



Pinpoint

Pinpoint™

Point-to-Point™

A Computer Communications Program
for the Apple IIc and IIe

by

Gary B. Little



Pinpoint Publishing
Emeryville, California

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First Edition

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Preface

Point-to-Point is a communications program for Apple II™ owners. Like all Pinpoint products, Point-to-Point is designed to help you get more from your Apple computer. Our package includes this user guide and a ProDOS™ disk containing Point-to-Point.

Isn't it nice to receive software on non-copy protected disks? We distribute all our software, including Point-to-Point, on non-copy protected disks because we want our software to be convenient to use, and because we trust you. Please remember that giving a copy of our software to a friend is a violation of copyright laws. Illegal copying of our software also makes it harder for us to make a living selling the software you'll be using and depending on every time you use your computer.

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We can serve you more quickly if you have the following information readily available when you call:

- Registration Number of Point-to-Point (*required for technical support*)
- Version # of Point-to-Point
- Version #'s of RAM card software
- Computer model type
- Modem type and interface card
- Plus other information you think is important

Technical Support Telephone Number

(415) 654-0286 • 9 am to 5 pm West Coast time
Thanks!

Acknowledgement

I would like to acknowledge the efforts of Bruce Tognazzini, Manager of Human Interface at Apple Computer, Inc. in designing the "filecard metaphor" used by Apple's best-selling program, AppleWorks.™ It was after a meeting with Bruce that I first realized the importance of using the same metaphor with Point-to-Point. As a result, Point-to-Point is now as easy to use as AppleWorks itself and is an ideal companion to it.

About the Author

Gary B. Little is an expert Apple II and Macintosh™ programmer. He is a founding member of the Apples British Columbia Computer Society and of SAGE (Serious Apple Group, Eh!), and is actively involved in several other computer-related business organizations. He is also one of the system operators of the Apple II Special Interest Group on the Delphi information utility located in Boston, Massachusetts. Gary has written numerous articles for several computer publications (notably *A+*, *Nibble*, and *Call A.P.P.L.E.*) and is the author of three recent microcomputer books, *Inside the Apple IIe*, *Inside the Apple IIc*, and *Apple ProDOS: Advanced Features for Programmers* (1985, Brady Communications). Two other books for Brady will be published in 1986: *Telecommunicating with the Apple II Family* and *Macintosh Assembly Language: A Guide for Programmers*. Gary lives in Vancouver, British Columbia with three computers, two cats, and one wife.



Gary B. Little — Author of Point-to-Point software and user guide.

Chapter 1

Introduction

Introducing Point-to-Point

Point-to-Point is a computer-to-computer communications program that works with either an Apple IIe™ with an Extended 80-column Text Card,™ or an Apple IIc.™ You can use it to call up and interactively chat with other computer systems around the world through the international telephone network. This includes commercial information utilities like The Source,™ CompuServe,™ and Delphi,™ the hundreds of non-commercial Computer Bulletin Board Systems, and other personal computers like your Apple II. Communication can also take place through a cable connected directly to another computer in the same room as your Apple.

To make it as easy as possible to connect to another computer, Point-to-Point lets you create a telephone directory containing a list of the telephone numbers of computer systems you frequently call. Each telephone number is associated with its own group of communications parameters so you never have to change them to match the requirements of the other computer — they are loaded automatically after you've defined them once. A telephone number is also associated with a group of sixteen command phrases, called *macros*, which can contain any text you like. You'll use them most often for storing all those password and signon sequences that are often so difficult to remember. When you're connected to another system, you can send any macro phrase quickly, easily, and without error, with a few simple keystrokes.

Point-to-Point also contains an easy-to-use text editor you can use to prepare a document for transmission to another computer before connecting to it via the telephone. Alternatively, you can prepare a document with any Apple II word processor, such as AppleWorks, that is able to store its documents in standard textfiles. (A *textfile* is a particular type of disk file that contains lines of readable text.) Once the document is ready, you can dial up the computer and send it quickly and easily. You can also send any other type of file directly from disk using the standard Xmodem error detection and correction protocol. This includes the standard word processing, database, and spreadsheet files of AppleWorks.

Apple program files can also be sent in readable form as textfiles because Point-to-Point comes with three subsidiary programs that let you convert

Applesoft and binary (machine language) programs and Apple Pascal™ program textfiles into ProDOS textfiles.

The ability to prepare a document, file, or program before starting to communicate with another computer means you can minimize expensive connect time and long-distance toll charges. Conversely, you can easily direct Point-to-Point to store in a 17,000-character *memory buffer* (a temporary data storage area in memory) or save to disk all the text sent to you by another computer. After you receive it, you can hang up and analyze it at your convenience later, when your time is free.

Point-to-Point includes many other useful features. Some of these are as follows:

- ▲ Its human interface is modeled after the familiar AppleWorks filecard metaphor.
- ▲ Point-to-Point works with any ProDOS-compatible disk device. This includes the Disk II,™ the UniDisk 3.5,™ the ProFile,™ and the RAMdisk created by the Apple Memory Expansion Card.™
- ▲ You can save, load, delete, and rename files, and catalog the disk from within Point-to-Point.
- ▲ You can format and print the contents of the memory buffer, a textfile, or an AppleWorks word processing file from within Point-to-Point.
- ▲ Incoming information can be sent to the printer at the same time it is being displayed on the screen.
- ▲ Pinpoint and RunRun compatibility gives you convenient desktop accessories at the touch of a key.

Hardware Requirements

Here's What You Need

Point-to-Point works with the following computer equipment:

- ▲ Apple IIe (standard or enhanced version) with an Extended 80-column Text Card or an Apple IIc.
- ▲ All ProDOS-compatible disk drives.
- ▲ One of the following internal, plug-in modems (unless you are using the slotless Apple IIc, of course):
 - (a) Hayes Micromodem II™ or Hayes Micromodem IIe™
 - (b) Novation Apple-Cat II™ (300 baud version)
 - (c) Transend (SSM) Apple ModemCard™
 - (d) Prometheus ProModem 1200A™
 - (e) Cermetek AppleMate 1200™
 - (f) Multitech Multimodem™
 - (g) Zoom Telephonics ZOOM/Modem IIe™
 - (h) Microcom Era 2™

or an acoustic coupler or data set connected to one of the following asynchronous serial interface cards (or to one of the two serial ports built in to the Apple IIc):

- (a) Apple Super Serial Card™
- (b) Prometheus VersaCard™ (serial option)
- (c) CCS Model 7710A Asynchronous Serial Interface Card™
- (d) CCS Model 7711 Asynchronous Serial Interface Card™
- (e) Videx PSIO Card™
- (f) SSM ASIO Apple Serial I/O Interface™
- (g) Advanced Logic Systems Dispatcher™
- (h) Apple Communications Card™
- (i) SSM AIO Card™ (serial option)
- (j) AST Research Multi-I/O Card™
- (k) Macrotech Macrocomm Serial I/O Card™
- (l) Street Electronics BusinessCard™
- (m) Quadram Serial Interface Adapter™
- (n) Quadram Multicore™ (serial option)

or one of the following intelligent modems:

- (a) Hayes Smartmodem™
- (b) Apple Personal Modem™
- (c) Apple Modem™
- (d) Prometheus ProModem™
- (e) U.S. Robotics Courier Modem™
- (f) U.S. Robotics Password Modem™
- (g) Anchor Automation Signalman Mark XII Modem™
- (h) Universal Data Systems 212A/D Modem™

connected to one of the asynchronous serial interface cards described in the previous list (or directly to one of the two serial ports built in to the

Apple IIc). Any other modem compatible with the Hayes Smartmodem should also work.

- ▲ Serial or Parallel Printer (optional). Simultaneous video display and printer output while in communications mode is supported if you're using any of the following printer interface cards (or for either of the two serial ports built in to the Apple IIc):
 - (a) Apple Parallel Interface Card™
 - (b) Apple Communications Interface Card™
 - (c) CCS Model 7710A Asynchronous Serial Interface Card™
 - (d) SSM AIO Board™ (serial option) or SSM ASIO Board™
 - (e) PKASO™ parallel interface card
 - (f) Grappler™ or Grappler+™ parallel interface cards
 - (g) Videx UniPrint Parallel Printer Interface™
 - (h) any printer interface card that adheres to the standard Apple firmware protocol (this includes the built-in printer interface in the Apple IIc, the Apple Super Serial Card, and the Videx PSIO Card and the Street Electronics BusinessCard)

- ▲ Clock (optional). Any ProDOS-compatible clock card. (You need such a card if you want to take advantage of Point-to-Point's "elapsed time" feature.) This includes the following clocks:
 - (a) Thunderware Thunderclock™
 - (b) Applied Engineering Timemaster II H.O.™
 - (c) Practical Peripherals ProClock™
 - (d) Quadram Corporation Clock/Calendar card™
 - (e) Street Electronics BusinessCard™
 - (f) CCS Model 7424 Clock/Calendar card™
 - (g) AST Research Multi-I/O card™
 - (h) Prometheus VersaCard™
 - (i) CPU //c System Clock™

Keyboard Information

Keystrokes

In this manual, brackets, [and], are used to enclose a key being referred to. For example, [ESC] refers to the ESC key and [9] refers to the 9 key. When asked to press a key such as [ESC], simply press ESC on the keyboard — the brackets are used for clarity only and must not be entered.

Control Characters

Control characters are denoted by [CONTROL-X] where X represents any alphabetic character. To enter a control character from the keyboard you must press two keys at the same time. The procedure to follow is to first press the [CONTROL] key and then, while still holding it down, to press and release the associated character key.

When you're using Point-to-Point's Editor, control characters are displayed as the corresponding highlighted alphabetic characters. [CONTROL-B], for example, is displayed as an inverse, upper-case [B]. Control characters are not displayed when you're communicating with another computer, however.

The ⌘ and ⌘ Keys

The Open-Apple Key (⌘-key) on the left side of the space bar is often used to enter Point-to-Point commands. These commands are denoted by [⌘-X] where [X] is the key to be pressed and released while holding down the ⌘-key. The Closed-Apple Key (⌘-key) is on the right side of the keyboard. It is used to send macro phrases in the same way as the ⌘-key.

The RESET Key

You should not press the RESET key while you are using Point-to-Point. If you do, and you are using an internal modem like the Micromodem, Apple-Cat II, or ModemCard, Point-to-Point immediately hangs up the telephone. In addition, the program ends just as if you had entered the QUIT command from the Main Menu.

Selecting Items from a Menu

In this section we're going to see how to use Point-to-Point to select items from a menu and how to modify the values associated with those items representing changeable parameters.

Point-to-Point uses a menu item selection routine that is common to its Main Menu and all other menus. Item names are numbered and arranged in a vertical column. To select one, you must move a horizontal white bar, which usually appears over the first item in the menu when you call it up, over the desired item and then press [RETURN]. You can use the up- and down-arrow keys to position the bar over any item in the menu.

If you press the down-arrow key, the white bar moves down one position in the menu (unless it is already at the last item, in which case it goes to the first item). If you press the up-arrow key, the bar moves up one position in the menu (unless it is already at the first item, in which case it goes to the last item).

There is an alternative method of item selection you can also use. To the left of each item in a menu is a number. To select a given item, simply press its number and then press [RETURN].

If you're in a menu and you want to leave it and go to the previous menu, press the [ESC] key. The name of the menu that you'll go to is always indicated in the top right-hand corner of the screen.

If the menu item you select represents a modifiable parameter, Point-to-Point does one of two things. If you select a parameter that can be set to one of two states (e.g., ON/OFF, YES/NO, HIGH/LOW), the parameter automatically toggles to the other state. If the parameter can take on more than two values, a statement appears on the bottom line of the screen asking you to enter the new value. You do this by typing in a new value and pressing [RETURN].

Entering Lines

Point-to-Point often asks you to enter a line of information in response to a menu item you've selected. For example, you must enter the name of a file when you want to save the memory buffer to disk.

In general, Point-to-Point displays a standard answer (called a *default*) when it asks for a response so that you can quickly accept it by pressing [RETURN].

Of course, you can type in a completely different response if you want. When you're doing so, use the following editing keys to assist in changing the default response or your new entry:

LEFT-ARROW and RIGHT-ARROW

The arrow key commands move the cursor back and forth on the line. The cursor marks the position in the line where the next character you type is to be placed.

[$\text{\textcircled{C}}$ -E]

This command toggles between insert and overstrike mode. In *insert* mode the cursor is a blinking underscore and any character you type is inserted in front of the character beneath the cursor. The characters beneath and to the right of the cursor move one position to the right to make room for the new character. In *overstrike* mode the cursor is a blinking box and each character you type replaces the character at the cursor position.

[$\text{\textcircled{C}}$ -Y] or [Control-Y]

This command erases the part of the line from the current cursor position to the end of the line.

[DELETE]

This command erases the character to the left of the cursor. The characters beneath and to the right of the cursor move one position to the left.

[ESC]

If the cursor is not on the first character of the line, this command restores the original default response and positions the cursor over the first character. If you're at the beginning of the line, the line entry procedure is cancelled and you'll return to the previous menu.

[RETURN]

When you're through typing in your response, press [RETURN] to enter it. Unlike some other programs, the part of the response line after the cursor position is considered to be part of the response. If you don't want to include it, use the [$\text{\textcircled{C}}$ -Y] command to erase it before pressing [RETURN].

Chapter 2

Getting Started

Starting Up and Configuring Point-to-Point

Before you can use Point-to-Point, you must properly attach your modem and serial interface card to your Apple IIe or IIc. See Appendix A: "Installing Your Modem" for guidelines on how to do this.

Point-to-Point is supplied on a write-protected disk to protect it and you. The program is not copy-protected so you should first make a working copy that you can configure and use. Use the FILER or System Utilities program that comes with the Apple II to make the working copy.

To begin a session with Point-to-Point, turn off the power to the Apple, insert the working copy of your Point-to-Point startup disk into your startup drive and then turn the power back on. If the Apple is already on, you can "warm boot" by pressing [CONTROL-⌘-RESET].

Alternatively, if Apple's ProDOS disk operating system has already been loaded, and you're in Applesoft command mode (that's where you see the] prompt symbol), you can begin a session with Point-to-Point by inserting the startup disk in any drive and entering a command of the form:

```
-PTP.SYSTEM,S6,D1 [RETURN]
```

The ",S6" indicates the disk drive slot number (usually 6) and ",D1" indicates the drive number (usually 1).

If you have previously transferred the main Point-to-Point program file, called PTP.SYSTEM, and all the other files on the startup disk, to a ProDOS subdirectory that is not the currently active directory, you have to specify a complete pathname to run the program. For example, if PTP.SYSTEM is stored in a subdirectory called POINT.TO.POINT that is contained in a disk directory called /PROFILE, enter:

```
-/PROFILE/POINT.TO.POINT/PTP.SYSTEM [RETURN]
```

from Applesoft command mode to start up the program.

Use the ProDOS FILER or System Utilities program to create a subdirectory on a disk and transfer the files on the Point-to-Point startup disk to the subdirectory. You will probably want to do this if you are using a high-capacity disk device like the UniDisk 3.5 or the ProFile hard disk.

For further hints on copying Point-to-Point to your high-capacity drive, see Appendix G: "Installing on High-Capacity Drives and RAMdisks."

If you're not familiar with the concept of a ProDOS pathname or a directory, read Appendix B: "Pathnames, Directories, and Prefixes" for some background information.

When Point-to-Point starts to run, you'll first see a screen containing the program's copyright notice. To continue, press the space bar or [RETURN] to see a Hardware Setup Menu.

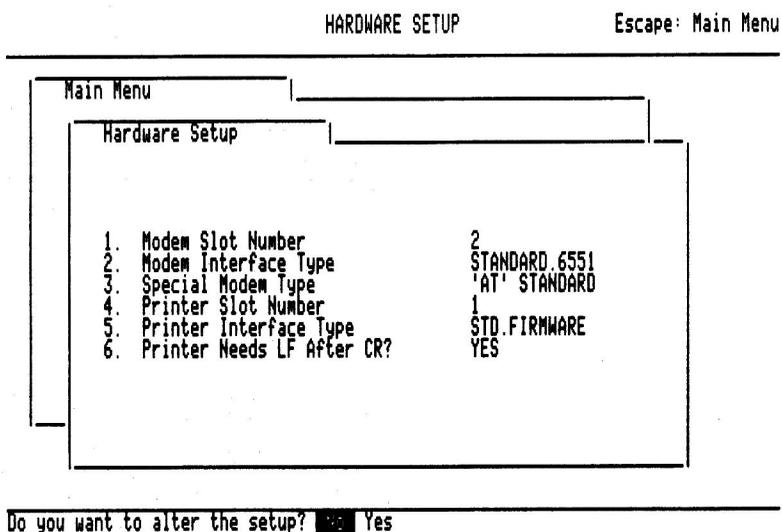
If you have previously configured Point-to-Point for your hardware, the following question appears at the foot of the screen:

Do you want alter this setup? No Yes

and the "No" response is highlighted. If you don't want to change any of the values shown for the hardware parameters, just press [RETURN] to continue on to the Main Menu. If you do, press the right-arrow key to highlight "Yes" and press [RETURN], or just press [Y].

If you haven't previously configured Point-to-Point, you're ready to reconfigure right away and the inverse bar is already positioned on the first item in the Hardware Setup Menu.

Figure 2.1
Hardware Setup



The menu in Figure 2.1 contains a list of six hardware parameters and their current settings. (The values shown are for an Apple IIc using an Apple Personal Modem. Your configuration may be different.)

You must tell Point-to-Point the correct values for these parameters so it will function properly with your modem and printer. To select a parameter to be modified, simply use the arrow keys to move the inverse bar over the name of the parameter and press [RETURN].

Once all the hardware parameters have been properly set up, press [ESC] to go to Point-to-Point's Main Menu. Note, however, that if no value for the "Modem Slot Number" or "Modem Interface Type" has been specified before you do this, you will see the message:

You must specify a MODEM SLOT NUMBER and
a MODEM INTERFACE TYPE before you can leave.

If you see this message, press the space bar to continue, and then set the "Modem Slot Number" and "Modem Interface Type" parameters before attempting to go to the Main Menu again.

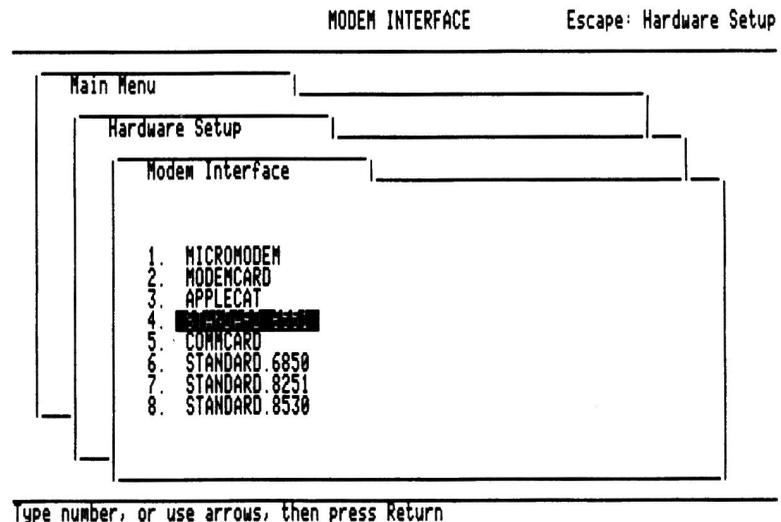
When you quit the program, Point-to-Point always memorizes the hardware setup you've specified. This means that after you configure once you'll never have to alter the hardware setup again unless you start using a different modem or printer.

A complete description of each of the hardware parameters follows:

Modem Slot Number

You must set this parameter equal to the slot number in which the internal modem card, or the modem interface card, has been installed. Slot numbers 1 through 7 (except 3) are all acceptable but slot #2 is recommended for such a card. If you are using an Apple IIc, this parameter is initially set equal to 2 but can be changed to 1 if required.

Figure 2.2
Modem Interface Type



Modem Interface Type

Set this parameter to the type of modem, or modem interface card (also called an asynchronous serial interface card), you are using.

After you select this parameter, a numbered list of modem interface types is displayed; just select the name of the interface type you are using. The modem interface types supported are shown in Figure 2.2.

MICROMODEM refers to the Hayes Micromodem and compatibles such as the ZOOM/Modem IIe.

MODEMCARD refers to the Transend (SSM) Apple ModemCard and the Multitech Multimodem IIe. Apart from the method they use to tone dial, they are compatible with the Hayes Micromodem.

APPLECAT refers to the Novation Apple-Cat II (300 baud version). The 1200-baud version is not supported at present.

STANDARD.6551 refers to any card that uses the "6551 UART" serial interface. This includes the Apple Super Serial Card, the Prometheus ProModem 1200A, the Microcom Era 2, the Cermetek AppleMate 1200, the CCS Model 7711 Card, and the serial option of the Videx PSIO card. It also includes the built-in serial port in the Apple IIc.

COMMCARD refers to the original Apple Communications Card (it is no longer manufactured).

STANDARD.6850 refers to any card that uses the "6850 ACIA" serial interface. This includes the AST Multi-I/O Card, the serial option of the Prometheus VersaCard, the CCS Model 7710A Card, the serial option of the SSM AIO board, the SSM ASIO Apple Serial I/O Interface, and the ALS Dispatcher.

STANDARD.8251 refers to any card that uses the "8251 ACIA" serial interface. This includes the serial option of the Quadram Multicore.

STANDARD.8530 refers to any card that uses the "8530 SCC" serial interface. The card must also be compatible with the standard Apple serial interface command structure.

Special Modem Type

Set this parameter to the type of "intelligent" or "smart" modem — we'll call it a Special Modem — you have connected to an asynchronous serial interface card (that is, the modem interface card). (Note that some Special Modems are single-board, internal modems and no separate modem interface card is required.) These Special Modems support several special commands, including three that Point-to-Point uses to dial, answer, and hang up the telephone.

After you select this parameter, a numbered list of special modems is displayed. If you are not using a Special Modem, or yours is not supported, select the first item ("NONE"); otherwise, select the one that applies. The screen in Figure 2.3 appears, listing the special modems supported.

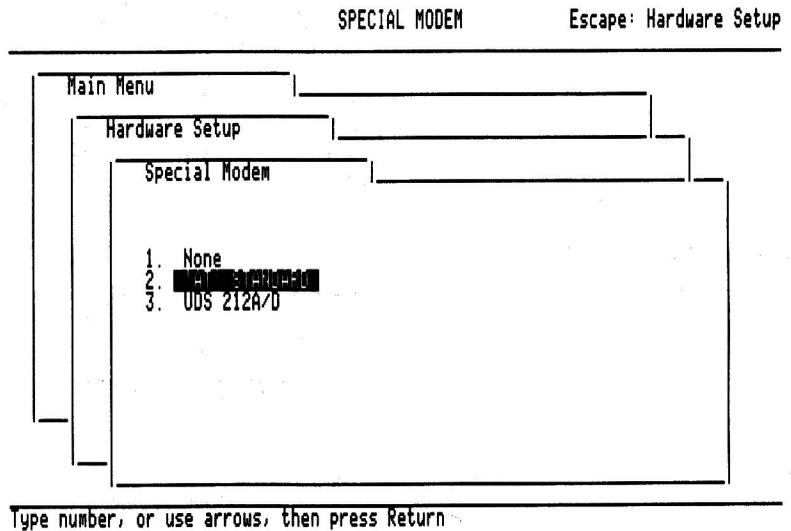
'AT' **STANDARD** refers to the Apple Modem, the Apple Personal Modem, the Hayes Smartmodem or any compatible modems that use the famous Smartmodem ("AT") command set. These include the U.S. Robotics Password Modem, the Anchor Automation Signalman, the Cermetek AppleMate 1200, and the Prometheus ProModem 1200 or 1200A.

UDS 212A/D refers to the Universal Data Systems 212A/D modem. It uses a unique command set that is not compatible with the "AT" standard.

NOTE

Although the Prometheus ProModem 1200A and the Cermetek AppleMate 1200 are internal modems, they emulate the effect of an 'AT' STANDARD Special Modem connected to a STANDARD.6551 modem interface.

Figure 2.3
Special Modem Type



Printer Slot Number

Set this parameter to the slot number in which your printer interface card has been installed. Slot numbers 1 through 7 (except 3) are all valid, but #1 is recommended. If you are not using a printer, enter 0 for this parameter. If you are using an Apple IIc, this parameter must be set to either 1 or 2.

Printer Interface Type

Set this parameter to the type of printer interface you are using.

After you select this parameter, a numbered list of printer interface types is displayed; just select the name of the printer interface you are using. If the name of your interface is not in the list, select the first item ("NONE"). The printer interface types supported appear on your screen as illustrated in Figure 2.4.

STD.FIRMWARE refers to all those printer interface cards that adhere to the Apple standard firmware protocol. This includes the Apple Super Serial Card, the Videx PSIO parallel interface, the Videx UniPrint parallel interface, the CCS Model 7711, the Quadram Multicore, the Street Electronics BusinessCard, and the Serial Grappler. It also includes the built-in printer port on the Apple IIc.

STD.PARALLEL refers to the Apple Parallel Printer Interface Card, or equivalent (such as the parallel option of the Prometheus Versacard).

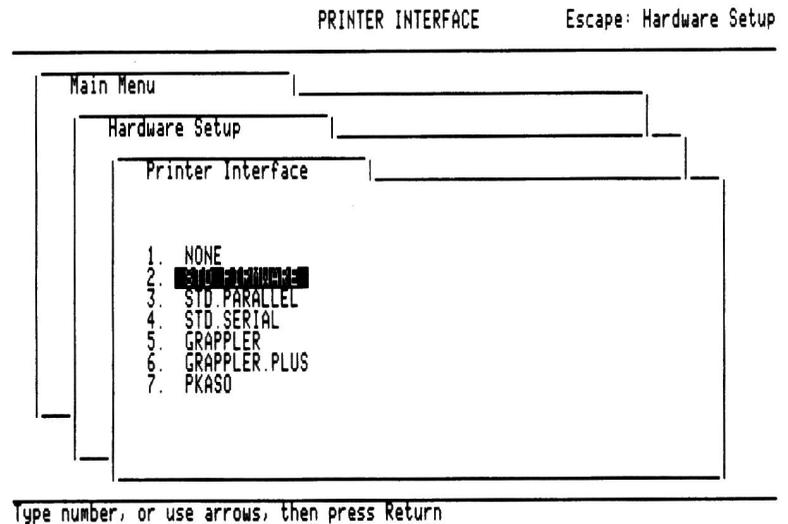
STD.SERIAL refers to the Apple Communications Card, the CCS Model 7710A, the SSM AIO board, the ALS Dispatcher, the Prometheus Versacard, SSM ASIO Board, and any other interface cards that use the "6850 ACIA" serial interface.

GRAPPLER and GRAPPLER.PLUS refer to the Orange Micro Inc. Grappler and Grappler+ interface cards. Do not confuse these cards with the Serial Grappler which uses the the STD.FIRMWARE printer interface type. PKASO refers to the Interactive Structures, Inc. Pkaso printer interface card.

If your printer card is not specifically mentioned above, try using the STD.FIRMWARE parameter. Most cards designed since 1982 adhere to Apple's standard guidelines.

If your printer interface card is supported, you can toggle the printer on and off while in communications mode using the [⌘-8] command. See the section in the next chapter entitled "Connect to this Telephone Number" for a discussion of this feature.

Figure 2.4
Printer Interface Type



Printer Needs LF after CR?

This parameter can be toggled between YES and NO. If it is set to YES, a line feed character (ASCII code 10) automatically follows every carriage return character (ASCII code 13) sent to the printer while in communications mode. You activate the printer in communications mode by entering the [⌘-8] command. If it is set to NO, no line feeds are sent.

If you find that printer output is double spaced when you're in communications mode, set this parameter to NO; if it is not spacing at all, set it to YES.

The setting of this parameter does not affect printing that originates from the Printing Menu.

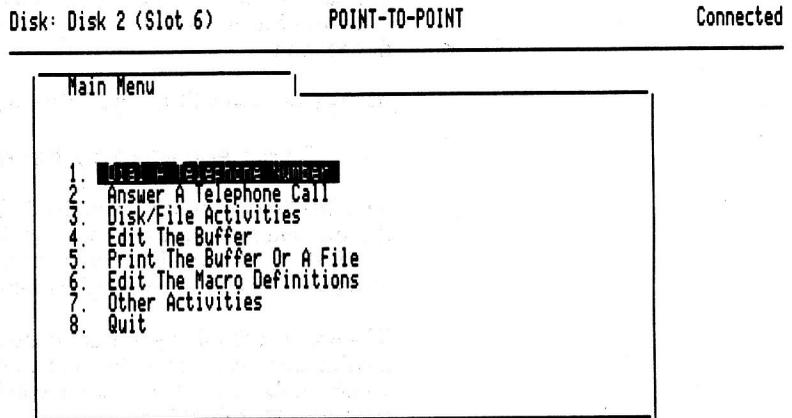
Chapter 3

Operation

Point-to-Point's Main Menu

Point-to-Point's Main Menu is very important because through it you access each of the subsystems that make up Point-to-Point. As with all Point-to-Point menus, it is framed by the outline of a filecard whose tab contains the name of the menu.

Figure 3.1
Main Menu



Type number, or use arrows, then press Return

In the top left-hand corner of the Main Menu screen is the name of the active disk directory. In the top right-hand corner is the status of the telephone connection: "Connected" or "Hung Up". If you are using a Special Modem whose DCD override switch is on (see Appendix A: "Installing Your Modem") the status is always "Connected" even if you are actually disconnected — in this situation, "Connected" simply means the Special Modem is turned on.

If you are using a clock, the current time is displayed in the lower right-hand corner of the screen.

The Main Menu is the one you see after you've configured the system at the beginning of a session with Point-to-Point. The commands in this menu are shown in Figure 3.1.

To select a command, use the up- and down-arrow keys to move the inverse bar over the command name and press [RETURN]. You can also move the bar to a particular command by pressing the number appearing to the left of its name.

We'll be seeing how to use the first seven commands in separate sections below.

The eighth command, Quit, is used to leave Point-to-Point so you can run another ProDOS system program like APLWORKS.SYSTEM (AppleWorks) or BASIC.SYSTEM (Applesoft). The file type mnemonic for a system program is SYS.

If the buffer is not empty when you select the Quit command, you will see this warning message:

Warning: The buffer is NOT empty.

If you want to save the buffer to disk before leaving, first press [ESC] to return to the Main Menu. Then enter the "Disk/File Activities" command so you can use the "Save A File To The Disk" command in the Disk/Files Activities Menu. We'll be taking a detailed look at these commands later in this section.

In any case, you will see the following question at the bottom of the screen:

Do you really want to do this? **No** Yes

with the "No" response highlighted. To select the response you want, use the left- and right-arrow keys to highlight "No" or "Yes", then press [RETURN]. Alternatively, you can press the letter "N" or "Y". You can also press [ESC] to return to the Main Menu.

When you verify that you want to quit Point-to-Point, the system configuration is saved to disk so that the next time you run Point-to-Point it will be in the same state as when you left it. The configuration is stored in a file called PTP.PARAMS.

If you've removed the Point-to-Point disk from the drive during your session, you will see the message:

Place the Point-to-Point STARTUP disk in a drive and press Return

and you should follow its directions. If, for some reason, you don't want to save the configuration (or you've lost the disk!), press [ESC] instead of [RETURN].

When you finally leave Point-to-Point, ProDOS takes over and usually asks you to enter the prefix and pathname of the next application to be run. ("Application" is another name for a system program.) If you want to enter Applesoft, for example, the application to run is BASIC.SYSTEM; the

prefix is the directory path in which BASIC.SYSTEM resides — it is /POINT.TO.POINT if you're using a copy of the Point-to-Point startup disk. (See Appendix B for an explanation of directories, pathnames, and prefixes.) From Applesoft you can run your own Applesoft BASIC programs or any of the three Point-to-Point utility programs on the startup disk: FP, ML, and PASCAL.

If you have previously installed a program selector utility like Pinpoint's RunRun, Quark's Catalyst 3.0 or International Solutions' MouseDesk, however, you will go straight to the "desktop" those programs define. From there you can use your mouse to double-click the next program you want to run. (See Appendix F: "Working with Program Selector Utilities.")

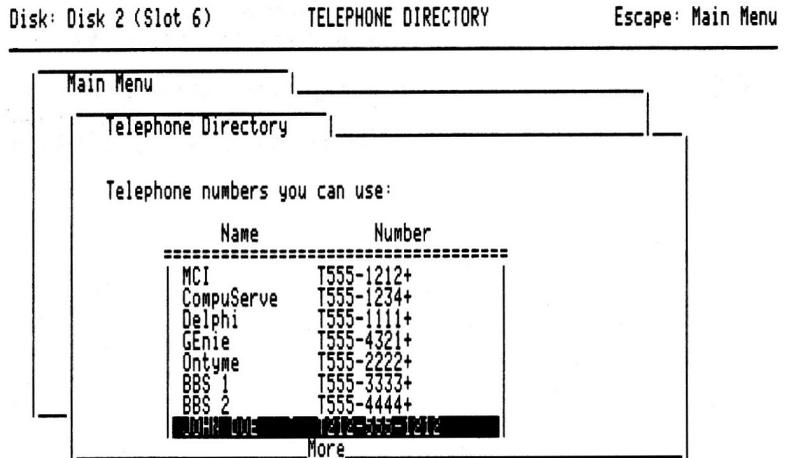
NOTE

Always remember to hang up the telephone before leaving Point-to-Point. You can do this by entering the [3-0] command in communications mode (see below) or, less elegantly, by turning off the power to your modem.

Dialing a Telephone Number

The first command in the Main Menu is "Dial A Telephone Number." It is the one you'll probably use most often because with it you can begin a communications session with another computer, either by dialing it up or by resuming a connection that's still in progress.

Figure 3.2
Telephone Directory Menu



Use up/down arrows to move through list, Return to select

Telephone Directory Menu

When you enter the "Dial A Telephone Number" command, a Telephone Directory Menu appears. (See Figure 3.2.) It holds the names and numbers of up to sixteen computer systems you may wish to communicate with. Select the system you want to dial by using the arrow keys to move the inverse bar over top of its telephone number, then press [RETURN]. For convenience, the bar is initially positioned over the last telephone number you used.

If you haven't previously stored any numbers in the directory, select one of the entries marked as unused. We'll see below how to assign a name, number, and communications parameters to it.

Telephone Number Menu

After you've selected a telephone number, the Telephone Number Menu appears in a filecard in front of the Telephone Directory Menu. This menu, shown in Figure 3.3, contains three commands.

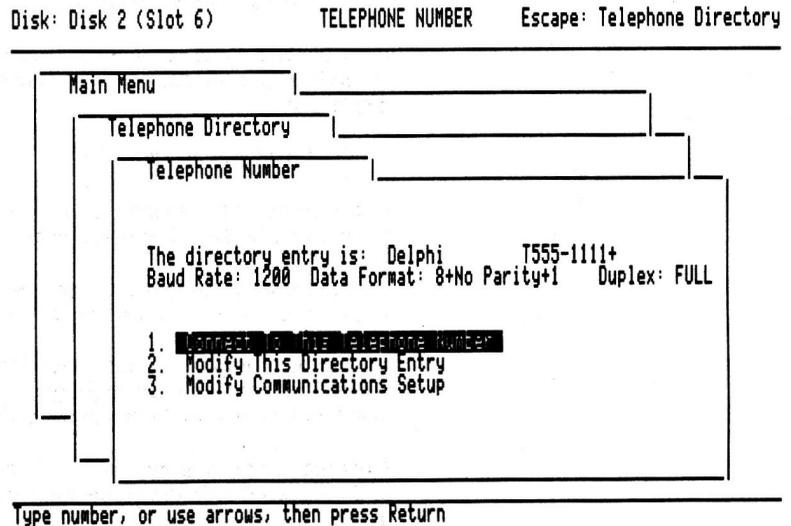
Just before the menu is the name and number of the currently active directory entry and the settings of three important communications parameters: the Baud Rate, Data Format, and Duplex. We'll discuss the meanings of these parameters when we look at the "Modify Communications Setup" command later in this chapter.

NOTE

If the number you picked from the directory represents an unused entry, Point-to-Point automatically selects the "Modify This Directory Entry" command for you. This forces you to enter a name and number for the directory entry. We'll describe this command later on below.

Let's now look at the meaning of the three commands in the Telephone Number Menu.

Figure 3.3
Telephone Number Menu



Connect To This Telephone Number

Use this command to connect to another computer and enter Point-to-Point's communications mode. In communications mode you can converse with the other computer by sending it commands from your keyboard and viewing its output.

You connect to the other computer either by dialing it or by resuming a communications session already in progress.

Before selecting this command, the communications parameters (in particular "Baud Rate," "Data Format," and "Duplex") must be set to the values expected by the system you are about to call. Modify these parameters using another command in the Telephone Number Menu, "Modify Communications Setup." (See Figure 3.3.)

The most common settings used by other computers are a "Baud Rate" of 300, a "Data Format" of 8+No Parity+1 (8 data bits/no parity/1 stop bit), and a "Duplex" of FULL, and these are the initial default values used by Point-to-Point. Be sure to change them if your system requires different values.

The method of connecting to another computer through the telephone system depends on the type of modem you are using: internal auto-dial, a Special Modem, or an external dumb modem. Let's look at each method in turn.

Internal Auto-Dial Modems

The connection procedure is very simple if you're using an internal auto-dial modem such as the Micromodem, ModemCard, or Apple-Cat II.

When you select the "Dial This Telephone Number" command, and you are not already connected to the other computer, Point-to-Point dials the telephone number and displays the following message:

Dialing: [telephone number]

Once the telephone number has been dialed, Point-to-Point waits up to 30 seconds for a response. If there is none, the following message is displayed:

No answer or busy.

and it hangs up the telephone. If you see this message, press the space bar to return to the Telephone Number Menu.

You can also return to the Telephone Number Menu by pressing [ESC] while Point-to-Point is waiting for the answering computer to respond.

If the other computer does answer, Point-to-Point causes your modem to connect to it and you can begin typing in commands from the keyboard. We'll look at how to do this in more detail in the next section.

Note that if you've previously connected to the other computer, and you're still connected to it, the phone number is not re-dialed. Instead, you automatically re-enter communications mode and you can start sending to it right away.

Special Modems

If you are using a Special Modem (such as the Apple Personal Modem or the Hayes Smartmodem) and you select the "Dial This Telephone Number" command, Point-to-Point asks you:

Do you want to dial the phone? No Yes

If you are already connected to another computer and you are simply re-entering communications mode, select "No"; otherwise select "Yes" to dial the phone number. You can select a response using the left- and right-arrow keys to highlight the response and then pressing [RETURN]; alternatively, you can press [N] or [Y].

Point-to-Point must ask this question because most Special Modems behave as if they are connected to another computer even if the telephone has actually been hung up. If the DCD (carrier detect) override switch on your Special Modem is off (see Appendix A), however, the telephone is automatically dialed if you are not connected.

When a telephone number is dialed, a Special Modem ultimately displays a message to tell you whether or not a connection has been established, at least if your DCD override switch is on. For example, the word CONNECT appears when the Hayes Smartmodem successfully links up with another computer; if no connection is made the words NO CARRIER or BUSY appear instead.

Non-Auto-Dial Modems

If you are using an external non-auto-dial modem (that is, an acoustic coupler or a directly-connected data set), you must establish a telephone connection with the other computer before entering the "Dial This Telephone Number" command.

To do this, move the switch or dial on the non-auto-dial modem to the "originate" position, dial the telephone number manually, and then, when you hear the high-pitched sound sent by the other computer, press the "DATA" button on the modem (if it's a direct-connect modem) or place the telephone handset into the acoustic coupler.

Of course, if you have already previously established this connection, and you are still connected, you can skip the above procedure and just select the "Dial This Telephone Number" command to enter communications mode.

Communications Mode

Once a connection is established with another computer, Point-to-Point enters communications mode. When this happens, the screen clears and the status header is displayed at the top of the screen. (See Figure 3.4.)

Figure 3.4
Communications Mode
Status Header
(with Pinpoint invoked)

```
[Calling]      0-1  2  3  4  5  6  7  8  0  Escape: Exit
Time: 0000    CAT_DSEND_XMODEM_BSEND_MACRO_TRAP_BREAK_PRINT_HANG 017282
CONNECT 1200
```

```
23SFG
Host Name: CIS
User ID: █
```



The word "Calling" on the far left indicates that you originated the connection to the other computer. The four digits after "Time:" represent the number of minutes since you last dialed the telephone and is meaningful only if you are using a ProDOS compatible clock card. The time indicator automatically ticks away during your communications session so that you can easily estimate your usage charges. The number of unused bytes in the memory buffer is displayed on the far right side of the second line.

We'll discuss the other parts of the status header in a moment. They represent command numbers and mnemonics.

When you first see this status header, you can usually begin to communicate with the other computer right away by sending it commands and viewing responses.

If you are using a Special Modem whose DCD override switch is on (see Appendix A), however, the modem will still be dialing when the header appears and you must not begin typing until the other computer answers the phone. It's safe to begin when the word CONNECT appears on the screen (this is a Hayes Smartmodem message; the message your modem uses to indicate that a successful link has been established may be different). If you

don't wait, and you start typing right away, the modem will hang up the phone and display a NO CARRIER message.

You will also see the NO CARRIER message, or a BUSY message, if the Special Modem is not able to establish a connection with the other computer because the line is busy or the call is not answered within thirty seconds. If this happens, press [ESC] to return to the Telephone Number Menu so that you can dial the number again later, if necessary.

Once you are in communications mode and the other computer has answered your call, you can begin to type in any command used to control the other computer; all of the computer's responses are displayed on your screen. (Note that you may have to press [RETURN] once or twice after you have connected to a system before it responds to you.) These commands depend on the program that is running on the other computer, of course. If you don't see anything you type, or if all characters are "doubled," you have to change the Duplex communications parameter and try again. (See the section entitled "Modify Communications Setup" later in this chapter.)

If for some reason the other computer hangs up while you are in communications mode, the following message is displayed:

HUNG UP
PRESS ANY KEY:

and you must press any key to return to the Telephone Number Menu. If this occurs, you must re-dial the telephone number to re-establish a connection.

NOTE

If your modem is not able to signal Point-to-Point that a hang-up condition has occurred because the DCD override switch is on, you won't see the HUNG UP message as just described. If you are using a Special Modem, the modem itself detects the loss of carrier, automatically hangs up the phone, and then displays a message to indicate this. The Hayes Smartmodem, for example, sends a CARRIER LOST message. When you see this message, you can press [ESC] to leave communications mode and return to the Telephone Number Menu.

Communications Mode Commands

The second line of the status header shown above contains mnemonics for nine special commands you can use when in communications mode. You can enter a command by holding down the ⌘-key while you press the key corresponding to the command number. The command numbers appear on the first line of the screen, above the command mnemonics.

Here are descriptions of each of the commands available in communications mode:

[⌘-1]
CAT

Catalog (CAT)

[⌘-1] is used to display a list of the names of all the files in the currently active directory of the disk. Point-to-Point displays the names in a small window in the center of the screen and you can use the up- and down-arrow keys to move the inverse bar over any file in the list. If you press [RETURN] while the bar is over a subdirectory file (marked by a DIR mnemonic or a picture of a file folder), you will see a list of the files in the

subdirectory. Use [C-ESC] to back up to the previous directory. Press [ESC] to remove the directory window from the screen and return to communications mode. (See Figure 3.5.)

Figure 3.5
Catalog and Disk Send

```
[Calling]  C-1  2  3  4  5  6  7  8  0  Escape: Exit  
Time: 0000  CAT_DSEND_XMODEM_BSEND_MACRO_TRAP_BREAK_PRINT_HANG 017282
```

```
AWP SHEET  
AWP CONTRACT  
TXT DOWNLOAD  
AWP MARIANNE  
TXT MOM  
BAS NEWPROG  
SYS PTP1 SYSTEM  
TXT TUTORIAL  
TXT UPDATE
```

[C-2]
DSEND

Disk Send (DSEND)

[C-2] is used to send the contents of a disk textfile or an AppleWorks word processing (AWP) file to the other computer. Point-to-Point converts the data in an AWP file (which includes formatting information as well as the text of the document) into lines of text as you send it, but the file on disk is not altered. If you want to send an unconverted AWP file, use the Xmodem file transfer technique instead (see below).

When you enter this command, a standard directory window opens up to reveal a list of all the textfiles, AWP files, and directory files in the currently active directory. Select the textfile to be sent by positioning the inverse bar over its name and pressing [RETURN]. If you'd rather cancel the operation, press [ESC] instead.

Before using this command, the "Prompt Symbol," "Delay After Each Line," and "Delay After Each Character" communications parameters should be set to the appropriate values. The settings of these parameters is discussed in Chapter 4 in the section entitled "Sending Textfiles."

If you see a "Can't locate the directory" error message when you enter [C-2], the disk containing the active disk directory is not present. To avoid this error, make sure the proper disk is in a drive, or change the active directory using the "Change Disk Drive Or Prefix" command from the Disk/File Activities Menu shown in Figure 3.14.

[C-3]
XMODEM

Xmodem Transfer (XMODEM)

[C-3] is used to transmit or receive files using the Xmodem error detection and correction protocol. The use of this command is discussed in detail in

the next chapter in the section entitled "Xmodem Transfer of Disk Files." If you see a "Can't locate the directory" error message when you enter [C-3], the disk containing the active disk directory is not present. To avoid this error, make sure the proper disk is in a drive, or change the active directory using the "Change Disk Drive Or Prefix" command from the Disk/File Activities Menu shown in Figure 3.14.

**[C-4]
BSEND**

Buffer Send (BSEND)

[C-4] is used to send the text stored in the memory buffer to the other computer. The buffer is sent, line by line, in much the same way that the contents of a textfile are sent when you use the [C-2] command. See the section in Chapter 4 entitled "Sending Textfiles" for complete instructions on how to send what's in the memory buffer.

**[C-5]
MACRO**

Send a Macro (MACRO)

[C-5] is used to send any of the sixteen macro phrases associated with the current telephone directory entry. (A macro phrase is simply a sequence of characters and special commands.) See the section entitled "Edit the Macro Definitions" for instructions on how to define macros. Macros typically represent system signon phrases or other common commands. (See Figure 3.6.)

**Figure 3.6
Send A Macro**

```
[Calling]          C-1  2  3  4  5  6  7  8  0  Escape: Exit
Time: 0000_____CAT_DSEND_XMODEM_BSEND_MACRO_TRAP_BREAK_PRINT_HANG_____017282
```



When you enter [C-5], a window appears that contains the first few characters of each of the sixteen current macro phrases. To select one, use the up- and down-arrow keys to position the bar cursor, and then press [RETURN]. As soon as you do this, the window disappears and the macro is sent. If you change your mind and you don't want to send a macro, press [ESC] instead.

No cursor appears on the screen while a macro is being sent. You can, however, still enter characters from the keyboard and enter most

communications mode commands. To abort the transmission of a macro, press [ESC].

There is another way to send a macro phrase that is much more convenient, at least after you've become familiar with your macros. When a macro phrase is defined, you can associate it with a key from A to Z. If you tap this key while holding down the -key, the macro is sent. The key associated with each macro is shown on the left side of the window that appears when you enter [G-5].

Figure 3.7
Memorize Mode and
Printer Toggle

```
[Calling]      G-1  2  3  4  5  6  7  8  0  Escape: Exit  
Time: 0000  CAT_DSEND_XMODEM_BSEND_MACRO  BREAK  HANG  017282
```

[G-6]
TRAP

Memorize Mode Toggle (TRAP)

[G-6] is used to toggle memorize mode from on to off or from off to on. When memorize mode is on, the word TRAP at the top of the screen is highlighted. (See Figure 3.7.)

When memorize mode is on, all information received from the other computer or typed in at the keyboard is "trapped" and added to the memory buffer and can later be edited, printed, or saved to disk. When memorize mode is off, no permanent record of incoming information is kept.

The memory buffer is able to hold approximately 17,000 characters of text received from the other computer or typed in at the keyboard. The amount of space remaining in the buffer is always displayed on the second status line at the far right. When the buffer fills up, Point-to-Point begins a downloading procedure whereby it automatically saves the buffer to a disk file, clears the buffer, and then begins trapping incoming characters once again. This procedure is repeated every time the buffer fills up. This means that Point-to-Point can easily trap and save an incoming document that is much larger than the buffer.

Let's examine exactly what happens when the buffer becomes full. First, Point-to-Point automatically sends a CONTROL-S character (also called XOFF, short for "transmit off") to the other computer. This is a standard signal that tells the other computer to stop sending further data. The data flow must be stopped because an Apple II is not able to check for modem input while a file (the contents of the buffer) is being saved to disk. (Be aware, however, that a few computers do not respond to CONTROL-S, so you will unavoidably lose incoming characters during the downloading process.)

Point-to-Point then waits for about four seconds to ensure that any characters that are "in transit" when the CONTROL-S is sent are properly saved. Point-to-Point then enters the "Save A File" menu, displays the message:

File selected: DOWNLOAD

and the contents of the buffer are saved on the disk in the currently active disk directory. The contents of the buffer are always appended to the existing contents of a file called DOWNLOAD.

NOTE

To avoid appending to an "old" DOWNLOAD file created during a previous session, at the start of each new Point-to-Point session you should always rename or delete this file using the commands in the Disk/File Activities Menu.

It takes several seconds to complete the downloading operation. The entire contents of the buffer (except for the last line) are put into the DOWNLOAD file. The last line (or most likely the first portion of a line being sent by the other computer) is then placed at the beginning of the buffer so that when output from the other computer is restarted the line will be completed and will be wholly contained in the buffer.

After the file is saved to the disk, the buffer is cleared (except for the last line) and Point-to-Point automatically re-enters communications mode and sends a CONTROL-Q character (also called XON, short for "transmit on") to the other computer. This is a standard signal directing the other computer to resume sending data.

[C-7] BREAK

Break Signal (BREAK)

[C-7] causes Point-to-Point to send a modem "break" signal for 233 milliseconds. This signal is interpreted by some computers as a request to interrupt and cancel any command that is being executed. To send a break signal for about four seconds, use [C-SHIFT-7]; this signal usually causes a remote computer to hang up.

[C-8] PRINT

Printer Toggle (PRINT)

[C-8] is used to toggle the printer on and off while communicating with the other computer. If the word "PRINT" at the top of the screen is highlighted, the printer is on. (See Figure 3.7.) With the printer on, text is displayed on the video screen and sent to the printer thus providing you with all the capabilities of an on-line printing terminal. This feature is only supported for the printer interface cards referred to in the discussion of the "Printer Interface Type" parameter in Chapter 2, "Starting Up and Configuring Point-to-Point."

You may observe that the printer paper does not advance when the printer is toggled on by [C-8] and information is being sent to it; if so, set the "Printer Needs LF After CR?" hardware parameter to YES when you start up Point-to-Point. If the printer is double spacing, set this parameter to NO. (See Chapter 2, "Starting Up and Configuring Point-to-Point" for a complete discussion of this parameter.)

NOTE

Point-to-Point appears to "freeze" if [C-8] is entered when the printer is not ready to print. Make sure the printer is turned on, has paper in it, and has been selected first.

[C-0] HANG

Hang Up (HANG)

[C-0] is used to hang up the telephone if you are using an auto-dial modem. If you are using a non-auto-dial modem, you must hang up manually by

turning off the modem's carrier signal switch and then hanging up the telephone handset. Note that if you are using a Special Modem, there is a delay of about six seconds before the telephone hangs up.

Special Commands

There are a few other communications mode commands that are not referred to in the screen header. They let you perform special operations which affect the contents of the buffer, or more conventional operations that would otherwise involve moving manually through several Point-to-Point menus.

[**Ctrl**-C]

Copy Screen to Buffer

[**Ctrl**-C] copies the contents of everything on the screen, except the two header lines at the top, to the buffer. Use it if you've forgotten to turn on memorize mode and something you want to save has just appeared.

[**Ctrl**-D]

Disk/File Direct

[**Ctrl**-D] takes you directly to the Disk/File Activities Menu so that you can perform disk-related activities such as loading and saving files, and changing the active disk directory. When you leave the Disk/File Activities Menu by pressing [ESC] you will return to communications mode.

[**Ctrl**-E]

Editor Direct

Use [**Ctrl**-E] to go straight to the Point-to-Point Editor so that you can view and modify the contents of the buffer. When you leave the Editor by pressing [ESC] you will return to communications mode.

[**Ctrl**-S]

Save Buffer

[**Ctrl**-S] saves the contents of the buffer to disk, almost the same way as if you had selected the Save A File To The Disk command from the Disk/File Activities Menu. The only difference is that after the buffer is saved, its contents are always cleared.

[**Ctrl**-DELETE]

Clear the Buffer

[**Ctrl**-DELETE] clears the contents of the buffer. It is equivalent to entering a D- command from the Editor.

Leaving Communications Mode

You can leave communications mode and return to the Telephone Number Menu by pressing the [ESC] key. When you do this, Point-to-Point sends a CONTROL-S character (also called XOFF) to the other computer to cause it to stop sending data while you are out of communications mode. When you re-enter communications mode, Point-to-Point sends a CONTROL-Q character (also called XON) to the other computer to signal it to resume sending information. This is done so that you won't miss any incoming information while you are out of communications mode.

NOTE

There is a delay of about two seconds before you actually return to the Telephone Number Menu after entering [ESC].

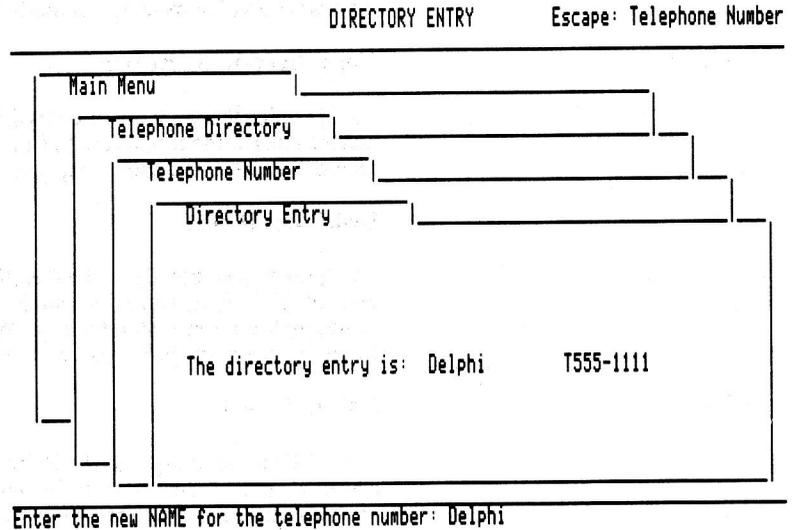
To send the character code for ESC to the other computer, type [**Ctrl**-ESC].

Modify This Directory Entry

When you select "Modify This Directory Entry" a Directory Entry filecard appears and you are asked to enter the new name and telephone number for the current directory entry. (See Figure 3.8.)

The new name can contain any text you like, to a maximum of thirteen characters.

Figure 3.8
Modify Directory Entry



The telephone number entry can be up to eighteen characters long. When you enter it, use a comma (",") to cause a 3-second delay when the number is actually dialed. Such a delay might be required to allow time for a second dial tone to become active before the rest of a number is dialed. For example, you must normally wait for a second dial tone when dialing long distance numbers — the second tone kicks in after the long distance number code ("1" in the U.S.A. and Canada) has been dialed. You must also wait for a second dial tone if you need to dial "9" to bypass your office switchboard.

If your auto-dial modem and your local telephone exchange support Touch-Tone dialing, place a "T" immediately before the telephone number to activate this tone method of dialing. This method of dialing is supported by most modems.

If you want to send the telephone number's first macro automatically after the number is dialed and a connection is established, put a plus sign ("+") after the last digit in the telephone number. Macros are discussed in the section entitled "Edit the Macro Definitions."

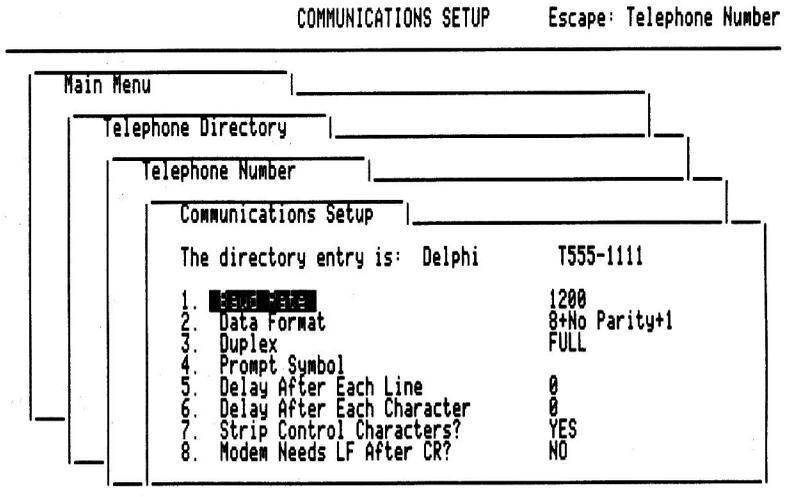
Modify Communications Setup

When you select "Modify Communications Setup" a Communications Setup Menu appears which contains a list of eight communications parameters associated with the currently active telephone number. These parameters control various aspects of the communications protocol between your Apple and another computer. You will have to adjust them properly before Point-to-Point can communicate intelligently with the other computer.

Whenever you select a number from the directory, the communications parameters are set to the values associated with it. The parameters for a previous session on another computer are not used.

The eight communications parameters are listed on the screen in Figure 3.9.

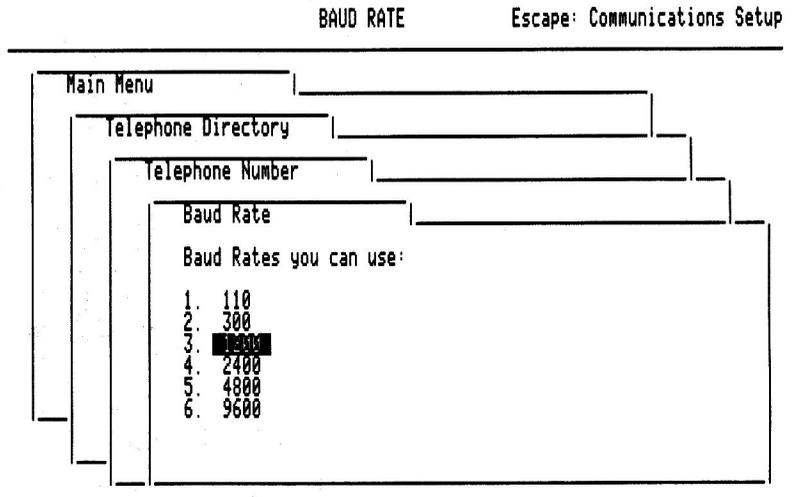
Figure 3.9
Modify
Communications Setup



Type number, or use arrows, then press Return

Immediately preceding this menu is the name and number of the telephone number with which the parameters are associated. A complete description of each of the parameters follows.

Figure 3.10
Set Baud Rate



Type number, or use arrows, then press Return

Baud Rate

This parameter indicates the current *baud rate* (speed) associated with the data transmission to and from the other computer. If you have a card that uses the STANDARD.6551 or STANDARD.8530 Modem Interface Type, the Baud Rate can be set equal to any of the rates shown in Figure 3.10.

If you are using any other Modem Interface Type, the baud rate can be toggled between two states, HIGH and LOW. For MICROMODEM, MODEMCARD, and APPLECAT modems, HIGH corresponds to a baud rate of 300 and LOW to a baud rate of 110.

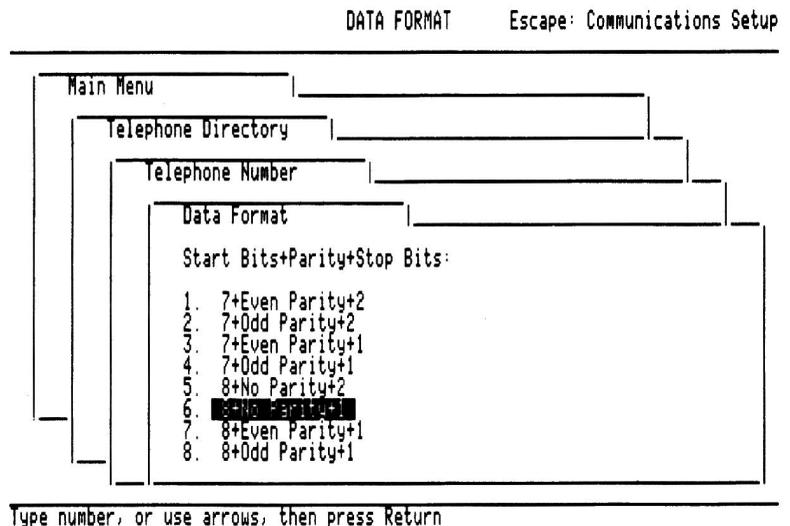
If you are using a STANDARD.6850 or STANDARD.8251 interface, HIGH refers to the baud rate set by the switches or jumpers on the interface card. LOW refers to the baud rate which is one-quarter of the HIGH baud rate. For example, if the switches on the card are set for 1200 baud, then 300 baud can be selected by setting Baud Rate to LOW.

If you are using the COMMCARD interface, a HIGH Baud Rate represents the higher of the two baud rates that the Apple Communications Card allows; the other Baud Rate is LOW. These two baud rates are usually 300 and 110, but the card can be modified for other rates. (See Appendix A: "Installing Your Modem" for an explanation.)

Data Format

This parameter indicates the current data transmission format being used to communicate with the other computer. In order to set this value properly, you must know what format the other computer expects and then adjust Data Format to match it. The eight valid Data Format settings are shown in Figure 3.11.

Figure 3.11
Set Data Format



The first digit in the setting represents the number of data bits (7 or 8); the middle phrase indicates the parity; the last digit represents the number of stop bits (1 or 2).

Most dial-up computers use the "8+No Parity+1" data format and so Point-to-Point initially defaults to this value. Another popular format is "7+Even Parity+1", so try it if "8+No Parity+1" doesn't seem to work.

Duplex

This parameter indicates whether characters you type from the keyboard or send from a file are to be displayed immediately (Duplex=HALF) or whether they are to be displayed only after they have been echoed by the other computer (Duplex=FULL).

Duplex should be set to a position consistent with the behavior of the other system. If you enter communications mode and notice that whenever you type a character it is displayed twice, reset Duplex to the FULL position. If you see nothing at all when you type characters from the keyboard, the other computer may not be echoing, so you should try again with Duplex set to HALF.

Prompt Symbol, Delay After Each Line and Delay After Each Character

These three parameters control the way in which the text in the buffer or in a file on disk is automatically sent to the other computer using the [C-2] and [C-4] commands while in communications mode. This topic is covered in detail in the section entitled "Sending Textfiles" in Chapter 4.

Strip Control Characters?

This parameter is used to disable or enable the display of certain control characters that may be received while in communications mode.

If "Strip Control Characters?" is set to YES, all incoming control characters (control characters have ASCII codes between 0 and 31) are ignored, except for bell (7), backspace (8), tab (9), line feed (10), form feed (12), and carriage return (13). The permitted control characters cause the following actions to occur:

- ▲ bell (7) causes the speaker to beep
- ▲ backspace (8) moves the cursor one position to the left
- ▲ tab (9) moves the cursor to the next tab stop (the tab stops are located every eight column positions)
- ▲ line feed (10) moves the cursor down one line
- ▲ form feed (12) has no effect on the screen but will cause a page eject when sent to the printer
- ▲ carriage return (13) move the cursor to the left side of the next line

The ignored characters are not displayed and they're not stored in the memory buffer, even if memorize mode is on.

NOTE

If Point-to-Point receives a backspace character when memorize mode is on, it does not place it in the buffer. Instead, it removes the last character from the buffer, unless that character happens to be a carriage return, in which case nothing happens. A delete character (code 127) is handled in exactly the same way.

The main reason for ignoring control characters is to avoid problems that would occur if you tried to print them. Control characters are typically used to control various aspects of a printout: line pitch, character spacing, font

style, and so on. Unfortunately, there are no standards dictating how a given control character is to be handled (the bell, backspace, tab, line feed, form feed, and carriage return characters are exceptions). That means that if you receive a control character, you are rarely sure of what effect its supposed to have on your printer; rather than guess, it's usually best to ignore it altogether.

If "Strip Control Characters?" is set to NO, all control characters received will be stored in the buffer if memorize mode is on.

Modem Needs LF After CR?

This parameter can be toggled between NO and YES. If it is set to YES, then a line feed character (ASCII code 10) is sent to the modem (and, thus, the other computer) after every carriage return character (ASCII code 13) is sent to it.

Some computers do not operate properly if you follow every carriage return by a line feed. If you have difficulty signing on to a computer or entering commands on it, and this parameter is set to YES, then set it to NO and try again.

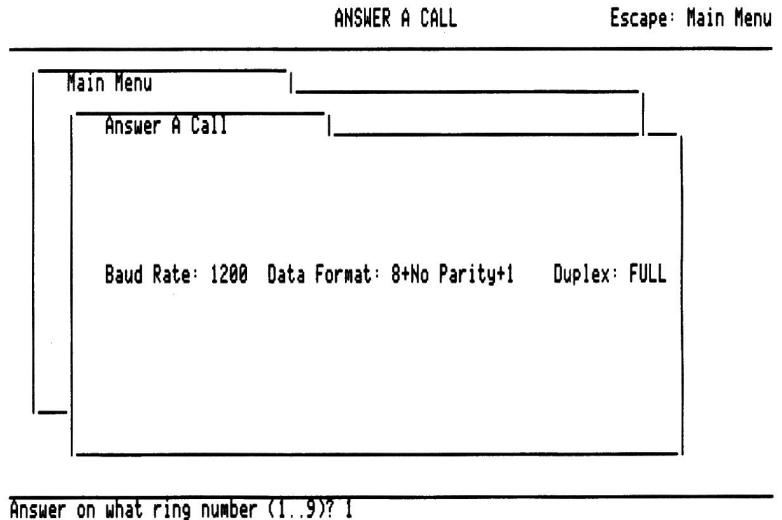
Other computers insist on receiving the line feed after a carriage return if a line is to be properly terminated. For example, if you are communicating with a Radio Shack Model 100 computer with this parameter set to NO, then anything that you send to it is displayed on the same line. The solution, of course, is to set this parameter to YES.

Answering a Telephone Call

Use the "Answer A Telephone Call" command in the Main Menu to answer telephone calls automatically and accept information being sent from other computers. This command is especially useful if you are using an auto-answer modem such as the Micromodem, Apple-Cat II, ModemCard, Apple Modem, or Hayes Smartmodem because completely unattended operation is possible. See the subsection entitled "Using Non-Auto-Answer Modems" at the end of this section for instructions on how to deal with modems that are not capable of automatically answering the telephone. You will also use the command to resume communicating with a remote system whose call you have previously answered.

The values of the communications parameters used when you're answering are the same as those associated with the currently active phone number. To change them, you have to select the "Dial A Telephone Number" command from the Main Menu so you can pick a telephone number from the Telephone Directory. After you do, select the "Modify Communications Setup" command from the Telephone Number Menu (illustrated in Figure 3.3), change the parameters, and press [ESC] twice to return to the Main Menu. At this point you can select the "Answer a Telephone Call" command again.

Figure 3.12
Answer A Call Menu



After you've selected the "Answer A Telephone Call" command, the current settings of the Baud Rate, Data Format, and Duplex communications parameters are shown in the center of the screen. On the bottom line, you are asked to specify how many times the telephone is to ring before it is to be answered by the modem:

Answer on what ring number (1..9)?

After the ring number is specified, the status header in Figure 3.13 is displayed.

Figure 3.13
Status Header in
Answer Mode

```
[Answering]  Ⓞ-1  2  3  4  5  6  7  8  0  Escape: Exit  
Time: 0000  CAT_DSEND_XMODEM_BSEND_MACRO  BREAK_PRINT_HANG  017280
```

The Ⓞ commands referred to in the status header are described in the section entitled "Dialing a Telephone Number" earlier in this chapter. The word "Answering" on the first line of the header indicates that you are in answer mode — that is, you are answering a telephone call rather than originating one.

At this point, if you are already connected to the other computer, the cursor will appear and you can resume communications immediately. If you are not already connected, you will see the message:

WAITING FOR NEXT CALL

If you press [ESC] at this time, you will return to the Main Menu in Figure 3.1.

Point-to-Point keeps track of the number of times the telephone rings. When the requisite number of rings has been detected, it electronically picks up the telephone and turns on a special tone (called a carrier signal) to indicate to the calling computer that a connection has been established.

Point-to-Point then waits for the caller to generate a similar tone. If that tone does not appear within 30 seconds, Point-to-Point hangs up the telephone and waits for the next call.

Note that if your modem has an internal speaker, you'll be able to hear the carrier signals being turned on after a call is answered.

Once an incoming carrier signal has been detected, communications can begin. As soon as the calling computer sends any character (such as [RETURN]), Point-to-Point sends a greeting message that is stored in a textfile called WELCOME in the same directory as the PTP.SYSTEM system program. (You can create this file with the Editor and then save it to disk with the "Save A File To The Disk" command in the Disk/File Activities Menu illustrated in Figure 3.14.)

NOTE

If you are using a Special Modem whose DCD override switch is on (see Appendix A), Point-to-Point always thinks you are connected to the calling computer. This has two ramifications: one, you won't see the WAITING FOR NEXT CALL message and, two, Point-to-Point will not send a greeting message. The Special Modem will answer the phone for you when it rings, however, and properly connect to the calling computer.

At this point the calling computer can leave any information it desires and it is all saved in the memory buffer unless you turn off memorize mode with an [C-6] command. (You can also enter information directly from the keyboard.) When the caller hangs up, Point-to-Point automatically waits for the next telephone call. Information left by subsequent callers is appended to the information that has been stored in the buffer by previous callers.

If the buffer becomes full while you're in answer mode, an automatic downloading procedure begins which is identical to the one described in the section earlier in this chapter entitled "Dialing a Telephone Number." The contents of the buffer are saved in a file called DOWNLOAD.

While a caller is connected to Point-to-Point, you can hang up by entering the [C-0] command. This procedure will take a few seconds if you are using a Special Modem. After you hang up, you return to the Main Menu where you can select the "Edit The Buffer" command to view the messages that have been left.

Using Non-Auto-Answer Modems

If you are using a modem that is not capable of automatically answering a telephone call, Point-to-Point may enter answer mode right after you enter the "Answer A Telephone Call" command even though you are not actually connected.

NOTE

Unfortunately, if this happens, Point-to-Point may "lock up" on you if you attempt to enter information from the keyboard. To avoid this, you must establish a connection with the other calling computer before selecting the "Answer A Telephone Call" command; this is done by manually picking up the telephone when it rings, moving the switch on the modem to the "answer" position, and then pressing the "DATA" button (if it's a direct-connect modem) or by placing the handset into the acoustic coupler.

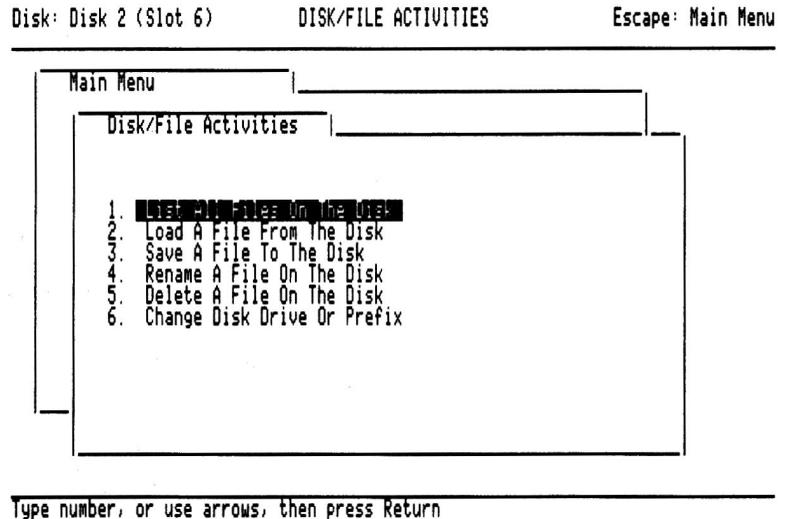
NOTE

You must also manually hang up the telephone when the other computer has hung up. Thus, it is not possible to achieve the objective of completely unattended operation when using these types of modems.

Disk/File Activities

The "Disk/File Activities" command is used to transfer information from the 17,000-character memory buffer to a file on disk and vice-versa. It is also used to display all the files on the disk, to rename and delete them, and to set the active disk drive or prefix.

Figure 3.14
Disk/Files Activities Menu



To better understand how ProDOS manages files, you should read Appendix B: "Pathnames, Directories, and Prefixes." That appendix reviews what is meant by two particularly mysterious terms, pathname and directory.

When you enter the "Disk/File Activities" command, a menu of six commands is displayed. (See Figure 3.14.)

In addition, in the top-left corner of the screen is the name of the currently active disk drive or directory prefix.

A description of each of the commands follows:

List All Files On The Disk

When you enter this command, a window pops up that contains a list of the files on the disk, in alphabetical order. (See Figure 3.15.) Just above the window is the name of the active directory and the amount of free space on the disk, in "K" units (1K = 1,024 characters).

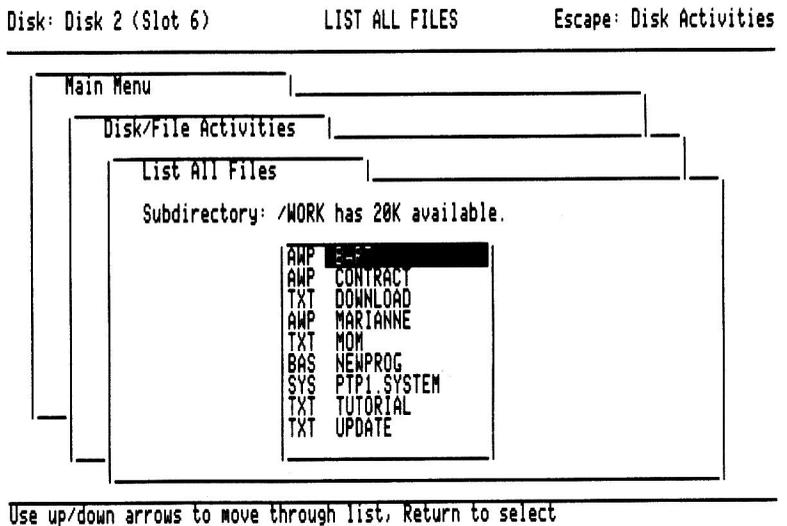
A three-character mnemonic appears to the left of each filename appearing in the window. Here is the meaning of each mnemonic:

- ADB an AppleWorks database file
- ASP an AppleWorks spreadsheet file
- AWP an AppleWorks word processing file
- BAS an Applesoft BASIC program

BIN a binary file
 CMD a command file
 PAS a Pascal file
 REL a relocatable binary file
 SYS a system file
 TXT a textfile
 VAR an Applesoft variable file

Any other file type is represented by a two-digit hexadecimal (base 16) number preceded by a \$ sign. You won't encounter these types of files very often.

Figure 3.15
List All Files



If you are using a IIc or an enhanced IIe, a file folder icon appears to the left of a subdirectory name. This icon appears as a highlighted "XY" on an unenhanced IIe.

If there are more files in the directory than will fit in the window, you will see the word "More" on the last line of the window. To display these files, keep moving the inverse bar down by pressing the down-arrow key until the word "More" disappears.

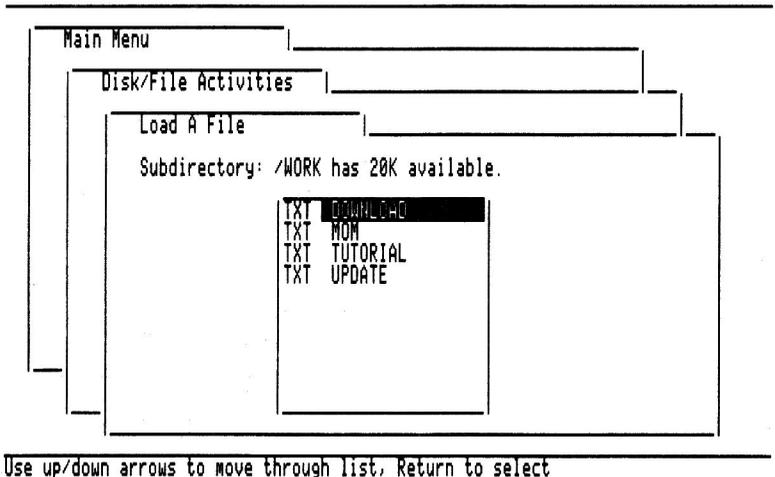
To list the files in a subdirectory, position the inverse bar over the name of the subdirectory (a highlighted "XY" or a file folder icon), and press [RETURN]. To return to the previous subdirectory level, press [⌘-ESC].

When you're finished looking at the directory, press [ESC] or [RETURN] and you will return to the "Disk/File Activities" menu.

Load A File From The Disk

Use this command to append the contents of an existing disk textfile to the current contents of the buffer. When you select it, the window illustrated in Figure 3.16 appears. It contains the names of all the textfiles and subdirectories on the disk. Move the inverse bar above the name of the file you want to load, then press [RETURN] to select it. If you select a subdirectory, the names of the files in it are displayed.

Figure 3.16
Load A File



After you select a file you are asked to specify the position within the file of the first character to be loaded:

Load from what position (0..65535)? 0

The default position is 0 (which means, load from the start of the file); just press [RETURN] to select this default. You would normally specify a non-zero position in situations where you want to load the tail end of a file that is larger than the buffer.

Point-to-Point then starts to load the file. If the buffer becomes full part way through the loading process, you will see a "The buffer is full." error message and you'll have to press the space bar to continue.

Note that you cannot load AppleWorks word processing (AWP) files into the buffer without converting them into textfiles first. See Appendix C: "Using AppleWorks Files with Point-to-Point" for instructions on how to do this.

Save A File To The Disk

Use this command to save the contents of the buffer in a disk textfile. The directory mnemonic for this type of file is TXT.

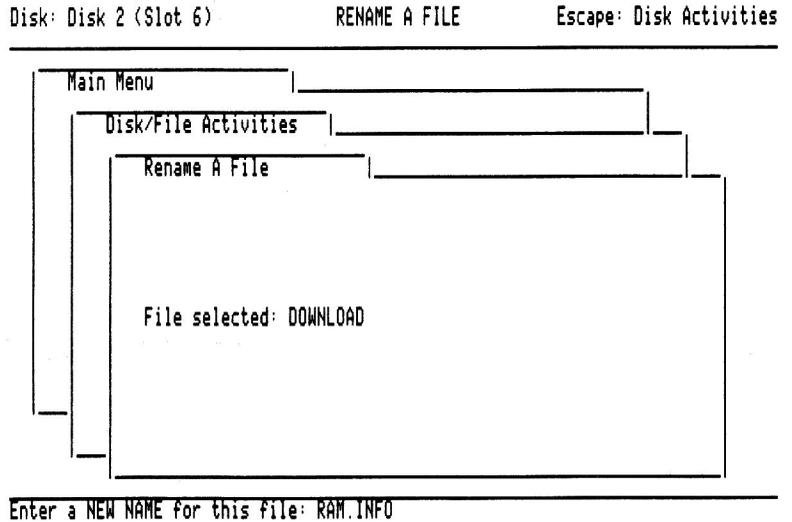
After you select this command you must provide a name for the file in which you want the buffer to be saved. (See Figure 3.17.) If you have previously loaded or saved a file, that name appears as the default and you can accept it by pressing [RETURN].

If an automatic downloading operation has previously taken place, and you're receiving a program, you should specify a file name of DOWNLOAD and append the contents of the buffer to the file. This will conveniently keep the whole program listing in one file.

Rename A File On The Disk

Use this command to change the name of an existing file. After the command is selected, you must select the name of the existing file from the directory window and then enter a new name for the file. (See Figure 3.18.) The rules for naming a file are the same as those related above for the "Save A File To The Disk" command.

Figure 3.18
Rename A File



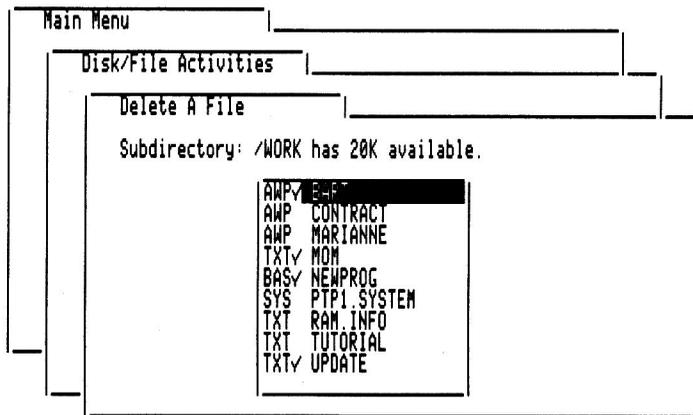
Delete A File On The Disk

Use this command to remove a file, or a group of files, from a disk. When the command is selected, a standard directory window opens up. (See Figure 3.19.) To select just one file, position the inverse bar over its name and press [RETURN].

To select a file for a group deletion, position the bar over its name and press the right-arrow key to tick it; to untick a previously selected name, press the right-arrow key. (On an unenhanced Ile, the tick mark appears as an inverse D.) When you've selected the entire group, press [RETURN] to commence deleting all files in it. Note that the file beneath the inverse bar when you press [RETURN] is not added to the group unless it has previously been ticked.

Figure 3.19
Delete A File
(with files checked)

Disk: Disk 2 (Slot 6) DELETE A FILE Escape: Disk Activities



Use up/down arrows to move through list, Return to select

NOTE

You should note that if you select another subdirectory (by pressing [RETURN] when the bar is over the name of a directory file), all files are unticked — you can only delete a group of files that appears in the same subdirectory.

Point-to-Point asks you to confirm each file deletion before it actually takes place. To confirm, just press [Y]; to cancel, press [N] or [RETURN]. If you like to live dangerously, you can tell Point-to-Point to skip the request for confirmation by holding down the ⌘-key when you press [RETURN] to leave the directory window.

Change Disk Drive Or Prefix

Use this command to select the base directory to be used by all the other Disk/File Activities commands. Point-to-Point saves the name of this directory on disk so that the next time you use Point-to-Point, the base directory stays the same.

When you select this command, you will see a list of active disk devices followed by a "ProDOS Directory" command. (See Figure 3.20 for the list you would see if you had two Disk II drives in slot 6, two UniDisk 3.5 drives in slot 5, and an Apple Memory Expansion Card RAMdisk in slot 4.)

At this point you can either choose a specific disk drive or choose the last item to enter a full pathname prefix. If you choose a disk drive, the volume directory (the main directory) of the disk it holds becomes the base directory for other disk operations.

When you select the ProDOS Directory item, you are asked to:

Type a ProDOS prefix:

A valid ProDOS prefix is a concatenation of directory names, each preceded by a "/", where each directory name specified is contained within the directory specified by the prior name in the chain. (A file folder icon is used

to mark subdirectory entries in a directory listing.) The first name specified in the line must be the name of the volume directory on the disk.

Figure 3.20
Change Disk Drive
Or Prefix Menu

```
Disk: Disk 2 (Slot 6)      CHANGE CURRENT DISK      Escape: Disk Activities
```

```
Main Menu
  |
  |-----|
  | Disk/File Activities
  |   |
  |   |-----|
  |   | Change Current Disk
  |   |   |
  |   |   |-----|
  |   |   | Disk drives you can use:
  |   |   |
  |   |   | 1. Disk 1 (Slot 6)
  |   |   | 2. Disk 2 (Slot 6)
  |   |   | 3. Disk 1 (Slot 5)
  |   |   | 4. Disk 2 (Slot 5)
  |   |   | 5. RamDisk (Slot 4)
  |   |   | --> ProDOS Directory
```

```
Type a ProDOS prefix: /UNI/POINT2POINT
```

For example, if the volume directory is called `HARD.DISK`, and it contains a subdirectory file called `TEXTFILES`, then to select the subdirectory you would enter the prefix name:

`/HARD.DISK/TEXTFILES`

If you enter a prefix that isn't present on any available disk, the following error message is displayed:

`ERROR: Can't find the directory.`

and the currently active prefix does not change. If you see this message, insert the disk with the directory specified and try again.

For more information on prefixes and directory names, see Appendix B and Apple's manual, *BASIC Programming with ProDOS*.

Editing the Buffer

You can use the "Edit The Buffer" command in the Main Menu to invoke the Point-to-Point Editor. With the Editor you can quickly compose or modify a document in the memory buffer before saving it to disk, printing it, or sending it to another computer.

Keep in mind, however, that the Editor is certainly not a word processor — each line in the buffer is dealt with separately from the rest so you can't combine lines or reformat paragraphs, for example. This means it is most useful for making minor changes to whatever text you've loaded or trapped in the buffer or for composing short notes. If you want to do more serious editing or writing, use a word processor, such as AppleWorks, instead. Provided that the word processor is able to save a document to disk as a standard textfile, you can always load the document into the buffer. Appendix C: "Using AppleWorks Files with Point-to-Point" explains how to convert AppleWorks word processing (AWP) files into standard textfiles and how to load textfiles into the AppleWorks word processor.

The Editor has commands to add, delete, edit, and list lines of text in the buffer. There is also a help command. The syntax associated with each of the editing commands is as follows:

A	{#}	(Add)
D	{#1}, {#2}	(Delete)
E	{#1}, {#2}	(Edit)
L	{#1}, {#2}	(List)
?		(Help)

The symbol "#" represents the number of a line in the buffer and "#1" and "#2" represent the lower and upper limits of a range of line numbers (with "#2" greater than or equal to "#1").

The braces {} indicate that the enclosed line number or line number range is optional. Do not type in the braces when you enter a command! If "#" or "#1" is omitted, it is presumed to be 1. If "#2" is omitted, it is presumed to be equal to the highest line number in the buffer. For example, you can use the "L 4," command to list everything from line 4 to the end of the buffer. Notice that numbers in a line number range must be separated by a comma (although you can also use a hyphen, if preferred).

Note that a highlighted line number is displayed at the beginning of a line when it is listed.

The Editor's commands must be entered while you are in the Editor's command mode (indicated by the ":" prompt symbol). To return to the Main Menu from the Editor, press [ESC].

An explanation of the function of each of the Editor's commands follows:

Add

A

Use the A command to add new lines of text to the memory buffer. New lines are placed in the buffer immediately *before* the line number specified

after the A command. If no line number is specified, the lines are added to the end of the buffer.

Examples:

A 3	Add a line before line 3
A	Add a line to the end of the buffer

After you enter the add command, a line number is displayed and you can begin to type in the contents of the new line. Press [RETURN] to complete the line entry and go on to the next line. You can use the standard editing commands while you are entering the line (see below).

The maximum length of one line is 255 characters.

To stop adding lines, press [ESC] or [CONTROL-X]. When you do this, all the lines in the buffer after the ones that were added are renumbered beginning with the number of the line that would have been added next.

Delete

D

Use the D command to delete all lines of the buffer in a specified range or, if a single line number is specified, to delete that line only. After a deletion, the lines in the buffer after the ones that were deleted are renumbered. This means that if you have to delete several isolated lines, you should delete the highest-numbered ones first so that the numbers of the other lines won't change after an earlier deletion.

Examples:

D 4,8	Delete lines 4 through 8
D 10,	Delete all lines from 10 to the end
D 16	Delete line 16

Note that the entire buffer can be deleted by entering the command "D,".

Edit

E

Use the E command to edit the lines of the buffer specified in the range or, if a single line number is specified, to edit that line only. If no range is specified, editing begins with line #1 and ends with the last line in the buffer (unless edit mode is cancelled by pressing [ESC] or [CONTROL-X]).

Examples:

E	Start editing with line 1
E 8	Edit line 8
E,77	Edit the first 77 lines

An easy way to edit a line is to simply type over the existing contents of the line. However, there are also eleven special function commands to assist you in changing the contents of a line:

Delete Character Commands [CONTROL-D]

This command deletes the character beneath the cursor and moves the characters to the right of the cursor one position to the left.

[DELETE]

This command deletes the character to the left of the cursor and moves all the characters to its right one position to the left.

Arrow Commands

LEFT-ARROW KEY

This command moves the cursor one position to the left unless it is already at the first character of the line.

RIGHT-ARROW KEY

This command moves the cursor one position to the right unless it is already at the 255th character of the line.

Overstrike or Insert Mode

[CONTROL-E] or [␣-E]

Both these commands are used to toggle the Editor between *overstrike* mode and *insert* mode. The appearance of the cursor tells you what mode you're in: if it's a blinking underscore, you're in insert mode; if it's a blinking white box, you're in overstrike mode.

When you type a character in overstrike mode, the character replaces the one beneath the cursor. When in insert mode, the typed character is inserted before the blinking character and all trailing characters are shifted one position to the right to make room for the new character.

NOTE

You cannot insert control characters that correspond to editing commands. These codes must be inserted using the [CONTROL-V] verbatim command (see below).

Move to Next Line

[RETURN]

This command is used to end the editing of the current line and to go on to the next line in the range. When [RETURN] is pressed all characters displayed for the current line are saved in the buffer (not just those before the blinking cursor). If you want to erase the characters to the right of the cursor, use the [CONTROL-Y] or [␣-Y] command.

Tab

[CONTROL-I] or [TAB]

Both these commands move the cursor 10 spaces to the right or to the end of the current line, whichever comes first.

Undo Your Last Edit

[CONTROL-R]

This command restores the original contents of the line being edited. Use it to "undo" any changes you've made to a line.

Erase To End of Line

[CONTROL-Y] or [␣-Y]

Both these commands erase the characters in the line from the current cursor position to the end of the line.

Verbatim Mode

[CONTROL-V]

This command activates *verbatim* mode. When verbatim mode is active, the next character typed is inserted at the cursor position, even if it is the [ESC] key or is normally interpreted as an editing command. The only exception is the [RETURN] key; you can never insert it. Verbatim mode ends as soon as you enter the character following the [CONTROL-V] command.

Go to Command Mode

[CONTROL-X] or [ESC]

Both these commands cancel edit mode and return you to command mode (as indicated by the ":" prompt symbol).

List

L

Use the L command to list the lines of the buffer specified in the range or, if a single line number is specified, to list that line only. If no range is specified, the listing begins with line #1 and ends with the last line in the buffer.

Examples:

L 3,55	List lines 3 through 55
L	List all lines
L ,15	List lines 1 through 15

You can suspend the listing at any time by pressing the space bar. When you do this, keep tapping the space bar to step through the listing one line at a time. To continue an uninterrupted listing, press a key other than the space bar. To cancel the listing, press [ESC] or [CONTROL-X].

Help

?

Use the ? command to display a list of all the Editor's commands and the syntax associated with them.

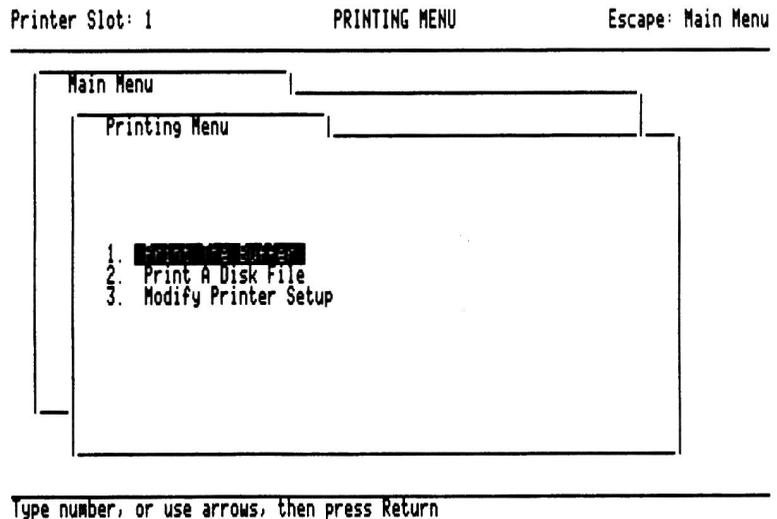
Printing the Buffer or a File

Use the "Print The Buffer Or A File" command in the Main Menu to enter the Printing Menu. From the Printing Menu you can generate a printed copy of the contents of a textfile or an AppleWorks word processing (AWP) file on disk, or the memory buffer.

When you enter the Printing Menu, the slot number of the printer appears in the top left-hand corner of the screen. If this is not the slot number actually being used, select the correct one by first quitting and re-starting Point-to-Point, then modifying the "Printer Slot Number" parameter in the Hardware Setup Menu.

There are three commands in the Printing Menu. (See Figure 3.21.)

Figure 3.21
Printing Menu



Type number, or use arrows, then press Return

A description of each of the commands follows:

Print The Buffer

Use this command to begin sending the contents of the buffer to the printer. Before entering the command, the printer must be turned on and be on-line, and the paper must be properly inserted and adjusted.

Each line in the buffer is sent to the printer preceded by the number of spaces set by the "Size Of Left Margin" parameter.

If the "Using Cut-Sheet Forms?" printing parameter is YES, after each page of output has been printed, a cursor appears on the screen and printing stops. When this occurs, insert the next piece of paper into the printer and then press any key to continue the printing.

The printing of the buffer can be aborted at any time by pressing [ESC]. If you do abort the printing, or if the entire buffer has been printed, you immediately return to the Main Menu. If you just want to stop printing

temporarily, press the [CONTROL-S] key; when you're ready to continue, press any key.

NOTE

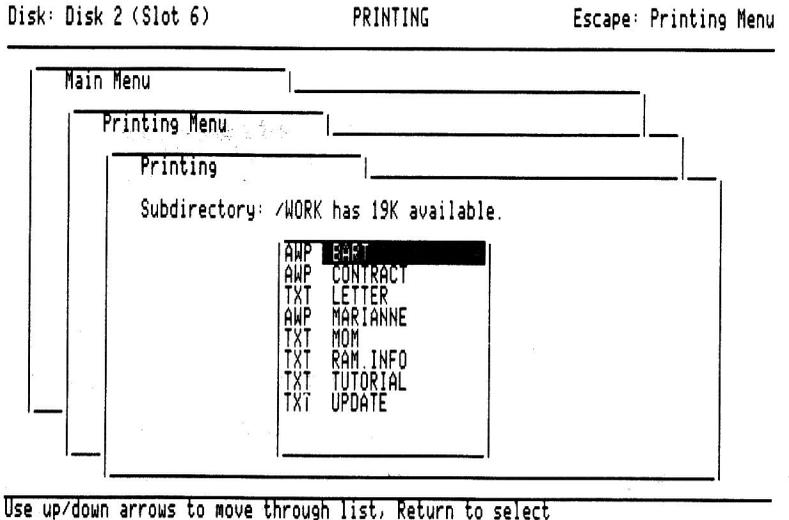
A page number is automatically printed at the top of each page of printed output if the "Starting Page Number" printing parameter is non-zero. The first page number is given by the value of the "Starting Page Number" parameter.

You may want to send special initialization commands to the printer before the buffer is printed. To do this, add a line before line #1 in the buffer (using the Editor's "A1" command) and type in the command line to be sent. Printer commands typically control such things as print density, line spacing, font style, and so on. Consult the user manual for your printer for descriptions of the available commands.

Print A Disk File

This command is similar to "Print The Buffer" except that it is a textfile or AppleWorks word processing (AWP) file on disk that is printed, not the buffer. When you enter the command, a standard directory window appears. (See Figure 3.22.) To select the textfile you want to print, use the up- and down-arrow keys to position the inverse bar over the name of the file, then press [RETURN]. Press [ESC] if you want to cancel the printing operation.

Figure 3.22
Printing A Disk File



NOTE

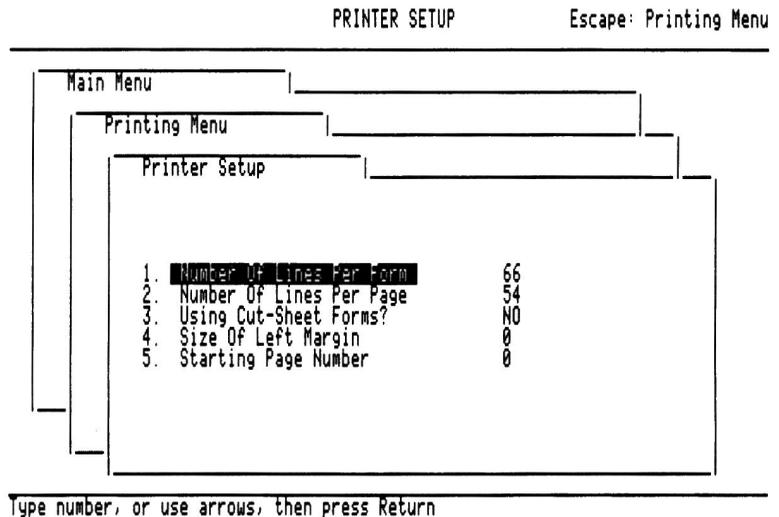
If you hold down the ⌘-key while selecting the name of the file to be printed, the file is displayed on the screen, even if the printer slot number is non-zero. This is useful for viewing the contents of a file without having to load the file into the buffer or print it.

Modify Printer Setup

Use this command to bring up the Printer Setup Menu so you can set the five parameters that control how the contents of the buffer or the file are to be sent to the printer.

The parameters in the menu are illustrated in Figure 3.23.

Figure 3.23
Printer Setup



A complete description of each of the printing parameters follows:

Number Of Lines Per Form

This parameter is set to the number of lines that you can print on one sheet of the paper you are using. For example, if you are using 11-inch sheets of paper and your printer is printing at 6 lines per inch, "Number Of Lines Per Form" should be set to 66 (66 = 11 x 6).

You can set "Number Of Lines Per Form" to any number between 1 and 255, inclusive.

Number Of Lines Per Page

This parameter is set to the number of lines that are to be printed on one sheet of paper before you want to move to the top of the next sheet. After this number of lines is printed, blank lines are printed to bring you to the top of the next sheet.

You can set "Number Of Lines Per Page" to any number between 1 and the value of "Number Of Lines Per Form," inclusive.

Using Cut-Sheet Forms?

This parameter can have one of two values: YES or NO. If it is YES, then output to the printer stops after each page of output has been printed and does not continue until you press any key on the keyboard. This gives you the opportunity to manually insert single sheets of paper.

If the parameter is set to NO, output is sent to the printer continuously until the entire buffer or file has been printed.

Size Of Left Margin

This parameter is set to the number of spaces that are to be printed to the left of each line that is sent to the printer.

You can set "Size Of Left Margin" to any number from 0 to 40, inclusive.

Starting Page Number

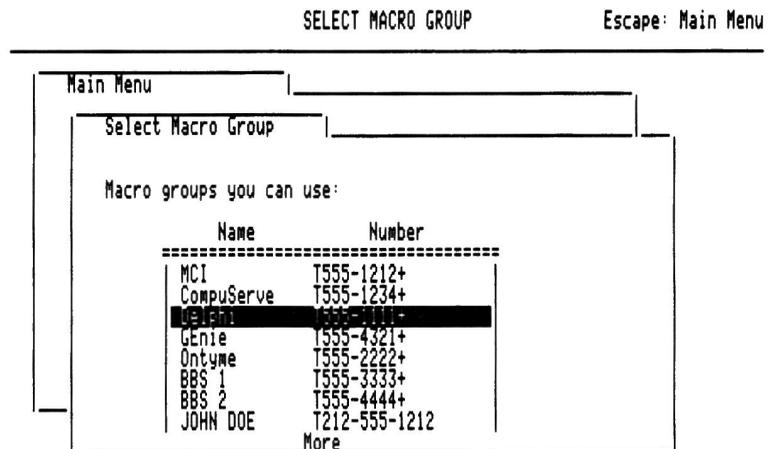
This parameter is set to the starting page number of the document to be printed. If you set "Starting Page Number" to 0, the pages are not numbered.

Editing the Macro Definitions

A *macro* is a sequence of up to 31 characters you can send while in communications mode, either by using the [C-5] command or by pressing a macro key combination that you define. If a commonly used phrase or set of commands (such as a signon sequence for a commercial information utility) is assigned to a macro, it can be sent easily, quickly, and without error merely by invoking the macro. (There are also several commands you can put in a macro phrase to control the way in which text is sent to the other computer.) This eliminates the need to manually enter the phrases or commands each time they are needed. The entire logon procedure for CompuServe, including access code, account number, and password could be assigned to a macro, for example.

Each entry in the telephone directory is associated with its own group of sixteen macro phrases. When you choose a telephone number, its group of macros is automatically loaded so that they are always available.

Figure 3.24
Select Macro Group



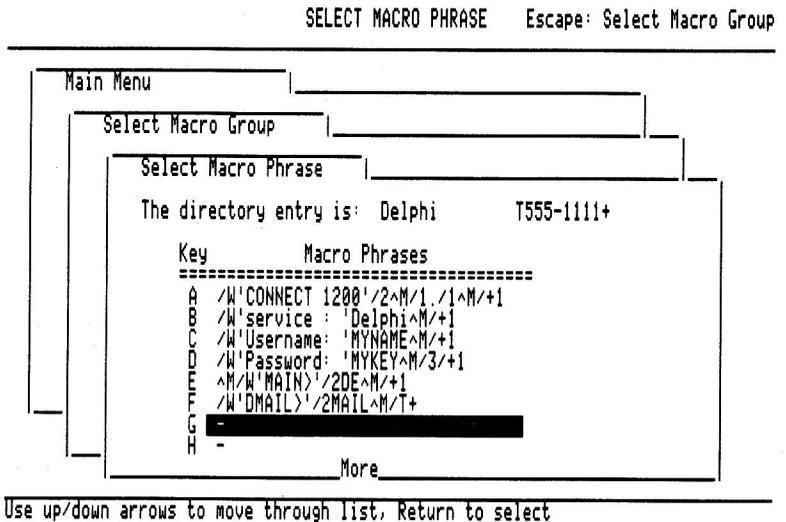
Use up/down arrows to move through list, Return to select

To edit a group of macros, select the "Edit The Macro Definitions" command from the Main Menu. When you do this, a Select Macro Group Menu appears (it looks very similar to the Telephone Directory Menu). (See Figure 3.24.) Pick the entry whose macros you wish to edit and press [RETURN]. Point-to-Point then loads the current macro definition file from disk if it is not already loaded. Macro definition files are always stored in the same subdirectory as the main Point-to-Point program file; if you've removed the Point-to-Point disk, you will see the message:

Place the Point-to-Point STARTUP disk in a drive and press Return.

To recover, insert the Point-to-Point disk into any drive and press [RETURN]. Otherwise, press [ESC] to return to the Select Macro Group Menu. (See Figure 3.25.)

Figure 3.25
Select Macro Phrase



Assuming all goes well, the Select Macro Phrase filecard appears next. It contains a list of all the macro phrases (and associated macro keys) in the group. Move the inverse bar over the macro you want to change, then press [RETURN].

If you press [ESC] instead, you will return to the Telephone Directory Menu (shown in Figure 3.2), but only after any changes you've made to the macros have been saved to disk first. The macro definition files are stored on the Point-to-Point startup disk, so if it's not available you'll be asked to insert it and press [RETURN] to continue.

NOTE

The first macro phrase in a group has a unique property that the others don't. You can tell Point-to-Point to send it automatically after connecting to another computer by putting a + sign at the end of the telephone number.

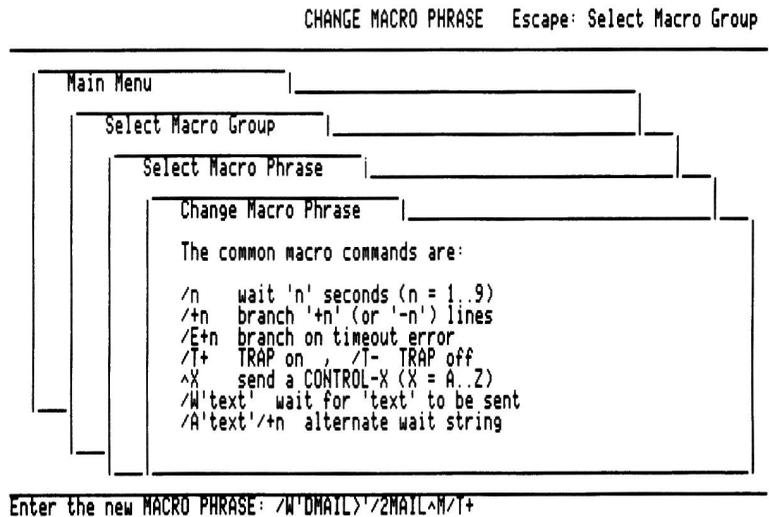
New Macro Phrase

Once you select a macro phrase, a page of instructions relating to macro phrase definitions appears and you are asked to enter a new macro phrase. (See Figure 3.26.)

The new macro phrase can be up to 31 characters long.

When you're in communications mode and you send a macro phrase to the other computer, Point-to-Point scans the selected phrase and transmits each character it finds until it encounters any of fourteen special commands imbedded in the phrase. These commands are called *meta* commands and control the way in which the macro is to be sent. After dealing with a command, subsequent characters in the phrase are transmitted until the next command is encountered. This process continues until the end of the phrase has been reached.

Figure 3.26
Enter New Macro Phrase
(with help)



The fourteen meta commands you can place within a macro phrase are as follows:

- /W'text' Wait for receipt of the text string before continuing.
- /A'text'/+n Alternate text string to wait for during the next /W'text' command. If the string is found, branch to the macro phrase 'n' lines ahead (use /-n for backwards branches).
- /E+n Branch to the macro phrase 'n' lines ahead if a timeout error occurs while waiting for a text string with /W'text' (n = 1..7).
- /E-n Branch to the macro phrase 'n' lines behind if a timeout error occurs while waiting for a text string with /W'text' (n = 1..7).
- /B Send the contents of the memory buffer.
- /D'filename' Send the contents of a textfile or an AWP file.
- /X'filename' Send a file using the Xmodem protocol.
- /n Wait for "n" seconds before continuing (n = 1..7).
- /+n Branch to the macro phrase 'n' lines ahead (n = 1..7).
- /-n Branch to the macro phrase 'n' lines behind (n = 1..7).
- /T+ Turn memorize mode (trap) on.
- /T- Turn memorize mode (trap) off.

`/H` Hang up the telephone.
`^X` Send the ASCII character code for CONTROL-X (X = @, A..Z, [, \,], ^, or _).

Wait for Text String

`/W'text'`

This meta command lets you synchronize the output of the macro to the output of the remote computer. When Point-to-Point encounters the command, it does not send the rest of the macro phrase until it receives the specified text string from the other computer.

For example, here is a macro that sends the phrase "MY NAME", a carriage return, and then waits for an "Enter Password: " prompt from the remote computer before sending the phrase "SESAME" and another carriage return:

```
MY NAME^M/W'Enter Password: 'SESAME^M
```

Notice that ' symbols (not " symbols) are used to enclose the text. Take care that you don't use " symbols by mistake. Notice also that there are no spaces following the `/W'text'` command.

NOTE

Be sure to specify a text string that is unique to the prompt you're waiting for. If same text string is sent (in a different context) before the prompting phrase, Point-to-Point will continue processing the macro phrase too soon.

You can save space in the macro phrase by specifying as short a text string as possible. In the previous example, for instance, if no ":" appears in the text sent before the 'Enter Password:' prompt, you could simply wait for a prompt string of ': '.

While Point-to-Point waits for the text string, it also checks to see whether an alternate text string, defined using the `/A'text'/+n` command, has been received. If the alternate string is received first, a branch occurs to the macro phrase that is +n lines from the line in which the alternate text string was defined.

You may sometimes encounter difficulties when sending macro phrases that use the `/W'text'` command. If the other computer doesn't send the expected text (or perhaps it does but line noise garbles it), Point-to-Point appears to "freeze" while it waits for the text it needs to continue.

Point-to-Point actually waits about one minute for the other computer to send the text string, and then it generates an internal timeout error. When a timeout error occurs, control passes to the line specified by the last `/E+n` (branch on timeout error) meta command. If no `/E+n` command is active, processing of the macro phrase ends and you return to communications mode.

When the `/W'text'` command has been processed (either successfully or unsuccessfully), any active `/E+n` and `/A'text'/+n` command is cancelled. If you're going to use another `/W'text'` command, you must enter new `/E+n` and `/A'text'/+n` commands, if applicable.

Alternate Text String

`/A'text'/+n`

This command defines an alternate text string that Point-to-Point will wait for during the next wait for text string command, `/W'text'`. If the alternate string is detected first, a branch occurs to the macro phrase that is `+n` lines from the one in which the alternate text string was defined ($n = 1..7$). You can also use a suffix of `-n` to branch backwards. (The `+` and `-` signs are mandatory.) The alternate text string is cancelled when the next `/W'text'` command is dealt with.

NOTE

The `/+n` (or `/-n`) branch suffix for this command is mandatory.

The ability to specify an alternate text string like this lets you define macros that react in different ways to two possible responses from the other computer. Programmers will recognize this as the equivalent of an `IF...THEN` construct in Applesoft BASIC or a `CASE` statement in Pascal.

Here is an example of a macro that you could tack on to the end of a signon macro for Delphi. It automatically routes you to the Apple II Special Interest Group (SIG) if you don't have any mail waiting; if you do have mail, it will retrieve the first piece of mail:

```
/A'new Mail'/+2/+1
/W'to do? 'GR APP^M
/W'to do? 'DE^M/W'Telex) 'MAIL^M/+1
/W'MAIL>'READ^M/T+
```

To understand fully what this macro group is doing, you have to understand how Delphi works. If you have unread mail waiting for you when you sign on to Delphi, you will see a message of the form:

You have 1 new Mail message.

An opening menu is then displayed, followed by the system prompt:

MAIN>What do you want to do?

If you have mail, you can read it by first entering the `DE` command (for DELPHI Mail), and then entering `MAIL` when the following prompt appears:

DMAIL>(Mail, Global, Telex)

Next, you will see a `MAIL>` prompt and you can enter `READ` to begin reading your mail.

If you don't have mail waiting, at the `MAIN>` prompt you can either sign off with the `BYE` command or explore other parts of Delphi. To enter the Apple II SIG, for instance, you would enter `GR APP` (for Groups, Apple).

In the macro example, the first phrase sets up an alternate text string that participates in the wait for the `'to do? '` string in the second phrase (this string is the last part of the `'MAIN>What do you want to do? '` prompt). If you have mail, the alternate string is detected first and you'll branch to the third phrase which continues the wait for `'to do? '`, sends the `DE` command, waits for the tail end of the `DMAIL>` prompt, and sends the `MAIL`

command. The last macro phrase waits for the MAIL> prompt before sending the READ command. It also turns on memorize mode with /T+ to trap the response.

If you don't have mail, the 'to do?' prompt is detected first, whereupon the GR APP command is sent to transfer you to the Apple II SIG.

Timeout Error Branch

/E+n and /E-n

These meta commands tell Point-to-Point what to do if the next wait for text string command, /W'text', results in a timeout error. When such an error occurs, control passes to the macro phrase that is +n or -n lines from the line containing the active /E+n command, and the /E+n (or /E-n) command is cancelled. The 'n' parameter can be any digit from 1 to 7; the + and - signs are mandatory.

Here is an example of how to use the /E+n command in conjunction with a series of macro phrases that will sign you on to Delphi through Uninet (comments are in parentheses and are not part of the macro phrase):

^M/1./1^M/+1	(RETURN . RETURN for Uninet)
/W'vice :DELPHI^M/+1	(System ID for Uninet)
/E+5/+1	(branch five lines on error)
/W'Username: 'GBL^M/+1	(Enter user ID of GBL)
/E+3/+1	(branch three lines on error)
/W'Password: '/+1	(Wait for password prompt)
SECRET^M/T+	(Enter password/trap on)
+++/W'OK'ATH^M	(This hangs up a Smartmodem)

The first two phrases in this group get you through to Delphi by sending a RETURN . RETURN sequence (the one-second delays are required), waiting for the tail end of Uninet's 'service :' prompt, then sending the name DELPHI. The third phrase tells Point-to-Point to branch to the last macro phrase if the text in the next wait for text command ('Username: ') is not received within one minute, and to turn memorize mode off. (You might not receive the prompt if Delphi is shut down for maintenance, for example.) The last line simply hangs up a Smartmodem by sending three + signs to enter its command mode, waiting for the 'OK' response, then sending the Smartmodem ATH hangup command. (You could also use the /H meta command to hang up.)

If the 'Username:' prompt is received, the word GBL is sent (a user identification code), followed by a carriage return. Another /E+n command is then executed to pass control to the last phrase on a timeout error. You must enter another one because the previous /W'text' command cancels the first /E+n command.

When the 'Password:' prompt is received, the SECRET password is sent, memorize mode is turned on, and macro processing ends.

Notice the /+1 commands that are placed at the end of each of the first six phrases. They tell Point-to-Point to branch to the next phrase in the group; this means that the first seven phrases are dealt with as though they were all one long phrase.

Send the Buffer**/B**

This command sends the contents of the memory buffer, just as if you had entered [3-4] from the keyboard.

Send a Textfile**/D'filename'**

This command sends the contents of a text (TXT) file, or the text in an AppleWorks word processing (AWP) file, as a series of lines of readable text. The filename you specify must be in the currently active directory.

For example, to send a textfile called MY.MEMO, use the meta command **/D'MY.MEMO'**.

Send a File Using Xmodem**/X'filename'**

This command sends the contents of any file on disk using the Xmodem error detection and correction protocol. The filename you specify must be in the currently active directory.

Vait**/n**

This command tells Point-to-Point to stop processing the macro phrase for "n" seconds. The number "n" represents a single digit between 1 and 9, inclusive. You will often insert delays like this to give the other computer a chance to complete an operation before you send more text to it.

For example, the macro phrase:

Firstname Lastname^M/3PASSWORD^M

would be used to send the phrase "Firstname Lastname" followed by a carriage return, a 3-second delay (long enough for the other computer to prompt you to enter the next line), and then the word "PASSWORD" and another carriage return.

Unconditional Branch**/+n and /-n**

These meta commands tell Point-to-Point to jump to a specific macro phrase for further processing. The number of the target phrase is calculated by adding the offset in the branch command to the current phrase number. Any characters in the current macro phrase after the branch command are ignored. The 'n' parameter can be any digit from 1 to 7; the + and - signs are mandatory.

You can link consecutive macro phrases together by placing a /+1 command at the end of each line. Negative branches are handy for implementing macro loops.

Trap On and Trap Off**/T+ and /T-**

The trap commands are used to either turn on memorize mode (/T+) or turn it off (/T-).

Hang Up

/H

This command hangs up the telephone.

Send a Control Character

^X

This meta command tells Point-to-Point to send a CONTROL-X character. The "X" represents the character symbol whose ASCII code is that of the control character you want to be sent, plus 64. What this means, in layman's terms, is that ^A represents CONTROL-A, ^B represents CONTROL-B, and so on. You'll use this meta command most often for inserting a carriage return character (CONTROL-M) in a phrase to simulate the pressing of the [RETURN] key; the meta command for the carriage return is ^M. (A carriage return is not automatically sent after the end of each macro phrase.)

NOTE

If you want to include a ^ or / character in your macro phrase without having it interpreted as a lead in to a meta command, precede it with a /. That is, use // to send a single / and use /^ to send a single ^.

New Macro Key

After you enter a new macro phrase, you are asked to:

Enter the new MACRO KEY (A..Z):

The macro key is the key you must press, along with the Ⓜ-key, to send the macro while in communications mode. (You can also send the macro using [Ⓜ-5] to open a macro window, positioning the inverse bar over the macro, then pressing RETURN; this is a lot less convenient, however.)

The macro key must be a single character from A to Z, or a question mark. Use a question mark if you don't want to be able to send the macro with a keyboard command (perhaps because it is just a continuation of an earlier macro phrase and has no separate meaning). Be sure that the macro key you specify is not already in use; if it is, when you enter the macro key, only the first macro associated with that key will be sent.

CAUTION

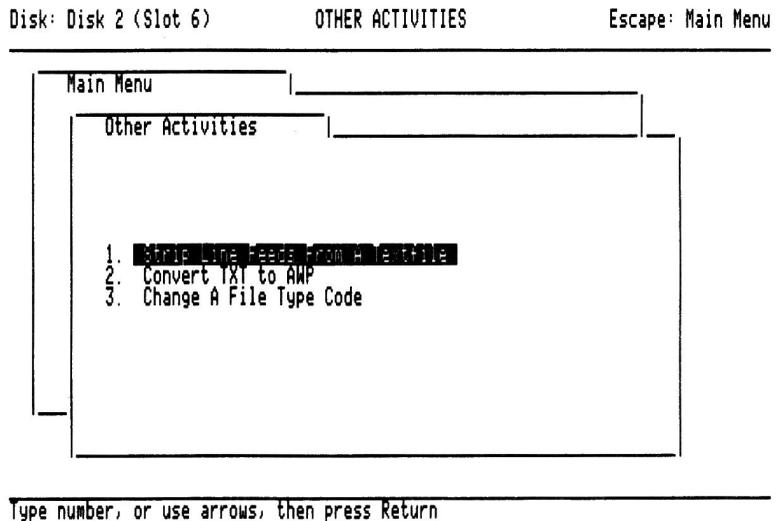
As we saw earlier, after dialing a number and connecting to another computer, Point-to-Point automatically sends the first macro phrase if the last character in the telephone number is a + sign. You must be careful when using this feature with a Special Modem whose DCD (carrier detect) override switch is on (see Appendix A: "Installing Your Modem") because Point-to-Point will think it's connected before it really is. If the first macro operation sends any text, the modem will stop dialing and hang up the telephone.

To provide a delay until the remote computer actually answers, use the /W'text' command in the first macro phrase to wait for the message the modem sends when it connects. For a Hayes Smartmodem (and compatibles), for example, this is the word CONNECT. Thus, the first macro phrase should begin with /W'CONNECT'. You may want to follow this with a one- or two-second delay (/1 or /2) to wait for any characters that might follow CONNECT (some modems display CONNECT 1200 or CONNECT 2400, for example).

Other Activities

The Other Activities Menu contains three commands that are useful for dealing with files received using the Xmodem error detection and correction protocol (see below) and for interacting more effectively with AppleWorks. The three commands in the Other Activities Menu are shown in Figure 3.27.

Figure 3.27
Other Activities Menu



Strip Line Feeds from A Textfile

Let's see how to use each command right now:

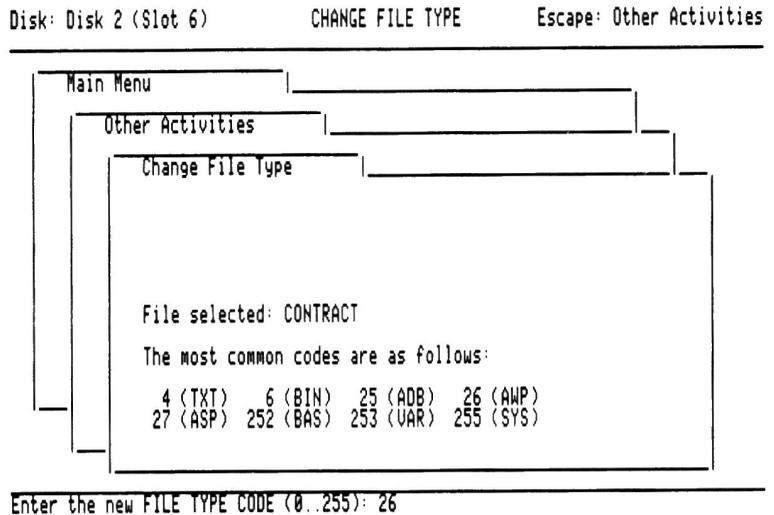
Each line of text in a standard Apple textfile is terminated by a carriage return character (CONTROL-M) only. Most other computer systems, however, terminate a line with a two-character sequence: a carriage return followed by a line feed character (CONTROL-J). This means that if you receive a textfile from a system like this you will have difficulty using it with the Apple IIe or IIc unless the line feeds are first removed. The most noticeable problems are:

- ▲ an inverse "J" (representing a CONTROL-J) appears at the beginning of every line when you load the file into the buffer and list it
- ▲ your hardcopy is double-spaced when you print the file
- ▲ if the textfile represents a program, you cannot load it into memory using the Applesoft "-FILENAME" command

If you want to receive a file simply by turning on memorize mode, you can easily solve the line feed problem by first setting the "Strip Control Characters?" communications parameter to YES. If, on the other hand, you want to receive a file using the Xmodem protocol, you have to remove the offending line feeds after the file has been stored on disk. For this you use the "Strip Line Feeds From A Textfile" command.

When you select this command, a directory window appears and you must select the name of the textfile to be acted on in the usual way. After you do so, Point-to-Point reads the file into memory, removes the line feeds, then writes the file back to disk under the same name.

Figure 3.28
New File Type Codes



The line feed stripping command also removes any null characters (00 bytes) at the end of the textfile. These are not really part of the file but are sent by the transmitter simply to ensure that the file size is an exact multiple of 128 bytes, as required by the Xmodem protocol.

Convert TXT To AWP

Text in an AppleWorks word processing (AWP) file is arranged in a different format than text in a standard text (TXT) file. With this command, you can convert a file from the TXT format to the AWP format so that you load it directly with AppleWorks.

When you select the Convert TXT To AWP command, a directory window appears which contains a list of all the TXT files in the active directory. To select the file to convert, position the inverse bar over its name and press [RETURN]. (Press [ESC] to cancel the operation.)

When the operation finishes, you will see a "Conversion complete." message and you can press the space bar to return to the Other Activities menu.

If you do not have enough space on the disk to perform the conversion, you will see an "ERROR: The disk is full." error message. To convert, you will have to delete some files from the disk and try again.

Change A File Type Code

Up to 256 different types of files can be stored on a ProDOS disk. The file type is stored as a numeric code in the directory entry for the file on the disk. The most common file types are as shown in Figure 3.28 (the three-character file type mnemonics in parentheses are displayed opposite the filenames when the disk is catalogued).

Unfortunately, the standard Xmodem file transfer protocol only defines how to transfer the data in a file; it does not define the method for transferring the file type code. This means that if you are communicating with a system that is not using Point-to-Point, any file received using Xmodem is always stored as a textfile (TXT). If the received file is not actually a textfile, your programs won't be able to use it properly. For example, if the file contains an Applesoft program, you can't load it or run it because it is not stored as an Applesoft program (BAS) file.

If you are communicating with another Point-to-Point system, these problems do not arise because Point-to-Point uses a unique variant of the Xmodem protocol to transmit the file type code. Fortunately, you can use the "Change A File Type Code" command to change the file type of any file on the disk. When you select the command, the names of all the files in the directory are displayed in a directory window. Select the one you want to deal with and then enter the new file type code when prompted to do so. Any file type codes from 0 to 255 (except for 15) can be selected. Point-to-Point displays a list of all the common codes and mnemonics on the screen to assist you in selecting a new code.

Once you've entered a new file type code, Point-to-Point proceeds to save it to disk. When it finishes, the following message is displayed:

The file type code has been changed.

and you can press the space bar to return to the Other Activities Menu.

NOTE

This command does not alter the data in the file itself; the data must already be in the format associated with the new file type. For example, simply changing a file type code from TXT to ASP does not mean you can load the new file directly into the AppleWorks spreadsheet unless the data in the original TXT file was formatted in accordance with ASP-file specifications.

Chapter 4

Transferring Files

Sending Textfiles

A *textfile* (a file containing lines of readable text) can be sent to another computer by first loading it into the memory buffer and then, when you're in communications mode, using the [⌘-4] command. Alternatively, you can send it directly from disk using the [⌘-2] command. (See Figure 3.5.)

You can also send an AppleWorks word processing (AWP) file as a series of lines of text using the [⌘-2] command. If you want to send an AWP file from the buffer with the [⌘-4] command, you'll first have to use AppleWorks to convert the file to a standard textfile that Point-to-Point can load. See Appendix C: "Using AppleWorks Files with Point-to-Point" for instructions on how to do this.

Before you send lines of text using either of these methods, you must, of course, ensure that the other computer is ready to receive them. That is, you must send commands to the other computer to prepare it to accept the first line of several lines of text which the buffer or file might contain.

You must also ensure that three communications parameters, "Prompt Symbol," "Delay After Each Line," and "Delay After Each Character," are properly set before sending a textfile. To change them, use the "Modify Communications Setup" command from the Telephone Number Menu.

To see why these three parameters are so important, let's look at exactly what happens when a textfile is sent to another computer.

When Point-to-Point sends a textfile, it sends it line by line. When the characters in a line are sent, there is a pause between characters as set by the "Delay After Each Character" communications parameter. When communicating with most computers, no "Delay After Each Character" is required ("Delay After Each Character" = 0) but on systems that are slow to respond to incoming information (usually because they're trying to deal with several users simultaneously), longer delays may be necessary to avoid character loss. Note that each unit of "Delay After Each Character" represents a delay of about 1/25th of a second. You can enter a value between 0 and 25 for "Delay After Each Character."

After a line has been received by a remote computer, it usually sends a unique symbol, called a prompt symbol, when it is ready to receive the next line. (The Applesoft programming language, for example, uses "]" as a prompt symbol. Many computer bulletin board systems use a "?".) You tell Point-to-Point what this symbol is by modifying the "Prompt Symbol" communications parameter before you begin sending your text. If the computer does not use a prompt symbol, just specify a blank "Prompt Symbol."

If a prompt symbol has been specified, after each line of text is sent, Point-to-Point waits until the other computer displays its prompt symbol before sending the next line.

If you haven't specified a prompt symbol, Point-to-Point waits the length of time specified by the "Delay After Each Line" communications parameter before sending the next line. As with the "Delay After Each Character" parameter, no "Delay After Each Line" is usually required ("Delay After Each Line" = 0) unless the other computer is bogged down with servicing several other users. Another occasion on which you will probably need to use a non-zero "Delay After Each Line" is when the other computer is printing whatever you send it, as you send it; the delay is needed to give the printer time to print the line and to return the print head to the left side of the paper. Note that each unit of "Delay After Each Line" represents an interval of about 1 second. You can enter a value between 0 and 9 for "Delay After Each Line."

When every line in the buffer or textfile has been sent, you should send the appropriate command to the remote computer to tell it you're finished. The Delphi service, for example, requires you to send a [CONTROL-Z] character.

Aborting the Transmission

You can cancel the transmission of the buffer or a textfile at any time by pressing the [ESC] key.

Memorize Mode Turned Off

Memorize mode is automatically turned off before the contents of the buffer or a textfile are sent to the other computer.

XON/XOFF Start-Stop Protocol

Point-to-Point stops transmitting lines of text if it receives a CONTROL-S character (XOFF) from the other computer and continues to transmit only when it receives a CONTROL-Q character (XON). Most computers use this XON/XOFF start-stop protocol to control the rate at which data is received.

Troubleshooting

If the transmission of the buffer or of a file unexpectedly stops as soon as the first line has been sent, you have probably specified an incorrect prompt symbol. Press [ESC] to abort the transmission, modify the "Prompt Symbol" parameter, and try again.

If transmission stops after several lines have been sent, the problem may be that line noise has garbled the prompt character sent by the other computer. If this has happened, you'll have to press [ESC] and begin again.

The transmission may also have stopped because the other computer has sent a CONTROL-S (XOFF) character. If so, be patient, transmission will resume as soon as the other computer sends a CONTROL-Q (XON) character. On occasion, line noise will generate a false CONTROL-S

character; if you suspect that this has happened, press [ESC] to abort the transmission.

After the entire buffer or textfile has been sent, you may find that the other computer has missed several characters, usually at the beginning of each line. This indicates that you are sending information to it too quickly for it to keep up. Try again with a higher "Delay After Each Character" or "Delay After Each Line" parameter.

Sending Programs

Applesoft and binary (6502 machine language) programs, and Apple Pascal program textfiles, can easily be sent to another computer using Point-to-Point commands and subsidiary programs.

If you want to send a readable version of a program (that is, the program source code), you must first convert the program into a ProDOS textfile using the programs we'll describe in this section (FP, ML, and PASCAL). Then, you can either load the program textfile into the memory buffer (if it fits) and send it with the [C-4] command while in communications mode, or send the textfile directly from disk using the [C-2] command.

Point-to-Point also lets you send the standard executable version of a program file directly from disk using the Xmodem file verification protocol. You do this by entering the [C-3] command. The Xmodem procedure is discussed later in this chapter in the section entitled "Xmodem Transfer of Disk Files."

There are three subsidiary programs on the Point-to-Point master disk you can use to convert an Applesoft or a binary program, or an Apple Pascal program textfile, into a readable ProDOS textfile. These programs are called FP, ML, and PASCAL, respectively. To use them, you must first enter Applesoft command mode (that's the mode where you see the "]" prompt symbol) by selecting the "Quit" command from the Main Menu of Point-to-Point and running the system program called BASIC.SYSTEM.

Using FP to Convert Applesoft Programs

An Applesoft program can be converted to a textfile using the FP program. To do this, use the "LOAD FILENAME" command to load the desired Applesoft program into memory, insert the Point-to-Point startup disk, and then enter the command

```
-FP [RETURN]
```

After all the disk activity has stopped, a textfile called PTP.BASIC will have been created. This textfile contains the readable listing of the Applesoft program.

Note that before using FP, you must ensure that the Applesoft program to be transferred is in the current disk directory. (You can view the files in this directory by entering the "CAT" command. The directory can be changed using the PREFIX command — see Appendix B: "Pathnames, Directories, and Prefixes.") If the FP program is not in this directory as well, you have to run it by specifying its full pathname.

Limitations to the Use of the FP Program

First, in order to use FP, the programs you wish to convert must be standard BASIC programs capable of being listed in their entireties. This means that "tricky" programs with machine-language routines imbedded in them cannot be converted.

Second, the FP procedure destroys line #0 of the program, so you should ensure that the program to be converted does not use this line number.

Using ML to Convert Binary Programs

Third, FP ignores all lines with numbers greater than 63999. These are "illegal" line numbers in Applesoft.

Binary programs (also called machine language programs) can be converted to a textfile using the ML program. To do this, insert the Point-to-Point startup disk and then enter the command

```
-ML [RETURN]
```

After a moment, Point-to-Point asks you for the name of the binary program you wish to convert.

Enter the name, insert the disk containing the binary program, press any key, and then wait until Point-to-Point asks you to re-insert the destination disk. After this disk has been inserted, press any key. After all the disk activity has stopped, a textfile called PTP.CODE will have been created. This textfile contains the commands required to automatically enter the binary program into memory and save it to disk when you use the "-FILENAME" command (where FILENAME is the name of the textfile) from Applesoft command mode. For example, the PTP.CODE file for a binary program called TESTFILE that starts at 768 (\$300) and is 33 bytes long looks something like this:

```
CALL -151
0300 :34 32 42 56 78 AB EE 23 65 77 9A
030B:83 32 44 55 66 99 AB CD EF 15 51
0316 :11 23 52 53 80 12 33 16 27 37 22
3D0G
BSAVE TESTFILE,A768,L33
```

The "CALL -151" command tells the Apple to enter its system monitor so that the file's data can be entered with the monitor's "enter" (:) command. "3D0G" returns the system to Applesoft command mode and the BSAVE command saves the binary program to disk.

Using PASCAL to Convert Pascal Textfiles

A Pascal textfile can be converted to a ProDOS textfile using the PASCAL program. To do this, insert the Point-to-Point startup disk into the disk drive and then enter the command

```
-PASCAL [RETURN]
```

After this has been done, you are asked to enter the slot and drive number of the Pascal-formatted disk, to insert the Pascal disk, and then to press any key. A list of all textfiles that are available on the disk are then displayed, in groups of ten. Enter the name of the textfile that you wish to convert when prompted to do so. Then, again when prompted to do so, enter the slot and drive number of the ProDOS-formatted disk on which you want to save the converted textfile, insert the ProDOS disk, and press any key.

When the conversion has been completed, a textfile called PTP.PASCAL will have been created. It is always stored in the volume directory of the disk.

Immediately after a program has been converted using FP, ML, or PASCAL, the textfile created should be renamed to any other name of your choice using the "Rename A File On The Disk" command in the Disk/File

Activities Menu of Point-to-Point or the ProDOS "RENAME FILENAME" command. This must be done so that the converted program file is not overwritten when the next program is converted.

Example: Sending a Program in Readable Form

To send the readable form of an Apple program to another computer, first convert the program into a textfile using the FP, INT, or PASCAL program. Next, start up the Point-to-Point program and, if you will be sending the program textfile from the buffer, enter the Disk/File Activities Menu and load it into the buffer.

Next, select the "Dial A Telephone Number" command from the Main Menu and choose a telephone number to dial. Before dialing, select the "Modify Communications Setup" command from the Telephone Number Menu and set the "Prompt Symbol", "Delay After Each Line", and "Delay After Each Character" communications parameters to values needed to communicate with the remote computer. (See the section earlier in this chapter entitled "Sending Textfiles" for complete instructions on how to do this.)

If you are sending the program to another Apple that is in a programming command mode, the prompt symbol to use depends on the type of program you are sending: "]" for Applesoft or "*" for binary programs. (There is no equivalent Pascal command mode.) If you are sending to another Apple that is running Point-to-Point in answer mode, no prompt symbol is used.

You must now connect to the target computer by selecting the "Connect To This Telephone Number" command in the Telephone Number Menu. Once you have entered communications mode, enter the appropriate commands to prepare the other computer to accept the first line of your program. If the other computer is another Apple, this may mean putting it into Applesoft command mode. (If you are sending a binary program textfile you can also enter Applesoft command mode because the first line of the textfile created by ML is "CALL -151" and this command places the other Apple in the system monitor.) If the other Apple is running Point-to-Point and is in answer mode, you don't have to do anything since it's already ready to accept text from you.

If the other computer is a CBBS (Computer Bulletin Board System), you must enter the appropriate sequence of commands to get the system ready to accept incoming lines. These commands depend on the particular CBBS with which you are communicating.

Once everything is ready, you can automatically send the program by entering the [C-4] command (if the file has been loaded into the buffer) or the [C-2] command to send it directly from disk. After the entire program has been sent, the other computer has it stored somewhere in its own memory. If you are communicating with an Apple that is in Applesoft command mode, you can now enter a ProDOS command that causes the other computer to store the program to its own disk. If an Applesoft program has been sent, this is the "SAVE FILENAME" command. If a binary program has been sent, it has already have been saved to disk because the ML program imbeds the appropriate "BSAVE FILENAME" command in the file.

Receiving Textfiles and Programs

There are two ways to receive and save information being sent to you by another computer. The first is to receive a specific file using the Xmodem data verification protocol. This procedure is discussed in next the section of this chapter entitled "Xmodem Transfer of Disk Files."

The second method is somewhat more straightforward. Information sent to you by another computer can be "trapped" at any time and automatically saved in the Point-to-Point buffer area by turning on memorize mode with the [C-6] command. To turn off memorize mode, all you have to do is enter another [C-6] command. (Remember that memorize mode is on if the TRAP mnemonic at the top of the screen in communications mode is highlighted.)

The information saved in the buffer can later be saved to a disk file with the "Save A File To The Disk" command in the Disk/File Activities Menu or edited with the Editor.

If the information saved in the disk file represents the readable version of a program (such as a version created by FP or ML, namely, the listing of an Applesoft program or the "enter" commands for a binary program), you must first convert it to an executable version before you can run it.

If the textfile contains an Applesoft program, you can do this by first entering Applesoft command mode by quitting Point-to-Point and running the BASIC.SYSTEM application program. Next, enter the command "-FILENAME" where "FILENAME" is the pathname of the textfile where the readable version of the program is stored. (Just to be safe, you may want to enter the "NEW" command just before entering the "-FILENAME" command. This clears out the program already in memory; if the file was created using FP, this is not necessary since the NEW command is included at the start of the file.) When the disk stops whirring, the program is in memory and you can run it with the "RUN" command or save it to disk using the "SAVE FILENAME" command.

If the textfile contains the "enter" (:) commands for a binary program in the format generated by the ML program, you can enter either Applesoft command mode before entering the "-FILENAME" command. Since the last line in the textfile contains a command of the form "BSAVE filename,Axxxx,Lyyyy", the program is automatically saved to disk as well.

Some systems may send you binary programs in a slightly different format, so be careful. If the "enter" commands are not preceded by a line containing the "CALL -151" command, you have to enter this command yourself before using the "-FILENAME" command. ("CALL -151" places you in the Apple system monitor, the home of the "enter" command.) In addition, if the file does not end with a BSAVE command, you have to enter it manually, after you have figured out the starting address and length of the program by inspecting the contents of the textfile.

If the program received is an Apple Pascal program source listing, you will need a special program to transfer the ProDOS textfile in which you have stored it into a textfile in the Pascal operating system.

Example: Receiving a Program in Readable Form

There are many ways to receive a program from another computer system. If the other system is an Apple II running Point-to-Point, the easiest way is to enter the "Answer A Telephone Call" command from the Main Menu and wait until the other Apple calls you. When it does, the caller can send you a program in readable form using the [⌘-2] or [⌘-4] command. Since you're answering, memorize mode will already be on and everything that's sent will be saved in your buffer. When the caller hangs up, you can exit to the main command menu, enter the Disk/File Activities Menu, and save the program to disk. As described above, you can then use the "-FILENAME" command to load it into memory before you use the "SAVE FILENAME" command to save it to disk in its executable form.

You can also receive programs from another Apple that has been placed in a "remote-control" mode by its operator. For example, an Apple IIe with a Hayes Micromodem in slot #2 can be placed in remote-control mode by entering the commands:

```
IN#2 [RETURN]
PR#2 [RETURN]
```

from Applesoft command mode. When the Apple is in remote-control mode, commands may be entered from its own keyboard or from an external terminal connected to it via a modem.

NOTE

The method of putting the Apple into remote-control mode is different for different modems. Sometimes the program needed to do this is contained in the firmware on the modem interface card itself (like the Micromodem) and sometimes you have to load and run a program that has been provided on a disk by the manufacturer. And sometimes you actually have to write the program yourself!

The call the remote Apple system, select the "Use This Telephone Number" command from the Telephone Number Menu. Once you have established a connection, you can control the other Apple in much the same way you control your own. There are some differences of course, notably the display speed, but they do not prevent you from entering the "CATALOG" command to see a list of the programs that are on the other Apple's disk or from using the "LOAD FILENAME" command to transfer an Applesoft program from disk into the other Apple's memory.

After you have loaded a program that you want to receive, you must enter the command

```
POKE 33,33 [RETURN]
```

This cryptic command ensures that carriage returns are only inserted at the end of a program line.

To begin receiving the program, simply type in the LIST command and press [RETURN]. As soon as you do this, the program is sent to you in a readable, source code format. In order to save the program in the buffer, you must immediately turn on memorize mode by entering the [⌘-6]

command. If you do not do this quickly enough you may miss part of the first line of the program, so you may want to enter the [⌘-6] command just before pressing [RETURN] after the LIST command. Once memorize mode is on, the incoming program lines are automatically stored in the buffer.

After the program has stopped listing, press [⌘-6] to turn off memorize mode and then use the Editor to delete any lines that are not part of the program. Next, enter the Disk/File Activities Menu to save the buffer to a disk file and then re-enter communications mode to continue communicating with the other Apple. Later, you can put the program that you have received into your own Apple's memory by following these steps:

- ▲ leave Point-to-Point by selecting the Quit command from the Main Menu
- ▲ run BASIC.SYSTEM by specifying its prefix and pathname when ProDOS asks
- ▲ enter the NEW command from Applesoft command mode to clear the program in memory
- ▲ enter the ProDOS "-FILENAME" command to load the program into memory

After all this has been done, the received program is in memory and you can run it or use the "SAVE FILENAME" command to store it on any of your disks.

Xmodem Transfer of Disk Files

You can also exchange files with other computers using a standard error detection and correction protocol called Xmodem. This protocol is used to ensure that the received copy of a file is identical to the transmitted original even though transmission noise may be intermittently garbling the data stream. The protocol is invoked by entering the [C-3] command while in communications or answer mode. (See Figure 4.1 or 4.2.)

There are two main advantages to using the Xmodem protocol to send or receive a file:

- ▲ any file on a disk can be sent, not just files containing readable text, and the file does not have to be loaded into the buffer first.
- ▲ almost all types of transmission errors are detected and dealt with; when an error is detected, the part of the file that was not properly received is automatically re-sent until it is.

When a file is transferred using Xmodem, a data format of "8+No Parity+1" (eight data bits, no parity bits, one stop bit) is used even if the "Data Format" communications parameter is not set to "8+No Parity+1." This means that both textfiles and general binary files can be transmitted.

Point-to-Point supports two versions of Xmodem that use different error-checking methods: standard Checksum and CRC-16. It automatically detects the version used by the other computer and uses it. If the other computer supports both, the more reliable CRC-16 version is used.

Transmitting a File Using Xmodem

Before you transmit a file to another computer using the Xmodem protocol, you must ensure that the other computer is ready to receive it. To do this, you must first enter the commands available on the other system to invoke its own Xmodem "receive mode." There is an important exception: if the receiver is using Point-to-Point, you don't have to explicitly send any special commands. Point-to-Point automatically sends an identification code that tells the receiving Point-to-Point to prepare to receive a file using Xmodem.

Once the other computer is ready to receive, enter Xmodem "transmit mode" on your Apple. To do this, first enter the [C-3] command while in communications or answer mode; once you have done this, the following message appears:

```
Xmodem File Transfer
[T]ransmit or [R]eceive a file?
```

Next, press [T] to select transmit mode. You are then shown a window containing the names of the files in the active directory. To send just one file, position the inverse bar over its name and press [RETURN]. If you are sending to another Point-to-Point system, you can send a group of files by ticking the ones you want to send before pressing [RETURN] when the inverse bar is over the name of the last file to be sent. To tick a file, position the bar over its name and press the right-arrow key; to untick it, press the left-arrow key. (On an unenhanced IIe the tick mark appears as an

inverse D.) If you're not sending to another Point-to-Point you can only send one file at a time, so don't bother ticking any files; if you do, only the last file in the list of ticked files will be sent.

NOTE

If you move to another subdirectory, all files in the previous directory are unticked. (See Figure 4.1.)

Figure 4.1
Xmodem Transmit
(with files checked)

```
[Calling] 0-1 2 3 4 5 6 7 8 0 Escape: Exit
Time: 0000 CAT_DSEND_XMODEM_BSEND_MACRO_TRAP_BREAK_PRINT_HANG 017282
Xmodem File Transfer
[T]ransmit or [R]eceive a file? T
```



As soon as you select a file, its name is displayed and the following message appears:

Waiting for start:

After a few moments you will see a message indicating the version of Xmodem being used: "(Using CRC-16)" or "(Using Checksum)." Point-to-Point then waits for a special code (defined by the Xmodem protocol) from the other computer instructing it to start transmitting the file. When the code is received, the contents of the file are transmitted as a series of data blocks. Each block is 128 bytes in size. As each block is sent, the following message is displayed:

Sending block nnnnnn of xxxxxx

(where "nnnnnn" is the block number and the "xxxxxx" represents the size of the file, in Xmodem blocks.) When the other computer receives the block, it checks to see if a transmission error has occurred. If it indicates that no error has occurred, the phrase:

- Verified

appears to the right of the "Sending block..." message. If an error is detected, however, the message:

- Error

appears and the current block is sent once again.

After all the blocks have been transmitted, the message:

END OF FILE

is displayed and the transfer is complete. At this point, the other computer should have received a true copy of the original file. If you selected more than one file to send, Point-to-Point begins sending the next file right away.

NOTE

Point-to-Point actually uses an Extended Xmodem Protocol (see Appendix J: "Extended Xmodem Protocol") to send files attributes (such as type, size, and name) that are not sent if the standard Xmodem protocol is used. As we will see below, this means that if the receiving Apple II uses the same protocol, it can use the received file without first changing its type.

Other "Transmit Mode" Error Messages

After each block is sent, the transmitter waits up to 100 seconds for an acknowledgement from the receiver that the block was received. If no such acknowledgement is sent within this time, then the following message is displayed:

CANCELLED

and the transfer is automatically aborted.

Figure 4.2
Xmodem Receive

```
[Calling] 0-1 2 3 4 5 6 7 8 0 Escape: Exit
Time: 0000 CAT_DSEND_XMODEM_BSEND_MACRO_TRAP_BREAK_PRINT_HANG 017282

Xmodem File Transfer

[T]ransmit or [R]eceive a file? R
Enter the name of the file: NEWPROG1
Waiting for start:
```

Receiving a File Using Xmodem

The method used to receive a file using the Xmodem protocol is quite similar to the one used to transmit a file. The first step is to cause the other computer to enter its own Xmodem "transmit mode." (If you are communicating with another Point-to-Point, its operator will have to do this; you can't do it yourself.) Once it is ready to transmit, enter the [↵-3] command to invoke the Xmodem file transfer program, and answer the question shown Figure 4.2.

You are then asked to enter the name of the file to be received. The name you specify here can be any valid ProDOS filename. See Appendix B for the rules for naming ProDOS files. (Also see Figure 4.2.)

If the file name you specify is already in use, the following message is displayed:

Replace existing file? N

If you don't want to erase the existing file, press [N] or [RETURN] to cancel the Xmodem transfer. If it's alright to erase the existing file, press [Y].

NOTE

If you are receiving a file from another Point-to-Point system, the filename you specify is ultimately ignored and the name that Point-to-Point sends is used instead. In this case, a file with the same name in the active directory is automatically deleted, unless it is locked. (If it is locked, the transmission is aborted.) To avoid accidentally overwriting important files, you should ensure that the active directory is empty. You can do this by using Apple's FILER or System Utilities program to create a new subdirectory or to transfer the files from an existing directory to another disk or another directory before deleting them.

You'll then see the following message:

Waiting for start:

and, in a few seconds, the first data block will be received (assuming that the sender detected your starting signal). As each data block is received and checked for accuracy, the message:

Received block nnnnnn of ?????? - Verified

is displayed. "nnnnnn" is the block number and "??????" is replaced by the size of the file being received (in Xmodem blocks), but only if you are communicating with another Point-to-Point system. If an error is detected in a transmitted block, you see the message:

Retrying

instead and the receiver sends a special code to the transmitter directing it to re-send the last block. Once all the blocks have been received, the message:

END OF FILE

is displayed and the Xmodem file transfer program ends.

Other "Receive Mode" Error Messages

TIMEOUT ERRORS. After each block is received, the receiver sends an acknowledgement code to the transmitter. The transmitter normally responds by immediately sending another data block. If the block is not sent within 20 seconds, however, then the following message is displayed:

Waiting

and another acknowledgement code is sent to the transmitter. Subsequent timeout errors occurs every 20 seconds until the transmitter responds. If 10

consecutive timeout errors occur, it is assumed that the transmitter has cancelled the transmission and the message:

CANCELLED

is displayed. (This message is also displayed if the receiver receives a special cancellation code from the transmitting computer before transmission of the entire file has taken place.)

DISK FULL ERRORS. If the disk becomes full while you are receiving a file, you see the message:

Can't write to disk

and the transfer is automatically aborted.

Special Notes

You can abort the file transfer process at any time by pressing [ESC]. When you do this, you re-enter standard communications mode.

There are two problems that can arise when receiving files using the Xmodem method.

First, unless you are communicating with a system that uses the Point-to-Point Extended Xmodem Protocol (See Appendix J) — typically another Apple II running the Point-to-Point program — or a system that uses the ASCII Express™ extensions to Xmodem, the incoming file will always be saved to disk as a textfile even if it really represents an executable program or some other type of file. This means you can't really use the file unless you first convert it to the correct file type. If the Point-to-Point or ASCII Express extended Xmodem protocols are used by the sender, file type information (and other attributes) are sent with the file, so you won't have a problem.

Second, incoming textfiles may contain a line feed character after each carriage return in the file; Apple ProDOS uses a carriage return only.

You can use the two commands in the Other Activities Menu to remedy these problems. "Change A File Type Code" can be used to change the file type code of a received file into any other ProDOS file type code and "Strip Line Feeds From A Textfile" can be used to remove the extraneous line feeds.

Appendices

Appendix A Installing Your Modem

You should consult the reference manuals for the modem and asynchronous serial interface card you're using with Point-to-Point for specific installation instructions.

REMEMBER TO TURN OFF THE APPLE BEFORE THE MODEM OR INTERFACE CARD IS INSTALLED!

If you are using an Apple IIc, all you need to do is connect your modem to one of the two serial ports at the back of the IIc (port 1 has a printer icon above it and port 2 has a telephone handset icon above it). We recommend that the modem be connected to port 2. You will need a special cable with the IIc's non-standard DIN-5 connector on one end to do this, but it is normally supplied with the modem when you buy it.

The Apple IIe does not have a built-in serial interface for the modem, so you must install it yourself before you can use the modem. To maintain compatibility with other software products you may use, we recommend that you insert your internal modem or asynchronous serial interface card in slot #2 (this is the second slot to the right of the power supply). Since Point-to-Point lets you specify where the card is located, however, you can actually place it in whatever slot you like, except slot 3 or the auxiliary connector slot.

In the rest of this appendix, we'll look at how to install the various types of modems that you can use with Point-to-Point.

Internal Modems

The easiest modems to install are the internal ones, those that are wholly contained on an interface card that plugs into one of the Apple IIe's slots. This group includes the following modems:

- Hayes Micromodem II and Micromodem IIe
- Multitech Multimodem
- Zoom Telephonics ZOOM/Modem IIe
- Transend (SSM) Apple ModemCard
- Novation Apple-Cat II
- Prometheus ProModem 1200A
- Cermetek AppleMate 1200

All you have to do to install one of these modems is place the card into any slot from 1 to 7 (slot 2 is recommended) and then connect the phone cable between the card and the modular wall jack. That's it!

The ProModem 1200A is actually a bit more complicated to install than other internal modems, however, because it is a two-card peripheral. In addition, it contains several on-card switches that must be properly set before it will work properly with Point-to-Point. The important switches are switch 1 (DTR control) and switch 3 (DCD control); they must both be ON. You probably won't have to touch these switches, however, because their factory settings are the ones that are required.

External Modems

Point-to-Point also works with external modems (such as the Hayes Smartmodem and the Apple Personal Modem) attached to the Apple IIe through a special modem interface called an "asynchronous serial interface card" or directly to a IIc serial port. Point-to-Point works with most of the serial interface cards available for the Apple IIe.

In most cases, the external modem is attached to such a card through a multi-wire cable that has a 25-pin male "DB-25" connector at the end that plugs into the female modem connector. (The primary exception is the Apple Modem: it uses a unique cable that has a nine-pin "DB-9" connector at the modem end.) The connector on the other end of the cable is usually quite different; its configuration depends on the type of serial interface card you're using.

It is very important that the cable and its connectors are carefully designed in order to ensure that all communications signals between the interface card and the modem are properly routed. The cable should use nine of the pins on the DB-25 connector, pins 1 through 8 and pin 20 (the pin numbers are usually marked on the connector), for the purposes indicated in the following table:

Pin Number -----	Usage (from computer's point of view) -----
pin 1	GND: protective ground
pin 2	TXD: transmit data
pin 3	RXD: receive data
pin 4	RTS: request to send
pin 5	CTS: clear to send
pin 6	DSR: data set ready
pin 7	GND: signal ground
pin 8	DCD: data carrier detect
pin 20	DTR: data terminal ready

(The pin numbers given in this table are for a standard DB-25 connector; refer to the user's manual for the Apple Modem for the corresponding pin numbers on that modem's unique DB-9 connector. The mnemonic names for the signals at each pin are those defined by the "RS-232-C" standard promulgated by the Electrical Industries Association.)

You will find that in some cases, notably where the serial interface card has been designed to directly interface with a printer rather than a modem, the usage of some of the pins on the modem end of the cable provided with the card is different from that indicated in the above table. For example, the card may be transmitting data on pin 3 and receiving data on pin 2. In order to rectify this situation you have to cross some of the wires in the connecting cable to ensure that the activity on each pin reflects the usage described above. For example, if TXD and RXD are reversed, then the pin 2 wire should be connected to pin 3 instead, and vice versa. A device that

does this for you automatically is called a "null modem" or a "modem eliminator."

To determine whether you have to prepare a special "crossed" cable before you can use your modem, you will have to consult the reference manual for your asynchronous serial interface card. It should tell you what signals are appearing at which pins on the DB-25 connector leading from the card.

If the Videx PSIO is being used with the UDS 212A/D modem, then one important wiring change must be made in the cable that connects these two devices. First, pin 8 (DCD) on the connector on the UDS 212A/D must be connected to pin 5 (CTS) on the Videx PSIO DB-25 connector. Second, pin 5 (CTS) on the UDS 212A/D must be connected to pin 8 (DCD) on the Videx PSIO. If these changes are not made, you will not be able to take advantage of the auto-dialing and auto-answering capabilities of that modem.

Setting the Baud Rate

If you are using the CCS Model 7710A Asynchronous Serial Interface Card, the SSM AIO Board, the Prometheus VersaCard, the SSM ASIO Board, the ALS Dispatcher, or the Quadram Multicore with your modem, or any other card that uses the "6850 ACIA" or "8251 ACIA" integrated circuit, the switches, jumpers, or dials (as the case may be) on the card must usually be set equal to the baud rate (speed) used by the computer with which you are going to communicate. Consult the reference manuals for these cards for complete instructions on how to configure them for the baud rate you require.

With Point-to-Point, however, you can select either the baud rate set by the switches or one-quarter of this baud rate without manually changing switch settings; this is done by setting the "Baud Rate" communications option in Point-to-Point's Communications Setup Menu to HIGH or LOW, respectively. Thus, if you are doing most of your communicating at either 1200 baud or 300 baud (the usual case), set the switches for 1200 baud. When you do this, the only time you'll have to change the switch settings is when you are communicating at a baud rate other than 300 or 1200.

If you are using the Apple Communications Card, you are normally restricted to two baud rates only: 300 and 110. However, a hardware modification can be made to the Communications Card to allow you to operate it at 1200/300 baud or 4800/1200 baud (see pages 35 and 36 of the Communications Card manual for details). If such a modification is made, when the "Baud Rate" communications option is set to LOW, the lower baud rate of the two is actually selected; when "Baud Rate" is set to HIGH, the higher baud rate of the two is actually selected. You can also set the baud rate of the Apple Super Serial Card by setting switches on the card or of the Videx PSIO Card by configuring its NOVRAM ("non-volatile RAM"). The baud rate actually used by Point-to-Point, however, is controlled by the setting of the "Baud Rate" communications parameter — the switches are ignored.

Using the Special Modems

The following modems are referred to as "Special Modems" because they have built in intelligence that is used to recognize and execute special commands sent by Point-to-Point for dialing, hanging up, and answering the telephone:

Apple Modem
Apple Personal Modem

Hayes Smartmodem
 U.S. Robotics Password Modem
 Universal Data Systems 212A/D
 Anchor Automation Signalman Mark XII
 Prometheus ProModem 1200 or 1200A
 Cermetek AppleMate 1200

Most of these modems have option switches on them that can be used to control, to some degree, how the modems behave when connected to the Apple. Ensure that the switches on your Special Modem are set to their default values before connecting the modem to the Apple. The installation manual for the modem should indicate what these default values are.

Most Special Modems have a switch that controls the state of the DCD ("data carrier detect") line. This line is supposed to be active only when a successful connection has been established with another computer. Point-to-Point examines it to determine when the other computer has answered the telephone and when it has hung up. Most Special Modems, however, generate a "fake" DCD signal that keeps DCD active whenever the modem is turned on, not just when a telephone connection has been established. With this configuration, it is not possible for Point-to-Point to determine automatically whether it is connected to the other computer.

A Special Modem's DCD override switch can be used to enable or disable this fake DCD signal. Ideally, it should be placed in the "disable" or "off" position so that Point-to-Point can act more intelligently by automatically sensing connect and hangup conditions; unfortunately, some interface cards cannot communicate with the Special Modem unless DCD is always enabled and others simply ignore the state of the DCD line.

The following table indicates the preferred setting of the DCD override signal for each of the various asynchronous serial interface cards supported by Point-to-Point:

Asynchronous Serial Interface Card	State of DCD Override
Apple Super Serial Card	OFF
Prometheus VersaCard (serial option)	OFF
CCS Model 7710A	OFF
SSM AIO Card (serial option)	OFF
SSM ASIO Apple Serial I/O Interface	OFF
Apple Communications Card	ON or OFF
ALS Dispatcher	ON or OFF Videx
Videx PSIO Card	ON*
Apple IIc modem port	ON
Street Electronics BusinessCard	ON

*can be OFF if the cabling change referred to earlier in this section is made.

The following table shows the switches that control the state of the DCD line for each of the various Special Modems and how those switches are to be adjusted to turn the "fake" DCD (that is, the DCD override) on or off:

Special Modem -----	Switch Number -----	SWITCH SETTING	
		"Fake" DCD On -----	"Fake" DCD Off -----
Apple Modem	1	DOWN	UP
Hayes Smartmodem*	6	DOWN	UP
Prometheus ProModem 1200	10	ON	OFF
Prometheus ProModem 1200A	3	ON	OFF
Cermetek AppleMate 1200	10	CLOSED	OPEN
U.S. Robotics Password	2	ON	OFF
UDS 212A/D	1-2	ON	OFF
Anchor Signalman	n/a	n/a	n/a
U.S. Robotics Courier 2400	6	DOWN	UP

NOTE*

The Smartmodem 2400 has no DCD override switch. To enable the "fake" DCD signal, send it an AT&C&W command from communications mode. To disable the "fake" DCD, send an AT&C1&W command instead. The DCD setting is stored in a battery-powered memory area within the Smartmodem, so once you configure the DCD signal like this, you will never have to configure it again.

Appendix B

Pathnames, Directories, and Prefixes

The purpose of this appendix is to familiarize you with three fundamental ProDOS concepts: pathnames, directories, and prefixes. You need to master these concepts if you want to fully understand how to access disk files when you're using Point-to-Point.

Naming ProDOS Files

When you first store a file on a ProDOS disk, you must assign it a unique filename used to identify it thereafter. A ProDOS filename can be up to 15 characters long. It must begin with an alphabetic letter (A-Z), but the other characters may be any combination of letters, digits (0-9), and periods (.). Lower-case letters may also be used, but ProDOS automatically converts them to upper-case. Here are some examples of valid ProDOS filenames:

```
FORM.LETTER  
CONTRACT.3  
CHAPTER.FOUR
```

Here are some examples of invalid filenames and the reasons they are invalid:

```
5.EASY.PIECES           (starts with a digit)  
EXPLORING MARS         (contains an illegal space)  
THIS&THAT              (contains an illegal &)  
THIRD.AND.TWELVE      (too long)
```

Probably the most common mistake arising from the naming of files is the use of a space as a word separator (see the second example). This is permitted with DOS 3.3 (Apple's other major operating system) but not ProDOS. Use a period instead of a space if you wish to improve the readability of your filenames.

Directories and Prefixes

When a file is saved to disk, it can be stored in any one of several directories you can create on the disk. These directories are analagous to file folders in that they usually hold groups of related files. For example, you may create one directory to hold word processing documents, another to hold Applesoft programs, and so on. The ability to create separate directories on the same disk makes it much easier to organize large numbers of files efficiently. When a disk is first formatted (usually with the FILER or System Utilities program on the ProDOS master disk), only one directory, called the volume directory, exists; you name it right after the formatting process finishes. (The rules for naming directories are the same as for naming ordinary files.) The volume directory for a standard ProDOS disk device can hold the names of up to 51 files (compared with the 105 files that a DOS 3.3 directory can handle).

You can create additional directories (called subdirectories) within the volume directory using the ProDOS "CREATE FILENAME" command from Applesoft command mode or the "MAKE DIRECTORY" command from FILER. Indeed, you can even create subdirectories within

subdirectories (64 levels are permitted). Each subdirectory can hold the names of as many files as you wish to store in it (although at some point the disk will become full). This system of nested directories is called a hierarchical directory structure. The DIR mnemonic appears to the right of a directory name when you request a file listing with the ProDOS CAT or CATALOG command.

The directory in which a file is to be saved is normally specified by tacking on a special prefix to the filename to create a unique identifier called a pathname. A pathname is made up of the names of a series of directories, beginning with the name of the volume directory and continuing with the names of all the directories that must be passed through in order to reach the directory you want, followed by the filename itself. Each directory name is separated from the next by a slash ("/"), and a slash must precede the name of the volume directory. The directory names in the chain must define a continuous path: each directory specified must be contained within the preceding directory. For example, consider a disk that has a volume directory called BASEBALL and two subdirectories within BASEBALL called AMERICAN and NATIONAL. If you want to save a file called NY.YANKEES in the AMERICAN subdirectory, you would specify the following pathname:

```
/BASEBALL/AMERICAN/NY.YANKEES
```

If you simply specified the name NY.YANKEES itself, the file would be saved in the currently active directory, which is usually the volume directory (unless you change it with the PREFIX command that we are about to describe).

If most of the files you are using are contained in the same subdirectory, it quickly becomes very annoying to have to specify the same chain of directory names every time a file is to be used. To alleviate this annoyance, ProDOS supports a PREFIX command that you can use to set the chain of directory names to which any filename specified in a ProDOS command will be automatically appended. (The chain must not be more than 64 characters long.) For example, if PREFIX is set by entering the following ProDOS command:

```
PREFIX/BASEBALL/AMERICAN/
```

then any file contained in the directory at the end of this path (such as NY.YANKEES) can be referred to by entering its filename only. A similar command is available within the Point-to-Point Disk/File Activities Menu ("ProDOS Directory").

A name that is a continuation of the prefix could also be entered to access files in lower-level subdirectories; such a name is called a partial pathname. If PREFIX has the value just described and if AMERICAN contains a subdirectory called CHAMPS that contains a file called ROYALS.1985, then you could access the file by specifying a partial pathname of CHAMPS/ROYALS.1985. Note that in this case the pathname is not preceded by a slash.

ProDOS prefixes can be up to 64 characters long, including the preceding slash. Partial pathnames can also be up to 64 characters long.

One of the useful features of ProDOS is that whenever it must find the file described by a pathname, it searches each installed disk drive until it is found. Contrast this with the DOS 3.3 environment where it is necessary to explicitly specify the drive and slot number for the file before it can be accessed (using the ",S#" and ",D#" parameters).

You can also access a specific slot and drive with Point-to-Point — it just sets the prefix to the volume directory name before performing any file-handling operations.

The advantage of subdirectories is often not readily apparent to users of floppy disks, but becomes obvious when a mass storage device, like the ProFile or UniDisk 3.5, that has room for hundreds of files, is used. If all the files were held in one directory you might have to wait a long time to spot your file when the disk was catalogued, and even then you could well miss it among the other files. Fortunately, the hierarchical directory structure used by ProDOS allows related files to be grouped within the same subdirectory for easy access.

[Note: This appendix is adapted from Chapter 2 of the book, *Apple ProDOS: Advanced Features for Programmers* by Gary B. Little (1985, Brady Communications Company, Inc.). Its use here is with the permission of the author and the publisher.]

Appendix C

Using AppleWorks Files with Point-to-Point

If you're like hundreds of thousands of other Apple IIe and IIc users, you're probably using AppleWorks, the integrated word processing, spreadsheet, and database program written by Rupert Lissner, designed by Bruce Tognazzini, and published by Apple Computer, Inc. Unfortunately, the files that AppleWorks uses (which have file type mnemonics of ADB, AWP, and ASP) are not standard textfiles, so you can't load them into Point-to-Point's memory buffer or send them, line by line, to another computer. You can, of course, transfer them using the Xmodem protocol, but the receiver won't be able to make sense of them unless he is also using AppleWorks.

There is one exception to this: in communications mode, you can send an AWP file directly from disk with the [C-2] command. Point-to-Point interprets the AWP file "on the fly" and sends it out as lines of standard text.

Converting AppleWorks Files into Textfiles

Fortunately, it's very easy to convert AppleWorks word processing files, or reports generated from database and spreadsheet files, into standard textfiles. "Standard" textfile means a file that has a carriage return character after each formatted line; that is, a file that contains the image of what would be sent to a printer if you were to print the document.

NOTE

AppleWorks routinely lets you create textfiles that have a carriage return at the end of every paragraph. You shouldn't use these types of files with Point-to-Point, however, because the text isn't formatted and because most remote computers can't deal with text sent to them on a paragraph by paragraph basis.

To generate a standard textfile, you must first add a custom printer driver to AppleWorks. To do this, follow these steps from the AppleWorks Main Menu:

1. Select the "Other Activities" command from the Main Menu.
2. Select the "Specify Information About Your Printer(s)" command from the Other Activities menu.
3. Select the "Add a Printer" command.
4. Select the "Custom Printer" option.
5. AppleWorks then asks you to enter a name for the printer driver. Call it MODEM, or anything else that suits you.
6. Next, you're asked how the "printer" is to be accessed. Select the "Print onto disk or on another Apple" option.

7. Finally, you're asked to define several printer characteristics. It is not necessary to change any of the defaults, so just keep pressing [ESC] until you return to the Main Menu. Your custom printer driver is permanently saved to disk in the process.

Now when you use the AppleWorks [⌘-P] command to print a document from the word processor, spreadsheet, or database module, the option "MODEM (disk)" will appear when you're asked "Where do you want to print?" Select this option, provide a filename, and sit back while the document is printed to disk. Later on, when you're running Point-to-Point, you can load the textfile into the buffer and then send it with the [⌘-4] command, or send it directly from disk with the [⌘-2] command.

Using Textfiles with AppleWorks

You may want to use the AppleWorks word processor with textfiles that Point-to-Point receives from another computer. You can do this in two ways. First, you can use the Convert TXT To AWP command in Point-to-Point's Other Activities menu to convert a TXT file to an AWP file that AppleWorks understands.

Second, you can use AppleWorks itself to convert the TXT file. To do this, following these steps from the AppleWorks Main Menu:

1. Select the "Add files to the Desktop" command from the Main Menu.
2. Select the "Make a new file for the Word Processor" command from the Add Files Menu.
3. Select the "From a text (ASCII) file" command from the Word Processor Menu.
4. Enter the complete ProDOS pathname for the textfile you want to use.
5. Type a name for the new word processing file. This file will have a AWP file type.

Once these steps have been completed, you will enter the word processor and can begin to deal with the document in the usual way.

Appendix D

Advanced Commands

Point-to-Point supports a few commands you can use to perform certain specialized activities:

1. If you press [⌘-H] while using Point-to-Point, a copy of what's on the screen is sent to the printer. Make sure the printer is on and selected before you enter this command. If it's not, Point-to-Point will "freeze up" until it is.
2. If you hold down the ⌘-key when you start up Point-to-Point, Point-to-Point automatically dials the last number used in the previous session.
3. There is a [⌘-DELETE] command in communications mode which you can use to control whether an incoming DELETE character (ASCII code 127) is to be ignored or not. If you want to ignore it, press [⌘-DELETE] at the beginning of a communications session; press [⌘-DELETE] once again to return to normal handling of the DELETE character.

Appendix E

Installing Pinpoint

Pinpoint 1.3 Installation

Installing Pinpoint on your **copy** of Point-to-Point is simple:

1. Boot your **copy** of Pinpoint, **Version 1.3**
2. Configure Pinpoint for your system
3. Select Point-to-Point on the "Program Information" screen
4. Press [RETURN] (with the Point-to-Point copy in a drive)
5. Press [RETURN] again and Pinpoint will find the "PTP.SYSTEM" file and install Pinpoint on it
6. Run Point-to-Point
7. Press [⌘-P] when you want to invoke the Pinpoint Desktop Accessories

Earlier Versions of Pinpoint

If you have a version of Pinpoint Desktop Accessories that is earlier than 1.3 and wish to get Pinpoint up and running with Point-to-Point right away, you should:

1. Run ProDOS BASIC with Pinpoint installed
2. Type "-PTP.SYSTEM"
3. Press [RETURN], to run the Point-to-Point startup file "PTP.SYSTEM"
4. Press [⌘-P] when you want to invoke the Pinpoint Desktop Accessories

Updating Your Pinpoint Desktop Accessories

If you have Pinpoint version 1.0 or 1.1, simply make a copy of Pinpoint to use, put your original disk **only** in a disk mailer, and return it to Pinpoint Publishing for a *free* update. To expedite the update, you can write "Pinpoint Update" and the version number on the outside of the package.

If you have Pinpoint version 1.2x (where x could be any letter), follow the above instructions with the additional step of including \$10.00 for the update. California residents include 6.5% or 65¢ to cover the sales tax.

Appendix F

Working with Program Selector Utilities

If you are going to use Point-to-Point with any of the various program selectors available, there are certain things that you should know. First, you should always work with a *backup copy* of all software, when possible. Next, configure your copy of Point-to-Point for your system before installing with your program selector. Finally, follow the specific installation instructions of the selector you are using.

Pinpoint RAM Enhancement Kit and RAM Switcher™

When using Pinpoint's RAM Enhancement Kit to autoloading Point-to-Point into your RAMdisk, bring up the "ProDOS file Autocopy Selection" screen. Then enter the filename and complete ProDOS path from which you will be copying the following primary Point-to-Point files:

PTP.SYSTEM	(startup file)
PTP1.SYSTEM	(program file)
PTP.PARAMS	(configuration file)
PTP.MACROS	(macro file)

With the Exit Path set as "RAM.SWITCHER", on exiting the current program you should select "PTP.SYSTEM" (the startup file) from the menu to call up Point-to-Point.

Pinpoint's RunRun, Glen Bredon's PROSEL, and International Solution's MouseDesk

Program selectors such as these, simply require you to know that the prefix of the Point-to-Point disk is "/POINT.TO.POINT/" and that the startup path is "PTP.SYSTEM" in order to configure the selector program following the appropriate publisher's documentation.

Quark Catalyst 2.1

The Point-to-Point disk contains the file "QUARK.INSTALL" and should be installed according to Quark's instructions. Please contact Quark or your dealer if you need further assistance.

Quark Catalyst 3.0

The Point-to-Point disk contains the file "CATALYSTDESKTOP" and should be installed with Quark 3.0 following Quark's instructions. You will find that the Point-to-Point icon is a telephone. Contact Quark or your dealer if you need further assistance.

Appendix G

Installing on High-Capacity Drives and RAMdisks

The easiest way to use Point-to-Point from a high-capacity drive is to copy all the files from the /POINT.TO.POINT/ disk to the same directory or subdirectory on your disk. This practice will assure that you have all the files that you need. Later, when you are more familiar with the program, you can always delete the files that you do not use.

Or, if you have a high-capacity disk drive in your system (such as a hard disk, UniDisk 3.5, or an extended memory card configured as a RAMdisk), you may want to copy selected files from the Point-to-Point disk.

Once you have configured your working copy of /POINT.TO.POINT/, you will want to transfer the following primary Point-to-Point files:

PTP.SYSTEM	(startup file)
PTP1.SYSTEM	(program file)
PTP.PARAMS	(configuration file)
PTP.MACROS	(macro file)

to your hard disk, UniDisk 3.5, or RAMdisk.

If you think that you will need to convert the appropriate file types to readable ProDOS textfiles for uploading, you can copy the following additional files:

STARTUP	(for running in BASIC)
FP	(for Applesoft programs)
ML	(for Machine Language programs)
PASCAL	(for Pascal programs)

You can also copy the files for the different device drivers if you are going to need to make frequent changes.

RAMdisk and RAM Enhancement Kit

When using Pinpoint's RAM Enhancement Kit to autoloading Point-to-Point into your RAMdisk, you should enter, in the "ProDOS file Autocopy Selection" screen, the filename and complete ProDOS path from which you will be copying the following primary Point-to-Point files:

PTP.SYSTEM	(startup file)
PTP1.SYSTEM	(program file)
PTP.PARAMS	(configuration file)
PTP.MACROS	(macro file)

Remember to save any changes that you have made to the macro and configuration files, if you plan to use them in the future.

Appendix H

Example Macros

This appendix contains some examples of Point-to-Point macros that work with selected services. We have found these macros to function properly with our system configuration, local phone system, and network link to the individual services.

We learned during the testing cycle that your setup may require some subtle changes to the macro to get it to flow properly. The most common ones involve changing the delay period and/or the wait for meta command text string. The best way to find out what works for you is to experiment and have fun.

Simple Logon to BBS

```
A /W'User Number'144^M/+1
B /W'Password'/1MYKEY^M
```

Macro phrase "A" waits for the prompt "User Number". It then sends a "144" followed by a Carriage Return (CR) and links to the next macro phrase.

NOTE

The text string is case-specific, that is, the upper and lower case characters must match exactly the text string that you will receive. You must also reproduce all the imbedded spaces and special characters correctly.

Macro phrase "B" waits for "Password", pauses 1 second, and then sends the password "MYKEY" and a CR. Now you are logged onto the Bulletin Board Service to do what you want.

Logon to CompuServe

```
A /W'CONNECT 1200/3^M/+1
B /W'Name: 'CIS^M/+1
C /W'ID: '12345,6789^M/+1
D /W'word: 'LETME!COMEIN^M
```

Macro phrase "A" waits for the 1200 Baud connect message generated by some modems, waits 3 seconds, sends a CR, and goes to the next macro phrase.

Macro phrase "B" looks for the last part of "Host Name: ", sends a "CIS", and continues linking the through the macro group to get you online.

Another Way to CompuServe

```
A /W'CONNECT'/1^C/+2
B ^M/W'Name: 'CIS^M/+1
C /W'ID: '12345,6789^M/+1
D /W'word: 'LETME!COMEIN^M
```

Macro phrase "A" sends a "CONTROL-C" after receiving the CONNECT message, and the "+2" skips to macro phrase "C" to continue the logon. If line noise disrupts the prompt message, you can simply press [␣-B] to send macro phrase "B" — thereby continuing the logon without having to enter your responses manually.

In and Out of MCI

```
A /W'CONNECT 1200/2^M/+1
B /W'name: 'MYNAME^M/+1
C /W'word: 'MYKEY^M/+1
D /A'no messages waiting!/+3/+1
E /W'Your INBOX has'/1SCAN^M/+1
F /W'Command: '/1READ ALL^M
G Create^M
H //^M/1EXIT^M/2/H
```

Macro phrase "D" looks for "no messages waiting" and, if it finds this message, it goes quickly to line "G"; otherwise it continues the macro flow to "SCAN" and "READ ALL" messages. Branching to line "G" sets you up to create a message. If you have no messages, enter [␣-H] to exit MCI quickly and hang up.

For Ontyme Users

```
A /W'1200/6A/W'n: '/EMSPQ^M/+1
B /A'shut'+5/+1
C /W'ID?'THISIS.MY//IDENT^M/+1
D /W'KEY?'LOGME//ONIT^M/+1
E /W'ACCEPTED".SET STOP ON^M/+1
F /W'TED':READ ALL^M/T+
```

Macro phrase "B" looks to see if the service is shut and bypasses the rest of the macro group if it is.

Macro phrase "C" answers the query for your "ID" and, since the "ID" has an imbedded "/", it sends a second "/" to pass through.

Macro phrase "D" for the "KEY" and also uses "/" to send a "/".

Macro phrase "E" sets the service to recognize XON/XOFF.

Macro phrase "F" turns the trap on and reads all the waiting messages.

A Delphi Macro

```
A /W'1200/2^M/1./1^M/+1
B /W'service : 'DELPHI^M/+1
C /W'Username: 'MYNAME^M/+1
D /W'Password: 'MYKEY^M/+1
E ^M/W'MAIN>/2DE^M/+1
F /W'DMAIL>/2MAIL^M/+1
G /W'MAIL>'READ^M/T+
```

Macro phrase "B" has an imbedded space before the colon.

Pinpoint Online

For online Pinpoint technical support, simply leave a message on CompuServe addressed to "PINPOINT" or [76244,123] in E-Mail. On Delphi and MCI we are "PINPOINT". Please, always leave your name, address, phone number, and all relevant information (including software version number) to aid us in helping you. To obtain support you must also post your Point-to-Point (or other product) registration number and have your registration card on file with Pinpoint. Our technical support team is always ready to help.

Other Online Help

Nibble Hot Line - 617/369-8920
AST Apple Products Technical Support BBS - 714/660-9175
(both are using 8 data/1 stop/no parity with full duplex).

Appendix I

Using Accelerator Cards

If you are having problems running Point-to-Point on an Apple II equipped with an accelerator card, you will want to turn off the accelerator card when using Point-to-Point.

The typical symptom will be difficulty in dialing. The reason for this potential problem is that when dialing, timing loops are used, and the accelerator card greatly speeds up the cycling of these loops.

If you consult the documentation that accompanies your accelerator card, you will find out how to disable the card temporarily when running Point-to-Point. The accelerator card's manufacturer is your best resource if you need additional assistance.

Accelerator Card Manufacturers

Applied Engineering TransWarp	214/241-6069
Microcomputer Technologies McT SpeedDemon	213/829-3641
Titan Technologies, Inc. Accelerator IIe	313/662-8542

Appendix J

Extended Xmodem Protocol

NOTE

This appendix presumes you are familiar with the standard Xmodem (Christensen) protocol and its CRC-16 variant. The information here is intended for programmers who wish to write programs compatible with Point-to-Point.

Point-to-Point uses an *Extended Xmodem Protocol* (EXP) to transfer ProDOS file attributes, as well as a file's data, to other systems using the EXP. These attributes include the file access code, file type code, auxiliary type code, storage type code, date of creation and last modification, time of creation and last modification, the file size, and the name of the file itself. (All these terms are defined in Apple's *ProDOS Technical Reference Manual* or in Gary B. Little's *Apple ProDOS: Advanced Features for Programmers*.) Without this information, a received file is always saved as a textfile under the name assigned to it by the receiver, making the file difficult to use if it actually represents some other type of file or if it requires a specific name.

The EXP also provides a method whereby a group of files can be sent in a single batch.

The EXP still works with computers that use the standard Xmodem protocol for file transfers. If the sender uses the EXP, but the receiver does not (or vice versa), however, no file attributes are exchanged.

When the EXP is used, a 128-byte *file information block* is always sent before the first data block. The configuration of the file information block is as follows:

Offset	Meaning
+0	parameter count: always 10 (1 byte)
+1	ID bytes: always \$47 \$4C (2 bytes)
+3	file access code (1 byte)
+4	file type code (1 byte)
+5	auxiliary type code (2 bytes)
+7	storage type code (1 byte)
+8	size of file in blocks (2 bytes)
+10	date of modification (2 bytes)
+12	time of modification (2 bytes)
+14	date of creation (2 bytes)
+16	time of creation (2 bytes)
+18	parameter count: always 2 (1 byte)
+19	[unused, can be anything] (1 byte)
+20	end-of-file position (3 bytes)
+23	length of filename (1 byte)
+24 to +38	filename (15 bytes)
+39 to +126	[reserved, must be zero] (88 bytes)
+127	number of files to follow (1 byte)

Multi-byte numeric quantities are stored with their low-order bytes first. All reserved bytes must be set to zero. They may be used in future versions of the protocol.

The number assigned to this block is 1. It is sent just like a normal data block, with one important exception: the last checksum byte (which is the only such byte if the standard Checksum method is used, or the low-order byte if the CRC-16 method is used) is complemented (EORed with \$FF) before it is sent out.

If the receiver isn't using the EXP, it detects a checksum error when a file information block is received and it sends a NAK to request that the block be sent again. On receipt of a NAK, the EXP sender deduces that the receiver isn't using the EXP and proceeds to send the file's data blocks in accordance with the standard Xmodem protocol.

If the receiver is using the EXP, and its last checksum byte doesn't match the one it receives, it complements its checksum byte and compares again. If it matches this time, the block must be the file information block, so the receiver creates and opens a new file with the specified name and attributes (after closing and deleting the textfile it created before transmission began), and sends an ACK. The sender detects the ACK and proceeds to send the file's data blocks in accordance with the standard Xmodem protocol.

NOTE

If the received file's access code indicates that the file is locked, create it as an unlocked file so that you can write the incoming data blocks to it; at the end of transmission, you can readjust the access code, if necessary.

If the checksum still doesn't match, the receiver can't tell whether the block was a standard data block or a file information block, so it sends NAK+\$80 (a NAK with the high bit set) followed by an ordinary NAK. This causes an EXP sender to send the file information block once again (it reacts to the NAK+\$80, NAK combination), or a standard Xmodem sender to send the first data block once again (it ignores the NAK+\$80 but reacts to the NAK).

If the receiver is using the EXP, and its checksum for the first block matches the one it receives, the block sent can't be a file information block. This means it must have been sent by a sender using the standard Xmodem protocol, so the receiver sends an ACK and begins storing the data in a standard textfile.

When an EXP receiver receives an EOT, marking the end of transmission of a file, it sets the true end-of-file position of the file (using the ProDOS SET_EOF call) if it previously received a file information block. Then it checks the "files to follow" byte in the file information block (at +127). If it is non-zero, the receiver immediately prepares to receive the next file in the batch. There is no need to prompt the user for a filename since one will be sent in the file information block for the next file in the batch.

The sender should begin sending the next file in the batch once it successfully completes the sending of a file.

Appendix K

Other Pinpoint Products

Other Pinpoint Products **Pinpoint Apple IIe Upgrade Kit™ \$29.00**

- ▲ Permits Pinpoint and many 'new' Apple IIe software programs to run on plain Apple IIe with 128K
- ▲ Solves many of the compatibility problems older software programs have with the Enhanced Apple IIe
- ▲ Includes Mouse Text Video ROM, exact copy of Apple's Character Generator ROM #342-0265 approved by Apple
- ▲ Includes GTE or Rockwell 65C02 microprocessor
- ▲ Does NOT include Apple's proprietary 'CD' and 'EF' ROMs required for most mouse-based software. This Kit does not "Enhance" the Apple IIe. This Kit is only to be used on Apple IIe's
- ▲ This upgrade is performed at user's own risk
- ▲ Handy chip puller included

Pinpoint RAM Enhancement Kit™ \$29.00

- ▲ Configures partitioned RAM disks
- ▲ Automatically uploads non copy protected ProDOS applications and files to partitioned RAM disks
- ▲ Menu driven setup. Catalog with toggles displays programs/files to be uploaded.
- ▲ Includes a ProDOS RAM switcher for AppleWorks with Pinpoint and other ProDOS applications uploaded into RAM, such as Business Works accounting software, Point-to-Point communications software, or InfoMerge mail merge and print formatting program
- ▲ Requires Pinpoint Desktop Software

Pinpoint Modem Enhancement Kit™ \$ 29.00

- ▲ Advanced modem software enhancement for Pinpoint's Communications Window
- ▲ Logon macros with default communications setups

- ▲ Keyboard and video character remapping, simple file encryption program
- ▲ Selective character filtering
- ▲ Required for Novation, Microcom and other non-standard external/internal modems or interface cards
- ▲ Contact Pinpoint for details
- ▲ Requires Pinpoint Desktop Software

Pinpoint Printer Enhancement Kit™ \$8.00

- ▲ Advanced installation utilities for non-Apple standard printers and interface cards
- ▲ Simultaneous text and graphics printing
- ▲ Epson FX, RX, LX, and MX-80 with GraphTrax+; Okidata 84, 92, 93, 192; H-P Thinkjet; Panasonic KX P1091, Smith-Corono D-200, Star Micronics SD-10 and SG-10 printers with standard interface cards, require the Pinpoint Printer Enhancement Kit to print graphics and text
- ▲ Printer interfaces supported include: Generic BASIC Standard, Generic Pascal 1.1 Standard, Orange Micro Grappler Serial and Grappler+ Parallel Cards, Star Micronics Grafstar and Grafstar II, Microtek Dumpling 64, Dumpling-GX, and RV-611C, Interactive Structures PKASO/U, and RC Systems Slot Buster
- ▲ Contact Pinpoint for details
- ▲ Requires Pinpoint Desktop Software

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- ▲ Choose from Micro Cookbook's 150 tested recipes (supplied on the program disk) or add your own
- ▲ Selects recipes from any individual recipe disk or path, or automatically searches up to 8 others — over 4,000 recipes online for instant recall
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- ▲ Lightning fast operation with unparalleled ease of use
- ▲ Fourth-generation, bit-mapped database design finds plurals, truncations, multi-variant relations (7 simultaneous index keys), overlooks request errors, and generally works hard so you don't have to
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 Holiday Meals
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 Soups & Salads
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New for Summer 1986

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- ▲ Pop-up version of ProDOS Filer
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- ▲ Video Resource Editor for accessory development and prototyping
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- ▲ Programmer utilities require 256K or greater Enhanced Apple IIe or Apple IIc, ProDOS Assembly Language experience, or use of MICOL BASIC, or KYAN PASCAL
- ▲ Contact Pinpoint for details

RunRun™ \$49.00

RunRun works just like the Pinpoint Desktop Accessories. Windows can be sized and dragged about the desktop. It does not require a mouse, and operates with the mousetext icon characters rather than double hi-res graphics. Consequently, RunRun loads and runs much faster than Quark Catalyst 3.0 or International Solutions' Mouse Desk. Any of you with RAM drives, hard disks, or UniDisk 3.5s will love RunRun's speed, flexibility, responsiveness, and open architecture.

RunRun is a fast, handy, versatile addition to your computer system. Customize it to include various desktop accessories and applications. ProDOS devices can be catalogued by filename, file type, modification date, or size.

Desktop Accessories or ProDOS applications such as AppleWorks, Apple Writer, PFS: File,[™] PFS: Write,[™] PFS: Plan,[™] ASCII Express Pro,[™] SuperCalc 3A,[™] Point-to-Point, InfoMerge, etc... can be run from RunRun.

Pinpoint Instant Business Letters[™] \$49.00

Business letter templates as AppleWorks word processor documents:

- ▲ Professionally designed to meet your everyday business needs
- ▲ Ready to use
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- ▲ Uses the same dictionaries as the Pinpoint Spelling Checker Accessory
- ▲ Up to 30 words per second
- ▲ Selectable auxiliary dictionaries for customized professional needs
- ▲ Lists word occurrences
- ▲ Remembers and automatically uses any correction

Contact Pinpoint for complete product information and scheduled release dates.

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