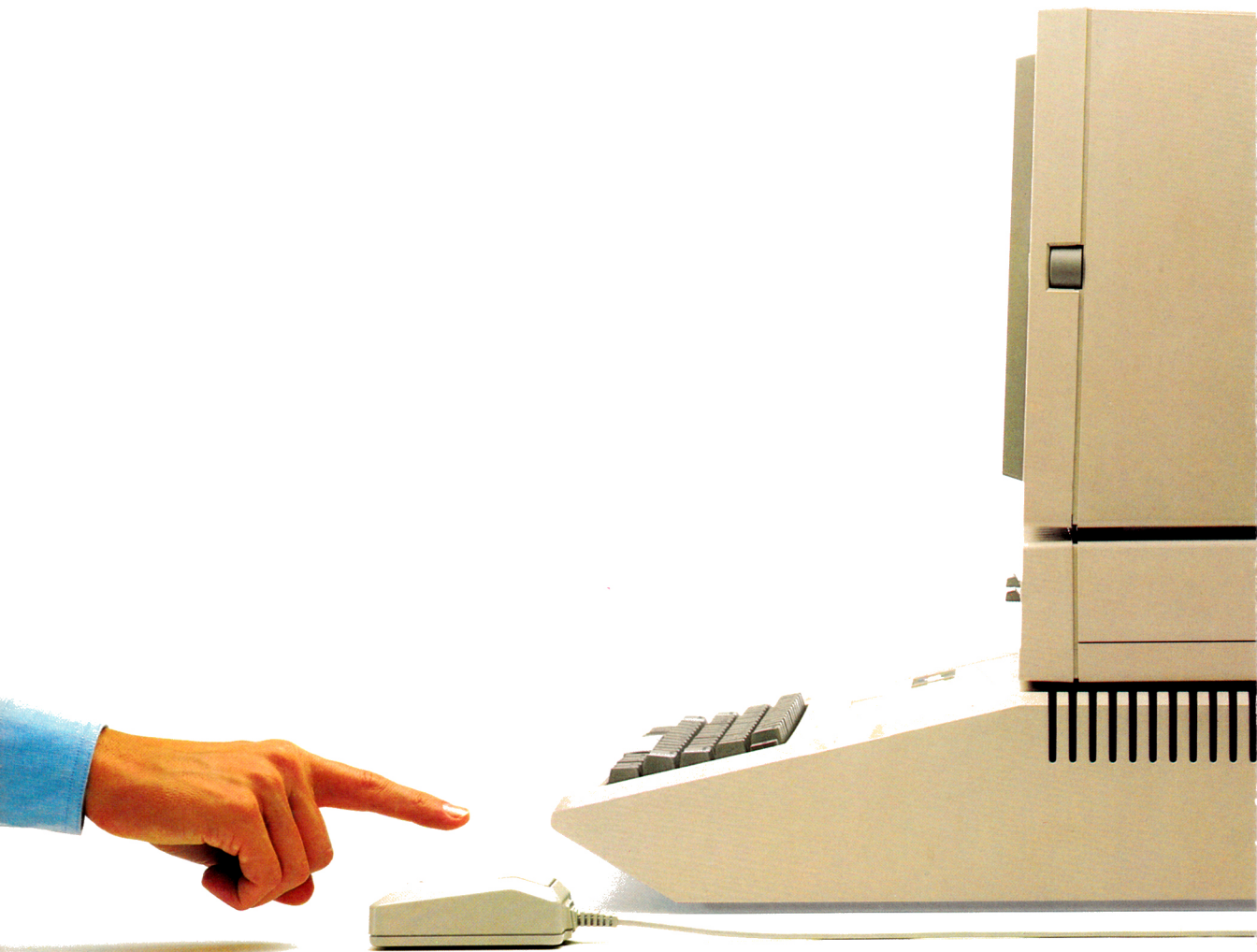




# About Your Enhanced Apple II: User's Guide



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# About Your Enhanced Apple II

## User's Guide

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## **What the Apple IIe Enhancement Gives You**

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The Apple™ IIe enhancement gives your Apple IIe greater compatibility with the Apple IIc and lets you run state-of-the-art software that's been designed to take advantage of your enhanced machine. Some features this new software may include are pull-down menus, pictorial characters, faster and smoother-looking graphics, and the ability to use the computer to work on one document while the printer is printing another. The enhancement is installed by your dealer. It involves replacing four integrated circuit chips in your Apple IIe with these more powerful chips:


- A character generator ROM, which makes it possible for your enhanced IIe to run software that uses pictorial characters and pull-down menus.
- Two new monitor ROMs, which allow your enhanced IIe to run software that incorporates features such as faster scrolling and smoother-looking graphics.
- A 65C02 microprocessor, which replaces the 6502 microprocessor and gives your IIe the ability to run most Apple IIc software.

### **The Benefits of Enhancing Your System**

The IIe enhancement by itself does not automatically give you pictorial characters, pull-down menus, and speed. You'll get the full benefit of your enhanced IIe when you use software that takes advantage of its enhanced features.

### **Pictorial Characters**

The new character generator ROM not only generates all of the characters that you're used to seeing on your Apple IIe display, it also gives you pictorial characters that make learning intuitive and fun.

When you use software that takes advantage of this feature, you'll see that many of the keystrokes, commands, and concepts that used to be represented on the display in words are now represented in pictures. For example, with the enhanced Iie and appropriate software, instead of seeing "OPEN-APPLE" on the screen you'll see .

To see how pictorial characters can simplify the display and make it easier to read, compare Figure 1 (a typical Iie display) with Figure 2 (the same display with many of the words replaced by pictorial characters).

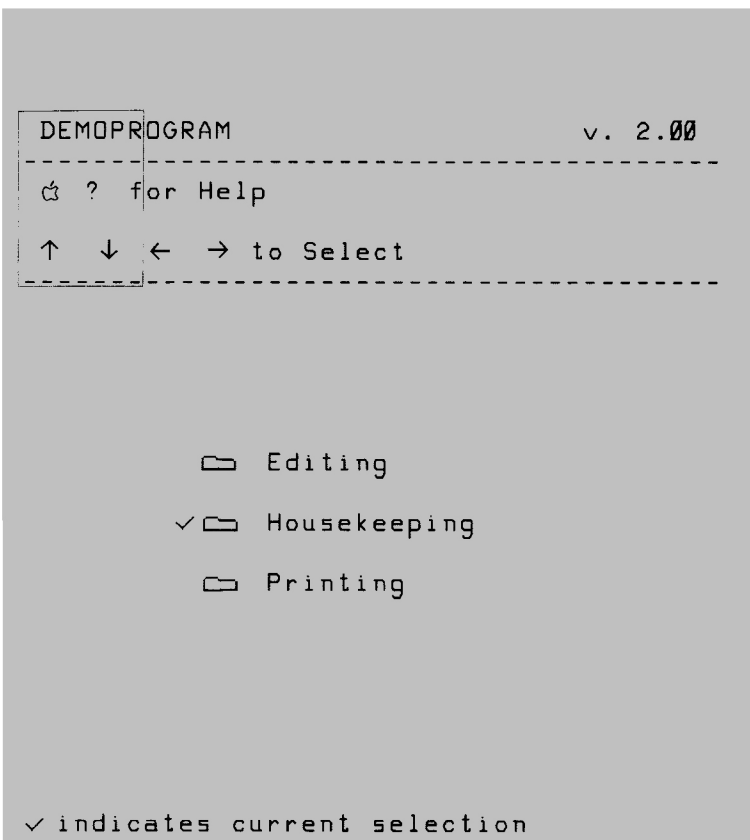
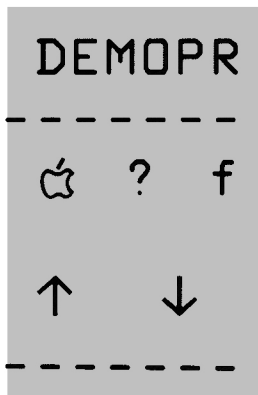
Figure 1. Typical Display Without Iie Enhancement

```
DEMOPROGRAM                                v. 1.00
-----
  OPEN-APPLE-?  for Help
  UP, DOWN, LEFT, RIGHT-ARROWS to Select
-----

      1. Editing Menu
      2. HOUSEKEEPING MENU
      3. Printing Menu

(UPPERCASE indicates current selection)
```

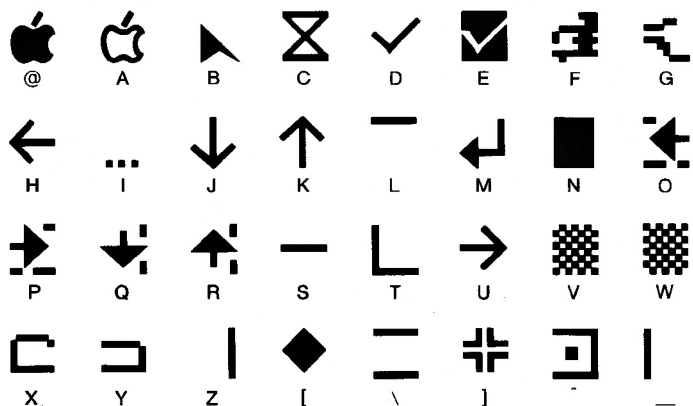
Figure 2. Typical Display With Iie Enhancement and Software That Takes Advantage of It



The pictorial characters included in the enhanced Iie and the more familiar alphanumeric characters they correspond to are shown in Figure 3. (Notice that some of the pictorial characters form a picture only when used side by side. For instance, the pictorial characters associated with the letters F and G form the image of a running man when they're put side by side. Those characters associated with X and Y form the image of a file folder.)



Figure 3. Pictorial Characters in Iie Enhancement



If you have an 80-column text card and want to display the pictorial character set on your own screen, you can do so by starting up ProDOS™ and then running this short BASIC program:

To find out how to run a BASIC program, see the chapter on programming in your *Apple Iie Owner's Manual*.

```

10 D$ = CHR$ (4): REM CONTROL-D
20 PRINT : PRINT D$;"PR#3": REM TURN ON
   80-COLUMN CARD
30 INVERSE
40 PRINT CHR$ (27);
   "@ABCDEFGHIJKLMNQPQRSTUVWXYZ[\]^_";:
   REM PRINT ALTERNATE CHARACTER SET
50 PRINT CHR$ (24);: REM TURN OFF THE
   ALTERNATE CHARACTER SET
60 NORMAL : REM TURN OFF INVERSE

```

### Pull-Down Menus and Windows

With the Iie enhancement you can also run software that uses pull-down menus and windows. Your Iie can give you these features because some of the new pictorial characters are line-drawing characters — characters that are specifically used to create crisp-looking corners and rectangular images.

FYI: It's possible to have pull-down menus and windows without the IIe enhancement. However, they don't look as good, because they must be created with vertical bars ( | ) and underline characters ( \_ ) instead of pictorial characters.

The appeal of pull-down menus and windows is more than just cosmetic: they allow you to use a program without knowing its commands or the structure of its menus. Instead of memorizing commands and typing them, you can look at a menu and see what's available, then select what you want by pointing to it with the cursor.

To see an example of how pull-down menus and windows can save you time and frustration, compare Figures 4 and 5. Figure 4 shows a typical way of saving a file: by typing the command (/S) followed by the name of the file and the number of the disk drive to save it to. Here, you must memorize the command, the drive number abbreviation, and the syntax to put it all together.

Figure 4. Typing a Command

```
DEMOPROGRAM                                v. 1.00
-----

and hope we can do business with Inter-
national Hydrofrac soon again.

Joe says you'll stop by to pick up the
televiewer on Tuesday. He claims the
new instrument is twice as sturdy and
half the cost of our old one. Let's
meet for lunch and discuss it then.

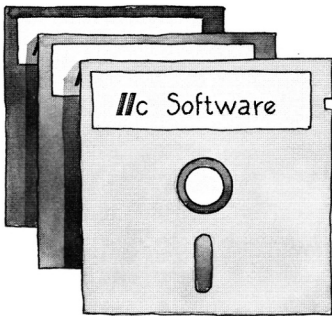
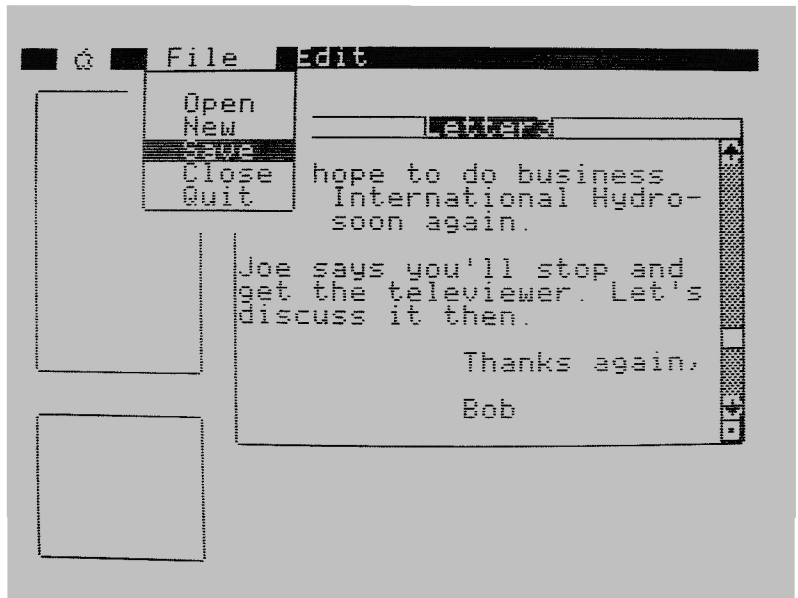
                Thanks again,

                Bob

/S letter3,d2
```

Figure 5 shows how to do the same thing using software that has pull-down menus and windows. You just point the cursor at the menu you want and pull it down to see the commands that are contained in it, then select the command you want with the cursor.

Figure 5. Selecting a Command From a Pull-Down Menu



### **Software**

With the IIe enhancement you can now run the new, easy-to-use software developed originally for the Apple IIc — and IIc upgrades of old favorites as well. This means that you have access to a larger volume of software, and software that has a more consistent, intuitive interface. The result: shorter learning time — and more fun!



### **Speed**

Your enhanced Apple IIe has the potential to run software a lot faster, so it can give you faster scrolling, smoother-looking graphics, and quicker mouse response. With the IIe enhancement and software that takes advantage of it, your Apple doesn't have to spend time checking each device every few moments to see if it needs attention. Instead, devices can now ask for the attention of the computer directly. Software that takes advantage of this ability to "interrupt" the computer can run up to 30% faster on an enhanced IIe than it would on a IIe that has not been enhanced.

The enhanced IIe's ability to handle interruptions also allows you to perform some time-dependent functions that were difficult or impossible to do before. For instance, with the enhanced IIe and appropriate software you could print one document while you're working on another — because your enhanced IIe can format pieces of one document and send them to the printer during the spare bits of time when you're editing the other.

### **Flexibility and Convenience**

The IIe enhancement gives you more flexibility and convenience in several ways:

ProDOS is the operating system for the Apple IIe that allows you to use both drives for flexible disks and mass storage devices (such as the ProFile disk drive).

- You can start up ProDOS from other devices besides the Disk II. For instance, you can now start up ProDOS from your ProFile™ hard disk.
- If you write programs, you don't have to buy an assembler. You can write small machine-language programs with the new Mini-Assembler.
- You can type Applesoft BASIC and ProDOS programs and commands in uppercase or lowercase. This means that if you forget to press **CAPS LOCK**, you won't get a SYNTAX ERROR message. Also, Applesoft now works in 80-column mode.

The IIe enhancement also offers several programming benefits. For details about these benefits and about the Mini-Assembler, see *About Your Enhanced Apple IIe: Programmer's Guide*, which you can get from your authorized Apple dealer at no extra cost.

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## **How to Tell If You Have an Enhanced IIe**

If you have this book, you probably have an enhanced IIe — but you can make sure either by checking the opening display or by lifting the lid and looking inside.

### **Look at the Opening Display**

Start up your computer and look at the top of the first display.

If it looks like this, you have an enhanced IIe:

**Apple //e**

If it looks like this, your IIe has not been enhanced:

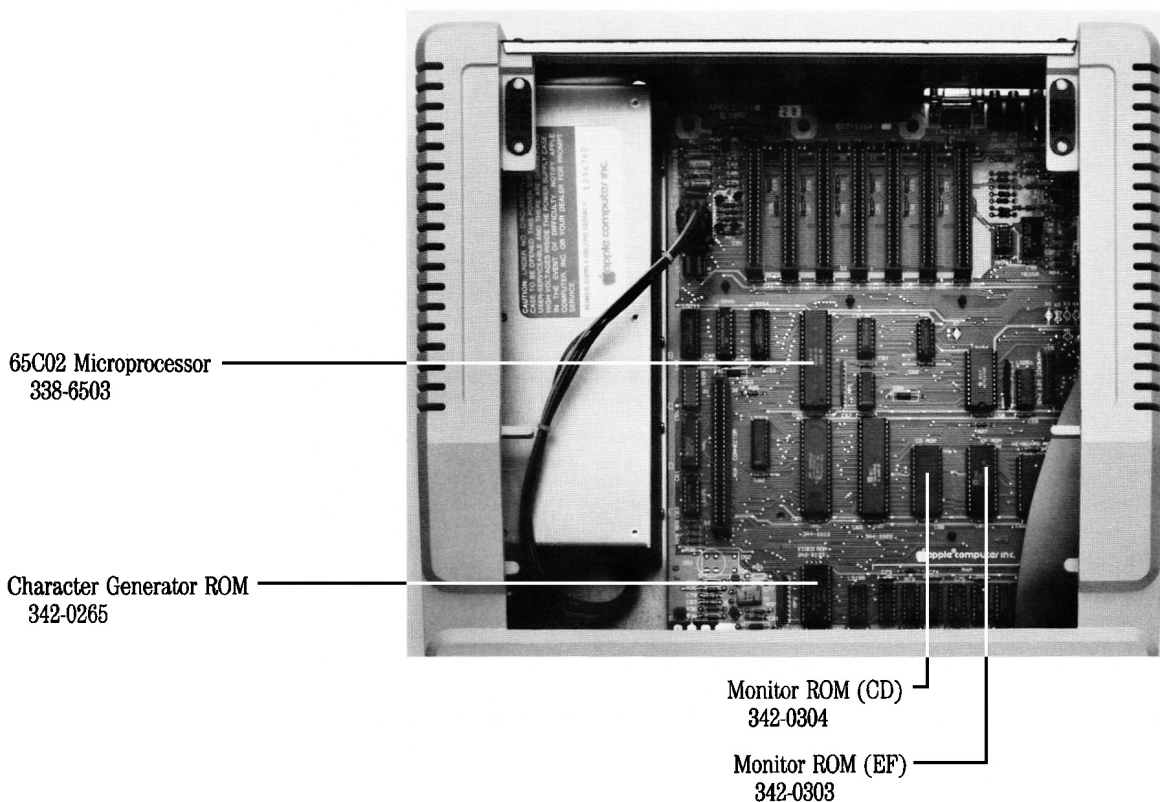
Apple II

### Or Lift the Lid

Pull up on the back edge of the IIe's cover and lift it off.

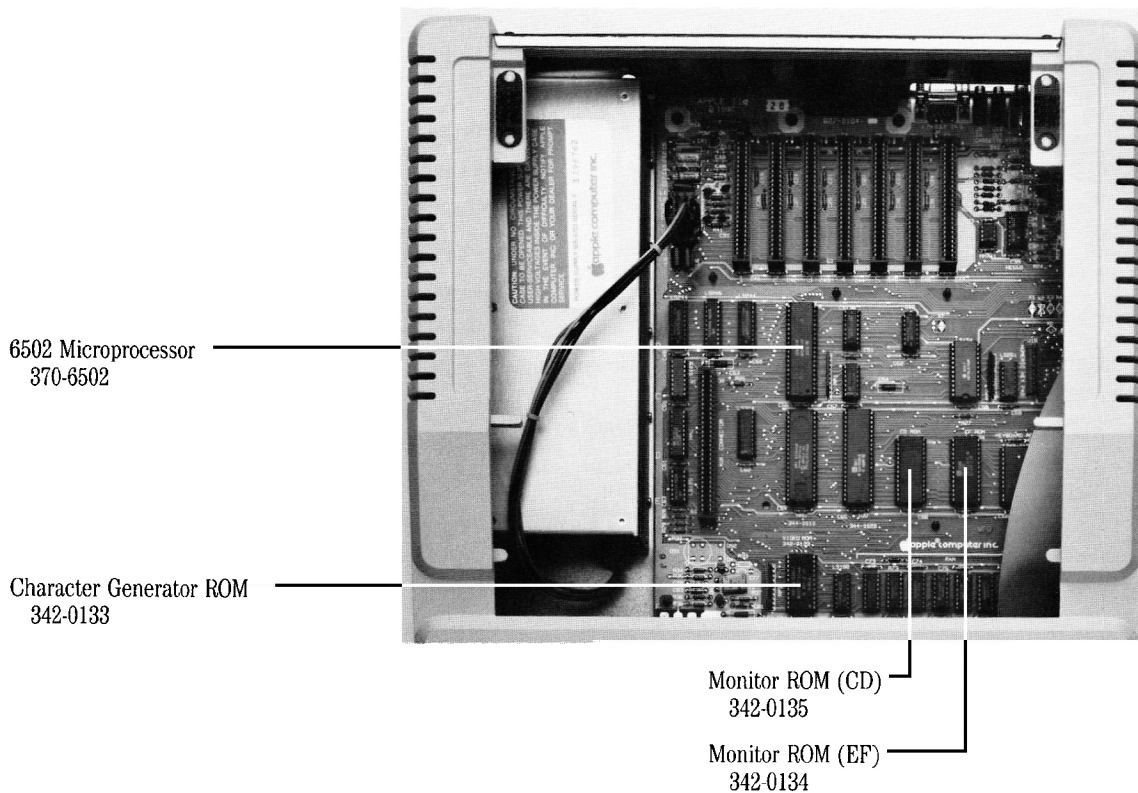
If the part numbers associated with the 65C02 microprocessor, character generator ROM, and monitor ROMs CD and EF in Figure 6 match the part numbers on the same chips inside your IIe, you have an enhanced IIe.

Figure 6. Enhanced IIe Chips



If the part numbers associated with the 6502 microprocessor, character generator ROM, and monitor ROMs CD and EF in Figure 7 match the part numbers on the same chips inside your IIe, your IIe has not been enhanced.

Figure 7. Chips in a IIe That Has Not Been Enhanced



## Check Your Software

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Most Ile software will run just the same on an enhanced Ile as it does on a Ile without the enhancement. However, in a few cases software will behave differently. That's why it's a good idea to check all of your existing software right after you get the Ile enhancement. That way, if you have a piece of software that doesn't work properly, you'll know — and avoid the confusion of trying to track the problem months later.

Of the few programs that are affected by the Ile enhancement, most are only superficially affected: in some programs, highlighted uppercase characters are displayed as pictorial characters instead. Here's why:

The original character generator ROM had two identical sets of highlighted uppercase characters. The enhanced character generator ROM has only one set of highlighted uppercase characters, and replaces the other set with pictorial characters (the characters shown in Figure 3). Hence, programs that used the other set of highlighted uppercase characters now display pictorial characters in their place. To see an example of how highlighted uppercase characters in a few older programs may be affected, compare Figures 8 and 9.

Highlighted characters are dark on a light background, like the word "MEM:" in this phrase:



MEM: FULL



Figure 8. Typical Iie Display With Some Highlighted Uppercase Characters

```
DEMOPROGRAM                                v. 1.00
-----
Filename                                  Space Allotted
LETTER                                     8   blocks
DON.822                                    2   "
CHAP6                                       15  "
MARKLET                                     3   "
MEMO.46                                    10  "
REVISE1                                    11  "

Total blocks left on disk: 150
```

Figure 9. Pictorial Characters in Affected Program

```
DEMOPROGRAM                                v. 1.00
-----
Filename                                -pace allotted
LETTER                                   8   blocks
DON.822                                  2   "
CHAP6                                     15  "
MARKLET                                   3   "
MEMO.46                                   10  "
REVISE1                                   11  "
```

Total blocks left on disk: 150

The difference in characters does not have any effect on program operation. You can go ahead and use the program as you always did — it will work just fine.

A few programs will encounter these more serious problems:

Apple reserved parts of the old ROM for future uses — such as this enhancement.

- Programs that use reserved locations in ROM may stop in midstream. (Very few programs encounter this problem.)
- The copy-protection schemes of some programs may cause them not to start up. (This problem is confined mostly to game software.)

If you encounter these problems, contact your dealer or the developer of the software to find out if an upgraded version of the software is available. Upgrades of most popular programs are available.

## To Find Out More

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If you're a programmer, you'll want to find out about some of the new things you can do with Applesoft and Pascal. For technical details about the IIe enhancement, see *About Your Enhanced Apple II: Programmer's Guide* (Apple part number 030-1143-A). You can get this manual at no extra cost from your authorized Apple dealer.

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