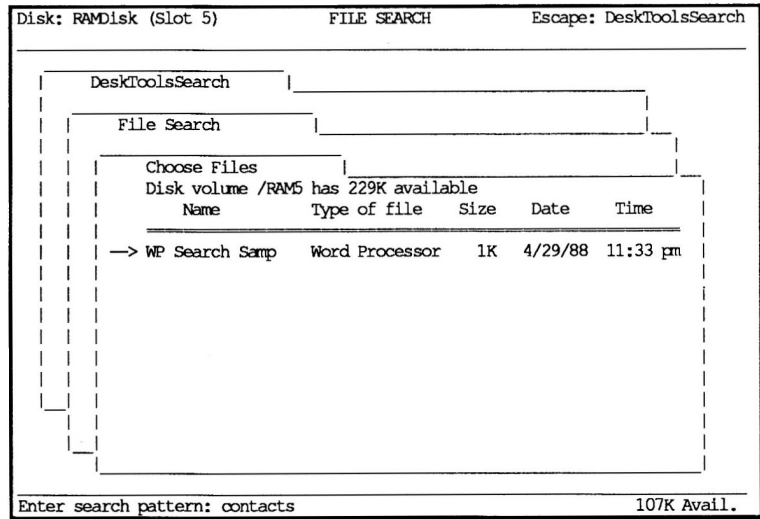
Using File Search

1. Insert the DeskTools II disk in a drive so that the sample search file is available.
2. Press Open-Apple Escape and select File Search from the TimeOut menu. You'll see a menu something like this:

Search files on:

1. The current disk:
 2. A different disk
3. Select the disk containing DeskTools II. If the files are not on the current disk, selecting A different disk will allow you to specify the disk or ProDOS path name to be searched. A list of files is displayed.

4. Next, use the arrow keys to select the files to be searched. For this exercise, just select the "WP Search Samp" file.
5. After selecting the file to be searched, press Return. You are then required to enter the search pattern. The screen should look like this:



6. Enter the word `contacts` and press Return. Before the search begins you will be prompted for information that allows you to control how the search is performed.
7. First comes the case sensitivity prompt:

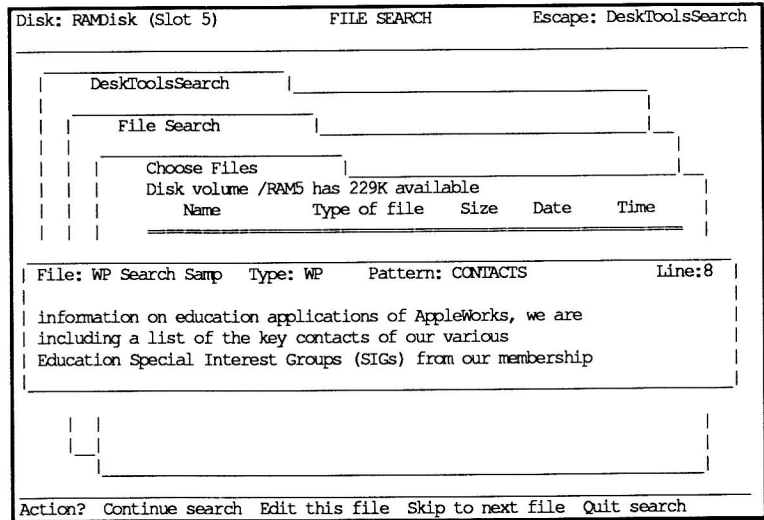

```
Case sensitive? No Yes
```

Press Return to specify that upper and lower case letters will be treated exactly the same for this search.
8. Next comes the whole vs. partial word control prompt:


```
Whole word? No Yes
```

Press Return to specify that the search will not be restricted to whole words, but that any occurrence of the pattern will be matched.

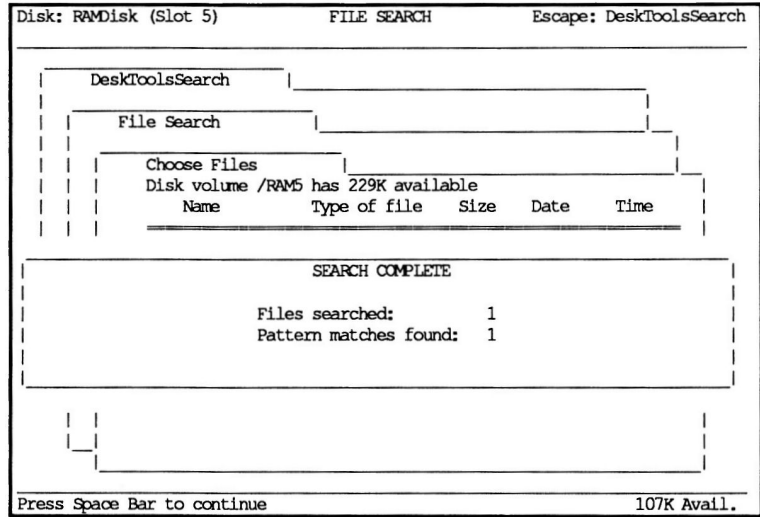
9. File Search will now search the specified file for the word "contacts". A Word Processor line containing "contacts" is found and displayed in a window that also contains information about the file search in progress:



10. The search is suspended to allow you to decide what to do next. The bottom of the screen displays this prompt: Action? Continue search Edit this file Skip to next file Quit search

You may either continue searching for the same pattern in the current file, load the current file to the Desktop, resume searching for "contacts" on the next file in the list (if any), or quit the search and return to the File Search main menu. For now, press Return, and allow the file search to give its report.

11. After all the selected files have been searched you will hear two beeps and a short report is written in the file search window:



12. For more practice, search some of your own disks and experiment with the other options available after a pattern match has been found. Also experiment with the case sensitivity and whole word search options.

File Search Reference

Selecting the Disk to be searched

The File Search main menu allows you to specify where files will be searched. Only one disk can be searched at a time, and only one directory on that disk at a time. The default disk will be the same as the one specified in your current AppleWorks session. A different disk is easily selected by the second option of the main

menu. In fact, the disk selection procedure is precisely the same as in AppleWorks.

If you do change to a different disk, the original default is restored upon returning to AppleWorks, unless a file is loaded. In that case, the AppleWorks drive will be the one that contains the file loaded by File Search.

Selecting files to be searched

Upon selecting the disk drive or ProDOS directory to be used for a given search, File Search immediately gives a list of the AppleWorks files on that disk. You will notice that only AppleWorks Data Base, Word Processor, and Spreadsheet files are listed by File Search.

The method for selecting files to be searched is just like that used by AppleWorks to select files to be loaded onto the Desktop. Simply use the arrow keys to select and/or deselect files, then press Return. The only exception is that File Search allows you to quickly select or deselect all files by using the Open-Apple key in combination with the Right or Left arrow keys respectively.

The Search Pattern

You are prompted for a search pattern after selecting files to be searched. The search pattern may consist of any combination of printable characters, up to 20 characters long.

Only one search pattern may be specified per search. After a search for a particular pattern has been completed, you may then try other search patterns after selecting files to be searched.

Case Sensitivity in searches

You are prompted for case sensitivity control immediately after specifying the search pattern. No case sensitivity means that the search will be performed as if both the alphabetic characters in the search pattern and the alphabetic characters in the files being searched were all upper case. In this case it wouldn't matter if you entered the search pattern in mixed case since all the alphabetic characters you entered are forced to upper case.

In specifying `Yes` for case sensitivity, you force File Search to match alphabetic characters exactly as you typed them. For example, "Dog" would be different than "dog" or "DOG".

Whole vs. partial word searches

If whole word search is set to `No`, then all occurrences of a pattern match are reported (a pattern of "port" would be found not only in "port" but also in "sport", "export", and "deportation").

A `Yes` for whole word therefore only allows matches for words that are completely delimited by non-alphanumeric characters (a pattern of "port" would be found in " port ", " port.", ",port?", etc).

The File Search window

```
| File: WP Search Samp  Type: WP  Pattern: CONTACTS  Line:8 |
| information on education applications of AppleWorks, we are |
| including a list of the key contacts of our various         |
| Education Special Interest Groups (SIGs) from our membership |
```

The File Search window monitors a search as it progresses from record to record, and from file to file. The window displays the current file being searched, the current file's type (DB: Data Base, WP: Word Processor, SS: Spreadsheet), the pattern being searched,

and the current Data Base record, Word Processor line, or Spreadsheet row of the file being searched.

As pattern matches are found throughout the search, the line containing the pattern is displayed in the window, and the search pattern is highlighted. Word Processor pattern matches are displayed with the previous and next lines of text for context. Data Base and Spreadsheet files display one record, but where records and rows lengths exceed the limits of the display, the pattern match is highlighted and framed so as to be centered within the File Search Window.

Data Base categories and Spreadsheet cells are delimited by the '|' symbol.

How AppleWorks files are searched

Files are searched based upon how they are stored on disk, and not exactly as they might appear in an AppleWorks report. Word Processor files are searched line by line. Data Base records are divided into categories, and the categories are concatenated into a single line, with each category separated by a '|'. Spreadsheet rows/cells are handled like Data Base records/categories.

Stopping a File Search in Progress

You can force File Search to pause in the middle of a search at any time by pressing any key. File Search then allows you to either continue, skip to the next file, or quit the search.

Loading a file to the Desktop

You have the option of loading a file to the desktop once File Search demonstrates that the file contains the specified search pattern. After a pattern match is found, File Search is suspended. You can then select `Edit this file`, at which point the file is loaded to the Desktop (if there are less than 12 files already on the

Desktop) as the current file. The current disk drive is changed to be the one that contained the file that was loaded by File Search.

Skipping to the next file

You can make File Search stop searching the current file and move on to the next file after it has stopped to display a pattern match or after you have stopped a File Search in progress.

File Search report

Before File Search returns to its main menu after a search it displays a report like the following:

```
SEARCH COMPLETE
Files searched:      1
Pattern matches found: 1
```

Press any key to continue on to the File Search main menu.

Quitting File Search

Press Escape at any time to return to File Search main menu, or from File Search main menu to AppleWorks. Open-Apple Q will get you directly to AppleWorks from anywhere in File Search. Select the `Quit Search` option whenever it is displayed to stop the search and return to the File Search main menu.

Chapter 9

Measurements

by Dan Verkade

Measurements is a handy measurement converter for converting length, volume, weight, and time from one unit to another, accurate to the nearest thousandth. Now you can convert those metric measurements in no time at all. Dazzle your friends by converting nautical miles to statute miles!

Using Measurements

1. Press Open-Apple Escape and select `Measurements`.
2. Press Return to select `Length`. A menu with the length options is displayed.
3. Select option #9, `Miles (nautical)`. A second menu identical to the first now appears on the right half of the screen:

Converting from:

1. Inches
2. Feet
3. Yards
4. Meters
5. Rods
6. Furlongs
7. Kilometers
8. Miles (statute)
- > 9. Miles (nautical)

To:

1. Inches
2. Feet
3. Yards
4. Meters
5. Rods
6. Furlongs
7. Kilometers
8. Miles (statute)
9. Miles (nautical)

4. Choose option #8, Miles (statute). You will then be prompted to enter the number of nautical miles that you wish to convert. Negative numbers are not allowed. You may type in up to twelve characters, including a decimal point.
5. Enter 100 and press Return. The answer is displayed, rounded to a precision of three decimal places (the nearest thousandth). A Do another? prompt is displayed.
6. Press Y to do another length conversion and choose the two units you wish to convert between.
7. You are prompted to enter the number units; press Open-Apple U to use 100 again. As long as you remain in the same measurement category, you may press Open-Apple U to automatically re-enter the last number previously used. Switching categories will reset it to zero.

Inserting the results into an AppleWorks file

The Insert option on the Measurements menu will exit Measurements and enter the last result at the cursor in your current AppleWorks file. If you exit using Escape or Open-Apple Q, the number will not be entered. If you were not in an AppleWorks file when you pressed Open-Apple Escape to access TimeOut, the number will not be entered, either.

Tip: If you wish to find out the conversion factor for any two sets of units, simply enter a '1' as your 'converting from' number. The factor displayed is multiplied by the 'converting from' units to obtain the 'converted to' units.

Chapter 10

Printer Manager

by Dan Verkade

Printer Manager allows you to directly control your printer by sending control codes or text. This allows you to do such things as compress the print, change fonts, set the top of form, or enter a line of text.

Error checking is built in to prevent unreadable codes from causing unpredictable behavior in your printer.

Getting Started

Printer Manager comes pre-configured for the ImageWriter II. If you have a different printer, be sure to read the Configuration section below, before using Printer Manager.

Configuration

Printer Manager may be configured for virtually any printer. You will need the manual that came with your printer to find out what codes are needed.

1. Press Open-Apple Escape and select Utilities.
2. Select Configure, and then select Printer Manager. A screen something like this appears:

```

File: DeskTools II                CONFIGURE                Escape: Utilities
-----
Printer Manager

1. Heading [ImageWriter II      ]
2. AppleWorks printer number (0 = QA-H printer)      [ 0]

3. Option 1 [Boldface           ] 4. Hex codes [1b21           ]
5. Option 2 [Set top of form    ] 6. Hex codes [1b76           ]
7. Option 3 [Top of form        ] 8. Hex codes [0c             ]
9. Option 4 [Extended           ] 10. Hex codes [1b6e           ]
11. Option 5 [Pica               ] 12. Hex codes [1b4e           ]
13. Option 6 [Elite             ] 14. Hex codes [1b45           ]
15. Option 7 [Condensed         ] 16. Hex codes [1b71           ]
17. Option 8 [Ultracondensed    ] 18. Hex codes [1b51           ]
19. Option 9 [Draft             ] 20. Hex codes [1b6131          ]
21. Option 10 [Standard         ] 22. Hex codes [1b6130          ]
23. Option 11 [Near letter quality ] 24. Hex codes [1b6132          ]
25. Option 12 [8 lines per inch  ] 26. Hex codes [1b41           ]
27. Option 13 [Line feed + CR   ] 28. Hex codes [1b6c30          ]
29. Option 14 [Power on defaults ] 30. Hex codes [1b63           ]

Type number, or use arrows, then press Return                1227K Avail.

```

Select any of these options by highlighting it using the Up and Down arrows and pressing Return or by typing the number of the option and pressing Return. Follow the instructions below for each of the options. After finishing the configuration of Printer Manager, you can return to AppleWorks by pressing Escape three times.

Option #1 in the Printer Manager configuration is Heading. This will be the title that will appear when Printer Manager is called from the TimeOut menu. The utility will still be called Printer Manager (however, see the last paragraph in this section), but the menu box after Printer Manager is called up will contain this heading. This heading can be anything you want it to be, up to 22 characters. A suggestion would be to use headings that correspond to the printer names you gave to your printers in the AppleWorks printer configuration. This will alleviate any confusion among printers (hopefully). For example, if you named a printer "ImageWriter" or "Susie's Office", give it the same name in Printer Manager.

Option #2 is the AppleWorks printer number. Again, just like AppleWorks, follow their numbering scheme with each of your printers. AppleWorks allows up to three printers, numbered 1-3, which you can select from any AppleWorks application. At this point, we will assume you only have one printer in your system. Choosing printer #1-3 in this option will always send the control codes to that printer bearing the same number in AppleWorks. If you give your printer a number 0 in this option, control codes will always be sent to the Open-Apple H printer chosen in AppleWorks. If you change the definition of the Open-Apple H printer in AppleWorks, a Printer Manager configured with printer number 0 will always send control codes to that printer.

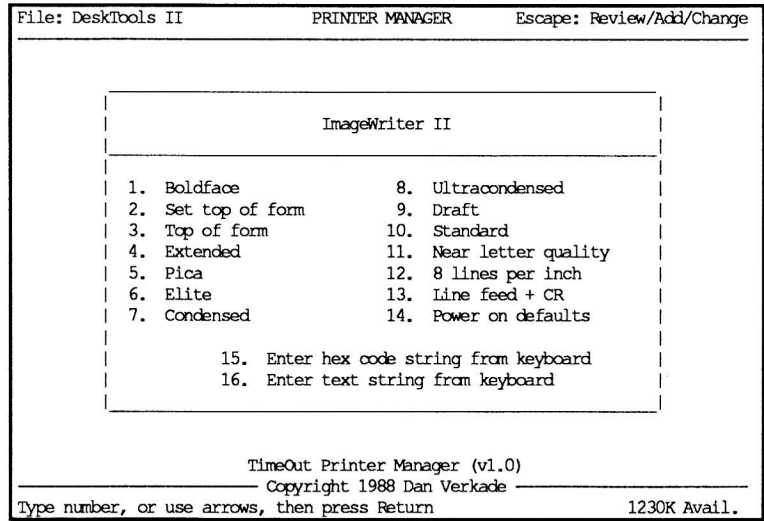
Options 3 through 30 define the option names and the control codes that go with them to make that option happen. The option names may be anything you wish up to a 22 character length. Obviously, they should describe the function that will occur when they are chosen.

The control codes used by your printer can be found in the manual that came with your printer, along with a description of their use. Certain printer functions are achieved by sending these codes via the software to your printer. For instance, by sending the number 12 to most printers, the printer will advance the paper to the top of the next page. The number 12 has a hexadecimal representation of "0C", sometimes shown as "\$0C". Be sure to use the hexadecimal code, not the decimal code.

Up to 10 hexadecimal codes may be entered for each function. One code consists of 2 hexadecimal digits. Type in all leading zeros when entering hex codes. Failure to do so will result in the sequences running together into something you did not mean. For example, if the sequence "1B 0C 01" made your printer say hello in German, and you did not type in the leading zeros, the sequence would really look like "1B C1", which may only do something as mundane as change the vertical spacing to eight lines per inch. Also, do not use any space in between the hex codes. The above example would have been properly typed in as "1B0C01".

Using Printer Manager

1. Press Open-Apple Escape and select **Printer Manager** from the TimeOut menu. You'll see something like this:



2. Make sure that your printer is online and make a selection. Printer Manager will instantly send the codes to your printer. You probably won't notice anything until you begin printing. If you have an ImageWriter, selecting **Power on defaults** will cause a noticeable resetting.
3. Choose option #16, **Enter text string from keyboard**. This option lets you send a line of text directly to your printer.
4. Choose option #15, **Enter hex code string from keyboard**. You will be queried for a hex string at the bottom of the screen. A hex code is a series of two hex digits (1-9 or A-F). The hex codes your printer responds to generally can be found in the manual you received with your printer. Type in a hex string using leading zeros when necessary. If you don't use leading zeros your string will be rejected if the number of characters ends up to

be odd, or worse, the entries will run together and you'll wind up sending a sequence you didn't mean. Use no spaces, type in the characters one right after the other. Up to 10 hex codes (which would require 20 hex digits) may be entered. See the Configuration section for more information. Press Return to send the codes to your printer.

Using more than one Printer Manager

The following section deals with optional ways to configure Printer Manager. See the Configuration section for more details.

You may have 3 different printers already hooked up to AppleWorks, for example, one for standard paper, one for two-part forms and one for labels. They may all be ImageWriters, or they may be an assortment of different models. If you have defined the label printer as printer #3 in AppleWorks and that is the printer you wish to control with Printer Manager, type in a 3 in Printer Manager option #2. If you wish to control the standard-paper printer and it is printer #1 in AppleWorks, type in a 1 in Printer Manager option #2. If you wish to control the Open-Apple H printer, type in a 0 in Printer Manager option #2. That way, whichever printer is configured in AppleWorks to be the Open-Apple H printer will always receive the control from Printer Manager.

You may set up more than one Printer Manager. In the example of the three printers above, you might want a Printer Manager for each of the three, and possibly a fourth Printer Manager for the Open-Apple H printer. The OA-H Printer Manager would always be redundant with one of the other three Printer Managers, but you would never have to worry about which printer was presently configured as the Open-Apple H printer in AppleWorks.

If you want to configure more than one Printer Manager, TimeOut provides a way to change the name of your TimeOut applications. You can call the various Printer Managers different names so as not to confuse them. You may wish to name the Printer Managers the same name as the `Heading` we discussed in Configuration Option #1, earlier in this chapter. Your only restriction here is that while

Heading allows up to 22 characters, the TimeOut application names must be 16 characters or less.

To put more than one Printer Manager onto the TimeOut Menu, copy the file TO.PM.xxxxxx to your TimeOut applications disk more than once, giving it a different ProDOS filename each time. For example, we'll make four Printer Managers as discussed in the above example.

Let's assume all three of the printers above are ImageWriters. This makes for a simpler example. The printer with standard paper is defined in AppleWorks as printer #1. The printer with the two-part paper is #2, and the label printer is #3. The Open-Apple H printer is the one with the standard paper. You will need to copy the file TO.PM.IMAGE from your TimeOut disk to your applications disk, but use the new ProDOS filename TO.PM.STANDARD as your filename. After copying, call up TimeOut, select the Utilities option and then the Change name option. Select Printer Manager as the name to change. After selecting Printer Manager you will be queried for a new name at the bottom of the screen. Type in the name, PM Standard, and press Return. The name of Printer Manager is now PM Standard. Check this by calling up the TimeOut menu. Make another copy of TO.PM.IMAGE and use the new ProDOS filename of TO.PM.TWOPART. Rename this application to PM Two-part. Do the same for two more copies of TO.PM.IMAGE, using the table below to complete the changes. Then configure these four Printer Managers according to the table, below. "ProDOS file" is the name you give to the file on your working disk, "TimeOut name" is the name to change to using the Change name option in Utilities, "Heading name" is configuration option 1, and Printer "#" is configuration option 2.

<u>ProDOS file</u>	<u>TimeOut name</u>	<u>Heading name</u>	<u>#</u>
TO.PM.STANDARD	PM Standard	ImageWriter - Standard	1
TO.PM.TWOPART	PM Two-part	ImageWriter - Two-part	2
TO.PM.LABEL	PM Label	ImageWriter - Label	3
TO.PM.OAH	PM OAH	ImageWriter - OAH	0

Doing this, you will have a Printer Manager with a different name for every printer on your system. Each one will only affect the

printer with the correct printer number as defined in AppleWorks. The Open-Apple H Printer Manager will affect whichever printer is defined as the Open-Apple H printer in AppleWorks.

If you are unclear about the connection between AppleWorks printer numbers and the particular printer assigned to it, review the section on printers and printer configuration in your AppleWorks manual.

Chapter 11

Screen Out

by Dan Verkade

Screen Out will clear your screen. This is useful for both increasing the life of your monitor screen as well as for security.

Screen Out must be called from TimeOut for it to clear your screen. It does not sit in the background and wait for a prescribed period of time to clear your screen. It will return you to the AppleWorks application from which it was called.

Optionally you may select up to 12 characters for a security code which must be typed in to restore your screen. This allows you to momentarily leave your system without fear of someone tampering with your application.

Using Screen Out

Screen Out is very easy to use. Simply select it from the TimeOut menu. It will visually count down from 5 to 1, and when it is finished, the screen will clear. If you are not using the security option, pressing any key will restore the screen.

If you are using a security code, it must be typed in and then Return pressed to restore the screen.

Configuration

There are two simple configuration options. Select `Configure` in the `TimeOut Utilities` option and then select `Screen Out`. If you wish to use a security code, answer `Yes` to the question. The code may be typed in lower case or upper case and may be no longer than twelve characters.

WARNING: If you clear your screen with `Screen Out` requiring a security code to restore the screen and you forget your security code, your only recourse is to reset or re-boot your system. If you reset, the currently active file on the desktop may be lost. If you re-boot, all files on the desktop will be lost. If you need security, be sure to remember or write down your security code.

Chapter 12

Screen Printer

by Dan Verkade

Screen Printer will print any portion of the AppleWorks screen to the Open-Apple H printer.

Using Screen Printer

1. Press Open-Apple Escape and select `Screen Printer` from the `TimeOut` menu.
2. Use the cursor keys to select the upper left corner of the block you wish to print. Open-Apple cursor keys will jump to the margins. The cursor can't be moved into the top two rows or the bottom two rows of the screen.
3. Press `Return` to mark the upper left corner of the block to be printed.
4. Use the cursor keys to highlight the text to be printed.
5. Press `Return` when the bottom right corner of the block has been selected. The block will then be printed on the Open-Apple H printer.

Chapter 13

Stop Watches

by Dan Verkade

Stop Watches is a set of 5 stop watches for timing events up to 24 hours in duration. You may start or stop each watch individually or all five at once. You may attach a 20-character memo to each stop watch.

You may start the watches and return to your AppleWorks application and Stop Watches will still keep time even while it is not currently displayed on the screen.

Seconds are timed on the Apple IIGS. All other Apple II models track time in increments of minutes only.

Using Stop Watches

From the TimeOut menu select `Stop Watches`. Immediately after booting AppleWorks, all five of the stop watches will be set to zero. Each watch displays four items: starting time (called "Begin"), ending time (called "End"), elapsed time, and a 20-character memo. All times are displayed in the 24 hour system, that is, 1:00 pm would be displayed as 13:00:00. Hours greater than 12 are "P.M.", and their twelve hour equivalent can be found by subtracting 12.

Note: You cannot use Stop Watches without a clock. If your system does not have a clock, a message to this effect will be displayed. Pressing the Space Bar will return you to AppleWorks.

There are four operations which may be performed on Stop Watches; they are displayed at the bottom of your screen: `Begin`, `Stop`, `Memo`, and `Zero`.

Begin

`Begin` is used to start or restart the time on a stop watch. Select `Begin` and a menu will appear to select which stop watch you wish to start. Select a stop watch or select `All` to start or restart all of the stop watches at the same time.

After starting a stopwatch, it will begin to keep time on the screen. The `Begin` column will remain frozen at the time it was begun, but the `End` and the `Elapsed` column will change every second for Apple IIGS models and every minute for other Apple II models.

Notice that while you are performing a menu function, the stopwatch does not appear to be keeping time. It really is, you just can't see it at the moment. As soon as you complete a menu function, all active stop watches will be updated.

You can actually see the watch changing time as time goes by. If the watch appears to keep time, but the right most digit pair stays at "00", then you have a standard Apple II (not an Apple IIGS). Standard Apple II models with a clock, even though the clock may keep track of seconds, will only display hours and minutes in Stop Watches.

If you are not running Stop Watches on an Apple II GS, your visual indication that a particular watch is active is the blinking colons in the time displays. If they are blinking, the watch is active; if they are not blinking, the watch is stopped.

Stop

Selecting `Stop` will freeze the `End` time and the `Elapsed` time. The time displays will show no movement for a stopped watch. Just as with `Begin`, you may stop any watch individually or all of the watches at once.

After a watch is stopped, the ending and elapsed times can be updated by selecting `Stop` for a particular watch again. If you inadvertently stopped it, `Stop` will update it, but it will never start ticking again until you execute another `Begin` for that watch.

Memo

Memo allows you to place a 20-character memo with a watch. Simply select `Memo`, select any of the five watches, and type in your memo at the prompt at the bottom of your screen. All of the standard AppleWorks editing features are available for this memo.

Zero

Will reset a stopwatch individually or all of them collectively to "00:00:00". This never needs to be done but is a good way of letting yourself know that you are finished with this particular watch and it is available for use again.

Leaving Stop Watches

Pressing `Escape` will take you back to AppleWorks. Even though you've gone back to AppleWorks, `Stop Watches` is still keeping time for you. This makes it great for timing telephone calls, short work projects, client work, and any other functions generally performed in the span of 24 hours.

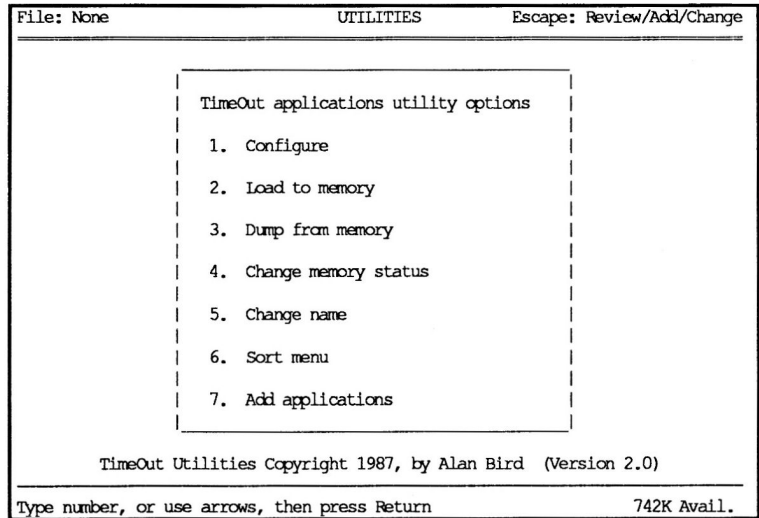
Appendix

TimeOut Utilities

The TimeOut Utilities application is provided with all TimeOut products. It has several functions that give you a lot more flexibility in using your TimeOut applications.

Using the Utilities

To use the TimeOut Utilities, make sure that the file *TO.UTILITIES* has been copied to your TimeOut applications disk. Start up AppleWorks and press Open-Apple-Escape to call up the TimeOut menu. Select *Utilities*. You will see the following:



Configure

The `Configure` option allows you to set new defaults for your TimeOut applications. Configurable options might include printer type, default font, location of files needed by the application, etc. Not all TimeOut applications have configurable options.

To configure an application, select `Configure` from the Utilities menu. Then select the application you want to configure. You will then see a menu indicating what options may be configured for that particular application. You should also see the current value for each option in brackets [].

Select an option that you would like to change. Enter or select the new value for that option. Make sure that the TimeOut applications disk is in a drive so that the application can be updated with the new value. The next time you use the application, it will use the new value that you have supplied.

After you are finished updating configurable options, press `Escape` to return to the Utilities main menu.

Load to memory

TimeOut applications are either disk-resident or memory-resident. If an application was configured as disk-resident when you started up AppleWorks, you can load it into memory using the `Load to memory` option. Just select the option from the Utilities menu and select which application you would like to load.

Dump from memory

If you receive a message from AppleWorks indicating that it was unable to complete an option because of insufficient desktop memory, you may need to dump one or more TimeOut applications that are memory-resident. Select `Dump from memory` from the

Utilities menu and select which application you would like to dump. Notice that the amount of free memory indicated in the lower right hand portion of the screen increases with each application you dump. Applications that are *dumped* are returned to disk-resident status for the remainder of the AppleWorks session.

Change memory status

This option allows you to indicate whether a TimeOut application is disk- or memory-resident. Note that this only indicates how the application will be treated when you start up AppleWorks. To load an application into memory or to return it to the disk for the current AppleWorks session, you will need to use the `Load to memory` option or the `Dump from memory` option.

Change name

This option allows you to change the name of the application as it appears in the TimeOut menu. The Beagle Bros staff carefully selects a good name for each application. However, you have the flexibility of renaming it if you wish.

If the new name you enter is longer than the old name, the name change will not be reflected in the TimeOut menu until the next time you start up AppleWorks.

Sort Menu

When you apply TimeOut to your *AppleWorks STARTUP* disk, you are given the option of indicating whether or not you want the TimeOut menu automatically sorted by application name. If you choose not to have the menu sorted, you can still sort it after starting up AppleWorks by selecting `Sort` menu from the Utilities menu.

Add Applications

This option allows you to add TimeOut applications to AppleWorks at any time while you are running AppleWorks. A new TimeOut menu is created for the new applications.

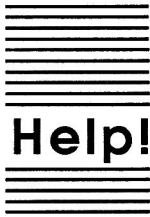
This feature allows you to start up AppleWorks with just a few TimeOut applications (including Utilities). You may just want to start AppleWorks only with Utilities and then add applications from their own disks as you may need them.

This feature also allow you to have more than 30 TimeOut applications by creating more than one TimeOut menu. Each menu can contain no more than 30 applications. If you have more than 30 applications, you will need to put 30 or less on each disk or in each subdirectory to be able to access all of them.

To add applications, select Add applications from the Utilities main menu, insert the disk containing the applications to be added, then specify the location of the disk.

There is no limit to the number of TimeOut menus you can create through the Add applications feature. To switch from one TimeOut menu to another, press Open-Apple-Escape to bring up the current TimeOut menu, and press Tab. If you continue to press Tab, you will cycle through all of the available TimeOut menus and will return back to your original menu.

Use the Tab key also to switch between TimeOut menus while using options 1-4 from the Utilities main menu. For example, if you select Configure and you get the wrong TimeOut menu, press Tab until the correct one appears.



Customer Support Information

If you have questions or problems that your dealer can't answer, you can contact the Beagle Bros Technical Support Staff for expert assistance.

Before calling, check the instruction manual to see if it contains the information you need. Write down a complete description of the problem, the version number of the software, and the names and version numbers of any other AppleWorks enhancement programs you're using.

If you have a modem, you may also receive Tech Support on our 24-hour Customer Support System. The system provides an electronic mail and conferencing system, along with the latest information about product updates and changes.

Technical Support:

(619) 452-5502 9 am to 5 pm, weekdays (Pacific Time)

Modem Tech Support:

(619) 452-5565 24 hours, everyday

Or, you can write to:

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