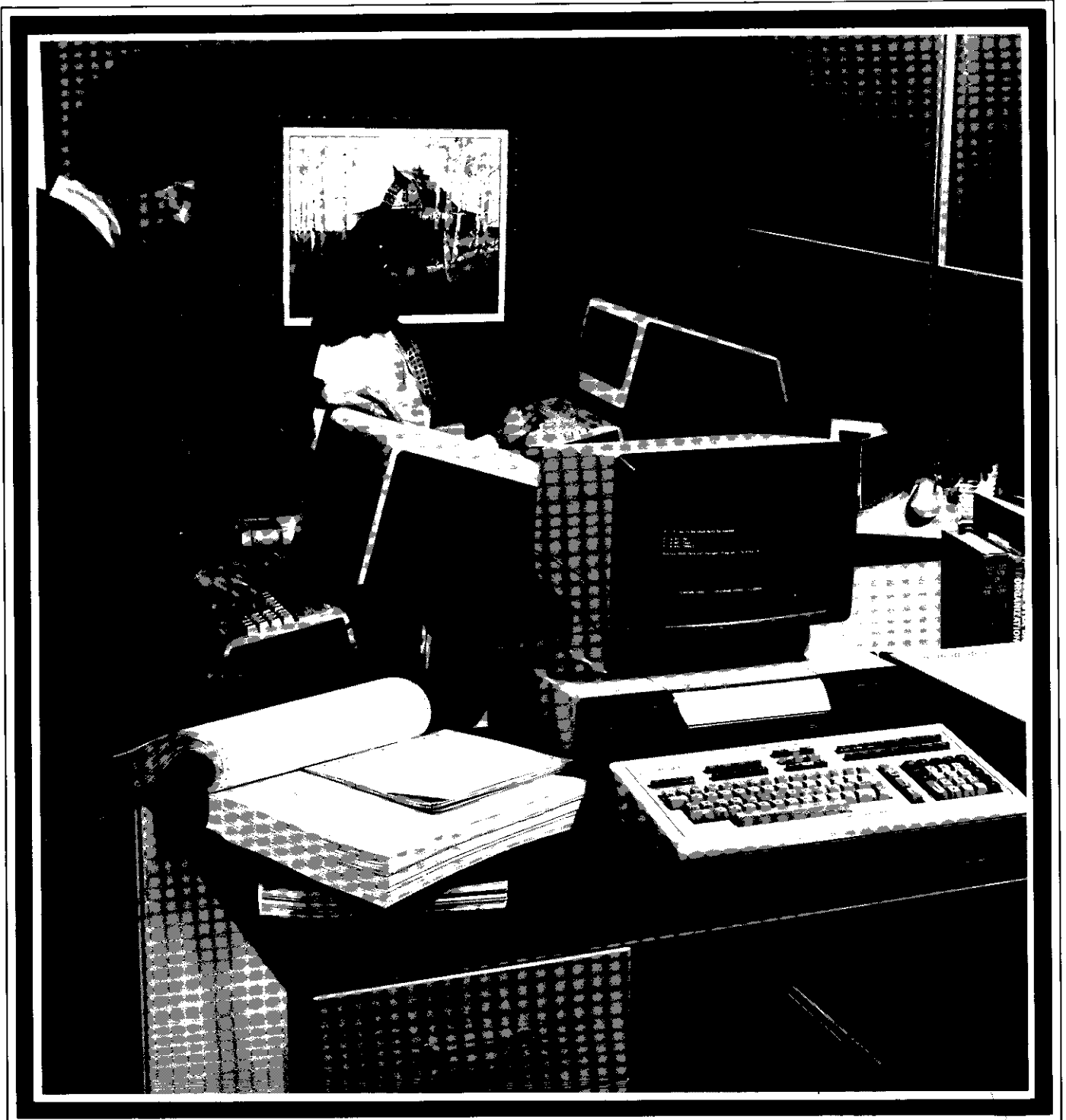


A Hewlett-Packard Software Summary  
for the System 45B Desktop Computer

# System 45B Multi-Terminal Manager



# Optimize your terminals' use with the System 45B desktop computer

If your applications call for the use of several computer terminals, chances are you're looking for a way to conveniently incorporate them into your system. With Hewlett-Packard's Multi-Terminal Manager software pack and the System 45B you can manage up to seven asynchronous terminals, with the keyboard of System 45B acting as an eighth terminal.

The Multi-Terminal Manager software pack was designed specifically to run on HP's System 45B which integrates keyboard, large memory, dual processors, mass storage, graphics CRT and optional printer into one easy-to-use, compact unit, small enough to sit on your desk.

The utility pack consists of two different programs. The character mode program can be used on any asynchronous terminal. The block mode program is designed to run specifically on Hewlett-Packard's 264X or 2621 terminals, which can buffer a line of text, and send it as an entity to the System 45B.

The block mode program takes advantage of many of the special features of the 264X and 2621. A major advantage of the block mode program is that you can assign files directly from the terminal, which allows you to assign files at will without stopping the program. In the character mode program, you can operate on only 10 files which must be opened when the program is started.

This general purpose utility is easy to use in conjunction with your own software so that implementing your particular application is a fairly simple matter.

In addition, this pack includes a terminal based text editor which provides an example of how to integrate your own application dependent subroutines with the utility. The EDITOR also provides a convenient means of entering text from a terminal — especially useful for creating and maintaining text files.

## The EDITOR

Two versions of the EDITOR are incorporated into the Multi-Terminal Manager pack — one tailored for the character mode utility, and the other tailored for the block mode utility.

The commands supported by the character mode editor are listed below with a brief description of each:

- APPEND** - add subsequent lines of text to the workfile.
- INSERT** - insert subsequent lines of text before a specified line number.
- PRINT** - print the specified lines of text to the terminal.
- FIND** - search for a character string in the specified line range.
- CHANGE** - replace all occurrences in the specified line range of a search string with a replace string.

**DELETE** - delete the specified lines from the workfile.

**MOVE** - place a block of text after a specified line.

**SAVE** - copy the workfile to the specified data file (file must be opened).

**QUIT** - exit the EDITOR.

**UPDATE** - modify a block of text (for 364X, 2621 Terminals only).

The block mode editor uses all the same commands as the character mode editor plus:

**RESAVE** - copies workfile to an existing data file.

**SAVE** - creates a new data file and copies workfile to it.

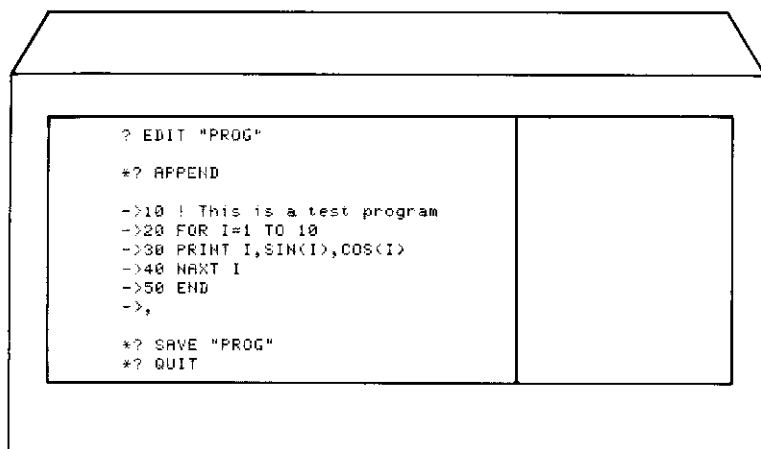


Figure 1.

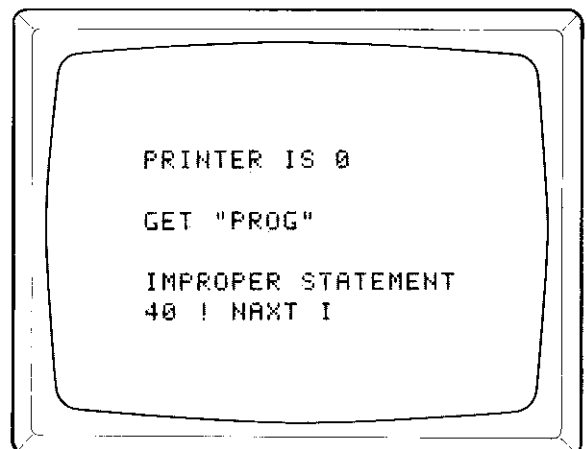


Figure 2.

## Creating a BASIC Program Using the EDITOR

Since syntax checking is performed by the System 45B operating system, not the EDITOR, program development typically proceeds in steps as follows:

- Create the program using the EDITOR.
- Save the program as a data file.
- Load the program into the System 45B. Syntax errors will be printed and stored as comments.
- Correct the syntax errors using the editor or System 45B keyboard.
- Debug the program from the System 45B keyboard.

Figure 1 is a simple illustration of these steps. We start with the empty file "PROG." Note: ?, \*?, and - > are prompts sent to the terminal by the EDITOR.

Review Figure 1 and you will see that there is a syntax error in line 50. It should read NEXT. Now, after stopping the program, the program is loaded into the System 45B. See Figure 2.

To correct the error, either EDIT LINE 40 from System 45B's keyboard or used the EDITOR. Figure 3 is an example using the EDITOR.

```

? EDIT "PROG"

*? 4 CHANGE "NAXT" TO "NEXT"
(4)
40 NEXT I

*? SAVE "PROG"
*? QUIT
  
```

Figure 3.

## Creating Application Software

The needs of a specific application can be met by adding commands to the terminal manager utility program. Which commands are implemented depends totally on the application. Tailoring the terminal manager for an application generally proceeds in this way.

- Study the application and determine what commands are needed.
- Write execution subroutines for these commands.
- Add the new commands and execution subroutines to the terminal manager.
- Test and debug.

The utility is structured such that it is a simple matter to add commands. To do this, the following is all that's required.

- Change the number of commands in the line "Cnum".
- Add the new command to the command list in the line "Clist".
- Add the label for the execution subroutine to the jump target list in the line "Coms".
- Add the execution subroutine for the statement.

While a command from one terminal is executing, commands from other terminals cannot be processed.

For this reason, it is helpful to break-up a command that could take considerable time to execute. Shorter "tasks" can be executed one-by-one, allowing other terminals to access between tasks. Provisions have been made in the utility to help you use the tasking commands. To further aid you, the software manual guides you through implementation of the tasks.



## Hardware Configuration

To use the System 45B Terminal Manager package, the following hardware is required:

- The Editor with 7 terminals will run on a System 45B with 189K bytes of R/W memory. Memory requirements for other applications depend on the amount of application software needed.
- I/O ROM, Opt. 312.
- Mass Storage ROM, Opt. 313.
- Asynchronous terminals 300, 600, 1200, 1800, or 2400 baud. Terminals should be set for no parity and must transmit and receive ASCII characters. It is desirable that terminals be configured to transmit a carriage return and linefeed after each line. To run the Block Mode editor, HP 264X or 2621 Terminals are required. These terminals must run at 2400 baud.
- One 9836A interface card for each terminal. Typically, these will be standard configuration (female RS232, DCE side).
- Any System 45B compatible flexible or hard disk, eg., 9885 flexible disk drive, or 7906, 7920 disc drives.

## Ordering Information

To order the Multi-Terminal Manager Software package, specify Part No. 09845-10610. The package includes:

- User instruction manual.
- 1 Tape cartridge.

Note: Additional software pertinent to your application will be needed to run with the Multi-Terminal Manager utility.



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