

# AppleWorks 2 Expander

Instructions

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AppleWorks Enhancements  
for AppleWorks 2.0 Only

**AE** APPLIED ENGINEERING

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# AppleWorks 2 Expander Instructions

## About the AppleWorks 2 Expander

The AppleWorks 2 Expander is an accessory program designed to complement Applied Engineering memory expansion products. It modifies the **AppleWorks 2.0** program to recognize and utilize the additional memory provided by these products. Also contained on the AppleWorks 2 Expander disk are several test programs you can run to verify the operation of your  $\text{\AE}$  memory expansion card.

The AppleWorks 2.0 Expander program, which is designed to enhance only AppleWorks 2.0, is a completely new program and is very different from the Super AppleWorks Desktop Expander program. The Super AppleWorks Desktop Expander will only enhance AppleWorks versions 1.0 through 1.3.

Here's a list of the AppleWorks enhancements created by the AppleWorks 2 Expander.

- Increased Desktop Size (for RamWorks & Z-Ram products)
- Up to 22,600 lines in the Word Processor (versus 7250 lines)
- Up to 22,600 records in the Data Base (versus 6350 records)
- Word Processor and Data Base Clipboard expanded to 2,042 lines (versus 250)
- On-screen time display (option)
- Data Base time-stamp capability (option)
- Printer Buffer (RamWorks and Z-Ram products)
- Multiple disk file-saving capability
- Print-file cache
- Expander options menu (accessible whenever AppleWorks is booted)

## *AppleWorks 2 Expander*

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### **Before you even think of modifying AppleWorks...**

If you are familiar with AppleWorks, you will probably be tempted to use the AppleWorks 2 Expander without reading these instructions. Resist the temptation. Or at least read this page.

- AppleWorks 2 Expander will only work on **AppleWorks 2.0**. It will not work on versions 1.0, 1.1, 1.2, or even 1.3.
- These instructions assume that you already know how to use AppleWorks. The AppleWorks 2 Expander program uses the same screen displays and keyboard input routines ("user interface") as the AppleWorks program. If you need a quick review, read *Throughout AppleWorks* in your *Using AppleWorks* manual.
- There is an AppleWorks Word-Processor file on the AppleWorks 2 Expander disk entitled "**READ.ME.**" Please do so. This document will contain information about any recent changes to the software or updates to the documentation.
- If you plan to use the Printer Buffer option, you must have a printer interface which supports Apple's Pascal 1.1 protocol for status-checking. (Most newer interfaces do support this standard.) For more information, please refer to *Printer Buffer Option* in the section entitled *About the New Features*.
- Apply the AppleWorks 2 Expander modifications only to **unmodified BACKUP copies** of your AppleWorks startup and program disks. Modifications required by other programs should be done after executing the AppleWorks 2 Expander enhancements.

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### **Enhancing AppleWorks 2.0**

AppleWorks expansion is a two part process. First, you will use the AppleWorks 2 Expander utility to modify some of the program files on the Appleworks startup and program disks. Then, you will boot the modified AppleWorks disk and add or change the limits on the enhanced features by accessing a special options menu.

#### **Part 1 - Modifying the AppleWorks disks**

Boot your copy of the AppleWorks 2 Expander disk. From the main menu, select "Execute AppleWorks Enhancements."

Read the on-screen documentation. Pressing the Space Bar will display the next screen. When prompted, remove the AppleWorks 2 Expander disk, insert the AppleWorks startup disk, and press the Space Bar to begin the modification process.

If the Expander program is unable to find the AppleWorks startup files on the disk in the currently prefixed disk drive, the following message will appear:

```
Unable to find file. Type prefix of AppleWorks to modify
```

If the AppleWorks files are on a UniDisk 3.5 or a hard-disk directory, enter the ProDOS prefix of the directory containing the AppleWorks files. (Unless you have renamed it, the AppleWorks UniDisk 3.5 directory prefix should be /APPLEWORKS.)

After the modifications to the startup disk have been made, you will then be prompted to insert the AppleWorks program disk -unless all of the AppleWorks startup and program files are contained in the same directory (i.e. UniDisk 3.5 or hard disk).

Successful AppleWorks modification is indicated by the message:

```
Modification successfully completed
```

The next very important step is to access the enhanced AppleWorks' Getting Started options menu and configure the program disk's parameter file with the desired expander options. (It's not as difficult as it sounds.)

# AppleWorks 2 Expander

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## Part 2 - Setting the AppleWorks enhancement options

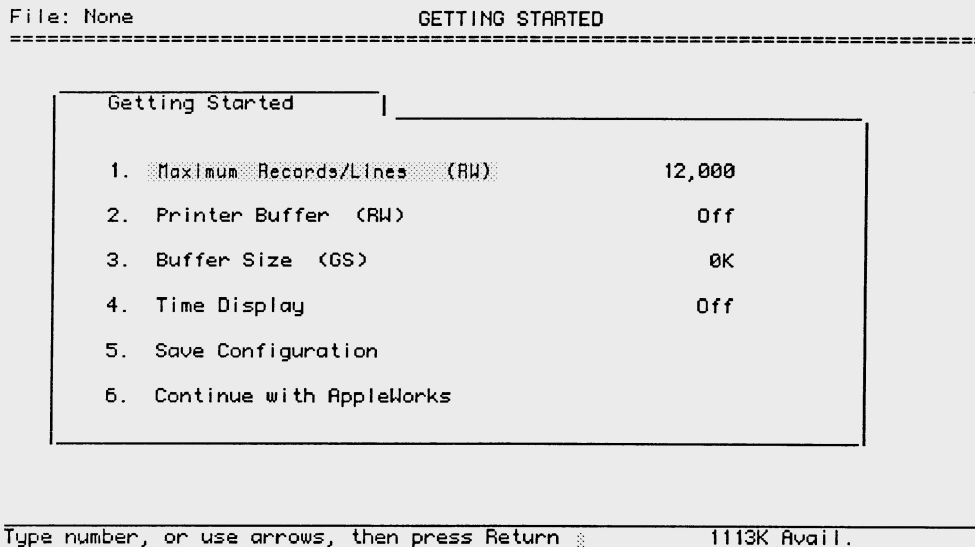
Boot the AppleWorks startup disk just like you normally would. (Notice that the AppleWorks version number near the lower right corner of the startup screen has been changed from 2.0 to 2.0A.)

When the startup disk has finished loading, remove the startup disk and insert the program disk, but DO NOT press return. Press the ESCape key instead. If you are booting AppleWorks from a UniDisk 3.5 or a hard disk, press the ESC key when you are prompted with: "Press the Space Bar to continue."

**Note:** It is not necessary to access the Getting Started options menu each time you boot AppleWorks. The Getting Started menu is only used to set the enhanced AppleWorks options.

The current enhancement-options configuration will be read from the parameter file (SEG.PR) on the AppleWorks program disk and displayed in the Getting Started option menu. The configuration shown contains the default settings. These default settings remain in effect until you change them and save the new configuration back to the AppleWorks program disk.

The Getting Started options menu:



Use the Up Arrow and Down Arrow keys to highlight the option you want. Use the Return key to select a highlighted option. For more information on the options, refer to the section entitled *About the New Features*. When you have made the desired changes, save the new configuration back to the AppleWorks program disk by selecting menu option 5, "Save Configuration."

Choose option 6 to continue booting the Appleworks program. If you did not save your new configuration, the new one will be in effect until you quit the AppleWorks program. The next time you boot AppleWorks, the previous (saved) configuration will be used.

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## About the New Features

The following paragraphs describe the new features of the enhanced AppleWorks and the instructions for using them. Please read this section very thoroughly.

### Desktop Expansion

The Desktop-expansion (over 56K) feature already built into AppleWorks 2.0 requires one of the following cards:

- RamFactor Card (Apple //e only)
- Apple II Memory Expansion Card (Apple //e only)
- GSRAM or GSRAM Plus (Apple IIGS only)

The enhanced version of Appleworks utilizes RamWorks or Z-Ram memory to expand the Desktop, enabling you to work with larger Desktop files. It does not increase the maximum number of files (12) you can have on the Desktop at one time. The Desktop expansion feature requires a minimum of 192K of system memory (128K of auxiliary memory).

### More Word-Processor Lines and Data-Base Records

With sufficient memory, the maximum number of Word Processor lines available with the un-enhanced AppleWorks 2.0 is limited to 7,250; the maximum number of Data-Base records is 6,350. The enhanced version expands the maximum number to just over 22,600 for both.

When a GSRAM, GSRAM Plus, or RamFactor is used, the enhanced AppleWorks automatically sets the number of lines and records to the maximum (22,600). When a RamWorks or Z-Ram card is used, the Getting Started options menu allows a choice of maximum lines and records. (The initial default is 12,000) In order to achieve the extraordinary increase in the number of lines and records, some Desktop space has to be sacrificed. As you set the maximum lines and records, remember that each additional 1000 lines/records requires about 2K of memory (Desktop) space.

### Clipboard Expansion

The standard AppleWorks clipboard is limited to only 250 lines of information. The enhanced AppleWorks clipboard expansion increases the clipboard size for the Word Processor and Data Base functions to 2,042 lines. Only clipboard activities within and originating from the Spreadsheet function remain limited to 250 lines.

### Printer Buffer Option

This feature is only available when the AppleWorks Desktop is expanded using RamWorks or Z-Ram memory. It is not available when only a RamFactor is used. The Apple IIGS has a built-in print buffer, which can be activated from the Apple IIGS control-panel menu. The next section describes Buffer Size Option for the Apple IIGS.



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If your RamWorks or Z-Ram has 256K or more memory, the Printer Buffer option will automatically enable you to continue working with files on the AppleWorks Desktop even while your printer is printing. With sufficient memory, the buffer will support two printers printing at the same time, each printing multiple files. The relative size of the print buffer is determined by the amount of available Z-Ram or RamWorks memory.

Note: This feature will not work with all printer interfaces. It was designed to work with all standard interfaces supporting the Pascal 1.1 protocol for status checking. If you cannot get this option to work, your interface does not support this official protocol. The Apple //c serial ports support this standard, but some serial-to-parallel printer-interface converters do not. Contact the manufacturer of your printer card or converter for details on upgrades.

As the Desktop file to be printed is being loaded to the buffer, the message "Filling buffer..." will appear on the screen and the printer will begin printing. If the printer is printing an exceptionally large file and the computer seems to be locked in the "Filling buffer..." mode, it is probably caused by insufficient buffer space. The AppleWorks Desktop will return as soon as there is enough space in the buffer for the remainder of the print file.

Pressing the ESC key while the print buffer is filling will cause AppleWorks to stop sending the remainder of the print file to the buffer. Sending a Control-C from the keyboard at any time while the printer is printing will reinitialize (clear) the AppleWorks internal print buffer. (A Control-C is issued by simultaneously pressing the "Control" and "c" keys.) If your printer or printer interface has an internal print buffer of its own, the printer may continue to print the remaining contents of its buffer even after the AppleWorks buffer has been cleared.

### **Buffer Size Option**

The Buffer-Size option of the Getting Started option menu only affects the size of the Apple IIGS' internal print buffer. (Remember to activate the computer's print buffer by using the Apple IIGS control panel.) Since the print buffer on the Apple IIGS is handled differently from the RamWorks/Z-Ram print buffer, this feature has no effect when used on an Apple //e or //c.

The Buffer-Size option of the enhanced AppleWorks Getting Started option menu lets you allocate the amount of Apple IIGS memory space (up to 64K) to be used for the print buffer. With the Apple IIGS print buffer ON and the Getting Started Buffer-Size option set to OK, the actual buffer size will be determined by the amount of memory (2K or less) that the Apple IIGS memory manager can allocate. Please refer to your Apple IIGS *Owner's Guide* for more information about the internal print buffer.

### **Time Display/Data Base Time-Stamp Option**

This option was designed to read the output of the Z-Ram Ultra clock, Serial Pro clock, Apple IIGS internal clock, TimeMaster II H.O., or any other ProDOS compatible clock and replace the "Open-Apple-? for Help" message in the bottom line of the AppleWorks screen with a current date and time display. This option also allows the AppleWorks user to enter the current date or time into a Data Base category by typing the @ character as the only entry in that category. The category name must contain either the word DATE or the word TIME but should not contain both. For example, you should not use this feature in a category named "Date and Time."

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The Getting Started options menu allows 12 hour or 24 hour time and date display. How the date is displayed on the screen and stamped in the Data Base is affected by the time display option selected.

The 12-hour (USA format) option displays the date as Month/Day/Year.

The 24-hour (French, German, and military format) option displays the date as Day/Month/Year.

The "AECLK.SYSTEM" file, required by the //c System Clock, Z-Ram Ultra, and Serial Pro clocks, can be installed to the AppleWorks STARTUP disk before or after using the AppleWorks 2 Expander. The instructions for installing the AECLK.SYSTEM file are provided in the appropriate  $\text{Æ}$  clock-product user's manual.

To use the internal clock of the Apple IIGS, the enhanced AppleWorks must be run under ProDOS 8 or 16, not ProDOS 1.1.1.

### **Multiple-Disk Save**

Data storage problems arise when the size of a file on the Desktop exceeds the amount of storage space on the data disk. A standard floppy disk can store only 135K of AppleWorks data. Using the modified AppleWorks, Desktop files larger than the available disk space, will be segmented, or "split", and saved in sections, to two or more disks. The following paragraphs explain how to use this feature to save and load segmented Desktop files.

This seems to be a good time to remind you of Murphy's Law:

**Whatever can go wrong will go wrong.**

Back up your Desktop files! A power failure will wipe out anything currently on the Desktop! It's always a good idea to have backup copies of your working data disks, especially if you have large amounts of data stored on them.

### **Saving Desktop Files to Disk**

When saving a Desktop file which is larger than the data disk space available, the enhanced AppleWorks will prompt the user with the following message:

```
Segmented Desktop File...  
Please insert NEXT disk with SAME VOLUME NAME
```

Note: If a previous version of the file already exists on the disk, AppleWorks will first ask you if you wish to delete the old file.

Remove the data disk from the current disk drive and replace it with the next data disk. All segments of a given segmented Desktop file **MUST** be saved on data disks having the same volume (disk) name as the primary (first) data disk. There must be at least one block of free space on the first data disk! If there isn't, the "unable to begin" error message will be displayed and you will

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have to delete a file on the disk or create a new primary data disk. On subsequent data disks, each appended file segment (sequential) will be automatically deleted before saving a new segment.

If you discover that you don't have enough formatted blank disks with the same volume name, don't panic! Just use the AppleWorks Disk Formatter utility under the "Other Activities" menu.

### Adding multiple-disk files to the Desktop

When adding multiple-disk, or segmented, files to the Desktop, the file **MUST** be loaded from the data disks in the same sequence as it was saved. AppleWorks will prompt the user to insert the **NEXT** data disk(s) until the file is completely loaded.

If you list the files on disks that contain segmented files you will notice that the first segment has the filename that you gave it. The next segment (on the **NEXT** disk) will have a ".2" appended to the end of your filename. The next disk in the sequence would have a ".3" appended to the filename and so on. This is the way AppleWorks keeps track of the segmented Desktop file sequence. You will probably want to label your data disks in such a way that you too can keep track of the proper sequence.

### Print-File Cache

- One small file (SEG.PR) on the AppleWorks program disk contains special configuration information about such things as your printer information, standard location of your data disk, and enhancement options. The unmodified version of AppleWorks leaves this information on the program disk and is not preloaded along with the program overlays. Whenever AppleWorks needs information from this file it prompts you to reinsert the AppleWorks program disk. The enhanced version of AppleWorks loads this file into memory at startup and eliminates the need for the program disk (until overlays are bumped from memory). Only when you change the contents of this file does the enhanced AppleWorks prompt you to insert the program disk.

Version 1.1

# **AppleWorks 2 Expander**

## **Version 2.0 Changes**

### **About the new changes**

The AppleWorks 2 Expander now includes Apple II Plus support for AppleWorks USA versions 1.2, 1.3, 2.0; German 1.2, 1.4; and French 1.2 and 1.4.

It applies two different types of patches. The II Plus patch is applied if it is being modified on a Apple II Plus, or you are modifying V1.2 or V1.3 AppleWorks. The II Plus patch appends a plus (+) symbol to the AppleWorks version number (ex: V1.3+). The memory patch is applied if you are modifying V2.0 AppleWorks on a //e, //c, or IIGS. The memory patch appends an (A) symbol to the version number (ex: V2.0A).

The FILER program, by Apple Computer Inc., is now included on this disk. Please refer to your ProDOS Users Manual for instructions on how to use this program.

Supports the ViewMaster 80, SuprTerm, Videx VideoTerm, and other Videx VideoTerm compatible cards for 80 column display on a Apple II Plus. Since the SuprTerm can not display inverse lowercase characters, all such characters are automatically converted to inverse uppercase for display.

When modifying the AppleWorks Startup disk, it now displays the modifications that will be made and asks if you want to continue. If the modifications are not the ones desired, then you will have to either modify the correct version or modify it on the computer you wish the software to run on.

Allows you to disable the Preload feature in the Getting Started Options menu. (You have to have more than 180K of available desktop space before AppleWorks will Preload itself.)

64K machines cannot use exponential functions in the spreadsheet. An Apple //e with 128k, an Apple II+ with a TransWarp, or an Apple II+ with an extra Pocket Rocket (⌘E's 16K ram expansion board) are needed for exponential functions.

Most of the documentation in the AppleWorks 2 Expander Instruction manual still apply, except for the Apple II Plus changes. These changes are documented on the following pages.

# AppleWorks for the Apple II Plus

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## AppleWorks for the Apple II Plus!

### Introduction

This section contains the instructions for the AppleWorks 2 Expander disk in relation to the Apple II Plus. These instructions will tell you how to modify AppleWorks with a ViewMaster 80 or RamFactor equipped Apple II Plus Computer.

### SOFTWARE Required:

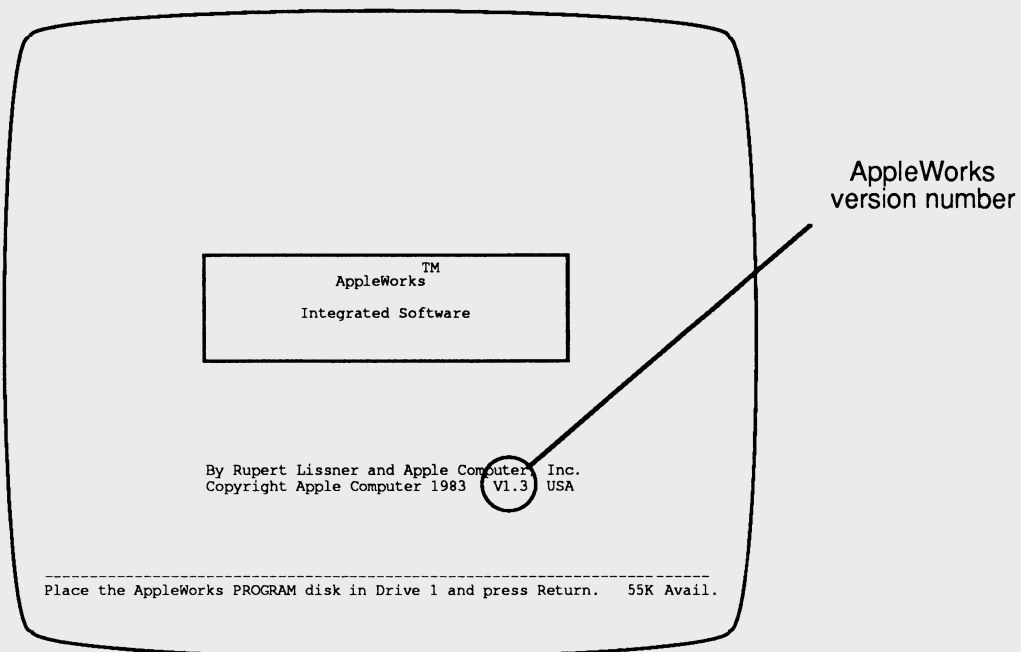
- An Applied Engineering AppleWorks 2 Expander Version 2.0 utility disk.

**Warning:** Use the AppleWorks 2 Expander only on backup COPIES of your AppleWorks disks! Store your original disks in a safe place.

- AppleWorks, version 1.2, 1.3, or 2.0.

If you have access to a computer that will boot AppleWorks (//e, //c, or IIGS), the version number is indicated on the AppleWorks Startup screen. See illustration 1-1. Versions 1.3 or 2.0 are recommended. Contact your Authorized Apple Dealer for an upgrade to the latest version.

**Illustration 1-1** AppleWorks Version number



## ***AppleWorks for the Apple II Plus***

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### **Minimum HARDWARE Required:**

- An Apple II Plus with 64K of Random Access Memory (RAM).

An Apple II won't do! It has to be an Apple II Plus with Applesoft BASIC in ROM, 48K of RAM on the main board and:

A 16K Language Card in slot 0. (See the note about *TransWarp*, below);

- A ViewMaster 80 or Videx compatible 80 column display card in slot 3; (note: to run AppleWorks version 1.2 you must be using a ViewMaster 80.)
- A video monitor capable of displaying 80 column text;
- At least one disk drive.

### **Optional Hardware:**

- RamFactor card in any available slot.

(Only AppleWorks versions 1.3 or 2.0 will be able to use the additional memory available on the RamFactor card to expand the AppleWorks Desktop. AppleWorks 1.2 will only recognize the RamFactor memory as a ProDOS RAMdisk.)

- Applied Engineering TransWarp™ accelerator card in any available slot.

(Highly recommended! - The TransWarp card will increase the processing speed of the computer and replace the 16K language card.)

- TimeMaster H.O. or any ProDOS compatible clock card.

### **AppleWorks Modification Instructions:**

This is how to use the AppleWorks 2 Expander to modify the AppleWorks disks:

1. First, make copies of your original AppleWorks disks. Filer or the System Utilities (Filer is provided on the AppleWorks 2 Expander) should be used for this purpose.
2. Boot the AppleWorks 2 Expander disk in your startup drive.
3. Select option 1 - "Execute AppleWorks Enhancements."
4. The Applied Engineering AppleWorks 2 Expander copyright screen will then appear. After reading each of the screens, press the space bar to continue.

## ***AppleWorks for the Apple II Plus***

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5. You will now be prompted to remove the AppleWorks 2 Expander disk and insert a COPY of the AppleWorks STARTUP disk in drive one. Be sure the WRITE PROTECT tab has been removed from the disk. As prompted at the bottom of the display screen, press the space bar to continue or the escape key to go back to the main menu.

The AppleWorks 2 Expander program expects to find the AppleWorks STARTUP file, "APLWORKS.SYSTEM," on the disk in drive one. If, at this point, the program displays the following message:

**Cannot find correct file  
Please enter the prefix of the AppleWorks program  
?**

Enter the complete ProDOS prefix of the AppleWorks STARTUP disk. Be sure to include any (/) slashes for subdirectories. An example ProDOS prefix of an AppleWorks subdirectory on a Profile hard disk (with a volume directory name of /PROFILE) might be:

**/PROFILE/APPLEWORKS**

6. The program will then give you a list of the modifications that it is will make to your AppleWorks disk(s) and ask you if you want to continue. If you want to go ahead and make these modifications to your AppleWorks disk(s), hit the "Y" key. If you do not want to make these modifications, hit the "N" key.
7. After the STARTUP disk has been successfully modified, you may be prompted to remove it from the disk drive and insert a COPY (write enabled) of the AppleWorks PROGRAM disk. The volume directory name of this disk must be the same as the STARTUP disk. Press the space bar to continue.
8. When the modification to the AppleWorks PROGRAM disk has been completed, the program will prompt for a key press to quit. Press the space bar and the modified AppleWorks can then be booted in the normal manner. Franklin Ace 1000 users may need to contact Franklin Computer Corp for information on how to boot ProDOS programs on their machines.

## AppleWorks for the Apple II Plus

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### Alternate AppleWorks Keyboard Commands

The Apple II Plus does not have many of the special keys available on the Apple //e keyboard, some of which are required by AppleWorks. Through the magic of software, the AppleWorks 2 Expander has patched AppleWorks to support the emulation of these special keys.

To enter an Open-Apple command on the Apple II Plus keyboard, press and release the Esc key (which will display an inverse A for the cursor to signify this mode), then press the key command. For example, ⌘ A would be entered as Esc A; ⌘ 4 would be Esc 4. Control commands are entered by holding the Control key down while pressing the appropriate letter key.

**Table 1-1** Alternate AppleWorks keys

Apple //e Keyboard	Apple II Plus Equivalent
Cursor Up ↑	Control K
Cursor Down ↓	Control J
Cursor Right →	Control U or →
Cursor Left ←	Control H or ←
Tab	Control I
Caps Lock	Control A
Escape	Esc Esc
Delete	Esc #
@	Esc %
^	Esc =
-	Esc -
\	Esc &
	Esc !
'	Esc '
~	Esc \$
[	Esc <
]	Esc >
{	Esc (
}	Esc )

### Lower Case Characters

When the modified AppleWorks is booted, it automatically enters lower-case mode. To toggle this shift lock feature between upper and lower case, use Control-A. (Press the A key while holding the CTRL key down.)

### Optional Shift Key Hardware Modification

Using the modified AppleWorks with this one wire modification, the shift key becomes a real shift key, eliminating the need to constantly toggle Control-A. The instructions for this modification are in your 80 column card manual.