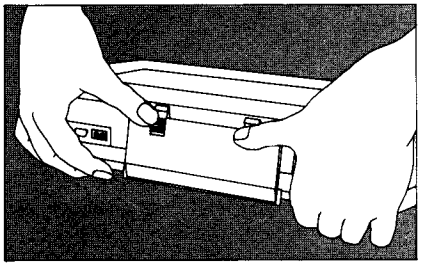
IMPORTANT! Do This First

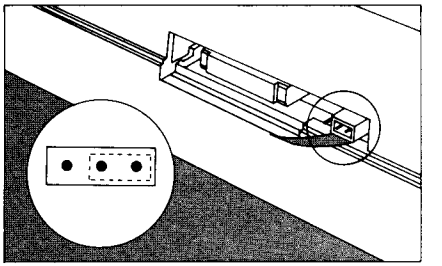
Connecting the Battery

Your computer was shipped with the battery disconnected to ensure the maximum possible charge retention during transit and storage. **The unit will not operate** until you do the following procedure to connect the battery.

1. Remove the battery cover from the back of the computer.



At the factory the battery connector was set to the "off" position—on the rightmost two pins (see inset)—to reduce battery drain.

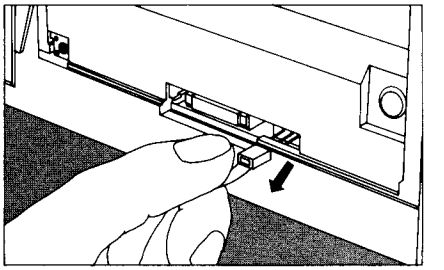


Note

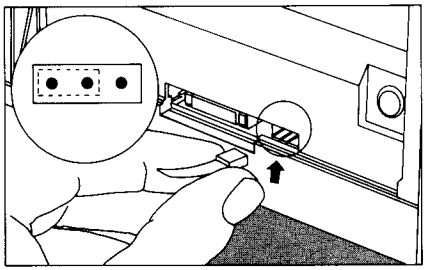
In this position:

- The computer cannot be turned on.
- User memory is empty.

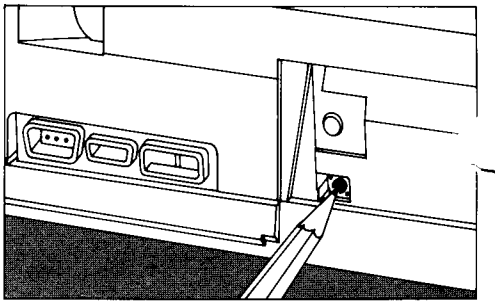
2. Remove the battery connector by pulling on the flexible tab protruding from the battery compartment.



3. Install the connector in the "on" position—on the leftmost two pins (see inset).



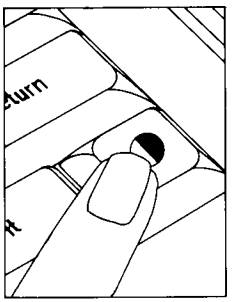
4. Do the following:
   a. Press the reset button located in the lower left-hand corner of the battery compartment.
   b. Replace the battery cover.

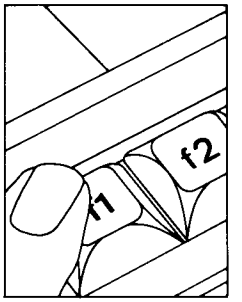


5. Open the computer and:
   a. Press the (◑) (contrast) key.
   b. Press the (f1) key to respond to the `WARNING: Memory Lost!...` message. You should now see the

      `Personal Applications Manager`

      screen. If the display is blank, connect the ac adapter and repeat the procedure, beginning with step 2.





6. To save time and to start using your computer the easy way, turn now to the booklet entitled *Getting Started with the Portable PLUS.*

Caution It should not be necessary to move the battery connector again. *Moving the connector erases user memory.*

HEWLETT PACKARD

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Portable Computer Division
1000 N.E. Circle Blvd.
Corvallis, OR 97330, U.S.A.

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Appendixes & Indexes

List of Tasks

Use this list to quickly locate the instructions for individual tasks.

Chapter 4:

Customizing Memory and System Configuration

Chapter 5:

Managing Files and Directories

Chapter 6:

Connecting Printers, Disc Drives, and Other Peripherals

Chapter 7: Using Printers

Chapter 8: Using External Disc Drives

Chapter 9: Remote Terminal Operations

Chapter 10: Using MS™-DOS Commands

Chapter 11: Using the Built-In Line Editor

You Might Like To Know

When To Use This Manual

Use this manual if you are already experienced with HP series 100 computers or after you have looked through your other Portable PLUS owner's manual, *Getting Started With the Portable PLUS*, and learned the basic operations it describes.

Typographical Conventions

The following table explains the significance of certain typefaces used in this manual:

Example	Meaning
(Return)	A computer key.
(Extend char) (Next)	A shifted key. Hold down the first key while pressing the second.
(Shift) (Control) (Break)	A two-shift key. Hold down the first two while pressing the third.
Start Applic	A label appearing at the bottom of the screen and corresponding to a function key ((f1) through (f8)).
`characters`	Characters that you type or that the computer automatically displays.
`type` *file name* (Return)	A command. The word in dot matrix (`type`) is a command. The words in italics (*file name*) indicate a variable that you provide.
`dir` [*file name*] (Return)	A command. The word in dot matrix (`dir`) is a command. The words in italics (*file name*) indicate a variable that you provide.The square brackets ([ ]) indicate that you can omit the variable if you don't need it.

You can type commands and file names in either lowercase (small letters) or uppercase (capital letters). (The computer does not distinguish between the two cases.) Once the computer stores a file name in memory, it converts all letters in the name to uppercase. Thus, when showing commands and file names in the form you would type, this manual uses lowercase because that is the case you are most likely to use. But when showing file names as they would be listed by the computer, the manual uses uppercase to correspond to the computer's operation.

Warning

This symbol marks a warning that you should observe to avoid bodily injury.

Caution

This symbol marks a caution that you should observe to avoid damage to the computer or serious loss of data.

Note

This symbol marks a note that you should observe to avoid minor problems.

Safety and Regulatory Information

For your protection this product has been tested to various national and international regulations and standards. The scope of this regulatory testing includes electrical/mechanical safety, radio frequency interference, ergonomics, acoustics, and hazardous materials. Where required, approvals obtained from third-party test agencies are shown on the product label. In addition, various regulatory bodies require some of the information under the following headings.

USA Radio Frequency Interference (FCC ID BEA9FA 45711)

The Portable PLUS generates and uses radio frequency energy and if not installed and used properly—that is, in strict accordance with the instructions in this manual—may cause interference to radio and television reception. It has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. In the unlikely event that there is interference to radio or television reception (which can be determined by turning the product off and on), you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the product with respect to the receiver.
- Plug the product or ac adapter/recharger into a different ac outlet so that the computer and the receiver are on different branch circuits.

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find the following booklet, prepared by the Federal Communications Commission, helpful: *How to Identify and Resolve Radio-TV Interference Problems.* This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock Number 004-000-00345-4. At the first printing of this manual the telephone number was (202) 783-3238.

Caution

The Portable PLUS has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC Rules. Only peripheral (computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to the computer. Operation with non-certified peripherals is likely to result in interference to radio and T.V. reception.

South African Radio Frequency Interference

This product has been certified to comply with the RFI requirements published in the Government Gazette, dated December, 1979 (Number 6794) in notice R2862 and subsequent amendments.

German Radio Frequency Interference

This product has been tested with Hewlett-Packard peripherals and complies with VFG 1046/84, VDE 0871B, and similar non-interference standards. Should you connect equipment that is not manufactured and/or recommended by Hewlett-Packard, that system configuration has to comply with the requirements of Paragraph 2 of the German Federal Gazette, Order (VFG) 1046/84, dated December 14, 1984.

French Radio Frequency Interference (ATI conforme classe B)

This product has been tested with Hewlett-Packard peripherals and complies with all French radio frequency non-interference standards for class B limits. Should you connect equipment that is not manufactured and/or recommended by Hewlett-Packard, that system configuration has to comply with these requirements.

Air Safety Notice (USA)

This product has been tested to the requirements of RTCA (Radio Technical Commission for Aeronautics) Docket 160B, Section 21 and found to comply with those limits. Many airlines permit the use of portable computers in flight based on such a qualification. However, before boarding a flight, check with an airline representative on the carrier's policy regarding use of portable computers in flight. Hewlett-Packard portables that have been qualified through this type of testing have the appropriate statement on the product label.

Other Safety Approvals

This product has been listed by the Underwriters' Laboratories, Inc., under UL standard UL 478.

This product has been tested and found to comply with VDE standard 0806 (IEC 380) by TÜV-Bayern e.V.

1 Starting an Application Program

Contents

Chapter 1: Starting an Application Program

1 Starting an Application Program

What You Can Learn in Chapter 1

This chapter tells you how to:

- Start an application program (three ways).
- Create an application menu label for a program that doesn't have one.
- Exit from an application program.

What You Can Learn Elsewhere

While this chapter tells you how to start an application program, you'll need to refer to the manual you received with the program to learn how to use it and, possibly, how to exit from it.

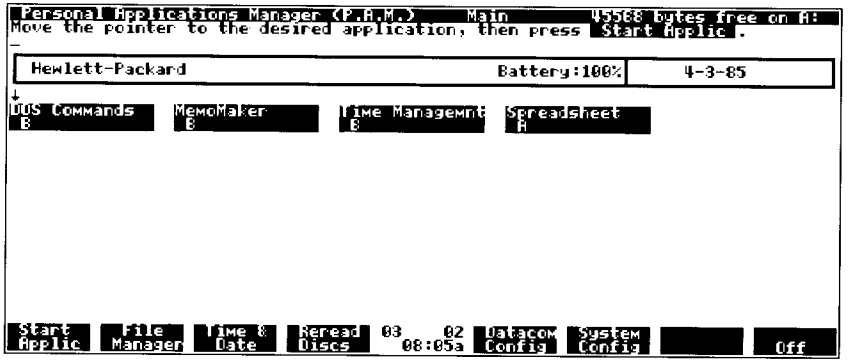
Starting an Application Program

If you want to start an application whose name appears in the main P.A.M. screen's application menu, go to the next heading. If you want to start an application whose name does not appear in the application menu, go to "Starting by Typing the Program File Name" on page 1-3.

Starting From the P.A.M. Application Menu

Some application programs you might use, whether in software modules or on flexible discs, will appear in the application menu of the main P.A.M. screen. For example, if you installed a software drawer and MemoMaker/Time Management module, connected a disc drive containing a spreadsheet application program, then turned on your computer, you would see a main P.A.M. screen similar to the following:

Main P.A.M. Screen Example With Simulated Applications Labels



Note

If you are using an external disc drive and you insert a disc containing an applications program *after* you display the main P.A.M. screen, press Reread Discs (f4) before you proceed.

Using the P.A.M. applications menu to start an applications program.

To start an application program listed like the MemoMaker or Spreadsheet applications shown above, use the following procedure:

1. Use the right-arrow key (➤) to move the pointer to the application.
2. Press Start Applic (f1).

(You can use Return or Select in place of Start Applic.)

If you need further help to start an application, refer to "Starting an Application" in chapter 6 of *Getting Started With the Portable PLUS*.

Starting by Typing the Program File Name

When the name of an applications program you want to start doesn't appear in the main P.A.M. screen applications menu, use the following procedure.

Using the P.A.M. command line to start an applications program.

This method uses the command line located near the top of the main P.A.M. screen, and requires that you know the name of the program file for the application you want to start. The colored area in the following illustration indicates the command line:

The P.A.M. Command Line

1. Begin by displaying the main P.A.M. screen.
2. Type the application program file name. If the program is in an external disc drive, type the drive name ahead of the program name. (Refer to "External Disc Drive Names" on page 8-2.) Also, if the program name ends with an .EXE, .COM, or .BAT extension, it is unnecessary to type the extension in this step.
3. Press Return.

What Could Go Wrong? If you used the correct file name (and drive name, if necessary) but the applications program did not start, one of the following conditions may exist:

- The applications program may require you to specify the drive containing that program as the default drive. To do so, use the "Starting an application from MS-DOS" procedure that is described below.
- The applications program may require certain machine settings. To verify this, refer to the documentation provided with the applications program.

Starting an application from MS-DOS.

(The MS™-DOS program is covered in greater detail in chapter 10, "Using MS™-DOS Commands.")

1. Begin by displaying the main P.A.M. screen.
2. Start the DOS Commands application. (Refer to "Using the P.A.M. applications menu to start an applications program" on page 1-2.)
3. If the applications program is on either drive A (the computer's internal, electronic disc) or an external disc drive, do the following. Otherwise go to step 4.
   a. Check the DOS prompt to ensure that it specifies the drive containing the applications program you want (A:\, C:\, D:\, etc.)
   b. If the specifier is wrong, change it by typing the correct one (a:, c:, or d:, etc.) and pressing Return.*
4. Type the application program's file name.
5. Press Return. This should start the program.

* This assumes that the program is stored in the root (main) directory of the disc. If it is not, you will have to specify the proper subdirectory before going on to step 4. To do so, refer to "Working With Files, Root Directories, and Subdirectories" on page 5-5, and to "Choosing Directories" on page 5-13.

What If I Don't Know the File Name To Use? The documentation you received with the program should tell you the name to use. However, if it doesn't, you can probably find the name by listing the directory containing the file. (If you don't remember how to list a directory, refer to chapter 7, "Working With Files," in *Getting Started With the the Portable PLUS.*) When you look at a directory listing, it may be obvious to you from the listed file names which name to use. But if you have to resort to the trial-and-error method to find the right file, you can narrow your search by remembering that, *generally, files having one of the following file name extensions will be applications program files*:

Executable Files	Batch Files
.COM	.BAT
.EXE	

Creating an Application Menu Label

Every time you want to start an applications program whose name doesn't appear on a label in the applications menu, you will have to type the program name and press (Return). However you can add the program name to the applications menu by creating a simple file named PAM.MNU. For example, if you wanted the applications menu to show a spreadsheet program named SPREAD.COM that you often used, you could create a PAM.MNU file containing the following two lines:

```
Spreadsheet
spread.com
```

(In most cases, you would probably want to store the PAM.MNU file on the same disc as the Spreadsheet program.) If you later wanted to add another program to the applications menu, such as a text editor program named EDIT.COM, you could add the following two lines to the PAM.MNU file that you created earlier:

```
Spreadsheet
spread.com
Editor
edit.com
```

If you actually created such a PAM.MNU file, the main P.A.M. screen might look like this:

Results of a Hypothetical PAM.MNU File

The basic requirements for any PAM.MNU file are:

- The odd-numbered lines (first, third, fifth, etc.) contain the names that you want to appear on applications menu labels. (A name can have up to 14 characters, including spaces.)
- The even-numbered lines (second, fourth, sixth, etc.) contain the actual file names you must use to start the desired program files. (These names are the same names that you would type in the P.A.M. command line to start the programs.)

Creating a PAM.MNU File. There are two ways: 1) Use the EDLIN line editor built into your computer, or 2) Use a text editor program available in a plug-in module or flexible disc. If you want to use the built-in EDLIN program, turn to chapter 11, "Using the Built-In Line Editor."

The PAM.MNU file must be stored in the main (root) directory of either the Edisc or an external disc. Usually, you would

probably want to store the PAM.MNU file on the same disc as the applications program. Thus, to create and store a PAM.MNU file for an application program on drive A (the built-in Edisc), use the file name a:\pam.mnu. To create and store a PAM.MNU file for an application program on a flexible disc in an external drive such as drive C, you should use the file name c:\pam.mnu.

There can be one PAM.MNU file in each drive you are using. Most program files will already be stored in the root directory. However, if you create a PAM.MNU file in the root directory, but get nothing but the main P.A.M. screen when you try to use the resulting menu label to run a program, the program is not in the same directory as the PAM.MNU file. To remedy such a situation, copy the program file so that it is in the root directory. (Refer to chapter 5, "Managing Files and Directories").

What Could Go Wrong?

When you work with files, there are several things that could go wrong. The following list describes some of the more common problems and indicates remedies.

- There is not enough Main memory to load an application program from a flexible disc. Refer to "When Do You Need To Re-allocate Memory?" in chapter 5 of *Getting Started With the Portable Plus.*
- The application program may require one or more additional program or data files to be located on a specific drive. Refer to the documentation provided with the application and copy the required files to the appropriate drive.
- The application program may require you to type one or more special parameters on the same line as the program name when you start the program. If this is the case and the parameters are different each time you start the program, then you will always have to start the program by typing the program name instead of by using a PAM.MNU file to create a menu label.

- There is not enough Edisc memory to store a file you've created while using an application program. Refer to "Is Edisc Memory Large Enough?" in chapter 5 of *Getting Started With the Portable PLUS*. (Unless you have access to a disc drive, you'll have to reduce the size of the file to the point where it can be stored in the currently available Edisc space.) See also "Checking the Available Memory" in chapter 6 of *Getting Started With the Portable PLUS*.
- Function keys (f1 through f8) do not operate as expected (as described by the manual for the application). The `Console Mode` setting in the system configuration screen may be wrong. Refer to "The Extended Character Keyboard" on page 2-4 and to the "Console Mode" entry in the table on pages 4-8 through 4-10.
- The extended keyboard won't work right. The `Console Mode` setting in the system configuration screen may be wrong.
- The computer evidently cannot find a program you specify. Either the disc containing the program is not in the drive being accessed by the computer or you have misspelled the file name or (if used) the name of a directory containing the file.
- An application program "locks up" the computer. Return to the main P.A.M. screen by resetting the computer as follows:

Caution

Any file you have created, but not already stored (including file updates), will be lost if you execute the following reset procedure.

Press and hold the CTRL and Shift keys, and then press the Break key.

For further information on resetting, including a reset that clears memory, refer to "Resetting Your Computer" on page B-6.

Exiting From an Application

The documentation you receive with any application program software should tell you how to exit from the application. If you can't find this information, try using one of the following two methods.

Exiting by using a formal command.

If the application does not have a function-key menu, the exit command will probably be a word like `exit` or `quit`, or a control sequence like (CTRL)(C).* However, if an application you have started has a function key menu, one of the menu labels in the application's main screen is likely to be an EXIT or similar command. Regardless of the actual label wording, the function key label for getting out of a program offered by Hewlett-Packard is likely to be assigned to the (f8) key.

Exiting by resetting the computer.

Caution

Any file you have created, but not already stored (including file updates), will be lost if you execute the following reset procedure.

Press and hold the (CTRL) and (Shift) keys, then press the (Break) key.

* You should not actually press (CTRL)(C) until after you store any file you've created or opened while using the application. This is because in some applications, (CTRL)(C) aborts (deletes) an open file instead of storing it. ((CTRL)(C) does not affect any earlier version of a file that is already stored on a disc.)

2 Understanding The Keyboard

Contents

Chapter 2: Understanding the Keyboard

2 Understanding The Keyboard

What You Can Learn in Chapter 2

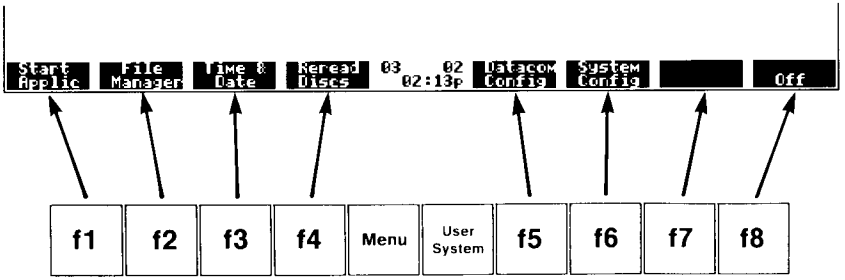
This chapter tells you the basics for using the keyboard to send information and commands to application programs and to the computer itself.

Executing a Command.

A *command* is an instruction to either an application program or the computer itself. Depending upon how you are using your computer at any particular time, you will execute commands in one or more of the following three ways:

- Pressing a function key (f1 through f8) that corresponds to a function label. For example:

Main P.A.M. Menu and Corresponding Function Keys



- Typing an MS™-DOS command and pressing (Return) to execute the command, such as `dir` (Return). (Several MS-DOS commands are described in chapter 10, "Using MS™-DOS Commands.")
- Using various keys or key combinations, such as (Backspace) and (Extend char)(Clr line).

The Cursor and How To Control It

The cursor marks the point at which characters will appear when you type on the keyboard.

The Cursor in P.A.M. Screens. The cursor symbol in P.A.M. screens is always a flashing underline character (_).

The Cursor in Applications Program Screens. The cursor symbol in applications may be either the flashing underline character or a block character (■). (To specify the block cursor refer to "The System Configuration Screen" on page 4-8.)

Moving the Cursor. In the P.A.M. screens the cursor moves when you type characters or press (Backspace) or (Return). However, in a number of applications programs, you can also move the cursor by using the (◄), (▲), (▼), (►), (Tab), (Shift)(Tab), (Extend char)(►), and (Extend char)(▲) keys. Procedures for using these keys are described under "Editing Text" on page 2-6.)

The Keyboard

The keyboard offers several capabilities; some you may already know and others about which you may or may not need to know.

An Application Program May Change Keyboard Operation

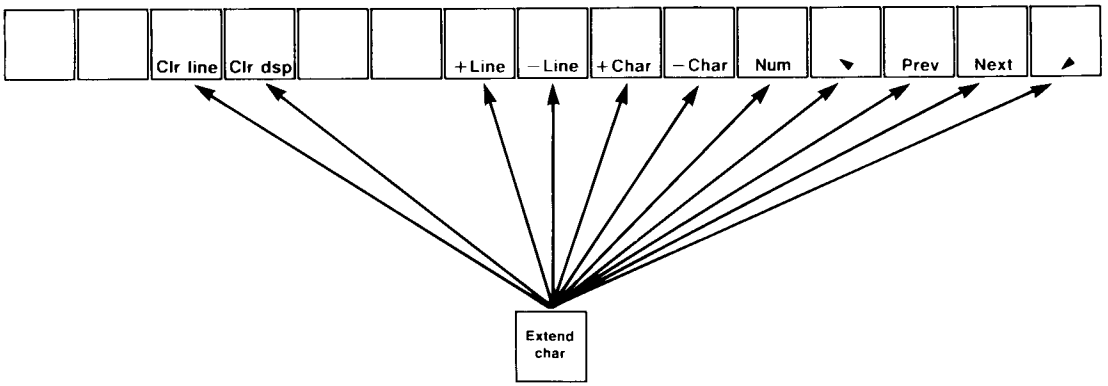
When you start an application, it may convert the operation of some individual keys and key combinations to new commands that are unique to the application. The operation of some other keys may simply be cancelled. To learn how any application program affects the keyboard, refer to the documentation provided with that application.

Keys That Shift or Modify Other Keys

By providing keys that shift or modify other keys, the keyboard offers you a large number of operations without a correspondingly large number of keys. The keys provided for shifting and modifying are (Shift), (Extend char), and (Caps).

The (Shift) key operates like the shift key on a typewriter. The (Extend char) key operates similarly, shifting the operation of the top row keys from their primary functions (printed on the tops of the keys) to their "extended" functions (printed on the front faces of the keys):*

Top Row Extended Function Keys

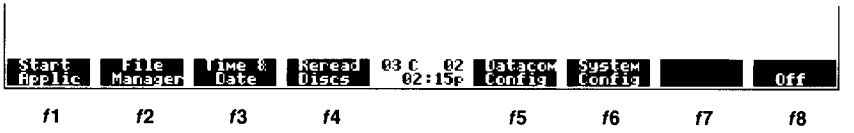


* Applies to standard system operation. To produce IBM®-compatible characters, refer to "The System Configuration Screen" on page 4-8 and to the Console Mode entry in the table on pages 4-8 through 4-10.

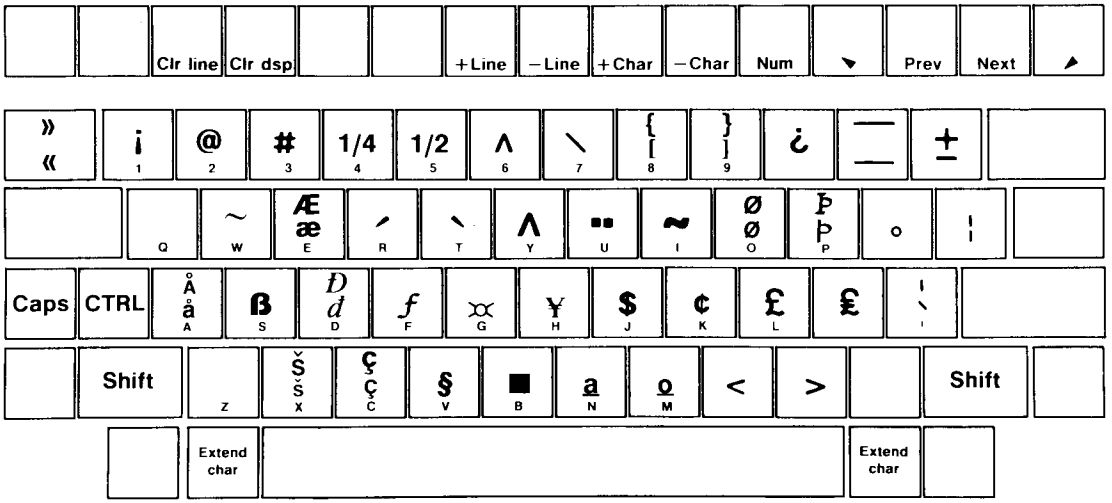
Thus, pressing (Extend char) and any top row key showing a function name on its front face executes that function. ((Extend char) also lets you use the letter keys to type Hewlett-Packard's *Roman8* characters on the extended character keyboard described on page 2-5.)

(Caps) operates like a caps lock key on a typewriter, changing the case of the letter keys back and forth between lowercase and uppercase. (When the keyboard is set to lowercase, using (Shift) with a letter key produces an uppercase letter. When the keyboard is set to uppercase, using (Shift) with a letter key produces a lowercase letter.) When your computer is set to uppercase, a capital C appears in the status block at the bottom of the screen:

The "Uppercase" Status Block Indicator



The Extended Character Keyboard. When you hold down (Extend char) and press almost any character key, an *extended character* is displayed that is not on the key face. These extended characters are from Hewlett-Packard's Roman8 character set:



To type an extended character, press (Extend char) and the character key. (To type the topmost character shown on keys having three characters, press (Shift)(Extend char) and the character key you want.)

These extended characters include international currency symbols and other characters needed for typing in several European languages. The diacritic characters (` ´ ^ ¨ ~) do not advance the cursor, thus allowing you to type characters such as í, è, î, ö, and ñ, as follows:

1. Press (Extend char) and the key having the diacritic mark you want. (The cursor does not move.)
2. Press the key having the character you want to appear under the diacritic.

For example, to type ö, you would press the following keys: (Extend char)(u)(o).

2

Note

Some application programs may not allow you to use the Roman8 extended character keyboard. Check the documentation for the specific application.

Text Processing

Some application programs such as text editors and terminal emulators enable you to type and edit text on the screen. To determine whether a particular application allows you to do so, refer to the documentation provided with that application.

Entering Text

Most of your computer's keys are like those on a standard typewriter keyboard. You can type uppercase letters, lowercase letters, numbers, and symbols. Use the (Return) key in the same way that you would use the carriage return on a typewriter.

Editing Text

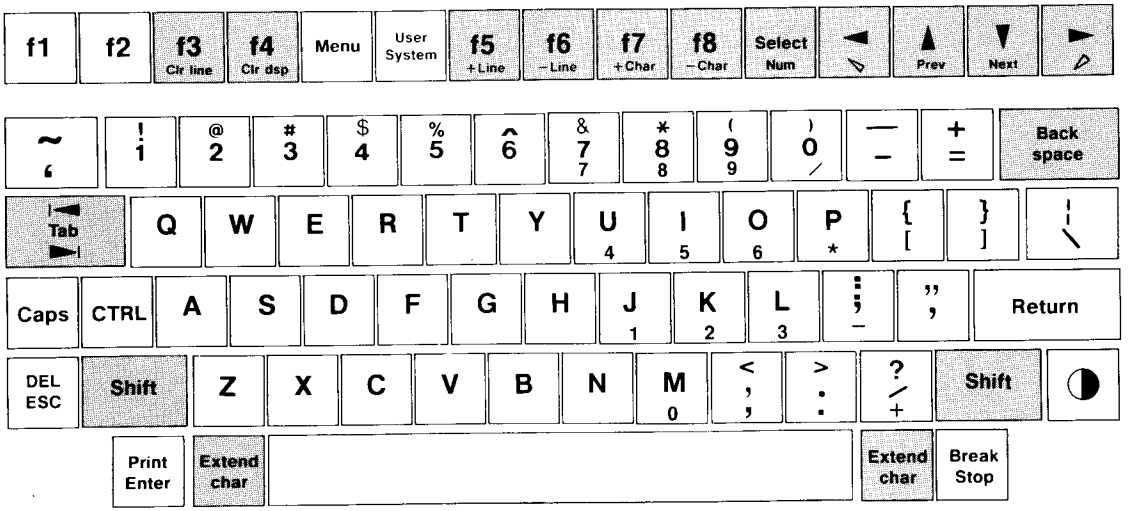
After you've typed your text, you can review it, add to it, modify it, or delete some or all of it. This section describes such editing operations as they apply to many applications.

Note

Remember that an application program can redefine keys. For this reason be sure to check the manual you received with the application to learn whether any key functions are altered.

Most of the editing tasks listed below are performed using keys in the top row, and several are executed using the (Extend char) key.*

* These tasks are nonoperative in the alternate Console Mode setting described in the "System Configuration Parameters and Settings" table on pages 4-8 through 4-10.



Clearing a line.

Use this command when you want to delete text from a line without deleting the space for the line.

1. Place the cursor on the character at which you want the deletion to begin.
2. Press (Extend char)(Clr line).

The character at the cursor position and all characters to the right will be deleted.

Clearing typed text from the screen.

Use this command when you want to delete all text from some point to the end of the display.

1. Place the cursor where you want to begin the deletion.
2. Press (Extend char)(Clr dsp).

This deletes the character at the cursor, all characters to the right of the cursor, and all lines below the cursor.

Deleting a character.

1. Place the cursor on the character you wish to delete.
2. Press (Extend char)(−Char).

Any characters remaining to the right will be moved one space to the left.

Deleting a line.

1. Place the cursor anywhere on the line you want to delete.
2. Press (Extend char)(−Line).

This deletes the line at which the cursor is located and moves all subsequent lines up one line.

Erasing text.

Press (Backspace) to move the cursor one space to the left and replace the character in that space with a blank.

Inserting a blank line.

1. Place the cursor anywhere on the line at which you want to insert a new line.
2. Press (Extend char)(+ Line).

This moves the line at which the cursor was located and all subsequent lines down one line and inserts a new, blank line.

Inserting or replacing characters.

This command operates like a switch, or *toggle*, that enables you to either type over existing characters or insert new characters within a series of existing characters. To switch between the two settings, press (Extend char)(+ Char).

When the computer is set to insert characters, a capital I appears in the status block at the bottom of the screen. While this feature does not operate in the P.A.M. screens, it operates in text editors such as MemoMaker, shown below:

The Insert Character Status Block Indicator

In Replace Character mode (I not displayed in status block), typing a new character replaces the existing character at the cursor position. In Insert Character mode (I displayed in status block), typing a new character inserts that character at the cursor position and moves all subsequent characters in the line one space to the right.

Moving the cursor to the next or previous tab stop.

To move the cursor to the next tab stop, press (Tab). To move the cursor to the previous tab stop, press (Shift)(Tab).

Moving the cursor to the right or left.

To move the cursor right or left one space at a time, press (►) or (◄). The cursor stops when it hits the right or left margin.

Moving the cursor to the top or bottom of the text.

To move to the first space in the first line, press (Extend char)(►). To move to the first space in the blank line following the last text line, press (Extend char)(▲).

Moving the cursor up or down.

To move the cursor up or down, press (▲) or (▼). The screen may scroll up or down to display lines beyond the current window. (In any case, the cursor stops when it reaches the first or last line in the display memory.)

Moving the text up or down.

To move the text up or down, press (Shift)(▲) or (Shift)(▼) once for each line. (The text stops when the first or last line is reached.)

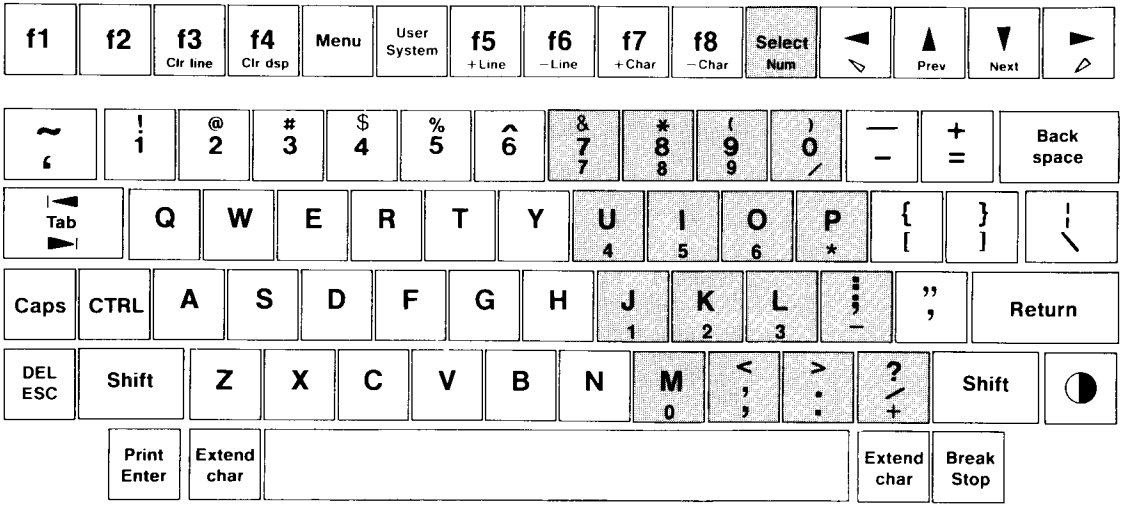
Moving to the next or previous page of text.

Press (Extend char)(Next) or (Extend char)(Prev).

The Numeric Keypad

Near the center of the keyboard is the numeric keypad.

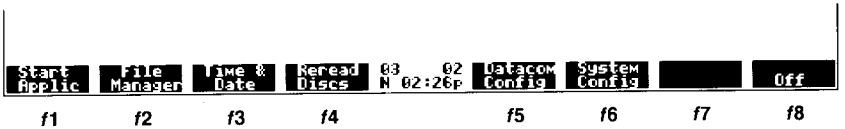
The Numeric Keypad



To activate or deactivate the keypad, press (Extend char)(Num).

This feature operates like a switch, or *toggle*, that enables you to use the keypad to type either the numbers printed on the faces of the keys or the letters printed on the tops of the keypad keys. When the computer is set for numeric keypad operation, a capital N appears in the status block at the bottom of the screen:

The Numeric Keypad Status Block Indicator



When the computer is set to type letters with the keypad keys, the N does not appear in the status block.

3 Using the Alarm Clock and Calendar

Contents

3 Using the Alarm Clock and Calendar

What You Can Learn in Chapter 3

This chapter tells you how to:

- Set and adjust the date and time.
- Set audible alarms that can display messages and automatically execute commands.

You might wish to read "Setting the Time" in chapter 3 of *Getting Started With the Portable Plus* before you proceed in this chapter. The information under "Setting the Time" tells you how to set the time and date without giving you the extra details you don't need at the beginning. The chapter you're reading now gives you the *additional* information you need to take advantage of all your clock-calendar's power.

Setting the Time and Date

The following procedure describes how to set the clock and calendar to your local time and date.

Note

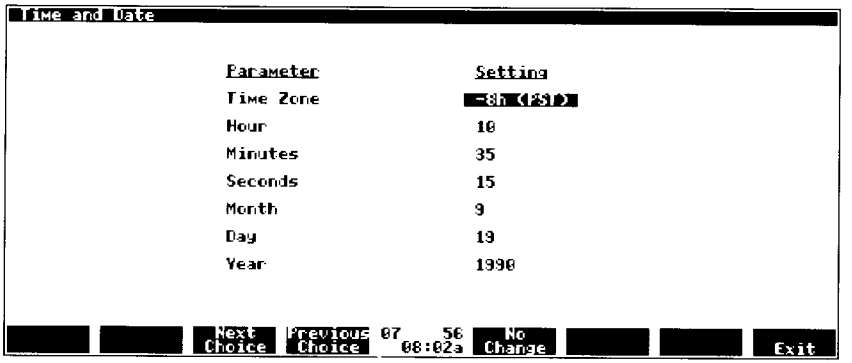
The typewriter keys are disabled when any configuration screen is displayed. Thus, you cannot use the number keys to enter a time. (If you try, the computer will only sound a tone.) Instead, you must press either Next Choice (f3) or Previous Choice (f4).

The settings you select on your Time and Date configuration screen do not become effective until you press Exit (f8). Thus, for maximum precision, set minutes and seconds last, just before you exit from the screen.

Setting your clock and calendar.

1. Start with the main P.A.M. screen. (If you don't know how to do this, refer to "Understanding the User Interface, P.A.M." and "Giving Instructions (The Main P.A.M. Screen)" in chapter 3 of *Getting Started With the Portable PLUS*.

2. Press Time & Date (f3) to display a configuration screen similar to the one shown below:



3. Since the time zone setting is already highlighted, you can now select the setting for your time zone. Press either Next Choice (f3) or Previous Choice (f4) as many times as necessary to display your time zone. The following table explains the meaning of the abbreviations that appear with several of the time zone setting options.

Time Zone Abbreviations Used in the U.S.A.

Zone	Abbreviation	Meaning
−3h	ADT	Atlantic Daylight Time
−4h	AST/EDT	Atlantic Standard Time Eastern Daylight Time
−5h	EST/CDT	Eastern Standard Time Central Daylight Time
−6h	CST/MDT	Central Standard Time Mountain Daylight Time
−7h	MST/PDT	Mountain Standard Time Pacific Daylight Time
−8h	PST	Pacific Standard Time

4. Press (▼) four times to highlight the `Month` menu setting.
5. Press either Next Choice ((f3)) or Previous Choice ((f4)) as many times as is necessary to display the number for the current month.
6. Use the arrow keys and the Next Choice ((f3)) or Previous Choice ((f4)) keys to set the remaining parameters (day, year, hour, minutes, seconds). You should set the time (hour, minutes, seconds) last.

Note 

When setting your clock to the correct time, choose a setting about one minute in the future. Then, after you select a `Seconds` setting, you can wait for the actual time to agree with your selected time.

---

7. *At the instant that the actual time you set in step 6 arrives,* press Exit ((f8)). This starts your clock at the time (and date) you've specified earlier in this procedure.

What to do if you've changed the time and/or date settings, then decided not to change the clock and calendar.

To prevent the computer from implementing changes you've made in the clock settings, press No Change (f5) *before* you press Exit (f8). This allows you to exit from the Time and Date screen without resetting the time and date.

Changing Time Zones

When you change time zones, all you need to do is change the `Time Zone` setting on the Time and Date Configuration screen. The computer automatically makes any corresponding time and date changes required by your time zone change.

Alarms

Your alarm clock not only sounds a tone of about ten seconds when the alarm goes off, but also can optionally display a message (*message alarm*) or execute a command (*command execution alarm*). To set an alarm, you need to either create a new file named `PAM.ALM` or, if this file already exists, add one line to it. You can create or write in this file by using either a text-editor program that can be used with your computer or the built-in MS-DOS line editor (`EDLIN`) described in chapter 11, "Using the Built-In Line Editor."

Message Alarms

1. If you don't already have a file named `PAM.ALM`, create it.

Note

The `PAM.ALM` file must be stored in the root directory of the computer's electronic disc, and not in a subdirectory. If you are unsure about how to do this, use `a:\pam.alm` when you name the file. This ensures that `PAM.ALM` will be stored in the right place. (If you store this file in a subdirectory, the computer will not recognize it as an alarm file.)

2. Execute any commands necessary to call or open the file. (If you are using the built-in `EDLIN` program, creating the file also opens it.)
3. If you are using a `PAM.ALM` file that existed previously, you may want to delete any alarm lines that are past due.
4. On a blank line, type an alarm setting (and any message you want) using the following format:

Note

Alarms must be in chronological order and each alarm must be on a separate line. Otherwise, the computer could miss some alarms.

MM/DD/YY HH/mm An (optional) message can go here.

where:

MM = the month (1 through 12).
DD = the day (1 through 31).
YY = the last two digits of the year.
space = separation between date and time.
HH = the hour (0 through 23).
mm = the minutes (0 through 59).
space = separation between time and (optional) message.

Notice that there *must* be a space between the year (*YY*) digits and the hour (*HH*) digits. Also, only one line per alarm setting (including the message—if any) is allowed. (The message can be up to 69 characters in length, including spaces.) If you want to, you can substitute a colon (:) for the slash (/) shown above.

5. Press (Return).
6. Using the same format, type in any chronologically later alarms you want. *Type each alarm on a separate line.*
7. Set the alarms you have typed by storing the file* and returning to the main P.A.M. screen.

* Use the commands required by your text editor.

Note

Part of setting an alarm is returning to the main P.A.M. screen after storing the PAM.ALM file. (If you don't return to the P.A.M. screen, the computer doesn't detect the alarm setting.) Once you have created the PAM.ALM file and returned to the main P.A.M. screen, you can continue with any other computer operations that you wish.

List Alarms in the Right Order. The computer searches the PAM.ALM file in chronological order for the next, future alarm, and stops searching when it finds a future alarm. (Past-due alarms are ignored.) Thus, when two or more alarms are listed in the file, they must be arranged in chronological order beginning with the nearest alarm. Otherwise, one or more alarms will become past due (and ignored) while the computer waits to activate a chronologically later alarm that is listed out of order in the file. For example:

```
3/18/88 10/00 }
3/18/88 10/30 } These alarms will not be missed.
3/18/88 13/30 }

3/18/88 11/15 } These alarms missed because they're listed
3/18/88 12/15 } after a later alarm.
```

Alarm File Examples. If you wanted an alarm to go off at 9:30 a.m. on January 10, 1990, with no message, you would type the following line in your alarm file:

```
1/10/90 9/30(Return)
```

If you wanted to add an alarm for 10:30 a.m. to remind you to call for a dinner reservation, and another alarm at 3:20 p.m. on the following day to remind you that a staff meeting begins at 3:30, your file would look like this when you finished typing:

```
1/10/90 9/30
1/10/90 10/30 Call for dinner reservation.
1/11/90 15/20 Staff meeting in 10 minutes.
```

Command Execution Alarms

You can set an alarm to execute any program that you could routinely execute by typing the appropriate command in the main P.A.M. screen command line and pressing (Return). The only difference is that you type the symbol > and a command after the alarm date and time instead of a message. (See step 4 on page 3-5.) Thus, you would type the alarm setting as follows:

MM/DD/YY HH/mm >command

As with the message alarm, be sure to leave a space between the minutes digits (*mm*) and the > symbol.

Example of Execute Alarms. If you wanted the computer to activate itself at 10:15 a.m. on September 16, 1990 and run a batch file named TEST1.BAT, you would type the following line in a PAM.ALM file:

```
9/16/90 10/15 >test1.bat
```

Responding to Alarms

Message Alarm Responses. The computer's alarm reaction and your response depends on what is showing on the screen when a particular alarm activates:

- **If the screen is off and the main P.A.M. screen was the last screen displayed:** When the alarm starts to sound, the computer displays the main P.A.M. screen. Once the alarm stops sounding (in about 10 seconds), your computer automatically displays the alarm message screen and any message associated with the alarm:

The Alarm Message Screen

- If you want to stop the alarm and see the message (if any) sooner, press the space bar.

  To return to the main P.A.M. screen, press the space bar again.

Note

If an alarm sounds while the main P.A.M. screen is displayed, the keyboard remains active. Thus, if you press a character key to stop the alarm and display the alarm message, the character assigned to that key will be typed in the command line. For this reason it is recommended that you press the space bar instead of any other key when you don't want to wait for an alarm to stop sounding before you see the message.

- **If the screen is showing one of the P.A.M. displays:** You respond in exactly the same way as if the screen were off when the alarm sounds. When the alarm stops, the message is automatically displayed. Or, you can press the space bar while the alarm is sounding to stop the alarm and to immediately display the message. If you're in one of the File Manager screens and you press the space bar, a space will be typed in the command line of the screen that's displayed when the alarm sounds. If you're in a configuration screen, no space will be typed.

  To return to the screen that was displayed when the alarm sounded, press any key.

- **If the screen is either turned on and showing an application program display or turned off due to a keyboard timeout during an application program display:** You can stop the alarm by pressing the space bar, which affects your application in the same way it would if no alarm were sounding (perhaps by typing a space). Or you can let the alarm stop by itself in about 10 seconds.

  In either case, to see your message, exit your application at any time and display the main P.A.M. screen. Be sure you save any application information you've entered such as spreadsheet entries or word processor text before you exit from your application program. As soon as you return to the main P.A.M. screen, your computer will automatically display the alarm message screen.

  To return to the main P.A.M. screen, press any key.

Command-Execution Alarm Response. If you are not using an application program when the alarm activates, do nothing. The alarm will sound for about 10 seconds, then your command will be automatically executed. If you are using an application program when the alarm activates, the tone will sound, *but the command will not be executed until you exit from the current application program and return to the main P.A.M. screen.*

If you interrupt the alarm by pressing almost any key, the alarm will stop sounding. If one of the P.A.M. screens is displayed, the computer executes the alarm command immediately. Otherwise, the alarm command will not be executed until you return the computer to P.A.M.

Alarm Limits

If you are using an application program when an alarm comes due, the tone sounds, but the message display or command execution specified in the `PAM.ALM` file does not occur until you exit from the application and return to the main P.A.M. screen. While you are using an application program, the computer can "remember" up to eight alarms that come due. However, only one of these alarms can be a command execution alarm. That is, regardless of how many alarms come due while you're using an application, only the first command execution alarm that comes due will be held for execution when you exit from the application. Any additional command execution alarms that come due will be lost.

What Could Go Wrong With an Alarm?

Depending upon how you are using your computer, there are several things that could cause an alarm not to activate when you want it to:

- The alarm is set for the wrong date or a past due time.
- Alarms are not in chronological order.
- The PAM.ALM file is not stored in the main (root) directory of drive A.
- The alarm data is not typed correctly. See steps 4 and 5 on page 3-5 and "Command Execution Alarms" on page 3-7.
- More than one alarm is typed on a line.
- External equipment required for a command execution alarm is not properly connected, is not turned on, or is not specified in the computer system configuration screen. (Refer to chapter 4, "Customizing Memory and System Configuration.")

4 Customizing Memory and System Configuration

Contents

Chapter 4: Customizing Memory and System Configuration

4 Customizing Memory and System Configuration

What You Can Learn in Chapter 4

This chapter tells you:

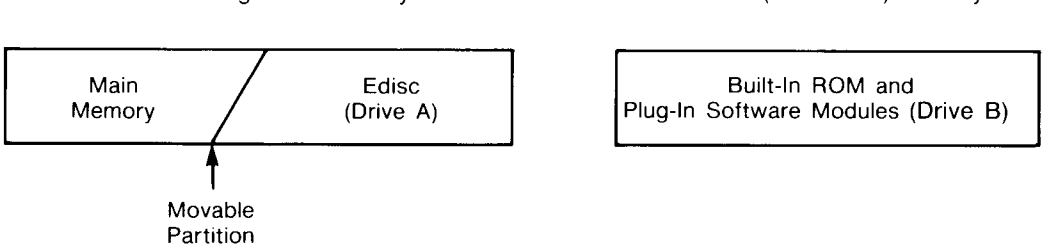
- What "disc drives" A and B are and how to use them.
- What the electronic disc (or Edisc) is.
- How computer memory is organized.
- How to move the boundary between main memory and electronic disc memory.
- How to use the system configuration screen.

Memory Layout

Your computer is equipped with two memory areas termed *user memory* and *read-only memory.*

User Memory. This contains the memory whose contents you can change. (User memory is sometimes referred to as *Random-Access Memory* or *RAM.*) It is divided into *main memory* and *electronic disc (Edisc) memory* by a movable partition.

Read-Only Memory. This memory contains programs such as those for the MS-DOS commands and terminal emulator that are built-in to your computer. Read-Only Memory is permanent. It contains programs you can use, but cannot change. (You may have heard this type of memory referred to as *ROM.*)



4

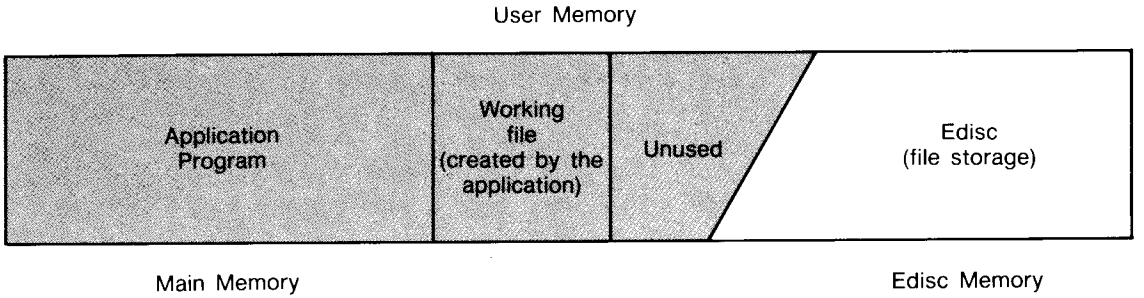
Main Memory

Main memory is your workspace. In many cases, when you tell the computer to start an application program, the computer copies the program from ROM or an external disc drive into main memory. The maximum size of a file that can be loaded into main memory (such as an application program file) is determined by the size of main memory.* In some cases, main memory size also controls how large a data file you can create using an application program (such as some word processor or spreadsheet programs).

A Portable Plus has a main memory whose size you can increase by moving the partition between main memory and Edisc memory. (To learn how to change main memory size, refer to "Dividing Memory Between Main and Electronic Disc Memories" on page 4-4.) You can also increase the upper limit on main memory by adding a memory drawer.†

* Some application programs operate out of ROM instead of out of a copy in RAM, or they operate only with program data (such as temporary tables, data pointers, and internal variables) in RAM. To determine whether either of these cases apply to a particular application program, refer to the documentation you received with the program.

† The maximum main memory is 512K bytes. If your unit contains more than 512K, the excess above 512K can be used only as Edisc memory.



The Other Side of User Memory: The Electronic Disc (Drive A)

As indicated under "User Memory" on page 4-1, part of user memory functions as an electronic disc (Edisc). This Edisc functions like a mechanical drive that uses physical discs, but actually involves neither one. The Edisc is termed *drive A*. You can save files on drive A and get files from drive A in the same way that you save and get files by using a flexible disc in a mechanical drive, but much faster—and you don't have to handle flexible discs.

In a Portable PLUS with no extra memory, you can adjust the memory capacity of the electronic disc by moving the partition between the Edisc and main memory or by adding a memory drawer. (To learn how to adjust main memory, refer to "Dividing Memory Between User and Electronic Disc Memories" on page 4-4.)

To learn how to use the Edisc, refer to chapter 8, "Using External Disc Drives."

Read-Only Memory: Drive B

Both the main memory and the Edisc memory are read-write memories. You can read (get) what's in these memories and you can also write (save) information on these memories. The other kind of memory is the read-only memory (ROM) on drive B. You can only read the information in drive B memory; you cannot write information to or save information on drive B. (You can't erase drive B memory—it is permanent.)

The files in drive B memory include the MS-DOS commands available through the DOS Commands program, the built-in terminal emulator, and several utility programs. Also, any applications modules you plug in will be interpreted by the computer as part of drive B.

Dividing Memory Between Main and Electronic Disc Memories

You can move the boundary between electronic disc memory and main memory to simultaneously enlarge one and reduce the other. The allocation range for each of these memories depends on the total amount of user memory you have in your Portable PLUS. For example, if you have 256K bytes of user memory in your computer, the range of user-memory allocation would be:

User Memory Allocation for 256K Bytes

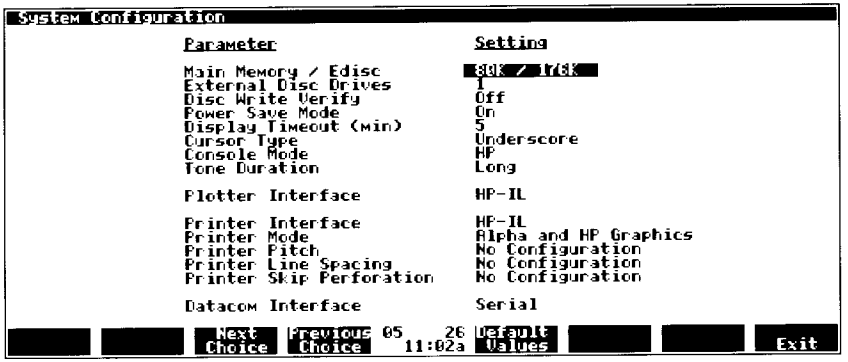
User Memory Subdivision	Default Allocation	Allocation Range
Main Memory	80K	80K ⟶ 252K
Edisc	176K	176K ⟶ 4K

Changing the sizes of Main and Edisc memories. This procedure shows you how to change the sizes of the Main and Edisc memories. The changes occur in increments of 4K bytes.

1. Start with the main P.A.M. screen.

2. Press System Config (f6) to display the System Configuration screen. The screen you see will be similar to that shown below. (The example assumes a computer having 256K bytes of user memory.)

The Default System Configuration Screen



Notice that the pointer is already positioned to the field for the Main Memory / Edisc parameter.

3. Press either Next Choice (f3) or Previous Choice (f4) to change the settings in the Setting column. (The number to the left of the slash (/) indicates main memory size; the number to the right indicates Edisc size.)

Note

If the Edisc is so filled up that reducing its size would make it unable to hold the files it currently holds, the computer will not allow you to reduce the Edisc size. (Refer to the next procedure, "Packing the Edisc.")

4. Press Exit (f8) to return to the main P.A.M. screen and activate the choice you made in step 3.

Packing the Edisc.

PACK consolidates unused Edisc space (created by deleting files from the Edisc) into space you can convert to Main Memory space.

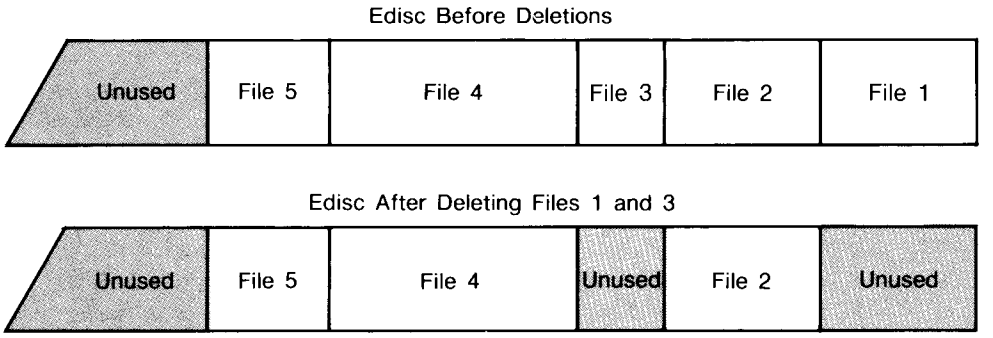
1. Start with the main P.A.M. screen.
2. Type pack (Return) to pack the Edisc.

If you want to increase the size of Main Memory, refer to "Changing the Sizes of Main and Edisc Memories" on page 4-4.

4

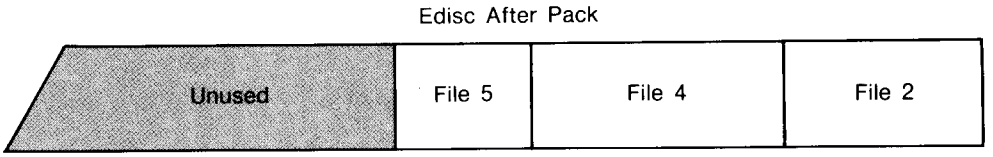
Why Pack the Edisc? When you delete files from your Edisc, you often leave gaps that remain unused. The following diagram illustrates how this affects memory:

Deleting Files Leaves Unused Gaps in Edisc Memory



When you increase Main memory (and thus decrease Edisc memory) by pressing Next Choice or Previous Choice you are simply moving the memory partition. To help visualize this, think of increasing Main memory as moving the illustrated memory partition to the right. Remember that the computer doesn't let you increase Main memory if doing so would encroach upon Edisc space that is being used to hold a file. (See the **Note** on page 4-5.) Notice, however, in the preceeding illustration that if you could eliminate the unused gaps in the Edisc, you could make more space available for increasing Main memory size.

PACK Consolidates Unused Gaps



Thus, the purpose of PACK is to remove unused gaps from between files and place the gaps at the end of Edisc memory, where they can be converted to Main memory space if you so desire.

The System Configuration Screen

The System Configuration screen enables you to customize your computer to operate with certain internal characteristics and specific types of external devices. The following table describes each item in the System Configuration screen and tells you where you can find more information. (Where no reference is given, all information on the topic is provided in the "Description" column.)

System Configuration Parameters and Settings

Item	Settings	Description and Reference
Main Memory / Edisc (Refer to "Changing the Sizes of Main and Edisc Memories" on page 4-4.)	Memory: 80K – 512K† Edisc: 4K or more.† (Steps of 4K)	Main memory and electronic disc memory. You can move the boundary between these two memories.
External Disc Drives (Refer to chapter 8.)	0, 1*, 2, 3, 4, 5, 6, 7, 8	Up to 8 external disc drives can be connected at one time.
Disc Write Verify (Refer to chapter 8.)	Off*, On	Verifies that the data written on a disc has been correctly recorded. When verify is on, the system runs slower.
Power Save Mode	Off, On*	To save power, the computer's processor halts while an application is waiting for keyboard input.‡ For some applications, it may be desirable to turn this off.
Display Timeout (minutes)	Off, .5, 1, 2, 3, 4, 5*, 6, 7, 8, 9, 10, 15, 20, 25, 30.	When Power Save mode is on, the recharger is not connected, and the computer has not received a keyboard input for the specified period, the display turns off to conserve battery power.‡ The chosen time interval starts after each keystroke.

* The default setting. To reset all parameters simultaneously, press Default Values

† Default depends on amount of user memory in computer.

‡ Does not affect programs and data. They resume where you left off.

System Configuration Parameters and Settings (Continued)

Item	Settings	Description and Reference
Cursor Type	Underscore*, Box	The blinking cursor in many applications (such as DOS Commands) can be either an underscore (_) or a box (■). P.A.M. screens always use the underscore cursor, regardless of the setting.
Console Mode	HP*, Alternate	In HP Console mode, the characters displayed belong to the HP character set and the keyboard corresponds to HP functionality. In Alternate Console Mode, the characters displayed and keyboard functionality are IBM-compatible.†
Tone Duration	Short, Long*	Select a long tone or a short tone.
Plotter Interface (Refer to chapter 6.)	HP-IL*, Serial, HP 82164A, HP-IB:00 – HP-IB:30 in steps of 1.	Select the appropriate interface. For HP-IB, choose the proper select code (00-30).
Printer Interface (Refer to chapter 6.)	HP-IL*, Serial, HP 82164A, HP-IB:00 to HP-IB:30 in steps of 1.	Select the appropriate interface. For HP-IB, choose the proper select code (00-30).
Printer Mode (Refer to chapter 7.)	Alpha and HP Graphics*, HP Graphics Only, Alpha Only	Select the mode in which the (Print) key operates.
Printer Pitch (Refer to chapter 7.)	No Configuration* Normal, Expanded, Compressed, Expanded-Compressed	For a non-HP printer, use No Configuration. For an HP printer, you can use any of the four settings.
Printer Line Spacing (Refer to chapter 7.)	No Configuration*, 6 lines per inch, 8 lines per inch	For a non-HP printer, choose No Configuration. For an HP printer, select either 6 lines per inch or 8 lines per inch.

* The default setting. To reset all parameters simultaneously, press Default Values.

† Also, in HP console mode the key codes (generated when you press keys) are HP key codes; in Alternate mode the key codes are IBM-Compatible codes. For example, (f1) in HP mode is ESC P, but (f1) in Alternate mode is "NULL ;".

System Configuration Parameters and Settings (Continued)

Item	Settings	Description and Reference
Printer Skip Perforation (Refer to chapter 7.)	No Configuration*, On, Off	For a non-HP printer, choose No Configuration. For an HP printer, choose whether or not you want to skip fanfold paper perforations (On or Off).‡
Datacom Interface (Refer to chapter 6.)	Serial*, HP 82164A,† Modem (Modem settings do not appear if the optional modem is not installed.)	Choose your data communications device or connection.

* The default setting. To reset all parameters simultaneously, press Default Values.

† The HP 82164A interface should not be used with the built-in terminal emulator (TERM) program. Refer to the **Caution** on page 9-3.

‡ Some text editor applications may automatically skip fan-fold perforations. If an application skips perforations by using linefeed commands instead of a form-feed command, setting the Printer Skip Perforation to On may put the skip control out of synchronization with the actual perforations.

Resetting to the Default Configuration

The command described next is for those times when you have made so many changes to the System Configuration screen that the best way to get the settings all back where you want them is to start over with their defaults. (These are indicated by asterisks in the preceeding table.)

Resetting the System Configuration to its defaults.

1. Start from the main P.A.M. screen.
2. Press System Config ((f6)) to display the System Configuration screen.
3. Press Default Values ((f5)) to restore all configuration settings to their defaults.
4. Make any changes you want to the default configuration settings.
5. Press Exit ((f8)) to exit from the System Configuration screen.

Securing Computer Memory

The SECURE feature can help you protect against unauthorized use of your computer. When you use SECURE, the next time you turn on the computer it prompts you for a password. If you type in the password correctly, either the main P.A.M. screen or the DOS Commands screen appears. Otherwise, the computer turns itself off.

Basic Use of SECURE

Once you have invoked SECURE, then subsequently turned on the computer and typed the password, SECURE is automatically disabled. The only way to use SECURE again is to re-execute the command.

SECURE operates as follows:

Caution

Once you execute SECURE, the *only* way to turn on the computer without destroying user memory contents (main memory and the Edisc) is to use the correct password. If you are unable to enter the correct password, the *only* way to recover is to press the reset button in the battery compartment. However, doing so *erases all data in both main memory and the Edisc.*

1. When you are ready to turn off the computer, type `secure` followed by a blank space and the password you want. (The password will consist of the first nonblank character you type and all following characters, including blanks, with a limit of 60 characters.)

Note

You should avoid using CTRL (control) characters in the password, as several of these characters produce unexpected results, depending upon whether they're used by the MS-DOS operating system.

2. Press Return to turn off the computer.

3. When you want to use the computer again, turn it on in the same way that you normally do. You will then see the following display:

4. Type the password exactly as you entered it in step 1. To help preserve security, the characters you type will not appear in the screen.
5. Press (Return).
6. If you correctly typed the password, the main P.A.M. screen or the DOS Commands screen will appear. Otherwise, the computer will turn itself off. If this occurs, repeat steps 3 thorugh 5.

After you complete step 6, SECURE is disabled unless you repeat step 1 or use the procedure described next.

Using an Application Menu Label to Execute SECURE

If you want to use SECURE every time you turn off the computer, create an applications menu label that allows you to execute SECURE in the same way that you would execute application programs. Then, each time you want to turn off the computer, go to the main P.A.M. screen, move the pointer to the menu label for the SECURE command, and press Start Applic (f1).

To create the applications menu label, either create a PAM.MNU text file or add the necessary information to an existing PAM.MNU file. (If you have installed a text editor application, use it to create the file; otherwise use the built-in line editor described in chapter 11, "Using the Built-In Line Editor.")

The PAM.MNU file must be in the root directory of drive A and:

1. The first unused, odd-numbered line must contain the label text you want to appear in the P.A.M. applications menu. (You could choose any text, such as Secure or Off.)
2. The next (even-numbered) line must contain the word secure followed by a blank space and the password you want to use.

For an example of a PAM.MNU file containing text for a menu label to execute SECURE, refer to "Example of Editing a PAM.MNU File" on page 11-7.

SECURE and Alarm Operation

If an alarm activates after you use SECURE to turn off the computer, the computer turns itself on, sounds the alarm, and then prompts you to type in the password. If the alarm is a message alarm, the message will not be displayed until you type in the password and press Return. Similarly, if the alarm is a command execution alarm, the command will not be executed until you type in the password and press Return.

5 Managing Files and Directories

Contents

Chapter 5: Managing Files and Directories

5 Managing Files and Directories

What You Can Learn in Chapter 5

This chapter tells you how to retrieve (get), handle, and organize files that you create using various application programs. Included are descriptions of:

- What the File Manager is and how to use it.
- Organizing files into directories and subdirectories.
- Creating a subdirectory.
- Displaying or printing a file or directory.
- Changing the default drive.
- Changing the default directory.
- Renaming a file.
- Copying a file.
- Copying directories.

What You Can Learn Elsewhere

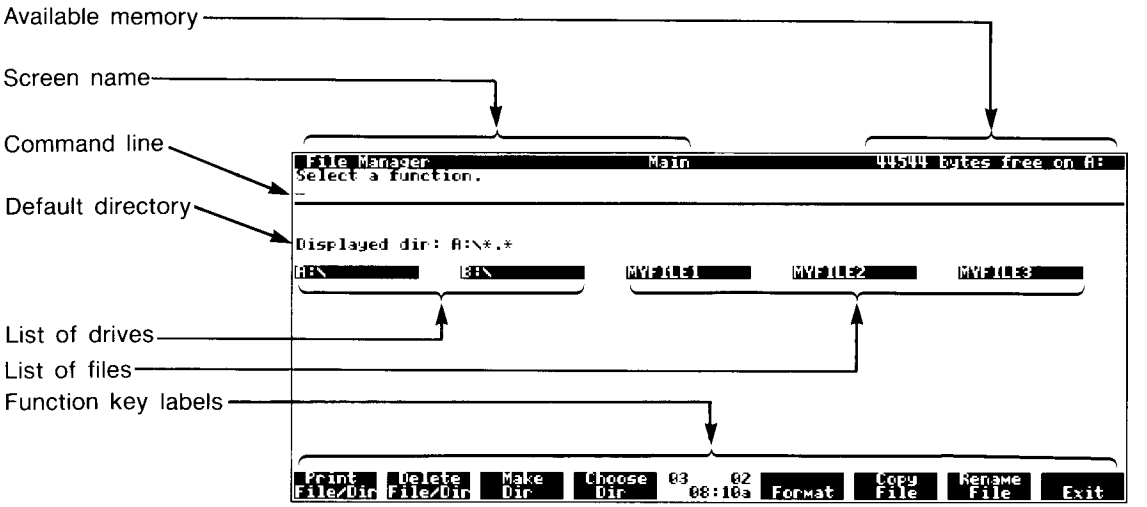
To learn how to save a file from within an application program (to store it on drive A or on a flexible disc), refer to the instructions you received with the program.

Using the File Manager

The File Manager lets you organize and keep track of the files you create. To use the File Manager, you first need to go to the File Manager screen.

Displaying the File Manager screen.

1. Start with the main P.A.M. screen.
2. Press File Manager (f2). The computer displays the File Manager screen. For example, if you had created and stored three files named MYFILE1, MYFILE2, and MYFILE3, the file manager screen would look like this:



The file manager screen shows you:

- **Screen Name:** Which of the P.A.M. screens is displayed. (In the illustration, this is the Main file manager screen.)
- **List of Drives:** This listing always contains drives A and B. It contains one additional drive label (C:\, D:\, etc.) for each drive you specify in the External Disc Drives line of the System Configuration screen. (Since the default for this parameter is 1, you may see a label for drive C

even if you don't have an external disc drive connected. Refer to the table on page 4-8.)

- **The Displayed (Default) Directory:** This line identifies the current default drive and default directory. (A `*.*` after the `\` means that the names of all files and subdirectories in the current default directory are displayed.)
- **Available Memory On Default Drive:** This line indicates how much empty space there is in the disc on the default drive. If the default drive is `A:`, this line shows the empty space on the Edisc. (Refer to "The Other Side of User Memory: The Electronic Disc" on page 4-3.)
- **Command line:** Use this line for responding to file manager prompts and executing MS-DOS commands. (Refer to chapter 10, "Using MS™-DOS Commands.")
- **List of Files and Subdirectories on Displayed Directory:** The files and subdirectories in the current default directory or subdirectory. Subdirectory names are always followed by a `\` (backslash) delimiter; file name listings do not have this delimiter. If your computer doesn't contain any files or subdirectories, this area will be blank.

  Function Key Labels: They indicate file manager commands and correspond to (f1) through (f8).

Exiting from the File Manager screen.

To exit from the main File manager screen to the main P.A.M. screen, press EXIT ((f8)). Use this key to exit from other file manager screens that are described later in this chapter.

Clearing Drive A

To erase the contents of the built-in Edisc (drive A), use this procedure. Otherwise, skip this topic. (If you are using an external disc drive and want to either prepare a new flexible disc to receive files or to erase the contents of a flexible disc, refer to "Preparing (Formatting) a Disc for Use" on page 8-3.)

Formatting (erasing) the Edisc.

Caution 

This procedure destroys any files and subdirectories on the Edisc.

1. Start with the main P.A.M. screen.
2. Press File Manager ((f2)). The computer displays the File Manager screen.
3. Press Format ((f5)). You will see the following at the top of the screen:

```
Enter the drive to format.  (All data on the disc will be lost.)
_

Drive to format:
Volume label:
Displayed dir: A:\*.*
```


4. In response to the prompt

   `Enter the drive to format.`

   type `a:` (Return). You will then see `A:` in the `Drive to format:` line .

5. In response to the new prompt:

   `Volume label (11 characters, [Return] for none)?`

   do one of the following:

   - If you don't want drive A to have a volume name, just press (Return).
   - If you do want drive A to have a volume name, type in the name (no more than 11 characters) and press (Return).

6. In response to the prompt

   `Press Start if information is correct`

   press the Start ((f1)) key.

7. When the message

   ```
   Enter the drive to format.
   ```

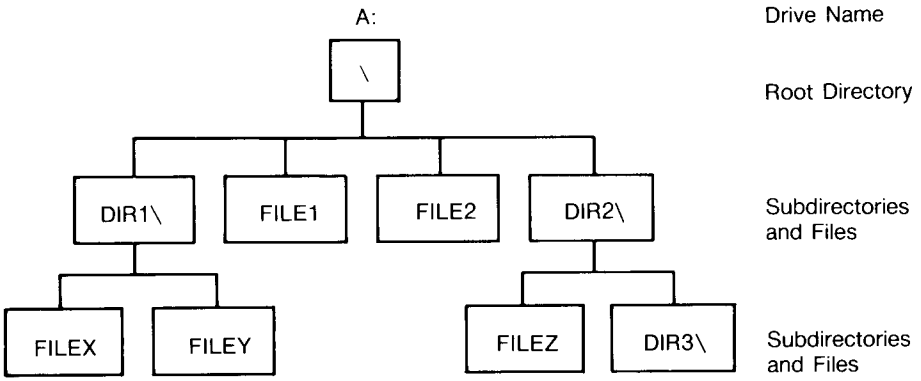
   reappears, press EXIT (f8) to return to the main file manager screen.

8. Press EXIT (f8) again to return to the main P.A.M. screen.

Working With Files, Root Directories, and Subdirectories

Files, root directories, and subdirectories are your means for subdividing data in the computer into meaningful units. A *file* contains a block of information such as a memo, spreadsheet data, or a program. A *root directory* is the main directory on any disc and can contain files and subdirectories. A *subdirectory* can contain files and other subdirectories, and is itself contained in another directory. You can think of this entire structure as an inverted tree, with a root directory at the top.

Root Directories, Subdirectories, and Files



The Displayed (Default) Directory

The *displayed* (or *default*) *directory* is the most recently chosen directory. Unless you've already chosen otherwise, it will be the root directory (\) of drive A. The default directory name is displayed when you press File Manager ((f2)) to get the main File Manager screen.

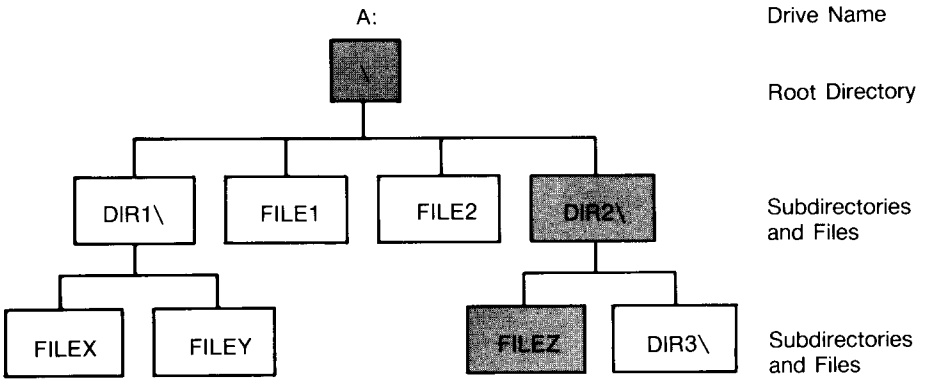
Identifying the Displayed (Default) Directory

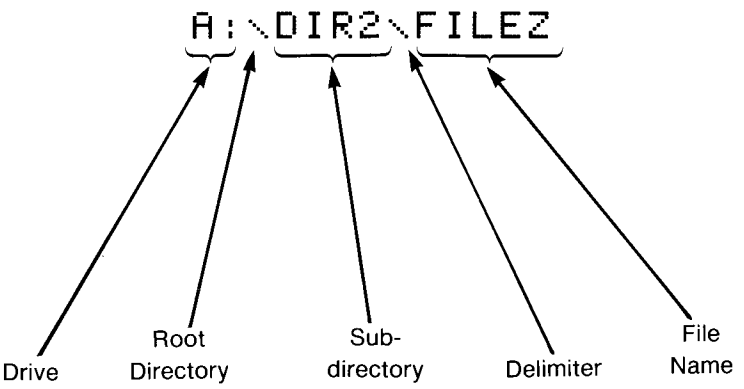
```
Select a function.
_

Displayed dir: A:\*.*
```

You can specify a new default directory at any time by using Choose Dir which is described later in this chapter, on page 5-13.

Path Names

If a file you want to access is in the default directory, you need to specify only the file name. But when the file you want is not in the default directory and you don't want to change to another directory, you need to specify the *path name* to the desired file. For example, if the default directory was `A:\` and you wanted to specify the file named `FILE1` in the following illustration, you would simply type `file1`. But if you wanted to specify `FILE2` in the same illustration, then you would use the entire path name, which is `A:\DIR2\FILE2`.





Notice that a path name starts with the drive (`A:` in this case), includes the root directory (`\`), any subdirectories between the root and the file that you want, and ends with the name of the desired file you want to access.

How Are Directories Created?

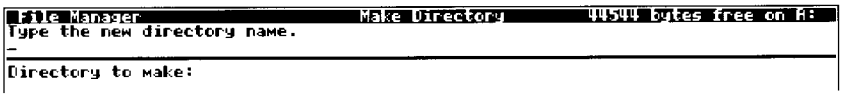
Root Directories Are Automatic. When you use the Format command (see "Clearing Drive A" on page 5-3) the disc is given an empty directory called the *root* directory. This directory is specified by the `\` character in any drive specifier, for example, `A:\` or `C:\`.

Thus, drive A and each flexible disc you've formatted has its own root directory, which can contain files and subdirectories. A root directory is always identified by drive rather than by disc. However, when you format a disc (prepare it for use), you can give it a unique name, called a volume name. (Refer to step 5 under "Formatting (erasing) the Edisc" on page 5-4.) A root directory can contain a limited number of entries.* However, if a root directory is full, you can still create files or subdirectories within existing subdirectories as long as there is enough space on the disc.

Subdirectories. A subdirectory is any directory contained within another directory.

Creating a subdirectory.

1. Start with the main P.A.M. screen.
2. Press File Manager (f2) to get the main File Manager screen.
3. Check the `Displayed Dir` line. If it specifies the directory in which you want to create the new subdirectory, go to step 4. Otherwise, use the "Choosing a directory" procedure (page 5-13) to specify the directory you want to contain the new subdirectory; then go on to step 4.
4. Press Make Dir (f3) to display the Make Directory screen:



5. Type the name of the subdirectory you want to create.

* The root directory of drive A: can contain up to 64 entries. The root directories on flexible discs can typically contain the same.

6. Press Step ((f1)) to create the new directory. The message `Making directory. Please wait` appears briefly.
7. When the message `Type the new directory name` reappears, press Exit ((f8)) to return to the main File Manager screen.
8. Press Exit ((f8)) again to return to the main P.A.M. screen.

What Could Go Wrong?

- The disc may be write-protected. (See step 4 on page 8-4.)
- Either there is not enough memory to create the new directory or the root directory is full.
- An invalid character was used in the new directory name. (Refer to the next topic, "Choosing File Names."
- A subdirectory or file having the same name may already exist.

Choosing File Names

A file name identifies a file and distinguishes it from all other files *in the same directory.* (This means that you can use the same file name for a different file in a different directory.)

A file name can have from one to eight *consecutive* characters. You can use any characters except for `[ ] ? \ / = * : . , ; < >`. The computer doesn't distinguish between lowercase and uppercase characters in any file name you type, and lists file names only in uppercase.

The names you might choose to use are virtually limitless. Here are some examples:

```
AIRLINES        MEMO#_1         SECTOR43
J_SMITH         GW_STK
```

However, there are some file names to avoid because they are already used by the operating system. They are:

AUX	COM2	LPT1	PRN
CLOCK	COM3	LPT2	PLT
COM1	CON	NUL	PRN

File extensions. A *file extension* is a file name suffix consisting of a period followed by one to three characters. For example, if you created a file named SAMPLE.TXT, the .TXT is the file extension. This feature allows you (or an applications program) to "tag" a file as a specific type. Some file extensions are commonly used by applications programs and the computer operating system. (An application program may prompt you for a file name, then append a predetermined file extension. An example of this operation is the LOTUS™ 1-2-3™ application.) Some predetermined extensions are:

.WKS	Identifies LOTUS™ 1-2-3™ worksheet files.
.PIC	Identifies LOTUS files.
.BAS	Identifies BASIC files.
.BAT	Identifies batch files.
.COM, .EXE	Identifies executable files.

You should avoid using the file extensions shown above and other file extensions that are automatically used by specific applications programs. To learn whether an application uses unique file extensions, refer to the manual provided with the application.

Drive Name as Part of the File Name. A drive name identifies the drive containing a file you want to call or to which you want to send a file. Examples of drive names are `A:` and `C:`. When you don't specify a drive name as part of a file name, the computer assumes you want to use the default drive. Thus, if you want to use a drive other than the default drive, you must include the drive name in front of the file name. For example, if drive A is the default drive, and you want to get a file named `ACCTSREC.JAN` that is stored in the root directory of a disc in drive C, you would ask for file `C:ACCTSREC.JAN`.

Displaying Files

This procedure uses the MS-DOS `TYPE` and `MORE` commands. For further information, refer to "Displaying a file in one, continuous listing", on page 10-9, and "Displaying a file one page at a time," on page 10-10.

Printing Files and Directories

Use this procedure when you want to print a text file or a directory.

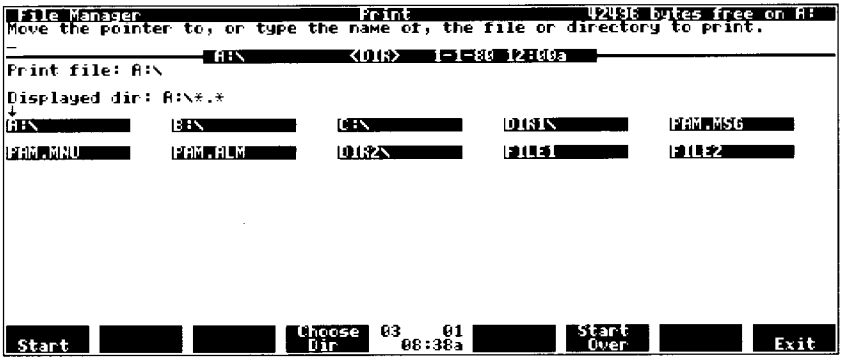
Note

Many programs, including Spreadsheets and Word Processors (such as Memo Maker) create files that cannot be printed using the following general procedures. If you discover that this is the case with a file you want to print, refer to the documentation provided with the program to determine how to print the file.

Printing a file or directory.

1. Start with the main P.A.M. screen.
2. Press File Manager (f2) to display the main File Manager screen.
3. Check the `Displayed dir:` line. If it specifies the directory you want (a root directory you want to print, or the directory containing the file or subdirectory you want to print), go to step 4. Otherwise, use the "Choosing a directory" procedure on page 5-13 before you go on to step 4.

4. Press **Print File/Dir** (f1). A screen similar to the following appears:



5. Use one of the following methods to specify the file or directory you want to print:
   - Using the arrow keys, move the pointer to the name of the file or directory.
   - Type the name of the file or directory.
6. Press **Start Print** (f1) to start printing the file or directory. While the printing is occurring, the **Stop Print** (f8) key label appears. If you want to stop printing before the entire file is printed, press this key.* Otherwise, wait until the printing stops before going to the next step.
7. Select the next file or directory to print and repeat step 6.
8. When you are finished printing, press **Exit** (f8) to return to the main File Manager screen.
9. Press **Exit** again to return to the main P.A.M. screen.

* Printing halts after the curent contents of the print buffer are printed, which is not necessarily at the same time that you press **Stop Print**.

Choosing Directories

When you get the main P.A.M. screen, then press File Manager (f2), the computer displays the main File Manager screen, which includes a listing of the files and subdirectories (if any) in the default directory. To view the contents of another directory, use the following procedure.

Choosing a directory.

This procedure designates a new default directory.

1. Start with the main P.A.M. screen.
2. Press File Manager (f2) to display the File Manager screen.
3. Press Choose Directory (f4) to display the Choose Directory screen.
4. Specify the desired directory in one of the following two ways:
   - If the directory name is displayed below the `Displayed dir:` line, use the arrow keys to move the pointer (↓) to the directory name.
   - If the directory name does not appear (which would occur if it is a subdirectory of another directory), type the name of the next level directory in the path to the directory you want.
5. Press Start (f1) to select the directory specified in step 4 as the default directory.
6. Repeat steps 4 and 5 until the desired directory is reached.
7. Press Exit (f8) to return to the main File Manager screen.
8. Press Exit (f8) to exit from the main File Manager screen to the main P.A.M. screen.

What Could Go Wrong?

- If you typed a path name to the directory, a directory name may have been left out or misspelled.
- If you're using an external disc drive, the disc in that drive may not contain the directory you specified.

Displaying Partial Directories. Depending upon the way you choose file names, you can cause the file manager directory to display only a certain subset of the files contained in that directory. The key to using this feature is to make part of each file name the same for all files in the subset. You can then tell the file manager to display only the file names that have the common part.

Thus, one subset of files might have the same name, but different extensions, while another group might have the opposite, and a third group might have several variations. For example, in the following set of files:


```
FILE1.TXT       DATA1.001       DATA1.TXT
FILE2.TXT       DATA1.002       SUMRY.TXT
FILE3           DATA1.003       RESPSE.TXT
```

All files with the extension `.TXT` form one subset; the files with the name `DATA1` form another subset; and the files having a name beginning with `FILE` could form a third subset.

The method to use for designating subsets is termed *using a wildcard. Wildcard* refers to the ability to substitute a special character for *any* other character. The two wildcard characters are `*` and `?`. The `*` character substitutes for any number of characters. The `?` substitutes for a single character. For example, you would list the subset of files named `DATA1.001`, `DATA1.002`, and `DATA1.003` (and exclude the file named `DATA1.TXT`) in the preceeding list by typing

```
dir data1.00? Return
```

To use * to specify the subset of files having the extension .TXT, you would type the following:

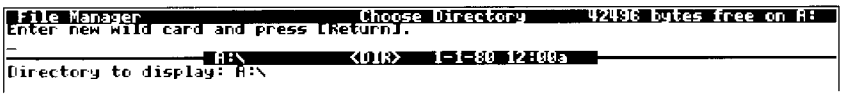
```
dir *.txt (Return)
```

Thus, to use a wildcard to specify a subset of file names, you simply substitute a wildcard character for any file name character that is not the same for all files in the subset you want.

Using a wildcard to display a subset of files in any directory.

This procedure causes the computer to display only the specified subset, *regardless of which directory is displayed.* It remains in effect (for all directories) until you exit from P.A.M., execute one of several MS-DOS commands, or use the "Cancelling a wildcard" command described on page 5-16.

1. Start with the main P.A.M. screen.
2. Press File Manager (f2) to display the main File Manager screen.
3. Press Choose Dir (f4) to display the Choose Directory screen.
4. Press Set Wildcard (f3), which results in the message indicated in color in the following illustration:



5. Type in the file name with wildcard character(s).
6. Press (Return) to activate your wildcard choice.
7. Press Exit (f2) to return to the main File Manager screen.
8. Press Exit (f2) again to return to the main P.A.M. screen.

Cancelling a wildcard.

To restore all directory listings to their full contents, repeat the foregoing procedure with the exception that in step 5 type the following:

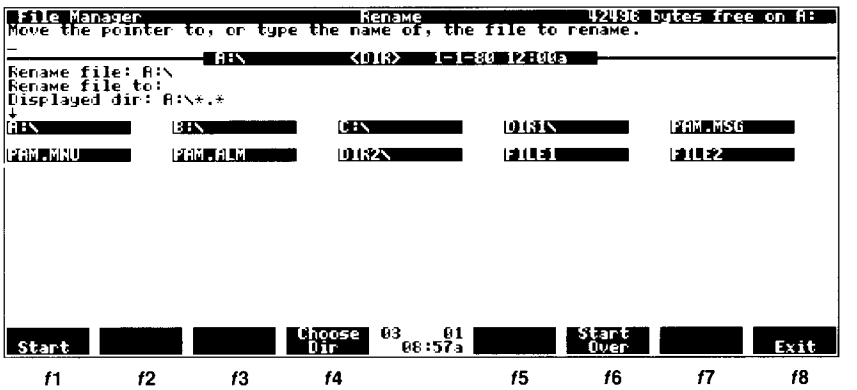
. (Return)

Renaming Files

The following procedure enables you to change the name of a file.

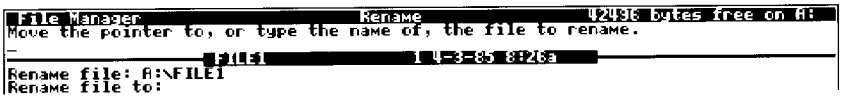
Using the file renaming command.

1. Start with the main P.A.M. screen.
2. Press File Manager ((f2)) to display the main File Manager screen.
3. Press Rename File ((f7)) to display the Rename screen. It will look similar to the following screen that contains examples of file names:

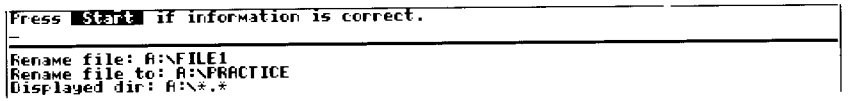


4. Using the arrow keys, move the pointer to a file name you want to change (or type the file name).

   Notice that the text following `Rename file` changes to show the path name for the file to which the pointer is moved.



5. Press (Return). The message just above the command line changes to `Type the new file name.`
6. Type the new file name and press (Return). Notice that the text following `Rename file to` changes to show the new file name and the instruction on line 2 (above the cursor) changes as shown below:



   If you encounter an error, start over. Press Start Over ((f6)), which displays a fresh Rename screen, and return to step 4.

7. Press Start ((f1)) to cause the file name change to begin.
8. Press Exit ((f8)) to leave the Rename screen and to return to the main File Manager screen.
9. Press Exit ((f8)) again to leave the main File Manager screen and return to the main P.A.M. screen.

Deleting Files and Directories

Except for drive B files and directories, you can delete any file or directory. However, before you delete any directory, you must first delete all files in that directory.

Deleting a file or directory.

Note

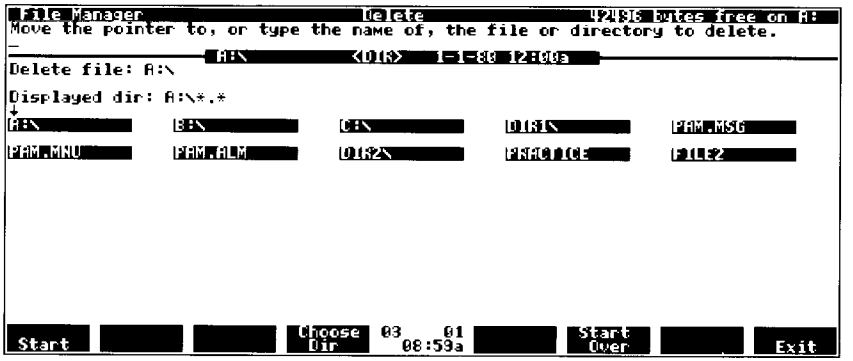
You cannot delete a directory that contains files. Thus, if a directory you want to delete contains any files, use the following procedure to delete those files, then repeat the procedure to delete the directory.

1. Start with the main P.A.M. screen.
2. Press File Manager (f2) to display the main File Manager screen.
3. Check the `Displayed dir:` line in the display. (This line indicates the *default* directory.)

```
Select a function.
_

Displayed dir: A:\*.*
```

If the directory containing the file or subdirectory you want to delete is not named in this line, use the "Choose a directory" procedure described on page 5-13 to display that directory.

4. Press Delete File/Dir (f2) to display the Delete screen:



5. Either use the arrow keys to move the pointer to the name of the file or directory you want to delete, or type the name.

6. Press (Return). The message

   ```
   Press Start if
   information is correct
   ```

   appears just above the command line. If an error occurs, press Start Over ((f6)) and go back to step 5.

Note

If the directory or file you're deleting is on a disc in an external drive, an error will occur if the disc is write-protected. To learn how to protect and unprotect a disc, refer to step 4 in the "Preparing (Formatting) a disc" procedure on page 8-3 or to the owner's manual for your disc drive.

7. Press Start ((f1)). The existing directory display will be replaced by a new one. If the deleted file or directory was in the displayed directory, the name will no longer appear.

8. Press Exit ((f8)) to return to the main File Manager screen.

9. Press Exit ((f8)) again to return to the main P.A.M. screen.

Copying Operations

There can be several reasons for copying one or more of your files. For example, you might want to regularly make backup copies of important work to help prevent accidental losses of data.

The copying operations in this section enable you to:

- Copy individual files.
- Copy groups of files.
- Copy files between the Edisc and an external disc.
- Copy files from one external disc to another.

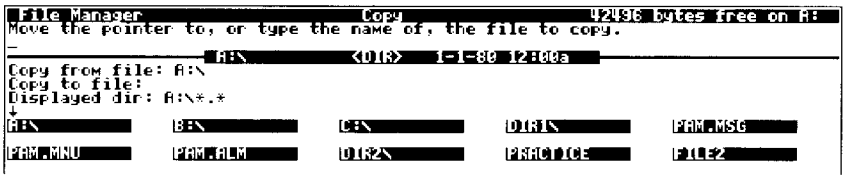
In the procedures that follow, the *source* is the file, directory, or disc containing the data you want to copy. The *destination* is the file, directory, or disc that will receive the data you want to copy.

Copying Files

You can use these procedures to copy a single file to another file, directory, or disc.

Copying a file within the same directory.

1. Start with the main P.A.M. screen.
2. Press File Manager (f2) to display the main File Manager screen.
3. Press Copy File (f6) to display the Copy screen.



4. Use the arrow keys to move the pointer to the name of the file you want to copy (the source file).
5. Press Return. The name of the source file appears on the `Copy from file:` line.
6. Specify the name of the destination file:
   - If you want to create a new destination file, type in a new file name.

- If you want to replace the contents of an existing file with those of the source file, move the pointer to the name of the existing file. *Using this option destroys the current contents of the destination file.*

7. Press (Return). The name of the destination file appears on the `Copy to file:` line. If an error occurs because you made a mistake in specifying the file name, press Start Over ((f6)) and go back to step 4.
8. Press Start ((f1)). You'll see the following two messages:

   `Copying specified file(s).`

   n `file(s) copied.`*

   followed by

   This means that the file has been copied.
9. Press (Return) to return to the Copy screen.
10. Press Exit ((f8)) to return to the main File Manager screen.
11. Press Exit ((f8)) to return to the main P.A.M. screen.

Copying a file to another directory.

The directory to which you want to copy a file must exist before you begin the file-copying operation. (If necessary, refer to "Creating a Subdirectory" on page 5-8.)

1. Complete steps 1 through 5 of the foregoing procedure.
2. Type the complete path name for the destination file.
   - If you want to create a new destination file, type the path name using a new file name for the destination file name.

* The *n* shown in the second message represents a variable that the computer supplies.

- If you want to replace the contents of an existing file with those of the source file, type the path name of that existing file. *Using this option destroys the current contents of the destination file.*

3. Press (Return). The path name of the destination file appears on the `Copy to file` line. If an error occurs because you made a mistake in specifying a file name, press Start Over ((f6)) and go back to step 1.
4. Press Start ((f1)). You'll see the following two messages:

   ```
   Copying specified file(s).
   n file(s) copied.*
   ```

   followed by

   ```
   Press any key to return to P.A.M.
   ```

   The file has been copied.
5. Press (Return) to return to the Copy screen.
6. Press Exit ((f8)) to return to the main File Manager screen.
7. Press Exit ((f8)) to return to the main P.A.M. screen.

To copy two or more files into another, single file, refer to "Copying and Appending Files" on page 10-13.

Copying a file to another disc.

Use the "Copying a file to another directory" procedure (page 5-21). For step 2 in that procedure, be sure to include the destination drive specifier (`A:`, `C:`, etc.) in the path name.

Copying Directories

To copy *all* of the files in one directory into another directory, use the "Copying a file to another directory" procedure (page 5-21). The only differences are:

* The *n* shown in the second message represents a variable that the computer supplies.

- Instead of using file names or file path names, use directory names or directory path names.
- If the destination directory doesn't already exist, you must create it before attempting to copy files. (Refer to "Creating a subdirectory" on page 5-8.)

To copy all of the files from a directory on one disc to a directory on another disc, you'll also need to include the destination disc in the destination path name.

The computer copies only the files from one directory into another. Any subdirectories in the source directory (and any files they contain) are ignored during a directory-copying operation.

Copying Discs

This subsection provides procedures for

- Making a backup copy of the Edisc.
- Copying the contents of an external disc into the Edisc.
- Copying one external disc to another.

Copying between the Edisc and an external disc.

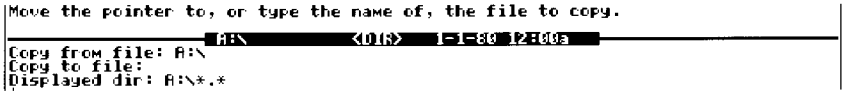
This procedure is for copying all of the files in one or more directories on the Edisc to an external disc, and vice-versa. To use this procedure, you should be familiar with the File Manager and the file structure of your computer. If you are not, refer to the following:

- "Using the File Manager" on page 5-2.
- "Working with Files, Root directories, and Subdirectories" on page 5-5.
- "Choosing Directories" on page 5-13.

This procedure assumes that your computer is properly connected and configured for operation with an external disc drive. (Refer to chapter 6, "Connecting Printers, Disc Drives, and Other Peripherals.")

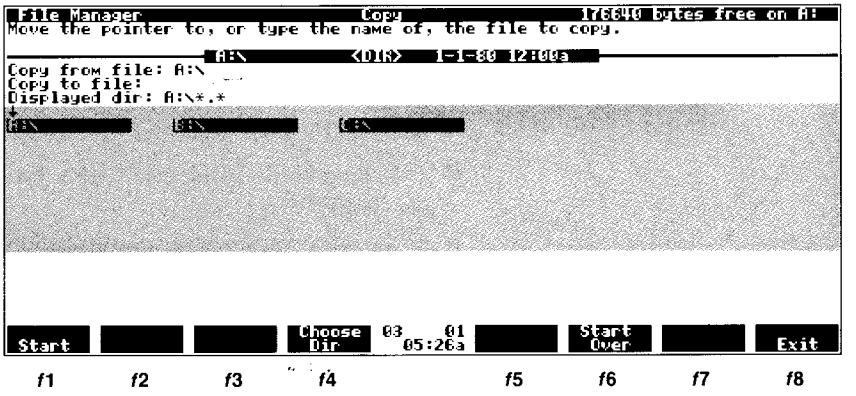
An example that utilizes this procedure begins on page 5-26.

1. If there are subdirectories on the source disc (the disc you want to copy from), create the same subdirectory structure on the destination disc (the disc you want to copy to). (Refer to "Creating a subdirectory" on page 5-8.)
2. Start from the main File Manager screen.
3. Press Copy File ((f6)).
4. If the `Displayed dir` line does not already show the desired source drive, use the Choose Dir procedure (steps 3 through 6 on page 5-13) to select it. For example, the colored line below shows that the displayed directory is the root directory of drive A.



5

5. In the area shown in color below, your computer's screen will probably show several directories and file names:



If the pointer is not already on the desired source directory (either the root directory of the source drive—such as A:\ or C:\—or one of its subdirectories), move the pointer to the name of the desired directory. (If the directory you want is not displayed, it might be a subdirectory that is contained within one of the displayed directories. In this case you must first use Choose Dir one or more times to display the desired directory name.)

6. When the pointer is on the desired *directory*, press (Return) to specify that *directory* as the source to copy from.

7. Now specify the destination directory by using the same procedure that is used in steps 4 and 5 to specify the source directory. (The destination directory will be either the root directory on the destination drive or a subdirectory contained within that root directory.)

8. When the pointer is on the desired directory, press (Return) to specify that directory as the destination to copy to.

9. Press Start (f1) to begin copying the files in the source directory to the destination directory.

10. When you see the message

    xx File(s) copied
    Press any key to return to P.A.M.

    press (Return).

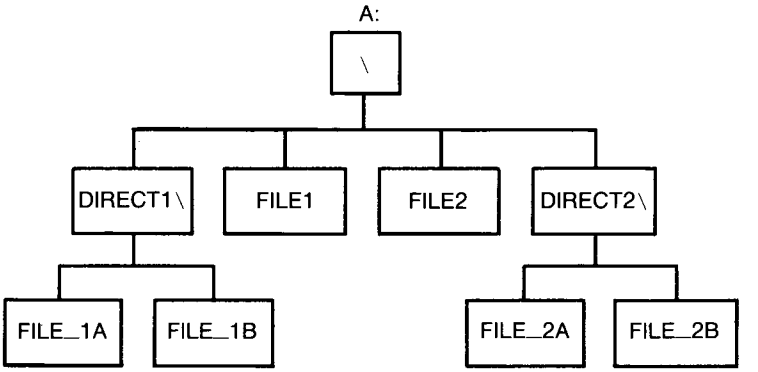
11. If you have more directories to copy, repeat this procedure beginning with step 5.

12. When you're finished copying directories, press Exit (f8) to exit from the Copy screen.

13. Press Exit (f8) to exit from the main File Manager screen.

If you are using this procedure to make a backup of the Edisc, the source drive will always be drive A and the destination drive will probably be drive C (as in the following example). If you're copying from an external disc to the Edisc, the source and destination drive specifiers will be reversed.

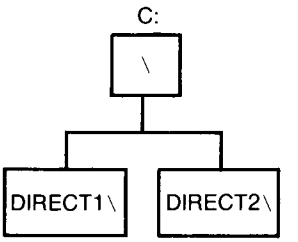
Example of Copying the Edisc to an External Disc. Suppose that you had created the following directory structure and files on the Edisc, and wanted to make a back-up copy on an external disc:



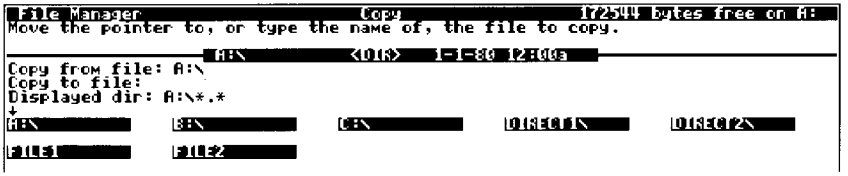
5

You could use the procedure that begins on page 5-23 to copy the Edisc contents to an external disc drive. For this example, assume that the computer is configured for one external disc drive (which would be drive C) and that you have just formatted a new disc in drive C.

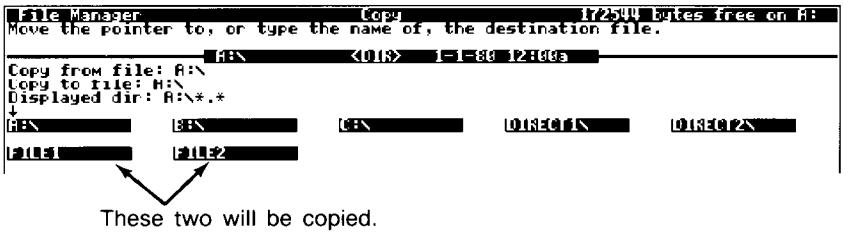
1. Create the subdirectory structure on drive C. When you're finished, you should have the subdirectories `DIRECT1` and `DIRECT2` in the root directory of drive C.



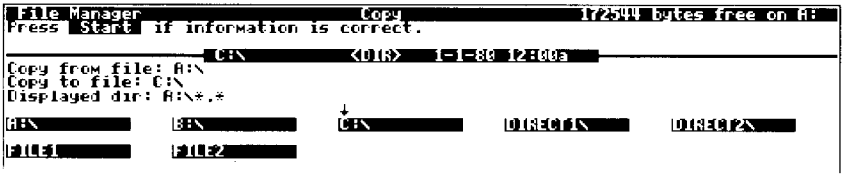
2. Return to the main File Manager screen if it is not already displayed.
3. Press Copy File (f6).
4. If the Displayed dir line does not already specify A:*.*, then use Choose Dir (f4) to select the root directory of drive A as the source.



5. Press Return. This specifies the root directory of drive A as the source, and tells the computer that you want to copy all of the files in the root directory of drive A (FILE1 and FILE2):



6. Move the pointer to C:\ and press (Return). This specifies the root directory of drive C as the destination, which tells the computer that the files in step 5 should be copied to the root directory of drive C:



7. Press Start ((f1)) to begin copying the files in the root directory of drive A (FILE1 and FILE2) to the root directory in drive C.

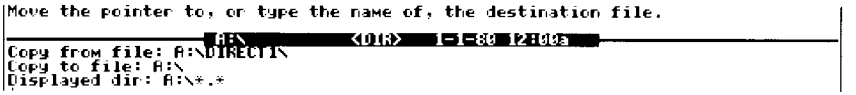
8. When you see the following display:

```
Copying specified file(s).

A:\FILE1
A:\FILE2
         2 File(s) copied
Press any key to return to F:A:M:
_
```

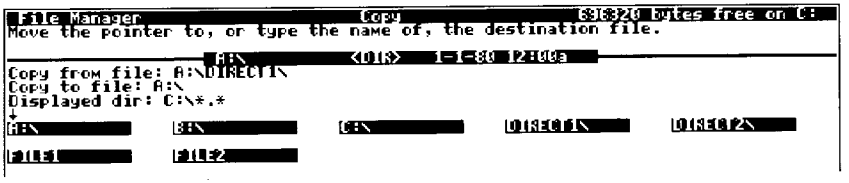
the copying is complete. Press (Return) to return to the Copy screen.

9. Copy the files in the DIRECT1 directory on drive A to the same-named directory on drive C:

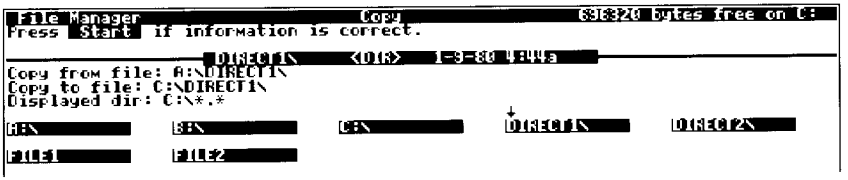
   a. Move the pointer to DIRECT1\ and press (Return). This specifies the subdirectory named DIRECT1 as the source directory, which tells the computer that you want to copy all of the files in the DIRECT1 directory on drive A (FILE_1A and FILE_1B):



b. Use Choose Dir (f4) to select drive C as the default directory. This displays the contents of the root directory of drive C:



c. Move the pointer to DIRECT1\ and press Return. This specifies the subdirectory named DIRECT1 on drive C as the destination directory and tells the computer that you want to copy the files in step 9a to the DIRECT1 directory on drive C:



d. Press Start (f1) to begin copying the files in the DIRECT1 directory of drive A (FILE_1A and FILE_1B) to the DIRECT1 directory in drive C.

e. When you see the following display:

```
Copying specified file(s).
A:\DIRECT1\FILE_1A
A:\DIRECT1\FILE_1B
        2 File(s) copied
Press any key to return to P.A.M.
_
```

The copying is complete. Press Return to return to the Copy screen.

10. Use Choose Dir to select drive A as the source drive.
11. Copy the files in the DIRECT2 directory on drive A to the same-named directory on drive C by following the procedure in steps 9a through 9e while substituting DIRECT2 for DIRECT1. Completing this step finishes the copying of the Edisc contents illustrated at the beginning of the example.
12. Press Exit (f8) to exit from the Copy screen.
13. Press Exit (f8) again to exit from the main File Manager screen.

Copying between two external discs.

You can copy one external disc to another by using the foregoing procedure (page 5-23). However, if the two external discs are of the same size and format, a much simpler method to use is the DISKCOPY command described under "Copying One Flexible Disc to Another" on page 10-18.

6 Connecting Printers, Disc Drives, and Other Peripheral Devices

Contents

Chapter 6: Connecting Printers, Disc Drives, and Other Peripheral Devices

6 Connecting Printers, Disc Drives, and Other Peripheral Devices

What You Can Learn in Chapter 6

This chapter explains the interfaces in your computer and the types of external devices (peripherals) you can use with your computer. Included are descriptions of:

- What an interface is.
- Connecting HP-IL peripherals.
- Connecting serial peripherals to the built-in HP-IL port via the HP-IL/RS-232 interface.
- Connecting HP-IB interface peripherals.
- Changing the System Configuration and Datacom Configuration parameter settings to conform to your peripherals.
- Connecting a LaserJet printer.
- Connecting a second Portable PLUS or a Portable.

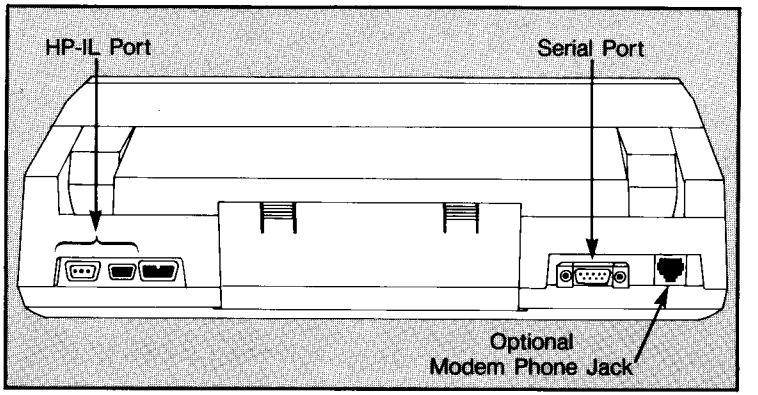
What's an Interface?

An interface is a device that enables communication between your computer and another piece of equipment. Your computer has two built-in interfaces:

- HP-IL (Hewlett-Packard Interface Loop). This interface uses HP-IL cables to connect with peripherals such as the ThinkJet printer and the HP 9114A Disc Drive, and with the (external) HP 82169A HP-IL/HP-IB Interface.
- Serial (also known as RS-232-C). This interface uses various RS-232-C cables to connect with peripherals such as external modems, and serial printers.

The ports for these interfaces are on the back of your computer. (A third, optional interface is the HP 82983A Modem, which is described in the manual provided with the modem.)

Interface Ports



To communicate with an HP-IL or serial peripheral, all you need to do is:

1. Connect the peripheral to the appropriate port.
2. Use the System Configuration and/or Datacom Configuration screens to tell your computer about the peripheral.

HP-IL supports up to 31 peripherals. Of this number, up to 23 can be HP-IL devices and up to 8 can be HP-IB devices. (To use HP-IB devices, you need to connect one HP 82169A HP-IL/HP-IB Interface to the computer and then connect the HP-IB peripheral(s) to the HP-IL/HP-IB interface.)

6

Connecting HP-IL Peripherals

HP-IL peripherals are connected to your computer via a cable loop that begins at the "OUT" receptacle on your computer's HP-IL port and ends at the "IN" receptacle.

HP-IL peripherals include printers (ThinkJet, HP 82905B opt 248), plotters (HP 7470A opt 003), disc drives (HP 9114A) and other devices.

If you want to space peripheral devices farther apart than permitted by your HP-IL cables, you can add additional cables to the loop. The maximum distance allowed between any two devices is 10 meters (33 feet with standard cables).

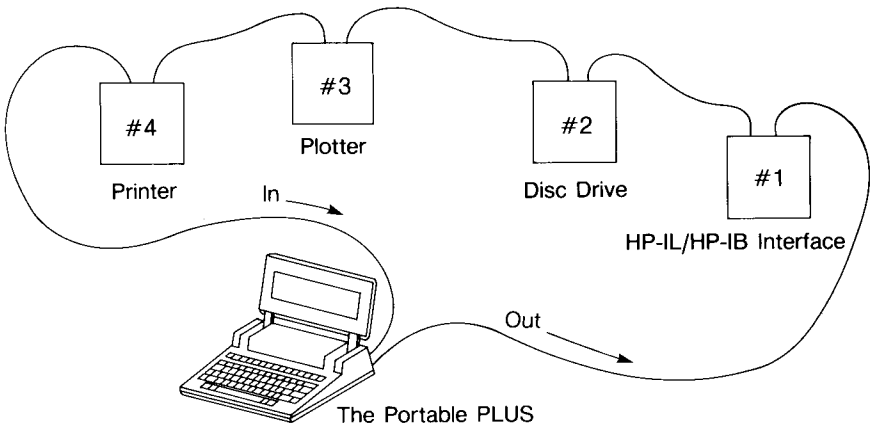
Equipment and Connections

You'll need the following equipment:

- One or more HP-IL peripheral devices (such as a printer or disc drive).
- One HP-IL cable for each piece of equipment, including your computer. (A 1-meter cable is shipped with each computer and each HP-IL peripheral.)

Connecting HP-IL peripherals.

When you want to connect one or more peripheral devices to your computer, the HP-IL cables must form a continuous loop. The devices can be arranged in any order you want. (However, the order in which the devices are connected determines the order in which they are accessed by the computer.)



1. Plug an HP-IL cable into the OUT receptacle of your computer's HP-IL port.
2. Plug the other end of the cable into the IN receptacle of a peripheral device.
3. Plug another HP-IL cable into the OUT receptacle of the peripheral device.
4. If you want to include another peripheral device in the loop, plug the cable in step 3 into the IN receptacle on the next device. If you don't want to include another device, plug the cable in step 3 into the IN receptacle of the computer.
5. For each additional peripheral device, repeat steps 3 and 4.
6. Turn on each of the peripheral devices in the HP-IL loop.

Note

All peripherals in the loop must be switched on for the information to travel from one peripheral to another. Any peripheral in the loop not switched on halts all loop operations.

6

System Configuration Settings for HP-IL Connections

System Configuration. Use the following procedure to set the System Configuration screen for communicating through HP-IL with any external device(s).

Specifying HP-IL peripheral devices in the System Configuration screen.

1. Start with the main P.A.M. screen.
2. Select the System Configuration screen by pressing System Config (f6) on the main P.A.M. screen.
3. Use the arrow keys to move the pointer to the appropriate parameter field:

Peripheral Device	Parameter Field(s)
disc drive	External Disc Drives
plotter	Plotter Interface
printer	Printer Interface Printer Mode Printer Pitch Printer Line Spacing Printer Skip Perforation

4. Use Next Choice (f3) or Previous Choice (f4) to select the field setting appropriate for your peripheral:
   - Disc Drives: Change the `External Disc Drives` setting to indicate the total number of external disc drives. Do not count the internal drives A and B.
   - Plotter: Change the `Plotter Interface` setting to `HP-IL`.
   - Printer: Change the `Printer Interface` setting to `HP-IL`. Change the `Printer Mode` setting to `HP Graphics only`, `Alpha only`, or `Alpha and HP Graphics`.* (The `Printer Mode` setting affects only the Shift Print operation used for producing screen dumps.)
   - Digital casette drive: Increase the `External Disc Drives` setting by 1.

* `HP Graphics only` means that screen dumps to HP graphics printers are printed exactly as displayed (all pixels lighted in the screen will be printed instead of only the pixels that form characters). `Alpha only` means standard character codes are sent to the printer and the printer prints the screen using its own character set—which may not be the same as the characters shown on the screen. `Alpha and HP Graphics` means that graphics screens are printed exactly as displayed and text screens are printed in Alpha mode. If you are unsure of the setting to use, select `Alpha and HP Graphics`.

5. Exit from the System Configuration screen by pressing Exit ((f8)). (This updates the computer to the current settings in the System Configuration screen.)

Datacom Configuration. If you want to communicate with another computer via telephone lines or a direct serial cable, refer to chapter 9, "Remote Terminal Operations."

Serial Peripherals

There are two ways you can connect peripherals that operate through a serial interface:

- Connecting directly to the built-in serial port.
- Connecting to the HP 82164A HP-IL/RS-232-C Interface, which is itself connected to the computer through the HP-IL port.

Connecting a Peripheral Device to the Built-in Serial Port

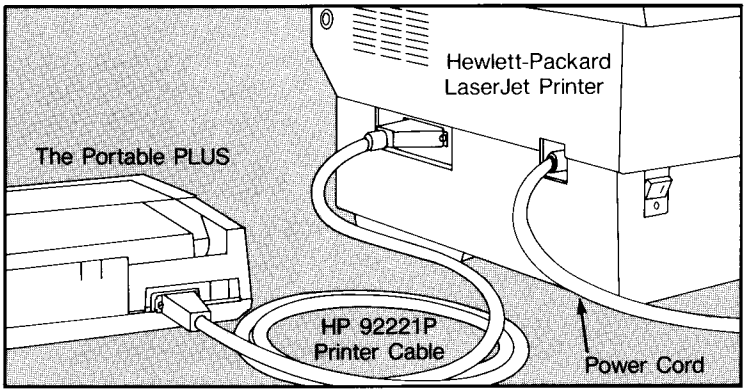
You'll need the following equipment:

- A serial peripheral device (such as a printer or plotter).
- A serial cable. Hewlett-Packard offers two optional serial cables for use with the built-in serial port: HP 92221P for connecting printer/plotters; and HP 92221M for connecting modems.

Connecting serial peripherals.

1. Connect the small end of the cable to the serial port.
2. Connect the other end to your peripheral device.
3. Tighten the screws.

Example of a Serial Connection



System Configuration Settings for Serial Port Devices

Operating peripheral devices through the serial port requires that you specify settings in both the System Configuration screen and the Datacom Configuration screen.

Note

To avoid unnecessary battery drain when you are not using the serial port, you should ensure that power is turned off when the port is not in use. Instructions for these operations are included under "Specifying serial peripheral devices in the Datacom Configuration screen" on page 6-8 and "Turning off the power" on page 6-9.

6

Specifying serial peripheral devices in the System Configuration screen.

1. Start with main P.A.M. screen.
2. Press System Config (f6) to display the System Configuration screen.

3. Use Next Choice ((f3)) or Previous Choice ((f4)) to change the field appropriate for your peripheral:
   - Plotter: Change the `Plotter Interface` setting to `Serial`.
   - Printer: Change the `Printer Interface` setting to `Serial`. If desired, change the `Printer Mode` setting to specify `HP Graphics only`, `Alpha only` or `Alpha and HP Graphics`.* (This last setting affects only the (Shift)(Print) operation.)
   - External modem: Change the `Datacom Interface` setting to `Serial`.

Specifying serial peripheral devices in the Datacom Configuration screen.

1. Determine which of the following parameters are used by the device and what settings are required:†

Transmission Rate (BPS)	XON/XOFF Pacing (On or Off?)
Word Length (bits)	CTS Line (Observe or Ignore?)
Stop Bits	DSR Line (Observe or Ignore?)
Parity	DCD Line (Observe or Ignore?)

6

Note

Refer to the device documentation or check with the dealer or manufacturer. If you cannot get the information you need, try using the default settings.

Most HP plotters with RS-232 interfaces use the DSR (data set ready) line, which means you will use step 4 of this procedure to set the DSR Line parameter to `Observe`.

* Refer to the footnote on page 6-5.

† If you are connecting to another computer, refer to chapter 9, "Remote Terminal Operations."

2. Get the main P.A.M. screen.
3. Press Datacom Config (f5) to display the Datacom Configuration screen.
4. Use Next Choice (f3) or Previous Choice (f4) to make any changes in the Serial column that are necessary to match the requirements of your peripheral device. (If you just want to ensure that the settings are all at their default values, press Default Values – the f6 key).
5. Press Exit (f8) to activate the changes you made in step 4 and to return to the main P.A.M. screen.

Turning off the power to an interface.

When you finish using a serial peripheral device connected to the serial port, you should ensure that the power to the port is off to decrease battery drain. To do so, use steps 2, 3, 4, and 5 in the foregoing procedure, except that in step 4; move the pointer to the Power to Interface setting and select Off.

Caution

Removing the serial cable when it is not in use minimizes the chances of electromagnetic interference with other nearby electrical devices. Some countries, such as the United Kingdom, require that a cable connected to a modem be disconnected from the modem end first.

Refer to appendix D for technical information about the built-in serial port.

The HP 82164A HP-IL/RS-232-C Interface

Connecting a Peripheral Device through the HP 82164A Interface

You'll need the following equipment:

- The peripheral device.
- The HP 82164A HP-IL/RS-232-C Interface.
- The ac adapter/recharger you received with the interface.
- The appropriate serial cable to use with the peripheral device. (Refer to the documentation provided with the device.)

To connect a serial peripheral through the HP 82164A interface:

1. Connect the HP-IL/RS-232-C Interface to the HP-IL port. (Refer to "Connecting a peripheral HP-IL device" on page 6-3.)
2. Plug the ac adapter/recharger into the interface and into an ac receptacle.
3. Connect the serial cable to the HP-IL/RS-232-C Interface and to the peripheral.

System Configuration Settings for the HP 82164A Interface

Operating peripheral devices through the HP 82164A interface requires that you specify settings in both the System Configuration screen and the Datacom Configuration screen. To do so, use the same procedures that are used for serial port devices (refer to "Specifying serial peripheral devices in the System Configuration screen" on page 6-7 and to "Specifying serial peripheral devices in the Datacom Configuration screen on page 6-8"). When you use the procedure for the Datacom Configuration screen, use the `HP 82164` column instead of the `Serial` column. (Ignore the `Power to Interface` setting. Power is always available to the HP-IL port and does not adversely affect battery life.)

Using the LaserJet Printer

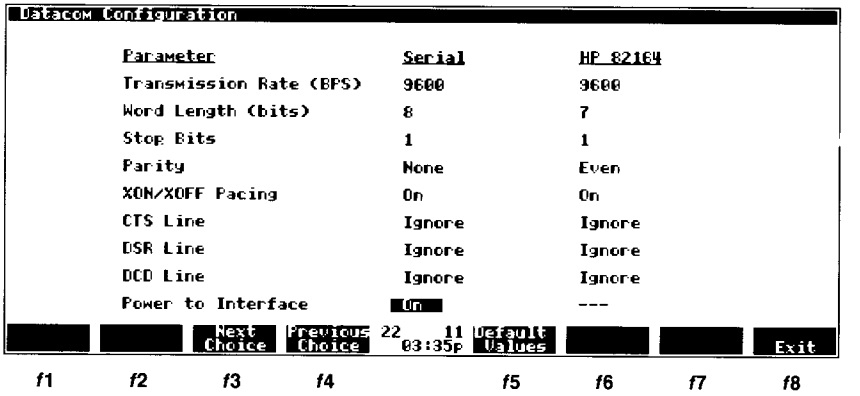
The LaserJet printer is a serial printer. You can connect it using either the computer serial port or the HP 82164A HP-IL/RS-232-C Interface.

Serial Port/LaserJet Connection

To connect the LaserJet directly to the serial port, use the HP 92221P Printer Cable. (Refer to the illustration on page 6-7.)

Connecting the printer and configuring the computer.

1. Plug the smaller end of the HP 92221P Printer Cable into the serial port on the back of the computer.
2. Connect the larger end of the cable into the back of the printer. (Refer to the documentation provided with the printer.)
3. Turn on the printer and the computer.
4. Get the main P.A.M. screen.
5. Press System Config (f6) to display the System Configuration screen.
6. Use the arrow keys and Next Choice (f3) or Previous Choice (f4) to move the pointer to and set the following parameters:
   - Printer Interface: Serial
   - Printer Mode: Alpha Only (This setting affects screen dumps—Shift Print operations—only.)
7. Press Exit (f8) to return to the main P.A.M. screen.
8. Press Datacom Config (f5) to display the Datacom Configuration screen.
9. Use the arrow keys and Next Choice (f3) or Previous Choice (f4) to move the pointer to and set the parameters in the serial column to match those shown on the next page:



10. Press Exit ((f8)) to return to the main P.A.M. screen.

Your LaserJet and computer are ready to use.

Note

The Print File/Dir command in the P.A.M. File Manager screen does not send form feed commands to the printer. Also, the LaserJet does not automatically print a page until it receives enough data to fill a whole page (that is, to cause an automatic form feed). Thus, if you use Print File/Dir to send data that results in a partial page, the (FORM FEED) key on the LaserJet stays lit, indicating that the printer has part of a page to print, but is waiting for a full page or a form feed command. To print a partial page by giving the LaserJet a manual form feed command, (1) press the LaserJet (ONLINE) key to take the printer off line, (2) press the LaserJet (FORM FEED) key to print the partial page, and (3) press the LaserJet (ONLINE) key again to put the printer back online.

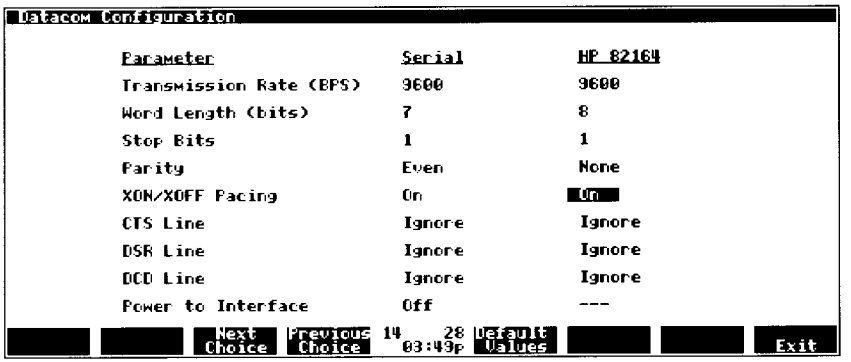
HP 82164A/ LaserJet Connection

To connect the LaserJet through the HP 82164A interface, use the HP 17255D Cable.

Connecting the printer and configuring the computer.

If you are using the HP-IL/RS-232-C Interface instead of the built-in serial interface, follow the steps in the "Connecting the printer and configuring the computer" procedure beginning on page 6-11, with the following exceptions:

- Begin with step 3 (that is, ignore steps 1 and 2).
- Connect the serial cable according to the instructions in the LaserJet and HP 82164A interface documentation.
- In step 6, set the `Printer Interface` parameter to `HP 82164A` *instead of* `Serial`. (The `Printer Mode` setting should still be set to `Alpha Only`.
- In step 9, use the `HP 82164A` column *instead of* the `Serial` column, and ignore the `Power to Interface` setting. When you're finished setting the parameters, the form should look like this:



HP-IB Peripherals

The HP 82169A HP-IL/HP-IB Interface enables you to use HP-IB peripherals, such as printers, plotters and disc drives, with your computer. You can use HP-IL and HP-IB devices at the same time.

Once you have the HP 82169A Interface, you can use several HP-IB peripherals at the same time. Each one needs its own HP-IB cable.

You'll need the following equipment:

- The HP-IB peripheral device you want to use.
- The HP 82169A HP-IL/HP-IB Interface.
- The HP 82059B AC Adapter.
- Two HP-IL cables.
- An HP-IB cable.

Note

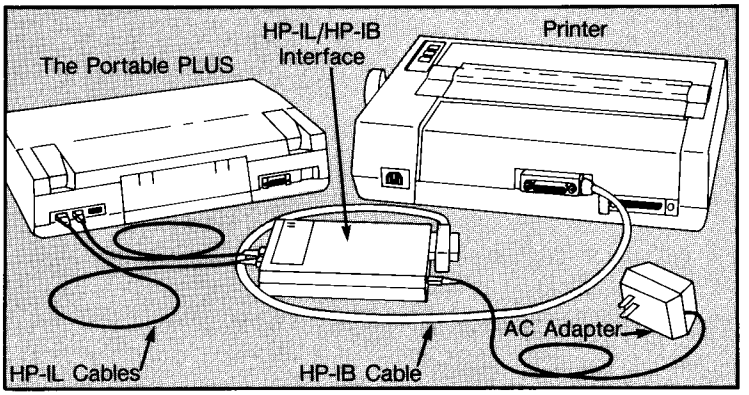
If you intend to use HP-IB disc drives, the HP-IL/HP-IB interface must have a serial number greater than 2406A00000. Otherwise it will cause a `bad unit` error message. If your interface has a lower serial number, send it to the service address in the interface owner's manual to be updated.

The HP-IL cables come with your computer and interface, but you must purchase the HP-IB cable. Hewlett-Packard offers HP-IB cables in four lengths: 0.5 meter (10833D), 1 meter (10833A), 2 meter (10833B) and 4 meter (10833C).

Connecting an HP-IB interface.

1. Determine the HP-IB address on the peripheral and note it for use in the next procedure. (Refer to the documentation for the peripheral device.)
2. Set all switches on the HP-IL/HP-IB interface to 0.
3. Put the HP-IL/HP-IB Interface anywhere in the HP-IL loop.
4. Connect the ac adapter to the interface and to an ac receptacle.
5. Connect the HP-IB cable to the HP-IL/HP-IB Interface and to the peripheral device.

Example of an HP-IL/HP-IB Connection



Specifying the system configuration for an HP-IB device.

1. Start with the main P.A.M. screen.
2. Press System Config ((f6)) on the main P.A.M. screen.
3. Use Next Choice ((f3)) or Previous Choice ((f4)) to change the field appropriate for peripheral devices connected through HP-IB:
   - Disc Drives: Change the `External Disc Drives` setting to indicate the total number of external disc drives. (Do not count the internal drives A and B.)
   - Plotter: Change the `Plotter Interface` setting to the HP-IB address you noted in step 1 of the preceding "Connecting the interface" procedure. (This address is usually "05.")

- Printer: Change the `Printer Interface` setting to the HP-IB address you noted in step 1 of the preceding "Connecting the interface" procedure. (This address is usually "01.") If desired, change the `Printer Mode` setting to `HP Graphics only`, `Alpha only`, or `Alpha and HP Graphics`.* (This last setting affects only the (Shift)(Print) operation.)

4. Press Exit ((f8)) to exit from the System Configuration screen.

Connecting the Portable PLUS to Another Portable PLUS or to The Portable

You can connect your computer to another Portable PLUS or to The Portable (HP 110) and use either your computer or the other computer as a dual disc drive. This enables you to transfer files between computers without using an external disc drive.

This feature is enabled by a program named `HPLINK` that is built into both the Portable PLUS and The Portable.

Connecting and Configuring for HPLINK

To use `HPLINK`, you'll need the following equipment:

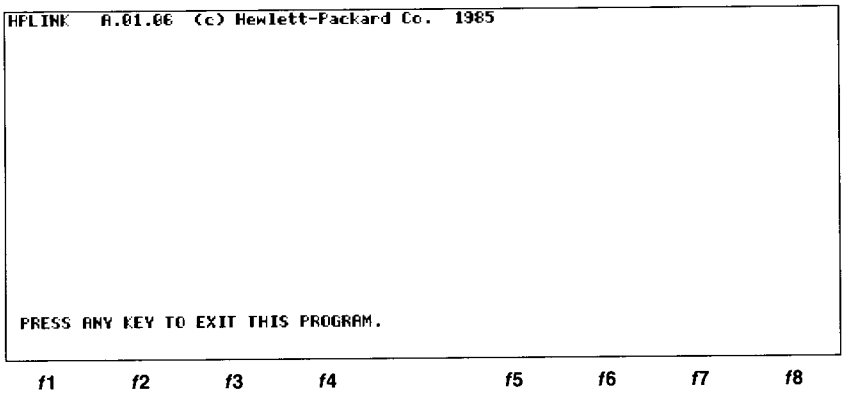
- Your computer.
- Another Portable PLUS or a Portable (HP 110).
- A pair of HP-IL cables.

Connecting and configuring the computers.

1. Use the HP-IL cables to connect the HP-IL ports of the two computers. (You can include other HP-IL devices in the loop if you need to.)
2. Get the main P.A.M. screen on the computer you want to function as a disc drive.

* Refer to the footnote page 6-5.

3. On the computer in step 2, type `hplink` (Return) to start the HPLINK program. If this computer is a Portable PLUS, you will then see a screen similar to the following:



4. Get the main P.A.M. screen on the computer you want to function as the controller.
5. Press **System Config** ((f6)) to display the main P.A.M. screen.
6. Move the pointer to the `External Disc Drives` parameter.
7. Use **Next Choice** ((f3)) or **Previous Choice** ((f4)) to change the setting to `2`. (If you have any other disc drive(s) in the loop, increase this setting by 1 for each of such drives.)
8. Press **Exit** ((f8)) to exit from the System Configuration screen.

Using HPLINK

Transfer information between the two computers just as you would between your computer and a disc drive. On the computer running HPLINK, drive A becomes drive C and drive B becomes drive D (unless there is another disc drive earlier in the loop). To stop the HPLINK program, press any key on the computer running the program.

If you use HPLINK frequently, you may want to add it to the applications menu in the main P.A.M. screen. To do so, refer to "Creating an Application Menu Label" on page 1-5.

7 Using Printers

Contents

Chapter 7: Using Printers

7 Using Printers

What You Can Learn In Chapter 7

This chapter describes how to use your computer's printer control functions. The major areas are:

- System configuration settings for printing operations.
- Printing the screen contents.
- Printing with single sheets or fanfold paper.
- Guidelines for using a non-HP printer.

Note

Before you can print, you must have a printer connected to your computer and verify that the `Printer Interface` and `Printer Mode` settings in the system configuration are correct. To connect a ThinkJet printer, refer to chapter 3 in *Getting Started With the Portable PLUS*. To connect any other printer and to check the Interface and Mode settings, refer to chapter 6, "Connecting Printers, Disc Drives, and Other Peripherals," in this manual.

Printing a Copy of the Screen

When you have a printer connected to your computer, you can easily print a copy of the screen contents. To do so, press and hold the (Shift) key, then press the (Print) key.

To see the different types of output you can get with the same screen, you may want to experiment with all three of the `Printer Mode` settings in the System Configuration screen. (See the "Printer Mode" entry in the "System Configuration Parameters and Settings" table on pages 4-8 through 4-10.)

Printer Control Features

The following topics describe features controlled from the System Configuration screen.

Print Pitch

The print pitch setting in the System Configuration screen controls the size of characters on an HP printer. The default is `No Configuration` (which makes no change in the printer's current setting). For Hewlett-Packard printers you can also select from one of four optional print pitch settings:

- `Normal`.
- `Expanded`.
- `Compressed`.
- `Expanded-Compressed`.

If you are unsure as to what setting to use, experiment first by printing with the `No Configuration` setting, then try the other four options.

Note

Use `No Configuration` when you are using a non-HP printer, when you are using an application that controls print pitch, or when you wish to explicitly control print pitch by sending the appropriate escape sequence to the printer. Escape sequences are listed in the printer documentation. For instructions on how to send an escape sequence to a printer, refer to "Sending Escape Sequences and Control Characters to a Printer" on page 7-5.

Changing the print pitch.

1. Ensure that your printer is properly connected to the computer.
2. Get the main P.A.M. screen.
3. Press `System Configuration` (f6) to display the System Configuration screen.

4. Using the arrow keys, move the pointer to the `Printer pitch` setting.
5. Use Next Choice ((f3)) and Previous Choice ((f4)) to change the print pitch to the setting you want.
6. Press Exit ((f8)) to send instructions for the new setting to your printer and to return to the main P.A.M. screen.

Line Spacing

You can specify the following line spacing:

- `6 lines per inch`
- `8 lines per inch`
- `No Configuration` (Default; six lines per inch on most HP printers.)

Note

Use `No Configuration` when you are using a non-HP printer, when you are using an application that controls line spacing, or when you wish to explicitly control line spacing by sending the appropriate escape sequence to the printer. Escape sequences should be listed in the printer documentation. For instructions on how to send an escape sequence to a printer, refer to "Sending Escape Sequences and Control Characters to a Printer" on page 7-5.

Changing line spacing.

1. Ensure that your printer is properly connected to the computer.
2. Get the main P.A.M. screen.
3. Press System Configuration ((f6)) to display the System Configuration screen.
4. Using the arrow keys, move the pointer to `Printer line spacing`.

5. Use Next Choice (f3) or Previous Choice (f4) to change the line spacing to the setting you want.
6. When you are finished using the System Configuration screen, press Exit (f8) to send instructions for the new setting to your printer and to return to the main P.A.M. screen.

Skipping Page Perforations

When you are using fanfold paper in a printer you will usually want the printer to skip (leave blank lines around) the perforation between sheets. When you are using single sheets in a printer, you will not want the printer to look for a perforation. Use the `Printer Skip Perforation` setting in the System Configuration screen to specify whether or not you want the page perforation to be skipped.

You can specify the following printer skip perforation settings:

- `On`
- `Off`
- `No Configuration` (Default)

Using the `No Configuration` setting on most Hewlett-Packard printers results in no skipping.

Use `No Configuration` when you are using a printer made by someone other than Hewlett-Packard, when you are using an application that controls perforation skip, or when you wish to explicitly control perforation skip by sending the appropriate escape sequence to your printer. The escape sequences to use should be listed in the printer documentation. For instructions on how to send an escape sequence to a printer, refer to "Sending Escape Sequences and Control Characters to a Printer" on page 7-5.

Skipping the paper perforation.

1. Ensure that your printer is properly connected to the computer.
2. Get the main P.A.M. screen.
3. Press System Configuration (f6) to display the System Configuration screen.
4. Using the arrow keys, move the cursor to `Printer Skip Perforation`.
5. Use Next Choice (f3) or Previous Choice (f4) to select the setting you want.
6. When you are finished using the System Configuration screen, press Exit (f8) to send instructions for the new setting to your printer and to return to the main P.A.M. screen.

Note

Pressing Exit (f8) automatically sends all setting information to your printer.

Sending Escape Sequences and Control Characters to a Printer

Escape sequences and control characters are commands that tell the printer to do something special. Escape sequences start with a special (escape) character that tells the printer that characters following the special character are commands rather than characters to be printed. Control characters are single-character commands.

The escape sequences and control characters your printer accepts should be listed in the printer documentation.

You can send escape sequences directly from the keyboard to a printer or you can enter the sequences in a file and print the file at a later time.

You can send some control characters directly to a printer by pressing (CTRL), followed by the desired letters. In other cases, you will have to create a text file containing the characters, then send the file to the printer.*

Configuring a printer by sending escape sequences and control characters directly from the keyboard.

1. Ensure that your printer is properly connected to the computer.
2. Start with main P.A.M. screen.
3. In the P.A.M. command line, type `copy con prn` (Return). `con` stands for console; `prn` stands for printer. You will see a blank screen.
4. Type the escape sequence(s) or control character(s) you want to send to the printer:
   - To type an escape sequence:
     a. Press and release (ESC).
     b. Press and hold (Shift) and press (&). (You won't see anything on the screen until you press (&). Then you see `^[`.)
     c. Type the remaining characters in the sequence.
     d. If you have no more sequences to send, press (Return). Otherwise, press the space bar once, then return to step a.
   - To type a control character:
     a. Press and hold the (CTRL) key.
     b. Press the desired character key.

   You can type as many as you need on the same line, but no sequence should go beyond the first line.
5. Press and hold (CTRL) and press (Z) when you are finished typing escape sequences.

* This is because some control characters will be intercepted and executed by your computer or an editor that you may be using. The editor that you use to create the file must be one that allows you to enter control characters as text.

6. Press (Return) to complete the copy command and send the escape sequences to the printer. If you need to send more sequences than you could type in the the first line, repeat steps 2 through 6.
7. Your printer is now configured. Press any key to return to P.A.M.

The changes you specify will remain in effect until you reset the printer or until an application program changes the printer configuration.

Configuring a printer by using EDLIN and COPY to send escape sequences and control characters.

This procedure uses the `COPY` command described in chapter 10, "Using MS™-DOS Commands" and the MS-DOS line editor described in chapter 11, "Using the Built-In Line Editor."

1. Ensure that your printer is properly connected to the computer.
2. Start with the main P.A.M. screen.
3. In the P.A.M. command line, type `edlin` *file name* (where *file name* is a file name having one to eight characters.)
4. Press (Return) to create and open the file you specified in step 3.
5. Type `i` (Return) to get into Insert mode so you can enter lines in your new file.
6. Type the escape sequence(s) or control character(s) you want to send to the printer:
   - To type an escape sequence:
     a. Press and release (ESC).
     b. Press and hold (Shift) and press (&). (You won't see anything on the screen until you press (&). Then you see `^[`.)
     c. Type the remaining characters in the sequence.
     d. If you have no more sequences to send, press (Return). Otherwise, press the space bar once, then return to step a.

- To type a control character:
  - **a.** Press and hold the (CTRL) key.
  - **d.** Press the desired character key.

  You can type as many as you need on the same line, but no sequence should be interrupted by the end of the line. If you need to go to a new line, press (Return) after typing the last complete sequence on the current line, then resume typing the sequences.

7. When you finish typing the last escape sequence, press (Return).

8. Press (CTRL)(C) to get out of the Insert mode.

9. Type `e` (Return) to end the editing session and save the file.

10. When you see the message

```
Press any key to return to P.A.M.
```

press (Return).

11. Send the file containing the escape sequences to the printer by typing

`copy` *file name* `prn`(Return)

in the P.A.M. Command Line (where *file name* is the name of the file containing the escape sequences). Doing so should configure the printer according to the escape sequences you specified.

The changes specified by your file will remain in effect until you reset the printer or until an application program changes the printer configuration.

The following illustration shows an example of a file created using the EDLIN text editor (refer to chapter 11) for sending the escape sequence for compressed typeface (for HP Printers) to a printer:

EDLIN Text File Containing an Escape Sequence

```
New file
*i
       1:*^[&k2s^Z_
```

8 Using External Disc Drives

Contents

Chapter 8: Using External Disc Drives

8 Using External Disc Drives

What You Can Learn in Chapter 8

This chapter tells you the required and optional things to do after you connect an external disc drive to your computer. (To connect an external disc drive, refer to chapter 6, "Connecting Printers, Disc Drives, and Other Peripheral Devices" in this manual and/or to chapter 4, "Hooking Up a Printer and a Disc Drive" in *Getting Started With the Portable Plus.*)

Specifying the Number of Disc Drives

You need to tell your computer how many external disc drives you have connected. Otherwise, your disc drives won't operate properly because the computer won't detect them.

Specifying the number of external disc drives.

1. Get the main P.A.M. screen.
2. Press System Config (f6) to display the System Configuration screen.
3. Use the arrow keys to move the pointer to the `External disc drives` setting.
4. Use Next Choice (f3) or Previous Choice (f4) to change the setting to agree with the number of external drives you have connected to your computer.
5. Press Exit (f8) to activate the new setting and to return to the main P.A.M. screen.

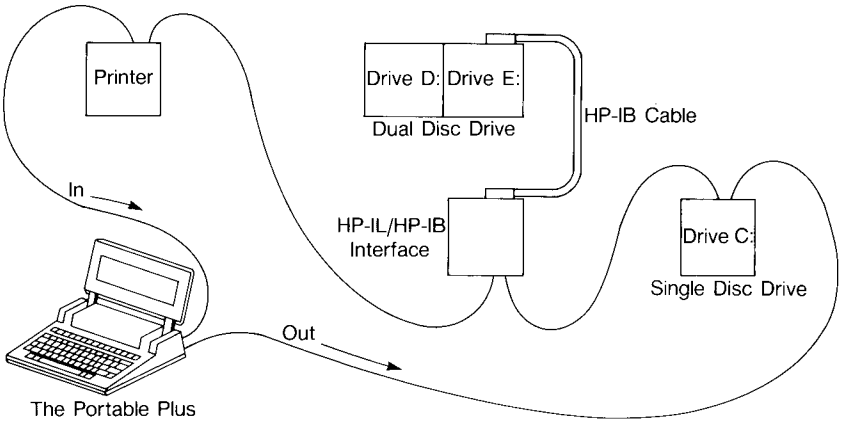
Note

The default setting is `1`. If you don't have any disc drives connected, you can speed up P.A.M. operation slightly by changing this setting to `0`.

External Disc Drive Names

If you connect one disc drive, the computer identifies it as drive C. If you connect two or more disc drives, the computer identifies them, in sequence, as drives C, D, etc.

Example of Naming Disc Drives



To specify an external disc drive in a file or directory path name, type the drive letter followed by a colon. For example, `C:` specifies the first external drive in the preceding illustration.

Preparing (Formatting) a Disc for Use

Before you can use a disc, you must format it. Formatting a disc is also a convenient way to clear the contents from a disc and "start over."

Formatting puts magnetic codes on a disc that makes it readable by your computer. Formatting also prepares space on the disc for a directory of files and other data stored on the disc.

Caution

Formatting destroys any information on a disc. When you format a disc, make sure that either the disc is new or that the information on it is no longer needed.

The electronic disc (Edisc) built into your computer is automatically formatted when you do the procedure described on the sheet titled *Connecting the Battery* shipped with your computer. However, you can format the Edisc again just like you would format any other disc.

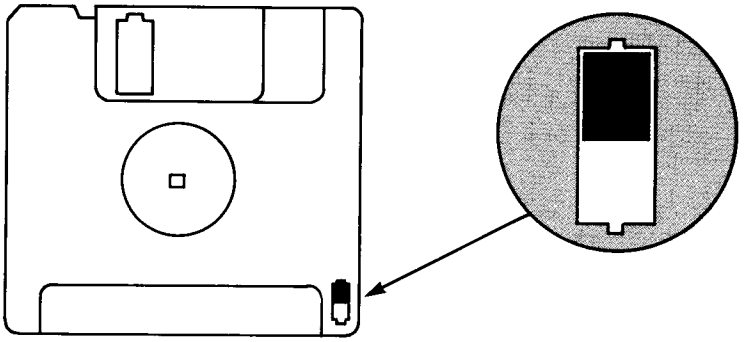
Formatting a disc.

Use this procedure to format double-sided discs. (To format a single-sided disc, refer to "Formatting External Discs" on page 10-16.)

1. Display the main P.A.M. screen.
2. Press File Manager ((f2)) to display the main File Manager screen.
3. Press Format ((f5)) to display the Format screen. The message indicated in color below appears on the screen:

```
File Manager          Format          [###] bytes free on A:
Enter the drive to format.  (All data on the disc will be lost.)
_

Drive to format:
Volume label:
```

4. Ensure that the disc is not write-protected. The tab on the back should be in the position shown:



5. Insert the disc into your drive. *Make sure the disc contains no information you wish to save. Any information on the disc will be destroyed in the following steps.*
6. Type the letter designating the drive containing the disc you want to format. (For example, if you are formatting a disc in drive c, type `c`.)
7. Press (Return). The letter you typed to designate a drive will be displayed in the `Drive to format:` line. For example, if you specified drive c in step 5, you would see `c` in this line:

```
File Manager                    Format                  48360 bytes free on A:
Volume label (11 characters, [Return] for none)?

Drive to format: C
Volume label:
```

If, after pressing (Return) you discover that you have specified the wrong drive, press Start Over ((f6)) and go back to step 6.

8

8. If you want the disc to have a name (termed *volume label*) recorded on it, type that name.* (The name can contain as many as 11 characters.) If you don't want a volume label, skip this step.
9. Press (Return). (If, after pressing (Return) you discover that you have specified a volume label you don't want, press Start Over — (f6) — and go back to step 6.)
10. Press Start ((f1)). The second line on your screen will show `Formatting disc. Please wait.` and your disc drive will run. The time required to complete the formatting depends on the drive you're using.
11. When your drive stops, formatting is complete and the prompt `Enter the drive to format` returns. If you want to format another disc, go to step 4. Otherwise, go to step 12.
12. Press Exit ((f8)) to return to the main File Manager screen.
13. Press Exit ((f8)) again to return to the main P.A.M. screen.

Verifying a Write to a Disc

When you're storing information, you may want to make sure that the disc has received the information correctly. Using your System Configuration screen, you can tell the disc drive to verify that the information it stored is identical to the information received from your computer. Although this verification process slows the storing process, there may be times when this reduced speed is an acceptable tradeoff.

Verifying accuracy of stored information.

1. Get the main P.A.M. screen.
2. Press System Config ((f6)) to display the System Configuration screen.

* Like file names, volume names should not include names used internally by the computer. Refer to "Choosing File Names" on page 5-9.

3. Use the arrow keys to move the pointer to the `Disc Write Verify:` setting.
4. Use Next Choice (f3) or Previous Choice (f4) to change the setting to `On`. (Later, if you want to turn off the write-verify feature, use this step to change the setting to `Off`.)
5. Press Exit (f8) to activate the new setting and to return to the main P.A.M. screen.

Making a Backup Copy of a Disc

It is a good idea to make backup copies of your discs. Doing so helps to prevent accidental loss of important files. To copy the Edisc onto an external disc, refer to "Copying between the Edisc and an external disc" on page 5-23. To copy one external disc to another, refer to "Copying One Flexible Disc to Another" on page 10-18.

Interchanging Discs Between Computers

Discs from some other computers can be read by the Portable PLUS, and Portable PLUS discs can be read by some other computers. The following provides some details on how disc-based information can move each way.

Reading Other Discs on the Portable PLUS

The Portable PLUS, when equipped with the appropriate external disc drive, can read discs that are MS-DOS format. (To connect an external disc drive, refer to chapter 6, "Connecting Printers, Disc Drives, and other Peripheral Devices.") This includes both single and double-sided 3.5-inch flexible discs, 5.25-inch discs, and Winchester discs. All of these must have been formatted by an MS-DOS computer. Data files will be directly usable, *but programs are not necessarily compatible.*

The Portable PLUS can also read and write to some desktop computers directly (such as the IBM® PC) if you use the Portable-Desktop Link. This product uses an HP-IL interface to connect with a desktop computer, and includes software that makes the desktop unit behave like a peripheral device for your Portable PLUS. The Portable PLUS can then use the desktop computer's disc drives or printer as though they were directly-connected devices.

To set up a Portable-Desktop link, follow the instructions that are recorded on the disc included with the product. Order the HP 82973A HP-IL Interface for the IBM PC, PC/XT, or PC/AT. Order the HP 45643A Extended I/O Accessory for the HP 150A or Touchscreen PC, which includes a Centronics-type parallel printer interface.

The HP 9114A Disc Drive is capable of reading either single- or double-sided discs, so single-sided discs from an HP 150A or Touchscreen (HP 150B) computer can be used by the Portable PLUS. A single-sided disc modified by the Portable PLUS will still be usable by an HP 150A on a single-sided drive.

To transfer data from a computer with incompatible discs, use the Portable PLUS' RS-232 interface and the appropriate application program to do a file transfer.

Reading Portable PLUS Discs on Other Computers

If you use your computer to format discs on certain types of disc drives, you can use those discs in some other computers.

- If you want to read your discs on an HP 150, then format them on the disc drive used with the HP 150. (To format a single-sided disc on the HP 9121 disc drive, refer to "Formatting External Discs" on page 10-16.)
- If you want to read your discs on an IBM PC, then format the discs on an HP 9114A disc drive and use a Portable-Desktop link.

Formatting an HP 150A-readable single-sided disc on a double-sided drive. The original HP 150A computer (HP 150A) does not support double-sided, 3.5-inch disc drives. (The HP Touchscreen—the HP 150B—does support these discs.) If you need to format a single-sided disc for subsequent reading by an HP 150A computer, refer to "Formatting External Discs" on page 10-16.

9 Remote Terminal Operations

Contents

Chapter 9: Remote Terminal Operations

9 Remote Terminal Operations

What You Can Learn in Chapter 9

Use this chapter when you want to operate your computer as a terminal connected to another computer. If you're using either the built-in terminal emulator or a terminal emulator that you've installed yourself, you should read from this point through "Where to Go from Here?" on page 9-7. If you're using the built-in terminal emulator, you should also look through the rest of the chapter for further information you'll need. (The built-in terminal emulator program provides a minimal capability for situations where a full-feature terminal emulator has not been installed.)

Before You Begin

Connect all of the hardware you need for contacting another computer. If you will be communicating through the built-in serial interface, refer to appendix D, "Serial Communication Port Technical Information."

For further information on hardware connections, refer to the documentation provided with the hardware.

Terminology You Should Know For Data Communications. Before you proceed in this chapter, you should be familiar with the terms listed below. Definitions of these terms are provided in appendix E, the "Glossary:"

datacom configuration
datacom interface
host
remote terminal

Before Beginning Data Communications With Another Computer System. In addition to making the hardware connections, you usually need to:

- Establish a host account.
- Learn the host log-on sequence.
- Acquire a host password.
- Understand how to use the host system for the work you have in mind.
- Know the host log-off command (so that you don't have to spend any on-line time wondering how to log off).
- Know whether the host uses your computer's default Datacom configuration settings or requires you to specify nondefault settings. (Refer to the "Datacom Configuration Parameters" table on page 9-7.)

One resource for help is the host documentation. Another is the host system administrator or representative. (Commercial information services include the instructions you need in the documentation they provide to their subscribers. If the documentation does not specify any configuration parameters, then your computer's default parameters may be acceptable.)

Setting Up for Terminal Operations

If you've connected and turned on all the hardware that's needed to contact a host, you're ready to proceed in this section.

Terminal setup procedure.

There are two main steps to perform:

1. Be sure that the `Datacom Interface` setting in the System Configuration screen is correct. This procedure is described under the next heading.
2. Be sure that the Datacom Configuration screen parameters for your interface are correct for the host. This procedure is described under "The Datacom Configuration" on page 9-4.

The System Configuration

Before contacting a host, tell your computer which datacom interface you want to use. Your options are:

- `Serial`: The built-in serial interface.
- `Modem`: The HP 82983A optional (built-in) modem (which your authorized HP dealer can install.)
- `HP 82164A`: The HP-IL to RS-232 interface.

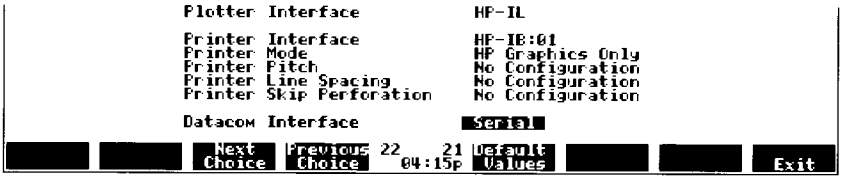
Caution

The built-in terminal emulator is not designed for use with the HP 82164A interface. Running the built-in terminal emulator with the Datacom Interface parameter set to `HP 82164` may lock up the system and erase or corrupt the contents of the Edisc, requiring you to use the reset button described under "Resetting Your Computer" on page B-6.

Specifying the datacom interface.

1. Select the main P.A.M. screen.
2. Press `System Config` (f6) to display the System Configuration screen.

3. Use the arrow keys to move the pointer to the `Datacom Interface` parameter setting at the bottom of the screen.



4. Press Next Choice (f3) or Previous Choice (f4) as many times as is necessary to display the name of the datacom interface you want to use.
5. Press Exit (f8) to exit from the System Configuration screen.

Note

The changes you make to the system configuration screen are not implemented until you press Exit (f8).

The Datacom Configuration

Before contacting a host, check the datacom configuration parameters for the interface you are using to be sure they match those required by the host. If you can't easily find out the parameters required by the host, try using the default settings.*

* If you are using the built-in terminal emulator (described later in this chapter) with the serial interface and an external modem in a location outside of the USA or Canada, you must set the Datacom Configuration to conform to CCITT (Comité Consultatif International Télégraphique et Téléphonique) standards. To do so, change the `CTS Line`, `DSR Line`, and `DCD Line` settings from `Ignore` to `Observe`.

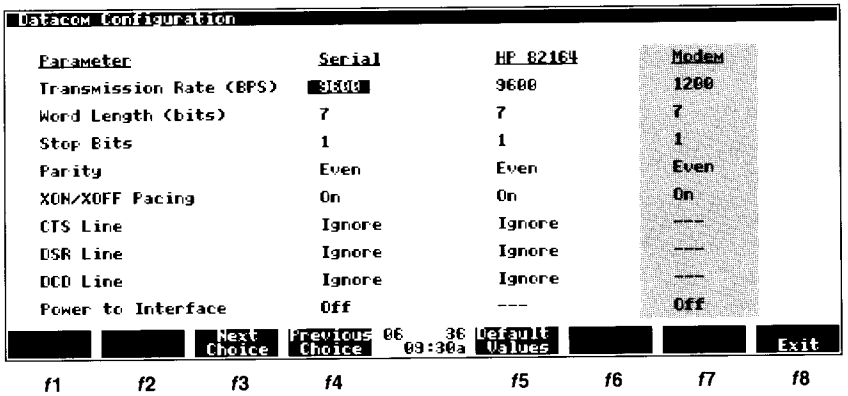
Specifying the datacom configuration.

1. Select the main P.A.M. screen.
2. Press Datacom Config ((f2)) to select the Datacom Configuration screen. You will see a screen similar to the one shown next.

Note

If the optional modem is *not* installed in your computer, the `Modem` column shown in the shaded portion of the following illustration will not appear in your screen.

Default Datacom Configuration



3. Find the column that identifies the datacom interface (`Serial`, `HP 82164A`, or `Modem`–if installed) that you will be using.
4. Check the parameters listed in the table against the parameters your host will accept.* (The names of the parameters are shown in the `Parameter` column on the left side of the screen.) For example, if you need to use the serial interface at a rate of 9600 bits per second (the default setting), you would check the part of the screen indicated in color in the following illustration:

* Refer to the footnote on page 9-4.

5. If the displayed parameter settings are the same as those required by your host, go on to the next step. But:
   - If you have to change any parameter setting, use the arrow keys to move the pointer to the parameter, then press Next Choice (f3) or Previous Choice (f4) as many times as is necessary to display the setting you need.
   - If you don't know what parameters to use, try the default set. To be sure that you have the default set, press Default Values (f5).

   (If you want to see a complete listing of datacom configuration parameters and default settings, refer to "Datacom Configuration Parameters," below.
6. Press Exit (f8) to exit from the System Configuration screen.

Note

Any changes you make to the parameter settings in the Datacom Configuration screen are not activated until you exit from this screen.

7. You are now ready to start your terminal emulator application.

Datacom Configuration Parameters

The following table lists the options for datacom parameter settings you could use in terminal operations.

Datacom Configuration Parameters

Parameter	Serial	HP 82164A (Optional)	Modem (Optional)
Transmission Rate (BPS)	110, 134.5, 150, 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600*, 19200	50, 75, 110, 134.5, 150, 300, 600, 1200, 1800, 2400, 3600, 4800, 7200, 9600*, 19200	110, 150, 300, 1200*
Word Length (bits)	7*, 8	7*, 8	7*, 8
Stop Bits	1*, 2	1*, 2	1*, 2
Parity (Should be None if word length is 8-bits.)	Even*, Odd, None	Even*, Odd, None	Even*, Odd, None
XON/XOFF Pacing	On*, Off	On*, Off	On*, Off
CTS Line	Ignore*, Observe	Ignore*, Observe	Not Applicable
DSR Line	Ignore*, Observe	Ignore*, Observe	Not Applicable
DCD Line	Ignore*, Observe	Ignore*, Observe	Not Applicable
Power to Interface	Off*, On	Not Applicable	Off*, On

* Default setting.

Where To Go From Here?

If you plan to use the terminal emulator built into your computer, go to the next heading. If you plan to use another terminal emulator application that you have installed in your computer, go to the manual for that application.

Using the Built-In Terminal Emulator

The terminal emulator built into your computer is an application that allows you to contact a host, operate as a remote terminal of the host, and upload or download data.

Note

The procedures described in this section assume that you've connected the necessary data communications hardware to your computer and have the information you need to log on to a host of your choice.

This terminal program does not provide block mode capabilities.

Interfaces You Can Use

The built-in terminal emulator can be used with either the built-in serial interface or the optional modem. (*The optional HP 82164A HP-IL/RS-232-C Interface will not operate with the built-in terminal emulator. See the caution on page 9-3.*)

Preparing for Data Communications

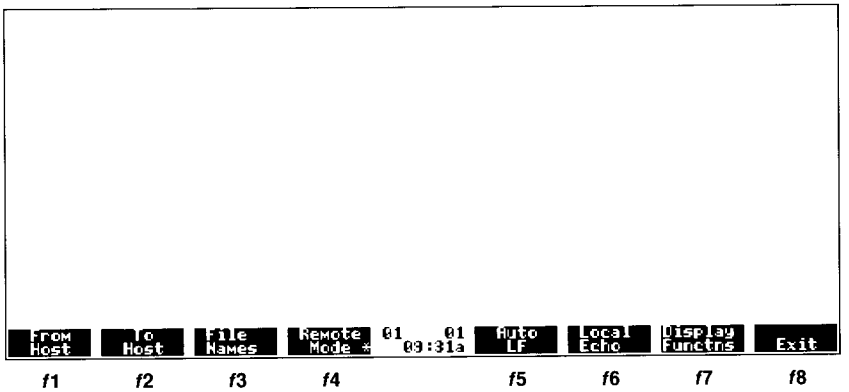
Setting system and datacom configuration parameters.

1. Specify the system configuration and Datacom configuration parameters as described under "Setting Up for Terminal Operations" on page 9-2.
2. If you are going to copy host data to a file in your computer's memory, be sure that there is enough space in the Edisc. (Refer to "Changing the sizes of Main and Edisc memories" on page 4-4.)

Starting the terminal emulator.

1. Start from the main P.A.M. screen.
2. Type `term`.
3. Press (Return) to start the program and display the terminal screen:

The Terminal Emulator Screen



Exiting or Pausing From a Terminal Session

Exiting from a terminal session.

When you want to end a terminal emulator session, press Exit ((f8)).

Note

Since there are some hosts that may not automatically log off when you break contact by pressing Exit ((f8)), you should always perform the host logoff procedure before pressing Exit.

Pausing a terminal session.

Use this procedure when you want to temporarily suspend the terminal emulator and perform another computer task without losing contact with the host.

1. Press (Shift) Exit ((Shift)(f8)).
2. Perform the operation you want, such as creating or editing a text file or spreadsheet. (Avoid breaking any datacom hardware connections.)
3. Restart the terminal emulator.
4. Resume your datacom operations.

Using Terminal-Emulator Settings

The following table describes the terminal emulator settings that control or monitor information moving between your computer and the host:

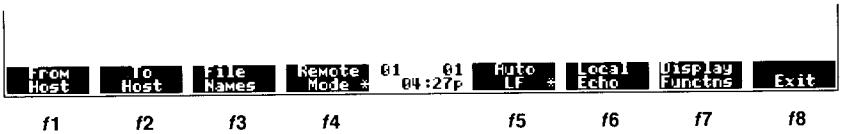
Terminal Emulator Commands

Settings	Use	Default Setting
Remote Mode (f4)	Enables/disables keyboard communication with a host.	On
Auto LF (f5)	Enables/disables automatic line feed. If the host has automatic line feed, enabling Auto LF inserts an extra line when you press Return.	Off
Local Echo (f6)	Enables/disables an echo of what you type; usually used when the host does not send an echo.* If used when the host sends an echo, causes a double image of each character you type, although the host receives only one of each character.	Off
Display Functns (f7)	Enables/disables display of the escape sequences sent by a host.	Off

* If the host sends an echo, you will see what the host received from your computer. If the host does not send an echo, you will see nothing unless you enable Local Echo. In this case, what you see is what your computer sends and not necessarily what the host receives.

How Do You Know When a Setting Is On or Off? If an asterisk * is in a menu label, the setting is "on." Otherwise, it is "off." When you start the terminal emulator, only the Remote setting is "on."

To change a setting from "off" to "on" or vice-versa, press the function key corresponding to the menu label in the screen. For example, if you had just called the terminal emulator and wanted to turn on the automatic line-feed setting, you would press Auto LF (f5). Doing so causes an asterisk to appear in the label:



Pressing Auto LF ((f5)) again turns off the automatic line feed (and causes the asterisk to disappear from the label).

Ending a call to a host.

Before you contact a host, you should know how to end the contact. In most cases, this means learning the host logoff procedure before you begin. (You should be able to get the logoff procedure from the host system administrator or the host documentation.)

1. If you are not at the level of the host's main prompt, return to the main prompt.
2. Execute the host's log-off procedure.
3. Exit from the terminal emulator program by pressing Exit ((f8)).

Calling a Host.

Before you begin, if you're using an external modem, verify that it is configured to the host.* (You may need to refer to the documentation provided with the external modem.)

1. Start the terminal emulator. (Refer to "Starting the terminal emulator" on page 9-8.)
2. If you know that the host does not have an automatic linefeed, turn on the automatic linefeed by pressing Auto LF ((f5)). (Refer to "Using Terminal Emulator Settings" on page 9-10.) Otherwise, skip this step.

* Not to be confused with the optional built-in modem that may be installed in your computer.

3. If you know that the host does not send an echo, turn on the local echo by pressing Local Echo (f6). (Refer to "Using Terminal Emulator Settings" on page 9-10.) Otherwise, skip this step.

4. Select the option allowed by your datacom hardware:

   - If you are communicating through a telephone line, type the dialing command for the datacom interface you are using, then press Return to send the command to the datacom interface.
   - If you are connected directly to a host line (instead of being connected through a telephone line), press Return to signal the host to send its prompt.

   When you perform this step, the computer waits for a connection with the host. When the connection is established, you may see a prompt from the host or (if you are using a modem) a message such as CONNECT.

5. If the host prompt does not appear as a result of executing step 4, press Return again to signal the host to send its prompt.*

6. When you receive the host prompt, begin the host logon procedure. From this point on, you would use your computer's keyboard in the same way that you would if you were using one of the host's own dedicated terminals.

* When you have set the datacom configuration to observe the CTS, DSR, and DCD lines (refer to the footnote on page 9-4) as per CCITT standards, you should *not* press any key until the modem signals that it has received a carrier signal from the host. Otherwise, a transmit failure error message may result.

Things That Could Go Wrong During a Calling Operation. Here are some factors that could prevent contact with a host or distort data transmissions between your computer and the host:

- Your data communications hardware is not properly connected.
- If you are using an optional built-in modem or an external modem, you may be using the wrong dialing command, or are using it incorrectly. Refer to the documentation you received with the modem you are using.
- The `Datacom Interface` specifier in the system configuration is set to the wrong interface. (Refer to "The System Configuration" on page 9-3.)
- One or more of the datacom configuration settings for the interface you are using is wrong. (Refer to "The Datacom Configuration" on page 9-4.)
- The host does not automatically echo characters. In this case, you may be successfully contacting the host, but can't see the results; try using the Local Echo (f6) setting.
- If you're using an external modem, it could be configured wrong or have a wrong switch setting.
- The host is busy with other data communications. Try again.
- You are observing a CTS, DSR, or DCD line when your modem does not correctly implement it.

If none of the above factors seem to be preventing a connection, but you still cannot get through, contact the host system administrator for help.

Receiving, Sending, and Printing Data

The data transfer utility in the terminal emulator enables you to send data from a file to the host and to record data from a host to your printer or into a file. (The next two procedures describe storing and receiving data. To print data from a host, refer to "Printing host data instead of storing it" on page 9-21.)

Recording host data into a file.

Before you begin, you should know the host commands for logging on to the host, transmitting the host data, and logging off of the host.

1. Start the terminal emulator program (refer to "Starting the terminal emulator" on page 9-8).
2. Press File Names (f3). (An asterisk will appear on the File Names label.) You will then see the following template in the top of the screen:

Data Transfer Template

```
FROM HOST to file:  termlog
TO HOST from file:  termsend
```

   If you have not already specified a file name for the FROM HOST to file: and TO HOST from file: lines (since starting the terminal emulator), you will see the default file names termlog and termsend on these lines.

3. In the FROM HOST to file: field type the file name (or file path name, if necessary) of the file you want to receive the host data. (You can specify either a file that already exists or a file that you want the computer to create especially for receiving the host data.)

Note

In any terminal emulator session, the characters you type in the FROM HOST to file field remain until you either change them or exit from the terminal emulator. And, if you specify the name of a file that already exists in memory, the new data you receive from the host will *write over* (destroy) the previously existing data in the specified file unless you specify otherwise in the following steps.

---

4. Store the template with its new information by pressing File Names * (f3) again. (The asterisk disappears from the key label.)

5. Contact the host. (Refer to "Calling a Host" on page 9-11.)

6. You are now ready to begin the transfer. However, once you tell the computer to start recording data, any characters that appear on the screen, *including commands you send to the host,* will be recorded as part of the data you are transferring. The following sequence performs the transfer without including in the copied data the transmit command you send to the host:

   a. Type the host command for starting transmission of the data from the host, *but don't press* Return (which tells the host to execute the command).

   b. Prepare your computer to receive the file:

      Replace Option: If the file you specified in step 3 either doesn't exist or contains data that you want replaced (destroyed) by the data from the host, press From Host (f1). An asterisk appears in the From Host* label to indicate that the computer is ready to receive the file.

      Append Option: If the file you specified in step 3 exists and contains data you want saved, press Shift From Host (Shift f1). A + appears in the From Host+ label to indicate that the computer is ready to receive the data. (This option causes the data from the host to be placed after any data that is already in your file.)

   c. Press Return to send the command you typed in step a to the host.

7. When the host stops sending data, press From Host* (f1) to stop the transfer operation (and to prevent any subsequent characters you type from being added to the data you just received from the host).
8. Go on to your next operation with the host. If you are finished with terminal operations, execute the host's log-off procedure and exit from the terminal emulator.

What Could Go Wrong With a Data-Receiving Operation?

If you see the message

`Cannot access` *file name*

your computer cannot find or create the file you specified in the `FROM HOST to file` line in the File Names template. If you are using a file path name, ensure that you have correctly typed it, and that the computer can access any drive or directory you've specified. If the data you want to copy does not appear in the screen, it is not being sent from the host. Look for host error messages and ensure that you are using the correct host commands. If necessary, contact the host system administrator.

Sending data to a host.

Before you begin, you should know

- The name of the file containing the data you want to send. (If the file is not in the default directory, you must either change directories or know the file path name.*)
- The host commands needed to prepare the host text editor to receive your data.
- The host commands needed to exit from the host text editor.

* If you are not familiar with these topics, refer to chapter 5, "Managing Files and Directories" and to the section entitled "Choosing a directory to list" on page 10-5.

1. Start the terminal emulator program (refer to "Starting the terminal emulator" on page 9-8).
2. Press File Names (f3). (An asterisk will appear on the File Names label.) You will then see the following template in the top of the screen:

Data Transfer Template

```
FROM HOST to file:  termlog
TO HOST from file:  termsend
```

If you have not already specified a file name for the `FROM HOST to file` line (since starting the terminal emulator) you will see the default file name `termlog` on this line. Similarly, you will see the default file name `termsend` on the `TO HOST from file` line unless you have previously specified another file name.

Note

In any terminal emulator session, the characters you type in the `FROM HOST to file` and `TO HOST from file` fields remain until you either change them or exit from the terminal emulator.

3. Press Return once to move the cursor to the second line. Then type the file name (or file path name, if necessary) of the file containing the data you want to send to the host.
4. Store the template with its new information by pressing File Names * ((f3)) again. (The asterisk disappears from the key label.)
5. Contact the host. (Refer to "Calling a Host" on page 9-11.)

6. Send to the host whatever host commands are required to prepare the host's text editor to receive your data. (For example, the host may require you to send one command to start the editor and another to initiate an "enter text" mode.
7. Begin the data transmission by pressing To Host (f2).

Note

The To Host command sends a copy of the data in the file without waiting for any host response. However, there are three options to this command that allow various types of host-response monitoring. Refer to "Data-Sending Options," below.

When your computer sends data to the host, a copy appears in the display. When the computer finishes sending data to the host, the CTRL Z character is usually sent to signal the host that the transmission has finished.*

8. If the host's text editor has not automatically terminated, execute the host command(s) needed to save the data you sent to the host file and to terminate the editor.
9. Go on to your next operation with the host. If you are finished with terminal operations, execute the host's log-off procedure and exit from the terminal emulator.

How It Works. The foregoing procedure (using To Host (f2)) sends the data in your entire file without any error-checking or prompting from the host. ENQ/ACK is always enabled and response to any host ENQ is immediate. (Any linefeed immediately following a carriage return—CR/LF—will not be sent to the host.)

* This is true only if the file itself ends with ^Z (CTRL Z). (Most text files end with ^Z.)

Data-Sending Options. Pressing To Host (f2) sends the data without waiting for any host responses. However, you can reduce the chances for data transfer errors (such as running faster than the host and thus losing characters) by using one of the following options. If you are not sure which option applies to your host, you may want to experiment with each of them.

- **Wait for host echo (Shift To Host):** In step 7 of the foregoing procedure, use Shift To Host (Shift f2) instead of just To Host (f2). (If the host does not automatically echo each character exactly as it is received, first send to the host the command needed to activate the character echo.) When you begin the transfer, "=" appears in the menu label (To Host =) to indicate the "host echo" option. When the transfer finishes, the transfer mode automatically turns off. (The "=" then disappears.)

  Technical details: This option causes a transfer in which one character (byte) at a time is sent. After each byte, the computer waits for the host to echo an identical byte before sending another byte. The transfer will be stalled in a repeating loop until the host echos the correct character. To escape from this condition, press To Host (f2) again.

- **Wait for host XON prompt (CTRL To Host):** Use this option if the host sends an XON prompt when it is ready to receive a line of data. (This is the option to use for sending data to an HP 3000 file.) In step 7 of the foregoing procedure, begin the transfer by pressing CTRL To Host (CTRL f2) instead of just To Host (f2). When you begin the transfer, "+" appears in the menu label (To Host +) to indicate the "host XON" option. When the transfer finishes, the transfer mode automatically turns off. (The "+" then disappears.)

  Technical details: This option causes your computer to send file data until a carriage return is sent or the end-of-file is reached. If a carriage return is sent, the computer pauses until it receives an XON from the host, then resumes sending. If the computer does not receive an XON, it waits indefinitely. To escape from this condition, press To Host (f2).

Wait for host echo and XON prompt (CTRL Shift To Host): This option combines the two preceding options. It is used when the host echos each carriage return you send, then sends an XON prompt. In step 7 of the foregoing procedure, begin the transfer by pressing CTRL Shift To Host (CTRL Shift f2). When you begin the transfer, "#" appears in the menu label (To Host #) to indicate the "host echo and XON" option. When the transfer finishes, the transfer mode automatically turns off. (The "#" then disappears.)

Technical details: This option sends one character (byte) at a time to the host. After each byte, the computer waits for the host to echo an identical byte before sending another byte. When a carriage return is sent and its echo received, the computer pauses until it receives an XON from the host, then resumes sending. If the computer does not receive an XON, it waits indefinitely. To escape from this condition, press To Host (f2) again.

What Could Go Wrong With a Data-Sending Operation. If you see the message

`Cannot access` *file name*

then the computer could not find the file you specified in the `TO HOST from file` line of the File Names template. Check the name you specified in the template (steps 1 through 3 on page 9-17). Is it misspelled? Is the file in the default directory? If not, is the file path name correctly typed?

If error messages from the host appear in the screen, contact the host system administrator or refer to the appropriate host system documentation.

If characters are lost during transmission, then the host may not be "listening" at certain times during a data-sending operation. In such cases, use one of the options listed under "Data-Sending Options" on page 9-19.

Printing host data instead of storing it.

There may be times when you want a copy of host data without storing it in a file. If you have a printer connected to your computer, use the following steps to get a printed copy of the data without using Edisc memory.

1. If you have not previously done so, ensure that the `Printer Interface` setting in the System Configuration screen specifies the interface you are using for your printer. (Refer to chapter 6, "Connecting Printers, Disc Drives, and Other Peripheral Devices.")
2. Perform the "Recording host data into a file" procedure (page 9-14) with the following exception: For step 3, type `prn` instead of a file name. This directs the host file transmission into the printer interface instead of into a file.

What Could Go Wrong? If you can get the host to send data (you'll see the data in the screen), but fail to get a printout, the cause may be one of the following:

- The printer is not turned on.
- The printer is not properly connected to the computer.
- The `Printer Interface` setting in the System Configuration screen is wrong. Refer to chapter 6, "Connecting Printers, Disc Drives, and Other Peripheral Devices." (If you're using an HP-IB interface, the *address*—for example, `HP-IB:01`, `HP-IB:02`, etc.—may be wrong).
- The text in the `FROM HOST to file` field is not `prn`.

For other possibilities, refer to "What Could Go Wrong With a Data-Receiving Operation" on page 9-16.

10 Using MS™-DOS Commands

Contents

Chapter 10: Using MS™-DOS Commands

10 Using MS™-DOS Commands

What You Can Learn in Chapter 10

This chapter tells you how to use several MS™-DOS commands whose capabilities exceed the features in your computer's P.A.M. system. While it is not essential that you know how to use these commands, you will probably find at least some of them useful in your everyday work.

You should understand the following terms

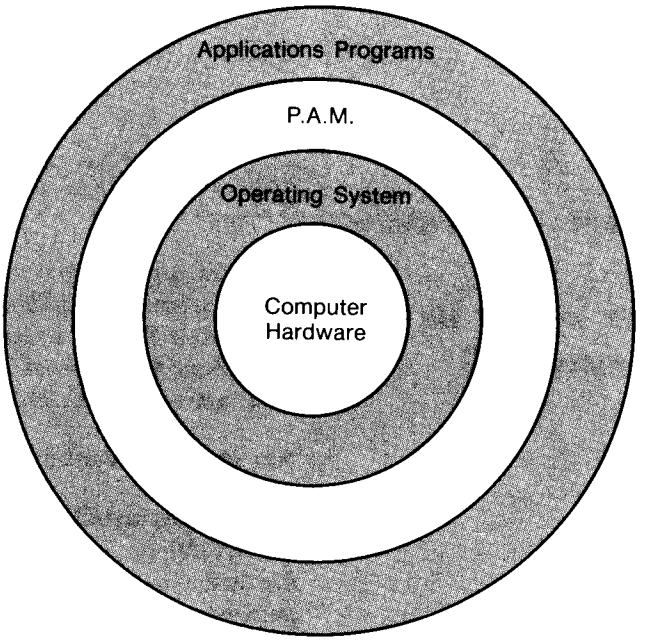
default (displayed) directory
default drive
file extension
path name

If you don't already understand these terms, refer to the "Glossary" (appendix E).

What Are MS-DOS Commands?

Your computer uses the MS™-DOS operating system. An operating system is like electricity in your house—you use it to run your electrical appliances, but you seldom think about it.

The operating system is the link between the Personal Applications Manager (P.A.M.) and your computer's hardware. Individual MS-DOS commands let you bypass P.A.M. and "speak" directly to the operating system when you want to speed up certain operations or when you want to perform an operation that is not available from P.A.M.



This chapter discusses only the following MS-DOS commands:

CD (change directory)	MORE (display a file page-by-page)
COPY (copy or append a file)	PRINT (print a file)
DIR (list directory)	REN (renumber)
EXIT (exit from MS-DOS)	TYPE (display a text file)
FORMAT (format a disc)	

These commands were selected because they exceed P.A.M. capabilities and/or offer features that many users might find especially useful. Descriptions of other MS-DOS commands are not included because they are either covered by P.A.M. commands or are beyond the scope of this manual. If you want to learn more about these other MS-DOS commands, refer to the (optional) MS™-DOS User's Guide, HP part number 45419-90001.

Executing MS-DOS Commands

Unless otherwise noted in the command descriptions, you can execute MS-DOS commands from any of the following:

- The DOS Commands application.
- The command line in the main P.A.M. screen.
- The command line in the main File Manager screen.

Executing an MS-DOS command.

This procedure shows how to execute MS-DOS commands from the MS-DOS application. Using the main P.A.M. screen or the main File Manager screen is similar.

1. Select the DOS Commands application. The screen then shows a display similar to the following:

   Notice that the MS-DOS prompt indicates the time of day and the default drive, followed by the cursor.

2. Type the MS-DOS command you want and press (Return). After the command executes, the prompt returns.
3. Type `exit` (Return) to return to the main P.A.M. screen.

Using the Commands

The commands are listed according to the common tasks they perform.

Syntax Symbols

When the commands require you to type a variable such as a file name or directory name, the variable is shown in *italic type*. (When you type such variables, use the actual variable name.) For example:

`DIR` *drive name* (Return) indicates that you should type a space and a drive name (such as `a:` or `c:`) after the `DIR` command.

Optional items are indicated by square brackets ([ ]) and repetitions of the same item are indicated by elipses (...).

`COPY` *destination file* + *source file*[... + *source file*] means:

- To execute the command you must provide a destination file and a source file.
- A second source file is not needed to execute the command, but you can provide one if you need it for your purposes.

Exiting From MS-DOS (EXIT)

After you have started the DOS Commands application, use the `EXIT` command to return to the main P.A.M. screen or to the program from which you entered the MS-DOS command level. To do so, type

`exit` (Return)

Changing the Default Drive

This procedure operates only while you are in the DOS Commands application.

1. Type the designator of the drive you want, then type a colon (for example, `a:`, `b:`, `c:`, etc.).
2. Press (Return). The new default drive will appear within the square brackets in the prompt label (for example, `[A:\]` or `[C:\]`).

Listing the Contents of a Directory (DIR, CD)

You can use the `DIR` (*directory*) command to list the disc volume label (if any) and all files and subdirectories in a directory. (For information concerning directories and subdirectories, refer to "Working With Files, Root Directories, and Subdirectories" on page 5-5.) If the directory you want to list is not the default directory, you can use the `CD` (*change directory*) command to switch the default status to the directory you want. The advantages to using `DIR` and `CD` instead of using the P.A.M. main File Manager screen are:

- You can usually get a listing more quickly than when using the P.A.M. file manager.
- For each file, the screen automatically shows the file size in bytes and the date and time that you created the file.
- Within a given directory, you can specify a listing that contains either all file names having the same extension, all file extensions having the same file name, or files having one or more common characters.

Volume Labels. Whenever you list a directory, the computer automatically lists either the volume name (if any) that was specified when the disc was last formatted or the message `Volume in drive X has no label.`

Listing the default directory on the default drive or another drive.

`DIR` [*drive*] (Return)

For example, if drive A is the default drive, you would type `dir`(Return) to list the root directory of drive A. If you have also connected one external drive (and it is not currently the default drive) you would list the root directory of this drive by typing `dir c:` (Return).

Choosing a directory to list.

Use the `CD` command when you want to list a directory that is not currently the default directory.

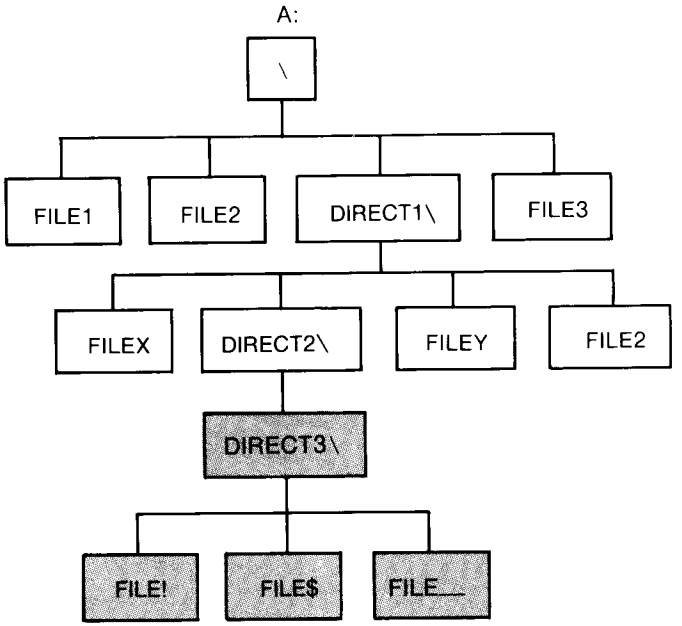
`CD` *subdirectory name* (Return)	Switches the default status from the current directory to one of the subdirectories it contains.
`CD ..` (Return)	Switches the default status from the current (sub)directory to the next highest directory.
`CD \` (Return)	Switches the default status from the current (sub)directory to the root (\) directory.

Note

Notice that you should always allow one blank space after `CD`.

Example of Switching the Default Status Between Directories. Suppose that you created the following file and directory structure on drive A (the Edisc). (The portion in color indicates the subject of this example.)

A Hypothetical File and Directory Structure



If the default directory was the root (\) directory and you wanted to list the DIRECT3 subdirectory, you would do the following to switch the default status from the root directory to the DIRECT3 subdirectory:

1. Type `cd direct1` (Return) to step from the root directory to DIRECT1. The default directory would now be DIRECT1.
2. Type `cd direct2` (Return) to step from DIRECT1 to DIRECT2. The default directory would now be DIRECT2.
3. Type `cd direct3` (Return) to step from DIRECT2 to DIRECT3. The default directory would now be DIRECT3.
4. Type `dir` (Return) to list the contents of DIRECT3.

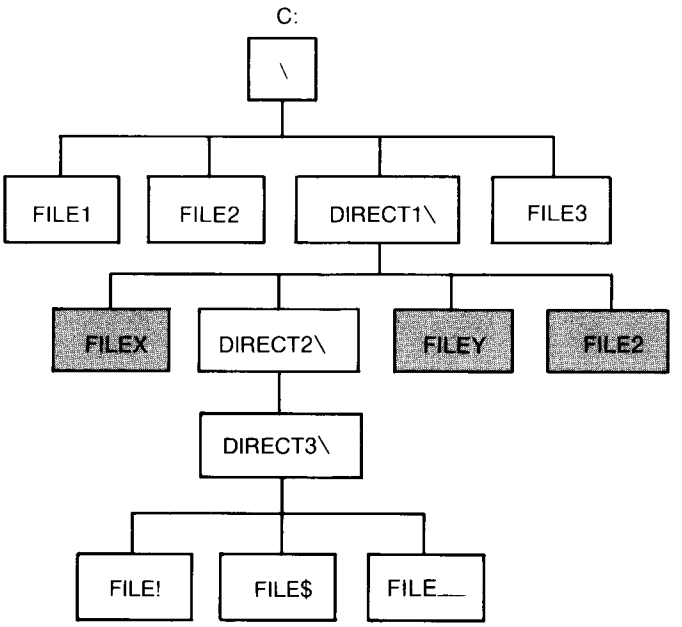
Suppose that after you went through the preceding four steps, you wanted to back up one level to the subdirectory named DIRECT2 and list its contents. To do so you would:

1. Type `cd..` (Return) to make DIRECT2 the default directory.
2. Type `dir` (Return) to list the contents of DIRECT2.

If you then wanted to return to the root directory (make it the default directory) you would type `cd \` (Return).

Listing a subset of the files and subdirectories in a directory.

You can list almost any subset of files and subdirectories if they all have a common feature in their names. To do so, use the "wildcard" symbols described under "Displaying Partial Directories" on page 5-14. For example, if DIRECT1 in the following illustration was the default directory, you would list the subset of files shown in color by typing `dir file*` (Return).



Printing a directory. To print a directory listing, type:

`DIR [drive] > PRN` (Return)

Things That Could Go Wrong With a DIR Operation . If the computer cannot find the specified drive or the drive does not contain a disc, you will see one of the following messages:

```
Bad unit error reading drive N
Abort, Retry, Ignore?
```

```
Not ready error reading drive N
Abort, Retry, Ignore? _
```

To recover, type `a` to abort the operation, `r` to retry it, and `i` to ignore the error. (In most cases, typing `i` causes the error message to repeat.)

If a directory, file, or file extension cannot be found, the computer displays

```
File not found.
```

Using `DIR` always applies only to the drive and directory you specify. If you don't specify a drive, then `DIR` uses the default drive.

Displaying or Printing Single Files (TYPE, MORE)

Use the following procedures to display or print text files.

Displaying a file in one continuous listing.

Use the following command to display a file. To pause and resume the listing, use the (Stop) key.

`TYPE` *file path name* (Return)

To abort the listing after it has begun, press (Break) or (CTRL)(C).

Displaying a file one page at a time.

To display the first page of a file, type

MORE *file path name* (Return)

If there is more of the file to display, you will see a message similar to the following:

This message indicates how much of the file has been displayed. (In the above example, 38% of the file has been displayed.)

To list the next portion of the file, press the space bar. To abort the listing press (Q) (for *quit*), or press (Break) or (CTRL)(C).

Printing one file at a time.

To print a file, type a blank space followed by > PRN after the *file path name* in the TYPE command:

TYPE *file path name* > PRN (Return)

Note

When you use TYPE to print a file that is longer than a single page, the printer may not automatically skip the perforation in fanfold paper. If this is the case, refer to "Skipping Page Perforations" on page 7-4.

Printing Multiple Files (PRINT)

The PRINT command enables you to include several text files in one command and to perform "background printing" (that is, printing text files while performing other MS-DOS tasks on your computer).

Note

The PRINT command can be used only from the DOS Commands screen.

When you specify more than one file, a *print queue* is created containing the files waiting to be printed. Once a print queue has been created, you can inspect it and change it.

Printing several files with one command.

1. To begin printing a series of files (and create the print queue), execute the following command:

   PRINT *file name* [*file name ...file name*] (Return)

   If you have previously specified a print device, the computer begins sending your text files to the printer and you should go to step 3. Otherwise, go to step 2.

2. If you have not previously specified a print device, the computer prompts you with

   ```
   Name of list device [PRN]: _
   ```

   Unless you want to specify a nondefault printer, just press (Return), which tells the computer to use the PRN device. (This is the printer addressed by the printer configuration settings in the P.A.M. System Configuration screen.) The computer then begins sending your text files to the printer.

3. Perform any other MS-DOS task that you want to do while the files you specified in step 1 are being printed.

Note

Exiting from DOS Commands automatically terminates the printing operation without finishing the file currently being printed.

Displaying the PRINT queue.

After you create a print queue by executing PRINT with two or more file names, you can inspect it by simply typing the PRINT command without any parameters:

PRINT (Return)

Editing the PRINT queue.

Once you have begun printing a series of files, you can alter the printing operations by re-executing PRINT with one of the following options:

PRINT /T (Return)

Terminates printing by deleting the names of all unprinted files from the print queue. (The computer will not send any more data to the printer for the file currently being printed. However, any data already sent to the printer and being held in the print buffer will be printed.)

PRINT *file name* /C [*file name ...file name*] (Return)

Suspends printing of the specified files. The suspension continues until you use the /P option described next.

PRINT *file name* /P [*file name ...file name*] (Return)

Reactivates printing for the files you specify. The specified files need not have already been in the print queue.

Examples of PRINT Options.

print file1 /c file2 file3 (Return)

Suspends FILE1, FILE2, and FILE3 from the print queue.

```
print file1 /c file1a /p file1b (Return)
```

Suspends FILE1 from the print queue and adds FILE1A and FILE1B to the print queue.

Copying and Appending Files (COPY)

Use the COPY command to copy or append files.

Copying a file.

Caution

If the destination file already exists, COPY destroys the file's content and replaces it with the content of the source file.

The command syntax to use is:

COPY *source file path name* [*destination file path name*] (Return)

For example:

`copy file1 file2`	Copies the contents of `file1` into `file2` in the default directory.
`copy a:\file1 c:`	Copies the contents of `file1` in drive A into another file named `file1` in drive C.

For any file, you need to specify the full path name only if the file is not in the default directory.

If you do not specify the *destination file path name* and the source file is not in the default directory, the copied file will be put in the default directory and will have the same name as the source file. But if the source file is in the default directory, no copying takes place and the following error message appears:

```
File cannot be copied onto itself
0 File(s) copied
```

File Copying and File Appending. *Copying* a file to another either creates a new file or destroys the previous contents of the file that receives data copied from another file. *Appending* a file means you add it to the contents of another (destination) file. Also, you can append a group of files having either the same file extension or the same name and different file extensions.

Copying groups of files into a destination file.

Use the following version of `COPY` to either create a new file by combining copies of two or more other files or to replace the contents of an existing file:

Caution 

Using this syntax *destroys* any former content of the destination file. Also, naming the same file as both an append file and the destination file will cause a *loss* of all data originally in the named file unless that file is the first source file in the command.

`COPY` *source file path name* + *source file path name* [...+ *source file path name*] *destination file path name* (Return)

Appending one or more files to a destination file.

`COPY` *destination file path name* + *source file path name* [... + *source file path name*] (Return)

This syntax copies one or more source files onto the end of the destination file. For example:

```
copy dest1 + file1 (Return)
```

This command means to append the contents of `file1` to `dest1`. (Both files are in the default drive.)

```
copy dest1 + file1 + file2
```

This command means to append the contents of `file1` and `file2` to `dest1`. (All files are in the default drive.)

```
copy c:\dest1 + file1 + file2
```

This command means to append the contents of `file1` and `file2` in the default drive into `dest1` in drive C (which is not currently the default drive).

Note

If `COPY` does not find the file in the *destination file path name*, the file in the first *source file path name* becomes the destination file.

Example of Appending Groups of Files. Suppose that the names of several files in your default directory ended with the file extent `.lst`. If you wanted to append all of these files into another, existing file named `SAVE` without losing the current contents of `SAVE`, you could do so by typing

```
copy save + *.lst (Return)
```

Things That Could Go Wrong When Using COPY. Misplacing a + symbol or adding one that is not called for in the syntax can alter an append operation without producing an error message. This can turn a source file into a destination file and omit the original destination file from the append operation. You will find out about this kind of error only later, when you try to use the files.

When copying one file into another, there must be enough disc space to accommodate the enlarged destination file. To create more memory space, refer to "Dividing Memory Between Main and Electronic Disc Memories" on page 4-4.

If the computer cannot find a needed drive or directory, all or part of a `COPY` operation may fail. When you are using a directory other than the default directory, be sure to correctly

type the complete directory path and specify the correct drive. Be sure also that the directory you want is in the specified drive. For further information, refer to chapter 5, "Managing Files and Directories."

Renaming a File or Group of Files (REN)

You can rename a single file or a group of files having the same file name or file extension by using REN.

Renaming file(s).

REN *file path name new file name* (Return)

If the file you want to rename is in the default drive and directory, you need to specify only the file name rather than the full path name. You do not have to specify a path for the new file name because the renamed file always remains in the original directory.

Formatting External Discs (FORMAT)

This disc-formatting command gives you options that are not included in the P.A.M. Format command.

FORMAT *drive specifier /format specifier* (Return)

The following table lists the *format specifier* parameters and their results:

External Disc Format Specifier Table

Specifier	Disc Type	Disc Sector Size	Storage Capacity (Bytes)	Files In Root Directory
W	single-sided disc	256	264,192	128
X	double-sided disc	256	618,496	304
Y	double-sided disc	512	700,416	176
Z	double-sided disc	1,024	780,288	96

For AST 3.5" Drive →

Using the MS-DOS FORMAT Command.

Caution

Formatting a disc erases (destroys) all data formerly stored on the disc.

To execute a FORMAT command:

1. Insert the disc you want to format into the disc drive.
2. Type the FORMAT command with the appropriate drive and format specifiers. (For format specifiers, refer to the preceding table.)
3. Press (Return). You will then see the message

   ```
   Press any key to begin formatting
   ```
4. Press (Return) again. After several seconds the message

   ```
   Volume label (11 characters, RETURN
    for none)?
   ```

   appears.
5. If you want a disc volume label (up to 11 characters), type it in and press (Return). If you don't want a disc volume label, just press (Return). The disc drive then formats the disc and displays

   ```
   Format another (Y/N)?
   ```
6. If you want to format another disc to the same specifications as you used in step 2, remove the disc you just formatted and insert the new one, then type y (Return) and go to step 3. Otherwise go to step 7.
7. Type n (Return) to exit from the formatting operation.

Copying One Flexible Disc to Another (DISKCOPY)

A good way to protect vital files you've saved on a flexible disc is to make a backup copy of that disc on another flexible disc. The DISKCOPY command provides an easy way to do this. DISKCOPY makes an exact duplicate of one disc onto another. All levels of subdirectories and their files, as well as the root directory and its files, are copied exactly as they appear on the source disc.

DISKCOPY Prerequisites. Successful DISKCOPY operation requires the following:

- You must have at least one external disc drive connected to your computer. (DISKCOPY works faster when two drives are available.)
- Since DISKCOPY makes an exact duplicate of your source disc, the destination disc must be the same size and type as the source disc.
- The destination disc must be formatted before you use DISKCOPY.

Using DISKCOPY with two disc drives.

Use the following procedure to copy the contents of a flexible disc on one disc drive to a flexible disc on another disc drive.

Caution

When you execute DISKCOPY, any data previously stored on the destination disc is overwritten (destroyed) by the new data being copied from the source disc. Thus, if you use DISKCOPY, you should ensure that your destination disc either is newly-formatted or contains no data you want to save.

1. Type

   `diskcopy` *source disc drive destination disc drive*

   For example, to copy the contents of a disc in drive C to a disc in drive D, you would type

   ```
   diskcopy c: d:
   ```

2. Press (Return). If the source disc was in drive C and the destination disc was in drive D, the computer would prompt you as follows:

   ```
   Insert source diskette in drive C:
   Insert formatted target diskette in
   drive D:

   Strike any key when ready
   ```

3. Insert the appropriate discs in the drives indicated on your screen when you did step 2.

4. Press (Return). The computer then responds with one of three messages:

   - `Copying...`
   - `Write protect error writing` *destination disc drive*
     `Abort, Retry, Ignore?`
   - `Data error reading` *source disc drive*
     `Abort, Retry, Ignore?`

   If you get a write-protect error, the protect tab on the destination disc drive is probably in the write-protect position. Remove the disc from the drive and move the tab to the unprotected position. (Refer to the illustration on page 8-4.) Then re-insert the disc in the drive and press (R).

If you get a data error, press (R) to retry the procedure. If the data error persists, go back to step 3 and use another disc containing the same data (if available). If the data error persists, try to finish the copy procedure by choosing the "ignore" option (press (I)). In that case, though, if you succeed in completing the copy procedure with one or more data errors, one or more of the copied files may be damaged. Check each copied file and delete the damaged files or at least note which ones are damaged. (You might see
`Copying...` followed later by one of the other messages.)

If you can't finish the `DISKCOPY` routine, reset the computer and try again with another disc.

5. If the copying proceeds without error, the disc drives will turn off and the computer will prompt you with the following:

```
Copying...Copy complete

Copy another (Y/N)?
```

   - If you want to copy another disc, press (Y), then return to step 3.
   - If you are finished copying, press (N).

Using DISKCOPY with one disc drive.

Use the following procedure to copy the contents of one flexible disc to another when you have only one disc drive.

Note 

The time required to complete the operation depends upon the capacity of the source disc, regardless of how much of that capacity is actually being used. (That is, whether the source disc is full or empty, it takes the same amount of time for `DISKCOPY` to make a copy of the source disc on the destination disc.)

Using DISKCOPY with one disc drive requires significant drive operating time. Thus, if you are using a battery-

powered disc drive (such as the HP 9114), you should plug in the disc drive recharger before executing DISKCOPY.

Caution

When you execute DISKCOPY, any data previously stored on the destination disc is overwritten (destroyed) by the new data being copied from the source disc. Thus, if you use DISKCOPY, you should ensure that your destination disc either is newly-formatted or contains no data you want to save.

1. Type the DISKCOPY command with your disc drive specified twice (as both the source drive and the destination drive):

   diskcopy *source disc drive* *destination disc drive*

   For example, if drive C was the only drive connected to your computer, you would type

   ```
   diskcopy c: c:
   ```

2. Press (Return). The computer prompts you as follows:

   Insert formatted target diskette in *disc drive*:
   Strike any key when ready

3. Insert the destination disc (the disc you want to copy to) in the disc drive.

4. Press (Return).

5. When the disc drive light turns off and you see the following message*:

   Insert source diskette in *disc drive*:
   Strike any key when ready

   insert the source disc (the disc you want to copy from) in the disc drive.

* If you get a write-protect error instead of the indicated message, the protect tab on the destination disc drive is probably in the write-protect position. Remove the disc from the drive and move the tab to the unprotected position. (Refer to the illustration on page 8-4.) Then re-insert the disc in the drive and press (R).

6. Press (Return). This causes the disc drive to read part of the contents of the disc and store it in the computer.
7. When the disc drive light turns off and you see the message

   ```
   Insert target diskette in drive disc drive:
   Strike any key when ready
   ```

   remove the source disc and insert the destination disc.
8. Press (Return). The computer then copies the stored information onto the destination disc and redisplays the message you saw in step 5; that is:

   ```
   Insert source diskette in disc drive:
   Strike key when ready
   ```

Note

If the disc drive does not run immediately after you press (Return), wait for several seconds. If there is no response, press (Return) again. If you see the message

```
Not ready error writing disc drive
Abort? Retry? Ignore?
```

The system was not ready when you pressed (Return). To recover, press (R).

Caution

When using DISKCOPY with only one external disc drive, be careful not to confuse your source and destination discs. Since the entire copying procedure may require you to exchange the discs several times, it becomes easy to make a mistake if you don't observe the prompts carefully.

9. Repeat steps 5 through 8 until you see the message

```
Copy complete
Copy another (Y/N)?
```

The disc-copying operation is complete. Now,

- If you want to copy another disc, press (Y), then return to step 3.
- If you are finished copying, press (N).

What Could Go Wrong With a DISKCOPY Operation?

Here are some common sources of problems that you may experience with DISKCOPY.

- The destination disc is not formatted. The two ways to format a disc are:
  1. The P.A.M. file manager Format command (page 8-3).
  2. The MS-DOS FORMAT command (page 10-16).
- Terminating a disc-copying operation before all source information has been copied onto the destination disc may result in the directory on the destination disc showing files that it did not actually receive.
- The destination disc is write-protected. Refer to step 4 on page 8-4.
- You are attempting to copy a double-sided disc to a single-sided disc. DISKCOPY requires that you always use a destination disc that is identical to the source disc.

11 Using the Built-In Line Editor

Contents

11 Using The Built-In Line Editor

What You Can Learn in Chapter 11

This chapter describes how to use EDLIN—your computer's text editor—to create and edit short text files. If you've already installed another text editor such as MemoMaker, you'll probably want to use that editor instead of EDLIN.

This chapter gets you started using EDLIN for small, simple editing tasks, but is not a complete treatment of the built-in editor. (A brief listing of all EDLIN commands is included under "EDLIN Command Summary" beginning on page 11-14.) For further information you may want to purchase the optional *MS-DOS User's Guide* (HP part number 45419-90001.)

Using EDLIN

EDLIN has two operating modes, with corresponding prompts:

`*_` Command Prompt; indicates *Command mode*. You see this prompt when you start EDLIN. In this mode you can move around in a file and perform functions that affect groups of lines.

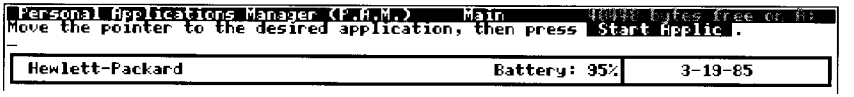
`1:*_` Line Prompt; indicates *Line mode*. A line number and colon followed by the asterisk and flashing cursor indicate the *currently active line*. In this mode you can create new lines and edit existing lines. (Maximum line length is 253 characters.)

Before You Begin EDLIN. If you're a beginner, you should learn the following two procedures, as they can help you avoid problems.

Getting ready to use EDLIN.

1. Start with the main P.A.M. screen.
2. Ensure that there is enough space (bytes) on the Edisc to create a file. For short files (such as a one- or two-line alarm file) all you usually need to do is ensure that there is *some* space available in the drive you want to use. (As a general guideline, each file requires about one byte per character.) The top line of the P.A.M. screen indicates the space free in the default drive. The following is an example of how the computer shows the space available on the Edisc:

Main P.A.M. Screen Memory Information



Exiting from EDLIN.

Before you start an EDLIN session, you should know how to end it. To end a session:

If the EDLIN prompt is:	Exit by:
The Command prompt (*_);	Typing e (Return).
The line prompt (such as 3:*_);	Pressing (CTRL)(C), then typing e (Return).

Backup File Copies. When you start EDLIN with an existing file, then store that file, the previous version is saved as a backup. If you're interested in this topic, refer to "Automatic File Backup" on page 11-12.

Creating a New File

Entering text in a new (empty) file.

1. Start with the main P.A.M. screen.
2. Type:

   `edlin` *new file name* (Return)

   The computer then displays the following:

   ```
   New File
   *_
   ```

3. Type `i`(Return) to get to the Line mode. The computer then displays the *line prompt,* where you will type in the first line of text:

   ```
   1:*_
   ```

4. Type the text you want in line 1 and press (Return). The computer then prompts you to type text in line 2:

   ```
   1:*your first line of text
   2:*_
   ```

5. Continue typing line by line and pressing (Return) until you have entered all of the text you want.
6. Press (CTRL)(C) when you are ready to tell the computer that you have finished your file. The computer then switches to the Command prompt:

   ```
   *_
   ```

7. Terminate EDLIN by typing `e` (Return).
8. When you see the message

   `Press any key to return to P.A.M.`

   press (Return) to return to the P.A.M. screen. (This message does not appear if you enter EDLIN from the `DOS Commands` application.)

Example of Creating a PAM.MNU File. Suppose that you installed a spreadsheet application in an optional software drawer. Because you've decided that you want this application to appear on a label in the application menu, you need to create a `PAM.MNU` file. The name you want to appear in the application label is `Spreadsheet`. The file name you have to use to start the spreadsheet application is `spread.com`. Thus, you would want your file to contain the following two lines:

```
Spreadsheet
spread.com
```

Here is how you would create the file:

1. Start with the main P.A.M. screen.
2. Type `edlin pam.mnu` (Return). The screen responds with

   ```
   New file
   *_
   ```

   and you are now in Command mode.
3. Type `i` (Return). The screen responds with

   ```
   1:*_
   ```

   and you are now in Line mode and ready to type your information.
4. Type `Spreadsheet` (Return). The screen responds with

   ```
   1:*Spreadsheet
   2:*_
   ```
5. Type `spread.com` (Return). The screen responds with

   ```
   1:*Spreadsheet
   2:*spread.com
   3:*
   ```
6. Exit from Line mode by pressing (CTRL)(C). The screen responds with

   ```
   *_
   ```

   and you are now in Command mode.

7. Exit from EDLIN by typing `e` (Return).
8. When you see the message

   ```
   Press any key to return to P.A.M.
   ```

   press (Return) to return to the P.A.M. screen. The computer then displays a screen similar to the following:

Editing an Existing File

Editing lines in an existing file.

1. Start with the main P.A.M. screen.
2. Type:

   `edlin` *existing file name* (Return)

   The computer then displays

   ```
   End of input file
   *_
   ```

   You are now in Command mode.
3. If you don't want to see a listing of the file, go to the next step. But if you want to see a listing of the file (so you can choose lines you want to edit) use the 1 (list) command (the letter "l"):

   `1` (Return)

   The computer displays the first 23 lines of the file (or the entire file if it is 23 or fewer lines long). (If you want to display more than the first 23 lines of a long file, refer to the "List Lines" command in the "Edlin Command Summary and Syntax Table" on pages 11-15 and 11-16.)

4. Select the first line you want to edit by typing the line number and pressing (Return). This displays the current contents of the line and prompts you to change the contents.
5. Change the line by simply typing the text you want. If you make a typing error, use the (Backspace) key to move the cursor to the first incorrect character in the line and type the characters you want.

Note 

Do not attempt to use the arrow keys ((◄), (►)). Although doing so appears to move the cursor, any characters you type will be appended at the cursor's last position prior to using the arrow keys.

If you decide to leave the line unchanged, do not type any characters.

6. Press (Return). The computer makes the changes you've indicated (if any) in the line and prompts you for your next command.
7. Repeat steps 4, 5, and 6 for each line you want to edit.
8. If you want to see the results of your editing, list the file again by typing the `l` (Return) command you used in step 3.
9. Type `e` (Return) to leave EDLIN and to store the edited file.
10. When you see the message

    `Press any key to return to P.A.M.`

    press (Return) to return to the main P.A.M. screen. (This message does not appear if you enter EDLIN from the `DOS Commands` application.)

Example of Editing a PAM.MNU File. Suppose that you created the PAM.MNU file in the example on page 11-4, then decided that you wanted to:

- Change the first line to read Number Sheet instead of Spreadsheet.
- Add new instructions for a menu label that would allow you to make the Secure function automatically repeat itself. (Refer to Securing Computer Memory on page 4-11.)

You could use the following steps to edit the file.

1. Start with the main P.A.M. screen.
2. Type edlin pam.mnu (Return). The display then shows:

   ```
   End of input file
   *_
   ```

3. If you want to display the lines in the file use the list command (l) by typing l (Return).

   ```
   1:*Spreadsheet
   2: spread.com
   ```

4. Type 1 (Return) to select line 1 (the line you want to edit). The computer displays

   ```
   1:*Spreadsheet
   1:*_
   ```

5. Edit the line by typing Number Sheet (Return). The computer then prompts you with

   ```
   *_
   ```

6. Type 3i (Return), which displays

   ```
   3:*_
   ```

   You are now at line three, which is the line to use for entering the name of a menu label.

7. Type the name you want to appear in the menu label for executing the SECURE function. For this example, we'll use Secure Off:

```
3:*Secure Off_
```

8. Press (Return). The display will then show

```
3:*Secure Off
4:*_
```

9. Type the SECURE command followed by *one* space and the password you want to use. For this example, we'll use the word MYPASS.

Caution

Once you execute SECURE, the *only* way to turn on the computer without destroying user memory contents (main memory and the Edisc) is to use the correct password. If you are unable to enter the correct password, the *only* way to recover is to press the reset button in the battery compartment. However, doing so *causes a loss of all data in user memory*.

```
4:*secure mypass_
```

10. Press (Return) to enter the text. The display then shows

```
3:*Secure Off
4:*secure mypass
5:*_
```

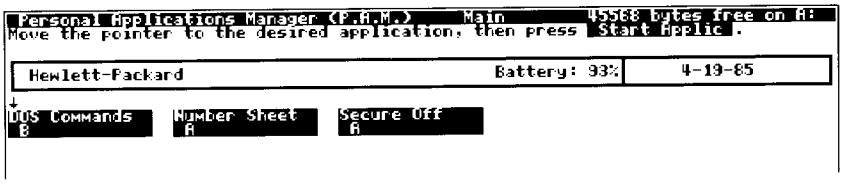
11. Press and hold (CTRL) and press (C). You will then see the command prompt

```
*_
```

12. Type e (Return) to leave EDLIN and to store the edited file. When you see the message

```
Press any key to return to P.A.M.
```

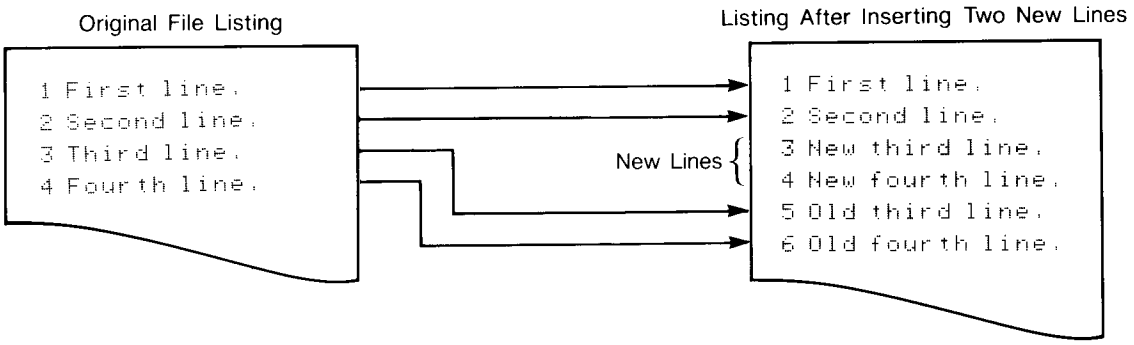
press (Return). The computer then displays a screen similar to the following:



Inserting lines anywhere in an existing file.

Use this procedure for inserting new lines between existing lines anywhere in a previously created text file. When you insert a line in a file, subsequent lines are automatically moved and renumbered.

Automatic Renumbering After an Insert



To insert a line:

1. Start with the main P.A.M. screen.
2. Type:

   `edlin` *existing file name* (Return)

   The computer then displays

   ```
   End of input file
   *_
   ```

3. If you want to display the lines in the file, use the list (`l`) command by typing `l` (Return). Otherwise, go to the next step.
4. Type the number of the line at which you want to begin inserting new lines, then type `i` and press (Return). For example, if you want to insert a new line in front of line 2, type `2i` (Return). The computer then prompts you with

   ```
   2:*_
   ```

5. Type the text you want to insert and press (Return). (If you want to insert a blank line, just press (Return).) The display then prompts you for the next consecutive line to insert.
6. Repeat step 5 for each consecutive line you want to insert.
7. Press (CTRL)(C) when you are finished inserting consecutive lines. The computer then displays the command prompt:

   ```
   *_
   ```

8. If you want to insert lines elsewhere in the file, repeat steps 3 through 6. Otherwise go to the next step.
9. If you want to inspect the edited file, list it by typing `l` (Return).
10. Terminate EDLIN and store the edited file by typing `e` (Return).
11. When you see the message

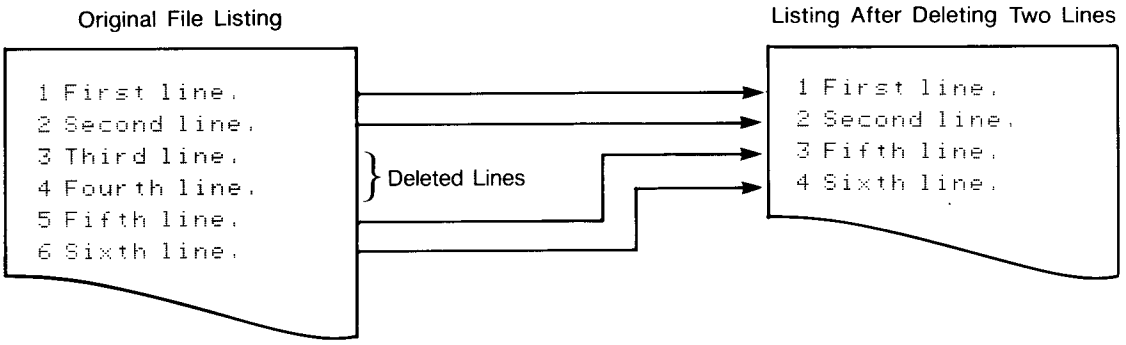
    ```
    Press any key to return to P.A.M.
    ```

    press (Return) to return to the main P.A.M. screen.

Deleting lines from anywhere in a file.

When you delete a line, the text editor automatically renumbers all subsequent lines.

Automatic Renumbering After a Deletion



To delete a line:

1. Start with the main P.A.M. screen.
2. Type:

   `edlin` *existing file name* (Return)

   The computer then displays

   ```
   End of input file
   *_
   ```

3. If you want to display the lines in the file, use the list (`l`) command by typing `l` (Return). Otherwise, go to the next step.
4. Do either of the following:
   - To delete a single line, type the line number and the character `d`, then press (Return). That is,

     line number`d` (Return)

     For example, to delete line 2 from a file, you would type `2d` (Return).
   - To delete two or more consecutive lines, type the first (lowest) line number, a comma, then the last (highest) line number, then the `d` character:

     first line number`,`*last line number*`d` (Return)

For example, if you wanted to delete lines 4 through 7 from a file, you would type `4,7d` (Return).

5. If you want to inspect the edited file, list it by typing `l` (Return).
6. Terminate EDLIN and store the edited file by typing `e` (Return).
7. When you see the message

```
Press any key to return to P.A.M.
```

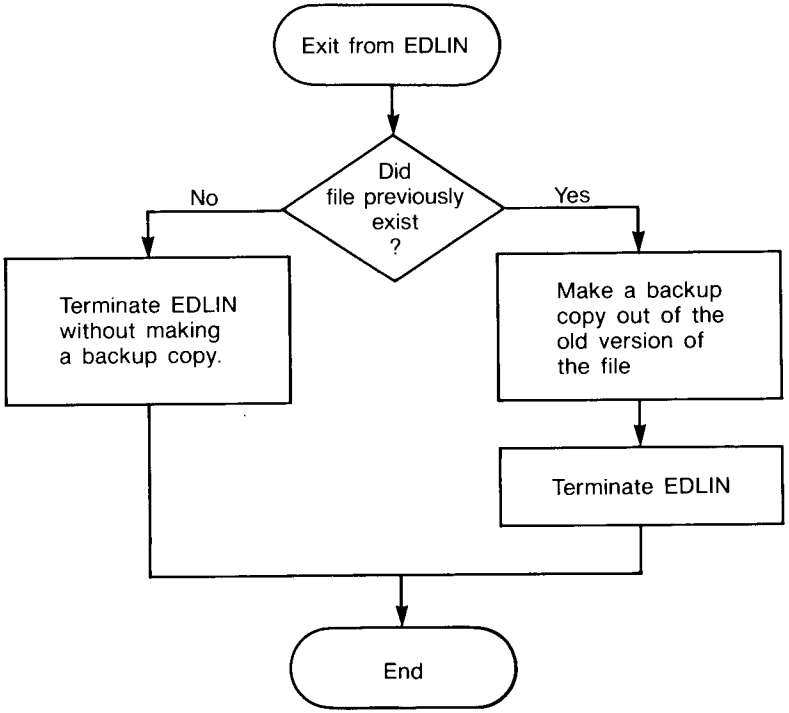
press (Return) to return to the P.A.M. screen.

EDLIN Exit Operations

The "Exiting from EDLIN" procedure on page 11-2 describes how to exit from the line level and the command level. This section describes how the automatic backup feature works and how to exit from EDLIN without changing the original contents of a file.

Automatic File Backup

How It Works. As indicated earlier in this chapter, when you exit from EDLIN, it stores the file you were working on. When this file is one that previously existed (that is, a file that you have stored at least once previously) EDLIN makes a backup copy out of the previously stored version. And, each time a backup copy is created, any earlier backup copy of the same file is deleted from memory. Thus, there is never more than one backup copy for any file. (When you exit from a new file—one that hasn't been stored before—EDLIN does not make a backup copy of that file because there is no previous version with which to make a backup.)



Identifying a Backup File. The file name for a backup copy is a combination of the original file name with the file extension .BAK. Thus, if you create and store a new text file named FILE1, there will be no backup version. But if you later call this file, then store it again, you will have both a current version of the file (named FILE1) and a backup version (named FILE1.BAK).

Note 

The act of storing a previously existing file creates the backup version, regardless of whether you edit the file.

You can view the backup version (using the MS-DOS TYPE command), but you cannot call and edit the backup version using EDLIN unless you first use the P.A.M. Rename function to rename the file with a file name that doesn't have .BAK for a file extension. (Refer to "Renaming Files" on page 5-16.)

Exiting Without Making Changes You've Already Entered

You can quit an EDLIN session *without* updating the file to include changes you made in the current session.

Use the procedure described under "Exiting from EDLIN" on page 11-2, but substitute the q command in place of the e command.

When you type q (Return), the computer prompts you with

```
Abort edit (Y/N)?
```

This gives you an opportunity to change your mind:

- If you decide that you do *not* want to discard the changes you've already typed into the file, type:

  n (Return).

  The computer will return you to the command prompt, and you can then exit by using e (Return), which will update the file with the changes you've made.
- If you still want to discard your changes, type y (Return). The computer will then take you out of EDLIN without making any changes to the file.

EDLIN Command Summary

The commands in the following table, including several that are not described in this chapter, must be executed from Command mode; that is, from the *_. (Refer to "Using EDLIN" on page 11-1.)

Syntax Symbols. In the following table, square brackets are used to indicate optional items. That is, any item enclosed in square brackets can be omitted from the command if unneeded. For example, the syntax for the delete (D) command:

[*start line #*][,*end line #*]D

allows you to omit "*,end line #*" or both "*start line #*" and "*,end line #.*"

Note

Do *not* include any square brackets when actually typing a command.

EDLIN Command Summary and Syntax Table*

Command	Purpose and Syntax
Edit Line	Enables editing a line. *line #* (Return)
Append Line(s)	Appends additional line(s) from disc file. Used in conjunction with W (Write) command with files too large for memory. [*# of lines*]A
Copy Line(s)	Copies line(s). The *count* option is for multiple copies. [*start line #*],[*end line #*],*destination line #*[,*count*]C
Delete Line(s)	Deletes line(s). [*start line #*][,*end line #*]D
End Session	Ends editing session and saves changes. E (Return)
Insert Line(s)	Inserts new line(s). [*line #*]I
List Line(s)	Lists lines. [*start line #*][,*end line #*]L (Return)
Move Line(s)	Moves lines. [*start line #*],[*end line #*],*destination line #*M (Return)

* This table includes EDLIN commands that are not described earlier in this chapter.

EDLIN Command Summary and Syntax Table (Continued)

Command	Purpose and Syntax
Page	Pages through file in 23-line blocks. [*start line #*][,*end line #*]P (Return)
Quit	Quits editing session without saving changes. Q (Return)
Replace	Replaces existing text with specified text.* [*start line #*][,*end line #*][?]R*search string* (CTRL)(Z) *replacement string* (Return)
Search	Searches for text.† [*start line #*][,*end line #*][?]S*search string* (Return)
Transfer (Copy)	Copies one file into another. [*line #*]T*source file name* (Return)
Write	Writes lines to disc file. Used in conjunction with A (Append) command. *# of lines to write*W (Return)

* The optional ? causes the computer to prompt you to determine whether to replace the search string in the current line. If you press (Y) or (Return), the string is replaced. Pressing almost any other key prevents replacement of the search string in the current line and the computer searches for the next copy of the search string.

† The optional ? causes the computer to prompt you to determine whether this occurrence is the one for which you are searching. Pressing (Y) or (Return) terminates the search and selects the line containing the search string as the current line. Pressing almost any other key resumes the search.

A Messages and Errors

Disc or Device Errors

If a disc or device error occurs at any time during a command or program, MS™-DOS returns an error message in the following format:

error message I/O action x
Abort, Ignore, Retry:

In this message, *error message* may be one of the following:

```
Bad unit error
Data error
Disk error
Non-DOS disk error
No paper error
Not ready error
Read fault error
Sector not found error
Seek error
Write fault error
Write protect error
```

The *I/O action* may be either: `reading` or `writing`.

x, is the drive, device, or file on which the error occurred.

When this message is displayed, MS-DOS waits for you to type one of the following responses:

A	Abort	Terminates the operation requesting the read or write.
I	Ignore	Causes the error to be ignored and continues the operation as if the error did not occur.

R	Retry	Causes an attempt to repeat the operation. Use this response when the error is caused by something you can correct (such as Not Ready or Write Protect errors).

Usually, you will want to attempt recovery by selecting R (to try again) then, if the message reappears, A to terminate the program.

A

Alphabetical Message Listing

This is a listing of messages that can be generated by MS-DOS, P.A.M., TERM, and EDLIN.

Some of the messages are *error messages* that indicate that something went wrong with an operation. For error messages, the condition that caused the message to appear is described along with the most likely remedy.

Some of the messages are *informational messages* that tell you the result of some operation or what it just did or is about to do.

Finally, some of the messages are *prompts* that indicate that some program or command is waiting for action by you. To respond, type the requested data and press (Return).

Letters or words that appear in *italics* are variable text that change depending on the specific circumstances. Usually the meaning of this variable text is clear from the context of the message. If not, the meaning is described with the message.

Messages that start with variable text (like a file name, for instance) are at the beginning of the list, alphabetized by the first nonvarying word in the message.

The operation that generates each message is listed at the left of each entry. "MS-DOS" indicates that the message is generated by the operating system or that the message could result from any of a number of different MS-DOS commands or programs.

FORMAT *x* bytes available on disk
Meaning: Total number of bytes (*x*) available on the specified disc.

FORMAT *x* bytes in bad sectors
Meaning: Number of bytes (*x*) in unusable bad sectors.

FORMAT *x* bytes total disk space
Meaning: Total number of bytes (*x*) on disc.

PRINT *file name* cancelled by operator
Meaning: Indicates that the file was removed from the print queue by the /C switch in a PRINT command.

PRINT *file name* file not found
Condition: You switched discs while a file was queued up, but before it started to print.
Remedy: Reissue the PRINT command for that file name.

MS-DOS *x* file(s)
Meaning: Number of files (*x*) in a directory.

COPY *x* file(s) copied
Meaning: Number of files (*x*) copied by COPY command.

PRINT *file name* is in queue
Meaning: The file name specified is waiting to be printed.

PRINT *error type* reading file
Meaning: A device error occurred during a print operation. Refer to "Disc or Device Errors" on page A-1.

MS-DOS Abort, Retry, Ignore?
Meaning: A disc or device error occurred. Refer to "Disc or Device Errors" on page A-1 for more information on how to respond.

PRINT All files cancelled by operator
Meaning: This message is displayed when you specify the /T switch with the PRINT command. It indicates that the print queue has been terminated.

MS-DOS Are you sure (Y/N)?
Meaning: MS-DOS displays this message if you try to delete all files in the current directory (*.*). A Y response causes the deletion to occur, N cancels the operation.

MS-DOS Bad command or file name
Condition: The computer cannot find the command or file you asked it to run. You either mistyped the name or it does not exist.
Remedy: Check the command or file name to be sure you are entering it correctly.

MS-DOS Bad or missing *file name*
Condition: You specified an invalid device in the CONFIG.SYS file.
Remedy: Check the accuracy of the DEVICE statement in the CONFIG.SYS file.

MS-DOS `Bad unit error reading drive x`

Condition: Device error. Drive *x* has returned an error message during a read operation that indicates a hardware problem. For example, a low battery condition on the HP 9114 disc drive causes this message to be displayed when the drive is accessed.

Remedy: Check the disc drive for problems and retry the command if the problem is correctable; otherwise abort. Refer to "Disc or Device Errors" on page A-1.

MS-DOS `Bad unit error writing drive x`

Condition: Device error. Drive *x* has returned an error message during a write operation that indicates a hardware problem. For example, a low battery condition on the HP 9114 disc drive causes this message to be displayed when the drive is accessed.

Remedy: Check the disc drive for problems and retry the command if the problem is correctable; otherwise abort. Refer to "Disc or Device Errors" on page A-1.

TERM `Cannot access "`*file name*`"`

Condition: TERM attempted to upload a nonexistent or invalidly specified file (*file name*).

Remedy: Check validity of entry in `TO HOST from file` field.

EDLIN `Cannot edit .BAK file--rename file`

Condition: You attempted to enter EDLIN with a `.BAK` type file specified.

Remedy: If you need the `.BAK` file for editing purposes, you must either rename the file with a different extension or copy the `.BAK` file and give it a different file name extension.

P.A.M. `Cannot format drive B: (read-only disc)`

Meaning: An attempt was made to format the system ROM disc.

TERM `Cannot open AUX`

Condition: Indicates that too many files are open in MS-DOS. Can be caused by programs that do not close files when they terminate.

Remedy: Perform a system reset ((Shift)(CTRL)(Break)).

PRINT `Cannot open` *file name*

Condition: Either MS-DOS cannot find the specified file to print or the file does not exist.

Remedy: Check that the filename is a valid name.

COPY `Content of destination lost before copy`

Meaning: A file to be used as a source file to the `COPY` command has been overwritten prior to completion of the copy. Example: `COPY A + B B`, which destroys B before it can be copied.

DISKCOPY `Copy another (Y/N)?`

Meaning: Press (Y) if you wish to copy another disc. Press (N) if you do not wish to copy another disc.

DISKCOPY `Copy complete`

Meaning: `DISKCOPY` has completed processing.

DISKCOPY `Copy not completed`

Condition: `DISKCOPY` could not copy the entire disc.

Remedy: Try a new destination disc. (If it's a new disc, remember to format it in the same way that the source disc was formatted.) Otherwise, use the file manager `Copy File` command or the MS-DOS `COPY` command.

DISKCOPY `Copying...`

Meaning: This message indicates that `DISKCOPY` is copying a disc.

MS-DOS `Data error reading drive x`

Condition: Device error. MS-DOS encountered an error condition when attempting to read from drive *x*. May be caused by worn or corrupt disc or by drive malfunction.

Remedy: Check disc and drive and retry command if correctable, otherwise abort. Refer to "Disc or Device Errors" on page A-1.

MS-DOS `Data error writing drive (x:)`

Condition: Device error. MS-DOS encountered an error condition when attempting to write to drive *x*. May be caused by worn or corrupt disc or by drive malfunction.

Remedy: Check disc and drive and retry command if correctable, otherwise abort. Refer to "Disc or Device Errors" on page A-1.

P.A.M. `Directory could not be created`

Condition: An unsuccessful attempt was made to create a directory from P.A.M. Could be caused by any disc error, such as a write-protected disc, drive not ready error, etc.

Remedy: Check the system for problems and try again if the problem is correctable.

P.A.M. `Directory is not empty, or is write-protected, or is the current directory`

Condition: An attempt was made to delete a directory from P.A.M., and one of the conditions listed in the message was true.

Remedy: Correct the problem by deleting all the files in the directory, changing write protection, or making some other directory the current one.

MS-DOS `Disk error reading drive x`

Condition: MS-DOS was unable to read from the disc in drive *x*. May be caused by: missing disc, wrong disc format, defective disc, etc.

Remedy: Correct condition and re-execute command. Refer to "Disc or Device Errors" on page A-1.

MS-DOS `Disk error writing drive x`

Condition: MS-DOS was unable to write to the disc in drive *x*. May be caused by: missing disc, wrong disc format, defective disc, etc.

Remedy: Correct condition and re-execute command. Refer to "Disc or Device Errors" on page A-1.

EDLIN `Disk Full--file write not completed`

Condition: You gave the E (end) command, but the disc did not contain enough free space for the whole file. EDLIN aborted the E command and returned you to the operating system. Some of the file may have been written to the disc.

Remedy: Only a portion (if any) of the file has been saved. You should probably delete that portion of the file and restart the edit session. The file will not be available after this error. Always be sure that the disc has sufficient free space for the file before you begin your editing session.

A

TERM `Disc write failure`

Condition: While attempting to download from a host into a file, TERM was unable to write the file to the disc.

Remedy: Check that sufficent room is available on disc for the incoming data. Also check disc write protection status.

DISKCOPY `Disks must be the same size`

Condition: You have attempted to use `DISKCOPY` with discs of different sizes.

Remedy: Use the File Manager `Copy File` command or the MS-DOS `COPY` command to copy the files to a disc of a different size. (Refer to "Copying and Appending Files" on page 10-13.)

MS-DOS `Duplicate file name or File not found`

Condition: Either you have tried to rename a file to a file name that already exists or the name you specified could not be found.

Remedy: Choose a different name or check to see that you have entered the file name corectly.

EDLIN `Entry Error`

Condition: The last command typed contained a syntax error.

Remedy: Retype the command with the correct syntax and press (Return).

P.A.M. `Error: line too long`

Condition: An entry in the command line (like a file or path name) for a File Manager command, such as `Format` or `Copy` was too long.

Remedy: Try again with a shorter entry in the command line

P.A.M. `Error reading drive x`

Condition: A DOS error has occurred during an attempt to read drive *x*.

Remedy: This error can be caused by any of a number of device errors. Check all parts of the system for problems. Refer to "Disc or Device Errors"on page A-1 for a list of DOS errors that may have occurred.

PRINT `Errors on list device indicate that it may be off-line. Please check it.`

Condition: Your printer is off-line.

Remedy: Turn it on and/or check the connection.

P.A.M. `Error writing drive x`

Condition: A DOS error has occurred during an attempt to write to drive *x*.

Remedy: This error can be caused by any of a number of device errors. Check all parts of the system for problems. Refer to "Disc or Device Errors"on page A-1 for a list of DOS errors that may have occurred.

MS-DOS `File allocation table bad`

Meaning: The disc may be defective.

PRINT `File allocation table bad drive x`

Meaning: The disc may be defective. This message means that the copy in memory of one of the allocation tables has pointers to nonexistent blocks. Possibly the disc was incorrectly formatted or not formatted before use. If this error persists, the disc is currently unusable and must be formatted prior to use.

COPY `File cannot be copied onto itself`
`0 File(s) copied`

Condition: The source file name you specified is the same as the destination file name. Example: `COPY A A`

Remedy: Pick a different name for the source or destination file name.

MS-DOS `File creation error`

Condition: You tried to add a new file name or replace a file that already exists in the directory. If the file already exists, it is a read-only file and cannot be replaced.

Remedy: Choose a new file name and re-enter the command.

EDLIN `File name must be specified`

Condition: You did not specify a file name when you started EDLIN.

Remedy: Specify a file name.

EDLIN `File not found`

Condition: The file name specified during a Transfer command was not found.

Remedy: Specify a valid file name when issuing a Transfer command.

P.A.M. `File or directory does not exist`

Condition: The file or directory name specified in a File Manager command does not exist.

Remedy: Repeat the command using a valid name.

P.A.M. `File or directory is write-protected`

Condition: An attempt was made to overwrite a write-protected file or directory.

Remedy: Disable the write-protection on the disc.

FORMAT `Format another (Y/N)?`

Meaning: Type Y (for Yes) to format another disc. Type N (for No) if you do not want to format another disc. If you accidentally type Y, you can abort the format process by pressing CTRL C in response to the `Strike any key to begin formatting` message.

FORMAT `Format failure`

Meaning: MS-DOS could not format the disc. This message is always displayed in conjunction with an explanation as to why MS-DOS could not format the disc.

MS-DOS `Insert COMMAND.COM disk in drive and strike any key when ready`

Condition: This message indicates that a problem with system memory has occurred.

Remedy: Perform a system reset ((Shift)(CTRL)(Break)).

A

MS-DOS `Insert diskette for drive x and strike any key when ready`

Meaning: This message appears when MS-DOS is copying and formatting. You should insert a disc in the appropriate drive and press any alphanumeric key to begin processing.

MS-DOS `Insert diskette with batch file and press any key when ready`

Condition: You no longer have the disc containing the batch file you specified in the drive you originally specified.

Remedy: Reinsert the disc containing the batch file into the appropriate drive.

DISKCOPY `Insert formatted target diskette into drive x:`

Meaning: `DISKCOPY` is ready for a disc in the destination drive. `DISKCOPY` requires that the destination disc be already formatted.

DISKCOPY `Insert source diskette into drive x:`

Meaning: Insert into the specified drive the disc you want to copy from.

DISKCOPY `Insert target diskette into drive x:`

Meaning: Your are running `DISKCOPY` and your source and destination drives are the same. Insert the destination disc into the specified drive.

MS-DOS `Insufficient disk space`

Condition: The disc is full. It does not contain enough room to perform the specified operation.

Remedy: Delete some files on the disc or use a different disc.

EDLIN `Insufficient memory`
`Processing cannot continue`

Condition: There is not enough memory to run EDLIN.

Remedy: You must free some memory by writing files to disc, by deleting files, or by changing the size of system memory.

TERM `Insufficient RAM`

Condition: There is not enough memory to run TERM.

Remedy: You must free some memory by writing files to disc, by deleting files, or by changing the size of system memory.

FORMAT `Invalid characters in volume label`

Condition: The volume label should contain a maximum of 11 alphanumeric characters.

Remedy: Change the label. (Refer to step 8 on page 8-5.)

MS-DOS `Invalid device`

Condition: The device specified is not installed.

Remedy: Re-enter the command with a valid device name.

MS-DOS `Invalid directory`

Condition: The directory you specified either does not exist or was incorrectly entered.

Remedy: Check to see that you entered the directory name correctly.

MS-DOS `Invalid drive in search path`

Condition: The drive you specified either does not exist or is incorrectly entered.

Remedy: Check to see that you entered the drive specification correctly.

MS-DOS `Invalid drive specification`

Condition: The drive you specified is incorrectly entered, or the number of external drives specified in the System Configuration menu is too low.

Remedy: Check to see that you entered the drive specification correctly, or that the number of external drives is correctly set.

MS-DOS `Invalid number of parameters`

Condition: You have specified the wrong number of options in the command line.

Remedy: Re-enter the command with the correct information.

MS-DOS `Invalid parameter` *option name*

Condition: One of the switches (*option name*) specified either does not exist or was incorrectly entered.

Remedy: Check to see that you have entered the *option name* correctly.

COPY `Invalid path or file name`

Condition: The path or file name specified either does not exist or was entered incorrectly.

Remedy: Check to see that you have entered a valid path name or file name to the `COPY` command.

MS-DOS `Invalid path, not directory, or directory not empty`

Condition: You are unable to remove the directory requested for one of the specified reasons.

Remedy: Check the path name specified, choose a directory, or remove all files from the directory and re-enter the command.

EDLIN `Line too long`

Condition: During a Replace command, the string given as the replacement caused the line to expand beyond the limit of 253 characters. EDLIN aborted the Replace command.

Remedy: Divide the long line into two lines, then use the Replace command twice.

PRINT `List output is not assigned to a device`

Condition: When you first run PRINT, it asks you what device you want to specify as a print spooler. This message appears if PRINT is set up for a nonexistent device.

Remedy: Specify a valid print device.

P.A.M. `Maximum number of applications installed`

Condition: A maximum of forty applications can be installed using PAM.MNU files—an attempt was made install more than forty.

Remedy: Remove some applications from one or more PAM.MNU files.

MORE `--More` *percent*`--`

Meaning: Indicates that there is more information in the file or directory. Press the space bar to view more of the file or directory. The *percent* indicates how much of the file has already been viewed.

P.A.M. `More files in directory than can be displayed - use wild card`

Condition: The chosen directory contains more files than P.A.M. can display.

Remedy: Use wildcard characters to display smaller portions of the directory.

EDLIN `Must specify destination number`

Condition: A destination line number was not specified for a COPY or MOVE command.

Remedy: Reissue the command with a destination line number.

PRINT `Name of list device [PRN]:`

Meaning: This prompt appears when PRINT is run the first time. Any valid device may be specified and that device then becomes the PRINT output device.

P.A.M. `New name already exists, is a directory, or could not be created`

Condition: The destination file name given in the Rename command is invalid for one of the given reasons.

Remedy: Use a valid file name.

P.A.M. `No destination file specified`

Condition: No destination file name was specified for a Copy or Format command.

Remedy: Specify a valid destination filename.

PRINT `No files match d:xxxxxxxx.xxx`

Condition: A filespec was given for files to add to the queue, but no files match the specification.

Remedy: Re-enter the command with a valid filespec.

MS-DOS `Non-DOS disk error reading drive x`

Condition: Device error. The disc you are trying to read is either unformatted (blank) or formatted for a different operating system.

Remedy: Format the disc if it is blank or use a correctly-formatted disc. Refer to "Disc or Device Errors" on page A-1.

MS-DOS `No paper error writing device x`

Condition: Device error. A printer specified as the output device in a command has returned an out-of-paper message.

Remedy: Install paper in the printer and retry. Refer to "Disc or Device Errors" on page A-1.

EDLIN `No room in directory for file`

Condition: When you attempted to create a new file, either the file directory was full or you specified an illegal disc drive or an illegal file name.

Remedy: Check the command line that started EDLIN for illegal file name and illegal disc drive entries. If the command line contains no illegal entries, execute `DIR` for the specified disc drive. If the the disc directory is full, remove the disc and insert and format a new disc.

EDLIN `Not enough room to merge the entire file`

Condition: There was not enough room in memory to hold the file during a Transfer command.

Remedy: You must free some memory by writing some files to disc or by deleting some files before you can transfer this file.

MS-DOS `Not ready error reading drive x`

Condition: Device error. MS-DOS was unable to access the specified drive. Could be caused by: drive not connected, drive not turned on, drive malfunction, external drive field of System Configuration menu set wrong, etc.

Remedy: Check power switches, connections, etc. and retry if the problem is correctable, otherwise abort. Refer to "Disc or Device Errors" on page A-1.

MS-DOS `Not ready error writing drive x`

Condition: Device error. MS-DOS was unable to access the specified drive. Could be caused by: drive not connected, drive not turned on, drive malfunction, external drive field of System Configuration menu set wrong, etc.

Remedy: Check power switches, connections, etc. and retry if the problem is correctable, otherwise abort. Refer to "Disc or Device Errors" on page A-1.

P.A.M. `No wild cards allowed in this function - Please retype file name`

Condition: Wildcard characters were used in the `Copy`, `Format`, or `Delete` commands.

Remedy: Use specific file names with these commands.

FORMAT `Press any key to begin formatting (x:)`

Meaning: This prompt is issued before you format a disc. Press any alphanumeric key to begin the format process. If you wish to discontinue this operation, press (CTRL)(C).

DISKCOPY `Press any key when ready`

Meaning: This prompt occurs when you are copying discs. When you have inserted the discs into the appropriate drives, press any alphanumeric key to begin the `DISKCOPY` process. If you wish to discontinue this operation, press (CTRL)(C).

A **P.A.M.** `Printer not ready`

Condition: A printer returned a "not ready" error during an attempt to print a file or directory from P.A.M.

Remedy: Check the printer for problems (no paper, printer not on-line, etc.) and try again if the problem is correctable.

PRINT `PRINT queue is empty`

Meaning: There are no files waiting to be printed.

PRINT `PRINT queue is full`

Meaning: There is room for 10 files in the list of files waiting to be printed. This message appears if you attempt to queue more than 10 files.

MS-DOS `Program too big to fit in memory`

Condition: The system is unable to load the program into the available main memory.

Remedy: You need more memory to run your application. Either free up more main memory or acquire additional RAM.

MS-DOS `Read fault error reading drive x`

Condition: Device error. MS-DOS was unable to read from the specified drive (*x*).

Remedy: Refer to "Disc or Device Errors" on page A-1.

PRINT `Resident part of PRINT installed`

Meaning: This is the first message that MS-DOS displays when you issue the print command. It means that available memory has been reduced by several thousand bytes to process the `PRINT` command concurrent with other processes.

MS-DOS `Seek error reading drive x`

Condition: Device error. MS-DOS was unable to read from the specified drive (*x*).

Remedy: Refer to "Disc or Device Errors" on page A-1.

MS-DOS `Seek error writing drive x`

Condition: Device error. MS-DOS was unable to write to the specified drive (*x*).

Remedy: Refer to "Disc or Device Errors" on page A-1.

DISKCOPY `Source and target diskettes are not the same format. Cannot do the copy`

Condition: You are using two discs that are different in format or size.

Remedy: Both discs in a `DISKCOPY` operation must have the same format. Also, the destination disc must be the same size as the source disc. If the destination disc is compatible in size, reformat it to have the same format as the source disc. If you don't know how the source disc was formatted, experiment with the following options until you find the right one:

1. Use the P.A.M. File Manager **Format** command described under "Preparing (Formatting) a Disc for Use" on page 8-3 to format the *destination* disc, then re-execute `DISKCOPY`. If you still get the format error message, go to step 2.
2. Use the MS-DOS `FORMAT` command described under "Formatting External Discs" on pages 10-16 and 10-17 to format the *destination* disc. If the destination disc is single-sided, execute `FORMAT` with the `/W` specifier shown in the table, then re-execute `DISKCOPY`. If the destination disc is double-sided, try the `/X` specifier, then re-execute `DISKCOPY`. If you still get a format error, try again using the `/Y` and (if necessary) the `/Z` specifiers.

MS-DOS `Strike a key when ready...`

Meaning: This prompt occurs during command processing and is usually accompanied by another message. For example, you may be asked to insert discs into appropriate drives before this prompt. Press any alphanumeric key to begin command processing.

MS-DOS `Syntax error`

Condition: You typed the command and its parameters incorrectly.

Remedy: Re-enter the command, making sure that you have typed it correctly.

MS-DOS `Terminate batch job (Y/N)?`

Meaning: If you press (CTRL)(C) while in batch mode, MS-DOS asks you whether you wish to end batch processing. Press (Y) to end processing. Press (N) to continue the batch job.

P.A.M. `The directory contains no files`

Meaning: There are no files in the displayed directory.

P.A.M. `This command can only be used from DOS Commands`

Condition: P.A.M. attempted to execute a `PRINT` command or a command with the pipe character (`|`) embedded in it.

Remedy: Execute the command from MS-DOS

TERM `Transmit failure`

Condition: TERM unsuccessfully tried to send a character to a host system.

Remedy: Check Datacom Configuration menu `CTS`, `DSR`, and `DCD Line` settings.

DIR `Volume in drive x has no label`

Meaning: The disc in drive *x* has no volume label.

DIR `Volume on drive x is` *file name* |*volume name*|*volume label*

Meaning: Gives the name of the volume in drive *x*.

A

FORMAT `Volume label (11 characters, ENTER for none)?`

Meaning: This message is displayed when you do not specify the `/V` switch in the `FORMAT` command. Specify a volume label or press (Return) to indicate that you do not want a volume label for this disc.

MS-DOS `Write fault error writing drive x`

Condition: Device error. MS-DOS was unable to write to the specified drive (*x*).

Remedy: Refer to "Disc or Device Errors" on page A-1.

MS-DOS `Write protect error writing drive x`

Condition: Device error. The disc in drive *x* was write-protected or you tried to write to drive B.

Remedy: Write-enable the disc or specify a different drive and retry. Refer to "Disc or Device Errors" on page A-1.

B Operating Information

Power Supply Information

Warning

The battery pack can NOT be serviced or replaced by the user.

Do not attempt to remove the battery pack—damage to the battery or the computer may occur.

Do not connect together or otherwise short-circuit the battery pack terminals—the pack may melt or cause serious burns.

Do not attempt to incinerate or mutlilate the battery pack—the pack may burst or release toxic materials.

Note

The battery jumper must be properly set before you can turn on the computer. Refer to the sheet titled *Connecting the Battery*.

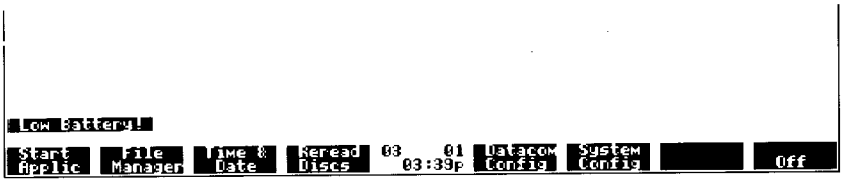
Your computer is powered by a 6-volt, 2.5 amp-hour sealed lead acid battery pack. These batteries are considered "dry cells" for all safety purposes and are treated just like alkaline cells for transportation. The International Air Traffic Association and the U.S. Department of Transportation clearly define these batteries as non-hazardous batteries, so you needn't worry about carrying the Portable PLUS on regulated carriers (such as buses, trains, or airplanes). (Refer to "Safety and Regulatory Information on page xiv at the front of this manual.)

The computer consumes the least amount of power when the display is turned off. More power is consumed while programs are running or when the serial interface or built-in modem (if installed) is in use. When the computer is not powered from an ac outlet, a fully-charged battery pack typically allows up to 20 hours of normal operation at room temperature (approximately 25°C or 77°F). With the display and interfaces off, a fully charged battery pack will discharge in about 6 months.

Low-Battery Safeguards

Two independent systems monitor the battery pack. The first monitoring system is the battery percentage that you see in the main P.A.M. screen. This percentage is an *estimate* of the remaining battery charge relative to a full charge. While the computer is in use on battery power alone, this percentage decreases. When the recharger is plugged in, the percentage increases. Because of variations in battery performance over changing temperature and ac line voltage conditions, the battery percentage indication provides only an approximation of remaining charge.

Standard Low-Battery Signal. The second monitoring system measures the voltage in the battery pack. When this voltage drops below a point where approximately 20% of battery charge remains, the `Low Battery` message is displayed.



You can type over this message; it will reappear every 8 minutes as long as the battery is low. When this message appears, you have from about three hours (continous operation) to one month (non-use) remaining before the next level of low-battery safeguard is activated.

If the battery is not charged during this time, and the voltage drops to a point that indicates about 5% of battery charge remains, the computer turns itself off and will not turn back on. Normal operations halt, including tone output, display output, HP-IL operations, and any currently executing program. The clock continues to operate and memory is preserved for about one week after the system shuts down. If the battery is still not charged, memory is lost and clock operations cease. (Drive B is not affected, however.)

The two monitoring systems may get out of synchronization if the battery voltage falls to a very low level before recharging. They can always be synchronized by fully recharging the system (approximately 10 hours if the computer is off).

If the battery discharges to the point that the display won't turn on, plug in the recharger, and press almost any key to turn on the display. Do not attempt to operate the computer on battery power alone until it has been recharged for at least one hour. (We recommend that, if battery charge falls to the 5% level, you fully recharge the computer before operating it on battery power again.)

Graphics Mode Low-Battery Signal. If you are in a graphics mode provided by an applications program, the display blinks at intervals of approximately eight minutes instead of displaying the `Low Battery` message. Otherwise, operation during low battery periods is the same as described in the preceding paragraphs.

Battery Recharging

We strongly recommend that you connect the recharger to your computer whenever ac power is available. This assures that your computer always has a full charge, and it also prolongs the life of the battery. The design of the charging circuit prevents the battery from being overcharged—no matter how long you leave it plugged in.

Caution

If you allow the battery to run down until the Low Battery indicator appears before you recharge it, the battery life can be substantially reduced. For maximum battery life, recharge the battery fully at every opportunity.

Under normal ac line voltage conditions, the recharger fully recharges the battery in about 10 hours with the computer off, or in about 18 hours when the computer is in use.

Lead acid cells have a long service life. However, should the battery pack reach a point where it no longer accepts a charge, the computer must be serviced. Refer to your *Personal Computer Support Guide* for information about service.

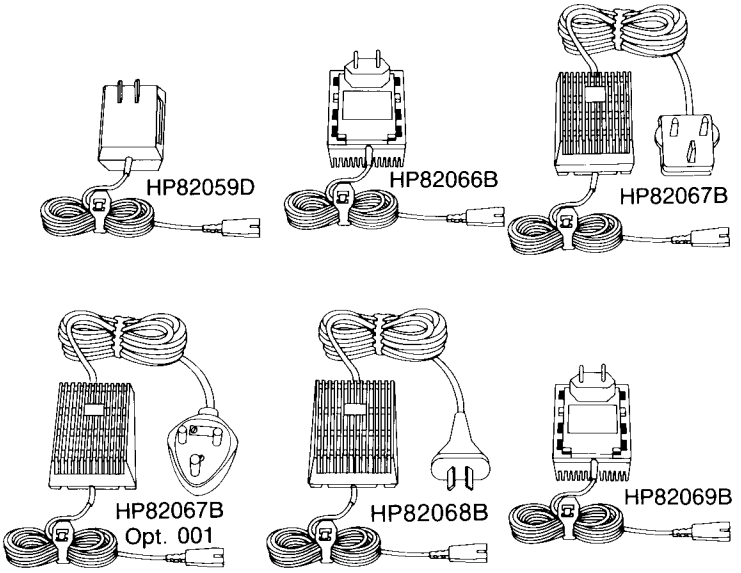
AC Adapter/ Recharger Part Numbers

Various ac adapter/rechargers are available for use with your computer.

AC Adapter/Rechargers

Part Number	Voltage*	Identification
HP 82059D	110 ac	United States
HP 82066B	220 ac	Europe
HP 82067B	240 ac	United Kingdom
HP 82067B opt 001	240 ac	South Africa
HP 82068B	240 ac	Australia
HP 82069B	110 ac	United Arab Emirates

* Indicates nominal voltage; acceptable ranges are 210 to 250 VAC and 90 to 120 VAC.



Turning On Your Computer

If the computer is off, it can normally be turned on by pressing almost any key. (The key should be held down for at least ¼ second.) The (Shift), (CTRL) and (Extend char) keys are exceptions to this rule; they do not turn on the computer. Occasionally, however, the computer may get into a state where it cannot be turned on by pressing a random key. If this happens, try pressing the contrast key ((◑)).

If pressing the contrast key does not turn on the computer, the battery may be too low to allow the computer to turn on. (To recover, refer to "Low Battery Safeguards" on page B-2.)

If none of these methods turn on the computer, refer to item 4 under "Resetting Your Computer" on page B-6.

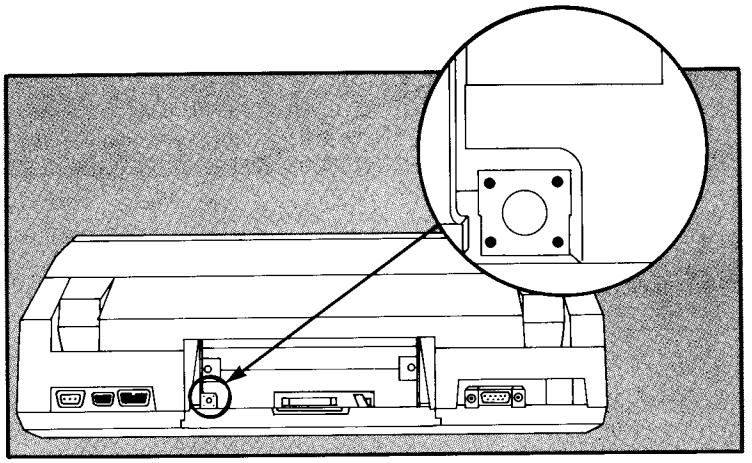
Resetting Your Computer

Under certain conditions your computer may get into a state where it will not respond to the keys you press. If you are sure that low battery voltage is not the cause (if you are not sure, refer to "Low Battery Safeguards," page B-2), you should follow one or more of the steps in the following procedure:

1. Reset the computer by pressing (Shift)(CTRL)(Break). (Drives A and B are not affected by this reset, but user memory is, and any work not stored to Edisc or a flexible disc is lost.) If the main P.A.M. screen appears, the computer has been reset, and you do not need to use any further steps.
2. If the main P.A.M. screen did not appear when you performed step 1, press (Shift) (CTRL) (Extend char) (Break). (This resetting method has the same effect on user memory as in step 1, above.) If the main P.A.M. screen appears, the computer has been reset and you do not need to use any further steps.
3. If the main P.A.M. screen did not appear when you performed step 2, turn off the computer by holding down the contrast key ((◑)). The display will darken to its maximum and then, after a few seconds, will turn off. Press the contrast key to turn the computer back on. This resetting method has the same effect on user memory as in step 1, above.
4. If the computer still does not respond, press the reset button located in the battery compartment to perform a full reset .

Caution

Pressing this button erases the contents of drive A and user memory. All data stored in Edisc will be lost. Don't press this button unless the resets in steps 1, 2, and 3 failed.



This button does not affect drive B (ROM).

4. If the full reset fixed the condition that caused the keyboard to lock up, the display will reactivate and a message will be displayed with instructions for reformatting drive A.
5. If, after performing all of the preceding resets, there is still no response, have your unit serviced. Refer to your support guide for service information.

Environmental Limits

Your computer can be operated in temperatures ranging between 0° and 50°C (32° to 122°F).

When not in use, your computer should be stored away from extreme temperatures. For example, do not store your computer in the trunk of a car or in an unheated aircraft baggage compartment. Very hot or very cold temperatures can adversely affect the life of the battery and the display.

Rapidly cycling your computer between one extreme temperature and another causes stresses in your computer that also tend to decrease its reliability.

Clock Accuracy

The system clock is regulated by a quartz crystal accurate to within 5 minutes per month for worst-case operating temperatures. A more typical accuracy is 1½ minutes per month. The clock crystal is affected by temperature, physical shock, humidity, and aging. Optimum accuracy is achieved at 25°±5°C (77°±9°F). When an extreme change in environment occurs, the clock may require adjustment.

Adjust the system clock by selecting Time & Date (f3) in the main P.A.M. screen and changing the time. Refer to chapter 3 for more information about setting the clock.

B

Cleaning Information

Your computer can be cleaned with a soft cloth dampened either in clean water or in water containing a mild detergent. Don't use an excessively wet cloth or allow water to get inside the computer. Don't use abrasive cleaners, especially on the display.

C Diagnostics

If you suspect that your computer is not working correctly, you can determine if there is a problem by running the diagnostic tests. These tests are built in to the computer. If the test generates a failure message, have your unit serviced. (Refer to the support guide that came with your computer for information about how to obtain service.)

If your computer passes all of the tests, but still does not appear to be working properly, refer to the manuals shipped with the computer for operating information. If you still experience difficulty, write or call Hewlett-Packard (refer to the support guide) for additional help.

Using the Diagnostic Tests

Caution 

The contents of RAM memory, both Main memory and Edisc (drive A), will be altered when running the RAM test or during the RAM portion of the software/memory drawer test. *Be sure to save the contents of the Edisc on an external disc before you initiate either the RAM test or the software/memory drawer test.* Also, save the contents of the Edisc before running the system test, since this includes both the RAM test and the software/memory drawer test.

Note

The display will not turn itself off when the diagnostics program is running. If you plan to run this program when you aren't around, connect the recharger so the battery won't run down.

The built-in test menu is displayed only on the screen. All other messages are directed to both the screen and (if connected) a ThinkJet printer. No other device can be configured to receive messages.

The RAM test and the RAM portion of the Software/Memory Drawer test each require about 5 minutes for each 128K of RAM checked.

1. Turn the display off before starting the test. If the display is on, press **Off** (f8) on the main P.A.M. screen.
2. With the display off, hold down the Shift and Extend char keys, then press f8 to start the diagnostic test. Hold the three keys down for about three seconds.
3. The self-test menu is then displayed:

```
Built-in self-tests:

f1: System test                          Shift f1: RAM test *
f2: LCD test                             Shift f2: Software/Memory drawer test *
f3: Timer test                           Shift f3:
f4: RS-232 test                          Shift f4:
f5: HP-IL test                           Shift f5:
f6: Modem test                           Shift f6:
f7: ROM test                             Shift f7:
f8:                                      Shift f8: Exit

* NOTE:  The RAM test and RAM portion of the Software/Memory drawer test
         require approximately 5 minutes per 128K RAM checked.
```

4. If you plan to run the System test (f1) or the HP-IL test (f5), and no HP-IL peripherals are connected to your computer, connect an HP-IL cable from the OUT receptacle to the IN receptacle on the computer. Otherwise, you will get the message `Broken Loop` when the HP-IL test runs.*

5. Press f1 to automatically run all of the tests, or press one of the other function keys to run a specific individual test.

   If all parts passed the test, the message `-ok` is displayed briefly on the same line as the test message, then the test menu returns. If there is a failure, the failure message remains on the screen. Press any key to return to the test menu.

   A failure message on the display indicates a part did not pass and service is required. On the service card in your support guide record the message, and the name of the test that generated it. Send the unit, with the completed service card, in for service.

6. Press Shift f8 from the self-test menu to exit from the diagnostics program and return to the main P.A.M. screen.

7. Type `FORMAT A:` in the P.A.M. command line.

8. Press Return to reformat the Edisc (drive A). At this point you can reload any files that you saved on an external disc before running the diagnostic test.

* If the HP 82169A HP-IL/HP-IB Interface is on the loop, make sure that at least one peripheral device is configured as an HP-IB device (refer to page 6-15, "Specifying the System Configuration," for information) before running the System or HP-IL tests. If no devices are configured as HP-IB when the HP 82169A interface is connected, the HP-IL test will not run correctly.

What Each Test Does

`System test` (f1)

This test takes several minutes to run. It calls each of the individual tests listed on the test menu, then returns to the menu after all of the tests are complete.

Caution

Because this includes RAM tests, information on the Edisc (drive A) will be lost. Refer to the caution on page C-1.

`LCD test` (f2)

This test checks the LCD display controller registers and the LCD display memory. A variety of patterns are displayed on the screen while the LCD test is running.

C

`Timer test` (f3)

This test checks the operation of the internal timers and the built-in time-of-day clock.

`RS-232 test` (f4)

This test checks the internal registers of the RS-232 interface.

`HP-IL test` (f5)

This test checks the operation of the HP-IL controller, determines whether the loop is broken, and if it is not broken, displays the number of devices on the loop. All HP-IL peripherals must be turned on for this test to work.

The `bad device` message indicates that the HP-IL controller chip in the computer failed the test.

The `Broken loop` message indicates that the loop is not continuous or that one of the devices on the loop is not turned on. To find out where the problem is, do the following:

1. If no HP-IL peripherals are connected, refer to step 4 below. Verify that all devices on the loop are connected properly and turned on. (Refer to chapter 6, "Connecting Printers, Disc Drives, and Other Peripheral Devices," if you have questions about hooking up HP-IL peripherals.) Then run the test again.
2. If the message still appears, remove one device from the loop and try again.
3. Repeat step 2 until the bad device or cable is found, or until all devices have been removed from the loop.
4. If you still get the `Broken loop` message, connect a cable from the HP-IL OUT connector on the Portable PLUS to the IN connector. Then try the test again.
5. If the message still appears, connect a different cable and try the test once more.
6. If the message appears again, the problem is internal to the computer and it requires repair.

`Modem test` (f6)

This test checks the built-in modem if one is present. The test first determines if the internal modem is installed and displays `Modem not installed` if no modem is installed. If the modem is present, it is tested.

`ROM test` (f7)

This test checks each internal ROM (drive B).

RAM test (Shift f1)

This test checks the internal RAM. It takes about 5 minutes.

Caution

This test erases information on the Edisc (drive A). Refer to the caution on page C-1.)

Software/Memory Drawer Test (Shift f2)

Checks for RAM (memory) and ROM (software modules) in both drawers.

Caution

This test erases information on the Edisc (drive A). Refer to the caution on page C-1.)

C

When ROM is found, a message tells how many ROMs are installed and their locations, then the ROM test is performed.

When RAM is found, the number of bytes installed in the memory drawer is displayed and the RAM test is performed.

If neither RAM nor ROM is found, a message states this. If both are found, both tests are run.

The RAM test requires about 5 minutes for each 128K of RAM.

The two drawer receptacles are called receptacle 1 and receptacle 2. The receptacle under (Return) is number 1 and the receptacle under (Caps) is number 2. Number 1 is checked first.

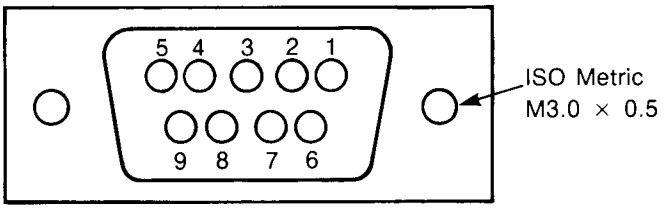
D

Serial Communication Port Technical Information

This appendix provides details of the technical specifications of the built-in serial port. Most users will not need to read this appendix. This information is provided for those whose applications require these details.

On the Portable PLUS, the serial interface is accessed via a nine-pin female D subminature connector. The pin numbering of the connecter, as viewed from the back of the product, is shown below:

Serial Interface Connector



The following table provides technical information about the built-in serial port. The serial port complies with certain industry standards, and these standards are listed below the table.

Serial Port Technical Data

Pin Number	RS-232-C Circuit Designator	Equivalent RS-232-C Number	V.24 Circuit Designator	Signal Description
1	CD	20	108/2	Data Terminal Ready
2	BA	2	103	Transmitted Data
3	BB	3	104	Received Data
4	CA	4	105	Request To Send
5	CB	5	106	Clear To Send (Ready for Sending)
6	CC	6	107	Data Set Ready
7	AB	7	102	Signal Ground (Common Return)
8	CF	8	109	Received Line Signal Detector (Carrier Detect)
9	CE	22	125	Ring Indicator (Calling Indicator)

All signals are from the point of view of Data Terminal Equipment.

Conforms to:

EIA RS-232-C	Specification (a 9-pin female connector has been used instead of a 25-pin male connector)
CCITT V.28	Electrical Specification
CCITT V.24	Electrical Specification (Interchange circuit definitions for the nine implemented lines)

The following tables provide the technical specifications for the two serial cables available from Hewlett-Packard for use with the Portable PLUS.

Serial Modem Cable (HP 92221M)

Signals		9-Pin (Male)		25-Pin (Male)
RS-232-C	V.24			
(CD) DTR	108/2	1	→	20
(BA) TxD	103	2	→	2
(BB) RxD	104	3	←	3
(CA) RTS	105	4	→	4
(CB) CTS	106	5	←	5
(CC) DSR	107	6	←	6
(AB) GND	102	7	↔	7
(CF) DCD	109	8	←	8
(CE) RING	125	9	←	22
		SHIELD		
		SHELL	↔	SHELL
		DRAIN	→	1

D

Serial Printer Cable (HP 92221P)

Signals		9-Pin (Male)		25-Pin (Male)	Signals	
RS-232-C	V.24				RS-232-C	V.24
(CD) DTR	108/2	1	→	6	DSR (CC)	107
(BA) TxD	103	2	→	3	RxD (BB)	104
(BB) RxD	104	3	←	2	TxD (BA)	103
(CA) RTS	105	4	→	8	DCD (CF)	109
(CB) CTS	106	5	←			
(CC) DSR	107	6	←	20	DTR (CD)	108/2
(AB) GND	102	7	↔	7	GND (AB)	102
(CF) DCD	109	8	←	4	RTS (CA)	105
(NOT USED)		9	→	5	CTS (CB)	106
		SHIELD				
		SHELL	↔	SHELL		
			⇢	1		
		DRAIN				

D

E

Glossary

A-B

allocating memory: Dividing User memory (RAM) into a portion for Main memory and a portion for drive A (electronic disc—or Edisc) memory.

application menu label: An inverse video block in the middle of the main P.A.M. screen; used to select either (the built-in) DOS Commands or an applications program that is available to the computer (and which is referenced by a PAM.MNU file in the root directory of the medium containing the applications program). *See also* **PAM.MNU** *and* **root directory**.

ASCII: An acronym for American Standard Code of Information Interchange. ASCII is a numeric code representing uppercase and lowercase characters, numbers, special symbols, and control characters. The ASCII code is standardized so that computers can share data.

ASCII text file: A file composed of ASCII characters codes.

baud: A unit of measure of a data transmission rate, and which is equivalent to the number of signal transitions per second. Equivalent to BPS in some cases (such as 300 baud). *See also* **bits-per-second**.

binary number: A number expressed in base 2. In a computer, a binary 1 represents an ON state and a 0 represents an OFF state.

bit: *b*inary dig*it*. A single digit in base 2, which must be 0 or 1.

bits per second: The rate at which a device transmits data bits.

BPS: Bits per second.

byte: A unit of computer memory. 1K byte (one kilobyte) equals 1,024 bytes. In data operations, each character is represented with one byte of memory. Each byte contains eight binary digits or bits.

C

character font: The specific bit image generated on the screen when keys are pressed or output is directed to the screen. Two fonts, the HP font and the alternate (IBM-compatible) font, are available directly from the keyboard. The HP font is used unless the alternate font is selected. Change fonts by changing the `Console Mode` setting in the System Configuration screen.

character set: A specific set of characters and control codes used by the computer for handling information. Each character or code has numeric value that establishes its order in the character set. *See also* **ASCII.**

command: A sequence of characters that cause an operation to occur. Commands generally start with a name that identifies an executable file, such as a program or utility, and may include parameters.

command line: The third line of the main P.A.M. screen and the File Manager screen containing the blinking cursor. Characters you type in these screens appear in the command line. When you press (Return), the computer attempts to execute what you typed.

continuous memory: Memory that is never lost because the computer never really turns off—only the *display* turns off. When the display turns on again, it shows the same characters as it did just before it turned off. All files in memory also remain, and the computer's operating mode is unchanged.

control code: An ASCII character code that can cause a specific action to occur instead of the displaying of a character. In the ROMAN8 character set, the ASCII character codes of 0 through 31, 127, 128 through 159, and 255 are reserved for control codes. Control codes can be entered by pressing (CTRL) and another key. Control codes are also referred to as control characters.

control sequence: A control code or escape sequence.

current line: The line on the screen that contains the cursor.

cursor: A blinking box or underscore indicating where the next typed character will go. In the P.A.M. screen, the cursor appears only in the command line.

D

datacom: Short for "data communications." This is the software and hardware that lets your computer communicate with another computer or external device.

datacom configuration: Internal parameter settings used to control data communications. These settings specify factors such as transmission speed.

datacom configuration screen: The P.A.M. screen you use to specify the settings to control datacom communications.

datacom interface: Refers to the built-in serial port, the optional HP 82983A 300/1200 BPS Modem, or the optional HP 82164A HP-IL/RS-232-C Interface. *See also* **datacom**.

default: The action or value automatically invoked by the computer unless you specify otherwise. For example, the original settings in the System Configuration screen are default settings. They are re-established whenever you reset the computer or when you press Default Values ((f5)).

default directory: Same as displayed directory. The most recently chosen root directory or subdirectory. You can change the default directory any time you use Choose Dir (f4) in the File Manager. The default directory name is displayed when you press File Manager (f2).

default drive: The most recently chosen disc drive. Change the default drive by using Choose Dir (f4) in the File Manager screen or by typing the drive letter followed by a colon in MS-DOS. The default drive is displayed in the upper right corner of the display in P.A.M. and the File Manager, and usually as part of the command line prompt when using MS-DOS commands.

destination: In a data transfer operation, the file, directory or disc to which data is transferred. In a copy operation, the disc being copied to is referred to as the destination. *See also* **source**.

destination file: A file into which you want to copy a source file. *See also* **target**.

directory: A file maintained internally by the computer and which contains pointers to other files and directories. *See also* **subdirectory**.

directory path: *See* **path name**.

disc: A storage medium for computer files. There are *physical discs* for external disc drives and *electronic discs* for the internal disc drives. *See also* **electronic disc**.

display: 1. The device on which information is shown by the computer. 2. The act of displaying information on the LCD. *See also* **screen**.

displayed directory: *See* **default directory**.

display pointer: *See* **pointer**.

download: To receive and save data from another computer. *See also* **upload**.

drawer: The long, flat containers that fit into the bottom of the Portable PLUS. *Software drawers* hold software modules and *memory drawers* hold memory cards.

drive A: The built-in electronic read/write disc (Edisc) contained in user memory. *See also* **main memory** *and* **user memory**.

drive B: The electronic read-only (ROM) disc containing the operating system and programs for your computer—the contents of drive B cannot be erased, deleted, or changed. Part of drive B is in the built-in system ROM that contains the operating system and part is in software modules that you install.

drive identifier: The letter you use to access a particular disc drive. For example, the drive identifier for the first external disc drive is C. The computer assigns a drive identifier to every drive it detects.

E

Edisc: *See* **electronic disc**.

editing keys: Any keys on the keyboard that can be used for updating information on the screen by deleting, clearing, and inserting characters. Keys used for moving the cursor, rolling the window, and moving the display pointer are also considered editing keys.

EDLIN: The MS-DOS line editor. Refer to chapter 11 in this manual.

electronic disc: Computer memory that looks like a physical disc to the operating system—and which is accessed in the same way. Electronic disc can be read/write (RAM or Edisc) or read-only (ROM) memory. *See also* **drive A**, **drive B**.

end-of-line (EOL) sequence: The sequence of characters sent at the end of a line. The default EOL is carriage return/line feed.

escape sequence: A string of two or more characters that begins with the escape (ESC or ₹) character and performs a specific function when received by a device, such as a printer, the display, or a terminal.

Extended keyboard: The HP Roman8 Extended Character set, accessed by the (Extend Char) key. The extended characters are not printed on the keys. Refer to "The Extended Character Keyboard" on page 2-4.

external modem: Any modem that must be connected to a serial interface to be used with your computer. *See also* **modem**.

F

file: A part of memory or a storage medium that is uniquely identified by its file name. A file is treated by the operating system and application programs as a separate unit of information that can be manipulated independently of other files. Files can contain data or programs, or both.

file extension: A period plus a one- to three-lettered tag on a file name. You can use this in addition to the eight characters allowed for a file name. File extensions may be used to identify a group of related files (for example, `STAFF.MTG`, `SALES.MTG`, etc.). They may also be used by the operating system and certain application programs to identify types of files (for example, program files or back-up files).

File Manager: That part of P.A.M. that guides you through common operations on files.

file name: A sequence of 1 to 8 characters used to identify a particular file. *See also* **file extension**.

file path name: *See* **path name**.

file system: The hierarchical structure of directories and subdirectories that is used for storing and organizing information in the computer. The location of any file or directory in the file system can be expressed in relation to the root directory by using a path name. *See also* **path name**.

formatting: Preparing a disc for storing information and creating a file system on the disc. Formatting a disc erases the contents of the disc.

function keys: The eight keys labeled (f1) through (f8) on the top row of the keyboard. Functions assigned to these keys often change when a new screen is displayed. Function-key labels appear in the eight blocks at the bottom of many screens. The position of these blocks on the screen corresponds to the position of the function keys on the keyboard. *See also* **menu**.

function-key label: *See* **menu label**.

H

host: Any computer you can access from your personal computer by using a terminal emulator program.

HP-IB: The abbreviation for Hewlett-Packard Interface Bus. This interface standard allows multiple devices to be accessed through one interface. To use HP-IB devices with the Portable PLUS, you need the HP 82169A HP-IL/HP-IB Interface.

HP-IL: The abbreviation for Hewlett-Packard Interface Loop. This interface allows multiple devices, such as disc drives, printers, and plotters to be accessed through the HP-IL connector on the rear of the computer.

HPLINK: A program file in your computer that enables it to communicate with another computer through HP-IL. HPLINK allows you to share data files and program files simply and easily.

I

interface: The link between your computer and another piece of equipment. It can be equipment or programs and is designed to communicate information from one system of computing devices or programs to another.

interface loop: *See* **HP-IL**.

interface port: A socket (HP–IL or RS–232), on the computer, for plugging in interfacing cables. The cables can then be connected to peripheral devices to work with the computer.

inverse video: A type of display showing light characters on a dark background, as opposed to the normal display showing dark characters on a light background.

I/O connection: The abbreviation for Input/Output connection. A mechanism by which a computer communicates with peripherals or other computers.

L

log off: The procedure for terminating contact with a host computer. Causes the computer to close the channel it had opened to your personal computer.

log on: The procedure for opening a channel to a host computer after making connection with the computer.

E

M

main memory: Memory used as work space for the current application and the current, open file. Main memory is that part of user memory (RAM) *not* used for electronic-disc memory. *See also* **drive A** *and* **user memory**.

memory card: Additonal user memory that you can purchase and have installed in a memory drawer by your dealer or sales representative. A card consists of 128K of memory (RAM), and you can add up to two cards in a memory drawer. *See also* **drawer.**

memory drawer: *See* **drawer**.

menu: A list of choices presented by a program from which the user can select operations for the program to perform. Examples include the function-key labels that appear as inverse video blocks at the bottom of a screen and the inverse video application labels on the main P.A.M. screen. *See also* **applications menu label** *and* **menu label**.

menu label: An inverse-video block on the lower portion of the screen that corresponds to a specific function key. The menu labels can be turned on or off with (Menu). The eight menu labels correspond to the eight function keys.

modem: A conversion device for receiving data from one computer and transmitting it to another over phone lines. If used with acoustic cups (to hold a telephone receiver), it is an *acoustic modem*.

MS™-DOS: Microsoft®-Disc Operating System, the operating system used by the Portable PLUS.

N-O-P

Numeric keypad: The set of number keys embedded in the typewriter keys that you access by pressing (Extend char) (Select). Each key that is active when you select the numeric keypad is indicated by a blue number on the front of the key. An N is displayed in the status block when numeric keypad is selected.

operating system: The built-in software used by the computer to manage memory, processing, and peripheral devices. *See also* **MS™-DOS**.

packing: The process of reclaiming wasted space between files on a disc (including the electronic disc in drive A).

P.A.M.: Personal Applications Manager. The *user interface* in many Hewlett-Packard computers, including the Portable PLUS. P.A.M. provides a series of screens and menus to guide you through operations involving settings, files, and applications. *See also* **user interface**.

PAM.ALM: The file you create when you want to set alarms. This file can be created using any text editor program including EDLIN or MemoMaker.

PAM.MNU: The file you create when you want additional entries on the P.A.M. screen. You can create this file on drive A and on flexible discs. This file can be created using any text editor program including EDLIN or MemoMaker.

parameter: A data item that is placed after a command to specify how an operation is to be performed or to supply other needed information. Programs and other processes also use parameters.

path name: A list of directory names separated by back-slashes, where each directory is a subdirectory of the one that precedes it. The last item in the path name may be either a directory or a file. Path names are used to specify directories or files that can be accessed through the file system. A leading back-slash represents the root directory. *See also* **root directory** *and* **subdirectory**.

peripheral: Any device—such as a printer, disc drive, plotter or modem—that is not built in to a computer, but rather is connected to a computer through an interface.

pointer: A downward arrow or other symbol indicating a selection. P.A.M. uses a pointer to indicate the selection of an application, a file, or a directory.

R

RAM: Random-Access Memory. This is the part of memory from which the computer can both store and retireve information. *See also* **drive A**, **main memory**, *and* **user memory**.

random-access memory: *See* **RAM**.

read-only memory: *See* **ROM**.

remote terminal: Using your personal computer to communicate with a host computer in the same way that you would with one of the host's own (dedicated) terminals.

ROM: Read-Only Memory. This is the part of memory that contains permanently stored information and which cannot be changed.

root directory: The topmost directory in the hierarchical file structure of any medium (such as the internal Edisc or an external flexible disc or fixed disc). This directory is identified by a back-slash (\). All files and directories contained on a file medium are accessed through the root directory.

S

screen: 1. The liquid crystal display (LCD) on which your typing is shown and on which messages appear. 2. One of several operating environments that the computer can be in (such as the Main P.A.M. screen or the System Configuration screen). *See also* **display**.

source disc: The disc from which you want to copy a file. *See also* **target disc**.

source: In a data transfer operation, the file, directory, or disc from which data is transferred. In a copy operation, the file being copied from called the source file. *See also* **destination**.

source file: A file that you want to copy into another file. *See also* **destination file**.

status block: Located at the bottom of the screen, in the middle of the menu. Displays the cursor position (line and column), the time, an I (when the keyboard is in insert mode), N (when the numeric keypad is active), and a C (when caps lock is active).

subdirectory: A directory contained in another directory. *See also* **directory**.

System Configuration: The P.A.M. screen that establishes the settings for a wide range of computer operations, including memory allocation, peripheral devices, interface selections, printer settings, and other operating modes.

T

target: The destination file or directory for an operation that transfers data from one location to another. A parameter is usually used for identifying the target. In a copy operation, for example, the target directory is the directory that receives the copy of the source file. *See* **destination**.

target disc: The disc that will receive the copy in any copy operation. *See also* **source disc.**

text: Alphabetic character data used to represent written material in a file. Text is usually intended for a user to read and not as a specific instruction for the computer.

text editor: An application program that allows you to create text files, enter text, and perform various editing functions such as searching and replacing characters, moving blocks of text, and justifying margins. Some text editors allow you to designate different print modes such as underline or bold.

text file: A file that contains text or other data in a character format.

toggle key: A key that causes the computer to alternate between two operation modes each time it is pressed. The (Num) key ((Extend char)(Select)) is an example of a toggle key.

U

upload: To send a file to another computer. *See also* **download**.

user interface: The method the computer uses to communicate with you, the user. In the Portable Plus this is P.A.M., the Personal Applications Manager, which supplies screens, menus, and function-key labels from which you can choose programs, operations, and functions. It also supplies short instructions.

user memory: All of the random access memory (RAM) in the computer. This includes built-in RAM and any RAM in the optional HP 82981A Memory Drawer. User memory is divided into Main memory and electronic disc (Edisc) memory by a movable partition. *See also* **drive A** *and* **main memory**.

user menu: *See* **menu**.

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