

Issue 11

for users of The Portable, HP 12x, and

Touchscreen/150 computers

HP Series 100 Communicator

THE
GRAPHICS GALLERY

Staff	Editor	Barbara Clifford
	Coordinator, PSD	Marilyn Ruel
	Coordinator, PCD	Michael Mohrman
	Graphics and Production	Mike Shenon
	Circulation	Russ Gordon

Publication Data	<p>The <i>Series 100 Communicator</i> is published six times per year by the Hewlett-Packard Company, Personal Office Computer Division, P.O. Box 486, Sunnyvale, CA 94086 USA.</p> <p>Subscription ordering instructions are given under "<i>Communicator Subscriptions</i>" in the "Current Information" insert in this issue.</p> <p>Back issue ordering instructions and an index of available issues are given under "<i>Communicator, Back Issues</i>" in the "Current Information" section of this issue.</p>
-------------------------	--

Notice	<p>The information contained in this document is subject to change without notice.</p> <p>Hewlett-Packard makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.</p> <p>Copyright © 1985 by Hewlett-Packard. All rights reserved.</p>
---------------	--

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

Series 100 Newslines

late-breaking news on Series 100 products



HP recently introduced a **modular test-and-measurement system** that converts an HP 150 Touchscreen PC or an IBM PC, PC/XT, or PC/AT into an system that does the job of certain electronic instruments. The powerful software of the HP PC Instruments system simulates an instrument control panel on the computer's screen. Among the low-priced modules now available are the digitizing oscilloscope, digital multimeter, function generator, universal counter, digital input/output, relay multiplexer, digital-to-analog converter, and relay actuator. The system can support up to eight modules. Up to fifteen stand-alone instruments can also be linked to the PC via the HP-IB (IEEE 488) interface.

* * *

A **new version of the Condor(TM) data-base management program** is now available for HP 150B (Touchscreen and Touchscreen MAX) personal computers. Version 2.11B, which replaces Version 2.11, provides the same functions as the old version but with greater reliability. If you own Version 2.11 of Condor and would like to receive a **free Version 2.11B update disk**, send your current master diskette with a letter that includes your name and address to:

CONDOR PRODUCT MANAGER
Hewlett-Packard Company
Personal Software Division
3410 Central Expressway
Santa Clara, CA 95051

* * *

Have you ever wanted to take information from the Dow Jones News Retrieval Service and incorporate it into spreadsheets in Lotus 1-2-3, Multiplan, or VisiCalc? The **Dow Jones Spreadsheet Link** program, which is now available for the HP 150 Touchscreen PC and The Portable, lets you do just that. Details appear in the "Product News" section of this issue.

continued . . .

Several companion products are now available for WordStar, the perennially popular word-processing program from MicroPro International. MailMerge, CorrectStar, Star Index, and WordStar itself are the components of **WordStar Professional**(TM) (HP product number 45427D). The **Professional Options**(TM) package (product number 45429D) includes only MailMerge, CorrectStar, and Star Index.

CorrectStar(TM) is the new spelling corrector that checks text for errors and gives you a list of possible spellings to choose from. This program works with WordStar 3.3B and later versions of the parent program. (NOTE: CorrectStar requires 384 Kbytes of memory and a dual-sided or fixed-disc drive in order to run on the HP 150.) **Star Index**(TM) makes it easy to create indexes, lists of figures, and a table of contents for a document. These two programs are not sold separately; they are included in the WordStar Professional or Professional Options package. See your HP dealer or sales and service office for more details.

* * *

The following **typefonts for the HP 2686A LaserJet printer** are currently in stock at HP's Computer Supplies Organization (CSO):

- **Courier 10** (product number 92286A)
- **Proportional Spacing 1** (Helvetica and Times Roman faces, with U.S. ASCII symbols) (92286B)
- **International 1** (Courier 10 with U.S. ASCII, Roman-8, and Roman Extended symbols, as well as symbols for British English, Danish, Finnish, French, German, Italian, Norwegian, Spanish, and Swedish) (92286C)
- **Prestige Elite** (12-pitch Roman-8) (92286D)
- **Letter Gothic** (12-pitch Roman-8) (92286E)
- **Proportional Spacing 2** (Helvetica and Times Roman faces, with Roman-8, Roman Extended, and U.S. ASCII symbols) (92286F)
- **Courier P&L** (Roman-8 symbols in vertical and horizontal ("portrait" and "landscape") formats) (92286L)
- **The Tax Cartridge** (for drawing tax forms only; requires special software) (92286T)

continued . . .

Transend Complete makes it easier than ever to exchange messages with other personal computers or with mail services such as The Source, MCI Mail, Quick-Comm, and HP Desk. This advanced communications software lets you transfer files reliably via XMODEM, and provides easy access to information sources such as Dialog and the Dow Jones News Retrieval Service. The program includes powerful macro and "learn" capabilities, and also provides VT-100 terminal emulation. The user interface is designed along desktop lines to make message organization as natural as possible. See your HP dealer or sales and service office for more details.

* * *

The new **ExecuDesk** package (45444A) adds another level of integration to selected HP software products, uniting them in one cohesive, easy-to-use whole. ExecuDesk makes it fast and easy to change from one application to another and to transfer data between applications. The program also provides some integration with the HP 3000 terminal mode. ExecuDesk is designed for busy managers who use the HP 150 Touchscreen computer to organize their deskwork. As an aid, HP's **Financial Calculator** program is included at no charge. ExecuDesk is an excellent way to achieve software integration with any combination of the following products: MemoMaker (Version B.01.02), Executive MemoMaker, Series 100/Graphics, Deluxe VisiCalc, Personal Card File (Version B.01.02), or HP's two new business graphics packages: **Charting Gallery** and **Drawing Gallery**. ExecuDesk is also available as part of the ExecuDesk System (45442A), which also includes Executive MemoMaker, Charting Gallery, Deluxe VisiCalc, Financial Calculator, and Personal Card File.

* * *

Hewlett-Packard is now introducing **HP software for the IBM PC!** The packages that run on the IBM PC include word-processing, data-base-management, graphics, and communications programs. With them, you can use IBM personal computers as workstations in an HP Personal Productivity Center.

- **AdvanceLink for the IBM PC** (45431E) provides the same powerful file-transfer capabilities that it does for the HP 150 Touchscreen PC.
- **Text Charts for the IBM PC** (45406E) lets your printer or plotter produce presentation-quality text illustrations on paper or transparencies. This program makes it easy to convert numerical data into charts and graphs.

continued . . .

- With **MemoMaker for the IBM PC (45420E)**, you can create short documents and then transfer the document file to HP Word on an HP 3000 system (via HP Message and HP Desk), to WordStar on an IBM PC, or to MemoMaker and WordStar on an HP 150 or The Portable.
- **Personal Card File for the IBM PC (45422E)** offers a simple, easy-to-use data-base management system, and also makes it easy to transfer PCF files to the HP 150.

* * *

Other recent additions to the family of software available from HP include the **Lattice C compiler** (product number 45452D) for the HP 150 or The Portable. This product contains the compiler, linker, librarian, many library functions, low-level I/O functions, and four memory modules. For programmers who are especially concerned with how their work looks, **Forms Master** (product number 45443A) is very useful for creating sophisticated interfaces quickly and easily. This display manager works with Microsoft Pascal, compiled BASIC, or FORTRAN.

* * *

The price has been reduced significantly on **MicroPlan**, the **MicroPlan Consolidation** program, and the **Context MBA** data-base management package. Your HP dealer or sales and service office has details.

* * *

New self-help software is now available for The Portable. **Health Aide**(TM) is a nutrition program that tracks diet and exercise. It uses a data base of almost 4,000 foods to analyze meals for 35 different nutrients. ("Health Aide" is a trademark of Programming Technology Corporation. For more information, or to order, specify HP product number 35158C.)

* * *

Another product that's now available for The Portable can help you discern another person's hidden ideas and attitudes. **Mind Prober**(TM) is a psychological assessment program that gives you a detailed report on someone else's character and personality based on your answers to a comprehensive set of questions about him or her. ("Mind Prober" is a trademark of Human Edge Corporation. The product for The Portable is number 35161C.)



The *Series 100 Communicator* is the backbone of HP's support program for Series 100 computers and software. The magazine contains programming techniques, information on software updates, notes on using applications, and corrections for manuals. The *Communicator* also lists known software problems and their solutions, and introduces new members of the Series 100 family.

We're going to run a letter-column in the *Communicator*. Won't you help us? Tell us what you'd like to see in the magazine. Letters containing problems or questions of general interest will be answered in print by our staff. Letters of praise will be printed regardless. Each reader whose letter appears will receive a free three-issue subscription to the *Communicator* or a free three-issue extension of an existing subscription (one sub or extension per letter per issue). Of course, letters will not necessarily represent the opinions or policies of HP, the editorial staff, or anyone else (except, presumably, the letter-writer).

Subscriptions and Back Issues

In many countries, you can order *Communicator* subscriptions and back issues by telephone. For details, see the "Ordering *Communicator* Subscriptions" and "Ordering Back Issues" sections in the Current Information insert.

Becoming a Contributor

Much of the material in this issue was submitted by HP users and field-support people. Some of it, such as the articles by Robert Belden and David Schacter, was contributed by private users and readers at large. If you'd like to submit an article, program, question, or suggestion, please send it to us at the following address:

Editor, *Series 100 Communicator*
Hewlett-Packard Company
P.O. Box 486
Sunnyvale, CA 94086 U.S.A.

By submitting information to the *Communicator*, you agree that the material will not be considered confidential, and that HP may use, copy, edit, modify, publish, or sell it without any liability and without any obligation to you or to anyone else. If we publish your contribution in the *Communicator*, your name will appear on the by-line. If you'd like us to return the material you submit, please enclose a stamped, self-addressed envelope with it.

We look forward to sharing your ideas with Series 100 users throughout the world.

About Applications

Inverting the Order of Items on Lists in Word/12x, <i>by Robert Belden</i>	1
Using Memory Effectively in Lotus 1-2-3, <i>by Judy Williams</i>	5
Moving Blocks of Text in MemoMaker, <i>by David Schacter</i>	7
Headings and Footings in Word/12x, <i>by Melanie Johnson</i>	11
Installing the ThinkJet Printer with WordStar, <i>by Stephen Johnson</i>	13

Programmers' Potpourri

Writing Your Own Menu Routines, <i>by Brian Rainie</i>	17
Using Escape Codes to Create Function Keys in COBOL, <i>by Helen Morimoto</i>	22
Reading with Handshaking in HP 150 BASIC, <i>by Brian Rainie</i>	23
Double's No Trouble, <i>by Helen Morimoto</i>	29
Precision Problems in Microsoft Languages, <i>by Brian Rainie and Tom Watson</i>	31

Product News

Presenting The Graphics Gallery, <i>by Marilyn Ruel and David Obershaw</i>	39
Introducing Dow Jones Spreadsheet Link, <i>by Chris Kocher</i>	45
The BPI Family of Accounting Packages, <i>by Marc Lowe and David Pugmire</i>	47
Turbo Pascal: A Hot Item, <i>by Michael Hachigian</i>	51
Special Upgrade for Word/12x, <i>by Stephen Peithman</i>	54
From Keyboard to Printer with Type-a-Line, <i>by Carol Luebke</i>	56
PFS: . . . Everything for the HP 150 Touchscreen PC, <i>by Chris Walker</i>	57
MultiMate and Friends, <i>by Jane Freeman</i>	61
HP 125 Software Obsolescence, <i>by Marilyn Ruel</i>	63

The Encyclopedia

Current Information

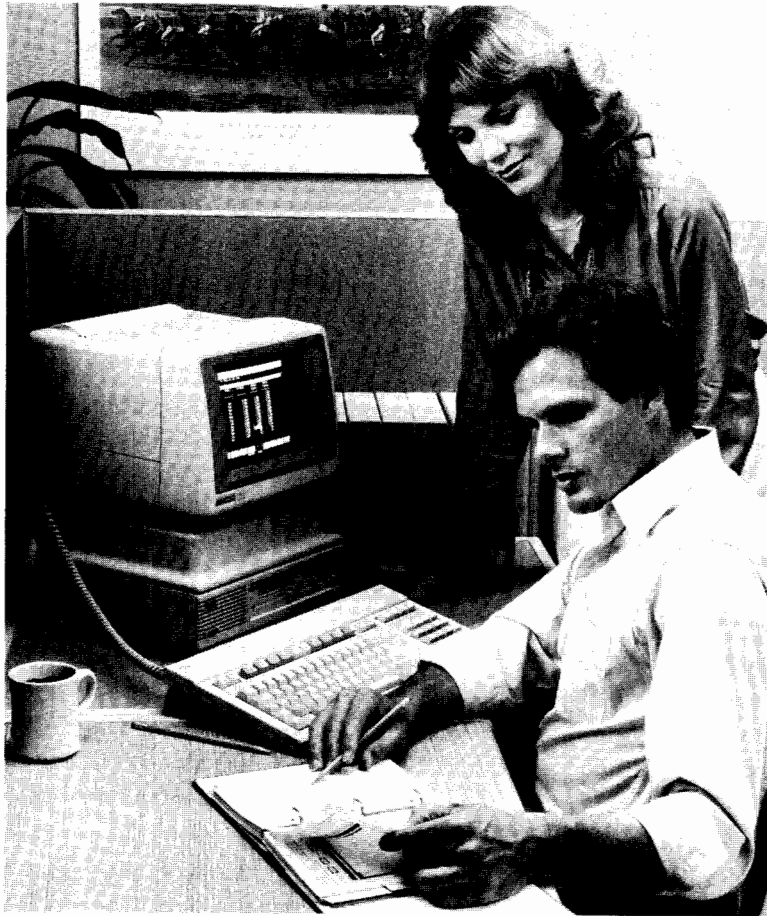
Encyclopedia

Welcome to the Encyclopedia	Encyclopedia-7
System Hardware, Firmware, and Operating System:	
The Portable	Issue #10
HP 150 Touchscreen	This issue
HP 12x	Issue #8; Insert-16 through -24; -37, -39
Applications (in alphabetical order):	
BASIC Interpreter—for the HP 150	Issue #10
BASIC Interpreter—for the HP 12x	Issue #8; Insert-21, -35
Block/Format—for the HP 12x	Issue #8; Insert-24
BPI Accounting—for the HP 150	This issue
BPI General Accounting—for the HP 12x	Issue #8; Insert-22, -35
BPI Payroll—for the HP 12x	Issue #8; Insert-35
COBOL by Microsoft—for the HP 150B.	Issue #10
Compiled BASIC by Microsoft.	Issue #10
Computer Tutor—for the HP 150	Issue #9
Condor—for the HP 150.	This issue
Condor—for the HP 12x.	Issue #8; Insert-22, -36, -42
Context MBA—for the HP 150.	This issue
dBASE II—for the HP 150	This issue
DSN/Link—for the HP 150.	This issue
DSN/Link—for the HP 12x.	Issue #8; Insert-21, -33, -43
Financial Calculator—for the HP 150B.	Issue #10
FORTRAN by Microsoft—for the HP 150B	Issue #10
Graphics—for the HP 150	Issue #9
Graphics—for the HP 12x	Issue #8; Insert-21, -27, -41
GW-BASIC by Microsoft—for the HP 150B	Issue #10
Link—for the HP 12x	Issue #8; Insert-33
Lotus 1-2-3—for The Portable	This issue
Lotus 1-2-3—for the HP 150.	This issue
MailMerge (see WordStar)	
MemoMaker—for The Portable	This issue
MemoMaker—for the HP 150	This issue
Multiplan—for The Portable	This issue
Pascal by Microsoft.	Issue #10
Personal Card File—for the HP 150	This issue
SpellStar (see WordStar)	
Terminal—for The Portable	Issue #10

VisiCalc—for the HP 150	This issue
VisiCalc—for the HP 12x	Issue #8; Insert-20, -25, -41
Word/12x—for the HP 12x	Issue #8; Insert-21, -30, -41
WordStar Family—for the HP 150	This issue

Current Information

Answers to Your Questions	Current Information- 5
Your Direct Line to HP	Current Information- 6
Assistance from Your Local Dealer	Current Information- 6
Assistance from Your Own Organization	Current Information- 6
Software from Third Parties	Current Information- 7
Are You a Third-Party Software Developer?	Current Information- 7
Assistance for HP Internal Users	Current Information- 7
User Group	Current Information- 9
<i>HP Software Catalog</i>	Current Information-13
Ordering <i>Communicator</i> Subscriptions	Current Information-15
Ordering <i>Communicator</i> Back Issues	Current Information-16
Books on Personal Computing	Current Information-21
Training Courses	Current Information-25
Software Available from HP	Current Information-29
Software Exchange Kits	Current Information-39
Supplies and Accessories	Current Information-47
How to Order	Current Information-53
Mail Order Form	
Change-of-Address Form	
HP PC Care Order Form	



Have you ever used the ALPHA SORT macro and found that the names or numbers in your list appear in the inverse order from the way you want them—for example, from low to high when you want them to be ordered from high to low?

You can invert the order manually by starting at the bottom of the list, holding one line, going to the end of the line, and “un-holding” the line. You would then go back to the bottom of the list and repeating this process until the items are in the proper order. If you insert a caret (“^”) at the end of the original list, you can use the “B” command to return automatically to the “old” bottom of the list. To save time, you can chain this sequence of commands—but you’ll still have to re-type the command line again and again.

The “AT” Command

Fortunately, you can perform the re-sorting procedure by using a command that is not in your Hp 12x owner’s manual, but is built into the Word command file. This command is the “AT” command.

The “A” command is essentially a macro “Load and Run” command similar to the RUN command in BASIC. The “AO” command (which you see when you use a function key to implement a macro) gives you the option of modifying the program and saving it on a disc. The “AD” command runs a program directly from a disk (the “D” stands for “disc”). The undocumented “AT” command is similar, except that in this command, the “T” stands for “text.” In other words, the “AT” command *loads a macro from the screen*. Thus, you can write *any command line* as text on the screen and load it into the macro buffer for repeated execution. The “A<” command executes the macro. What’s more, “An<” executes it *n* times!

For Example. . .

Try this with a list of numbers that are in order from low to high.

1. Place a “^” at the end of the list to mark the bottom of it.
2. In EDIT mode, in the clear space at the end of the list, type the following line:
B1/H1/E/U/H0/B<
3. Position the cursor under the first “B”, shift to COMMAND mode, and type “AT<”. The line should disappear.
4. Move the cursor back to the “^”.

5. Still in COMMAND mode, type "An<", where n is the number of line items in the list. (If the items in the list are single-line items, let n equal the line number less 1.) The inverted list should soon appear.

This procedure works for files, or for any list you wish, provided all of the files are the same length. If the items are more than one line long, change the B1/H1 values to Bn/Hn, where n is the number of lines in the file.

A Couple of Rules

The "AT" command loads *any* text into the macro buffer as a "macro program." I've found this feature immensely useful whenever I need to repeat a command line many times in sorting or editing a list. In effect, it lets me program a "user key" ("A<") in the command mode. However, when using it, you must observe the following two rules:

1. Unlike the "Hn" command, the "AT" command is not selective. The "AT" command loads into the macro buffer *everything* that appears between the location of the cursor and the end of screen memory. Therefore, you must either write the command before you display your list on the screen, or else use the clear space at the end of the screen.
2. As for any macro, the HOLD buffer *must* be clear before you load the text.

The "AT" command also "toggles." That is, if you enter a second "AT" command, the command line re-appears on the screen. This feature is handy for editing if something doesn't work the way you intended.

Naturally, you can file the "command line" for later use, as you would any text. In such a case, the command line becomes a "mini-macro," and the command to load it becomes "AD". An "A<" or "An" command executes the mini-macro. If you file the command line using the file-name extension ".WPM", the command will load without a file-type designator. (I file the command in the above example as "INVERT.WPM".)

Splitting a List

Here is a slightly more complicated example. I had reason to split an alphabetized list of names into two groups. I wanted to move names from the original list to a new list appended to the end of the original list. Therefore, I needed to return to my previous place in the original list rather than to the end of it. I did so by inserting a "" to mark

my place in the original list each time, and then erasing the "" once I'd returned to that position. The command line shown below performs this task automatically. (In my list, each name was a single-line item.)

```
H1/S/^/E/U/H0/B/S/^/;<
```

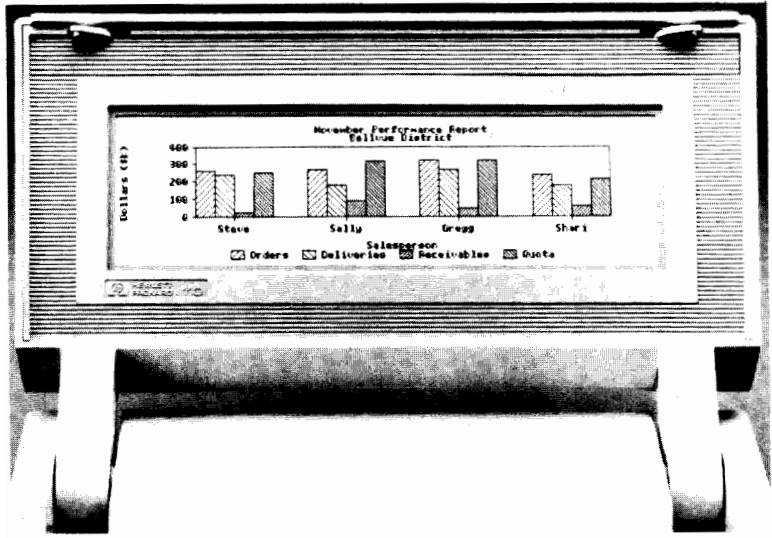
Note that the search command ("S") is used to insert a marker (the "") before leaving the line, and is then used to delete the marker after returning to the line where I started. (The H0 command saves having to answer the Y/N question, and thus makes execution of the procedure fully automatic via the RETURN key.)

To transfer a name to the second list, I positioned the cursor at that name and entered the "A<" command. I repeated this procedure as many times as necessary, and obtained two separate, properly alphabetized files.

The "macro programs" described above use *only* the normal commands of COMMAND mode. They do *not* depend on the user's knowledge of the special macro code used to write macro programs for Word. These procedures are easy to use any time you need to enter a chain of commands repeatedly to manipulate files or lists.

□

Our thanks to Robert Belden of Robert A. Belden and Associates, San Diego, CA for contributing this article.



**"Memory Full"
Messages**

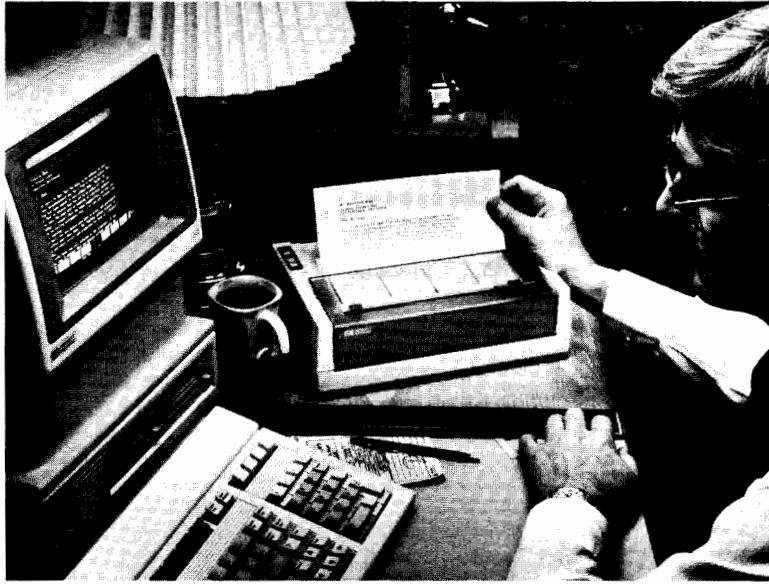
A "Memory Full" message in Lotus 1-2-3 indicates that all internal memory of the computer (RAM) has been used and that no additional data can be entered into the current worksheet. There are a number of ways to work around this situation. If you consistently use large worksheets and often run into the "Memory Full" message, the best solution might be to increase the available memory by adding memory boards.

Second, creating a worksheet that arranges data beginning in cell A1 and avoids blank rows and columns between data will maximize available memory. Because blank cells use memory, minimizing blank cells where possible will increase memory availability.

**Eliminating
Blanks**

You should also keep in mind that blank formatted cells use memory. To determine where blank formatted cells are located in the worksheet, press the Selectkey and the home cursor key (diagonal arrow key) which will place the cursor at the outermost cell where data is entered (values, labels, formulas, or formats). If the outermost cell does not have a value, formula, or label, you have determined that formatted blank cells are present. To eliminate these cells use the /File Xtract command to extract only the portion of the spreadsheet containing data. This creates a new worksheet containing only data and no blank formatted cells, and thus increases the amount of memory available for the worksheet.







Moving Blocks of Text in MemoMaker on the HP 150

David Schacter

MemoMaker has the potential to satisfy 90% of the needs of the people who use a word processing program either at work or at home. The program will undoubtedly be updated, many of the problems discussed herein will probably be corrected or eliminated, and new capabilities will be added. This article is to aid those who are presently using the earlier editions of MemoMaker.

Moving Text within a File

An extension of MemoMaker permits moving blocks of text from one place to another and the creation of directories and sub-directories. In this article, function keys (the highlighted instruction boxes at the bottom of the screen) will be represented by information in [single brackets] and keyboard instructions or action keys will be represented by capital letters, such as RETURN key.

To begin, press [Block Keys] and mark the copy you wish to copy or transfer by pressing either [Copy Block] or [Cut Out Block], followed by [Block OK].

To move a block of text to another place in the same file, move the cursor to the new location and press [Paste Block].

Moving Text between Files

To move a block of text to another file on the same disc, do the following:

Press [MemoMaker Main], then [File Keys], then [Get Memo]. A screen prompt will ask if you want to save the current memo. Select [Yes, Save] if you wish to save the document in the workspace; otherwise select [No, Discard]. It is probably better to press [Yes, Save] to insure retention of the text until it is transferred. At this point the prompt **Enter File Name (or use File Manager)** will be displayed. You may then enter the file name and press RETURN or touch [File Manager]. (I recommend using File Manager.)

When in File Manager, press [MemoMaker Memo], highlight the file you want by touching it, press [Return File], then press [Back to MemoMaker]. Then, while in the new file, place the cursor where you wish to place the block of text and press [Paste Block].

You may also use the following procedure to move text: copy or cut out the block of text you want, press [MemoMaker Main], then [File Keys], then [Save Memo]; then press the name of the memo listed in f1, then [Get Memo](the softkey in f1), then [File Manager]. While in File Manager highlight the memo you wish to see, press [Return Memo] and [Back to MemoMaker]. Place the cursor in the position you desire and press [Paste Block].

WARNING: When moving text, do not perform other procedures such as adding words, changing formats or enhancements otherwise you could lose the text you are transferring.

Moving Text from Disc to Disc

(The following procedures assume you are using the 9121 Disc Drive, and that Drive A (which has a small 0 under the eject button) contains the application or work disc and Drive B (which has a small "1" under the EJECT button) contains the data disc.)

The same rules apply to moving blocks of text between files on the same disc and moving text from file to file on different discs. In your current file, locate the text you wish to copy or cut out and follow all the steps outlined above for moving text from file to file within a disc until you reach the "save memo" screen prompt. Press [Yes, Save] and then [File Manager]. When the file directory appears on the screen, and neither disc drive is showing any activity (meaning neither of the red L.E.D. lights is lit), do the following:

Remove the data disc in Drive B and replace it with another disc that has been formatted and used with MemoMaker. Check to see that the new disc has files and a directory so you will have some place to move the block of text.

With the new disc in Drive B, press [File Manager]. If just files are listed, press [MemoMaker Memo], highlight the file you wish to enter. Press [Return File], then [Back to MemoMaker]. The file will appear. Place the cursor where you wish to insert the text you cut out or copied from the other disc, press [Block Keys], then press [Paste Block].

When you place the new disc in Drive B the original file manager directory from the previous disc may still appear on the screen. In this case, press [Back to Memomaker]; you will see that the memo you previously left is still in the buffer/memory of the machine. Press [Get Memo] in f1, then press [File Manager]. At this time you will see the new file directory for the disc currently in Drive B. Press [MemoMaker Memo], highlight the file/memo you wish to see, press [Return Memo], then [Back to MemoMaker] and the new file will appear. Place the cursor in the position where you wish to place the block of text and press [Paste Block].

□

Our thanks to Mr. David Schacter for contributing this valuable information.



There are times when you might use Word/12x to type a manuscript in which you want titles as both headings and footings, as well as having the page number appear on each page. If the manuscript is divided into chapters, these titles will also change at chapter breaks. By careful manipulation of the .YT tables in Word, you can use both headings and footings in the document. Here is the procedure.

Fetch the .YT table at the beginning of the document. A .H line will automatically be inserted above it.

Immediately after the .H type your title heading, followed by a carriage return [CR].

Change the .YT line to these values: 1 2 3 2 5 1 3
3 0 0

1 = top title only

2 = top spacing

3 = bottom title and page number as it appears on screen and in manual

2 = bottom spacing

5 = odd page column number (?)

5 = even page column number (?)

1 = starting page

03 = odd format, title on left

03 = even format, page number on right

0 = odd indent

0 = even indent

Fetch the .YT table with values: 1 5 4 0 0 10 1 0 65 8
12 1 0 35 5 [CR].

Type the text.

Return the cursor to the beginning of the text.

In Command Mode, use the J command to find the end of the first page.

Fetch the .YT table where the cursor defines the start of page 2. (The .H line will be inserted with the top title heading.)

Replace this heading with the bottom title.

Change the .YT to 1 2 3 // (slashes don't reset the values).

Insert a .E [CR] on the line following the .YT table.
Fetch the .YT table for the second page.
Change the .H line to .H\ \ \ \top title (the
back-slashes force line feeds).
Change the .YT to 1 / 2////////.
Repeat for each page.
Before printing, change the first .Y table to values
1 55. . . etc. Change titles in appropriate .H lines
for chapter breaks.



Users who want to connect the new HP 2225A ThinkJet printer to an HP 150 for use with WordStar should follow the three steps outlined below. Steps 1 and 2 are common to *all* applications, while step 3 applies specifically to WordStar.

1. Connect the HP 2225A to the HP 150 with an HP-IB cable and set the printer's HP-IB Address to 1.
2. Run DEV CONFIG on the HP 150 and set the PRN: Interface to: HP-IB, Address to: 1, and Model to: 82906A.
3. Run WINSTALL to configure WordStar for the HP 2225A. Because this printer does not appear on the menu of printers in 3.30, 3.3A or 3.3B, you must make some custom changes to the 82906A Installation.

**Customizing the
ThinkJet**

To customize the HP 2225A, follow the instructions listed below. These modifications enable the features of SUB and SUPERscript, and Bold and Doublestrike printing. They also let you adjust the position of the left margin.

1. Follow the instructions for running WINSTALL in Appendix A of the *WordStar Self-Paced Training Manual* until the INSTALLATION MENU screen appears.
2. Choose A (Menu of Printers) and select "82906A". You will automatically exit to the INSTALLATION MENU.
3. Choose B (Custom Installation of Printer Menu). You will change items C (Printer Name), F (Boldfacing) and L (Return/line feed).
 - A. First select C. "Current name is: HP 82906A" will appear. Enter "C". A message will appear on the screen, asking you to enter a name that will be displayed when WordStar runs:

New printer (maximum 32 characters):
Enter "HP 2225A" and accept this as the new printer name by pressing <Return>.
You will now return to the PRINTER INSTALLATION MENU.
 - B. Now select F. Enter a "C". When the "Enter New Value" message appears, enter "1" and press <Return> to change the number of Boldfacing strikes. A screen prompt will ask if this value is correct. Press <Return> to answer yes.

You will now return to the PRINTER
INSTALLATION MENU.

- C. Select L. Enter a "C" to change the return and line-feed-control sequences. The following display appears; you should modify it under "New Value" as indicated below.

The maximum number of entries for the return and line-feed function is 10.

Current Value	New Value
0D(h)	<Return>
0A(h)	<Return>
0A(h)	. <Return>

The return and line-feed function code sequence is now D(h) A(h).

NOTE: (h) equals small "h".

If this is correct, enter Y or <Return>. If not, enter N. Enter <Return>.

Next, the Return (no line-feed) control sequence will appear. This sequence need not be changed; therefore press <Return> for these questions.

The Return and half-line-feed-control sequence will now appear. Type "C" to start making changes in this set of sequences. The following display appears. You should make the indicated entries:

The maximum number of entries for the return and half-line-feed function is 6.

Current Value	New Value
0D(h)	<Return>
0A(h)	1B <Return>
00(h)	3D <Return>
00(h)	. <Return.

The return and half-line-feed function code sequence is now D(h) 1B(h) 3D(h).

NOTE: (h) equals small "h".

If this is correct, enter Y or <Return>. If not, enter N. Enter <Return>.

You will now be back to the PRINTER INSTALLATION MENU. Choose X to exit the Custom Installation functions and go back to the INSTALLATION MENU.

4. From the INSTALLATION MENU, select "C" to modify WordStar features. You should change the Page Offset from 8 columns to 2, because the HP 2225A produces a 1-inch left margin. You should also inhibit the use of FORM FEEDS, as indicated below.

Select "N" and enter "C" to change the Page Offset value. Enter the value "2" when the following message appears:

Enter new value: 2 <Return>

You should confirm the response with a <Return> on the next line. This action returns you to the MENU OF WORDSTAR FEATURES.

Select "O" and enter "C" to change the Form Feed toggle to OFF. Confirm this choice by responding with a <Return>. This action returns you to the MENU OF WORDSTAR FEATURES.

5. Finally, respond with an "X" at the INSTALLATION MENU display. This will place you at the display EXIT OPTIONS MENU. Enter an "A" and WINSTALL saves this configuration and returns you to the PAM screen.

Dealing with WordStar

A small problem occurs when using a ThinkJet printer on an HP 150 running WordStar. If the printer is installed as an HP 82906A, the printer always prints double spaced documents. If the printer is installed as a "Standard Printer", then boldfacing and underlining do not function. To install the ThinkJet properly, use the following procedure:

1. Run WINSTALL as usual and select the 82906A (Selection C on the first printer menu).
2. After you return to the INSTALLATION MENU, do not exit. Select B for Custom Installation of Printers.
3. In the Printer Installation Menu select C (Printer Name). Type C to make a change. The program should now ask for a printer name; type ThinkJet and press <Return>. You will need to enter a Y to indicate that the information is correct. Return to the PRINTER INSTALLATION MENU.

4. In the PRINTER INSTALLATION MENU select D (Initialization). Type C to make a change. Enter the value 1B and press <Return> (if 1B(h) is the present value, just press <Return>). Type a period <.> to end the sequence and press <Return>. You will need to type Y to indicate the information is correct. Return to the PRINTER INSTALLATION MENU.
5. In the PRINTER INSTALLATION MENU select F. Enter C to make a change. Type 1. Type 1 to indicate the information is correct. Return to the PRINTER INSTALLATION MENU.
6. In the PRINTER INSTALLATION MENU select L (Line Feed). Type C to make change. For Carriage Return Single Line type in the following: D <Return>, A <Return>, then type a period and <Return> to end the sequence. Type Y to indicate the information is correct. The program will then present Carriage Return No Line. Just press <Return> and type Y to indicate the information is correct. The program will then present Carriage Return 1/2 Half Line. Type the following: OD <Return>, 1B <Return>, _____ = <Return>. Then type a period and press <Return> to end the sequence. Type Y to indicate the information is correct. Return to the PRINTER INSTALLATION MENU.
7. Exit the Menu and save the WINSTALL file.
8. This completes the installation of the ThinkJet printer in WordStar. Should you have any questions about this procedure, call your HP Sales and Service Office.



It's not hard to write your own menu routines for your HP 150 Touchscreen PC. But many programmers write very extensive procedures to get the job done, when it's much easier to let the features of the terminal do the work. The key is to understand FORMAT mode, BLOCK-mode data transfers, and BLOCK-mode terminal operations.

FORMAT Mode and BLOCK Mode

Let's consider FORMAT mode. When FORMAT mode is off, the terminal responds like any other terminal. In other words, you can place characters anywhere on the screen, possibly overwriting existing text. But if you display a menu on the screen, establish UNPROTECTED fields to hold menu information, and turn on FORMAT mode, the only areas of this "menu" that the user can modify are the fields that you have defined as being UNPROTECTED. Any attempt to place text in the remaining areas (that is, the PROTECTED areas) is defeated. As long as FORMAT mode is on, the following rules hold:

1. HOME-CURSOR moves the cursor to the first field.
2. Any attempt to enter text in a PROTECTED area moves the cursor to an UNPROTECTED field before any text is entered.
3. TAB causes the cursor to move automatically to the next field.
4. Filling a field causes the cursor to move automatically to the next field.

BLOCK-mode data transfers let the program read the information from the fields in the menu. But before reading the fields, the program must position the cursor at the very first field. The escape sequence "ESC d" transfers the contents of the current field to the program. The program must read this information without echoing it back to the terminal. The program reads the fields one at a time; the cursor is moved automatically after the program reads each field.

These two procedures—FORMAT mode and BLOCK mode—let you perform menu operations. However, if you don't use BLOCK-mode terminal operation, the program must do the following things while the user is entering text in the fields in the menu:

1. Because characters being entered from the keyboard are sent to the program, the program must read characters one at a time and display them on the screen.

2. In MS-DOS, the TAB character is a reserved character. Multiple blanks will result if this character is printed. To ensure proper execution of the TAB function, you should print the "ESC I" sequence instead.
3. You must define a character sequence that indicates that the user is ready for the program to read the menu.

BLOCK-mode terminal operation avoids these problems and also allows easy response to the selection of a function key. Once BLOCK mode is enabled, the terminal in most cases goes into LOCAL mode. In LOCAL mode, text that the user enters is simply displayed on the screen instead of being sent as input to the program. The TAB key works properly in LOCAL mode because MS-DOS is not intervening. The "trigger" key (which indicates that the user is ready for the program to read the menu) is the ENTER key. Once the user presses ENTER, the system sends the program a message indicating that the user is ready for the program to read the menu. After the program reads this message, the program can turn off BLOCK-mode operation and can read the menu in the same way described above.

Function-Key Processing

Function-key processing works very well in BLOCK mode. Many applications use function keys to indicate optional menu selections. In most applications that display menus, the functions keys are loaded with extras such as HELP, START OVER, or ABORT. If the user doesn't want to fill out the menu and have the program read it, s/he can select a special function instead. For example, in the preceding paragraph, the user pressed ENTER to send a message to the program. This message consists of a DC2 code followed by a carriage return. If, instead, the user selects a function key defined (for example) as type TRANSMIT, the message the program receives consists of the definition of the key itself. In such a case, the program can use the text of this message to determine which key the user selected and can then perform the appropriate action.

Building a Menu in BASIC

The following BASIC program uses all three features of the terminal to perform menu operations. It builds a menu and defines all eight function keys, using data in the data statements located at the end of the program. Once the menu is displayed on the screen, the use can either fill it in and press ENTER or select one of the function

keys. If the user presses ENTER, the program reads the menu, stores the text in a string array, and displays the text on the screen. If the user presses a function key, the program simply displays the number of that key.

NOTE: This example transfers data in BLOCK mode. To ensure proper data transfers, you must enter the terminal configuration menu and set both the G and H settings to NO (the default setting).

```

1000 REM
1010 REM Define array which will hold the menu text entered by user
1020 REM
1030 DIM MENU$(3) ' Menu array set for 3 entries
1040 REM
1050 REM Define special characters to be used in this program
1060 REM
1070 EC$=CHR$(27) ' ESCAPE character
1080 DC1$=CHR$(17) ' DC1 handshaking character
1090 REM
1100 REM Define escape sequences to be used in this program
1110 REM
1120 ENH$=EC$+"&d" ' Enhance video
1130 HOME.CURSORS$=EC$+"h" ' Move cursor to top left
1140 HOME.CURSORS.DOWN$=EC$+"F" ' Move cursor last line + 1
1150 CLEAR.DISPLAY$=EC$+"J" ' Clear the display
1160 FIELD.START$=ENH$+"B["+EC$+"[" ' Start an unprotected field area
1170 FIELD.END$=EC$+""]"+ENH$+"@" ' End and unprotected field area
1180 FORMAT.MODE.ON$=EC$+"U" ' Turn on format mode
1190 FORMAT.MODE.OFF$=EC$+"X" ' Turn off format mode
1200 BLOCK.MODE.ON$=EC$+"&k1B" ' Turn on block mode
1210 BLOCK.MODE.OFF$=EC$+"&k0B" ' Turn off block mode
1220 FUNCTIONKEYS.ON$=EC$+"&jB" ' Turn on function key labels
1230 FUNCTIONKEYS.OFF$=EC$+"&j@" ' Turn off function key labels
1240 TRANSMIT.A.LINE$=EC$+"d" ' Tell terminal to transmit a line
1250 REM
1260 REM Set print line width to infinity so Basic will not
1270 REM insert carriage-return/line-feeds after 80 characters
1280 REM
1290 WIDTH 255 ' Set width to infinity
1300 REM
1310 REM Define all 8 softkeys to return the phrases f1-f2
1320 REM using the labels defined at line 10000 below
1330 REM
1340 RESTORE 10000
1350 FOR K=1 TO 8
1360 READ LABEL$ ' Read the label
1370 PRINT EC$;"&f";K;"k2a16d2L"; ' Define function key #k using
1380 PRINT LABEL$;"f";CHR$(K+48); ' the label read
1390 NEXT K
1400 REM
1410 REM Draw the menu on the screen by reading the description
1420 REM lines defined at line 20000 below

```



```

1430 REM
1440 PRINT HOME.CURSORS;CLEAR.DISPLAYS; ' Clear the entire display
1450 RESTORE 20000
1460 READ TOTAL.FIELDS
1470 FOR K=1 TO TOTAL.FIELDS
1480 READ ROW,COL,TEXT$,FIELD.LEN ' Read a set of information
1490 PRINT EC$;"&a";ROW;"r";COL;"C"; ' Move cursor to selected start loc
1500 PRINT TEXT$; ' Output any preceding text
1510 PRINT FIELD.STARTS; ' Define start of field
1520 PRINT SPC(FIELD.LEN); ' Use blanks for field
1530 PRINT FIELD.ENDS; ' Define end of field
1540 NEXT K
1550 PRINT HOME.CURSORS; ' Move cursor to top of menu
1560 REM
1570 REM Turn on function key line showing alternate possibilities
1580 REM beside hitting ENTER
1590 REM
1600 PRINT FUNCTIONKEYS.ON$; ' Display the function key labels
1610 REM
1620 REM Activate menu by turning on format mode and block mode.
1630 REM Wait for user to optionally fill in field, then hit ENTER
1640 REM or a function key f1-f8.
1650 REM
1660 PRINT FORMAT.MODE.ON$; ' Turn on format mode
1670 PRINT BLOCK.MODE.ON$; ' Turn on block mode
1680 PRINT DC1$; ' Tell terminal "ready to receive"
1690 A$=INKEY$ ' Look for a character from terminal
1700 IF A$="f" THEN 2110 ' "f" is the start of a func key
1710 IF A$<>CHR$(13) THEN 1690 ' Carriage return means ENTER
1720 REM
1730 REM User hit the ENTER key. Terminal automatically expects to send
1740 REM the current menu field. This could be any field and therefore any
1750 REM length, which makes reading the line difficult. We will tell the
1760 REM terminal to home down before sending the line, this always returns
1770 REM a null (empty) line which we CAN read.
1780 REM
1790 PRINT HOME.CURSOR.DOWN$; ' Move cursor to last line + 1
1800 PRINT DC1$; ' Tell terminal "ready to receive"
1810 LINE INPUT A$ ' Read the null (empty) line
1820 REM
1830 REM Read each field using lengths specified in the data statements
1840 REM starting at line 20000. We must know each field's length in order
1850 REM to use INPUT$ for non-echoed reading.
1860 REM
1870 PRINT BLOCK.MODE.OFF$; ' Turn off block mode
1880 PRINT FUNCTIONKEYS.OFF$; ' Turn off the function key labels
1890 PRINT HOME.CURSORS; ' Move the cursor to the first field
1900 RESTORE 20000
1910 READ TOTAL.FIELDS
1920 FOR K=1 TO TOTAL.FIELDS
1930 READ ROW,COL,TEXT$,FIELD.LEN ' Read the field-length value
1940 PRINT TRANSMIT.A.LINES; ' Tell terminal "transmit a line"
1950 PRINT DC1$; ' Tell terminal "ready to receive"
1960 A$=INPUT$(FIELD.LEN+1) ' Read the field + a carriage return
1970 MENU$(K)=LEFT$(A$,FIELD.LEN) ' Store just the field information

```

```

1980 NEXT K
1990 PRINT FORMAT.MODE.OFF$;          ' Turn off format mode
2000 REM
2010 REM For this particular example, we will now simply print out all
2020 REM the text read from the menu
2030 REM
2040 PRINT HOME.CURSORS$;CLEAR.DISPLAY$; ' Clear the menu from the screen
2050 FOR K=1 TO TOTAL.FIELDS
2060 PRINT "Menu line #";K;": ";      ' Display which field being shown
2070 PRINT MENU$(K)                  ' Display the information read
2080 NEXT K
2090 GOTO 2250
2100 REM
2110 REM Function key f1-f2 selected. Read second character of two-
2120 REM character function definition, which shows which key was
2130 REM selected, and carriage return automatically sent by terminal.
2140 REM
2150 PRINT BLOCK.MODE.OFF$;          ' Turn off block mode
2160 PRINT FORMAT.MODE.OFF$;        ' Turn off format mode
2170 PRINT FUNCTIONKEYS.OFF$;       ' Turn off the function key labels
2180 A$=LEFT$(INPUT$(2),1)          ' Read two chars, keep the first
2190 REM
2200 REM For this example, we will simply display which key was selected.
2210 REM
2220 PRINT HOME.CURSORS$;CLEAR.DISPLAY$; ' Clear the entire display
2230 PRINT "Function key #";A$;" was selected."
2240 REM
2250 REM End of program. Make sure print line length is reset to 80
2260 REM
2270 WIDTH 80
2280 END
10000 REM
10010 REM Softkey labels follow. All are 16 characters long.
10020 REM
10030 DATA "Function Key #1 "
10040 DATA "Function Key #2 "
10050 DATA "Function Key #3 "
10060 DATA "Function Key #4 "
10070 DATA "Function Key #5 "
10080 DATA "Function Key #6 "
10090 DATA "Function Key #7 "
10100 DATA "Function Key #8 "
20000 REM
20010 REM Menu information follows. Each set consists of a zero-relative
20020 REM start row&col, any text which is to precede the field, and the
20030 REM length of the field. A single integer specifying the number of
20040 REM sets must precede the first set. The sets must be in sequential
20050 REM order by row&col.
20060 REM
20070 DATA 3
20080 DATA 1,5,"User name: ",30
20090 DATA 3,5,"User ID number: ",5
20100 DATA 3,40,"User Extension: ",4

```

□

Using Escape Codes to Create Function Keys in COBOL

Helen Morimoto

Function keys are useful when one is writing a program to interact with the user. COBOL enables this feature by providing "escape codes" that correspond to the last key struck in entry.

The following program is an example of how to declare escape codes and obtain the value that is being sent from the keyboard.

```
IDENTIFICATION DIVISION.  
PROGRAM-ID.      ESCALATE.  
                  THIS PROGRAM SHOWS  
                  AN EXAMPLE OF ESCAPE-  
                  CODE USAGE.  
AUTHOR.          MORIMOTO.  
DATE-WRITTEN.    21 DECEMBER 1984.  
SECURITY.        NONE.  
DATA DIVISION.  
WORKING-STORAGE SECTION.  
  77 ESC-KEY      PIC 99.  
  01 WORK-FIELDS.  
    05 ANY-CHARA  PIC X VALUE SPACE.  
SCREEN SECTION.  
  01 WINDOW-SCRN.  
    03 BLANK SCREEN.  
    03 LINE 1 COLUMN 11 VALUE.  
      Escape-code feature is:  
    03 COLUMN PLUS 1 PIC X TO ANY-  
      CHARA.  
PROCEDURE DIVISION.  
MAIN.  
  DISPLAY "THIS IS BEFORE SCREEN  
  ACCEPT".  
  DISPLAY WINDOW-SCRN.  
  ACCEPT WINDOW-SCRN ON ESCAPE.  
  DISPLAY " You hit ESCAPE " ANY-  
  CHARA.  
  ACCEPT ESC-KEY FROM ESCAPE KEY.  
  DISPLAY ' escape code : ' ESC-KEY.
```

□

Many of you have called HP-COACH for assistance when the terminal part of your HP 150 does not seem to want to talk to your program. When I first started writing programs, I too encountered this problem. My program printed the correct escape sequence, asking the terminal to send it to the current position of the alpha cursor, and the terminal would not respond. Not only did my HP 150 refuse to answer, it also locked up my keyboard! I became extremely familiar with the reset key (soft reset).

What I did not understand at that time was the concept of handshaking. The terminal side of the HP 150 responds somewhat like a well-disciplined child; it will tell you something when it knows you are ready to hear it. Although my program had sent the correct request, it had neglected to tell the terminal that it was ready to hear the response.

**Eliminating the
Communication
Gap**

One method of eliminating the communication gap between your program and the terminal is to disable handshaking (setting the G and H fields in the terminal configuration menu to YES). The result is the same as taking that well-disciplined child and teaching it to speak to you as fast as it can, whether you are ready to listen or not. This is not the ideal approach.

Your best bet is to leave handshaking enabled and include the appropriate code in your program to abide by its rules. This ensures that the terminal will talk *to* your program and not *at* it. If the user of the HP 150 running your program wants to turn handshaking off, he or she must take the responsibility for any data lost. Your program would still run properly; the handshaking codes it sends would simply be ignored.

Handshaking is not a difficult concept. When your program requests information from the terminal using an escape sequence, it's really saying something to the effect of "Please tell me what you know, but wait until I raise my hand." Printing a DC1 character (CHR\$(17)) is the equivalent of the program raising its hand, indicating that it is ready to listen.

**The ECHO Function:
Displaying while
Reading**

Now that you are an expert in handshaking, let's progress to the concept of ECHO. When you are typing in a command/statement or responding to an INPUT/LINE INPUT statement, the characters you type are being copied back to the screen for your convenience. This action of displaying the characters while reading them is called ECHOing. Although it is extremely helpful to the user when entering information, most programmers find the echoing of the terminal response information to the screen annoying.

There are two ways to eliminate the ECHO problem. First, you may use the INPUT\$ function. This function reads characters without echoing them back, but you must know exactly how many characters are going to be sent. Second, you can open the console device temporarily and use it to read without echo. This requires a little more code, but will read a string of any length (*i.e.*, read a line off the screen).

The program examples outlined below assume you are using an HP 150, handshaking fields G and H are both ON or both OFF, and AUTO-LF is off. You may also want to review the following articles to help bring you up to speed:

“BASIC/150 Block Mode Transfers” in
Communicator #7

“Using Record Mode on the HP 150”

“Writing Your Own Menu Routines” in this
issue

The code examples that follow demonstrate the different methods of obtaining important information from the HP 150. The two statements at the beginning are used to define the two major characters used, the escape characters and the DC1 character.

**Locating the
Cursor**

The first example shows an easy method of obtaining the current location of the alpha cursor in row/column format. The string returned is always 12 bytes long, so we can use the INPUT\$ function to read without echo. The row and column values will be imbedded in the string at the locations shown.

Reading Text from the Display	<p>The second example, starting at line 2000, demonstrates the first method of reading a line of text off the display screen. Since this routine relies on the INPUT\$ function, the line returned must be of the length specified by LNELEN or communication errors will result. This routine is used primarily to read menu fields, which are fixed in length.</p> <p>The third example, starting at line 3000, is the alternate method of reading a line of text off the display screen. If the length of the line to be read can be of any length, the console device must be used to perform a read without echo. The file number here must refer to a free file buffer (that is, a buffer that is not currently being used).</p>
Programmatic Device Control	<p>The next example, starting at line 4000, demonstrates programmatic device control. In many cases, the device control escape sequences not only perform a particular device function (copy from device to device, etc.), but automatically respond with the status of the function performed. The program requesting the operation must be prepared to read the status, just as if it had asked for it explicitly.</p>
Softkeys	<p>The next example, starting at line 5000, covers those cases where a user may strike a softkey as part of, or instead of, a response to a prompt. Most programs define softkeys using the NORMAL option, which respond in a manner similar to key strikes. Softkeys defined as type TRANSMIT require a DC1 before they will send their data. If your program allows the use of TRANSMIT type of softkeys, precede any input with a DC1 to insure the transmission of text.</p>
Status Information	<p>The routines starting at lines 6000 and 7000, respectively, request and read status information. The information returned is always an expected length, and therefore the same procedure may be used as with reading the alpha cursor position.</p>

The last example outlines the method of requesting graphics status. An interesting exception to the rule seems to be present here. As with the other status requests, proper handshaking must be performed, but the ECHO situation is not the same. To allow for compatibility with numerous graphics products, the HP 150 performs a masking function when it returns graphics status; although the information is echoed by BASIC, the terminal disables the display line so the user cannot see it. I have found the best approach toward reading graphics status is to read without echo (as with the other status requests), and then re-enable the display line with an ESC-blank.

```

100 EC$=CHR$(27)      ' Define Escape character
110 DC1$=CHR$(17)    ' Define DC1 character

1000 REM GET CURRENT ALPHA-CURSOR POSITION, WITHOUT MOVING CURSOR
1010 PRINT EC$;"a";  ' Output request for alpha cursor position
1020 PRINT DC1$;     ' Notify terminal, "ready to receive"
1030 ACSR$=INPUT$(12) ' Read string without echo
1040 COL=VAL(MID$(ACSR$,4,3)) ' COL now equals cursor column posit.
1050 ROW=VAL(MID$(ACSR$,8,3)) ' ROW now equals cursor row position.

2000 REM READ LINE OF FIXED LENGTH OFF TERMINAL SCREEN
2010 REM Assumes the program knows how long the line is.
2020 REM Reads all characters from cursor posit to end of line.
2030 LNELEN=15      ' Must equal number of characters on the line
2040 PRINT EC$;"d"; ' Request transmission of current line
2050 PRINT DC1$;   ' Notify terminal, "ready to receive"
2060 LNE$=INPUT$(LNELEN) ' Read line without echo

3000 REM READ LINE OF VARIABLE LENGTH OFF TERMINAL SCREEN
3010 REM Assumes the program does not know how long the line is.
3020 REM Reads all characters from cursor posit to end of line.
3030 PRINT EC$;"d"; ' Request transmission of current line
3040 PRINT DC1$;   ' Notify terminal, "ready to receive"
3050 OPEN "I",1,"CON" ' Open Console as a file (it won't echo)
3060 LINE INPUT #1,LNE$ ' Read line without echo
3070 CLOSE #1      ' Close the temporary file

4000 REM WRITE TEXT TO OUTPUT DEVICE, THEN READ STATUS BACK
4010 REM Uses output device 3 which is the terminal screen.
4020 REM Status returned: S=satisfactory, F=failed, U=interrupted
4030 PRINT EC$;"&p3dW"; ' Output command to copy following to screen
4040 PRINT "Test Line" ' Information to be copied
4050 PRINT DC1$;       ' Notify terminal, "ready to receive status"
4060 STATUS$=INPUT$(2) ' Read status character and carriage-return

```

```

5000 REM GENERAL INPUT ROUTINE WHICH WILL HANDLE SOFTKEY STRIKES
5010 REM Use this when doing a [LINE] INPUT if there is a possibility
5020 REM that the user may strike a TRANSMIT-type softkey as input.
5030 PRINT DC1$;          ' Notify terminal, "ready to receive"
5040 LINE INPUT TEXT$    ' Input user text

6000 REM GET PRIMARY TERMINAL STATUS
6010 REM Must use same approach as when reading alpha cursor position.
6020 PRINT EC$;"^";      ' Output request for primary terminal status
6030 PRINT DC1$;        ' Notify terminal, "ready to receive"
6040 STATUS$=INPUT$(10) ' Read status string without echo

7000 REM GET DEVICE STATUS
7010 REM Must use same approach as when reading alpha cursor position
7020 PRINT EC$;"&p6";    ' Output request for status of integral printer
7030 PRINT DC1$;        ' Notify terminal, "ready to receive"
7040 STATUS$=INPUT$(8)  ' Read status string without echo

8000 REM READ GRAPHICS CURSOR POSITION (GRAPHICS STATUS CODE 3)
8010 REM Must use same approach as when reading alpha cursor position,
8020 REM but must reset display line when finished or any upcoming text
8030 REM written to the line will not appear.
8040 PRINT EC$;"*s3";    ' Output request for graphics cursor position
8050 PRINT DC1$;        ' Notify terminal, "ready to receive"
8060 GPOSIT$=INPUT$(14) ' Read status string without echo
8070 PRINT EC$;" ";     ' Reset display line
8080 X=VAL(LEFT$(GPOSIT$,6)) ' X now equals cursor x-position
8090 Y=VAL(RIGHT$(GPOSIT$,6)) ' Y now equals cursor y-position

```

□



Programming with numbers in FORTRAN generally requires accuracy, so when you enter a number like 1,000,000.6 and get 1,000,000.625 you immediately question the accuracy of the language. Although all the languages have this level of "precision" by default, the good news is that you can get around it using the same logic. The following program uses double precision to get accuracy to a more acceptable level. (At the least, it presents the value as assigned.)

```
D Line # 1      7  Microsoft FORTRAN77
                               V3.13 8/05/83
      1      PROGRAM DPREC
      2 C     THIS PROGRAM USES
      3 C     DOUBLE PRECISION
      4 C     H. MORIMOTO-
      5 C     DECEMBER 13, 1984
      6      REAL#8 X,Y,Z
      7      DOUBLE PRECISION A,B,C
      8      X = 1234567.89
      9      Y = 1234567.00
     10      Z = X-Y
     11      A = 1234.567891D3
     12      B = 1234.567D3
     13      C = A-B
     14      WRITE(*,*) 'REAL'
     15      WRITE(*,*) X,Y,Z
     16      WRITE(*,4440)X,Y,Z
     17      WRITE(*,*) 'DOUBLE'
     18      WRITE(*,*) A,B,C
     19 4440  FORMAT(3F20.9)
     20 4444  FORMAT(3D20.9)
     21 5000  STOP
     22      END
```

Name	Type	Offset	P	Class
C	REAL*8	42		
X	REAL*8	2		
Y	REAL*8	10		
Z	REAL*8	18		

23
24
25
26

Name	Type	Size	Class
DPREC			PROGRAM

Pass One No Errors Detected
26 Source Lines

The program prints the values of A, B, C, X, Y, Z:

```
REAL
1234567.875000000000000  1234567.000000000000000  8.75000000000000E-001
1234567.875              1234567.0000000000    .8750000000
DOUBLE
1234567.891000000000000  1234567.000000000000000  8.9100000006147E-001
.123456789d+07           .123456700d+07           .891000000D+00
Stop-Program terminated.
```

□

**Are You a Victim of
Precision Errors?**

Precision errors creep up in a variety of programming situations. You're a victim if you have experienced what appears to be an unexplainable loss of precision when using floating point numbers in BASIC, Pascal and FORTRAN.

**The Precision Error
Scenario**

If you haven't experienced precision errors, but are interested anyway, take a look at the following BASIC program:

```
10 INPUT A    'Ask for input of a number
20 PRINT A    'Echo (print) it back to the
              screen
```

When you run this program and enter the number 9.9, the number printed back is 9.899999. This approximation usually shocks programmers who have never run into this type of error before. This article explains why precision errors occur and what can be done to keep the problem to a minimum.

Data Type Basics

BASIC, Pascal and FORTRAN all support three major types of data. There are character, integer and floating point values. The two numeric types, integer and floating point, can be further subdivided into single and double precision. Although BASIC supports double precision floating point, double precision integer is not available at this time. The ranges of each type are shown below:

Integer	-32768 to + 32767 Whole numbers only
Double integer	-2147483647 to + 2147483647 Whole numbers only
Floating-point	$\pm (1.0E-38 \text{ to } 1.0E + 38)$ 6-7 digit accuracy
Double floating-point	$\pm (1.0E-38 \text{ to } 1.0E + 38)$ 16-digit accuracy

As numeric variables are defined, their types are specified by the programmer. For BASIC, this is done as part of the variable name. By appending a "%", "!" or "#" to the name, its type is defined as single precision integer, single precision floating point and double precision floating point, respectively. If not explicitly noted by one of the above characters, the default is single precision floating point. For Pascal and Fortran, a keyword in the variable definition is used (ex: real4).

As numeric constants are included in the program source, they will be typed according to their size and configuration. If they fall within an integer range, and do not contain a decimal point or exponent, they will be typed as integer. Any number which contains a fractional part or exponent, or which exceeds the integer range, will be considered floating point. Using BASIC as an example, here are some constants and their respective types:

- 100 Integer
- 12.7 Single-precision floating-point (decimal point)
- 54331 Single-precision floating-point (larger than integer)
- 100E0 Single-precision floating-point (E-exponent)
- 100D0 Double-precision floating-point (D-exponent)

What Numbers Look Like Inside Your Computer

When we think of or write down numbers, we don't think in terms of a specified number of digits. We use as many digits as the number requires. Computers, however, store numbers in a predefined, limited amount of space.

The computer's memory is essentially an array of cells, each capable of holding data. These cells are called bytes, and each is comprised of eight binary digits, called bits. The largest value that a byte can store is 255 ($2^8 - 1$). To increase this maximum size, BASIC groups contiguous (adjacent) bits of memory together. Precisely, two contiguous bytes of computer memory can hold a 16-bit integer. Four bytes are used for single-precision floating-point numbers, and eight bytes are used for double-precision. The total number of bits will determine the size and/or precision of the number being stored.

There is a world of difference between how integers are stored and how floating point numbers are stored. For integers, the entire field of bits is used to hold the value, with the exception of one bit which is used to keep track of the sign (\pm value). For floating point values, the field of bits is split up into two areas. One holds the exponent and the other holds the mantissa (fractional part). Each area reserves one bit for the sign (\pm value, \pm exponent).

Another important difference between the way computers handle numbers and the way we do is the number system used. We usually don't pay much attention to number systems, but our system is not the only way numbers can be represented. In fact, digital computers use a system that differs from our own.

The system we use is referred to as base-10 (also called decimal), and is a positional system. "Base-10" indicates that we use ten (10) digits. These are the digits "0" through "9". Most historians believe that mankind arrived at this system simply because most people have ten fingers (also called digits).

"Positional" indicates the way digits are combined to form numbers. The decimal point separates the whole and fractional parts; digits to the left of the decimal define the whole (integer) part, while digits to the right comprise the fractional part. Note that each position in either direction can be computed as a successive power of ten. It is no coincidence that ten is the base of this system.

The system employed by a digital computer is also positional, but uses base-2 (also called binary). The two digits are "0" and "1", which correspond electronically to the computer's two states of voltage: On and Off. The positional weights can be computed as successive powers of two. For example, the binary number 1001 is equivalent to the decimal number 9, because there is a "1" in both the units (1's) place and the eights (8's) place. The computer's numbering scheme does not allow for a fractional part, which is why a fraction is handled separately in its own field.

Overflow Error

Any attempt to store a value into a storage location which is not large enough to contain it will generate an overflow error. Keep within the ranges to avoid this type of problem.

Roundoff Errors

The term "roundoff error" refers to the loss of precision in floating point numbers when values are assigned or computed. During an assignment, a value containing more significant digits than allowed will be shortened to fit. The value 188.55627, for example, would be converted to 188.5563 if assigned a single precision variable. During computations, significant digits beyond the allowable range are lost. The expression $100.0/6.0$ will evaluate to the indefinite number 16.666666. . . (repeating), but be stored as the value 16.66667.

We typically would not call this rounding-off an error, although the results of rounding are slightly inaccurate. In the computer, the decision is dictated by the space limitations imposed on storage. Because of the limited space used for representing floating point numbers, indefinite numbers and numbers with more significant digits than space allows will suffer loss of precision.

Binary Representation Errors

When a number is converted from our decimal system to the computer's binary system for internal storage, in many cases the fractional part cannot be expressed exactly. The fractional part of the value 9.9 is clearly not indefinite, but becomes indefinite when represented in binary form; it is stored with a slight inaccuracy. When retrieved, it will have the value 9.899999, which is very close but still an approximation.

Double Precision Expansion Errors

Most people can easily see the problem of precision errors when converting double precision values to single precision; you are going to lose the last 9 digits of accuracy. What few understand is the problem related to the reverse operation. When a single precision value is converted to double precision, any fractional part will be expanded inaccurately to fill the larger field. Although 1267E0 will convert properly to 1267D0, 126.7E0 will be converted to 126.6999969482422.

What Have We Learned So Far?

First, you can't fit a big number into a small space. This problem is fairly easy to avoid if you program with care. Second, the fractional part of floating point numbers is going to cause precision problems if not handled properly. For scientists who realize that close approximations are good enough, no problem! As far as the accountants who contemplate suicide when two cents are "missing", certain precautions should be taken. The most common workarounds can be found in the remainder of this article.

Choosing the Right Type

If at all possible, use type Integer! This is the most efficient value type possible. It takes up the least amount of space, makes for faster calculations, and will not generate precision errors. If you have to use floating point, keep in mind that double precision is slow and takes up twice as much space as single precision.

Accounting Programs Should Use Whole Numbers Only!	<p>One excellent way to solve the problem of precision errors is to keep to whole numbers. This is not difficult if you follow these four rules:</p> <ul style="list-style-type: none"> ■ Store everything as cents, not dollars and cents ■ If type integer can't hold the numbers, use floating point (just don't exceed the precision) ■ When you read in values, multiply them by 100 and then use an integer function to clean them up ■ When you output a value, place it in a temporary variable, divide it by 100, then use formatted output to insure a clean print (see PRINT USING in BASIC)
Do Not Mix Single and Double Precision	<p>When coding equations, never mix single and double precision variables and/or constants which may contain fractional parts; the errors from this can be frightening. Some common examples:</p> <p>Use: A# = 9.9DO Not: A# = 9.9 Use: A# = A# + .1DO Not: A# = A# + .1</p>
Clean Up Your Outputted Values With Formatted Option	<p>The PRINT statement in BASIC is notorious for displaying strange representations of values. This is not really a bug. Most people do not understand that PRINT should only be used as a quick-and-dirty method of getting output. PRINT USING is the formal method of producing proper reports. Although the minor precision errors are still present internally, you can use PRINT USING to hide them. The value 9.899999 will be displayed as 9.9 if your use PRINT USING with a specification of only one place to the right of the decimal point (it rounds properly).</p>
BASIC Functions Return Single Precision	<p>None of the intrinsic functions (SIN, SQR, VAL, etc.) or the power arithmetic operator (^) available in interpreted MS-BASIC return double precision values. Therefore, results returned from these functions should not be assigned to double precision variables directly or indirectly by involving them in expressions whose results are assigned to double precision variables.</p> <p>The GW-BASIC Interpreter will return double precision results only if the /D option-strap is specified in the command to load the interpreter. P.A.M. will not set this strap for you. You must execute GW-BASIC from MS-DOS COMMANDS with the statement:</p> <p style="padding-left: 40px;">GWBASIC /D</p>

The MS-BASIC compiler does return double precision results from intrinsic functions, so compiling a program that uses intrinsic functions and/or the power operator (^) will improve the accuracy of the results.

**IF-THEN-ELSE
Equality Tests May Not
Work**

When comparing two values which have fractional parts, such as $A! = B!$, the computer's definition of EQUAL may not match yours. Keep in mind that fractional parts are only approximations. To insure the test will work, use a statement of the form:

```
10 IF ABS(A!-B!) < T THEN . . .
```

In this case, T is a tolerance (an allowable difference between the two numbers). This statement says, essentially, .cp 2 that if $A!$ and $B!$ are close enough, then consider them to be equal. The variable T defines what is "close enough".

**Loops Can Compound
Errors**

Creating a loop which counts with a fractional part as its increment is bound to cause errors. Each time through the loop, the new inaccurate increment is added to the sum of the old inaccurate increments, "contaminating" the counter beyond belief.

Consider, for example, a loop increment of 9.9. As you should be able to guess by now, something will go awry when we use any number that is indefinite when represented in binary. In this case, each time the next value of the loop is computed, 9.899999 is added instead of 9.9. When this first happens our loop counter will be in error by only 0.0000001. However, with the one-thousandth execution of this loop the loop counter will be in error by 0.0001. The previous error will have been compounded one thousand times.

If you can live with the smaller error but not the larger, compounded error, you'll need a work-around. Use whole number increments for the loop and divide the counter by a constant inside the loop to produce the desired counter replacement:

```
10 FOR I=0 TO 9900 STEP 9.9  
   'WRONG: Compounded errors  
10 FOR I=0 TO 99000 STEP 99  
   'RIGHT: No compounded errors  
20 I2=I/10  
   'I2 can now be used in upcoming  
   computations
```

Isn't There A Better Way To Do Math On A Computer?

"Better" is in the eye of the beholder. The floating point decimal system used in BASIC, Pascal and FORTRAN takes up minimal space (memory) and allows for fairly speedy execution. This coincides with the intended use of the languages, to develop general-purpose or scientific application software. The main drawback is that the programmer must understand that the fractional parts of the values are only "approximations".

Many programmers designing software on a PC ignore the language developed specifically to handle business applications, a language designed to manipulate exact values without losing precision. This language is COBOL! If you are writing business applications, the Binary Coded Decimal (BCD) math used by COBOL will eliminate your precision problems.

What is Binary Coded Decimal?

The floating point system converts base-10 values to compacted base-2 values. BCD operates with base-10 values in memory. The advantage here is obvious; no precision/ conversion errors. The drawbacks are (1) it takes up more memory, and (2) math is performed in a fashion similar to long hand and is therefore a little slower.

Is COBOL the only language that supports BCD math? No. Lattice C, just recently released, allows use of BOTH floating point and BCD math operations. (Ah, the language of the future!)

□



THE GALLERY COLLECTION

The Graphics Gallery: Professional Business Graphics on HP Touchscreen Personal Computers

Marilyn Ruel
David Obershaw

Introducing The Graphics Gallery

With the opening of The Graphics Gallery, HP brings professional-quality presentation graphics to personal computers. A complete family of compatible business graphics software, Graphics Gallery features three exhibits—Drawing Gallery, Charting Gallery, and Executive MemoMaker—designed to make business communications more effective.

Individually, and together, these packages have been designed to provide your customers with a wide variety of high-quality solutions for business presentations and reports. You can create a pie or bar chart in Charting Gallery, add a special font and border from Drawing Gallery, and make a full-color overhead transparency with an HP plotter. Or you can use Drawing Gallery by itself to create graphics like text charts, organization charts, and process-flow diagrams. And any graphics you create with Charting Gallery or Drawing Gallery can be merged with documents you've written using Executive MemoMaker.

In the area of printed graphics, The Graphics Gallery products provide excellent support for HP ThinkJet and LaserJet printers. You can also achieve very-high-resolution merged text and graphics with the help of Executive MemoMaker. Each of these products also works with other HP and non-HP printers.

Drawing Gallery

Drawing Gallery is a creative framework designed to help you present concepts and information in a clear and concise manner. Using Drawing Gallery, you can create organization charts, text charts, and other graphics with minimum effort. And with built-in electronic templates, you can quickly produce these visuals without the aid of a graphic artist.

Drawing Gallery and the HP Mouse

The Drawing Gallery product has been designed to support the new HP Mouse for the HP Touchscreen personal computers. Using the mouse with Drawing Gallery is strongly recommended, as the product has an interface which has been optimized for mouse input.

Charting Gallery: Professional Charts for Reports and Presentations	By transforming confusing columns of numbers into easy-to-read charts and graphs, Charting Gallery can make your business presentations more effective. For example, bar charts provide a powerful means of comparing performance, and you can use line charts to project trends, or pie charts to explain relationships. And charts created in Charting Gallery can be easily transferred into Drawing Gallery for customization, or merged with Executive MemoMaker documents.
Executive MemoMaker	Executive MemoMaker is the word processor for business professionals. It gives you the power to create polished, professional letters and reports—without any complicated commands or instructions. And while Executive MemoMaker was designed with simplicity in mind, it provides many powerful features, including merged text and graphics and professional spelling correction. With Executive MemoMaker, it's easy to incorporate charts and drawings created with the Graphics Gallery products into your documents for strong and immediate impact. Now you can supplement written messages with professional-quality graphics. And with MemoSpeller spelling correction, you can focus on using the correct word without worrying how to spell it.
Executive MemoMaker versus Original MemoMaker	If you are familiar with the original MemoMaker product, learning executive MemoMaker will require only a few minutes. The merged text and graphics and spelling correction are achieved with the addition of two new softkey levels.
Gallery Picture Library, Vol. II	Gallery Picture Library, Vol. II lets you build on the library of pictures included in Drawing Gallery with over 200 new ready-made drawings for enhancing presentation visuals. This product is designed to help non-artists create professional drawings simply and easily. And you can choose from a selection ranging from buildings to people to satellites. So with the combined talents of Drawing Gallery and Gallery Picture Library, Vol. II, it's easy to create an even wider range of visuals.
Electronic Templates	Included with the Gallery Picture Library, Vol. II, are two new electronic templates: Floorplan and Mapping. These drawing "building blocks" make it easy for you to lay out your office or draw a map to your next off-site meeting.

The Gallery Collection The Gallery Collection offers the professional presentation graphics of Charting Gallery, Drawing Gallery, and Gallery Picture Library, Vol. II in one package.

Memory Requirements While The Graphics Gallery products do not require more than the standard 256K bytes included with the HP Touchscreen personal computers, you will experience improved performance in each of these applications with additional memory. Each of these programs has been designed to use as much memory as is available, and thus any additional memory will provide faster performance. The larger the memory board, the better the performance.

Memory size will have the greatest effect when you create complex drawings with Drawing Gallery, or merging graphics into an Executive MemoMaker document. These tasks require a great deal of memory; you will see impressive results if you use extra memory when executing these functions.

Additional memory is NOT required. However, any of the following add-on memory boards will let you take on larger, more complex jobs.

Product	Product Number
128K RAM Memory Accessory Board	45630A
256K RAM Memory Accessory Board	45631A
384K RAM Memory Accessory Board	45632A

HP Touch is standard with the HP 150 Touchscreen and 150 Touchscreen MAX. For even greater ease-of-use, you might consider one of the following HP Mouse packages:

Product	Product Number
HP Mouse Solution	45916
HP Mouse-Memory (384K) Solution	45917

Ordering Information To order Graphics Gallery products, contact your local HP sales office—or use the order form in the Current Information section of this issue.

Charting Gallery	45513A
Drawing Gallery	45411A
Gallery Picture Library, Vol. II	45433A
The Gallery Collection	45437A
Executive MemoMaker	45418A
Charting Gallery and Executive MemoMaker	45440A

Text

Text

Text created using another high-quality PC Graphics package.

Text

Text

Text created using the Graphics Gallery's professional quality fonts.

Gallery Sales by Artist

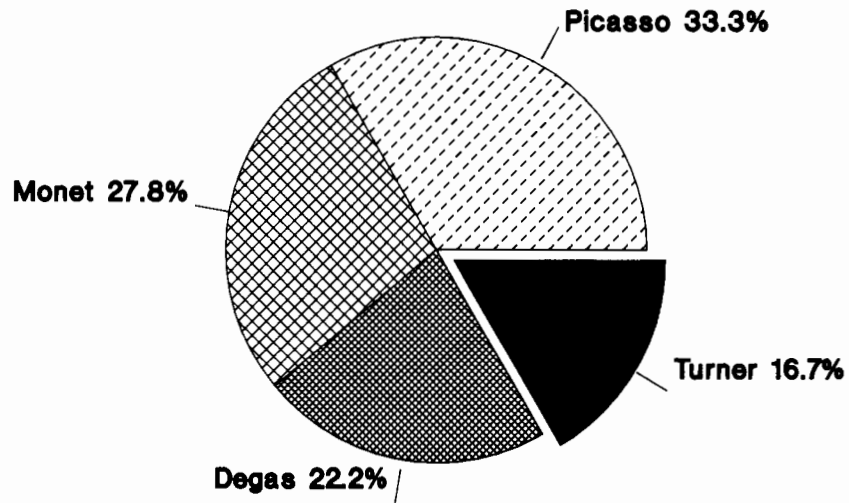
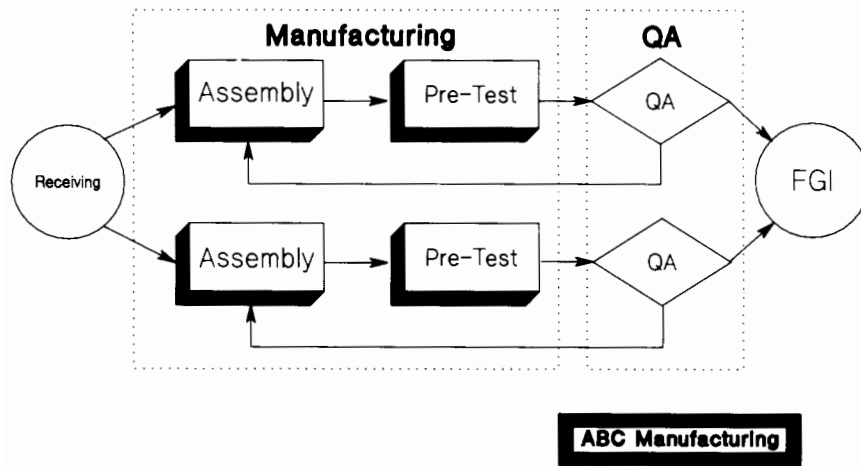


Chart created using Hewlett Packard's Charting Gallery Software.

New Production Process



Drawing created with Hewlett Packard's Drawing Gallery Software.

Spreadsheet Link™ from Dow Jones and Company is now available for the Touchscreen Personal Computer and The PORTABLE. Spreadsheet Link lets you log on automatically to the Dow Jones News/Retrieval® Service and download financial information into your Lotus 1-2-3™, Multiplan®, or VisiCalc® spreadsheets. HP Touch is used on the Touchscreen Personal Computer to enhance this software's ease of use.

Financial Analysis and Portfolio Valuation

Spreadsheet Link lets you analyze your investments in a spreadsheet that you have customized. If you are an individual investor, credit manager, financial analyst, strategic planner, management consultant, money manager, or pension manager, Dow Jones Spreadsheet Link can put the most up-to-date information at your fingertips.

How It Works

Retrieving information is simple. You just type the stock symbols for companies or securities into the left-hand column of your spreadsheet, and enter specific data-item identifiers (such as earnings per share, current prices and closing prices), across the top row. Once this information is saved in your spreadsheet you can go online.

After making the appropriate selections from the main menu of Dow Jones Spreadsheet Link, the program takes over. If an autodial modem is used, the phone call and all dialogue between your personal computer and Dow Jones can be carried out automatically. After the data is retrieved, you can load the data into your previously formatted spreadsheet and all the calculations you specified will be performed automatically.

Features and Benefits

- Works with Lotus 1-2-3, Multiplan and VisiCalc to combine the power of the most popular spreadsheets with the most up-to-date information from Dow Jones News/Retrieval.
- Automatically logs on, extracts data and downloads it to your personal computer to save you time and reduce errors.
- Provides menus that simplify the learning process, so you can spend more time on analysis.
- Provides preformatted spreadsheet templates to help you get started quickly.

- The built-in terminal program gives you access to a wide range of news and information: an online encyclopedia, a free text-search service, up-to-the-minute news and sports stories, and the latest information from the *Wall Street Journal* and *Barron's*.
- Access to Dow Jones financial data lets you process data from Current Quotes, Media General, Corporate Earnings Estimator, and Disclosure II data bases.
- One hour of free use of the Dow Jones News/Retrieval Service lets you acquaint yourself with the variety of information available from Dow Jones.
- Extensive documentation, a step-by-step tutorial, and a built-in Help facility ensure that you'll become productive quickly.
- Access to Dow Jones Market Analyzer allows data interchange between the programs to eliminate additional communication charges if you use both software programs.

Ordering Information

Dow Jones Spreadsheet Link for the HP 150 Touchscreen Personal Computer and The PORTABLE is available as HP Product Number 45511D. Refer to the "How to Order" section in this issue for details.





The entire family of BPI accounting software is now available for the HP 150. BPI's flexibility and ease of use have made it the top-selling line of accounting software nationally. With special enhancements for the HP 150 and backed by Hewlett-Packard's quality and comprehensive post-sale support, the BPI accounting family may be the ideal solution for your small-business and personal-accounting needs.

In all, seven BPI modules are available for different accounting applications. These packages include General Accounting, Accounts Receivable, Accounts Payable, Payroll, Job Costing and Inventory Control to help you run your business, and Personal Accounting to help you organize your personal finances.

Now is the time to consider an investment in a computerized accounting system for your business. Many business owners find year-end closing a convenient time to switch over from a manual to an automated accounting system. Let 1985 be your year to enjoy the added productivity and improved management information a BPI Accounting System can deliver.

Practical Features

All BPI Accounting modules offer a number of features which can be found on larger, more expensive systems. These features include:

- Automatic double-entry bookkeeping
- Flexible modules which can be used together or as stand-alone, special-purpose accounting systems
- Fully compatible modules for simple data transfers
- Account number coding for easy data entry
- Error protection to avoid mistakes and accidental data loss
- Practice data to help you learn BPI quickly and easily

General Accounting	<p>BPI General Accounting is the most flexible module of the BPI accounting line. For many firms, it will be the only package required to manage the entire company's finances. General Accounting offers the flexibility of creating up to 2000 accounts which can be divided among general ledger accounts, employees, customers, suppliers, and debtors. The system can handle the transactions of as many as ten individual departments or branches. General Accounting can generate several useful management reports, including trial balances, balance sheets, income statements, payroll registers, cash disbursement journals, customers lists and more. With BPI General Accounting, end-of-month closings are simple and easy.</p>
Accounts Receivable	<p>BPI Accounts Receivable is designed for companies that handle a large number of customer accounts and transactions. The system can handle as many as 1000 customers, 120 general ledger accounts, and 5400 transactions per billing period. Accounts Receivable can accommodate two levels of finance charge, four kinds of customer accounts, and either balance-forwarded or open-item methods of accounting. The module prints customer statements, past-due notices, and mailing labels. Management reports include aged balances, balance-forward, charges year-to-date, finance charges by account, and the number of times an account has been past due, to name a few.</p>
Accounts Payable	<p>BPI Accounts Payable lets you reduce dramatically the amount of time you spend determining payment amounts and due dates, since the system performs these calculations automatically based on each vendor's specific terms. With the Accounts Payable system, you can select either the cash or accrual method of accounting, maintain a detailed vendor data base, and choose from three methods of check disbursement. The program can handle up to 450 general ledger accounts, 250 regular vendors, 200 casual vendors, and 1000 vouchers. Management reports include an accounts payable general ledger, check register, voucher register, and expense distribution report.</p>



Payroll	<p>BPI Payroll offers you the flexibility you need to create a customized company payroll system. You can choose from three methods of paying employees, specify up to nine deductions per employee, and distribute employee gross pay among up to five general ledger accounts. Calculation of federal and state income tax withholdings is fully automated with BPI Payroll and the BPI Tax Table Update Service. The BPI Payroll system supports as many as 150 employees. Management reports include a payroll register showing gross pay, sick pay, vacation pay, tips, commissions, and deductions for each employee, as well as reports detailing employee earning records, total tax deductions by state, and current hours, total pay, and average hourly rates by department.</p>
Job Cost	<p>BPI Job Cost is particularly well-suited to construction management applications. BPI Job Cost helps you estimate the costs of each job and will print job estimates detailing rates per unit of measure, number of units, and estimated dollar cost by work code. Once the job has begun, Job Cost tracks the actual costs for each job and compares actual to estimated costs and quantities using percent of completion as a basis. Other reports you can produce include retainage profit-and-loss type analysis, job-cost general ledger, and monthly job-cost summary reports, as well as listings of jobs, work codes, vendors, and general ledger accounts.</p>
Inventory Control	<p>The BPI Inventory Control system can easily be tailored to your company's needs. You can use one of three methods to cost your inventory, establish up to 10 branches and 10 departments for your company, and automatically create back orders and track low-balance items. Inventory items can be listed in 12 different ways. The system prints purchase orders, sales invoices, listings of journal activity, price labels, and packing lists. End-of-period reports include activity in inventory, general ledger, profit-and-loss statements, and trial balance.</p>

Personal Accounting

With BPI Personal Accounting, you can bring the power of the HP 150 to the task of managing your personal income and expenses. Personal Accounting lets you record checks and deposits in up to 10 separate checking accounts, and credit charges on as many as 10 credit-card accounts. Personal Accounting takes care of your monthly check reconciliation, can print checks automatically, and can help you plan a budget for your income and expense accounts. Printed reports include profit-and-loss statements, listing of checks written and deposits made for each checking account, amortization schedules on loan and mortgage payments, and cost- and market-based statements of net worth.

Ordering Information

The BPI Accounting System for the HP 150 is available under the following HP Product Numbers:

BPI General Accounting	45455A
BPI Accounts Receivable	45456A
BPI Accounts Payable	45457A
BPI Payroll	45458A
BPI Personal Accounting	45459A
BPI Inventory Control	45460A
BPI Job Cost	45461A



Turbo-Pascal, by Borland International, is a powerful tool designed to provide programmers with a compiler that does not limit their capabilities. Based on standard Pascal as defined by Wirth and Jensen in *The Pascal User Manual and Report*, it adds extensions to give users access to lower levels of the machine, such as absolute address variables, bit/byte manipulation, logical operations on integers, and full support of operating-system facilities.

Integrated Editor

Because the editor is part of the compiler, you no longer need to exit the editor to compile a program. You can compile your program just by entering a command to Turbo. Until the program becomes a finished compiled tool, Turbo will reenter the program after a compile. Turbo's full-screen editor is also versatile, allowing you to define the editing commands as you please.

Access to the Operating System

Turbo also gives you access to the operating system. Most high-level-language compilers force you to use assembly-language routines to access MS-DOS function calls; with Turbo-Pascal, you can set up and call the MS-DOS function calls directly. This feature is especially powerful with the HP 150 because it gives you access to the Alphanumeric/Graphics Input/Output System (AGIOS). AGIOS gives you access to many of the firmware routines which only the terminal can usually access.

This sample program shows just such a call; it prints a birthday greeting with an enhanced area. Normally this enhancement would require the use of escape sequences, but that's slow. Using AGIOS can increase your program's speed. AGIOS also gives increased functionality in some areas, even though in other areas you must still use escape sequences. For more information on AGIOS, consult the *Programmer's Reference Manual* in the Programmer's Tools package (Hewlett-Packard Product Number 45435A).

Turbo-Pascal is distributed and supported by Borland International. When ordering from Borland, be sure to indicate that you have an HP 150, and specify whether you are using 3.5" or 5.25" diskettes. For further information contact:

Borland International
4113 Scotts Valley Dr.
Scotts Valley, CA 95066


```

(*****
*)
*)      Happy Birthday Display      *)
*)      (An Example of AGIOS with Turbo-Pascal) *)
*)
*)      By Mike Hachigian          *)
*)
*)      Description: This program uses a procedure called "outlin" to *)
*)      write out three lines with enhancements and different character *)
*)      sets to the specified position on the screen. *)
*)
*)
(*****)
program hapbir;

type regs =          (* Structure to store the registers for the MS-DOS *)
                    (* function call *)
                    record
                        ax,bx,cx,dx,bp,si,di,ds,es,flags: integer;
                    end;

                    string80 = string[80];

var
    textbuf,enhbuf,chr_setbuf: string80;

(*****
*)
*)      Procedure: outlin          *)
*)
*)      Description: This procedure uses an AIOS write line (AIOS function *)
*)      call 0,7) to write the line specified in tbuf, ebuf, and cbuf to *)
*)      to the screen at the specified row and column. *)
*)
*)
(*****)
procedure outlin(row,col: byte; var tbuf,ebuf,cbuf: string80);

var
    reg_buf: regs;
    wrln_buf: record          (* Structure to setup for the Write-Line *)
                            (* AIOS function call *)
                            low_func, high_func: byte;
                            column, row: byte;
                            length: integer;
                            enh_off, enh_seg: integer;
                            chr_off, chr_seg: integer;
                            txt_off, txt_seg: integer;
                            end;

begin
    (* Set up the wrln buffer. *)
    wrln_buf.low_func := 7;          (* AIOS function call (0,7) *)
    wrln_buf.high_func := 0;
    wrln_buf.column := col;        (* Store away the column *)
    wrln_buf.row := row;          (* Store away the row *)
    wrln_buf.length := length(tbuf); (* Store the length of the string *)
    wrln_buf.enh_off := ofs(ebuf)+1; (* Address of the enhancement buffer *)

```

```

wrlin_buf.enh_seg := seg(ebuf);
wrlin_buf.chr_off := ofs(cbuf)+1; (* Address of the character set buffer *)
wrlin_buf.chr_seg := seg(cbuf);
wrlin_buf.txt_off := ofs(tbuf)+1; (* Address of the text buffer *)
wrlin_buf.txt_seg := seg(tbuf);

(* Set up the MS-DOS function 44 call to access AGIOS *)
req_buf.ax := $4403; (* Function call 44; function code 3 *)
req_buf.bx := $0001; (* Device is the console *)
req_buf.cx := 18; (* Length of the buffer is 18 bytes *)
req_buf.dx := ofs(wrlin_buf); (* Address of the buffer containing the *)
req_buf.ds := seg(wrlin_buf); (* AIOS call *)
msdos(req_buf)

end;

begin (* the main program *)

(* Clear the screen. *)
writeln(chr(27),'h',chr(27),'J'); (* Normally I would use an AIOS routine *)
(* here, but for the sake of brevity, *)
(* I have omitted that routine. *)

(* Set up the enhancement, character set, text buffers for line 1. *)
enhbuf := 'CCCCCCCC'; (* Inverse video; blinking enhancement *)
chr_setbuf := 'CCCCCCCC'; (* Italics roman character set *)
textbuf := ' Happy '; (* Text of the first line *)
outlin(10,36,textbuf,enhbuf,chr_setbuf); (* Output the line *)

(* Set up and print line 2. *)
textbuf := 'Birthday'; (* Use the same enhancement and character set. *)
outlin(11,36,textbuf,enhbuf,chr_setbuf);

(* Set up and print line 3. *)
chr_setbuf := 'BBBBB'; (* Change the character set to Roman Bold *)
textbuf := ' Terry ';
outlin(12,36,textbuf,enhbuf,chr_setbuf);

end.

```

□

Word/125, the word processing program provided with the HP 125, is an early version of the Spellbinder word processing and office management system. Now Lexisoft, Inc. is making available an update for Word/125 users. Lexisoft's Perry Gee, who developed Spellbinder and Word/125, says the original version of Word/125 was "a fine product for its time, but we have made substantial improvements since then—improvements we're sure that Word/125 users will find useful." Listed below are highlights of the updated program.

Built-in Spelling and Grammar Check; Automatic Hyphenation	Spellbinder's new spelling/syntax checking program, Electric Webster, proofreads documents for spelling and typographical errors by comparing the text of a document against the contents of a 50,000-word internal dictionary. The program will also display words in context in the document. The grammatical feature of Electric Webster checks for double negatives, wordy phrases and many common misuses of words. For most errors it suggests a simple correction for the problem. It also analyzes the document, displaying the average phrase, sentence, and paragraph lengths. In addition to counting particularly long words and phrases, the program will also automatically hyphenate words if you ask it to do so.
Printing and Formatting Improvements	Among the improvements are absolute horizontal tabbing (even with proportional spacing), multiple fonts, column and row additions, decimal tabbing, and columnar heading; automatic headers and footers; automatic pagination; automatic hyphenation; support for multiple-bin sheet feeders; conditional page breaks; page numbering to 30,000; and more extensive printer tables for use with a greater range of printers.
Macro Program Improvements	Spellbinder's macro programs combine tasks to speed such projects as mass mailings or list maintenance. Seventeen such programs are now included with Spellbinder: batch printing (BATCH), keyphrase insertion (KPHRASE), tabular addition (ADDIT), boilerplating (BOILER), personalized documents (MMERGE), mailing labels (MLABEL), selecting items from a list (CUESORT), sorting items in a file (ALPHA), handling columns (MOVEIT), on-screen calculator (CALC), printing in two columns (TCPRINT), numbering lines of text (LINENB), handling forms (FORMS), extended page number (PAGENUM),

dividing a file into pages (PAGER), and printing paged text (FORMAT).

New to Word/125 users are the on-screen calculator, forms handling (for automatically filling in preprinted forms or for creating your own forms from scratch), mail label; and the improved mail-merge program that lets you insert text into some documents but not others, and also incorporate ASCII or DIF files produced by other software packages (e.g., dBase II and VisiCalc). Most macro programs have also been made easier to use.

Other Improvements

You can get on-screen help at any time. Searching and replacing have been improved, and footnoting is automatic. Conditional page breaks and conditional mail-merging have also been added. Other useful changes include more protection against accidental deletion of text, and the ability to open a READ file when one is already open.

Word/125 users can either continue to use the function keys they have become accustomed to or else switch to Spellbinder's control sequences. These sequences, explained in the manual, give added flexibility to the system. Changes can also be made in the keyboard codes to let Spellbinder display and print special characters.

Manual, Technical Support

The HP 125 version of Spellbinder comes with a manual that includes an index, a glossary, and useful information about the Spellbinder program. For users who would like to further customize Spellbinder, a separate technical manual is available that explains how Spellbinder can be altered and how to write macro programs. Users will now be Lexisoft/Spellbinder customers and thus eligible for technical assistance through their dealers. Those who update their Word/125 to Spellbinder can then receive future updates at the usual price of \$50-\$75.

If a Spellbinder user wishes to change computers in the future, an update can be provided for the new computer at a nominal charge. Spellbinder runs under CP/M, CP/M-86, Concurrent CP/M, MS-DOS, Turbo-DOS and Oasis. Special versions are available for most popular microcomputers, including one for the HP 150. The latter version uses the computer's touchscreen capability and also displays underlining, boldface, and italics.



Type-a-Line is the software product that lets you use a character-mode printer as though it were a typewriter. With Type-a-Line, whatever you enter from the keyboard is printed immediately and directly by the printer, without reading a file.

The product lets you scroll paper up and down in the printer and move the print head to a desired location—for example, to a box on a form or a line on an envelope.

**Edit Before You
Print . . .**

In EDIT mode, Type-a-Line lets you write, edit, and revise your text before you send it to the printer. While you're preparing the text, the printer's print head moves as the cursor moves—but doesn't print characters until you tell it to.

**. . . or Print as You
Type**

In NON-EDIT mode, what you type is printed directly on the paper in the printer at the same time the characters you're typing are displayed on the screen.

**Printers and
Orders**

You can use Type-a-Line with HP 2601A and 2602A printers, and also with Diablo 620/630 or Qume 1140 printers. To order this product for your HP 150 Touchscreen personal computer, contact your local HP Sales and Service office or use the order form at the back of this issue. Type-a-Line is product number 45680A.



The full line of PFS: products—PFS:File & Report, PFS:Write, and PFS:Graph—is now available for the HP 150 Touchscreen personal computer. These popular products are often at or near the top of the software best-seller lists. When used together with softkeys and HP Touch, they are ideal tools for business managers and other professionals who need a set of integrated products that are very easy to learn about and to use. These three products are designed to work together. For example, you can organize information with PFS:File & Report, merge the data into PFS:Write documents, and then display or analyze it with PFS:Graph. Because these programs are also available separately, you can add power and flexibility as your computing needs change and grow.

**Organizing
Information Simply**

PFS:File & Report is an electronic filing program that lets you store, retrieve, update, and print all kinds of information—such as mailing lists, inventories, or customer files. The program, designed for first-time computer users, makes it easy to sort, modify, format, and print presentation-quality reports. With PFS:File & Report you can present information in multiple-column format, with totals, subtotals, averages, sub-averages, counts, and sub-counts in each column. You can sort a report in several different ways, number pages automatically, and center the titles on each page.

Other products such as Condor 20-1 and Personal Card File also let users integrate data with information in programs such as WordStar and Lotus 1-2-3, but sometimes require users to enter several commands or convert the data to a different format. Not so with the PFS: products. They are all integrated at the command level, which means that common functions use the same commands. It is very easy to move data from one PFS: program to another. For example:

- To merge data from PFS:Report into a PFS:Write document, simply type *JOINfilename* on the line in the document where you want to place the report data.
- To graph data stored in PFS:File, type “X” and “Y” on the PFS:File data form, next to the items that you want to graph.
- To move a graph into a PFS:Write document, simply type *GRAPHfilename* at the place in the document where you want the graph to appear.

PFS: products can also use data from other programs such as VisiCalc, Lotus 1-2-3, or Multiplan. To do so, you need only select items from a menu provided in PFS:Graph.

Incorporating VisiCalc, Lotus 1-2-3, or Multiplan spreadsheets into a PFS:Write document is easy, too. You first print the spreadsheet as a disc file, and then type *JOIN filename.PRF* where you want the spreadsheet to appear. PFS:Write can read any standard ASCII text file and incorporate it into a PFS: document.

PFS:File & Report is a good product if your data-management needs are simple. However, it does allow larger records or forms, and a greater number of records, than Personal Card File currently allows (3200 fields per record, and up to 1500 records per data base). It also permits up to 32 screens per record or form (as opposed to one screen in PCF, and two screens in Condor 20-1). This means that you can use PFS:File & Report to organize information that appears in textual form. This program is especially useful if you need to manipulate your data mathematically and you don't need the 18-decimal-place accuracy of Condor 20-1.

PFS:File & Report lets you display information in summarized form in any of eight predefined report formats, thus saving you the time it would take to recreate frequently used formats. If your needs expand, or if you need to perform even more calculations, you may want to convert PFS: data for use with Condor 3.

The Write Stuff

PFS:Write is now available for use with softkeys and HP Touch on HP touchscreen personal computers, thus making this popular word-processing program even easier to use than before. PFS:Write treats the screen like a blank sheet of paper with a ruled line across the bottom that acts like the ruled scale on a typewriter. Because the program includes many of the features of a standard typewriter, users find it especially easy to learn. You can set margins and tab stops as you would on a typewriter; what's more, page breaks, underlined text, and boldface text appear on-screen exactly the way they will in the printed copy of your document.

As in the other PFS: programs, you can enter commands from the keyboard or by using HP Touch and the softkeys together with on-screen menus. PFS:Write includes the features that writers want most, such as automatic page-numbering, automatic margin re-setting during text-entry and editing, and an automatic search-and-replace function.

PFS:Write works together with the other PFS: programs to let you produce reports with text and graphics on the same page when you print a document on a printer that supports the graphics function. You can incorporate data from PFS:File & Report in business presentations by using the *JOIN* command mentioned earlier in this article. You can also produce multiple "personalized" copies of form letters by incorporating data from PFS:File into PFS:Write documents.

Making Better Use of Information

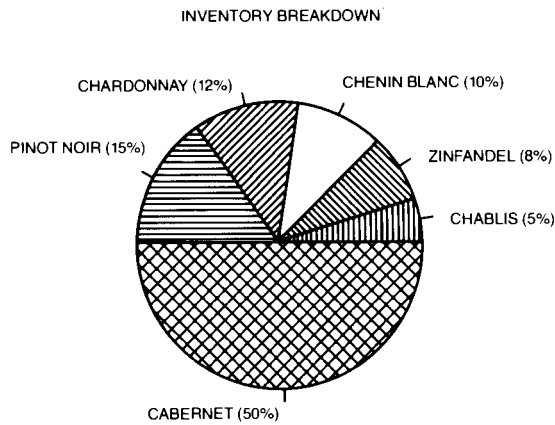
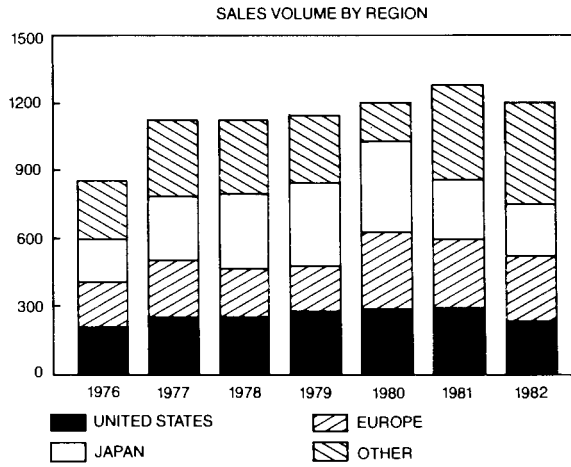
PFS:Graph helps you make more and better use of the information you work with. It produces bar, line, or pie charts, as well as mixed line and bar graphs. You can display up to four graphs on a single set of axes. The bar graphs can be either stacked or comparative. The advanced features of this program include automatic formatting, scaling, legend-labeling, and pattern-filling.

PFS:Graph accepts data directly from the keyboard, or from PFS:File, or from spreadsheet programs (such as VisiCalc, Lotus 1-2-3, or Multiplan). With PFS:Graph, you can display data graphically in a number of ways:

- Integrated with PFS:Write documents
- In charts produced with a plotter
- In either half-page or full-page size
- As color transparencies

Alone or in combination, the PFS: family of products gives you a wide range of the most popular features in packages that are very easy to use, and at a very reasonable price.

Examples of Charts produced using PFS:Graph:



To Order

Contact your nearest HP Sales and Service Office, or use the order form at the back of this issue.

Product	Product Number
PFS:File & Report	45488A
PFS:Graph	45490A
PFS:Write	45489A



MultiMate (HP product number 45424A) is a Wang look-alike word processor whose capabilities include a spelling checker, merged printing, and file-transfer utilities. The 80,000-word spelling checker can be expanded with a custom vocabulary. MultiMate provides support for the HP 2501 and HP 2934 sheet-fed printers as well as the following standard HP printers:

2601A	82905B	2674A
2602A	82906A	2934A
LaserJet	ThinkJet	2932A

The following table compares the major features of MultiMate, MemoMaker, and WordStar.

Feature	WordStar	MemoMaker	MultiMate
Subdirectories	No	Yes	No
Ease of learning	No	Yes	Somewhat
Merged printing	MailMerge	No	
Spelling checker/ corrector	SpellStar/No	No/No	Yes/Yes
HP Touch	Yes	Yes	Yes
Printers:			
Enhancements	Many	Two	Many
Ease of configuration	No (WINSTALL)	Yes	Yes (PATs)
Changing features	Difficult	Not possible	Very difficult
Background printing	No	No	Yes
File-size limits	1/2 disc	Disc/ memory	250 pages
Memory required	64K	256K	384K
Editing mode(s)	Screen/ Commands	Screen	Screen
ASCII file-transfer	Non-document	No	Convert Utility
Math calculation	No	No	Yes

Overall, if you are already using a Wang word processor or if you need an interactive spelling checker, you will probably want to consider using MultiMate.

To order this product, contact your local HP Sales and Service Office, or use the order form in the "Current Information" section of this issue.

□



The following chart lists the HP 125 software products that will become obsolete on May 1, 1985. The upgrade kits for these products will also become obsolete on May 1.

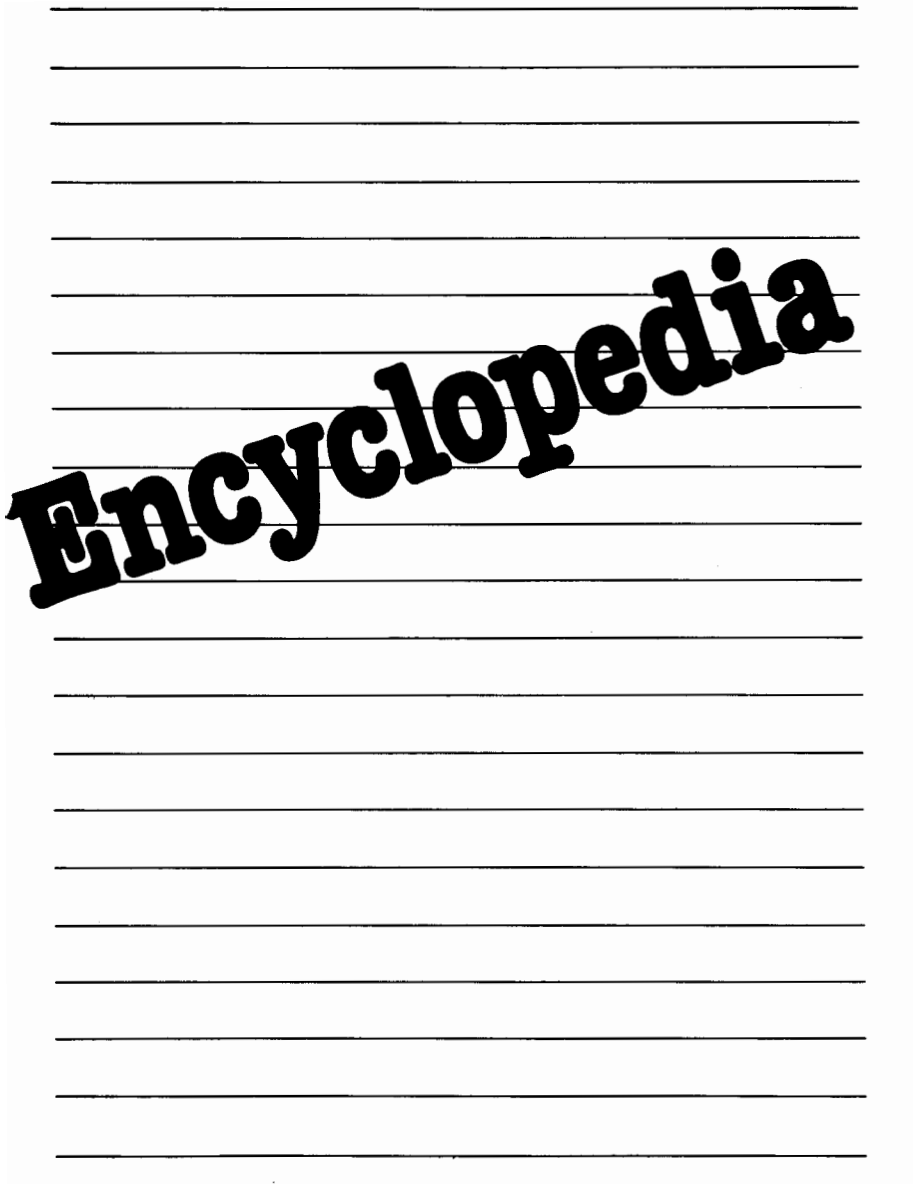
Product Number	Option(s)	Product
45531B	630, 650	VisiCalc
45531EA	630, 650	VisiCalc (Spanish)
45532B	630, 631, 632, 633, 635, 650, 651, 652, 653, 655	Series 100 Graphics
45532EA	630, 650	Series 100 Graphics (Spanish)
45533B	630, 650	Word/125
45534B	630, 650	DSN/Link
45535A	630, 650	BASIC
45536A	630, 650	The Programmer's Package
45550A	630, 650	Condor 1
45550H	630, 650	Condor 3
45552A	630, 650	BPI General Accounting
45553A	630, 650	BPI Payroll
45560A	630, 650	WordStar
45560EA	630, 650	WordStar (Spanish)
45561A	630, 650	SpellStar
45562A	630, 650	MailMerge
45603A	630, 650	Picture Perfect
45670A	630, 650	MicroPlan
45671A	630, 650	MicroPlan Consolidation
45900-13800		OpSys: 125A Upgrade
45900-13810		OpSys: U.S. Exchange Kit
45900-15800		OpSys: 125A Upgrade
45900-15810		OpSys: U.S. Exchange Kit

Two HP-Plus programs, Aardvark Professional Tax Plan (Product Number 45585A) and Aardvark Personal Tax Plan (Product Number 45586A), became obsolete earlier this year.

The following chart lists HP 125 software on 8-inch discs that is now obsolete. Upgrade kits, options, and foreign-language software for these products are also obsolete.

Product Number	Option	Product
45531B	680	VisiCalc
45532B	680	Series 100 Graphics
45533B	680	Word/125
45534B	680	DSN/Link
45535A	680	BASIC
45536A	680	The Programmer's Package
45550A	680	Condor 1
45550H	680	Condor 3
45550P	680	Upgrade: Condor 1 to Condor 3
45552A	680	BPI General Accounting
45553A	680	BPI Payroll
45560A	680	WordStar
45561A	680	SpellStar
45562A	680	MailMerge
45580A	680	Milestone
45582A	680	Personal Datebook
45670A	680	MicroPlan
45671A	680	MicroPlan Consolidation
45900-18800		OpSys: 125A Upgrade
45900-18810		OpSys: U.S. Exchange Kit





Encyclopedia

Encyclopedia

Welcome to the Encyclopedia Encyclopedia-7

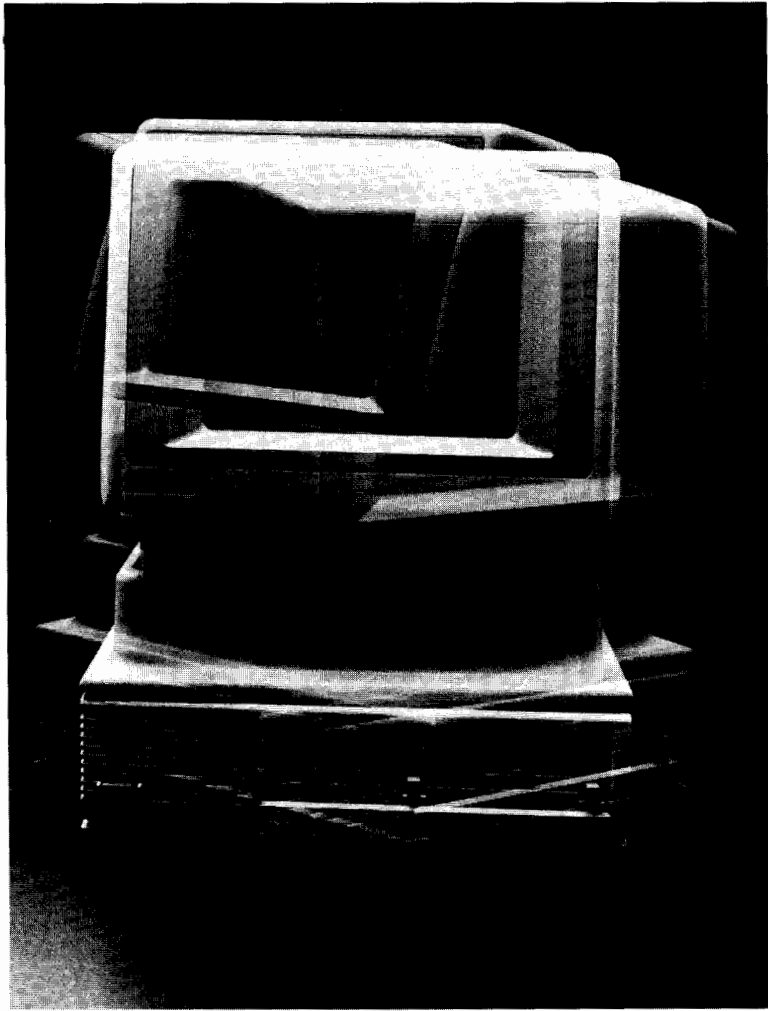
System Hardware, Firmware, and Operating System:

The Portable Issue #10
HP 150 Touchscreen This issue
HP 12x Issue #8; Insert-16 through -24; -37, -39

Applications (in alphabetical order):

BASIC Interpreter—for the HP 150 Issue #10
BASIC Interpreter—for the HP 12x Issue #8; Insert-21, -35
Block/Format—for the HP 12x Issue #8; Insert-24
BPI Accounting—for the HP 150 This issue
BPI General Accounting—for the HP 12x Issue #8; Insert-22, -35
BPI Payroll—for the HP 12x Issue #8; Insert-35
COBOL by Microsoft—for the HP 150B. Issue #10
Compiled BASIC by Microsoft Issue #10
Computer Tutor—for the HP 150 Issue #9
Condor—for the HP 150. This issue
Condor—for the HP 12x. Issue #8; Insert-22, -36, -42
Context MBA—for the HP 150. This issue
dBASE II—for the HP 150 This issue
DSN/Link—for the HP 150. This issue
DSN/Link—for the HP 12x. Issue #8; Insert-21, -33, -43
Financial Calculator—for the HP 150B. Issue #10
FORTRAN by Microsoft—for the HP 150B Issue #10
Graphics—for the HP 150 Issue #9
Graphics—for the HP 12x Issue #8; Insert-21, -27, -41
GW-BASIC by Microsoft—for the HP 150B Issue #10
Link—for the HP 12x Issue #8; Insert-33
Lotus 1-2-3—for The Portable This issue
Lotus 1-2-3—for the HP 150. This issue
MailMerge (see WordStar)
MemoMaker—for The Portable This issue
MemoMaker—for the HP 150 This issue
Multiplan—for The Portable This issue
Pascal by Microsoft. Issue #10
Personal Card File—for the HP 150 This issue
SpellStar (see WordStar)
Terminal—for The Portable Issue #10

VisiCalc—for the HP 150 This issue
VisiCalc—for the HP 12x Issue #8; Insert-20, -25, -41
Word/12x—for the HP 12x Issue #8; Insert-21, -30, -41
WordStar Family—for the HP 150 This issue



From the Coach

latest information about Series 100 questions, problems, and solutions

The LaserJet "FF" Error Code

The "FF" code on the display panel of your HP 2686A LaserJet printer means that you've either tried to select a font that is not present in the cartridge currently installed in the printer, or changed the font cartridge without turning the printer off and on again. This code appears most often in connection with the 92286B proportional-spacing font cartridge, especially with Font 3.

The solution is to turn the printer off and on again when the "FF" code appears, so that the printer recognizes the cartridge properly. You should also be sure the cartridge is seated securely, and check the accuracy of the escape sequence you're sending.

P.A.M. and Extended I/O

If the date code on your Extended I/O application diskette is 2349, you will not be able to run the "TEST I/O" application from the P.A.M. menu on the master diskette. To run this application from P.A.M., you should first install it onto a work diskette.

Tape Back-Up and the HP 150

If you have the HP 9144A tape back-up system, you should not use it if Context MBA is installed on the fixed-disc drive you're using with the HP 150. Instead, use the following procedures:

1. To back up Context MBA files on flexible diskettes, use the storage-transfer command that is part of the program, as described in the Context Management Systems manual.
2. To back up all other files on the HP 9144A, use the Copy/Back-Up utility from the P.A.M. menu.

Be especially careful not to boot up Context MBA with the 9144A. "On line" simply means "connected and powered up, with a tape cartridge loaded." (To take the 9144A off line, just unload the tape cartridge.)

continued . . .

Installing MS-Word on the HP 150A

A few users may encounter a a problem installing MS-Word on the HP 150A touchscreen PC. If you're one of them, try the following procedure:

- Enter MS-Word
- [Cancel] Transfer Load filename: MSWORD.IN\$
- Home the cursor down
- Position the cursor at the space after EXAMPLE.DOC (on the last line)
- Press [Delete Char] until the end mark is highlighted
- Press [Return]
- [Cancel] Transfer Save [Return]
- Quit

You should then be able to install the program.

AdvanceLink

You should use the command "&TERMINATOR OFF" to let AdvanceLink send data without waiting for an acknowledgment character (DC1 or any other) from the host computer. Be careful NOT to use "&TERMINATOR" followed by no string.

This procedure supersedes the information on page A-80 (and elsewhere) of the Using AdvanceLink manual (HP part number 45431-90002).

New Personal Computer Assistance Program

On May 1, 1985, the HP HelpLine will replace the current HPCOACH telephone-assistance program in the U.S. This new program will accept major credit cards in payment for assistance, which will be charged on a per-incident basis. HP's Computer Supplies Organization (CSO) will offer a package that includes five Call Certificates.

Users of HP 3000 systems will be able to extend their system software contracts to include the support of application software for any number of HP personal computers through a single Application System Manager.

Polygon-Filling Without Tears

The BASIC program listing that begins on page 24 of Issue 10 of the **Communicator** incorrectly contains double apostrophes instead of double quotation marks. Please make this change when you want to run Brian Rainie's polygon-filling program.



Welcome to the “Encyclopedia” section of the *Communicator*—bringing together all the news you need on each of the software packages and systems that you use.

Coupled with the manuals, your *Communicator* back issues and subscription provide everything you need to make the best use of your personal computer.

What’s in the Encyclopedia?

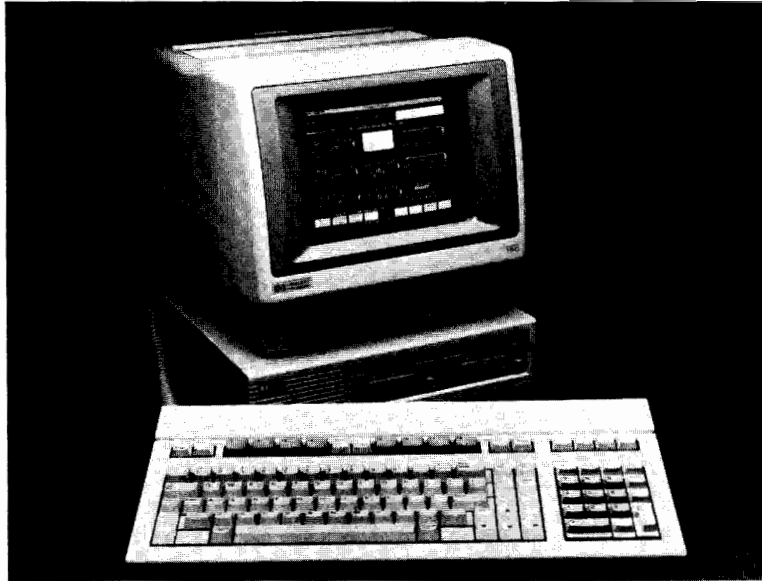
For each major product, there is an Encyclopedia entry containing this information:

- News items about the product.
- Program Updates or Upgrades—how to obtain the new version of the program, if it has been revised. (New items since the last issue are marked with a “New” symbol.)
- Most Frequent Questions—with answers, based on the experience of HP’s Phone-In Software Assistance Centers around the world. (New question listings since the last issue are marked with a star.)
- Software Problem Reports—a cumulative list of the major problems which have been reported. If you have a problem, check the “Encyclopedia” entry for the product. (New problem listings since the last issue are marked with a star.)
- Manual Corrections or Updates—a cumulative list of corrections to the manuals for the product. Check the products you use, write in any new corrections since the last issue (marked with a star), and your manuals are up-to-date.
- Related HP Publications—any Quick Reference Guides, textbooks, etc. available from HP for the product. (New items since the last issue are marked with a “New” symbol.)
- *Communicator* Articles—an index of articles in back issues of the *Communicator*.
- Courses—descriptions of courses available from HP for the product. (New items since the last issue are marked with a “New” symbol.)

The Encyclopedia entries are arranged so that you can remove them for insertion in your manuals or a separate binder.

Which Products are Covered?

To make the best use of space, the entire Encyclopedia is not repeated in every issue of the *Communicator*. The Encyclopedia Table of Contents, given at the front of the section, is updated in every *Communicator* ... directing you to the issue containing the latest article for each product.



For information on replacing damaged media, refer to "Software Exchange Kits" in this issue's Current Information Insert.

This section covers:

- General Information
- P.A.M. (Personal Applications Manager)
- Main Memory
- Disc Memory
- Printers
- Plotters
- Program and Data Transfer
- Communications

**Documentation and
Programming Aids**

The following new documentation and programming products are now available from your dealer or through HP. See "How to Order" in the Current Information Insert.

■ **Hewlett-Packard Software Catalog**

Published by John Wiley and Sons, this book describes over 250 of the software products that are currently available for the HP 150. Most of the products are from independent software vendors, so the catalog also includes information on ordering the software, how it is supported, and what training is available from the vendor.

The Catalog (ISBN 0 471 81912-3) is available at your HP dealer—or it may be ordered from the publisher at 800/526-5368 (201/342-6707 in New Jersey). Outside the U.S. write to the publisher at 605 Third Ave., New York, NY, 10158.

HP personnel should order the Catalog as part number 5953-5880 from the PCG Literature Distribution Center, Corvallis—Comsys 3900.

■ **Getting Started with Your HP 150**

This is a supplement to the *HP 150 Owner's Guide*. It gives step-by-step instructions on how to set up a system—including a hard disc, how to install application programs onto new discs, and the installation of HP printers and plotters.

Getting Started with your HP 150 . . . 45621-90022

■ **HP 150 MS-DOS User's Guide**

This manual covers MS™-DOS commands, files, directory structure, utilities, programming considerations, and programming the HP 150 terminal. Included in these sections are descriptions of all the HP 150 escape sequences, keyboard control, graphics control, data operations, status requests as a terminal, and touchscreen programming with examples.

HP 150 MS-DOS User's Guide 45624A

■ **HP 150 Technical Reference Manual**

This manual provides the sophisticated designer, engineer, programmer, and other design enthusiasts with the necessary tools and information to integrate the HP 150 Personal Computer into their design. It provides detailed technical information on the internals of the HP 150 hardware, firmware, and software. The manual is designed to aid in the development of hardware and software products which will become part of, or work in conjunction with, the HP 150.

This manual assumes that the reader is familiar with digital logic and assembly-language programming. It contains detailed information on the hardware subsystems; memory and input/output bit mapping; device drivers, MS-DOS calls, AGIOS, BIOS, configuration, and disc format structure; plus programming information on escape sequences, MS-DOS, AGIOS, alphanumeric and graphics displays, datacomm, keyboard, HP-IB, and accessory card interfacing. It also includes an AGIOS function-call reference guide and logic diagrams.

HP 150 Technical Reference Manual 45625A

■ **HP 150 Programmer's Tools**

This kit is for the advanced programmer who is writing assembler-level software. It includes:

– **HP 150 Programmer's Reference Manual**

Presents the two ways your program can control the display and keyboard: Escape Sequence Programming and AGIOS (Alphanumeric Graphics Input/Output Subsystem) function calls. AGIOS is unique to the HP 150 and virtually all of the tasks that commonly require BIOS calls can be performed using AGIOS. Since AGIOS normally requires issuing assembly language calls, we have included the additional documentation from Microsoft and Intel.

– **Series 100/MS-DOS User's Guide**

(from Microsoft®)

– **Series 100/MS-DOS Macro Assembler Manual**

(from Microsoft)

– **Series 100/MS-DOS Programmer's Reference Manual** (from Microsoft)

– **iAPX 88 Book** (from Intel™)

– **Programmer's Tools Disc...** with Assembler, Linker, Debugger, File Compare, Sort, Cross Reference, Library, Find, File Conversion Utility and Line Editor.

HP 150 Programmer's Tools. 45435A

**Most Frequent
Questions**



Q. What software is available for the HP 150?

- A. Refer to the "Software Available from HP" section in the Current Information Insert of this Communicator for the many available applications—including games and educational software.

The Hewlett-Packard Software Catalog, published by John Wiley and Sons, describes over 250 of the software products that are currently available for the HP 150. Most of the products are from independent software vendors, so the catalog also includes information on ordering the software, how it is supported, and what training is available from the vendor.

The catalog (ISBN 0 471 81912-3) is available from your HP dealer—or it can be ordered from the publisher at 800/526-5368 (201/342-6707 in New Jersey). Outside the U.S., write to the publisher at 605 Third Ave., New York, NY, 10158.

Q. Is the HP 150 available in other languages?

- A. Yes. Refer to this article: "HP 150 Goes Worldwide" in Issue #8 of the Communicator.

Q. Does the screen on the HP 150 show smudges?

- A. The HP 150 screen has been specially coated to resist smudging.

Q. Must I always use my finger to operate the software?

- A. No. The keyboard can do anything that touch does.

Q. How long do the batteries in the HP 150 last?

- A. About 9 months. When the batteries are discharged, you will find that your system configuration will not be saved nor will your internal clock keep time when the machine is turned off. When battery power is low, the message "Default configs used" appears when you turn on the HP 150.

You can easily replace the batteries yourself. Check Appendix C of your Owner's Guide for further information.

Q. Does my HP 150 have a battery pack?

- A. *Yes. The pack contains two E90910A Size "N" batteries, which preserve the configuration of the system and let the internal clock keep time when the HP 150 is turned off. These batteries will need to be replaced approximately nine months after the initial start-up of your HP 150. Otherwise, when the batteries fail, the configuration of the system will not be saved when power is off; nor will the internal clock keep time when the HP 150 is turned off.*
- You can easily change these batteries yourself. The chapter on maintenance in your HP 150 Owner's Guide explains exactly how to do so.*

P.A.M.

Q. I recently configured my HP 150. When I load P.A.M., it seems to take approximately one minute to load. Why is it so slow, and is this normal?

- A. *With the default disc configuration, this is a normal amount of time. When more discs are logically defined or specified than are physically connected to the HP 150, a longer time to load is caused by device timeout on the non-existent discs. Place a NO DEVICE in the device configuration menu where physical discs do not exist, and P.A.M. will come up more quickly.*

Q. How do I install my own program into P.A.M.?

- A. *Refer to this article: "Install Your BASIC/150 Application in P.A.M." in Issue #8 of the Communicator.*

Q. How do I install applications into subdirectories?

- A. *You can't. . . P.A.M. will only find applications that are installed in the root directory.*

Main Memory

Q. What is the HP 150's main memory capacity?

- A. *640 kB maximum main memory. Not all application programs can utilize all of the available memory.*

Q. How much workspace is left over after MS-DOS and P.A.M. are loaded?

- A. *About 140 kB, if you have a 256 kB (minimum) system.*

Q. Why do I keep running out of memory when I try to run any program?

A. It may be caused when you return to P.A.M. from MS-DOS Commands—you should type "EXIT" instead of "PAMCODE". Each time PAMCODE is executed, another copy of P.A.M. gets loaded into memory. EXIT simply executes the P.A.M. code that already resides in memory. For more information refer to Chapter 19 in the HP 150 MS-DOS User's Guide.

Disc Memory

Q. Why did HP choose 3½ inch discs?

A. To achieve higher quality, reliability, performance and a smaller system footprint.

Q. How much data can I store on a 3½ inch single-sided disc?

A. About 260 kB, formatted—approximately the same as on a 5¼ inch disc.

Q. How do I format my 9133XV 15 MB disc drive, and how long does it take to format it?

A. The HP 150 Owner's Guide describes the operation of the Disc Formatting Utility on pages 7-5 through 7-9. This utility program is compatible with the 9133 XV disc. It takes approximately 30 minutes to format this 15 MB drive.

Printers

Q. I can't seem to get my HP printer to work with my HP 150. Any idea what's wrong?

A. Most of the time, the problem can be remedied by doing the following:

Make sure everything is well connected (double check if necessary) and the printer is turned on. The printer and the computer both need to be plugged in and the correct cable used to connect the printer to the HP 150. Make sure the configuration menus in the HP 150 are set correctly and the DIP switches on the printer are correct.

Resources for printer configuration are the HP 150 Owner's Guide, beginning at page 2-41, as well as the MS-DOS configuration information in Appendix A, beginning on page A-23. You may also need to set up your system correctly, which is covered beginning on page 3-19.

The new booklet, Getting Started with Your HP 150, covers installation of HP printers in detail. This manual is orderable as HP part number 45621-90022.

Q. What are the differences between a standard Epson MX-80 printer and the HP 82905A/B or 82906A printers?

A. Hewlett-Packard purchases the Epson MX-80 printer for use in the HP 82905A/B dot matrix printers, and the Epson FX-80 for use in the HP 82906A dot matrix printer. The obsolete HP 82905A used the standard Epson MX-80, including standard firmware. The HP 82905B uses the basic Epson MX-80 printer with HP-modified firmware, and the HP 82906A uses the basic Epson FX-80 printer with HP-modified firmware. Therefore, the standard Epson printers may not work with Series 80 and Series 100 graphics or other application software.

Q. Can I connect my serial 2631B dot matrix printer to my HP 150? Does HP support this type of configuration?

A. Although not fully supported, the serial 2631B can successfully operate with the HP 150. With regards to device configuration, the serial 2631B should be configured identical to the 2932, 2933, or 2934 printers from HP. The cable used to connect the serial 2631B to the HP 150 is the 13242G. Switch settings are as follows:

(RS-232C) 2631B Switch Configuration

S1 on Serial Interface Adapter (Rear Panel)

1	XON/XOF Operation	Open
2	ENQ/ACK Operation	Closed
3	SCA Line	Closed
4	Operation	Closed
5	CD Line	Closed
6	Operation	Closed
7	External CB Signal	Open
8	Auto Modem Disconnect	Closed

Front Panel (Left Switch)

1	Duplex	OFF
2	Parity	OFF
3	Parity	OFF
4		OFF
5	Baud Rate (2400)	OFF
6	Baud Rate (2400)	ON
7	Baud Rate (2400)	OFF
8	Baud Rate (2400)	OFF

Front Panel (Right Switch)

1	Lines Per Inch	OFF
2	Print Pitch	OFF
3	Print Pitch	OFF
4	Perforation Skip	OFF
5	Length	OFF
6	Length	OFF
7	Length	OFF
8	Length	OFF

Q. How can I connect my non-HP printer to my HP 150?

A. *There are two methods to connect the HP 150 to a printer: RS-232 or HP-IB (HP's implementation of IEEE-488). RS-232 and IEEE-488 are industry standards which define only the connector and signal lines. The detailed usage of signal lines varies from vendor to vendor—and the printer control sequences sent via the interface are typically unique to each printer. Hewlett-Packard performed limited operational testing on the following non-HP printers:*

- Diablo 630 API*
- Diablo 620 API*
- NEC 3510*
- NEC 7715*
- Qume 1140*
- C. Itoh F10-40*
- Epson FX-80*
- Epson RX-80*
- Brother HR-15*
- Okidata 92*
- Okidata 2410*
- Mannesmann Tally Spirit 80*

Application briefs on the use of these printers are available from your HP dealer or HP Sales and Service Office. (Note that HP's testing of non-HP printers does not include measurement of radio-frequency emission. You are responsible for any radio/TV or other interference consequences which result from configuration of non-HP printers with the system.)

Plotters

Q. How do I configure my 7470 or 7475 plotter with the HP 150?

A. *For instructions, refer to the article titled, "Using Plotters with the HP 150" in Issue #8 of the Communicator.*

**Program and
Data Transfer****Q. Can I copy HP 120 or HP 125 files over to my HP 150?**

- A. Yes! Use the COPY/BACKUP utility program as outlined in the HP 150 Owner's Guide, pages 7-11 through 7-13. If different size discs are required, the disc units/drives must be properly configured on the HP 150. To convert CP/M® files to MS-DOS files, follow the discussion beginning on page 7-20 of the Owner's Manual. Refer also to this article: "Data Compatibility Between HP 12x and HP 150 Applications" in Issue #7 of the Communicator.

Q. Can I take programs from the IBM® PC and run them on the HP 150?

- A. The 150, like the PC, runs MS-DOS. In general, software written for the IBM needs some modification to run on the 150. Many industry packages utilize techniques that are not part of the MS-DOS standard; when this has been done, conversion work is needed before the software will operate on either the HP 150 or IBM-PC.

Q. How can you transfer data from the IBM PC?

- A. For information, refer to the article titled, "Transferring Data Between a Series 100 Computer and an IBM PC" in Issue #8 of the Communicator.

Communications**Q. Can HP 150s communicate with computers other than the HP 3000?**

- A. Yes, either as another computer system, in which case you can use DSN/Link, or as a terminal closely emulating the HP 2623. HP's DSN/Link software will not work on another host and may not upload or operate properly. HP supports this software product only when loaded on an HP 3000. The absence of this software defeats the error checking capability of the DSN/Link product.

Q. How do I talk to the datacomm ports on the HP 150?

- A. Through the use of files. Com 1 is associated with Port 1, and Com 2 is associated with Port 2, by default. By modifying the Device Configuration, these files can be remapped to Port 1, Port 2 or Remote, if desired.

Q. How do I get two HP 150s to "talk" to each other?

- A. In either a hardwired configuration or through the use of modems, HP's DSN/Link package is designed to make communication easy.

Q. When I run the HP 150 Datacommunication Test, I get an error A111. What's wrong?

A. The Datacommunications test is designed to operate correctly with two test connectors on Ports 1 and 2. These test connectors are used by trained service personnel to verify correct port operation. Running the Datacommunications test without these connectors on Ports 1 and 2 provides the A111 error.

★Q. Where can I learn about data communications?

A. Order this HP book: Touring Datacomm: A Data Communications Primer, HP Product Number 5957-4622.

Software Problem Reports



Sys-Master Version A.01.03

Problem: Redefining the standard MS-DOS prompt to be the default disc drive specification and then selecting a drive configured as No Device in the Device Configuration utility causes the system to enter an error loop:

```
A> PROMPT $P
A:\ n:
Bad unit error reading drive N
Abort, Retry, Ignore?
```

where n is a valid drive specification, although it is configured as No Device within the Device Configuration disc application.

Ensure that this PROMPT specification is given only with disc devices that are configured through the Device Configuration utility. If the current default disc drive is a flexible disc, the disc must be inserted.

Workaround: Hard reset (CTRL Shift Reset) to clear the system.

Problem: Printing large documents to the HP 2602A printer, option 046 (HP-IB interface), may halt after partial printing of the document and display one of the following error messages:

- Abort, Ignore, Retry:
- Disc error writing to device PRN
- Device not available
- Can't print to current printer

Workaround: Contact your dealer or HP Phone-In Software Assistance Center (800-HPCOACH, in the U.S.).

Disc Applications Version A.01.01

Problem: Can't copy a file from a CP/M fixed disc to MS-DOS fixed disc directly using COPY/BACKUP.

Workaround: Copy the CP/M file onto a flexible disc first, then use COPY/BACKUP to copy from the flexible disc onto the fixed disc.

(NOTE: Compressed files can't be copied with COPY/BACKUP.)

HP 150 Firmware ROMs

Problem: When powering on an HP 150 configured with an HP 9121D, one of the following error messages may appear:

- Load OP Sys failed, OP sys device not found
- Load OP Sys failed, OP sys disc not found

These error messages will be followed by the statement: "Press Return to clear"

Workaround: If a unit is experiencing this problem:

- Press the Return key on the keyboard
- Press Shift and Stop simultaneously to access the disc and load the system

A hard reset (CTRL, Shift, and Reset simultaneously) can alternately be used to access the disc and load the operating system.

This problem has been solved. It does not occur in Rev. D firmware.

Problem: When printing to any HP-supported serial or HP-IB printer using the terminal function keys, the following error may appear: "Illegal or No Destination Device"

Workaround: Follow this sequence:

- Hard reset (CTRL Shift Reset).
- From P.A.M. select the Terminal function (f6).
- Ensure that Caps mode is off.
- Touch the Remote function key (f4) to enter local mode. (This removes the asterisk from the Remote function key label.)
- Press the User System key on your keyboard.
- Touch device control (f1).
- Touch "to" devices (f3).
- Type the following keyboard sequence: ESC & p 4 D ("ESC" means to press the Escape key). The asterisk should appear in the SERIAL DEVICE key label if this has been entered correctly.

This sequence selects the SERIAL DEVICE as your destination device and disables any prior selections that may exist on your HP 150. To select your HP-IB device, touch SERIAL DEVICE (f2) to turn this selection off, and HP-IB DEVICE (f4) to turn the HP-IB device on. Press Shift and Stop simultaneously to return to P.A.M.

If the problem persists, power off the system and remove the battery (located on the rear panel of the HP 150), for a minimum of 1 hour. This will return your HP 150 to its system default configuration values and will eliminate the problem.

Applications can programmatically select the "to" device using escape sequences. This may result in the selection of an invalid destination device unknowingly by the user. Although the above steps correct the problem, there is no way to restrict the use of such escape sequences by applications and therefore no way to ensure that the problem will not reoccur.

Problem: When an HP 82906A printer and an HP 7475A plotter are both connected via the HP-IB interface, logging data to the HP 82906A printer using the terminal function keys may fail and give the following message:

HP-IB Device Error
Press RETURN To Clear

Workaround: Follow this sequence:

- Press the Return key.
- Turn off the power on the HP 7475A plotter.
- Hard reset the HP 150 (CTRL, Shift, and Reset simultaneously).

This problem has been solved. It does not occur in Rev. B or later firmware.

Problem: When printing HP 3000 Slate documents from the HP 150, underlined text does not print correctly. (The text is printed on the next line directly beneath the underline characters.)

Workaround: Before printing, select "typewriter" as the device type.

This problem has been solved. It does not occur in Rev. B or later firmware.

Problem: Logging data to the HP 2674A Internal Thermal Printer using COMPRESS PRINT prints only 96 characters.

Workaround: Avoid using COMPRESS PRINT.

This problem has been solved. It does not occur in Rev. B or later firmware.

Problem: Selection of the HP-IB DEVICE as the printer destination device, using the following escape sequence, does not display an asterisk in the function key label: Esc]

Workaround: No current workaround.

Problem: The calendar function incorrectly increments the date and day of the week when the HP 150 is powered off on the 29th of a month. The date and day of the week are incremented two days upon power on of the system.

Workaround: Keep your HP 150 system unit powered on or check the date each time that you power on your system.

This problem has been solved. It does not occur in Rev. D firmware.

Problem: When logging data to the HP 2674A Internal Thermal Printer using the "LOG BOTTOM" function key, the keyboard will be locked while the printer is active. If a soft reset (Shift and Reset simultaneously) is performed to discontinue printing, the Status Line (line 27) may appear twice on the display.

Workaround: A hard reset (CTRL, Shift, and Reset simultaneously) can be used to clear the duplicate status line from the display.

Problem: Forms defined using the line drawing character set appear with broken vertical lines when printed to the HP 2674A Internal Thermal Printer.

Workaround: No current workaround.

Problem: Changes to fields within the port 1 or port 2 configuration menu for serial device use do not become active after they are saved.

Workaround: A hard reset (CTRL, Shift, and Reset simultaneously) is required to put these new values into effect.

Problem: Attempts to save the port 2 configuration as a FULL DUPLEX MODEM result in the following error message:

Configuration Must Be FULL DUPLEX
HARDWIRED
Press RETURN To Clear

Workaround: Press the Return key. Use the FULL DUPLEX HARDWIRED configuration menu to configure the modem. The additional fields not available in the standard FULL DUPLEX MODEM menu (SRRXmit, SRRInvert, and CS(CB)Xmit) can be set to their off states.

**Manual Corrections
and Updates**

**HP 150 Personal Computer Owner's Guide
First Edition—9/83**

A booklet, *Getting Started with Your HP 150*, is available. This is a supplement to the *HP 150 Owner's Guide*. It gives step-by-step instructions on how to set up a system (including a fixed-disc drive); how to install application programs on new diskettes; and how to connect HP printers and plotters. To order this manual, specify HP Part Number 45621-90022.

Page 2-53: The illustration of the switch setting is for an RS-232 cable connection. If you have an HP-IB cable, only switch 3 should be on.

Page 2-83: The illustration of the switches shows them as seen from the front of the 7470A plotter, not from the rear of the plotter as implied.

Page 2-87: The illustration of the switches shows them as seen from the front of the 7475A plotter, not from the rear of the plotter as implied.

Page 8-5: Delete the command "DISKCOPY" and its description. There is no DISKCOPY utility on the HP 150.

Page A-39: In the top configuration menu: replace the value in the Parity field with "Even"; replace the value in the Check Parity field with "Yes"; the value in the EnqAck field need not be "No" as this protocol is not used by these printers.

Page A-39: In the bottom configuration menu, the value in the EnqAck field need not be "No".

Page A-40: Replace the value in the XmitPace field by "None". Replace the value in the DM(CC)Xmit by "Yes". The value in the EnqAck field need not be "No".

**HP 150 Terminal User's Guide
First Edition—9/83**

Page 2-13: In the section on Terminal Control Group keys, the STOP key is omitted. Insert the following text: "**Pausing.** Pressing the STOP key pauses operation of the computer and locks the keyboard except for the STOP key itself. This might be used to 'freeze' the screen display momentarily. To resume normal operation of the computer, press the STOP key a second time. **Terminal-to-PC Switch.** Simultaneously pressing the STOP key and the SHIFT key switches the HP 150 from a terminal to a personal computer."

Page 2-13: In the description of soft reset, replace the first sentence with "Pressing the SHIFT and RESET keys simultaneously results in a 'soft reset'."

Page 2-15: Replace the subheading "User Keys Key" with "User-Defined Function Keys."

Page 2-15: To the last paragraph, add this sentence: "Pressing the SHIFT and USER keys simultaneously activates the function key labels that are associated with the application program which is currently running."

Page 3-6: Near the top of the page, add the label "set time" below function key f7.

Page 3-6: Delete the sentence in the second paragraph that begins, "Since the label for f4 is capitalized..." All of the labels have lower case letters.

Page 3-6: In the second paragraph, second sentence, delete the word "other," and replace the word "Aids" with "User/System."

Page 3-7: In the second paragraph, replace the word "Aids" with "User/System."

Page 3-7: In the service keys description, replace "or for selecting Monitor Mode" with "and Touch Screen Alignment." The HP 150 does not have Monitor Mode.

Page 3-10: Near the top of the page, delete the label "EXPAND PRINT" below function key f5. The HP 150 does not have this mode.

Page 3-11: Delete the section on EXPAND PRINT.

Page 3-18: At the bottom of the page, add the label "accessory config" to function key f6.

Page 3-19: After the terminal configuration function key description, insert another description: "accessory config—this is reserved for future use."

Page 3-24: In Step 10, replace the "AIDS" key with the "USER/SYSTEM" key.

Page 5-2: Near the top of the page, delete the section on Background Inverse. The HP 150 does not have this feature.

Page 5-2: In the paragraph below the row of video enhancement function keys, delete all references to "Background Inverse."

Page 5-9: Fill in the three blank function keys with "EXTEND CHAR."

Page 5-9: In the middle of the second paragraph, replace "SHIFT W" with "SHIFT E."

Page 6-2: In the last paragraph, replace all references to "Shift" with "CTRL."

Page 6-3: In the middle of the page, replace the "SHIFT" key with the "CTRL" key and delete the words "NUM PAD."

Page 7-7: In the last sentence, replace the first "Section ?" with "Section 8" and the second "Section ?" with "Section 9."

Page 9-5: In Step 1, replace the "AUTO LF" key with the "USER/SYSTEM" key.

Page 9-6: In the last sentence, replace "Chapter 7" with "Chapter 2."

Page A-12: At the top of the page, replace "Ec &p <x>D" with Ec &p <a>d d <c>D" and replace "device 'x' as the destination device" with "devices 'a,' 'b,' and 'c' as the destination devices."

Page A-17: In the middle of the page, replace "<string length>I" with "<string length>L."

Manuals	Getting Started with your HP 150 45621-90022
	HP 150 MS-DOS User's Guide45624A
	HP 150 Technical Reference Manual45625A
	HP 150 Programmer's Tools.45435A
	HP 150 Personal Computer Owner's Guide (Contains System Software on 3.5" discs) 45621A
	HP 150 Terminal User's Guide 45623A
Communicator Articles	- "Transferring Files Between the HP 12x and HP 150" Issue #7
	- "Data Compatibility Between HP 12x and HP 150 Applications" Issue #7
	- "HP 150 Goes Worldwide" Issue #8
	- "Using Plotters with the HP 150" Issue #8
	- "Transferring Data Between a Series 100 Computer and an IBM PC" Issue #8
	- "Install Your BASIC/150 Application in P.A.M." Issue #8
	- "From Numbers to Charts to the HP 150: dBASEII to Series 100 Graphics" Issue #9
	- "HP 150 Graphics: From the Screen to Your Printer" Issue #9
	- "Using Lotus/150 1-2-3 with the 7475A Plotter and B-Size Paper" Issue #9
	- "Running Applications from MS-DOS on Your HP 150" Issue #9
	- "Localizing Your HP 150" Issue #9
	- "Using Record Mode on the HP 150" . . . Issue #9
	- "Access to the Touchscreen via MS-Pascal/150" Issue #9
	- "So You Want to Write Programs for the HP 150" Issue #9
	- "Introducing PFS:File and PFS:Report for the HP 150" Issue #9
	- "New Simulations—and a Chess Game —for the HP 150" Issue #9
	- "The Portable: Compatibility with the HP 150" Issue #9
	- "dBASEII for The Portable . . . and a New Version for the HP 150" Issue #9
	- "The HP 150 Programmer's Tools" Issue #9
	- "The HP 150 Technical Reference Manual" Issue #9
	- "Getting Started with the HP 150" Issue #9

NEW

- “Internal Rate of Return: Using the Iteration Option in Multiplan” Issue #10
- “Lotus 1-2-3: Disc Drives, Peripherals, and Data Bases” Issue #10
- “Setting User-Defined Function Keys in dBASE II” Issue #10
- “Transferring Fixed-Length ASCII Records via DSN/Link” Issue #10
- “A Feature-by-Feature Comparison of the HP 150 and HP 2623A Terminals” Issue #10
- “Saving HP 150 Screen Graphics” Issue #10
- “BAT/150: A Fast, Easy Way to Obtain an .EXE File” Issue #10
- “Graphics on the HP 150: Filling Polygonal Areas” Issue #10
- “The Newest Members of the HP 150 Family” Issue #10
- “Two New Programming Tools for HP 150 Users” Issue #10
- “Double-Sided Disc Drives for the HP 150B” Issue #10
- “Announcing the EtherSeries/150 Local-Area Network” Issue #10
- “The HP 150B and the IBM PC Speak to Each Other” Issue #10
- “Enhanced Condor Software Now Available for the HP 150” Issue #10
- “Enhanced MicroPlan for the HP 150” Issue #10

Courses**■ *Introduction to Personal Computers***

For managers and professionals with limited knowledge of personal computers. Content: general personal computer usage including basic computer literacy, lots of hands-on use of VisiCalc, some hands-on use of word processing and graphics; summary of how PCs can work for you.

35119A (1 day)

■ *Getting Started with your HP 150*

This workshop was created especially for beginners, so that your first experience with your new computer will be a positive one. You'll learn how to define basic computer terms, start up the system, handle discs properly, prepare new discs, and install application software.

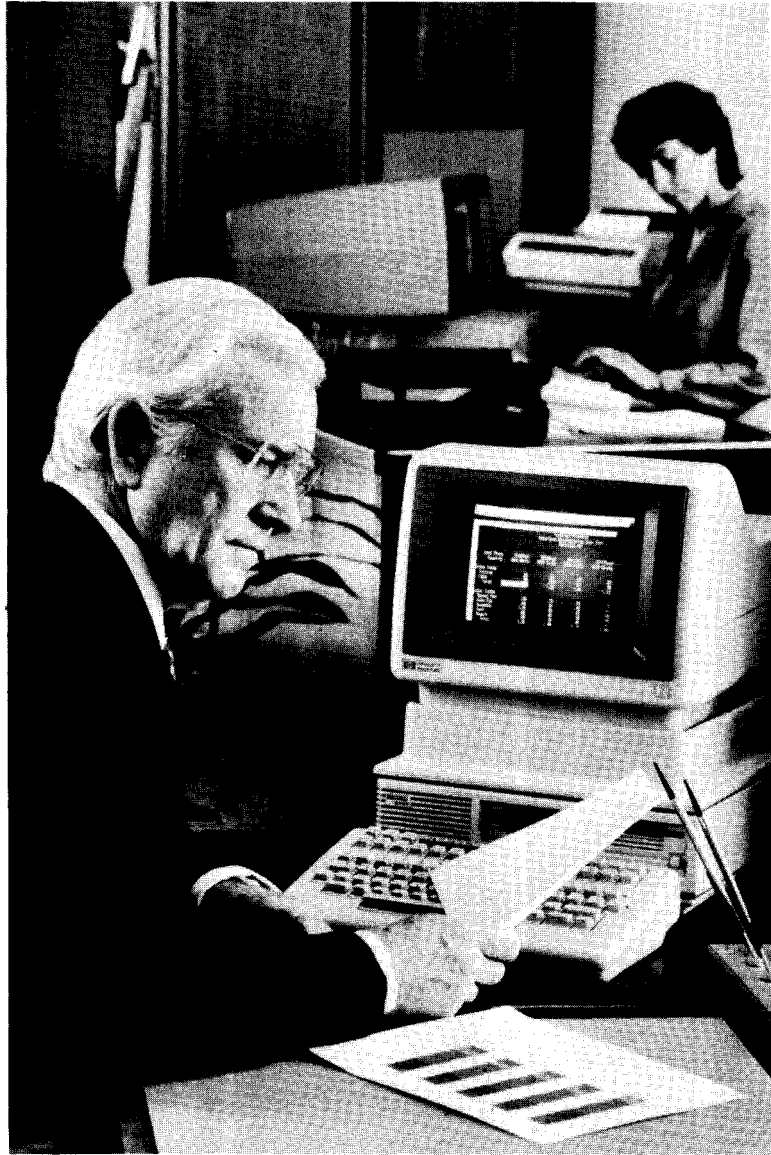
35036A (1 day)

This course, or equivalent knowledge, is a prerequisite for all applications and programming training on the HP 150.

■ *HP 150 Applications: Sharing Information*

Because you may use the same information in different ways, this workshop was created to teach you how to pass information from one software application to another. The following applications are covered: Condor, PCF, MailMerge, MemoMaker, SpellStar, WordStar, HPGraphics, and WordStar.

35037A (½ day)



To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Most Frequent Questions

??

NEW

Q. Does BPI work faster on a Winchester disc drive as opposed to a flexible disc drive?

A. *The Winchester does operate faster (it has a faster access and transfer rate) than a flexible drive; accordingly, the hard disc handles data faster. Also, by having all of the BPI Start-Up and Program discs on the Winchester, you save the additional time it takes to insert and remove flexible discs as you operate the particular package.*

Q. How do I store backup monthly data (before the monthend close command is executed) on a single diskette without writing over the previous month's data? Can I store more than one BPI System, for the same or different companies, on a single data diskette?

A. *You can execute COMMAND 74 "CHANGE COMPANY CODE" (in GA, AP, AR, IC, JC and PR)—"RENAME ACCOUNTS" (in PA), and change the six-character code for a set of books. A single set of books on a data diskette is identified by its company code preceded by its two-character system code (i.e., GA for GENERAL ACCOUNTING; A- for ACCOUNTS RECEIVABLE).*

In order to have a copy of each month's detail for each BPI System:

-Execute COMMAND 31—"POST LEDGER" (for all BPI Systems except PR, which would use COMMAND 51).

-Review the "END OF PERIOD CHECKLIST" for each BPI System.

-Execute COMMAND 41—"END OF MONTH" after all activity has been processed for the month, including corrections and adjustments.

-Execute COMMAND 74—"RENAME COMPANY CODE" (or RENAME ACCOUNTS in PA) and enter a new six-character COMPANY CODE representing something relative to the Accounting Period. For example, an old company code such as "XYZCOM" for January 1985, could be renamed "XYZ015."

–Property execute the BPI System you are in, and load the COPY/BACKUP Application from PAM. Then, copy the “GAXYZ015” set of files to a previously formatted diskette. This example applies to the General Accounting System, and will copy all the related “GAXYZ015” files.

–Exit the COPY/BACKUP Application, and reload the BPI System.

–You can keep the renamed company/personal code, or enter COMMAND 74–“RENAME COMPANY CODE,” and change it back to the original company/personal code.

–Continue with your “END OF PERIOD CHECKLIST” as appropriate.

Q. Can BPI data files be transferred between other applications such as Condor or Lotus 1-2-3? Can these other applications transfer data into BPI files?

A. No. BPI-GA only accepts external journal entries, and BPI only permits compatible file transfer between other BPI Systems.

Q. Do I have to close out this month’s books before entering next month’s activity?

A. The BPI System will accept next month’s activity, however if the current month’s books are still open, it will include the “next month’s activity” in “this month’s books.” If you want to keep each month’s activities separate, close this month’s books before entering the next month’s activity.

Q. Will the ThinkJet (2225) printer work with all BPI Systems?

A. Generally, yes, if properly configured. The ThinkJet will not properly print on preprinted documents which have defined columns in them due to the 1-inch right and left margin on the printer. You can adjust your printout by using custom-designed forms to accommodate the margin limits.

Q. When I execute COMMAND 11–“ENTER CASH DISBURSEMENTS,” after I’ve entered more than 10 checks (and one or more is a voided check), why do I get the message TERMINAL 9 (SUBSCRIPT OUT OF RANGE) AT LINE 455 OF PROGRAM 106 when I review my batch?

NEW

NEW

NEW

NEW

A. This is the result of a known software bug in BPI-GA, Version 1.1, 9/83. The workarounds are: 1) keep the voided checks in a separate batch, and only have check batches up to the recommended maximum of 30 entries, and 2) keep the batches to less than 10 checks, including voided checks. With either of these workarounds, you will be able to review any batch successfully.

NEW

Q. When printing several reports (e.g., COMMAND 31.11—"INCOME STATEMENTS-(CONSOLIDATED)", COMMAND 32—"TRIAL BALANCE", COMMAND 33—"BALANCE SHEET", etc.), why can't I get the income statement to print?

A. This is the result of a known software bug on BPI-GA, Version 1.1, 9/83. The workaround is to print the COMMAND 32.11—"INCOME STATEMENT-(CONSOLIDATED)" separately.

NEW

Q. When I use COMMAND 72.10—"EDIT ACCOUNTS" (using standard entries and have more than 100 aggregate accounts in the standard entries used), why do I get messages like TERMINAL ERROR 9 AT LINE XXX IN PROGRAM XXX?

A. Use less than 100 accounts aggregate when using standard entries.

NEW

Q. When executing COMMAND 18—"EXTERNAL JOURNAL ENTRIES" why did I get a NON-ZERO BALANCE error message?

A. This is a result of the way the software performs its arithmetic. You can avoid it by not entering decimal values in the external Journal Entry when you input data.

Q. Can I get some more specifications on BPI?

A. The General Accounting Package has 2000 accounts available for use in General Ledger Accounts, Employees, Vendors, Customers and Payees/Payors. Up to ten departments are available, along with a variety of reports. The demo disc that comes with each BPI package contains information relevant to the particular package. For further specifications, see the current issue of the Software Buying Guide for the HP 150.

Q. Does BPI incorporate HP Touch in its packages?

A. Yes, it uses HP touch on the softkeys in many operations.

Software Problem Reports



**BPI General Accounting/150
Original Version—A.01.00**

Problem: When retrieving a saved printer configuration, "Printer Not Ready" message appears.

Workaround: Don't save printer configuration on the data disc if "Serial (RS232)" is chosen as the printer type using command 6. Use command 6 to configure the printer whenever you want to print from BPI.

Problem: After retrieving a saved printer configuration, the "Print Uppercase Only" value in the configuration menu exceeds expected values of 1 or 2.

Workaround: Don't save printer configuration on the data disc if "Serial (RS232)" is chosen as the printer type using command 6. Use command 6 to configure the printer whenever you want to print from BPI.

Problem: It is not clear how to change the print type from BPI.

Workaround: Using command 6—the printer configuration mode—type in the ASCII codes for the escape sequence required by the printer separated by commas. For example: on an HP 82905B, the escape sequence for compress mode is ESC & k 2 S. In the control characters row of the printer configuration, you would type the corresponding ASCII codes as follows: 27, 38, 107, 50, 83.

Manual Corrections

**BPI General Accounting/150 Manual
First Edition—9/83**

Page E-5: At the bottom of the page, delete the section on creating subdirectories. Version A.01.03 of Sys-Master (of the operating system) does not support installing applications on subdirectories.



To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Program Update

**Condor/150
Revised Version—A.0.2.11B**

If you have Version 2.10, order an exchange kit to obtain Version 2.11B. The new version has been enhanced so that Condor™ 3 now runs on a single disc, has a two-screen data entry form, has an expanded record limit (now twice the original size), has up to 18 decimal places in numeric fields, a new INSERT mode during data entry, enhancements to the COMPUTE command, an in-string search capability, and an improved User's and Reference Guide.

**Most Frequent
Questions**

Q. What are the differences between Versions 2.10 and 2.11 of Condor?

- A. *Version 2.11 offers the following features not available in Version 2.10:*
- New, improved User's and Reference Manuals.
 - dRUN and BUILD have been combined onto a single disc.
 - The data entry screen is twice the size; you now have two screens to design a form.
 - The record limit has been doubled to a maximum of 65,634 records.
 - A new field definition, Decimal Numeric, has been added. It allows storage of numbers containing up to 18 decimal places.
 - The COMPUTE command has been enhanced to provide for a COMPUTE WHERE statement.
 - In-string search capabilities have been added.

NEW

Q. How do you sort a dataset that takes up more than half of the space available on the disc?

A. The following outlines the procedure for a dual disc drive system, but can be slightly modified to work with a fixed disc system:

-Place the Condor disc in the A drive and a blank formatted disc in the B drive.

-Start the Condor application and at the A>> prompt, type COPY B: = A:SORT.DBM

-Replace the Condor disc in the A drive with the disc which contains our dataset.

-At the A>> prompt, type B: (return)

-At the B>> prompt, type SORT A:FILENAME BY DATAITEM where FILENAME is the name of your dataset, and DATAITEM is the item you want to sort. Condor will now begin sorting your dataset.

Q. How can I send data from a Condor database to a dBasell database?

A. The steps for sending data to dBasell from Condor are as follows:

While in Condor

B>>WRITE CONDORDB NEWNAME.TXT[R]
(Write the Condor database to a file called NEWNAME. Be sure to include the .TXT extension.)

B>>SYSTEM

(Exit from Condor by typing SYSTEM.)

While in dBasell

.CREATE DBSEIIDB

(Create a data base structure in dBasell that has the same field definitions as those in the Condor database that is being transferred. The fields must be the same size.)

.USE DBSEIIDB

(Put the database online with the USE command.)

.APPEND FROM NEWNAME.TXT SDF

(Transfer the datafile to the dBasell database.)

NEW

Q. Why do I get the messages Insufficient print spaces allowed for field X or File directory shows more/fewer fields than form label?

A. These error messages indicate that the definitions do not match the form of your database. Refer to the previous question to verify that you correctly changed the structure of your database. You may be able to restore your database to its original form using these procedures. If you are getting garbage in the fields, you will need to restore the database from a previously backed up copy.

Q. Can Condor and the HP 150 Operating System be placed on the same disc?

A. No. This is an error in the Condor manual. After you've created the disc containing only the Condor application, this disc is placed in drive A, and can be started after re-reading your discs from P.A.M.

Q. Can a dataset form encompass more than one screen?

A. Version 2.10 of Condor allows one screen per form. Version 2.11B of Condor allows two screens per form.

Q. What is the purpose of the RESULT dataset, and what can I do if I accidentally destroy this dataset?

A. The RESULT dataset is created by Condor for the purpose of storing intermediate files that are the result of commands such as PROJECT, SELECT, JOIN, etc. If at all possible, the RESULT dataset should never be DESTROYed. If the RESULT dataset is not needed at the present time, simply EMPTY RESULT to gain extra disc space.

If you happen to inadvertently DESTROY the RESULT dataset, you must manually enter it into the DATA DICTIONARY. To do this you must:

1) Type ENTER DATA.DIC at the B>> prompt (or the drive where the RESULT dataset has been DESTROYed).

2) In the area designed for title, type RESULT, then type R\$ in each of the form, definition and data file areas.

NEW

Q. How can I print mailing labels from my Condor dataset using WordStar?

A. To transfer data to WordStar® from Condor, use the following procedure:

Type PROJECT DATABASE BY ITEM1, ITEM2, ITEM3, . . . ITEM32 (up to 32 items) where DATABASE is the name of your dataset and ITEM 1 through ITEM32 are the particular items you need for your mailing list such as name, street, city, state, zipcode, etc.

Type WRITE RESULT NEWFILE [B] to write the results into a file named NEWFILE. It is important to append the [B] to this command.

This creates a file that can be input to MailMerge™ and used against a form for addressing letters, envelopes or labels. The same file can be read into WordStar as a document using the READ A FILE softkey.

This technique does not apply to the international version of WordStar.

Q. Why can't I install both of my Condor Version 2.10 RUN and BUILD discs on my 150B?

A. Install the BUILD disc and copy the RUN disc using the COPY/BACKUP utility. This will give you access to all of the Condor commands when you load the Condor BUILD.

Q. Can I use the Condor datasets I've created on my HP 120 or HP125 with the HP 150?

A. Yes. Refer to the HP 150 Owner's Guide, page 7-20; Converting CP/M files to MS-DOS files.

Q. How can I make a copy of my dataset disc?

A. It is good practice to always keep a current copy of your dataset. You can:

1. Use the COPY/BACKUP UTILITY in P. A. M. Refer to the HP 150 Owner's Guide, page 7-10.
2. Use the COPY command in MS-DOS. Refer to the HP 150 Owner's Guide, page 8-4.
3. Use the COPY command in Condor. Refer to the Condor Reference Manual, page 2-14. An example using this last process:

-Place your CONDOR disc in drive A and a blank, formatted disc in drive B.

-At the A>> prompt, type COPY B: =
A:COPY.DBM

-Remove the CONDOR disc from A and replace it with a disc containing your dataset.

-At the A>> prompt, type B:

-At the B>> prompt, type COPY B: =
A:DATABASE where DATABASE is the name of your dataset.

Using the above procedure, all extensions to the dataset are automatically copied as well, e.g., the .DAT, .DEF, .FRM, .RPT, .IDX etc. files, along with the DATA.DIC file.

If you have a fixed disc, and the dataset is larger than your flexible disc, use the COPY/BACKUP UTILITY in P.A.M. Refer to the HP 150 Owner's Guide, page 7-18 for more information.

Q. Are any Condor Training classes available?

A. Yes—for details refer to the list of courses at the end of this article.

Q. How can I send escape sequences to my printer in Condor/150?

A. Escape sequences cannot be sent to your printer directly from Condor/150. In order to send an escape sequence to your printer, such as setting compressed print, you must send it prior to loading Condor from either MS-DOS or Terminal Mode. Before sending the escape sequence to your printer, make sure your printer is turned on and is Online. Follow the procedure outlined below:

From MS-DOS:

1. From the PAM screen, load the operating system disc, highlight MSDOS COMANDS, and press "Start Application."
2. Press the "User System" key on the keyboard.
3. Take the asterisk out of REMOTE MODE.
4. Press the "Home Cursor" key and CLEAR DISPLAY.
5. Turn on DISPLAY FUNCTIONS.
6. Type your escape code (for example: ESC*&k2S for compressed print).
7. Press the PRINT/ENTER key.
8. Turn off DISPLAY FUNCTIONS and turn on REMOTE MODE
9. Press the RETURN key and type EXIT (CR).

From TERMINAL MODE:

1. From the PAM screen, press the TERMINAL key.
2. Turn off REMOTE MODE.
3. Turn on DISPLAY FUNCTIONS.
4. Type your escape code (for example: ESC* & k2S for compressed print).
5. Press the PRINT/ENTER key.
6. Turn REMOTE MODE back on and turn DISPLAY FUNCTIONS off.
7. Press the SHIFT key and the STOP key simultaneously to get back to the PAM screen.

You can now load Condor.

NOTE: If you make a mistake while typing your escape sequence, turn off DISPLAY FUNCTIONS, backspace and press DELETE CHAR to erase the error. Then turn DISPLAY FUNCTIONS back on and resume typing.

*For the ESCape command, press the DEL/ESC key on your keyboard.

Q. How can I prevent continuous printing over the perforation of the paper?

- A. The Condor PRINT command prints all records continuously, and you need to use the TITLE command to perform form feeds on printers that use continuous sheets of paper. (Refer to the Condor Reference Manual, page 2-108). Make sure your PRINT command follows the appropriate TITLE command.

The command TITLE TOP,56 will form feed every 56 lines, which leaves approximately one inch at the bottom of every sheet.

If you want a text title with your output, use the command TITLE TOP, 56 "text" where text is the text of your title. The TITLE command executes from left to right; therefore you will get a form feed to the next sheet and then the text of your title will be printed.

The TITLE command is cleared only by another TITLE command, or by exiting Condor. Therefore the most recent TITLE command will execute with any subsequent PRINT commands.

Q. How can I modify the structure of my dataset after I have it defined?

A. *There are different methods depending on what you're modifying:*

If you want to cosmetically alter the form or change field names, use the FORMAT command. Refer to the Condor User's Manual, page 9-4. Caution: be sure not to alter the lengths of the fields or the order of the fields when using this command!

If you only want to change the minimum, maximum and default values, use the UPDATE command on the .DEF file of your dataset. Refer to the Condor User's Manual, page 9-8.

If you want to add, delete or reorder fields, use the REORG command. Refer to the Condor User's Manual, page 9-16.

The FORMAT, UPDATE and REORG commands can be used on a dataset regardless of whether or not it contains data.

If you want to change a field type or field length, use the DEFINE command. If your dataset contains data, you must first write the data out to a temporary file, restructure the dataset and then read the data back into the dataset from the temporary file. Refer to the Condor User's Manual, pages 9-18 and 9-19.

Before you make any changes, make sure that your data is compatible with the desired modifications, i.e., if shortening a field the existing data does not exceed the new length, and if you change a field type—from AN to N, for example—the existing data does not contain any alpha characters. If your data is not compatible, you will not be able to successfully read the data into your modified dataset!

Here is an example of how to alter the field type or length. Skip the FORMAT command if only changing a field type. The example uses a dataset named CARDFILE:

- It is suggested that you first make a copy of your dataset using the command COPY TEMP = CARDFILE, which will copy the contents of CARDFILE into a file called TEMP.*
- Write out the data to a file named TEMPFILE in Basic format using the command WRITE TEMP TEMPFILE [B] (be sure to add the [B]).*

-The command **FORMAT TEMP** will allow you to change the field length.

-The command **DEFINE TEMP** will allow you to change the definition specifications. At this point Condor will ask you to choose an option: Re-define? to which you type R. With a file containing data, Condor will prompt Data file is not empty: OK to delete all records (Y/N), to which you answer Yes. Use the carriage return to position the cursor on the field line to be modified. Use the backspace key, not the arrows, to move the cursor.

If changing the field length for a field defined as NAME: ANR,30,0,30," " you can backspace to the first comma, use the space bar and erase everything to the last quote mark. Press return and let the program input the size, minimum, and maximum requirements. This method ensures that the definition will agree with the form.

If changing the field type for a field defined as above: backspace to the field type (ANR) and overstrike with a new field type. Use the space bar to erase everything to the last quote mark. Press return and let the program input the size, minimum and maximum requirements.

-After all modifications are made, use the command **READ TEMP TEMPFILE** to read the data back into the dataset.

-**LIST TEMP** to verify the data.

-To rename the dataset, use the **COPY CARDFILE = TEMP** command. Since the dataset already exists, you will be asked to verify whether or not you want to replace the original. Answer Yes.

-**DESTROY TEMP** will destroy the TEMP dataset.

-**DESTROY TEMPFILE*** will destroy the TEMPFILE file.

(Note that this procedure differs slightly from the one given in the Condor User's Manual).

Software Problem Reports



**Condor/150
Versions A.02.10 and A.02.11**

Problem: Having difficulties in updating data in a form that uses an underscore (—) in a cosmetic border.

Workaround: Redraw the data entry form using the FORMAT command and eliminate the underscores in the border. Safe characters include, but are not limited to, the following: plus sign (+), asterisk (*), hyphen (-), pound sign (#), and exclamation point (!).

Problem: Tabulate and search won't work properly on numeric fields.

Workaround: Use the default number of bytes in the database definition phase. Redefine the database using the DEFINE command, and choose the default value when specifying the field size.

Problem: Can't read in data correctly after redefining a database.

Workaround: When redefining a database, first WRITE out the existing data using the [B] option. Whenever you WRITE out data to a file, always use the [B] option of the command unless you intend to read the data into an application that requires another option.

Manual Corrections

**Condor/150 User's Manual
First Edition—9/83**

Page 2-115: Add the following paragraph to the bottom of the page: "When redefining a database, you need to WRITE out the existing data to a file before redefining. Use the [B] option of the WRITE command when saving the existing data."

Page 3-9: Add the following paragraph to the bottom of the page: "Condor allows specification of the field-size immediately following the data type specification. Allow the field-size parameter to be defaulted by Condor."

**Quick Reference
Guide**

Condor/150 Quick Reference
Guide 45415-90002

Communicator Articles	<p>-“Transferring IMAGE/3000 Data to a Condor Database” Issue #5</p> <p>-“Condor Tips” Issue #7</p> <p>-“Plotting Condor Data with HP Graphics” Issue #8</p> <p>-“Enhanced Condor Software Now Available for the HP 150” Issue #10</p>
Books	<p>Data Base Management Systems: A Guide to Microcomputer Software <i>Krugliniski</i>; Osborne-McGraw Hill, 1983 A number of packages are examined in detail— including Condor and dBASE II. HP Product Number 92234A</p>
Courses	<ul style="list-style-type: none"> ■ <i>Condor/150-1</i> This workshop will introduce you to Condor. After you understand what a database system is you'll learn how to use one by designing a form for entering data, creating a simple dataset, editing information, sorting and creating simple reports, and reorganizing a dataset. 35124B (1 day) ■ <i>Condor/150 3</i> The Condor 3 workshop will provide you with in-depth experience using Condor's advanced database management and report writing capabilities including indexing a new or existing dataset, joining unlike datasets, creating, printing and revising reports, and creating and running a help screen and command procedure. 35124C (½ day) ■ <i>Condor/150-1 and 3</i> can be ordered as a single unit. 35124A (1½ days)



To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Most Frequent Questions



Q. What is Context™ MBA™, and what can it do for me?

A. *The Context MBA is an integrated program that lets you pull the information from a number of sources, analyze it, graph it, store and retrieve it, write about it, and communicate the results to others.*

The Context MBA offers six ways to create and handle data: 1) modeling or spreadsheet, 2) business graphics, 3) database, 4) word processing, 5) forms, 6) communication link with a remote computer.

Q. Why can't I have both Context MBA and the MS-DOS Operating System on my hard disk (9133 or 9134 Series)?

A. *This problem is due to implementation of MBA that uses the P-System. The P-System requires its file directory to be resident at the beginning of the disc, in the same place the MS-DOS operating system would reside. Consequently, installing MBA onto a hard disc would overlay any MS-DOS operating system files that were present on the hard disc.*

If you want MBA on the hard disc, you will have to first boot the MS-DOS operating system from the flexible drive.

Q. Why won't MBA boot from a 9133D drive with a formatted double-sided disc in the flexible drive?

A. *Context MBA does not support or recognize the larger sector size of the new double-sided format. You will need to remove the diskette from the drive before booting MBA. You can have any single-sided discs or double-sided discs that have been formatted single-sided in any drive while booting MBA.*

Q. Why won't MBA boot when I have a Ram Disc configured on my 150B?

A. *Context MBA does not recognize the sector size of the Ram Disc on the 150B and will hang up if the Ram Disc is configured. The workaround is to not use the Ram Disc with MBA.*

NEW

NEW

NEW

NEW

Q. Why do characters intermittently show up on my screen when my 150B is hardwired to an HP 3000?

A. On the 150B, MBA turns ENQ/ACK handshaking OFF. Unfortunately there is no way to turn ENQ/ACK handshaking on from within MBA. The workaround for this is for the user to manually send an "ACK" to the 3000 by simultaneously pressing the CONTROL and F keys. If the user holds these keys down, the 3000 will continuously send data to the 150B. Any extra "ACKs" sent to the 3000 may cause the next command typed to be misinterpreted, so it's best to press RETURN first before typing the next command to the 3000.

Q. Does the HP 150 version of Context MBA utilize the touch capability?

A. Yes, using the 8 function keys f1 through f8. The 8 functions are: /E(Edit), > (GOTO), WXY (Draw grf or Expand a cell to entire window), WXN (Clear Grf or de-Expand cell), END, CNTL-C! (Recalc) and ?(Help). The touch capability can also be used for positioning the cursor within a window and moving the cursor to any other window.

Q. How many discs are required to run Context MBA on the HP 150?

A. Three program discs and one demo disc are included with the HP 150 version of Context MBA. They are labelled MBA1, MBA2, MBA3, and DEMOS. Because a backup copy of the MBA3 disc cannot be made, a backup copy is also included in the package.

Q. Will Context MBA on the HP 150 run in the standard 256 kB memory configuration?

A. 512 K of memory is recommended for Context MBA to run on the HP 150. Context MBA will run on 256K of memory but will usually operate too slowly for the MBA user's requirements.

NEW

Q. Can I use the 9144 tape drive to back up my fixed disc containing Context MBA?

A. No, because MBA cannot support the larger 9144 sector size. If you do have a 9144 tape drive you can still back up your MS-DOS files from your fixed disc to the 9144 using Copy/Backup. You will then need to copy MBA data files to flexible discs by performing the following steps:

1. format flexible discs using the 150's Format utility
2. Initialize flexible discs using MBA's /STORAGE INITIALIZE VOLUME command.
3. Use /STORAGE TRANSFER to back up individual files or folders to the flexible disc.

NEW

Q. When using the MBA telecommunications feature with my 150B hard-wired to a 3000, why are characters intermittently showing on my screen?

A. On the 150B MBA turns the ENQ/ACK handshaking OFF and there is no way to turn ENQ/ACK handshaking on from within MBA. This causes the characters showing on the screen.

The workaround is to hold the <CTRL-F> keys down which will send "ACKs" to the 3000. No characters should show on your screen. If any extra "ACKs" are sent to the 3000 the command typed will be misinterpreted. So, it is best to hit <return> first before typing the next command to the 3000.

NEW

Q. Can I use a double-sided flexible disc as a MBA data disc?

A. No. You must format the disc as single-sided. MBA cannot recognize double-sided formatted discs.

Q. Why can't I boot Context MBA from my hard disk when I have a double-sided formatted disc in another drive?

A. Context MBA doesn't recognize discs with the double-sided format. You need to remove ANY double-sided formatted disc from your system (this includes RAM disc). To use your double-sided drives, format the data discs as single-sided. Also remove RAM disc from your configuration.

NEW

Q. Can I exchange other applications' files with MBA?

A. No. There isn't a translation utility to translate files into MBA's format or from MBA's format to another application.

With Context MBA you have important functions within a single program, that's why an integrated package is so nice!

Q. How much workspace is available for data on the HP 150 version of Context MBA if I have the standard 256 kB memory configuration?

A. There are two options available for your workspace, which translates to about 110 Pascal blocks of memory in the default configuration, and about 225 Pascal blocks for the maximum possible workspace. A Pascal block is equivalent to 512K bytes.

Q. How do I install MBA on the Winchester disc drive?

A. To install MBA, the hard disc must be reformatted. This will erase any files on the hard disc.

When installing MBA on the Winchester disc drive, follow these steps:

1. Configure the hard disc as E.
2. Backup applications and files currently on the hard disc.
3. Reformat the disc—do not copy the MS-DOS operating system onto the disc.
4. Transfer MBA onto the hard disc, then
5. Reload the previously installed applications back onto the disc.

Once MBA is on the E drive, you can no longer boot-up from the hard disc and must use the floppy to bring up the 150. The operating system and MBA require the same portion of the disc, so MBA transfers on the disc first and locks out the operating system. You can't start up from drive E.

Q. When the HELP function is used, nothing happens.

A. Make sure that disc MBA2 is in the right drive when using HELP.

Q. Error messages refer to unit numbers that do not apply to the HP 150.

A. Refer to the Conversion Chart in the HP 150 insert of the Context MBA/150 package. For example, it shows that Unit 5 is equivalent to Drive B.



dBASE II ...for the HP 150 Touchscreen



To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Program Update

dBASE II/150 Revised Version—A.2.41

You can now get an update kit for dBASE II™/150 from HP. Enhancements include:

- an on-disc tutorial*
- dBASE Sort—to improve sorting time*
- dBASE II Commands on soft keys—for ease of use
- cursor/edit keys now implemented on the HP keyboard
- HP Touch demo—shows how to program with HP Touch

*Not available with international versions.

Refer to "Software Exchange Kits," in this issue's Current Information insert, for ordering instructions.

Most Frequent Questions

Q. How do I install dBASE II on the HP 150?

- A. For instructions, refer to the article entitled "Installing dBASE II on the HP 150" in issue #8 of the Communicator. (NOTE: These instructions apply only to Version 2.4 of dBASEII.)

Q. Which command should I use to transfer data to PCF?

- A. COPYTO <file> DELIMITED WITH "

Q. How do I send escape codes to my printer using dBASE II?

- A. It is possible to send escape codes from your HP 150 to your printer from a program within dBASE II. dBASE II will not accept the ESC key in the escape sequence, so you need to use the decimal value for ESC. The CHR(27) decimal value is equivalent to the ESC key. The escape sequence is sent to the printer using an (@,SAY command.

Below is an example which can be used for compressing print on most HP printers:

.MODIFY COMMAND	Creates a program
ESCAPE	file called ESCAPE

SET FORMAT TO PRINT	Sends (@,SAY
(@ 0,0 SAY CHR(27) +	commands to the
"&k2S"	printer

NEW

NEW

Q. How can I automatically execute a dBaseII program file from the P.A.M. menu?

A. If you are familiar with creating the IN\$ file necessary to install dBaseII under P.A.M. (refer to the Communicator Issue 8 article "Installing dBaseII on the HP150"), it is very easy. Simply add the program name (FILENAME.PRG) in the blank line of the IN\$ file, then INSTALL. (The blank line is in between dBASE.COM and 132096).

Q. How can I get a copy of a dBaseII program file using the 2.41 version?

A. You cannot get a printout from dBaseII. QUIT dBaseII and from your operating system prompt, issue the following command:

MS-DOS: A>TYPE Filename.PRG > PRN
(PRN defaults to the printer listed as PRN in your Device Configuration menu.)

CP/M: A>PIP LST: Filename.CMD
(LST is the primary list device.)

Q. Will all editing keys (Insert Line/Delete Line and Insert Char/Delete Char) be operable with the new 2.41 Version?

A. Although all editing keys and arrow keys work with Version 2.41, it is still advisable to use CTRL N to insert lines when creating or modifying command files.

Q. Is there anything I can do to ensure data integrity in command files when using MODIFY COMMAND?

A. Here are a few precautions that help ensure order and consistency when modifying command files within dBaseII:

- Do not modify a program file with a data base in USE. If your program file contains a USE DBFILE command, add a USE command at the end of the program to close the DBF file.
- Avoid backing up more than 1 screen of data.
- Use a CTRL W only at the end of the file.
- Use a CTRL N to insert lines rather than the Insert Line key.

SET FORMAT TO
SCREEN

Press CTRL W To save file
(Ensure your printer
is turned on)

.DO ESCAPE Executes command
file

*The printer can be configured for normal print
size by sending another escape sequence to the
printer similar to the one above substituting
"&kOS" for the "&k2S"*

**Software Problem
Reports**

**dBASE II/150
Original Version—A.2.4**

Problem: Cursor arrow keys appear to work in
edit mode, but modifications made using these
keys are in the wrong place.

Workaround: Use the control characters to move
cursor. Refer to Page 23 of Part B of the dBASE II
User Manual for a list of the control characters.

Fixed in Version 2.41.

Problem: Using the ENTER key will lock the
keyboard.

Workaround: Use only the return key. (This
problem was fixed in Version 2.41.)

Problem: 'Quit To' command doesn't work.

Workaround: (Problem fixed in Version 2.41.)

**Communicator
Articles**

- "dBASE II Now Available for the
HP 150" Issue #8
- "Installing dBASE II on the HP 150" Issue #8
- "dBASE II for The Portable" Issue #9
- "Setting User-Defined Softkeys
in dBASE II" Issue #10

Books

**Everyman's Database Primer:
Featuring dBASE II**

Byers; Ashton-Tate, 1982

HP Product Number 92233R

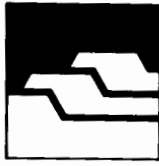
**Data Base Management Systems:
A Guide to Microcomputer Software**

Krugliniski; Osborne-McGraw Hill, 1983

A number of packages are examined in detail—
including Condor and dBASE II.

HP Product Number 92234A





To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Most Frequent Questions

NEW

Q. What are the differences between AdvanceLink and DSN/Link?

A. *The DSN/Link communications software package has been replaced by the AdvanceLink package. AdvanceLink has a richer command set than DSN/Link, along with a command-file editor and a utility that converts WordStar and MemoMaker files to true 7-bit format. The command-file editor checks syntax, has an extensive 'HELP' facility, and lets you install command files in the P.A.M. screen. In AdvanceLink, LINK/100 is now called MONITOR, and MONITOR works with the HP 3000 MPE-VE operating system. (LINK/100 has major problems when used in this particular environment.)*

NEW

Q. How do I get two HP 150s to "talk" to each other?

A. *In either a hardwired configuration or through the use of modems, HP's AdvanceLink package is designed to make communication easy.*

NEW

Q. How fo I connect an HP 150 to an HP 3000?

A. *Just as you can connect two 150's together, you can either hardwire or use modems to connect the 150 to a 3000. Here again, the AdvanceLink package is ideal for communicating between the two computers. Consult your HP 3000 System Manager or System Engineer if you're having difficulty.*

NEW

Q. Can HP 150s communicate with computers other than the HP 3000?

A. *Yes, either as a terminal emulating the HP 2623, or as a computer running a datacommunications package or terminal emulator. AdvanceLink allows the use of all of its features with the exception of binary file transfers.*

Q. Every time I try to upload Link/100 to my HP 3000 host system, I get the error message "Unable to Install Host Program File." What am I doing wrong?

A. You should check for all of the following:

You need to be logged on as MANAGER.SYS in order to load anything into the PUB.SYS account, where the Link/100 program must reside.

Your TERMTYPE must be set at 10. If it's not, set it during your logon procedure, for example:

HELLO MANAGER.SYS; TERM = 10

The terminal configuration for your 150 should reflect a baud rate matching that of your HP 3000 port.

Port configuration of the 150 should have parity set to NONE and DATA Bits set to 8.

Q. Why do I get the error message "Cannot Find Local File" when I try to install the Format Conversion Utility?

A. You should install the DSN/Link and UPLOAD programs on one disc, but do not install the MONITOR program since it will not fit in the remaining space. This should permit you to upload now.

Q. The messages "Cannot Start HP 3000 Transfer Program. Link/100 must be installed" or "File Inaccessible" or "Wrong Version of Link file" is displayed. What's the problem?

A. You must correctly install the latest version of Link/100 on the system. As of this printing, the current version of Link/100 is A.02.00. It is also possible that you did UPLOAD, but not into the PUB.SYS account on the HP 3000.

Q. Why can't just any RS-232 cable be used to connect two Series 100 computers?

A. Any cable with pins 2 & 3 crossed and pin 7 to pin 7 can be used. Crossing pins 2 & 3 connects the transmit pin to the receive pin in both directions. The HP 13242G cable meets these requirements.

Software Problem Reports

**DSN/Link/150
Original Version—A.01.01**

Problem: If the Upload program is run over a modem, the file is not transferred to the host.

Workaround: If you are using a modem to run the UPLOAD program, you must be logged onto the HP 3000 as TERMTYPE 10. For example:

```
HELLO user.account/password;TERM = 10
```

Problem: When transferring a binary file from an HP 150 to an HP 3000, an error message indicating that lines have been truncated appears at the top of the screen and the file is not transferred.

Workaround: You must change the ASCII/BINARY field to BINARY. It is not sensed automatically.

Problem: If an HP 3000 program file is transferred to an HP 150 and then transferred back to an HP 3000, it no longer has the parameters of a program file and therefore cannot be run.

Workaround: A file equation must be used on the HP 3000 to which the file is transferred and the filename must be back-referenced on the DSN/Link screen.

on the HP 3000:

```
FILE filename;REC = 128,,F,  
  BINARY;DISC = ,1,1;CODE = PROG
```

on the DSN/Link screen:

```
*filename [an asterisk before the destination  
filename]
```

Problem: Can't make the Hayes Smartmodem hang up from a command file.

Workaround: Perform the hang-up manually.

Problem: Transferring an ASCII file other than type 0 from the HP 3000 to the HP 150 sometimes doesn't work.

Workaround: Transfer the file as a binary file instead of ASCII. Because DSN/Link does not allow you to override the file type when transferring from the HP 3000, you must BUILD on the HP 3000 an identical file to the one you wish to transfer except specifying it as binary. Use FCOPY to copy from the ASCII file to the HP 150 using DSN/Link. To transfer the file back up to the HP 3000, transfer the file as a binary file. Then BUILD an ASCII file identical to the original ASCII file (remember to specify the correct file code) and use FCOPY to copy from the binary file to the ASCII file you just built.

**Manual Corrections
and Updates**

**DSN/Link/150 Manual
First Edition—9/83**

Page 3-1. Installing the SDTODIF Utility. The files SDTODIF.COM, SDTODIF, CSDTODIF must be on the currently selected drive. It is suggested that you install UPLOAD and DSN/Link on the same disc, and later delete UPLOAD.

Page 6-4. Logging to a printer: By default, DSN/Link talks to the device PRN. (If you do not have a printer configured as PRN, the logging attempt will produce a printer error message). You can change this by going into File Manager prior to logging and performing a "set printer" function.

Page 9-4. Addition to "Software Requirements" The Series 100/DSN/Monitor program includes RUN.EXE and SYSLIB.PAS, used in uploading Monitor.

Page 9-6. Note in "Setting Up a Password" implies that "Enter Password" comes up automatically after touching Time/Out Exit. The message appears only after you press Return.

Page 9-20. Message in note should read "directory of remote drive X:"

Page B-1. Add missing ampersand (&) in reference to &ASSIGN command.

Page B-2. Under "HP 150 Commands" correct command to read: &CHAIN filename (parameter 1, parameter 2,... etc)

**Quick Reference
Guide**

DSN/Link/150 Quick Reference
Guide 45425-90000

**Communicator
Articles**

—"Transferring Fixed-Length ASCII Records via
DSN/Link" Issue #10



This product is built into the Portable.

Most Frequent Questions

NEW

Q. Every time I try to run the Lotus 1-2-3 Tutorial, I get the message LOADING TUTOR and then I'm returned to the P.A.M. screen. What's wrong?

A. You need at least 192K bytes of memory to load the Lotus Tutorial. Check your SYSTEM CONFIG menu to be sure you have allocated at least this many bytes for memory.

NEW

Q. Is there any way to load the Lotus Tutorial without using an external disc drive?

A. No.

NEW

Q. How can I transfer Lotus files from the Portable to the HP 150 using an HP 9133 disc drive?

A. You must format the floppy disc for the transfer by using the FORMAT utility on the HP 150. Save the files from the Portable to this floppy using a 9114A disc drive. You can then gain access to this disc through the floppy drive on the 9133.

NEW

Q. How much memory does the Lotus application use?

A. Approximately 70K bytes. MS-DOS occupies 27K, and Lotus takes up 40K.

NEW

Q. Can the built-in Lotus application on the Portable be transferred to another personal computer?

A. No. None of the built-in applications on the Portable can be transferred to other computers.

NEW

Q. When I try to run the Printgraph program, the message Loading Printgraph appears, but the system returns to the P.A.M. menu instead of running the program. What's wrong?

A. When a program is run, it is first loaded into memory. If not enough memory is available, then the system immediately returns to P.A.M.

You need at least 152K bytes of memory to run Printgraph. Check your SYSTEM CONFIG menu to be sure you have allocated at least this many bytes for memory.

NEW

Q. Why does the message MISSING OR ILLEGAL CONFIGURATION FILE appear on the screen when I try to run LOTUS 1-2-3 on the Portable?

A. *To clear this message, press RETURN to clear the message from the screen. Then select the following commands: /Worksheet Global Default Update. This procedure creates a file called 123.CNF which Lotus uses to read the default configurations each time it's run.*

NEW

Q. I want Lotus 1-2-3 to pause after each keystroke (single-step execution) in my macro, rather than type the entire sequence. How is this done?

A. *Press CONTROL F1. You do not need to hold down the SHIFT key as indicated in the manual.*

NEW

Q. How do I save a Lotus data file in a format that can be read by a BASIC program?

A. *From Lotus, you will need to save your data so that it is in an ASCII format that BASIC can interpret:*

- From the main Lotus menu, invoke the commands /Print File and enter a name for your print file.*
- Select the /Range command and enter the range of cells that you want saved.*
- Invoke the commands /Option Other Unformatted to delete all page breaks, headers, and footers. Select /Quit.*
- Select /Align Go Quit.*

To read the file into BASIC, open the file and read in the lines of data as ASCII strings:

```
10 OPEN "I", #1, "filename.PRN"  
20 LINE INPUT #1, A$
```

You can do this for each line of data, and then take the data strings to manipulate within your program.

NEW

Q. The manual says that I can press SHIFT Print and my graph will automatically dump to my HP 82905B printer. Why can't I get this to work?

A. *This is a misprint in the manual. You cannot do a raster dump to this printer. The only printers to which you can perform a raster dump are the HP 82906A and the HP 2225A (ThinkJet).*

NEW

Q. I worked on a Lotus file that I had transferred from my IBM to my 110, and then transferred it back to the IBM. Now the worksheet only takes up half of the IBM screen. Is there a way to get the worksheet back to the original size?

A. *When you transfer a Lotus file from The Portable to the IBM, it remains in its former 16-line format even after it is transferred back to the IBM. To expand the worksheet back to its original size on the IBM, create a window by selecting /Worksheet Window Horizontal. Then invoke /Worksheet Window Clear. Your worksheet will then fill the IBM screen.*

NEW

Q. I named my macro \C. When I invoked it, I got the message Cntl-break. Why?

A. *When a macro is invoked, you must hit the CONTROL SHIFT keys along with the letter that you assigned to the macro. CTRL-C has an additional meaning to your Portable. It is a software control code that MS-DOS interprets as a signal to "BREAK" or stop the current operation. To allow a macro with the letter C to work without invoking an MS-DOS command, enter MS-DOS before you invoke Lotus, and type in the command BREAK OFF. Now you will be able to invoke any macro that has been designated by the character C.*

NEW

Q. What causes a memory full message in Lotus?

A. *The worksheet that is displayed on your screen is occupying memory in your computer. You will get the memory full indication when your worksheet reaches the maximum allocated memory. The amount of memory in the EDISC field in the System Config menu, minus approximately 67K for Lotus and the operating system, is the maximum amount of memory you can utilize in a worksheet. You will need to save your worksheet and then increase the amount of memory in the EDISC field to increase the amount of space available for the worksheet.*

NEW

Q. Will Lotus Symphony be available on The Portable?

A. *Lotus Development Corp. and HP worked on an implementation of Symphony on The Portable since the introduction of the products. Technical difficulties associated with the memory requirements of Symphony and the ROM/RAM capacity of The Portable did not allow a reasonable implementation. HP and Lotus therefore decided that Symphony will not be offered on The Portable.*

Problem Reports

Lotus 1-2-3 Firmware

Problem: Legends in Print/Graph run off the page if there are more than two legends. This is common to all implementations of Lotus™ 1-2-3™.

Workaround: Adjust the legends to fit accordingly.

Problem: When programming in macros, if the macro enters an infinite loop, *and* if the first key pressed is not [shift][break], then the system must be re-booted.

Workaround: In this situation, use [shift][break] to terminate the infinite loop.

HP 110 Lotus 1-2-3™ Configuration Error

Problem: When The Portable's memory is lost or erased, the error message "Missing or illegal configuration file" appears when the user tries to run Lotus 1-2-3.™

Workaround: To set up a configuration file, press [Return]/WGDUQ.

Courses

■ *Introducing 1-2-3*

This introductory workshop familiarizes you with the features, worksheet, and command structure of 1-2-3. Using hands-on practice, you will learn how to create and format a spreadsheet; save a worksheet and print a report; create and use a database; and create, print, and plot a graph.

45688A (one day)



To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Program Update

You can now order a Lotus 1-2-3 upgrade kit from HP. This kit, which contains the latest version of the program, runs on both the HP 150A and the HP 150B.

The original 1-2-3 system disc does not run with the new HP 9122D double-sided disc drive, or when the HP 150B's operating system is configured with RAM.

To order the upgrade kit, follow the procedure outlined in the "Software Exchange Kits" section of the Current Information insert in this issue.

Most Frequent Questions

NEW

Q. The "memory full" error message appears even though my worksheet isn't very large. What's going on?

A. The "memory full" message indicates that all internal random-access memory (RAM) is being used; therefore, no further information can be entered in the current worksheet. To maximize available memory, create your worksheets by arranging data starting in cell A1, and avoid blank rows or columns between data items.

If the "memory full" message still appears more often than you'd like, you might consider installing an additional memory board.

NEW

Q. When I try to print or plot, the "wait" message flashes on the screen and the peripheral doesn't respond. What should I do?

A. Be sure the print-option number in Lotus corresponds to the MS-DOS configuration menu on the HP 150. To set the print-option number, use the following commands: /WORKSHEET, GLOBAL, DEFAULT, PRINTER, INTERFACE. If your printer is configured in the PRN: section of the configuration menu, select Option 1 and press the RETURN key. The Lotus print-option numbers are listed below:

Option Number	MS-DOS Device Configuration
1	1 PRN (primary printer)
2	2 LST (secondary printer)
3	3 Internal Printer (HP 2674A)
4	4 AUX (auxiliary device, such as an HP 7470 or HP 7475 plotter)

After you select the print-option number, press QUIT. Then enter the UPDATE command to make your selection part of the Lotus default configuration, and press QUIT again to exit the menu.

Appendix A of the HP 150 Lotus manual contains more information about printer and plotter configurations.

NEW

Q. What device should I specify when I want to use Printgraph to send output to an HP 2686A (LaserJet) printer?

A. On the HP 150 Lotus Printgraph disc, select the HP 2674A device.

NEW

Q. Blank lines appear in the middle of my spreadsheet when I print it on LaserJet. How can I prevent this?

A. First, take the printer off-line and manually set it to the top of the page. Next, put the printer back on-line, enter the /PRINT PRINTER ALIGN commands, and press the RETURN key. (This sequence of steps sets the Lotus page-length counter to 1, to agree with LaserJet's top-of-form marker.) Then enter the /PAGE command to advance the printer paper to the top of the next page.

NEW

Q. I have a fixed-disc/floppy-disc drive. Can I take the master system disc out of the floppy drive when I'm starting a working session?

A. No. Even if you have installed Lotus 1-2-3 on the fixed disc, you must still keep the master system disc in the floppy drive when you're starting a 1-2-3 working session.

NEW

Q. I saved my graph by using the /GRAPH SAVE commands. Then when I retrieved my spreadsheet file, I couldn't find my graph. What (if anything) did I do wrong?

A. The /GRAPH SAVE commands save an image of your graph in a separate disc file that has the file-

name extension .PIC. This file can only be used with the Printgraph program to send the graph image to printer or plotter.

If you want to save a graph under a specified name within a worksheet file, you should use the /GRAPH NAME CREATE commands. This way, the named graph is not saved on disc until you re-save the worksheet file by entering the /FILE SAVE commands. When you enter these commands, Lotus saves the graph and the graph name as part of your worksheet file.

To view the graph again, enter the /GRAPH NAME USE commands. NOTE: Although these commands let you retrieve a graph from a spreadsheet file, you cannot use them with the Printgraph utility.

NEW

Q. How can I transfer my Lotus files from an IBM PC to an HP 150 computer?

- A. Use the HP Monitor/IBM PC program. This package, which works with DSN/Link and AdvanceLink, transfers both ASCII and binary files between an IBM PC or XT and an HP 150A or 150B (Touchscreen) computer.

NEW

Q. How can I move only values (NOT formulas) to a different location on my spreadsheet?

- A. There are two ways to do it:
- Copy the formula absolute and then use the EDIT and CALC keys; or
 - Use the /FILE EXTRACT commands to extract only values, and then use the /FILE COMBINE commands to bring the values back into the spreadsheet.

Q. How much memory does Lotus™ 1-2-3™ take up? How much memory will I have available on a 256K machine? How many cells can I fill up?

- A. The HP 150 standard memory configuration is 256K. After the operating system, P.A.M. and 1-2-3 are loaded, there is approximately 40K of worksheet space remaining. Filling cells with just numbers allows a user to fill 10,000 cells, whereas using formulae and filling every cell, a user can fill about 2,000 cells.

Q. What is the largest number I can store in 1-2-3? How accurately is it stored?

- A. *The largest number that 1-2-3 can store internally is 10^{308} ; smallest number is 10^{-308}
The largest number that can be displayed is 10^{99}
1-2-3 stores numbers up to 15 digits of precision.*

Q. Can I use my VisiCalc and dBASE II files with 1-2-3? What other programs will 1-2-3 exchange data with?

- A. *1-2-3 will accept the transfer files from VisiCalc and dBASE II, and from/to dBASE II and any DIF™ (Data Interchange Format) file, 1-2-3 can import and export standard ASCII text files too.*

Q. Are there any special considerations when I use a plotter with 1-2-3?

- A. *Depending on the type of plotter you intend to connect (see the article, "Using Plotters with the HP 150" in Communicator #8 for detailed information on the 7470 and 7475 plotters), we suggest configuring your plotter to HP system device AUX (address 5 of HP-IB) in the Device Configuration menu. You should also configure your plotter to HP System device PLT:. By doing this you will have one physical device (plotter) linked to two system devices, PLT: and AUX:. 1-2-3 sends graphics output to the AUX, and HP Graphics send output to the PLT device. The plotter will now work fine with 1-2-3 and existing applications.*

Q. The manual mentions limitations for the length of legends. What are they?

A. # of legends	Total characters per line
1	19
2	38
3	35
4	29
5	23
6	17

The maximum legend length is 19 characters. If you have spaces at the end of your legend, those count as characters.

Q. How can I install both Tutor discs using the new (B-version) INSTALL utility? (When I install Tutor 2, Tutor 2 writes over the already installed Tutor 1.)

- A. *Install Tutor 1 at the root-directory level and Tutor 2 in a subdirectory.*

Q. Why do I get a "Disc Error" when trying to bring up Lotus? What should I do to fix this?

A. *The 1-2-3 system's default directory is B;. You will receive a disc error upon entering 1-2-3 from PAM if your MS-DOS Device Configuration menu defines your fixed disc as A: and the floppy as something other than B:. 1-2-3 is trying to load from the B:drive.*

To alleviate this, change the start up directory in 1-2-3. Issue the /WORKSHEET GLOBAL DEFAULT DIRECTORY commands. Change the directory to the appropriate drive as defined in the MS-DOS configuration menu, then invoke the UPDATE command to make the change permanent.

If you don't want to change the default directory in 1-2-3 to match the MS-DOS Device Configuration menu, then change the Device Configuration menu to match 1-2-3 default directory of B:.

Manual Corrections

**Lotus 1-2-3 User's Manual
Original Version—Release 1A**

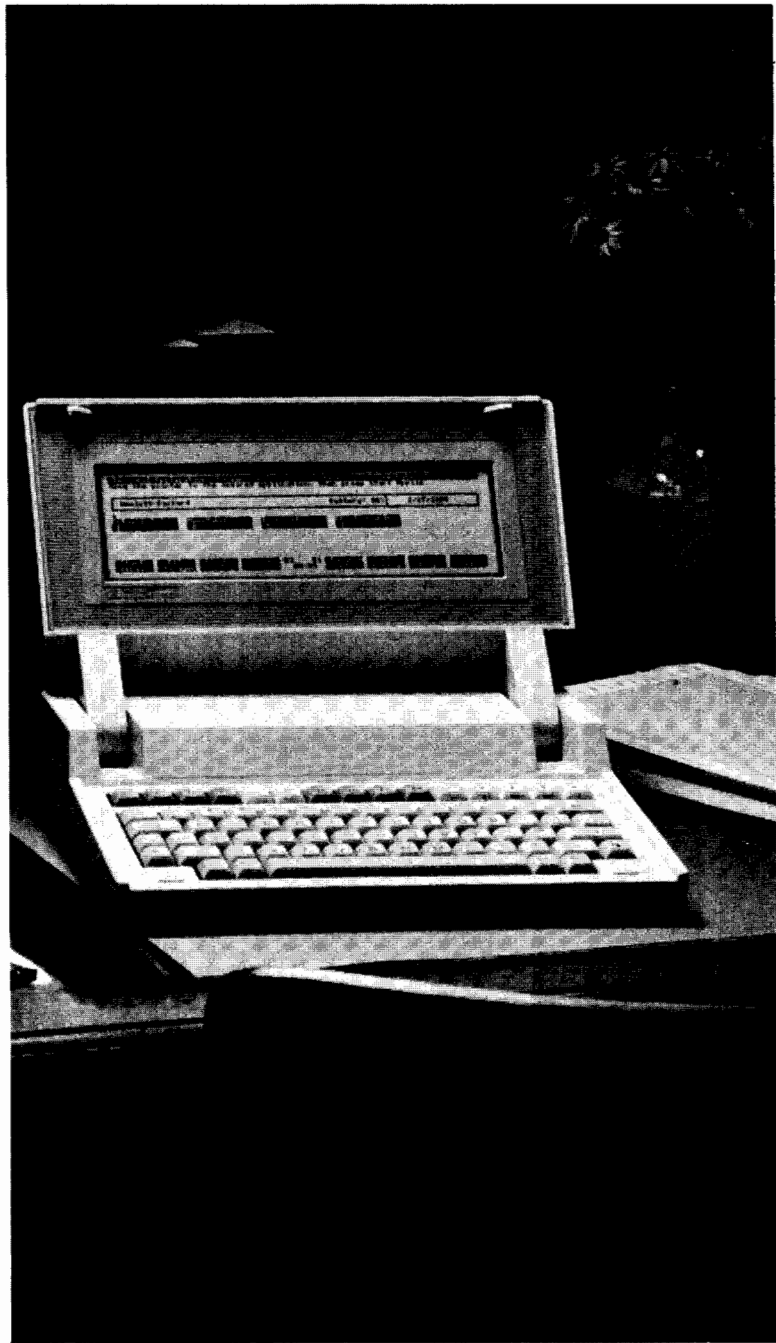
Page 15-14 The first example of control codes used as a printer set-up string turns compress print ON To turn on compress print.
027038107048083 (Escape &k2S)

Communicator Articles

–"Introducing 1-2-3 for the HP 150" Issue #8
–"Using Lotus/150 1-2-3 with the 7475A Plotter and B-Size Paper" Issue #9
–"Lotus 1-2-3: Disc Drives, Peripherals, and Data Bases" Issue #10

Courses

■ *Introducing 1-2-3*
This introductory workshop familiarizes you with the features, worksheet, and command structure of 1-2-3. Using hands-on practice, you will learn how to create and format a spreadsheet; save a worksheet and print a report; create and use a database; and create, print, and plot a graph.
45688A (one day)





This product is built into the Portable.

**Most Frequent
Questions**

Q. Can I send control or escape sequences to the printer in a MemoMaker file?

A. No. MemoMaker for The Portable does not support control or escape sequences.

Q. How much user memory does MemoMaker occupy when loaded?

A. Approximately 20K bytes.

Q. I ran out of memory while using MemoMaker. How can I configure The Portable for the largest possible memo I can write?

A. Any MemoMaker document is limited to the available system memory or 64K bytes (whichever is less). To create a document that occupies 64K bytes, your system memory must be set to at least 120K bytes (to allow for the 27K that MS-DOS uses and the 20K that MemoMaker uses). With system memory set to 120K bytes or more, you can create a document that occupies 819 lines (14.9 pages).

NOTE: The amount of memory a document uses is independent of the margin settings or the amount of white space. To maximize the size of a document, set the margins as wide as possible and don't leave blank lines.

Q. I'm having problems transferring files from my HP 150 to The Portable. What are the file-size limits for using MemoMaker on The Portable?

A. MemoMaker documents on The Portable are limited to 819 lines per file. To avoid problems transferring large files from an HP 150 to The Portable, you should break the files into smaller sections on the HP 150 before transferring them.

Q. I saved a MemoMaker file from The Portable to an HP 9114 disc drive, and then tried to load and print the file from my HP 150 using an HP 9122 disc drive. The drive hung up. What's wrong?

- A. Before you save your MemoMaker file from The Portable, you must format the disc in the HP 9114 drive as a single-sided disc. To do so, either use the MS-DOS "FORMAT" command, or follow the steps listed below:
- Insert the utilities disc for The Portable into the C: disc drive.
 - From P.A.M. or from the MS-DOS "A>" prompt, type "COPY C:FORMAT.EXE A:" and then press the RETURN key. (This procedure copies the formatting program onto disc A:.)
 - When the copying is done, remove the utilities disc from the drive, and insert the blank disc that you want to format.
 - Type "A:FORMAT C:/W" and press the RETURN key.
- (If you use the FORMAT utility with the /X, /Y, and /Z options instead of the /W option in the example above, the FORMAT utility will format the disc in double-sided format with 256, 512, or 1024 bytes per sector, respectively.)

Most Frequent Questions



- Q. The message "CAN'T CREATE FILE" appears on the screen when I try to save a memo. What's wrong?**
- A. Either the directory is full, or you incorrectly specified the file name or the disc ID. See Section A-1 of the MemoMaker manual for more information.
- Q. Can MemoMaker read WordStar Document files?**
- A. Yes. However, all printer controls (except for boldface and underlining) are stripped from the file and discarded. You must re-enter these controls if you intend to print the file later using WordStar.
- Q. Can I make MemoMaker come up automatically in a subdirectory?**
- A. Yes. To do so, you must change directories using File Manager or MS-DOS before you enter MemoMaker. (Unlike the HP 150, The Portable does not let you save a default subdirectory in the STARTUP.FMT file.)
- (1) Type "T" (Transfer) and "L" (Load). Then type the drive designator (if it is different from the drive in which Multiplan is installed), the subdirectory name, and the file name. Last, press the RETURN key.

For example, if you have a file named "grades" in a subdirectory named "test" in Drive B:, you would type T, L, B:TESTGRADES, and then press RETURN.

(2) If you need continual access to this subdirectory, you should type "T" (Transfer), "O" (Options), and then press the TAB key. (Pressing the TAB key displays the set-up field.) Then type the drive designator (if it is different from the drive in which Multiplan is installed), and the subdirectory name. Last, press the RETURN key. This procedure causes Multiplan to load and save all files in that subdirectory.

Q. Can I view more than two pages of files?

A. Multiplan has a feature that lets users view a screenful of file names. You can use this feature by typing "T" (Transfer) and "L" (Load), and then pressing any cursor key. This procedure causes the display of a screenful of file names. (If you followed procedure (2) in the preceding question, these file names will be the names in the subdirectory you selected.)

If you have more files than one screen can show, follow the steps listed below:

- Separately write down the name of the last file shown at the bottom right of the screen.
- Press the ESCAPE key.
- Type "T", "L", and the name of that last file.
- Press any one of the cursor keys.

The next screen should then appear. You can also use this procedure when the files whose names you want to display are located in subdirectories.

Problem Reports

MemoMaker Firmware

Problem: Single characters can be pasted in column 80. This may result in improper operation, as column 80 is reserved for MemoMaker control.

Workaround: Avoid pasting single characters in column 80.

Problem: Long path and/or file names may leave extraneous trailing characters on line 1.

Workaround: Use shorter names, or ignore.

Problem: The display is garbled when: MENU is turned off while in help mode *and* not turned back on again before returning from help mode.

Workaround: Make certain the MENU is on when returning from help within MemoMaker.

Problem: If there are exactly 25 files and a directory is requested, the user is prompted for "more", but there are no more files to display.

Workaround: Ignore the "more" prompt.

Problem: Directory on empty or non-existent drive doesn't give error message.

Workaround: Be aware of this 'non-response' as an indicator that the drive is empty or non-existent.

Problem: Keylabels are not updated after error condition in align block.

Workaround: Any subsequent operation will update the labels.

Problem: MemoMaker does not initialize the softkey response upon entry. Thus, if another program redefined those keys and P.A.M. does not get control of the computer (i.e. the user enters MemoMaker from MS-DOS), then the function keys will not work properly in MemoMaker.

Workaround: Initiate MemoMaker from P.A.M.

Problem: If you follow this sequence:

- a) your document is longer than twelve lines,
and
- b) you press [EXTEND][END CURSOR] (right cursor) to move the cursor to the end of the document, *and*
- c) press the [Cut Out Block], *and*
- d) move the cursor up until the display scrolls down at least one or two lines, but not all the way to line 1, *and*
- e) press [Block OK], *then*

the cursor will be in a wrong place (in the top-left corner).

If you press the up/down cursor keys, it will appear that all of the text in the file is gone. If you start typing while the cursor is in the top left corner, you can clear the character set that is currently in LCD memory.

Workaround: Press [EXTEND][HOME CURSOR], and the rest of the text will return.



To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Most Frequent
Questions

NEW

Q. Can I set the margins in MemoMaker to work with an HP 2601A printer with a sheet-feeder?

A. Yes. Because the sheet-feeder positions paper to the right of where continuous-form paper enters the printer, you must reset the left margin. To do so, follow the steps listed below:

1. Position the cursor to the right by the same number of spaces that you want to move the left margin.
2. Press the CONTROL key.
3. Type a left bracket followed by a '9', thus: [9.

When you print the memo, the left margin will be offset by the number of spaces you moved the cursor in Step 1.

To move the left margin farther to the right, follow the steps listed above, adding the number of additional spaces you want.

Q. How do I reformat my text after changing my margins or editing a paragraph?

A. Press the function key Block Keys. Position the cursor at the beginning of a block of text, and press Align Block. The message Use cursor to define a block then select Block OK will appear.

Move the cursor to the end of the section to be aligned. Once the whole segment is highlighted, press the function key Block OK. The message Select Alignment OK if the new alignment is correct will appear.

Press Alignment OK and the text will be reformatted.

Q. Can I extend my right margin beyond 80?

A. No, MemoMaker only goes to column 79.

Q. When I bring a MemoMaker file into WordStar, why is the left margin so wide?

A. WordStar automatically gives you a left margin which is one inch wide. MemoMaker does not. If you were to put a one-inch wide left margin in a MemoMaker document, and bring that memo up in

WordStar, the result would be a two-inch-wide left margin. To avoid having to reformat your text every time, place the dot command .PO 0 (the number 0) at the top of your WordStar document before printing it out.

Q. How can I get another memo without exiting MemoMaker?

A. In the Print Keys, turn AutoFeed off (no asterisk). Press the function key Get Memo. You get the message Do you want to save the current memo as Nameless or the current filename?

If you want to save anything, press the function key Yes, Save. The prompt Enter File Name (or use File Manager) will be displayed. Enter a valid file name of another memo and your new memo will be displayed on the screen.

Q. How do I print the portion of the memo that can be displayed on the screen?

A. Make sure your cursor is positioned at the place where you want to begin printing, then press the PrintMemo function key. This will print out the contents of the memo to the end of memory.

You may selectively print out sections of text by placing .PA commands in your text, and positioning your cursor before the command, such as at the beginning of a paragraph. When you press the PrintMemo softkey, only the contents of the memo from the cursor to the .PA command will be printed.

Q. Is it dangerous to re-boot or turn off my HP 150 Touchscreen Personal Computer while MemoMaker is running?

A. YES! MemoMaker opens a temporary file on the program disc when it is loaded. If you abruptly leave MemoMaker by turning off the machine, or by resetting the system, there is a risk of file damage. This is particularly true if you are working with another program which is copy-protected. If the other program disc is in the disc drive, the program on that disc could be damaged.

So, remember, whether you are running MemoMaker or another application, always return to the PAM screen before turning off the machine.

Q. How can I create escape sequence in MemoMaker and send it to my printer?

NEW

A. To create an escape character in a memo, press the CONTROL key and the left-bracket ([]) key simultaneously. A left bracket should appear on the screen. Then type the rest of the escape sequence as it appears in the manual for your printer. When you print the memo, the escape sequence will be sent to the printer at the point at which you inserted it into the memo.

NEW

Q. I'm using MemoMaker to create the source-code file for my program. The program is correct, but compilation errors still happen. Why?

A. When MemoMaker word-wraps text, it sets the eighth bit of some of the characters in a file. Compilation errors happen because the compiler rejects these characters. Unlike WordStar, MemoMaker does not have a non-document mode; therefore, you must add a "hard" carriage return to the end of each line of code. Do so by pressing the RETURN key at the end of each line.

NEW

Q. What causes Internal Error 13.2 in Version A.01.06 of MemoMaker?

A. Internal Error 13.2 happens when you select "Exit MemoMaker" before you have saved a new or edited memo and select the "Yes, Save" response in answer to the MemoMaker prompt "Do you want to save the current memo as {filename}?"

This error happens only if a file is large enough to cause MemoMaker to open a temporary file. Although the "Hit RETURN to Terminate" message appears, MemoMaker will in fact save the file. To avoid receiving this error message, always save the material you want to save before you select "Exit MemoMaker."

NEW

Q. How can I avoid Internal Error 99.600?

A. Internal Error 99.600 happens when you try to load a file that is too large for MemoMaker to handle. To avoid this problem, break the file into smaller segments before you read it into MemoMaker.

NEW

Q. What causes Internal Error 99.800 in Version A.01.06 or A.02.01 of MemoMaker?

A. Internal Error 99.800 happens when you press the right-hand SHIFT key and hold down any other key in order to repeat a character. The only way out of the error is to do a hard reset—which in effect erases any material you haven't yet saved.

Therefore, we suggest you avoid using the right-hand SHIFT key when you want to enter repeated characters.

Q. How can I run MemoMaker from MS-DOS?

A. There are two ways to do it:

1. Type the following command line:
RUN MEMOMAKR.OVL; LIB=SYSLIB.PAS
2. Create a batch file in MemoMaker by creating a memo, entering the above command line in it, and saving the memo with the ".BAT" extension of the filename (for example, "MEMO.BAT"). Then, from MS-DOS, simply type the filename (in this case, "MEMO"). MS-DOS will automatically execute the command line and load MemoMaker.

NEW

Q. Is there anything tricky about bringing VisiCalc or Lotus 1-2-3 files into MemoMaker?

A. Not really. Just remember to save the files in VisiCalc or Lotus as printfiles.

NEW

Q. MemoMaker automatically prints 55 lines per page. How can I make it print more lines before it sends a form-feed command to the printer?

A. Here is a manual procedure:

1. Place a ".PA" (forced page-ending) command on the line after the last line of text you want to appear on each page of your document. (For example, for legal-size pages, place the ".PA" command at approximately line 70.)
2. Position the cursor at the beginning of the first page to be printed.
3. Select "Print Keys".
4. Select "Print Memo".
5. As the cursor reaches approximately line 15 of the document on the screen, select "Cancel Print".
6. Immediately press "Print Memo" again. MemoMaker will then continue printing text until it reaches the ".PA" command, or until it has printed another 55 lines.

NEW

NOTE: Although this procedure also works with the LaserJet printer, you will need to send the appropriate escape code to the printer and also feed the paper manually. (This procedure will not work with MemoMaker on The Portable.)

NEW

Q. What causes trashed directories and broken chain files in MemoMaker and WordStar?

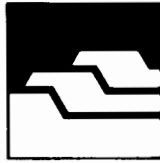
A. *The way these applications use disc space as additional work areas. MemoMaker uses the application disc as its work area; WordStar generally uses the work disc as its work area. Switching discs or changing drives while you are using one of these applications, and then exiting from the application, will result in files left open and incorrect directory information on the discs. A hard reset can also cause directory errors.*

To avoid these problems, be sure you have enough operating space on the discs, and don't switch discs while using MemoMaker or WordStar. Also avoid hard resets during working sessions.

**Quick Reference
Guide**

MemoMaker/150 Quick Reference
Guide 45420-90000





To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Program Update

Multiplan is now available for The Portable as well as for the HP 150 Touchscreen personal computers.

By ordering product number 45473D, you will get a thorough reference manual, a quick-reference guide and a 3.5" diskette.

Most Frequent Questions



Q. Does Multiplan support subdirectories?

A. Yes. There are two ways to gain access to a file that is stored in a subdirectory:

(1) Type "T" (Transfer) and "L" (Load). Then type the drive designator (if it is different from the drive in which Multiplan is installed), the subdirectory name, and the file name. Last, press the RETURN key.

For example, if you have a file named "grades" in a subdirectory named "test" in Drive B:, you would type T, L, B:TESTGRADES, and then press RETURN.

(2) If you need continual access to this subdirectory, you should type "T" (Transfer), "O" (Options), and then press the TAB key. (Pressing the TAB key displays the set-up field.) Then type the drive designator (if it is different from the drive in which Multiplan is installed), and the subdirectory name. Last, press the RETURN key. This procedure causes Multiplan to load and save all files in that subdirectory.

Q. Can I view more than two pages of files?

A. Multiplan has a feature that lets users view a screenful of file names. You can use this feature by typing "T" (Transfer) and "L" (Load), and then pressing any cursor key. This procedure causes the display of a screenful of file names. (If you followed procedure (2) in the preceding question, these file names will be the names in the subdirectory you selected.)

NEW

If you have more files than one screen can show, follow the steps listed below:

- Separately write down the name of the last file shown at the bottom right of the screen.
- Press the ESCAPE key.
- Type "T", "L", and the name of that last file.
- Press any one of the cursor keys.

The next screen should then appear. You can also use this procedure when the files whose names you want to display are located in subdirectories.

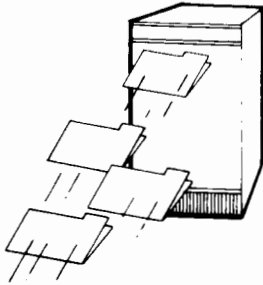
NEW

Q. How can I stop the printer after one page has been printed?

A. Use the PRINT OPTIONS command to define the number of rows and columns to be printed so that only one page will be filled. Also remember to set the correct margin size by using the PRINT MARGINS command. Note that these commands let you print selected parts of your spreadsheet on any size paper.

Communicator
Articles

—"Internal Rate of Return: Using the Iteration
Option in Multiplan" Issue #10



To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Most Frequent Questions



NEW

Q. Is a new version of Personal Card File available?

A. Yes. Version B.01.02 of Personal Card File (Product Number 45422A) is now available. It includes the following features and improvements:

- The sample-card forms are different.
- The AutoDial feature now lets you enter the "#" and "*" symbols, and also lets you enter up to 39 characters (very useful for long-distance dialing!).
- The deletion function provides protection against accidental deletions.
- The Lines per Label and Lines per Card functions allow more flexibility in printing.
- New or modified function-key labels make PCF even easier to use.
- Improved file-handling procedures make it easier to save or gain access to files.
- The new "map" of PCF helps locate function-keys.

Q. How can I order Version B.01.02 of PCF?

A. Place your order through Computer Supplies Organization (Division A500); see also "How to Order" in the Current Information section of this issue.

Q. How many cards can I have in a cardfile, and how many characters can I have on a card?

A. Provided there is enough disc space available, you can create up to 550 cards in a cardfile, at 1520 characters per card (19 lines by 80 columns). The number of cards per cardfile increases or decreases depending on the amount of disc space available.

Q. How can I modify my cardfile after I have created the form and entered data into it?

- A. First transfer your current data out of your cardfile, using the Transfer Out function key. Create a new cardfile, using the Show Old Form function key. Modify the fields you wish. Transfer the data back into the new cardfile using the Transfer In function key.

The above procedure will allow you to:

- Shorten or lengthen your fields.
- Add additional fields at the bottom of the card.
- Rename your fields.
- Add additional descriptive text.

You cannot delete fields, insert new fields in the middle of the card, or change the order of the fields.

Q. How can I create more than 550 cards?

- A. PCF is programmed to accept only 550 cards. If you are using a Winchester disc drive, you will still only be able to create 550 records per cardfile.

Q. How come I can't add the maximum 550 cards to my cardfile? I keep getting a disc full error, and I haven't added 550 cards yet.

- A. The maximum number of cards that can be entered per cardfile is 550. If the card "form" has a lot of "green fields" for data detail, 250 or so cards may fit on one floppy disc.

NOTE: Even if an entire card is not filled out, each entry field is allocated space on the disc.

Q. How can I transfer out PCF data to use with MailMerge?

- A. You transfer out a file to use with MailMerge the same way you would transfer out the data of a file to use with other applications such as Condor, dBaseII, or BASIC:

- Load your cardfile.
- Touch CARDFILE TASKS.
- Touch COPY CARDFILE.
- Touch TRANSFER OUT.
- Name the "Transferred Out" file.
- Touch EXIT TASKS.

After this procedure, you will have a file that is in a "BASIC Quoted String" format. This is the type of format required for use in MailMerge or to transfer into Condor, dBase II or BASIC.

NEW



Q. When I print an individual card, why are control characters printed out instead of lines and bold print?

- A. *This problem is most common with non-HP printers. Not all printers are compatible with the Print Cardfile function of PCF because PCF sends special escape sequences to the printer to generate bold and underline print.*

To determine whether a particular printer is compatible, change the Model type in the 150's Device Configuration menu to Special, and print out the file. If the control characters continue to print out, the only print feature you can use is Print Cardfile. This function doesn't permit any escape sequence characters to be sent.

Q. Why isn't autodial working when I select Dial Phone?

- A. *The only modems that operate with PCF are Hayes or "Hayes-compatible" modems. If you're using a compatible modem:*

- *Check your Device Configuration menu to be sure that COM2 is set to the port that your modem is connected to.*
- *Verify that the configuration for your port is correct. Remember to use the Full Duplex Hardwired configuration (not the Full Duplex Modem configuration).*
- *Check the Global Configuration to verify that the Serial Dev is set up to use the port the modem is connected to.*

If the modem is not a Hayes or "Hayes-compatible" modem, send the following string from Terminal Mode to the modem. This is the string PCF sends out when Autodial is initiated:

```
AT CO E0 M1 Q1 S3=13 S7=7 T D  
<phone number>
```

If this string does not cause the modem to respond, and the configuration is set properly, PCF is not compatible with that modem.

NEW

Q. How can I bring a PCF file up in WordStar or MemoMaker for viewing or editing as a document?

- A. *PCF can output the contents of a cardfile to a file. When viewed, this file looks exactly the same as if the Print to Printer function had been used. The steps in the output procedure are listed below:*
- *Load the Cardfile to be used.*
 - *Select Print Cardfile.*
 - *Remove P's from any fields that you don't want printed.*
 - *Select Label Options.*
 - *Select Lines Per Lbl.*
 - *Set the number of lines per label to correspond to the number of lines to be printed plus one, in order to provide a blank line between records.*
 - *Select Print To File.*
 - *Type a file name. Remember to precede it with B: if you wish to store the file on drive B.*
 - *Select Exit Options.*
 - *Select Print & Exit.*
 - *When the print to file is complete, Exit PCF and load the program that you wish to access the file from.*

Q. PCF prints out the cardfile all the way over to the left margin. How can I get it to print farther to the right on the page?

- A. *To adjust the left margin, you must send an escape sequence to the printer before you load PCF. The steps in this procedure are listed below:*
- *Turn on the system and the printer.*
 - *From the P.A.M. screen, select Terminal to enter the terminal mode.*
 - *Select REMOTE MODE to remove the * (asterisk) from the function key.*
 - *Select DISPLAY FUNCTNS to add the * (asterisk) to the function key.*
 - *Type the appropriate escape sequence for the printer (refer to your printer manual for the exact sequence used to alter the left margin).*
 - *Select DISPLAY FUNCTNS again to remove the *(asterisk).*
 - *Press SHIFT and Print simultaneously to send the escape sequence to the printer.*
 - *Select REMOTE MODE to add the * again.*

NEW

- Press SHIFT and the "Stop" key to return you to the main P.A.M. menu.
- Load PCF and print out the cardfile.

Q. Why don't "long" phone numbers work when I autodial?

A. Versions A.01.02 and A.02.01 of PCF use 23 characters for an Auto Dial phone number. If you have a long log-on number to use a service like MCI, you may run out of characters and not be able to use Auto Dial with those long distance numbers. Version B.02.01 of PCF accepts 35 characters, thus solving the problem of long phone numbers.

Q. How can I change the default drive setting to A: instead of B:?

- A. You need to change the directory from PCF:
- Load PCF.
 - Select Cardfile Tasks.
 - Select File Manager.
 - Select PCF Dir.
 - Type in A: and press RETURN.
 - SELECT Return Dir.
 - SELECT Back To PCF.

Q. Why are there three files in File Manager for my cardfile?

A. PCF creates three files for each cardfile. And all three are necessary to provide access to your cardfile:

File Name	Purpose
FILENAME.PDT	This file contains the data for the cardfile
FILENAME.PIX	This file contains the Rolodex information
FILENAME.PFM	This file contains the card-form specifications

Q. Sometimes, when I press Exit Select I completely exit PCF. Why?

A. This key (both Touch and the Softkey) is very sensitive. When you press Exit Select, be sure to touch the key very quickly, and do not hold your finger on the key. Key strokes are stacked up ("buffered"), and it is possible to activate Exit PCF if you hold your finger on the key.





To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Most Frequent Questions
NEW

Q. Why is it that when I input the number 65.6 it appears on the command line as 65.5999999999999?

A. The VisiCalc® program translates the number from the actual value to an internal representation and then back to an alphanumeric representation. Page 1-16 of the VisiCalc Procedure Manual explains the considerations used in displaying and rounding numbers.

NEW

Q. How can I print in compressed mode on my 82906A printer?

A. In the printer set-up string, press the ENTER key and then type &k2S.

NEW

Q. How can I combine VisiCalc files into one large worksheet?

A. There is no easy way to do this. One possible way is to take the dimensions of the files to be integrated into the larger spreadsheet. From this information, insert rows and/or columns in the main large sheet to accommodate the other sheet's dimensions. When you are done, do not clear the screen; simply overlay the file by loading it and then recalculating.

NEW

Q. After I set my spreadsheet with the global configuration, why do certain cells not conform to the formatting?

A. Formatting individual cells overrides the global formatting. You can easily modify cells to match the global formatting by using the /FD command.

NEW

Q. How can I replicate a rectangular block of data in another area of my spreadsheet?

A. You cannot replicate a rectangular block of data. You must replicate a single row or column at a time.

NEW

Q. How can I transfer data from a VisiCalc file to a WordStar file?

*A. Follow the steps listed below:
–Print the contents of the VisiCalc spreadsheet to a print file on a data disc using the Print to File softkey or the /PF command. This will add a .PRN extension to the filename you give it.*

-Load WordStar and open a file in non-document mode. Position the cursor at the place the file should be added or inserted. Read the file remembering the .PRN extension.

-Delete the extraneous line of characters at the beginning of the transferred VisiCalc file.

Q. When I want to load a spreadsheet from drive B, why does it automatically give me the directory for the A drive?

A. *The default drive is always the one you load the VisiCalc program from. To change this, use the File Manager and the VisiCalc Directory keys. In version A.01.03 there is a command /S and a pair of softkeys (Load and Store, Choose Dir) to allow a change of the current drive and directory.*

Q. How can I get more memory to handle a larger VisiCalc spreadsheet?

A. *There are two ways to do this:*

- 1. Add additional HP 150 memory. The maximum memory configuration, 640K bytes, is recommended. Additional memory is recommended if your spreadsheet contains more than 1200 cells or has many formulas or labels.*
- 2. Disabling P.A.M. will also allow you to gain more spreadsheet memory (an additional 60K bytes).*

Q. Why can't I insert a column or row into my worksheet? My computer just beeps when I try.

A. *There are three possible reasons:*

- 1. You may have a worksheet that has used up all the memory in your computer and cannot grow any larger. Check your memory indicator for O or OM.*
- 2. Your worksheet may be at the maximum size that VisiCalc will allow (254 rows or column BK).*
- 3. You may have a blank formatted cell, label or value on row 254 or column BK. Delete the row or column at this location. Store the worksheet, clear your screen and then load your worksheet back up again. You should then be able to insert the row or column.*

NEW

Q. What is the current version of VisiCalc that is available on the HP 150? How do I upgrade from earlier versions?

A. *The most current version of VisiCalc is B.01.02. For information about upgrading to this version from any previous version, contact HP's Computer Supplies Operation.*

If you have Version A.01.01, you can receive a free upgrade to version A.01.02 by sending your master to "VC Update Kit", 3410 Central Expressway, Santa Clara, California 95051. A new copy of the A.01.03 version will be placed over your existing copy and this new disc will be returned to you immediately. (When you get the new disc, make sure you remove the old version of VisiCalc using the INSTALL program, and re-INSTALL the A.01.03 version of VisiCalc.) NOTE: this upgrade program is provided free of charge and is available indefinitely at this time. HP reserves the right to modify the terms of this upgrade program without notice.

NEW

Q. I have a 150B and I have version A.01.03 of VisiCalc. I installed VisiCalc onto a subdirectory, and now when I try to run VisiCalc, I get the message Unable to load language file and I'm returned to P.A.M. What's wrong?

A. *You cannot run VisiCalc when it's installed on a subdirectory. Either reinstall VisiCalc on the root directory or upgrade to version B.01.02 which lets VisiCalc be run when installed on a subdirectory.*

NEW

Q. I see Shift Alt at the bottom of my screen, and I see garbage on the screen when I enter characters or press keys. What happened?

A. *You probably pressed the CONTROL and > keys simultaneously instead of the SHIFT and > keys you wanted to produce the GOTO command. This combination of keys enabled the alternate character set, resulting in the strange characters you see on the screen. To get back to the main character set, press the CONTROL and < keys simultaneously.*

Q. How do I disable P.A.M.?

A. You need to set up two diskettes, one for the operating system and one for VisiCalc. See the steps below:

- Format a blank disc and name the disc volume, "NO-PAM".
- Copy the HP 150 SYS-MASTER disc programs to the NO-PAM disc (you can use COPY SYSTEM in the Format utility).
- Copy COMMAND.COM from the HP 150 SYS-MASTER disc to the NO-PAM disc.
- Finally, rename file CONFIG.SYS to CONFIG.SAV on the NO-PAM disc.

You should now have the following files on your NO-PAM disc:

CONFIG.SAV	PAMCODE.EXE
PAM.MSG	COMMAND.COM
PAM.BAT	

Now, to set up the VisiCalc disc:

- Format a blank disc and name the disc volume, "VC".
- Install VisiCalc onto the VC disc.
- Delete the tutorial worksheet files (files with extensions of .VC) on the VC disc. This frees plenty of space on the disc for the file you're going to copy in the next step.
- Copy COMMAND.COM from the HP 150 SYS-MASTER Disc to the VC disc.

You should now have the following files on your VisiCalc disc:

VISICALC.RM\$	VCRUN. EXE
VCLIB.PAS	VISICALC.OVL
VISICALC.HLP	VISICALC.MSG
VC.BAT	COMMAND.COM

Now, when you're ready to use VisiCalc, you:

- Insert the NO-PAM disc into drive A, and the VC disc into drive B.
- Hold down the CTRL and SHIFT keyboard keys, then press the RESET key. You are prompted by MS-DOS for the date and time. Next, you see A>.
- Type B:, then RETURN.
- Type VC, then RETURN.

Q. If I have disabled P.A.M., how do I run VisiCalc?

A. It is recommended that you have your MS-DOS prompt be A>, and place your VisiCalc application disc in drive A. Now type VC to begin VisiCalc.

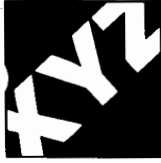
Q. When I reload my spreadsheet from the disc, some of the cells have the word "ERROR" or some portion of the word displayed in them. What can I do to prevent this?

A. The ERROR in the cell is the result of the order in which cell's contents are calculated. The order is based on the formula contained in the cell. If the value for the cell is calculated based on cells not yet calculated or having old values in them, ERROR is displayed in the cell to reflect this fact. This is known as forward referencing, and is explained in the VisiCalc Procedures Manual, page 1-17. Portions of the ERROR message are displayed if the width of the cell is less than 5.

One or several manual recalculations (press the exclamation key—!) may be needed to clear up all ERROR messages in the cells. The permanent solution is to reorganize the worksheet, avoiding all forward references.

Quick Reference Guide	VisiCalc/150 Quick Reference Guide 45405-90000
Communicator Articles	- "Getting VisiCalc to Round Dollar Values to Two Places" Issue #5 - "Comparing VisiCalc and MicroPlan" Issue #7
Books	VisiCalc Programs Made Easy Castlewitz, Osborne-McGraw Hill, 1983 HP Product Number 92233Q
	VisiCalc: Home and Office Companion Castlewitz and Chisausky with Kronberg; Osborne-McGraw Hill, 1982 HP Product Number 92233Z
Courses	■ <i>VisiCalc/150</i> A solid introduction to the elements of a VisiCalc worksheet is provided in this workshop. Participants will learn to create, edit and print worksheets, identify and use 16 commands, activate the function keys, and store and load worksheets. 35125A (1 day)





To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Program Update

**WordStar/150
Revised Version—3.3B**

You can now get an upgrade kit for WordStar®/150 from HP. This upgrade, which contains version 3.3B of WordStar, significantly improves the performance of previous versions 3.3A and 3.30. Improvements include increased printer speed (10% to 40% faster) and faster program loading, cursor movement, screen responsiveness, and horizontal scrolling.

Additional printer features are also included in the upgrade. Support for the 2674A Internal Printer using perforated paper has been added to the Printer Menu. Enhancements have been added to work with non-HP printers: Okidata printers now have underline capabilities, and the Diablo 630 printer has superscript and subscript enhancements. The software update kit also contains an update for the *WordStar/150 Self-Paced Training Guide*.

Refer to "Software Exchange Kits," in this issue's Current Information Insert, for ordering instructions.

**Most Frequent
Questions**

NEW

NEW

Q. Can I have a default supplemental dictionary in SpellStar?

A. *Probably not. According to MicroPro, there is no way to make a supplemental dictionary appear in the "Add Supplemental Dictionary" field when you start to do a spelling check.*

Q. Can I make SpellStar treat words in single quotes the same way it treats words enclosed in double quotes?

A. *Yes. You can either tell SpellStar to add the word in single quotes to your dictionary (as a "new" word), or else use the "Find and Replace" function to change all single quotes to double quotes before you do a spelling check. (SpellStar ignores double quotes around a word.)*

NEW

Q. I pressed the RETURN key after each line in my document and now I can't reformat the paragraphs. How can I get rid of the "hard" carriage returns in the middle of the paragraphs?

A. If you have MemoMaker, bring the WordStar document into MemoMaker and reformat each paragraph by using the "Align Block" function. If you don't have MemoMaker, follow the steps listed below. This procedure removes unwanted carriage returns from documents that contain up to approximately nine full pages of text:

1. Open the document and home the cursor.
2. Select "Format and Find".
3. Select "Find and Replace".
4. When WordStar displays the "FIND?" prompt, press the CONTROL key and the "N" key simultaneously twice. The characters should appear on the screen.
5. When the "REPLACE?" prompt appears, press the "@" key and then press the RETURN key.
6. When the "OPTIONS?" prompt appears, type "NG" and then press the RETURN key.
7. Once the find-and-replace process has been performed, home the cursor and select "Find and Replace".
8. When the "FIND?" prompt appears, press the CONTROL key and the "N" key simultaneously once, and then press the RETURN key.
9. When the "REPLACE?" prompt appears, press the space bar and then press the RETURN key.
10. When the "OPTIONS?" prompt appears, type "NG" and then press the RETURN key.
11. When the find-and-replace process finishes for the second time, home the cursor again and select "Find and Replace".
12. When WordStar displays the "FIND?" prompt, type "@" and press the RETURN key.
13. When the "REPLACE?" prompt appears, press the CONTROL key and the "N" key simultaneously twice; then press the RETURN key.

14. When the "OPTIONS?" prompt appears, type "NG" and then press the RETURN key.
15. Home the cursor and reformat the paragraphs.

NEW

Q. How can I add footnotes in WordStar?

- A. You can't. Although WordStar lets you place footers on pages (via the .FO command), it has no provision for real relocatable footnotes.

NEW

Q. What does the "Suppress Page Formatting" option do? Can I use this option to turn off page-numbering when I print a document?

- A. This option makes WordStar print out "dot" commands without executing them. You cannot use it to turn off page-numbering. Instead, enter the ".OP" command at the beginning of your document.

NEW

Q. Can I transfer WordStar files to Lotus 1-2-3?

- A. Yes. Follow the steps listed below:
1. When you create the WordStar document, place quotation marks around any item that will be text and place a comma after each value. Save the file with the ".PRN" extension of the filename (for example, "FILENAME.PRN").
 2. From Lotus, use the /FILE IMPORT NUMBERS commands to bring in the file you created in Step 1 above. The text that was enclosed in quotation marks now becomes labels, and values set off by commas become numbers.

NOTE: If you do not plan to perform data-base functions on the text you are transferring from WordStar, you can ignore these steps and simply use the /FILE IMPORT TEXT commands to bring the file into Lotus. All of the information will reside in the "A" column in Lotus, but will print correctly.

NEW

Q. How can I turn the function keys off and on in WordStar?

- A. To turn the function keys off:
1. Press the CONTROL key and the MENU key simultaneously.
 2. Press the MENU key.
- To turn the function keys on:
1. Press the CONTROL key and the USER SYSTEM key simultaneously.
 2. Press the SHIFT key and the USER SYSTEM key simultaneously.

NEW

Q. Why does the system hang up after I use the FIND STRING command or press the SHIFT and HOME CURSOR keys simultaneously?

A. These commands cause WordStar to search for an end-of-file marker. If an edited file was created by another application or has come from another system (such as an HP 3000), it probably does not use the same end-of-file marker (CONTROL-Z or ^Z) that MS-DOS requires. The system hangs up because WordStar cannot find the end-of-file marker that it is looking for.

To add a correct end-of-file marker, either place a CONTROL-Z marker in the file on the host computer before using the file in WordStar, or else mark the entire document as a block and write that block to a new file. (In the latter case, WordStar adds the correct marker to the new file.)

Q. Why does double-spacing occur in files that I create with WordStar or MemoMaker and then send to another computer via DSN/Link?

A. WordStar and MemoMaker create "soft" carriage returns when the lines you type exceed the margins. The extra line-spacing occurs because DSN/Link misinterprets these carriage returns. To avoid this problem, either press the RETURN key at the end of each line in a document, or else use the REPEAT COMMAND and CARRIAGE RETURN functions in the file so that each line ends with a "hard" carriage return. (Of course, when you do so, be sure that Insert Mode is turned off.)

Q. How do I change the pitch on my 82906A? How can I print in compressed mode on my internal printer?

A. Insert a Control PA (^PA) in your text to change the pitch on an 82906A. To return to the default pitch, insert a control PN (^PN).

To set your internal printer to compressed mode, insert a Control PA (^PA) in your text; a Control PN (^PN) will return the printer to normal mode.

Q. How do I turn off Microjustification?

A. Insert the dot command .UJ 0 (the number 0) into your document. The dot command to resume microjustification is .UJ 1 (the number 1).

NEW

Q. How many words can I add to the SpellStar Supplemental Dictionary?

A. *There is room on the dictionary disc for approximately 6,000 to 7,000 words. This allows a total of approximately 26,000 words for the combined Main and Supplemental Dictionaries.*

Q. Why does my printer seem to print more slowly when I use WordStar?

A. *The WordStar program is designed to print at a speed that insures the printer buffer won't overflow. The 3.3B and 3.3A versions of WordStar have been improved to increase printer speed. (Refer to "Program Updates" earlier in this article.) If you have version 3.30 of WordStar, you may increase the speed of only the primary printer with the following:*

-Run WINSTALL. Answer the questions as usual until you reach the INSTALLATION MENU. Instead of answering A, B, C or X, type in a + (plus sign).

-The program will ask for a confirmation, which is done by pressing return. It will then ask for a starting address. Respond with :HAVBSY followed by a return.

-The WINSTALL program will respond that this corresponds to address 7CA. It will ask if this is the response you want. It is, so answer YES.

-The WINSTALL program will display the address, its current value (which should be 00), and will ask for a new value. Type in FF then press return.

-WINSTALL will then ask for a value to put in the next address. Nothing else should be changed, so enter a period (.) followed by a return.

-WINSTALL will now give you a chance to get back to the INSTALLATION MENU by entering an X. Do this now, and make any other changes if desired, then save the changes as usual.

Q. How do I add SpellStar and MailMerge to my WordStar work disc?

- A. *SpellStar™ and MailMerge™ are not installable programs. They are WordStar utilities which are copied onto your WordStar work disc using the following procedure:*
- Place your WordStar work disc in drive A
 - Place the SpellStar or MailMerge disc in drive B
 - Select the function key File Options
 - Select the function key Copy File
 - For SpellStar, copy the files SPELSTAR.OVR and SAMPLE.TXT
 - For MailMerge, copy the file MAILMERG.OVR
 - The SpellStar Dictionary (SPELSTAR.DCT) should be copied to another disc.

Q. When I output from WordStar, why do I get scrambled printout?

- A. *This occurs when WordStar is first run but the printer is not correctly configured. To fix this, you need to run the WINSTALL procedure as outlined in the WordStar Self-Paced Training Manual, Appendix A (Installation Procedures), Page A-9.*

Q. Can subdirectories be accessed through WordStar?

- A. *No. WordStar does not utilize subdirectory capabilities at this time.*

Q. Is there a way to save certain margins and tabs with my WordStar file so that I don't have to figure out which values I used each time and then individually reset them?

- A. *Yes, just create your own ruler:*
- First, create a comment line in the file by placing two dots (periods) starting in the first column.*
- Enter a Control P (^P) and then press Return. The cursor will immediately move to the next line, and a hyphen will appear in the flag column (extreme right hand column of your screen). This hyphen indicates that the line the cursor is on will overprint the line above it.*
- Starting at the current position (first column of the line below the double dots), enter hyphens (-), exclamation points (!), and pound signs (#) to represent spacing, tabs and margins for the ruler you want.*

For example:

```
..
-----!-----!!-----#-----!----->
>
>
>
```

Once you have this ruler line in your file, simply move the cursor anywhere on the sample ruler and type Control OF (^OF). The actual ruler at the top of the WordStar screen will change to reflect the ruler in your file.

To set margins from previous text: If you are not concerned with tabs and have previously entered text material that has the margins you want, you can place the cursor on any line of this text and type Control OF (^OF). The right and left margins will immediately change to match those of the line that the cursor is presently located on. Tabs will remain unchanged.

NEW

Q. Can I use MailMerge with MemoMaker?

A. No.

Q. In MailMerge, can I use the "Start at Page Number" and "Stop After Page Number" options to merge only selected parts of a data file?

A. No. The record number of a particular line in a data file does not necessarily correspond to a page number. The "Start at" and "Stop After" functions are meant to be used with actual page numbers in a multi-page document (or, in the case of MailMerge, with a multi-page matrix document).

NEW

If you want to start a merger at a certain record other than the first record, or end the merger before the end of the data file, follow the steps listed below:

1. Mark the beginning and the end of the "block" of records you want to merge by using the "Mark Blk Start" (^KB) and "Mark Blk End" (^KK) functions.
2. "Write" the block (^K) to a new file.
3. Change the .DF line in the matrix letter to point to the new file instead of the original data file.
4. Run MailMerge.

Q. Can I use MailMerge to center variables?

A. No. MailMerge cannot perform separate centering calculations for variables when bringing the variables into the matrix document.

NEW

NEW

Q. Will MailMerge work with Lotus 1-2-3 data bases?

A. Yes. Create a .PRN file in Lotus and then open it as a non-document file in WordStar, placing commas between the fields. You needn't be concerned with entering a carriage return after each horizontal line (that is, after each record), because Lotus inserts them. MailMerge ignores the spaces between fields that Lotus inserts for column alignment.

NEW

Q. Will MailMerge work with Multiplan files?

A. Yes. Create a file in Multiplan and save it as a print file; then open it as a non-document file in WordStar.

Q. The first "dot" command(s) in my MailMerge document don't print out on the first copy of the document, but they do print out on the second copy. What's wrong?

A. Press the SHIFT and HOME CURSOR keys simultaneously to locate the place where MailMerge thinks the file ends. If the cursor stops anywhere except after the last character in the file, you've found the problem. You may also see carriage-return symbols in the "flag" column at the right-hand side of the screen. MailMerge treats any additional spaces, characters, or lines as part of a non-existent next page, thus causing subsequent copies of the document to print incorrectly.

To solve this problem, position the cursor in the first column of the line immediately after the last line in the document. (This line should contain only the ".PA" command.) Press the DELETE key and hold it down until the "flag" column at the right-hand side of the screen shows only a series of dots. Then position the cursor immediately to the right of the ".PA" command. Press the DELETE key and hold it down until any "hard" carriage returns disappear. Save the document and run MailMerge again.

Software Problem Reports

**WordStar/150
Original Version—3.30**

Problem: When printing on a bidirectional printer, the left margin sometimes disappears.

Workaround: Turn off the bidirectional print (.BP OFF) or change your text line count to an odd number by changing either the margin width or the page length. In a short letter, printing the page with the margin problem separately will produce a correctly printed page. **Fixed in version 3.3B.**

Manual Corrections	<p>WordStar Installation Guide First Edition—9/83</p> <p>Page 1-2. "Copying Wordstar." Change the file called WSU.COM to WS.COM.</p> <p>Page 1-3 through and including 1-5. Incorrectly lists the steps for running WINSTALL Program. For the correct procedure, refer to the <i>Self-Paced Training Manual</i>, Appendix A ("Installation Procedures").</p>
Quick Reference Guide	<p>WordStar/150 Quick Reference Guide 45400-90000</p>
Communicator Articles	<p>-"Two-column Print in WordStar" Issue #5 -"WordStar Quick Tips and Defaults" Issue #5 -"WordStar/100 Multiple Column Print Update" Issue #6 -"WordStar Microspace Justification" Issue #7 -"Configuring WordStar/150 for your Printer" Issue #7 -"PIPPing Files on Your HP 12x" Issue #9 -"Removing Soft Hyphens in WordStar/12x" Issue #10</p>
Books	<p>Writing in the Computer Age: Word Processing Skills and Style for Every Writer <i>Fluegelman and Hewes;</i> Anchor Press/Doubleday, 1983 HP Product Number 92233N</p>
Courses	<ul style="list-style-type: none"> ■ <i>WordStar/150</i> The WordStar workshop will help you get started with word processing and its many capabilities. By the end of the workshop you will know how to start WordStar, create a new document, and then edit, save and print documents. 35123B (½ day) ■ <i>MailMerge and SpellStar/150</i> As a follow-on to WordStar this workshop shows you how to merge files as well as proof your text using SpellStar's 20,000 word dictionary. In practice sessions, you will learn how to create a mailing list database and then combine this with text files to print customized letters and memos. The majority of WordStar's dot commands are explained and illustrated. 35123C (½ day) ■ <i>WordStar/100 and MailMerge/SpellStar/150 are available as a single unit.</i> 35123A (1 day)



Current Information

Current Information

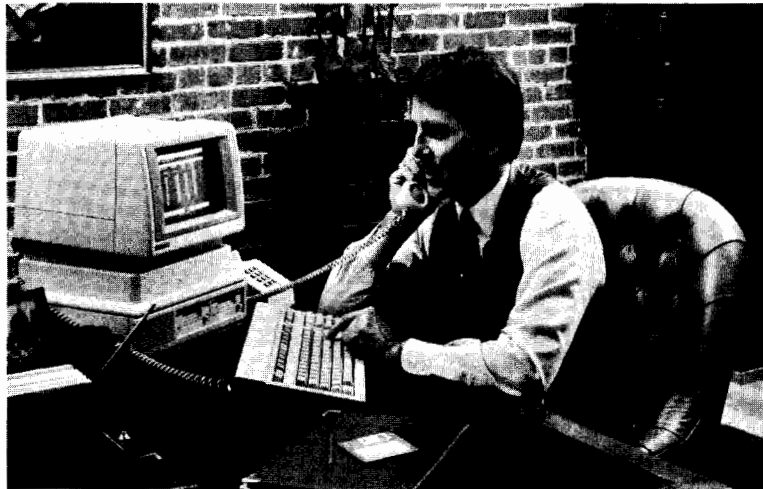
Answers to Your Questions	Current Information- 5
Your Direct Line to HP	Current Information- 6
Assistance from Your Local Dealer	Current Information- 6
Assistance from Your Own Organization	Current Information- 6
Software from Third Parties	Current Information- 7
Are You a Third-Party Software Developer?	Current Information- 7
Assistance for HP Internal Users	Current Information- 7
User Group	Current Information- 9
<i>HP Software Catalog</i>	Current Information-13
Ordering <i>Communicator</i> Subscriptions	Current Information-15
Ordering <i>Communicator</i> Back Issues	Current Information-16
Books on Personal Computing	Current Information-21
Training Courses	Current Information-25
Software Available from HP	Current Information-29
Software Exchange Kits	Current Information-39
Supplies and Accessories	Current Information-47
How to Order	Current Information-53
Mail Order Form	
Change-of-Address Form	
HP PC Care Order Form	



We stand behind every product we sell—including not only the software developed by Hewlett-Packard but also the industry-standard software packages we provide.

The level of capability provided by advanced personal computer software—together with the rapid evolution of this field—means that you may sometimes have questions that are not answered in the product manuals or in the *Communicator*.

Depending on how you purchased your system and on how you are using it, the best source of assistance may be Hewlett-Packard, your dealer, or your own organization—as explained below:



Your Direct Line to Hewlett-Packard

HP's Phone-In Software Assistance service is available to provide answers to your questions on software distributed by Hewlett-Packard. To use this service, call the Personal Computer Response Center in your region or country. When you call, a phone-in coordinator will arrange for the appropriate HP support representative to call you. Using a full set of Series 100 software and documentation—together with computer knowledge, problem-solving skills, and access to further assistance via HP's worldwide telecommunications network—the support representative works with you to answer your question.

- To obtain Phone-In Software Assistance in the United States, call
1-800/858-8867
- For assistance in other countries, call your HP Sales and Service Office and ask for the Personal Computer Response Center.

Assistance from Your Local Dealer

If your system is purchased from a dealer or system house, they have worked with you to define your application and configure your system—perhaps selecting software or peripherals not supplied or supported by Hewlett-Packard. Here, your dealer is the best source of assistance—knowing you, your needs, and your configuration well. Of course, your dealer is backed up by special support resources within HP.

Optimized Assistance from Your Own Organization

If yours is a large organization using Series 100 systems in a networking environment, the best software support source may be your central MIS, office-automation, or data-processing department. They have full knowledge of your organization's overall system: your internally developed programs, your particular operating and networking procedures... and your specific hardware and software configuration. The central support personnel, in turn, can call on special resources within Hewlett-Packard.

Software from Third Parties	Some Series 100 software packages were designed by other companies but are marketed and supported by Hewlett-Packard. There are many other products for the Series 100 which are marketed by independent organizations—referred to as “third parties” or “independent software vendors.” Support for these products comes from the software vendor or the dealer who supplied the software.
Are You a Third-Party Software Developer?	If you are interested in marketing software you have developed for HP personal computers, participate in the software submissions program. This program enables you to promote your software through the HP Software Catalog. For more information: -In the U.S., call 408/773-6332 -In other countries, call your HP Sales and Service Office and ask for “Personal Computer Sales”
Assistance for HP Internal Users	Each HP division or office has an Office Automation Coordinator who is usually part of the finance department. Please contact your O.A.C. for personal computer training and assistance.



User Group: Interex

Get in Touch



To get in touch with HP 150 Touchscreen, HP 120/125, and Portable owners in your area—and worldwide—join Interex, the International Association of Hewlett-Packard Computer Users. Interex is an independent group of HP computer users, with chapters and regional groups in 21 countries.

Start a Local Chapter

Local Interex Personal Computer chapters are now forming. For details on joining or starting a group in your area, contact Interex headquarters and ask for the pamphlet "Starting a Regional User Group."

Membership

Two levels of membership are available:

- **Standard Membership** includes a subscription to the magazine *Professional Computing*, a subscription to *Intercom* (the Series 100 newsletter), and one disc from the Interex Contributed Software Library.
Standard Membership:
North America \$50*
Outside North America \$100*
- **Standard-Plus Membership**, available to users in North America, includes all the Standard Membership services *plus* a subscription to CompuServe's Executive Information Service. CompuServe's electronic communication network allows you to access an on-line Special Interest Group for HP users—which includes a bulletin board, online conferencing, and the Intercom newsletter.
Your Standard-Plus Interex Membership gets you started with a CompuServe Executive Information Service account and documentation . . . plus 2 hours of free connect time on the network. CompuServe bills you directly for additional on-line time. (If you already subscribe to CompuServe, then you should order the standard membership.)
Standard-Plus Membership
(not available outside North America) . . \$100*

*U.S. funds. Prices effective through June 30, 1985.

How to Join

To join, fill out the form on the next page.

For more information, contact:

Interex Membership Department

Fourth Floor

2570 El Camino Real West

Mountain View, CA 94040

U.S.A.

(Telephone 415/941-9960)

U.K. residents may contact the HP 100 Users
Group in England:

Tim Cullis

HP 100 Users Group

Trafalgar House

Grenville Place

Mill Hill

London, NW7 3SA

England

Are you currently an HP 1000 or HP 3000 Interex member?

No Yes: Membership # _____

Please send more information about Interex's other activities:

____ HP 1000 ____ HP 3000

I understand that no membership dues will be refunded after the contributed software library disc has been sent from Interex.

Signature _____ Date _____

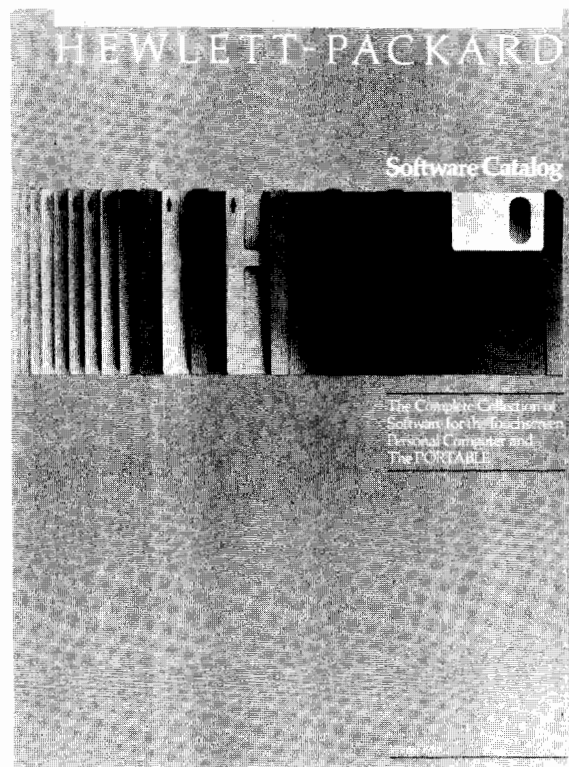
Send this page with your full payment to:

Interex
Bank File #61054
P.O. Box 60000
San Francisco, CA 94160
U.S.A.

The *Hewlett-Packard Software Catalog* describes more than 500 of the software products that are currently available for HP 150 Touchscreen personal computers and the HP 110 (The Portable).

Because most of these products come from independent software vendors, the catalog also tells you how to order the software, explains how the products are supported, and describes the training that the vendor offers.

The catalog (HP part number 5953-5880) is available through HP's Computer Supplies Organization (CSO). To order your copy, please refer to the "How to Order" information that appears at the back of this issue. If you are located outside the continental U.S., please note the telephone order number for your country or region.







The *Series 100 Communicator* is the heart of the support program for The Portable, the HP 150 Touchscreen, and the HP 12x.

This publication contains articles on how to best use your system—plus each issue includes sections of the “Series 100 Encyclopedia.”

The “Series 100 Encyclopedia” brings together all the current information you need, in addition to the manuals, for each of the software packages that you use. New and revised Encyclopedia articles are sent to you as part of the *Communicator*.

You can order a subscription just as you order supplies and accessories—through your dealer, by using HP’s special telephone orderlines, or through your local HP office. (See the “How To Order” section in this insert for the special HP telephone number for your area.)

- Series 100 *Communicator*—
 - U.S. Edition 45530A
 - Series 100 *Communicator*—
 - Canada/Mexico 45530B
 - Series 100 *Communicator*—
 - International 45530C
- (Subscriptions outside the U.S. are sent by accelerated mail.)

Note: We are unable to start your subscription with an issue which has already been mailed; to complete your set of Communicator issues, order individual copies as described in the next section.

Address Corrections for <i>Communicator</i> Subscribers	Change the information on the mailing label by sending us the Change of Address form which appears at the end of this Current Information Insert. Allow 6 to 8 weeks for the change to take effect.
HP Internal Users	Have your purchasing department enter an I2 order on HP division A5 (CSO).
HP Employees	Check with the Employee Computer Program Coordinator in your personnel or purchasing department for Computer Supplies (CSO) ordering instructions.

Ordering *Communicator* Back Issues



The application information, operational tips, and programming techniques included in the *Communicator* make back issues valuable—to increase your productivity and improve your system knowledge.

To order, refer to the "How to Order" section at the end of this insert.

HP 120 and HP 125

Issues #1 through #6 cover primarily the HP 12x. (8½" x 11" page size.)

Issue #1 includes the following major articles:

- "Single and Multi-line Page Headings with Word"
- "Searching for Enhanced Text in Word"
- "Making Invisible Characters Visible in Word"
- "Directory Scrolling in VisiCalc"
- "Sending Escape and Control Codes to a Printer from VisiCalc"
- "Warning: PASCAL"
- "Things you should Know About Random Access Files"
- "HP 9895 to HP 9135 File Transfer"
- "Electronically Reading a Disc Reference Number"

Communicator Issue #1 5955-3937*

Issue #2 includes the following major articles:

- "Making Graphs from VisiCalc Worksheets"
- "Word and VisiCalc Go Together"
- "Printing Formulas from VisiCalc Worksheets"
- "Printing Multiple Copies From Word"
- "More on Search and Replace in Word"
- "Chaining from One Executable Program File to Another"
- "A BASIC Subroutine Library"
- "Sort and Back Up Operations with Large Data Bases"
- "Using COPY DISC to Back Up Data Files on Drive B"
- "Computing Internal Rate of Return in VisiCalc"

Communicator Issue #2—U.S. 5955-3943*

Communicator Issue #2—Intl. 5955-3947*

Issue #3 includes the following major articles:

- “Disc Formats on the HP Series 100”
- “Non-HP 12x CP/M Programs—Will They Run?”
- “Long Documents with Series 100/Word”
- “Series 100/Word: Y Table Gymnastics”
- “Using Graphics to Your Advantage”
- “Condor Tips”
- “Adding Your Application Program to the WELCOME Menu”
- “Using Softkeys on Non-HP Systems”
- “Changing Printer Characters”
- “Using The HP 2121 Disc Drive with Your HP 125A”

Communicator Issue #3 5957-6213*

Issue #4 includes the following major articles:

- “International System Summary”
- “Condor News”
- “Comparing BPI and Peachtree Accounting”
- “Printing Mailing Labels from Condor”
- “More on HPMAIL and the Series 100”
- “File Transfers Using PIP”
- “Accessing a Plotter from BASIC”

Communicator Issue #4—U.S. 5957-6204*

Communicator Issue #4—Intl. 5957-6214*

Issue #5 includes the following major articles:

- “Enhanced Installation Program Available”
- “Video Display Interface for the HP 125”
- “Comparing Condor and dBASE II”
- “Sending Escape Codes to Printers from WordStar and Condor”
- “Interchangeability of Word and WordStar Text”
- “Two-Column Print in WordStar”
- “WordStar Quick Tips and Defaults”
- “Getting VisiCalc to Round Dollar Values to Two Places”
- “Word: Wandering HP 2601A Printer Margins with the Sheet Feeder”
- “DSN/Link: Enhanced File Transfer Capabilities over Link/125”
- “Connecting Two Series 100 Systems for ASCII File Transfer”
- “Transferring IMAGE/3000 Data to a Condor Database”
- “Transferring Data to the HP 2700 Color Graphics Terminal”
- “Installing the Operating System on Your Fixed Disc”
- “Using the HP 2631B HP-IB Printer with Series 100”

-“Programming Challenge—Bypassing WELCOME”

Communicator Issue #5—U.S. 5957-6205*

Communicator Issue #5—Intl. 5957-6215*

Issue #6 includes the following major articles:

-“CSC Graphics Available on the Series 100”

-“New Auto Shutter for 3½ inch Micro Flexible Discs”

-“Introducing Enhanced DSN/Link”

-“Microsoft BASIC Compiler”

-“Using Block/Format on the Series 100”

-“Correction—Printing Mailing Labels From Condor”

-“WordStar/100 Multiple Column Print Update”

-“Remote Access to the HP 125”

-“Using the 92911A Bar Code Reader on the HP 125”

-“Configuring the Series 100 for use with the Diablo 630 Printer”

-“An Alternative to ALPHASORT for Series 100/Word”

Communicator Issue #6—U.S. 5957-6206*

Communicator Issue #6—Intl. 5957-6216*

HP 150 Touchscreen and HP 12x

Issues #7 and #8 cover primarily the HP 150 Touchscreen and HP 12x. (5½" x 8½" page size.)

Issue #7 includes the following major articles:

-“Transferring Files Between the HP 12x and HP 150”

-“Data Compatibility Between HP 12x and HP 150 Applications”

-“HP 12x: PIP, COPY, and BACKUP”

-“Comparing VisiCalc and MicroPlan”

-“WordStar Microspace Justification”

-“Configuring WordStar/150 for your Printer”

-“Condor Tips”

-“Correction: Remote Access to the HP 120/125”

-“BASIC/150: Block Mode Transfers”

-“HP 12x BASIC Compared to HP 150 BASIC”

-“Subtle Difference: HP 12x/150 BASIC and Other BASICs”

Communicator Issue #7—U.S. 5957-6207*

Communicator Issue #7—Intl. 5957-6217*

Issue #8 includes the following major articles:

- “HP 150 Goes Worldwide”
- “HP 12x Fixed Disc Support Now Available”
- “Future Plans for the HP 120 and HP 125”
- “Using Plotters with the HP 150”
- “Installing dBASE II on the HP 150”
- “Three-Column Print in Word/12x”
- “Plotting Condor Data with HP Graphics”
- “Transferring Data Between a Series 100 Computer and an IBM PC”
- “Accessing Plotters from BASIC/150”
- “BASIC: How Do You Make RND More Random?”
- “Install Your BASIC/150 Application in PAM”
- “Decrease BASIC/150 Debugging Time with Cross Reference Utility

*Communicator Issue #8—Worldwide. . . 5957-6218**

**Portable, HP 150
Touchscreen, HP 12x**

Issues #9 and onward cover the Portable, HP 150 Touchscreen, and HP 12x. (5½" x 8½" page size.)

Issue #9 includes the following major articles:

- “PIPping Files on Your HP 12x”
- “From Numbers to Charts on the HP 150: dBASEII to Series 100 Graphics”
- “HP 150 Graphics: From the Screen to Your Printer”
- “Using Lotus/150 1-2-3 with the 7475A Plotter and B-size Paper”
- “Running Applications from MS-DOS on Your HP 150”
- “Word/12x: Rapid Returns”
- “Localizing Your HP 150”
- “Using Record Mode on the HP 150”
- “Escaping in High-Level Languages”
- “Access to the Touchscreen via MS-Pascal/150”
- “So You Want to Write Programs for the HP 150”
- “Introducing PFS:File and PFS:Report for the HP 150”
- “GraphPlan: New Integrated Spreadsheet and Graphics Software”
- “New Simulations—and a Chess Game—for the HP 150”
- “Challenging New Recreational Software for Series 100 PC Users”
- “The Portable: Desktop Capability in a Notebook-Sized Package”
- “The Portable: Compatibility with the HP 150”
- “Battery-Powered Peripherals for The Portable”
- “dBASEII for The Portable . . . and a New Version for the HP 150”

*Communicator Issue #9—Worldwide. . . 5957-6219**

Issue #10 includes the following major articles:

- "Removing Soft Hyphens in WordStar/12x"
- "Adding Data Points to Linear Charts in Graphics/12x"
- "Internal Rate of Return: Using the Iteration Option in Multiplan"
- "Lotus 1-2-3: Disc Drives, Peripherals, and Data Bases"
- "Setting User-Defined Function Keys in dBASE II"
- "A 'Help' Menu for CP/M Utilities"
- "Transferring Fixed-Length ASCII Records via DSN/Link"
- "A Feature-by-Feature Comparison of the HP 150 and HP 2623A Terminals"
- "Saving HP 150 Screen Graphics"
- "BAT/150: A Fast, Easy Way to Obtain an .EXE File"
- "Graphics on the HP 150: Filling Polygonal Areas"
- "The Newest Members of the HP 150 Family"
- "Two New Programming Tools for HP 150 Users"
- "Double-Sided Disc Drives for the HP 150B"
- "Announcing the EtherSeries/150 Local-Area Network"
- "The HP 150B and the IBM PC Speak to Each Other"
- "Enhanced Condor Software Now Available for the HP 150"
- "Enhanced MicroPlan for the HP 150"

Communicator Issue #10—Worldwide . . . 5958-0250*

Additional copies of this current issue are available:

Communicator Issue #11—Worldwide . . . 5958-0251*

Binders

Three-ring binders are available to organize your *Communicator* back issues.

8½" x 11" page size; 1½" capacity 5955-3982

5½" x 8½" page size; 1¼" capacity;
with slipcover. 5958-0209

**If 10 or more copies of a single *Communicator* issue are ordered from HP at the same time, the price is discounted by 25%.*



This section lists several personal computer books which we have found helpful.

For ordering information, refer to the "How to Order" section at the end of this Current Information Insert.

Applications

VisiCalc Programs Made Easy

Castlewitz; Osborne-McGraw Hill, 1983

For first-time users of VisiCalc, this step-by-step tutorial uses a series of "hands on" lessons that introduce the program's format and its many commands. In the final section, advanced uses and special tricks are covered that extend the capabilities of VisiCalc programs.

HP Product Number 92233Q

VisiCalc: Home and Office Companion

Castlewitz and Chisauky with Kronberg; Osborne-McGraw Hill, 1982

A book for both beginners and experts. For the novice, it contains 50 models that can be used immediately for personal and business applications. For the experienced user, it is a source of new ideas and techniques. Arranged by application, the book provides models for loans and investments, advertising and sales, inventory control, personnel, household aids, and more. Each model includes the VisiCalc entry grid, a descriptive narrative, and sample printed report.

HP Product Number 92233Z

Writing in the Computer Age: Word Processing Skills and Style for Every Writer

Fluegelman and Hewes; Anchor Press/Doubleday, 1983

This book demystifies word processing and explains how it can be the ultimate tool in creating and refining your work. Topics include: hardware and software—what they are and what they do; the mechanics of working on word processors; screen and print formatting; setting up, organizing, and maintaining file systems; techniques for editing and polishing; styles and strategies; and more. This is a generic book on word processing that thoroughly covers the subject without being directed at any one word processor.

HP Product Number 92233N

**Everyman's Database Primer:
Featuring dBASE II**

Byers; Ashton-Tate, 1982

Written for the novice, this book is a tutorial on relational database management systems on a personal computer. It features dBASE II™ as the database management system used to illustrate the main points.

HP Product Number 92233R

**Data Base Management Systems:
A Guide to Microcomputer Software**

Krugliniski; Osborne-McGraw Hill, 1983

This book provides an introduction to data bases on personal computers. It presents information which will enable you to select a data base management system to meet your requirements. A number of packages are examined in detail—including Condor and dBASE II.

HP Product Number 92234A

**HP 12x System
Management**

CP/M User Guide

Hogan; Osborne-McGraw Hill, 1981

Written for all levels of expertise, this book introduces the reader to CP/M's function within a microcomputer system as well as the use of built-in and transient commands, assembly language utilities, high-level languages and applications programs.

HP Product Number 92233Y

Networking

**Touring Datacomm:
A Data Communications Primer**

Hewlett-Packard, 1983

This is an introductory text which guides you through the basic concepts of data communications. It begins with a discussion of simple communications concepts and gradually introduces increasingly more complex topics. Topics include hardware and software; transmission methods and channels; line configurations and interfaces; signal conversion; multiplexing; common carrier services; and networks. Designed for readers with little or no previous knowledge of data communications.

HP Product Number 5957-4622

Computer Networks

Tenanbaum; Prentice-Hall, 1981

This introduction to computer networks emphasizes network architectures and protocols from the physical layer to the application layer, and from local networks to satellite networks. No prior background in computer networks is assumed, though a general familiarity with computer systems and programming is desirable.
HP Product Number 92233V

Programming**BASIC For Home Computers**

Albrecht, Finkel, and Brown; Wiley, 1978

Teach yourself Microsoft™ BASIC with this step-by-step self-teaching guide. (Series 100/BASIC is a version of Microsoft BASIC.) This book is suitable for the novice who has never programmed before. Commands are explained using a short working program and then illustrated in a variety of applications.

HP Product Number 92234D

Microsoft BASIC

Knecht; Dilithium Press, 1983

This book is appropriate for a person who already programs in another version of BASIC or another language and who wants to learn this version of BASIC. This book is not as elementary as *BASIC for Home Computers* and it covers more of the advanced features of Microsoft BASIC.

HP Product Number 92234E

The Investor's Computer Handbook

Packer; Hayden Books, 1982

This book gives programs and examples directed toward the stock market, which are transferable to other types of dynamic markets and portfolios. Types of programs explained: portfolio management and trading, research filing and retrieval, chart generation and portfolio management. The demonstration programs are written in Microsoft BASIC.

HP Product Number 92234G



The Series 100 and its application programs are designed for ease of use and ease of learning. Classroom training courses can help your first-time computer users rapidly build confidence and gain new skills in a supportive environment away from the day-to-day job.

**HP-Conducted
Introductory Courses**

Hewlett-Packard provides Series 100 training courses at HP Customer Training Centers using HP-provided equipment; they can also be taught by HP at your facility using your own systems. To order, call your HP Sales and Service Office.

■ *Introduction to Personal Computers*

For managers and professionals with limited knowledge of personal computers. Content: General personal computer usage including basic computer literacy, lots of hands-on use of VisiCalc[®], hands-on use of word processing and graphics; summary of how PCs can work for you.

35119A (1 day)

■ *Getting Started With the Portable*

If you're a novice computer user interested in learning how to use the HP Portable, this workshop is for you. It includes instruction on P.A.M., MemoMaker, and Terminal, along with an introduction to Lotus[™] 1-2-3[™] and Personal-Desktop Link. You'll get hands-on experience with the computer, the built-in applications, and HP-IL peripherals.

35036C (1 day)

■ *Getting Started with your HP 150*

This workshop was created especially for beginners—so your first experience with your new computer will be a positive one. You'll learn how to define basic computer terms, start up the system, handle discs properly, prepare new discs, and install application software.

35036A (1 day)

This course, or equivalent knowledge, is a prerequisite for all applications and programming training on the HP 150.

■ *HP 12x User Course*

For any user of the HP 120/125. Content: Introduction to the HP 12x and the use of Word/12x; second day covers Graphics/12x, VisiCalc/12x, and DSN/Link/12x.

35042B (2 days)

This course, or equivalent knowledge, is a prerequisite for all applications and programming training on the HP 12x.

**HP-Conducted
Application Courses**

We have structured the curriculum for maximum flexibility. You can attend whatever functional area course you want—spreadsheet analysis, word processing, data base management, or integrated software—without having to go through material you are not interested in. For further efficiency, *WordStar/150* and *Condor/150* are each divided into two modules, allowing you to choose the depth of understanding you wish to attain.

All of these classes stress hands-on work with the HP 150 during class time for maximum effectiveness.

■ *Introducing Lotus 1-2-3*

This introductory workshop familiarizes you with the features, worksheet, and command structure of Lotus 1-2-3. Using hands-on practice, you will learn how to create and format a spreadsheet; save a worksheet and print a report; create and use a database; and create, print, and plot a graph.

45688A (one day)

■ *VisiCalc/150*

A solid introduction to the elements of a VisiCalc worksheet is provided in this workshop. Participants will learn to create, edit and print worksheets, identify and use 16 commands, activate the function keys, and store and load worksheets.

35125A (1 day)

■ *WordStar®/150*

The WordStar® workshop will help you get started with word processing and its many capabilities. By the end of the workshop you will know how to start WordStar, create a new document, and then edit, save and print documents.

35123B (½day)

- *MailMerge and SpellStar/150*
 As a follow-on to WordStar, this workshop shows you how to merge files with MailMerge™ as well as proof your text using the SpellStar™ 20,000 word dictionary. In practice sessions, you will learn how to create a mailing list database and then combine this with text files to print customized letters and memos. The majority of WordStar's dot commands are explained and illustrated.
 35123C (½ day)
 - *WordStar/150 and MailMerge/SpellStar/150* are available as a single unit.
 35123A (1 day)
 - *Condor/150 20-1*
 This workshop will introduce you to Condor™—an easy-to-use, yet powerful database management system. After you understand what a database system is you'll learn how to use one by designing a form for entering data, creating a simple dataset, editing information, sorting and creating simple reports, and reorganizing a dataset.
 35124B (1 day)
 - *Condor/150 20-3*
 The Condor 20-3 workshop will provide you with in-depth experience using Condor's advanced database management and report writing capabilities including indexing a new or existing dataset, joining unlike datasets, creating, printing and revising reports, and creating and running a help screen and command procedure.
 35124C (½ day)
 - *Condor/150 20-1 and 20-3* can be ordered as a single unit.
 35124A (1½ days)
-
- *HP 150 Applications: Sharing Information*
 Because you may use the same information in different ways, this workshop was created to teach you how to pass information from one software application to another. The following applications are covered: Condor, PCF, MailMerge, MemoMaker, SpellStar, WordStar, Graphics, and WordStar.
 35037A (½ day)

**HP-Conducted
Programming Courses**

Refer to "Books on Personal Computing", just before this section, for self-study texts on programming.

- HP 12x Programmer training is provided by the HP 12x Program Development Course, which covers CP/M®, the specifics of Series 100/BASIC, and the assembly language. This course is designed for those who have programming experience in both BASIC and an assembly language.

34043A (5 days)

**HP Customized
Training**

These courses can be taught at your facility using your own systems—or training to suit your specific needs can be designed and given through HP's Personal Computer Applications Engineering Consulting Service. Contact your HP Sales and Service Office for details.

**Dealer-Conducted
Courses**

Many HP Personal Computer Dealers teach similar courses or arrange for a Hewlett-Packard instructor to teach courses in your area. Contact your dealer for details.



Here are lists of the software packages currently available from HP. There are two tables:

- Portable and HP 150 Touchscreen
- HP 120/125

***Hewlett-Packard
Software Catalog***

The *Hewlett-Packard Software Catalog* describes more than 500 of the software products that are currently available for HP 150 Touchscreen personal computers and the HP 110 (The Portable).

Because most of these products come from independent software vendors, the catalog also tells you how to order the software, explains how the products are supported, and describes the training that the vendor offers.

The catalog (HP part number 5953-5880) is available through HP's Computer Supplies Organization (CSO). To order your copy, please refer to the "How to Order" information that appears at the back of this issue. If you are located outside the continental U.S., please note the telephone order number for your country or region.

**Portable and
HP 150 Touchscreen
Software Available
from HP**

Disc size

This software is provided on 3.5" microfloppy discs.

U.S. software on localized systems

To determine which U.S. products are recommended for use with localized HP 150 systems, check with your dealer or HP office.

Multinational versions

For most products that are distributed in several languages, the standard "A" product supports 8-bit operation and the international keyboards. For international products that do not support 8-bit operation directly, we provide a version with a "B" second suffix. For instance, a multinational company which wants to exchange WordStar documents between HP 150s located in the U.S. and the U.K. should order 45400AB.

Name	Product Number	System		Notes*
		Portable	HP 150 Touchscreen	
Word Processing:				
WordStar®	45400D	●	Touch	
	45400AB U.K. (8-bit)		Touch	3
	45400AD German		Touch	
	45400AF French		Touch	
	45400AH Dutch		Touch	
	45400AN Norwegian		Touch	
	45400AS Swedish		Touch	7
	45400AU (order HB)		Touch	2
	45400AX Finnish		Touch	
	45400AY Danish		Touch	
MailMerge™	45401AB U.K. (8-bit)		●	8
	45401AD German		●	
	45401AF French		●	
	45401AH Dutch		Touch	
	45401AN Norwegian		Touch	
	45401AS Swedish		●	7
	45401AU (order AB)		●	2
	45401AX Finnish		Touch	
	45401AY Danish		Touch	
	WordStar Professional™	45427D	●	Touch
WordStar Professional™ Options	45429D	●	Touch	
Executive MemoMaker	45418A		Touch	
Microsoft® Word	45474D		Touch	
MultiMate™	45424A	●	Touch	
PFS®:Write	45489A		Touch	
Type-a-Line	45680A		Touch	
MemoMaker	45420A	Built-in	Touch	8
	45420AA Afrikaans		Touch	
	45420AD German		Touch	
	45420AE Spanish		Touch	
	45420AF French		Touch	
	45420AH Dutch		Touch	
	45420AN Norwegian		Touch	
	45420AS Swedish		Touch	
	45420AU (order A)		Touch	3
	45420AX Finnish		Touch	
45420AY Danish		Touch		
45420AZ Italian		Touch		

*See notes at end of table

Name	Product Number	System		Notes*
		Portable	HP 150 Touchscreen	
Electronic Spreadsheets:				
Microplan™	45465A		Touch	1
Microplan Consol.	45466A		•	1
Multiplan™	45473D	•	Touch	
	45473A International		Touch	
Context MBA™	45481A		Touch	1
Lotus™ 1-2-3™	45482A	Built-in	•	1
VisiCalc®	45405A		Touch	4
	45405AA Afrikaans		Touch	4
	45405AD German		Touch	4
	45405AE Spanish		Touch	4
	45405AF French		Touch	4
	45405AH Dutch		Touch	4
	45405AN Norwegian		Touch	4
	45405AS Swedish		Touch	4
	45405AX Finnish		Touch	4
	45405AY Danish		Touch	4
	45405AZ Italian		Touch	4
Deluxe VisiCalc®	45405A		Touch	4
Computation and Analysis:				
Financial Calculator	45423A		Touch	
	45423AE Spanish		Touch	
	45423AF French		Touch	
	45423AX Finnish		Touch	
Data Bases:				
Personal Card File	45422A		Touch	8
	45422AA Afrikaans		Touch	
	45422AD German		Touch	
	45422AE Spanish		Touch	
	45422AF French		Touch	
	45422AH Dutch		Touch	
	45422AN Norwegian		Touch	
	45422AS Swedish		Touch	
	45422AU (order A)		Touch	3
	45422AX Finnish		Touch	
45422AY Danish		Touch		
45422AZ Italian		Touch		

*See notes at end of table

Name	Product Number	System		Notes*
		Portable	HP 150 Touchscreen	
Condor™ 20-1	45415A		Touch	1
Condor 3	45416A		Touch	1
Condor Upgrade	45417A		Touch	1
dBASE II®	45468D	•	•	
	45468AD German		•	5
	45468AF French		•	5
PFS:®File & Report	45488A		Touch	
DataFax™	45408C	•		
Accounting Systems:				
BPI General Accounting	45455A		•	
BPI A/R	45456A		•	
BPI A/P	45457A		•	
BPI Job Cost	45461A		•	
BPI Inv. Control	45460A		•	
BPI Payroll	45458A		•	
BPI Personal Accounting	45459A		•	
Rags to Riches Ledger	45520C	•		
Rags to Riches Sales	45521C	•		
Rags to Riches Receivables	45522C	•		
Rags to Riches Payables	45523C	•		
Programming:				
BASIC Programmer's Library	45310A		•	
ICON Design System	45311A		•	
Forms Master	45443A		•	
BASIC by Microsoft	45445D	•	•	
Compiled BASIC by Microsoft	45446D	•	•	
Pascal by Microsoft	45447D	•	•	
COBOL by Microsoft	45448A		•	
FORTTRAN by Microsoft	45449A		•	
GW™-BASIC by Microsoft	45450D	•	•	
Cross Reference Utility	92248BA		•	
Lattice-C Compiler	45452D	•	•	
Programmer's Tools for The Portable	45419C	•		
Programmer's Tools for the HP150	45435A		•	

*See notes at end of table



Name	Product Number	System		Notes*
		Portable	HP 150 Touchscreen	
Graphics:				
Picture Perfect™	45462A		Touch	
Diagraph™	45463A		Touch	
S/100 Graphics	45410A		Touch	8
	45410AA Afrikaans		Touch	
	45410AD German		Touch	
	45410AE Spanish		Touch	
	45410AF French		Touch	
	45410AH Dutch		Touch	
	45410AN Norwegian		Touch	
	45410AS Swedish		Touch	
	45410AU (order A)		Touch	3
	45410AX Finnish		Touch	
	45410AY Danish		Touch	
	45410AZ Italian		Touch	
GraphPlan™	45467A		Touch	
GraphWriter®	45484A		Touch	
PFS®:Graph	45490A		Touch	
Charting Gallery	45513A		Touch	
Drawing Gallery	45411A		Touch	
Gallery Picture Library, Vol. II	45433A		Touch	
The Gallery Collection	45437A		Touch	
Communications:				
Advance Link	45431A		Touch	
DSN/Link	45425AB U.K. (8-bit)		Touch	8
	45425AD German		Touch	
	45425AE Spanish		Touch	
	45425AF French		Touch	
	45425AH Dutch		Touch	
	45425AS Swedish		Touch	
	45425AU (order AB)		Touch	2
	45425AX Finnish		Touch	
EtherSeries™ Local-Area Networking Products:				
EtherLink™/150	45644A		•	
EtherMail™/150 Touchscreen MAX Server Software	45647A		•	
EtherMail™/150 User Software	45639A		•	
EtherPrint™/150	45646A		•	
EtherShare™/150	45645A		•	
EtherStart™/150	45649A		•	

*See notes at end of table

Name	Product Number	System		Notes*
		Portable	HP 150 Touchscreen	
The Extended I/O Accessory	45643A	•	•	
HP-IL Interface for the IBM PC/XT	82973A	•		
Monitor/IBM PC Touchscreen 3278	45439A		•	6
Emulation Accessory with File Transfer	45641B		•	
Touchscreen Internal Modem	45640A		•	
Transend COMplete	45414A		Touch	
Dow Jones SpreadSheet Link™	45511D	•	•	
VT 100 Terminal Emulator	45412A		Touch	
Entertainment:				
Adventure: The Original by Crowther and Woods	92243D	•	Touch	
BARON: The Real Estate Simulation™	92243KA		Touch	
Cutthroats™	92244AA	•	•	
Cyborg	92243NA		Touch	
Deadline™	92243VA	•	•	
Enchanter™	92243UA	•	•	
The Hitchhiker's Guide to the Galaxy™	92244BA	•	•	
Infidel™	92243WA	•	•	
Milky Way Merchant	92243BA		Touch	
MILLIONAIRE: The Stock Market Simulation™	92243JA		Touch	
Planetfall™	92243PA	•	•	
Ricochet™	92243GB		Touch	
SARGON III	92243MA		•	
Sea Stalker	92243ZA	•	•	

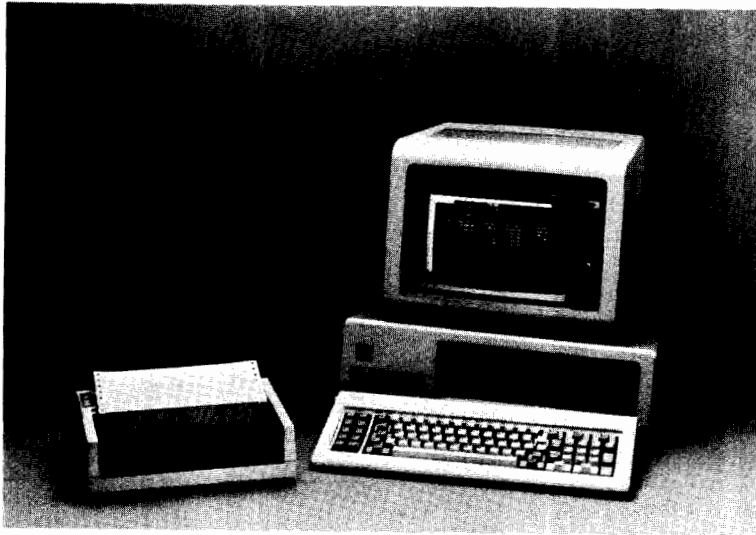
*See notes at end of table

Name	Product Number	System		Notes*
		Portable	HP 150 Touchscreen	
Sorcerer	922434A	•	•	
Spellbound™	92243SA		Touch	
Starcross™	92243DA	•	•	
Suspect™	92244CA	•	•	
Suspended™	92243FA	•	•	
Temple of Apshai™	92243GA		Touch	
Touch Games I	92248AA		Touch	
TYCOON: The Commodity Market Simulation™	92243HA		Touch	
Type Attack™	92243EA		Touch	
Winning Deal	92248CA		Touch	
The Witness™	92243QD	•	•	
Zork® I	92243CA	•	•	
Zork® II	92243RA	•	•	
Zork® III	92243TA	•	•	
Personal Business Management:				
The Calendar	35151D	•	•	
The List Manager	35152D	•	•	
The Writer	35153D	•	•	
The Speller	35154D	•	•	
The Planner	35155D	•	•	
The Personal Correspondence Pack	35156D	•	•	
The Personal Organizer Pack	35157D	•	•	
ExecuDesk	45444A		Touch	
The ExecuDesk System	45442A		Touch	
Software for the IBM PC:				
Personal Card File/ IBM PC	45422EE			
TextCharts/IBM PC	45406E			
AdvanceLink/IBM PC	45431E			
MemoMaker/IBM PC	45420E			
HP Message/IBM PC	36569E			

*See notes at end of table

Notes

- 1—Not available in international languages. Product supports 7-bit ASCII character set.
- 2—Product renumbered. No change to the software. Order with "AB" suffix.
- 3—Product renumbered. No change to the software. Order with "A" suffix.
- 4—Total 512K memory recommended.
- 5—Product is available with international language manuals and screen messages and works with the character set of that language.
- 6—Monitor/IBM PC works with either 45425A, 45425AB, or 45425AU, and also with DSN/Link for the HP 120/125 computers, 45534B. Supplied on a 5.25" IBM-formatted disc. Requires 128K of RAM on the IBM PC.
- 7—Supplied with English reference manual and translated self-paced training manual.
- 8—Recommended for multi-national data exchange between 7-bit and 8-bit systems.



**HP 12x Software
Available from HP**

Although the HP 120 and HP 125 are no longer in production, the following software products are still available.

HP 12x Application Software	Product No.†
VisiCalc®/12x	45531B
Graphics/12x	45532B
Word/12x	45533B
DSN/Link/12x	45534B
BASIC/12x	45535A
Programming Package/12x	45536A
Condor™ 20-1/12x**	45550A
Condor 20-2/12x**	45550E
Condor 3/12x*	45550H
Condor 20-1 to 20-2/12x Upgrade Kit**	45550K
Condor 20-1 to 3/12x Upgrade Kit*	45550P
BPI General Accounting/12x*	45552A
BPI Payroll/12x*	45553A
WordStar®/12x	45560A
SpellStar™/12x*	45561A
MailMerge™/12x*	45562A
Picture Perfect™/12x*	45603A
MicroPlan®/12x*	45670A
MicroPlan Consolidation/12x	45671A

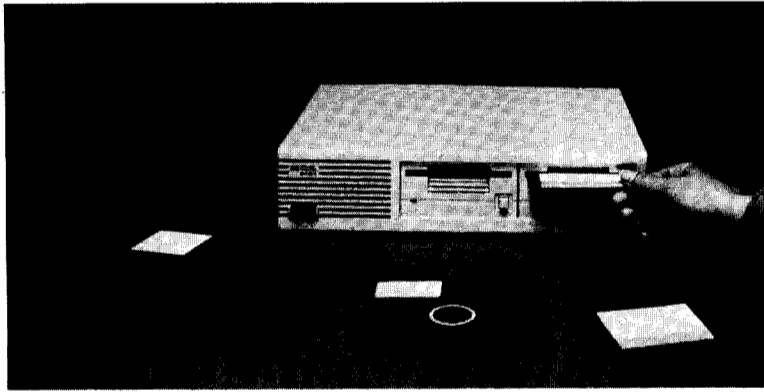
**Standard CP/M
Application Software for
the HP 12x**

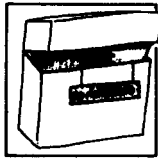
Milestone™	45580A
Datebook II™	45581A
Personal Datebook™*	45582A
dBASE II™	45583A
Aardvark Professional Tax Plan	45585A
Aardvark Personal Tax Plan	45586A
Peachtree General Ledger*	45589A
Peachtree Accounts Receivable*	45590A
Peachtree Sales Invoicing*	45591A
Peachtree Inventory Control*	45592A
Peachtree Accounts Payable*	45593A
PeachPay™ Payroll*	45594A

* Not supported on single-disc-drive system

** Not recommended for use on single-disc-drive system

† Media option must be specified with product number
(630 for 3.5" disc; 650 for 5.25" disc)





This section lists the software exchange kits available for The Portable, the HP 120/125, and the HP 150. These kits contain the latest software and any manual updates issued since the original release. **Exchange kits are provided at a nominal charge.** You return your original master disc as proof of purchase and continue operating as usual with your work copy of the software.

Software Exchange Kits are provided for several different purposes:

- **Updates.** Software is revised to add new features, to let it work with new peripherals, or to correct problems. You can update your program and manuals at a nominal cost by ordering the appropriate Software Exchange Kit.

The Encyclopedia article for your product explains the capabilities added or problems fixed in the latest version.

- **Upgrades.** When major features are added to a software product, you can order a Software Exchange Kit at a low cost—"trading in" your older version for one with the latest capabilities and documentation.

The Encyclopedia article for your product gives the details of new features.

- **Media Replacement.** The master-copy/work-copy technique used by the Series 100 is designed to minimize the risk of damage to your master software due to handling or human error. If this happens, Software Exchange Kits are available at a nominal charge. If the product has been updated since your original purchase, the Exchange Kit contains the latest version and any manual updates issued since the original release.

Ordering

To order:

- In the U.S., Software Exchange Kits are available through your HP dealer or by mail from HP's Computer Supplies Distribution Center, using the form given later in this magazine.
- Outside the U.S., contact your HP dealer or HP sales and service office for details.

For each kit ordered, along with your payment submit one corresponding original master disc. This is the disc with the HP software product number and description printed on the label. **Be sure to make working copies before sending your master disc.**

To determine the price for a kit, contact your dealer or HP office—or call the HP telephone order number for your country. (See the "How to Order" section later in this Current Information Insert.) HP cannot accept orders submitted without the correct master disc.

Refer to the tables on the next pages for Exchange Kit part numbers.

HP Internal Orders

For HP Internal Orders of Software Exchange Kits, return the original master discs to:

Software Product Marketing, Building 78
or Hewlett-Packard
Attn: Software Product Marketing
P.O. Box 60008
Sunnyvale, CA 94088

Reference your HP Internal Order number on the package.

Products not Listed

Because entertainment software packages are low-priced, there are no exchange kits for these products. Re-order the original product to replace damaged discs.

For information on other products not listed, contact your Phone-In Software Assistance Center. (In the U.S., dial 800/HP COACH).

**Portable and HP 150 Touchscreen
Software Exchange Kits**

Product	Version	Order Part Number†	System		Notes
			Portable	HP 150 Touchscreen	
HP 150B Operating System		45626-63007		•	
Op Sys	B.02.02				
Applications	B.02.02				
Utilities	B.02.02				
Sys Master Disc	B.02.02				
P.A.M.	B.02.02				
HPBIOS	B.02.02				
MS-DOS	B.02.02				
MS-DOS	B.02.02				
COMMANDS					
FORMAT	B.02.00				
DEV CONFIG	B.02.00				
Appl Master Disc	B.02.02				
COPY/BACKUP	B.02.02				
INSTALL	B.02.02				
SET UP P.A.M.	B.02.02				

Product	Version	Order Part Number†	System		Notes
			Portable	HP 150 Touchscreen	
Advance Link	A.01.02	45431-63002		•	
BASIC Interpreter	A.05.28	45445-63002	•	•	
BASIC Compiler	A.01.01	45446-63002	•	•	
BPI General Acctg.	A.01.11	45455-63001		•	
BPI Personal Acctg.	A.01.11	45459-63001		•	
BPI Accounts Rec.	A.01.11	45456-63001		•	
COBOL	A.01.00	45448-63001		•	
Computer Tutor (see HP 150 Operating System)					
Condor 1	*A.02.11	45415-63002		•	
Condor 3	*A.02.11	45416-63002		•	1
Context MBA	A.02.03	45481-63001		•	
Data Fax	A.01.00	45408-63001	•		
dBASE II	*A.2.41	45468-63001	•	•	
Diagraph	A.03.00	45463-63001		•	
Financial Calculator	n/a	n/a		•	2
Forms Master	A.01.00	45443-13001		•	
FORTRAN	A.01.00	45449-63001		•	

Product	Version	Order Part Number†	System		Notes
			Portable	HP 150 Touchscreen	
Graphics (bar disc, pie disc, line disc, text disc, examples disc)	*A.03.00	45410-63001			●
GraphPlan	1.00.T2	45467-63001			●
GraphWriter	A.01.00	45484-63001			●
GW BASIC	A.01.00	45450-63001			●
Lattice C Compiler	Contact CSO for special instructions				
Lotus 1-2-3:					
System Disc	1.A	45482-63001			●
System Disc	1.A	45482-63004			●
Printgraph/Util	1.A	45482-63002			●
Tutorial 1&2	1.A	45482-63003			●
MailMerge	A.03.30	45401-63001			●
MemoMaker	B.01.01	45420-63001			●
MicroPlan	4.04.T2	45465-63001			●
MicroPlan Consol.	4.04.T2	45466-63001			●
MultiMate					
System Disc	3.29	45424-13001			●
Dictionary	3.29	45424-13003			●
Utilities	3.29	45424-13004			●
MultiPlan	A.01.00	45473-63001			●
Pascal	A.01.00	45447-63001			●
PCF	B.00.02	45422-63001			●
Picture Perfect	A.03.00	45462-63001			●
PFS: Graph	Contact CSO for special instructions				
PFS: File & Report	A.2.41	45488-63001			●
PFS: Write	Contact CSO for special instructions				
Prog. Tools/Portable	A.01.00	45419-63001	●		
Prog. Tools/150	A.01.00	45435-63001			●
SpellStar	A.03.30	45402-63001			●
Transend COMplete	1.0	45414-63001			●
Type-a-Line	A.01.00	45680-63001			●
VisiCalc	B.01.02	45405-63004			●
VT100 Terminal Emulator	A.01.00	45412-63001			●
Winstall	4.0	45400-13074			●

WordStar	*A.03.3B	45400-63001	•
WordStar	3.33	45400-13072	•
WordStar	3.30	45400-13072	•
WordStar Professional Options			
MailMerge	3.0	45401-13001	•
StarIndex	1.03	45403-13001	•
CorrectStar	3.31	45429-13001	•

*Revised since original release

†For each kit ordered, along with your payment submit one corresponding original master disc. This is the disc with the HP software product number and description printed on the label. Be sure to make working copies before sending your master disc.

To determine the price for a kit, contact your dealer or HP office, or call the HP telephone order number for your country. (See the "How to Order" section later in this Current Information Insert.) Orders submitted without the correct master disc cannot be accepted. If you want a kit with 5.25" discs, please indicate this preference on your order. Otherwise 3.5" disc will be shipped, regardless of the size of your returned master disc.

Notes

- 1—Either a Condor 20-3 disc or a Condor-20-1-to-Condor-3 Upgrade disc can be exchanged for the Condor 3 disc.
- 2—Low-priced package. Re-order the original product to replace damaged media.



HP 12x Software Exchange Kits

Product (Notes)	Version	Order Part Number†	
		3.5" Disc	5.25" Disc
Op Sys/Util (1)	*A.02.00	45900-13810	45900-15810
Op Sys/Util (2,8)	*A.02.00	45900-13800	45900-15800
VisiCalc (8)	*A.02.01	45531-13800	45531-15800
Graphics (8)	*A.01.03	45532-13800	45532-15800
Word/12x (8)	*A.02.03	45533-13800	45533-15800
Link/125 (3)	A.02.00	45534-13800	45534-15800
DSN/Link (4)	A.01.01	45534-13820	45534-15820
DSN/Link (5)	A.01.01	45534-13810	45534-15810
BASIC	A.05.21	45535-13800	45535-15800
Programming	A.01.00	45536-13800	45536-15800
Condor 20-1 (7)	A.02.00	45550-13800	45550-15800
Condor 3 (6,7)	*A.02.01	45550-13802	45550-15802
BPI G/A	A.01.00	45552-13800	45552-15800
BPI Payroll	A.01.00	45553-13800	45553-15800
WordStar	A.01.00	45560-13800	45560-15800
SpellStar	A.01.00	45561-13800	45561-15800
MailMerge	A.01.00	45562-13800	45562-15800
MicroPlan	A.01.00	45670-13800	45670-15800
MicroPlan Cons.	A.01.00	45671-13800	45671-15800

See notes on next page.

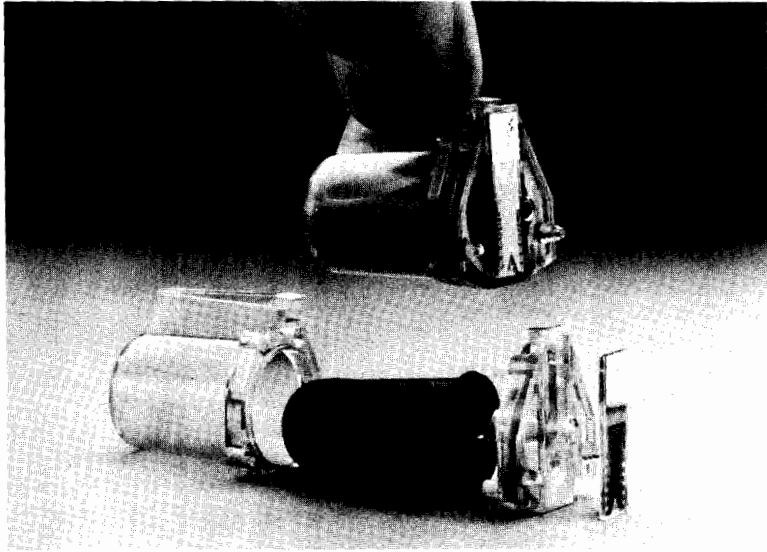
*Revised since original release.

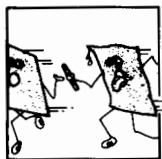
†For each kit ordered, along with your payment submit one corresponding original master disc. This is the disc with the HP software product number and description printed on the label. Be sure to make working copies before sending your master disc.

To determine the price for a kit, contact your dealer or HP office—or call the HP telephone order number for your country. (See the "How to Order" section later in this Current Information Insert.) Orders submitted without the correct master disc cannot be accepted.

Notes

- 1—This kit is to *update* a Series 100 Op Sys. This kit contains the current Operating System disc, the current Utility Disc, the current Computer Tutor Disc, and all Owner's and Installation manual updates issued since the initial 5½ x 8" editions. (An *upgrade* kit to move from earlier HP 125 versions is available as part number 45900-13800 or 45900-15800.)
For each kit ordered, return one original **Series 100** A.01.20 Operating System disc. (This kit includes the current Utility and Computer Tutor discs—but only the Op Sys disc will have to be returned.)
- 2—This kit is to *upgrade* an A.01.10 version or an A.01.20 Operating System labeled "**HP 125**" (rather than "**Series 100**").
This kit contains:
 - The new 5½" x 8½" Owner's Manual, with slipcase.
 - The new 5½" x 8½" HP 125B Installation Manual, with slipcase.
 - Current Operating System disc, which includes the improved WELCOME utility, the single-disc COPY utility, and the single-disc INSTALL utility.
 - A Utility Disc, containing the new fixed-disc BACKUP utility.
 - The new Computer Tutor Disc (a computer-aided introduction to the 120/125 system for the first-time user).(If you have an A.01.20 Operating System labeled "*Series 100*", order part number 45900-13810 or 45900-15810.)
For each kit ordered, return one original **HP 125** Operating System disc. (This kit includes the current Utility and Computer Tutor discs—but only the Op Sys disc will have to be returned.)
- 3—This kit is to exchange your Link/125 disc for a Link/125 disc. (If you want to *upgrade* to Series 100 DSN/Link, order part number 45534-13810 or 45534-15810.)
- 4—This kit is to exchange your Series 100 DSN/Link disc for a Series 100 DSN/Link disc. (If you currently have Link/125, order part number 45534-13810 or 45534-15810 to upgrade to Series 100 DSN/Link.) For each kit ordered, return one original **Series 100/DSN/Link** disc.
- 5—This kit is to *upgrade* Link/125 to Series 100 DSN/Link—including a second disc containing DSN/Monitor. For each kit ordered, return one original **Link/125** disc.
- 6—A Condor 3 disc, a Condor 20-2 or 3 Upgrade disc, or a Condor 20-1 to 3 Upgrade disc may be exchanged for the Condor 3 disc.
- 7—To *upgrade* to Condor 3, order product 45550K, 45550N, or 45550P. See the "Software Available from HP" section in this Current Information Insert.
- 8—Exchange Kit includes complete new 5½" x 8½" manuals.





Here is a list of the most popular Series 100 supplies and accessories.

A full list of HP computer supplies matched to your system for optimum performance appears in the *HP Computer User's Catalog*.

For ordering information—or to obtain a copy of the *User's Catalog*—refer to the "How To Order" section in this Current Information section.

Binders

- 5955-3982 8½" x 11" page size; 1½" capacity
 5958-0209 5½" x 8½" page size, 1¼" capacity; with slipcover
 (5½" x 8½" filler paper is available at your office supply store. The part numbers for one brand, National Blank Book, are 14-250 and 14-251—for plain and ruled paper, respectively.)

For Computers

■ The Portable

- 13269K Vinyl replacement case
 13269U Carrying case
 13269V System carrying case
 13269W Attaché case
 92221P RS232C printer cable (1.5 meters)
 92221M RS232C modem cable (1.5 meters)
 92222F RS232C gender converter (female)
 92222M RS232C gender converter (male)

■ HP 120 Personal Computer

- 13242H RS-232C cable (use 13242-60011 for replacement)
 13269P Carrying case (for HP 120 with short keyboard plus 9121 disc drive; or HP 120 with extended keyboard)
 92171C Keyboard drawer park
 92171J Keyboard park
 92171T System turntable
 92240A Display tilt unit
 92240B Display swivel unit
 92250D Dust cover
 92220R Right-angle HP-IB cable (0.3 meters long)
 92251P "Stacked" dust cover (for computer and disk drive)

■ HP 125 Personal Computer

- 92160A Thermal paper, blue print (box of 24 rolls)
 92160B Thermal paper, black print (box of 24 rolls)
 92171C Keyboard drawer park
 92171R Keyboard palm rest (for extended keyboard)
 92171T System turntable
 92207A Anti-glare filter
 92250B Dust cover

■ **HP 150 Touchscreen Personal Computer**

92160A	Thermal paper, blue print (box of 24 rolls)
92160B	Thermal paper, black print (box of 24 rolls)
92160C	Thermal paper, (page-perforated, box of 24 rolls)
13242H	RS-232C cable (use 13242-60011 for replacement)
13269C	Carrying case (for HP 150 and 9121 disc drive)
92250F	Dust cover
92171C	Keyboard drawer park
92171J	Large (extended) keyboard park
92240A	Light-gray tilt unit
92240B	Light-gray swivel unit
92220R	Right-angle HP-IB cable (0.3 meters long)

For Disc Drives

■ **HP 82901M/S, 82902M/S, 9130A, 9135A 5.25-inch Disc Drives**

92190A	5.25-inch flexible discs, double-sided (box of 10 discs)
92190L	5.25-inch flexible discs in Flex Files
92193K	5.25-inch flexible-disc drive-cleaning kit
92251A	Dust cover (82901M/S)
92251B	Dust cover (82902M/S)

■ **HP 9121D/S, 9133A/B, 9133V/XV, 9134 3.5-inch Disc Drives; 9114A, 9122D, 9122S, and 9133D Disc Drives**

92191A	3.5-inch micro flex discs—single-sided (box of 10)
92192A	3.5-inch micro flex discs—double-sided (box of 10)
92191D	3.5-inch micro flex disc desktop file (capacity 50)
92191C	3.5-inch micro flex disc album (capacity 20)
92191R	3.5-inch micro flex disc roll-top file (capacity 50)
92251D	Dust cover (9121 D/S)
13269T	Disc-drive case (for 9121)

For Printers

■ **HP 2225A/B/C ThinkJet**

92261A	Individual printhead ink cartridge
92261L	Fan-folded ink-jet paper (1000 sheets)
92261M	Cut-sheet ink-jet paper (Four 500-sheet packs)
92261N	Fan-folded ink-jet paper (five 500-sheet packs)
92261S	Desktop ThinkJet printer stand
92250V	Dust cover

■ **HP 2601A Daisywheel Printer**

92151C	Multi-strike ribbon cartridges (box of 12 cartridges)
92151D	Fabric ribbon cartridges (box of 12 cartridges)
92157A	Printer paper, fan-folded (box of 2400 sheets)
92157C	Printer paper, microperforated fan-folded (box of 2400 sheets)
92177Q	Sheet-feeder
92252 Series	Plastic print wheels, 96 character (box of 6 wheels)
92153 Series	Metal print wheels (1 each)

■ **HP 2602A Daisywheel Printer**

92151H	Multi-strike ribbon cartridge (box of 12 cartridges)
92157A	Printer paper, fan-folded (box of 2400 sheets)

92157C	Printer paper, microperforated fan-folded (box of 2400 sheets)
92177R	Sheet-feeder
92262 Series	Plastic print wheels, 98-character, USASCII
92263 Series	Plastic print wheels, 98-character, International
92264 Series	Plastic print wheels, HP 150 International Keyboard Support
■ HP 2932A/2934A Dot-Matrix Printer	
92154B	Print head (average life of 200 million characters)
92155L	Ribbon cartridges (box of 3 cartridges)
92157A	Printer paper, fan-folded (box of 2400 sheets)
92157C	Printer paper, microperforated, fan-folded (box of 2400 sheets)
■ HP 2671A/G and 2673A Thermal Printers	
92160A	Thermal paper, blue print (box of 24 rolls)
92160B	Thermal paper, black print (box of 24 rolls)
92160C	Thermal paper, blue print, page perforated (box of 24 rolls)
92160D	Thermal paper, black print (box of 4 rolls)
92160E	Thermal paper, black print (box of 330 fan-folded sheets)
92160M	Thermal paper, blue print (box of 1320 fan-folded sheets)
92160N	Thermal paper, black print (box of 1320 fan-folded sheets)
■ HP 2686A LaserJet Printer	
92219H	RS232C cable to HP 150 (5 meters)
92219J	RS232C cable to IBM PC (5 meters)
92215F	RS232C extension cable (15 meters)
92215T	RS232C extension cable (30 meters)
92285A	Toner (EP) cartridge
92285B	8.5" x 11" paper tray
92285C	8.5" x 14" paper tray
92285D	Metric A4-size paper tray
92285E	Metric B5-size paper tray
92286A	Plug-in type-font cartridge (Courier and Line Printer, compressed)
92286B	Plug-in type-font cartridge (Proportional Spacing)
92286C	Plug-in type-font cartridge (International Courier)
92286D	Plug-in type-font cartridge (Prestige Elite)
92286E	Plug-in type-font cartridge (Letter Gothic)
92286F	Plug-in type-font cartridge (Proportional Spacing II)
92286G	Plug-in type-font cartridge (Legal Elite)
92286H	Plug-in type-font cartridge (Legal Courier)
92286L	Plug-in type-font cartridge (Courier and Line Printer)
92286U	Plug-in type-font cartridge (Forms, "portrait"-style)
92286V	Plug-in type-font cartridge (Forms, "landscape"-style)
■ HP 82905A/B Dot-Matrix Printer	
92156A	Ribbon cartridges (box of 2 cartridges)
92157A	Printer paper, fan-folded (box of 2400 sheets)
92157C	Printer paper, microperforated, fan-folded
92154P	Print head
92171S	Desktop printer stand
92250T	Dust cover

■ **HP 82906A Dot-Matrix Printer**

92156A	Ribbon cartridges (box of 2 cartridges)
92154N	Print head
92171N	Forms tractor unit
92157A	Printer paper, fan-folded (box of 2400 sheets)
92157C	Printer paper, microperforated, fan-folded (box of 2400 sheets)
92171S	Desktop printer stand

For HP 7470A and 7475A Plotters

■ **Paper**

9280-0589	Fifty A-size sheets (blank)
9280-0517	Three hundred A-size sheets (blank)
9280-0588	Fifty A4-size sheets (blank)
9280-0519	Three hundred A4-size sheets (blank)
9280-0614	Fifty B-size sheets (blank)
9280-0518	Three hundred B-size sheets (blank)
9280-0615	Fifty A3-size sheets (blank)
9280-0610	Three hundred A3-size sheets (blank)
9280-0640	Fifty A-size sheets (gloss-finish heavy-weight)
9280-0642	Fifty A4-size sheets (gloss-finish heavy-weight)
9280-0641	Fifty B-size sheets (gloss-finish heavy-weight)
9280-0643	Fifty A3-size sheets (gloss-finish heavy-weight)

■ **Paper-and-Pen Kits**

5061-5070	Three hundred A-size sheets; pen holder; 20 fiber-tip pens (10 colors, 2 line-widths)
5061-5071	Three hundred A4-size sheets; pen holder; 20 fiber-tip pens (10 colors, 2 line-widths)

■ **Transparency Film**

9270-1126	Fifty A-size sheets (for the 7470A plotter)
9270-1181	Fifty A-size sheets (for the 7475A plotter)
9270-1182	Fifty A4-size sheets (for the 7475A plotter)

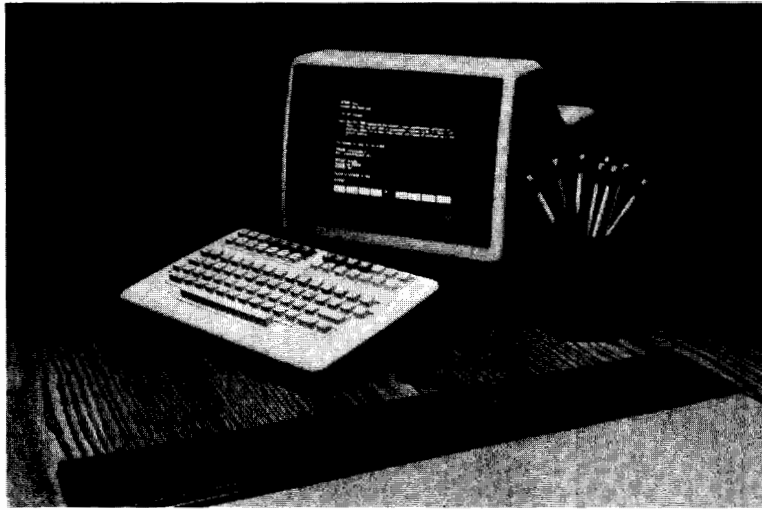
■ **Transparency Kits**

5061-7561	Fifty sheets of paper-backed A-size transparency film; 16 pens (7 colors, 2 tip-widths) (for the 7470A plotter)
5061-7583	Fifty sheets of paper-backed A-size transparency film; 16 pens (7 colors, 2 tip-widths) (for the 7475A plotter)
5061-7584	Fifty sheets of paper-backed A4-size transparency film; 16 pens (7 colors, 2 tip-widths) (for the 7475A plotter)

■ **Fiber-Tip Pens (for use with paper)**

5060-6784	Narrow line-width (0.3-mm) red pen (package of 5)
5060-6785	Narrow line-width (0.3-mm) blue pen (package of 5)
5060-6786	Narrow line-width (0.3-mm) green pen (package of 5)
5060-6787	Narrow line-width (0.3-mm) black pen (package of 5)
5060-6890	Wide line-width (0.7-mm) black pen (package of 5)
5060-6891	Wide line-width (0.7-mm) blue pen (package of 5)
5060-6892	Wide line-width (0.7-mm) green pen (package of 5)
5060-6893	Wide line-width (0.7-mm) red pen (package of 5)

- 5060-6810 Narrow line-width (0.3-mm) pens (package of 4: one each red, blue, green, and black)
- 5060-6858 Wide line-width (0.7-mm) pens (package of 4: one each red, blue, green, and black)
- 5060-6894 Narrow line-width (0.3-mm) pens (package of 6: one each orange, brown, violet, turquoise, gold, lime green)
- 5060-6895 Wide line-width (0.7-mm) pens (package of 6: one each orange, brown, violet, turquoise, gold, lime green)
- **Transparency Pens (for use with film)**
 - 5061-5010 Narrow line-width (0.3-mm) black pen (package of 5)
 - 5061-5012 Narrow line-width (0.3-mm) red pen (package of 5)
 - 5061-5015 Narrow line-width (0.3-mm) green pen (package of 5)
 - 5061-5016 Narrow line-width (0.3-mm) blue pen (package of 5)
 - 5061-5020 Wide line-width (0.7-mm) black pen (package of 5)
 - 5061-5022 Wide line-width (0.7-mm) red pen (package of 5)
 - 5061-5025 Wide line-width (0.7-mm) green pen (package of 5)
 - 5061-5026 Wide line-width (0.7-mm) blue pen (package of 5)
 - 5060-6818 Narrow line-width (0.3-mm) pens (package of 4: one each red, blue, green, and black)
 - 5060-6819 Wide line-width (0.7-mm) pens (package of 4: one each red, blue, green, and black)
 - 5060-6834 Narrow line-width (0.3-mm) pens (package of 4: one each orange, brown, violet, and black)
 - 5060-6835 Wide line-width (0.7-mm) pens (package of 4: one each orange, brown, violet, and black)
 - **Solvent**
 - 5060-6828 One ounce (29.6 ml) of solvent for refreshing dry transparency pens
 - **Accessories**
 - 92171S Desktop stand (7470A)
 - 92177T Plotter-pen organizer (for short pens)
 - 92177U Plotter-pen organizer (for tall pens)
 - 92250N Dust cover (7470A)



How to Order

All of the items listed in this issue, except software update/upgrade kits and HP-conducted training courses, are available from your dealer or HP:

- Your local HP Dealer can often provide immediate delivery. (To locate a dealer, call 800/FOR-HPPC in the U.S. or contact your local HP office—ask for “Personal Computer Dealer Sales.”)
- Your HP Sales and Service Office will transmit your order to the appropriate HP distribution center.

Ordering by Telephone from HP

Except for systems, peripherals (such as disc drives and printers), and training courses, the items listed in this issue are also available by telephone from Hewlett-Packard:

- Belgium/Luxembourg (02) 762 32 00
- Canada
 - Toronto local 416-671-8383
 - Ontario 1-800-268-6982
 - Quebec 1-800-387-3417
 - British Columbia 1-112-387-3154
 - other provinces 1-800-387-3154
- France (6) 928 32 64
- The Netherlands 020-470639
- South Africa 802-5111
53-7954
28-4178
- Sweden 08-7502027
08-7502028
- Switzerland (057) 31 22 54
or 31 22 59
- United Kingdom 0734-792868
0734-792959
- United States 800-538-8787
 - California 408-738-4133
- West Germany 07031-142829
07031-223133

If countries not listed, call your local HP Sales and Service Office for ordering information.

Ordering HP-Conducted Training Courses

Hewlett-Packard provides personal computer training courses at HP Customer Training Centers using HP-provided equipment; they can also be taught by HP at your facility using your own systems. To order, call your HP Sales and Service Office.

**Ordering Software
Update and Upgrade
Kits**

Your original master disc must accompany an order for software update or upgrade kits. Therefore, they are available only through your local dealer or from HP by mail.

For ordering instructions, refer to the section "Software Exchange Kits" earlier in this Current Information Insert.

HP Internal Users

Have your purchasing department enter an I2 order on the supplying entity shown for the item on the Corporate Price List or the Parts Price List.

If you are ordering a Software Exchange Kit, return the original master disc to:

Software Product Marketing, Building 78

or to:

Hewlett-Packard
P.O. Box 60008
Sunnyvale, CA 94088
Attn: Software Product Marketing

Reference your HP Internal Order number on the package.

HP Employees

Check with the Employee Computer Program Coordinator in your personnel or purchasing department for ordering instructions.

Mail Order Form

for HP Personal/Desktop Computer Software Update Kits

Use this form only for HP Personal/Desktop Computer Software Update Kits. Supplies matched to your HP Computer System can be ordered with update kits.

Ordering instructions:

1. Print or type all requested customer information.
2. Order software update kit(s) for your HP Personal/Desktop Computer. The original disc must be sent to HP with your order for the software update kit; see instruction 7.
3. You may also order computer supplies using this form. Obtain current prices by calling toll-free 800-538-8787. In California, Alaska and Hawaii call (408) 738-4133 collect.
4. Compute state/local taxes on the total cost of items ordered (HP is required to collect taxes; their omission delays your order). If tax exempt, you must provide your tax exemption/resale number.
5. Fill in any special shipping instructions, as required. HP pays freight to U.S. addresses on mail orders. EXCEPT you will be charged extra for special expedited shipping methods; and you will be charged freight on heavy, bulky items weighing more than 30 lbs., such as furniture or printer paper.
6. Fill in credit card information or enclose cashier's check for fastest shipment. Payment by personal or company check will delay shipment up to 10 days. Make check payable to Hewlett-Packard Co. All orders subject to credit approval. Do not send currency, coin, stamps or purchase orders.
7. Before your software update kit(s) can be shipped, you must send with your order one original disc (containing the software being updated) for each update kit ordered. This is the disc with the HP software product number and description printed on the label. Be sure to make a working copy before sending the original.
8. Mail this form, along with credit card information (or check), and the original disc to:
HEWLETT-PACKARD
Mail Order Dept., P.O. Box 60008, Sunnyvale, CA 94088

Thank you for your order!

Your Name _____ Phone () _____ Date _____

Disc Size: _____ 5.25" _____ 3.5"

Product Number	Description	Quantity	Unit Price	Amount
1			*	*
2			*	*
3			*	*
4			*	*
5			*	*

Tax Exempt? No Yes

Tax Exempt or Resale Number _____

Subtotal	*
State/Local Taxes	*
TOTAL	*

Ship To

Company _____ Bldg/Room _____

Attn Of _____

Street Address _____

City _____ State _____ Zip _____

Special Shipping Instructions _____




Standard Shipping Method Is _____
UPS Surface _____

Payment Method

Purchase Order (Number _____)

Check Enclosed (Payable to Hewlett-Packard Co.)

Credit Card (Check one, provide all information, and sign)

Account No. _____

Expiration Date _____

Name on Card _____

Address _____

Signature _____

Use this form for prepaid U.S. orders only POD 1/84 (Over)

Change of Address Form for *Communicator* Subscribers

If the information on your *Communicator* mailing label is no longer correct, please let us know. Fill in this form and mail it to **Hewlett-Packard, Subscriptions Marketing Department, P.O. Box 60008, Sunnyvale, CA 94088 U.S.A.** Allow 6-8 weeks for change to take effect.

(please print)

Old Address:

(attach mailing label or fill in information as it appears on mailing label)

Name _____ (Title) _____

(Company) _____

Address _____ (Bldg No./Mail Stop) _____

City _____ State _____ Zip _____

Country _____

New Address:

(exactly as it should appear on the mailing label)

Name _____ (Title) _____

(Company) _____

Address _____ (Bldg No./Mail Stop) _____

City _____ State _____ Zip _____

Country _____



HP PC Care

Hewlett-Packard computer-equipment care—expert service for your peace of mind

You have acquired a powerful tool in the engineering excellence of your new Hewlett-Packard product. By boosting your operation's productivity, this high-quality equipment will help you achieve the success you desire in your business.

But investing in productive hardware isn't enough. To realize the potential of your investment, you should select the proper care and maintenance program for your product. Just as a championship racing driver depends on the pit crew for help in reaching the checkered flag, you can count on the skill of HP's service engineers to help you win in the business world. Hewlett-Packard maintenance will protect your investment and ensure productivity in the long run.

Discover the lasting value of HP product- care agreements

By selecting a service program that meets your needs, you can maximize the return on your hardware investment. HP maintenance agreements combine assured response and long-term economy. In fact, in most cases, the annual cost of a maintenance agreement is much less than the charge for the parts and labor involved in a single service call.

Hewlett-Packard product-care agreements offer the following features:

Economy through quality

The reliability built into HP products lets you obtain maintenance agreements at the lowest possible cost.

Guaranteed cost

The price of contractual maintenance is fixed for twelve months. This guaranteed cost lets you plan your budget with the assurance of no unexpected expense for product care.

Flexibility

HP offers the broadest range of maintenance options in the computer industry. You can select a service that meets your needs for convenience and response—and that also fits your budget.

A product-care program that meets your needs

Learn more about the range of HP product-care services by filling in and mailing the attached card, or by calling:

**800-835-HPHP (408-741-3033 outside the
continental U.S.)**

An HP support specialist will explain the types of product-care agreements that are available and will help you plan a package of support services that meets your needs.

Plan for your success today with the help of Hewlett-Packard product-care services

Hewlett-Packard provides the right service options

The on-site product maintenance agreement

This service offers next-day service performed at your location for sites located within 100 miles of an HP Service-Responsible Office.

The field-repair-center maintenance agreement

This service offers substantial savings for returning your products to a nearby HP Field Repair Center. Engineers make the repairs and ship the products back to you within three days.

The volume on-site repair agreement

This economical service provides regular weekly maintenance visits to sites with at least 25 eligible products.

Hewlett-Packard has 96 Service-Responsible offices and 15 Field Repair Centers throughout North America. Furthermore, your local authorized HP Personal Computer Dealer may provide similar product-care services. Call 800-835-HPHP (408-741-3033 outside the continental U.S.) to locate the nearest HP service office or for information about care services from your local HP personal computer dealer.

Effective and economical support from Hewlett-Packard

I would like further information about HP product-care services.

Please contact me by telephone

Please send me a quotation based on the following products:

	Product Number	Options
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____

Name _____

Position _____

Company _____

Address _____

Telephone _____

45530/5958-6251

Tear Out And Mail This Page

From _____

NO POSTAGE
NECESSARY
IF MAILED IN THE
UNITED STATES

BUSINESS REPLY MAIL

First-Class Permit No. 607, Cupertino, CA

HEWLETT-PACKARD COMPANY
19310 Pruneridge Avenue
Cupertino, CA 95014

ATTN: Support Sales Center

Trademarks

The following trademarks appear in this publication:

VisiCalc® is a U.S. registered trademark of VisiCorp.

DIF™ is a trademark of Software Arts.

CP/M® is a U.S. registered trademark of Digital Research.

Condor™ is a trademark of Condor Computer Corporation.

WordStar® is a U.S. registered trademark of MicroPro International Corporation.

SpellStar™ and MailMerge™ are trademarks of MicroPro International Corporation.

Picture Perfect™ and Diagraph™ are trademarks of Computer Support Corp.

MicroPlan™ is a trademark of Chang Laboratories, Inc.

Dow Jones News/Retrieval Service® is a U.S. registered trademark of Dow Jones & Co. Inc.

The SourceSM is a U.S. service mark of Source Telecomputing Corporation, a subsidiary of The Reader's Digest Association, Inc.

Milestone™, Datebook II™ and Personal Datebook™ are trademarks of Organic Software.

dBASE II™ is a trademark of Ashton-Tate.

Peachtree Software™ is a trademark of Peachtree Software, Inc.

PeachPay™ is a trademark of Peachtree Software, Inc.

TYCOON: The Commodity Market Simulation™ is a trademark of Blue Chip Software, Inc.

Starcross™ and Suspended™ are trademarks of Infocom, Inc.

Temple of Apshai™ and Ricochet™ are trademarks of EPYX Inc.

Type Attack™ is a trademark of Sirius Software, Inc.

Zork® is a registered trademark of Infocom, Inc.

IBM® is a registered trademark of International Business Machines Corporation. The IBM Personal Computer (PC) is a product of International Business Machines Corporation.

1-2-3™ and Lotus™ are trademarks of Lotus Development Corporation.

Microsoft® is a registered trademark of Microsoft Corporation.

Context MBA™ is a trademark of Context Management Systems.

UCSD p-System is a U.S. trademark of The Regents of the University of California.



**HEWLETT
PACKARD**

Computer Supplies Operation
P.O. Box 60008
Sunnyvale, CA 94086

Bulk Rate
U.S. Postage
PAID
Hewlett-
Packard

ADDRESS CORRECTION REQUESTED

Printed in U.S.A. 4/85
5958-0251 (Issue 11)
45530A/B/C (subscription)