for users of The Portable, HP12x, and

Touchscreen/150 computers

HP Series 100 Communicator

Local-Area Networking

with HP Personal Computers

Worldwide Edition

HP Computer Museum
www.hpmuseum.net

Series 100 Newsline

Computer Museum

Update/upgrade reminder: Although very few of the HP Series 100 update or upgrade kits are free, in most cases the charge is modest. So before you place an order for one of these kits, please call HP for price and delivery information on the software you want. The phone numbers are listed under "How to Order" in the Current Information section of this issue.

Several new type fonts are now available for the HP 2686A LaserJet printer. Contact your local HP sales office for more information about the variety of typefaces for this versatile peripheral device... Environmentally aware users will be glad to learn that **gaseous emissions** from the LaserJet are at less than 1% of the allowable level established by the U.S. Government for dry-toner copiers and laser printers. The gases that are produced when the LaserJet is running are not dangerous or offensive.

HP's Series 100 personal computers now support the following languages, all by Microsoft: BASIC (a BASIC interpreter: Product Number 45445D), Compiled BASIC (45446D), Pascal (a compiler: 45447D), COBOL (45448A), FORTRAN (45449A), and GW-BASIC (an advanced BASIC interpreter: 45450A). Quick-reference guides are available for BASIC (Part Number 45445-90006), Pascal (45447-90002), COBOL (45448-90002), FORTRAN (45449-90002), and GW-BASIC (45450-90008).

The new HP 92915A bar-code reader offers users of terminals and HP personal computers a fast, accurate, and reliable way to enter data. The reader supports many of the most widely used codes: Code 3 of 9, Interleaved 2 of 5, CODABAR, and the UPC/EAN/JAN retailers' codes.

The new HP 3-1/2" double-sided diskettes (in boxes of ten; Product Number 92192A) are compatible with both single-sided and double-sided disc drives. Each diskette offers 710 Kbytes of storage -- well over twice the capacity of single-sided diskettes -- and costs not quite 1/3 more than a single-sided diskette.

Three new carrying cases are now available for The Portable. American Tourister has designed a strong, lightweight fabric case (Product Number 13269V) that has room for The Portable, an HP 9114 disc drive, and a ThinkJet printer. The complete system in this case measures 18 by 15 by 12 inches and weighs only 21 pounds. A surrogate-leather carrying case (13269U) and a leather attaché case (13269W) are also available.

The utilities diskette for The Portable is now available in
two new versions: a 3-1/2" diskette formatted for use with HP
3-1/2" single-sided drives, and a 5-1/4" diskette formatted
for use with the IBM PC and IBM XT via the HP 82973A HP-IL
interface.   Each new utilities diskette comes in a replace-
ment kit that also includes Lotus 1-2-3 Print/Graph and two
Lotus 1-2-3 tutorials. The kit with the 3-1/2" diskettes is
Part Number 00090-12011, and the kit with the 5-1/4" diskettes
is Part Number 00090-12012. Contact your local HP personal-
computer dealer or HP sales and service office for price and
delivery information.

One free Communicator per customer is HP's policy, regardless
of the number of free-offer cards an individual may send in.
If you need more copies of the Communicator, please order a
subscription: six issues for $24 (U.S. only; Product Number
45530A), $33 (Canada and Mexico; 45530B), or $43 (the rest of
the world: 45530C). Complete ordering information appears in
the Current Information section of this issue.

**The price of the user-installable, keyboard-addressable
HP 2674A thermal printer** has been reduced by more than one-
third. This highly reliable printer offers many advantages:
low cost, preconfiguration (no cables to buy or switches to
set), and quiet 120-cps printing of text (80 to 132 columns)
and graphics in blue or black ink. It takes up no additional
desk space, uses either continuous or fan-folded thermal
paper, and is ready for immediate delivery from your local
HP personal-computer dealer.

Single-sided HP 3-1/2" and 5-1/4" flexible diskettes now cost
less. For details, see your HP dealer or local HP sales
office... There's also been a substantial reduction in the
price of **HP Financial Calculator** (Product Number 45423A), the
program that works like an HP 12C hand-held calculator. This
program stores and recalls financial programs on the HP 150,
and can exchange data with VisiCalc and Lotus 1-2-3 files.
Contact your local HP sales office for details.

We are delighted with the trade press's enthusiastic response
to the HP 150. **Infoworld:** "...innovative touchscreen and a
lot more ... a lot of byte for your bucks"; **Business Computer
Systems:** "... HP has advanced the state of the art with a
superbly designed and executed machine."

Welcome to the *Series 100 Communicator*   Barbara Clifford

WELCOME

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.

This issue introduces a counterpart to the Newsline. "From the Coach" is a summary of recent software problems and their solutions, as reported by users and found by the HP COACH support staff. "From the Coach" will appear regularly at the beginning of the Encyclopedia section in each issue of the *Communicator.*

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 users and HP field-support people. If you'd like to contribute an article, program, question, or suggestion, please send it to us at the following address:

Editor, *Series 100 Communicator*
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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.

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Removing Soft Hyphens in WordStar/12x   Pete Roche

If you're ready to print the final version of a heavily edited text, you probably want to remove any "soft" hyphens that appear in the middle of a line. You can do so automatically and without removing necessary hyphens by following the procedures described below.

1. Select [main menu], [help & modes], and [other keys].

2. Enable [SOFT HYPHEN].

3. Select [main menu], [format & find], and [FIND & REPLACE].

4. When the "FIND?" prompt appears, type "-".

5. When the "REPLACE WITH?" prompt appears, press [RETURN].

6. When the "OPTIONS?" prompt appears, type "?"/

7. When the list of options appears, type "GN" and press [RETURN].

WordStar will then search the entire file and remove all soft hyphens.

To preserve the hyphens that appear at ends of lines, you can replace them with normal ("hard") hyphens before starting the soft-hyphen removal procedure. Another approach would be to select only the "G" option for the FIND & REPLACE feature, and remove or retain each hyphen individually when the program finds it.   □

Did you know that you can enter more than 100 data points on the data-entry screen for linear charts in the Graphics/12x software package? If you've found it frustrating to be limited to 23 data points when creating a linear chart, worry no more. The limit on data points is actually much greater.

When you start to enter data for the linear-chart program, the data-entry screen is blank. The Graphics/12x manual states that you are limited to 23 records of data when you enter data on this screen. The key word here is "records." Users often think of one record as being the same as one line of data, and interpret the statement in the manual as meaning that the program accepts only 23 data points. What users sometimes don't realize is that one line can contain more than one data point.

If you specify that each data point to be entered should consist of three columns of numbers, then Graphics/12x will read numbers from the data-entry screen in groups of three, from left to right and from top to bottom.

The numbers that you enter on the same line must be separated by two spaces. You can place several groups of three numbers on the same line, or split a group of numbers between two or three lines. What this means is that the number of data points you can enter is limited only by the number of entries (separated by two spaces) that you can fit onto one screen—in most cases, considerably more than 23.

For example, the two data-entry schemes shown in the following figure are exactly equivalent.

```
- - - - - - - - - - - - - - - - -
1            2            5
2            9            3
3            8            7
4            3            8
5            2            4
6            6            9
7            9            0
```

Screen 1

```
- - - - - - - - - - - - - - - - -
1   2   5   2   9   3   3   8   7   4
3   8   5   2   4   6   6   9   7   9
0
```

Screen 2

As you see, Screen 2 has room for quite a few more data points. I hope using this technique makes your work easier, as it has mine. □

Internal Rate of Return: Using the Iteration Option in Multiplan

Mary Ellen Kassotakis

The user's manual for Version 1.10 of Multiplan contains a detailed example of how to use the iteration option in calculating internal rates of return (pages D-18 through D-21). This procedure can be a useful tool in business decision-making. The following tips should make it easier to set up the equations in this example.

1. Define the names "IRR" and "Cash Flow".

2. Set the cell format to "Continuous" in order to accommodate the long statements in the appropriate columns.

3. Touch the [OPTION] label.

4. Set "Iteration" to YES.

5. Set the completion test for the specific cell in which the DELTA function is to be located.

6. Enter each equation on an individual row. (Typing the sheet row by row is very helpful.)

You'll also find it useful to read the "Summary of Hints for Creating Iteration Models" on pages D-25 through D-27. □

Lotus 1-2-3: Disc Drives, Peripherals, and Data Bases

Mary C. Lion
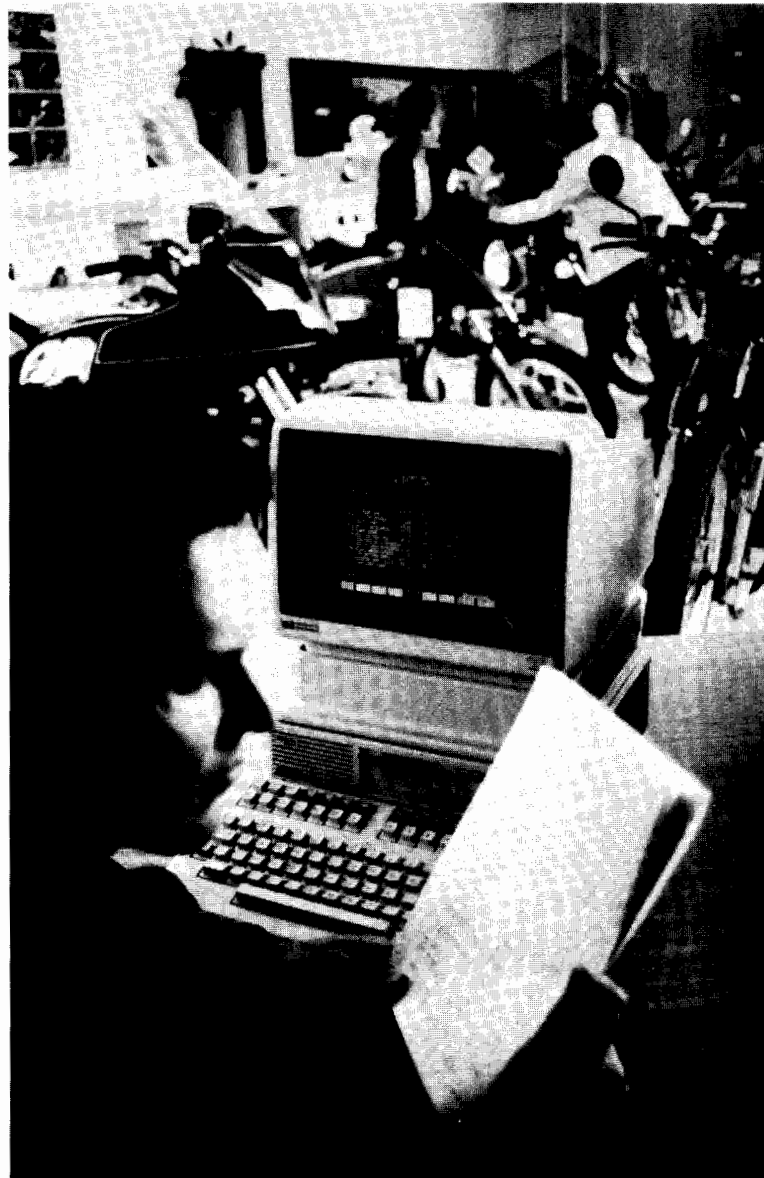
If you're now using Lotus 1-2-3, you're already on your way to improving your business productivity through spreadsheet analysis and data-base management. But you'll probably find that you progress even faster with Lotus 1-2-3 if you apply the hints in this article.

Getting Started with Fixed-Disc Drives

Disk Errors: In Lotus, the default "start-up" directory is directory B:. When you enter Lotus from the Personal Applications Manager (P.A.M.) of the HP 150 Touchscreen personal computer, the system tries to load the 1-2-3 program from the drive that contains the B: directory. A disc error will occur if the MS-DOS configuration menu has named the fixed-disc drive "A:" and the flexible-disc drive "C:". To avoid this problem, you should change the start-up directory in Lotus. The procedure for doing so is outlined below.

1. Enter the /WORKSHEET GLOBAL DEFAULT DIRECTORY commands
2. Change the name of the start-up directory to "C:"
3. Enter the UPDATE command

Another way to obtain the same result is to change the drive designation in the MS-DOS device-configuration menu from "C:" to "B:" so that it matches the drive designation in Lotus.

The 1-2-3 Master System Disc: Even if your copy of Lotus 1-2-3 is installed on a fixed-disc drive, you must still keep the 1-2-3 master system disc in the flexible-disc drive throughout your 1-2-3 working session.

Printers

Configuration: Be sure that the print-option number in Lotus corresponds to the specification in the MS-DOS device-configuration menu that appears on the screen. To set the default print-option number, enter the /WORKSHEET GLOBAL DEFAULT PRINTER INTERFACE commands and select the appropriate print-option number from the following table:

Lotus Print-Option Number	MS-DOS Device Configuration
1	PRN (primary printer)
2	LST (secondary printer)
3	INTERNAL PRINTER (2674A)
4	AUX (auxiliary device—usually a plotter)

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After you select the proper print-option number, enter the UPDATE command to incorporate your selection into the Lotus default instructions. (The interface terms "serial" and "parallel" that appear on the screen under each option do not apply to the interface method for the HP 150.)

Arbitrary blank lines: What do you do if the printer seems to insert blank lines arbitrarily into the middle of your spreadsheet? This break happens because Lotus believes that the printer has reached the end of a page. The solution is easy: set the printer to start printing at the top of a page, and enter the /PRINT PRINTER ALIGN command. This command resets the line-number counter and the page-number counter to 1.

Plotters	To tell Lotus to send output to a plotter, select "AUX" on the MS-DOS device-configuration menu. This selection corresponds to Lotus print-option 4 for 1-2-3.
Graphics	*Saving graphs:* You can save graphs by entering either of the following commands:

- /GRAPH NAME CREATE If you assign a name to a graph, this command saves the graph under that name in your worksheet file. When you save the worksheet, Lotus also saves the graph name. (Enter the /GRAPH NAME USE command to display the graph again.)

- /GRAPH SAVE This command saves an image of your graph in a separate file whose name has the extension ".PIC". The Printgraph program uses this file to print or plot the final version of the graph.

Dumping graphics: When you are using the VIEW mode of the /GRAPH command, you can print the graphics display by simultaneously pressing the [CTRL] and [ENTER] keys. This technique works with the HP 2674A internal printer and also with the HP 82906A, HP 2225 (ThinkJet), HP 2932A, and HP 2934A external printer.

Line charts: When you are defining the range of points to be graphed in a line chart, be sure that each set of values is a series of adjacent points. (A range that contains empty cells will result in a graph that contains broken lines.)

Pie charts: If the sectors in a pie chart are very small, the sector labels might overlap—on the screen as well as on the hard copy. To avoid this problem, you should re-arrange the information in the chart or else consider using a different kind of chart.

Legends: You should keep legends as short as possible. Your HP 150 can display more text on the screen than the printer or plotter can produce. The character limits for legend lines are listed below:

Number of Legends	Total Number of Characters per Line
1	19
2	38
3	35
4	29
5	23
6	17

Separating Macros

If you are creating more than one macro for your spreadsheet, be sure to separate them with a non-label cell (an empty cell, a number cell, or a formula cell). You can also use the /XG, /XC, or /XM programming command. Lotus reads downward and executes macros until it reaches a separator.

Data Bases

DATA QUERY: Be sure each field has its own name. When you are using the /DATA QUERY commands, 1-2-3 can become confused if two or more fields have the same name.

Column/row orientation: When you create a data base, be sure to place the field names in the first row of the data base and the records in each subsequent row. If the information in a data base you've already created isn't organized this way, follow the procedure outlined below to re-arrange it:

1. Enter the /FILE SAVE command to save the data base as a WKS file.
2. Run access to the TRANSLATE program on the utility disc. Select the "WKS to DIF" option. (This option transfers the data to a file that has the DIF format.)
3. Select the "DIF to WKS" option to convert the DIF file to a file that has the WKS format.
4. Select the ROW-WISE translation option. (This option re-orients the rows and columns.)
5. Enter the /FILE RETRIEVE command to reload the file into Lotus 1-2-3.

Transferring Files from VisiCalc to Lotus 1-2-3	*The disappearing cell:* Before you transfer a VisiCalc/150 file to Lotus 1-2-3, be sure to save the VisiCalc file. And when you do so, be sure the cursor is in an empty cell. Otherwise, when you transfer the VisiCalc file, the contents of that cell will disappear. (If this happens, simply retype the entry.)
	Non-transferable functions and formats: Data should not disappear when you transfer a file from VisiCalc to Lotus 1-2-3. However, the following VisiCalc functions and formats *do not* travel:
	■ Functions: @CHOOSE, @NOT, @OR, and @AND
	■ Formats: left and right justification; currency symbols ($, K, M); numerics (scientific, integer, fixed decimal, accounting, percent, parentheses, comma separator); individual column widths
	■ Attributes: Hide, Protect
Transferring IBM Lotus Files to the HP Touchscreen 150 Personal Computer	Use the HP Monitor/IBM PC program to transfer Lotus files from an IBM PC to your HP 150 Touchscreen computer. The Monitor program works in conjunction with DSN/Link to transfer both ASCII and binary files.
	For more information about HP Monitor/IBM PC (Product Number 45439A), contact your authorized HP Personal Computer dealer or your local HP Sales Office. □

Here is a procedure you can use to set user-defined function keys within a dBASE II command file. The *HP 150 Terminal User's Guide* lists the escape-code sequences that define the function keys. You should refer to pages A-17 and A-18 of this manual while following the steps outlined below.

The goal of this example is to define the first function key (key F1) as the "BROWSE FILES" key.

1. Run dBASE II.

2. Enter the statement "MODIFY COMMAND KEYFILE".

   This step creates a command file named "KEYFILE." This is the file into which you'll enter the escape codes that define the function keys.

3. When the screen goes blank, enter the following data exactly as it appears below:

   ? CHR(27) + "$F0a1k1x16d7L" + "BROWSE
       FILES   " + "BROWSE" + CHR(13)
   ? CHR(27) + "$jB"

4. To save the file, press [CTRL] and the "W" key simultaneously.

   The functions of the parts of the first line in the command file are explained below:

CHR(27)	is the escape sequence
0a	indicates that the attribute of the function key is normal
1k	indicates that the first function key (F1) is being defined
1x	defines the top half of the function-key label; the text will wrap to the bottom line
16d	indicates that the total length of the label (including spaces) is 16 characters
7L	indicates that the command and return occupy 7 characters

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"BROWSE   is the label
FILES   "

"BROWSE" is the command

CHR(13)   is the return

The second line in the command file displays
the function-key labels on the screen. (See Page
A-17 of the manual.)

To execute the command procedure, type the
following statement:

    do KEYFILE

The example on Page A-17 of the *HP 150
Terminal User's Guide* provides additional
information about the format of the command
line, as shown below:

    Ec &f <attribute>a <key>k
    <enhancement>v <label half>x
    <label length>d <string length>L
    <label> <string>

☐

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The current editions of the HP 120 and HP 125 owner's manuals provide basic information about the CP/M operating system and the standard CP/M utilities for HP 12x computers. However, several versatile and effective tools are available that are not described in these manuals. For example, once you've discovered what the PIP and STAT utilities can do, you'll find many occasions outside of packaged applications when you can put these utilities to excellent use.

Here is a "Help" menu that you can store on a work disc. This menu explains each of the utilities that come with the CP/M operating system. To install this menu on the work disc and add it to the "Welcome" menu, you would create a .WEL file (like the one shown in this article) by following the directions given on pages 5–19 and 5–20 of the *Series 100 Owner's Manual*. This menu provides a ready reference, and you should find many opportunities to use these utilities in your programs.

filename: GTU.MSG

```
   ESC&dJ   CP/M UTILITIES AVAILABLE ON THIS DISC  ESC&d@
PIP          Transfers/copies material from one disc or
             device to another
STAT         Assigns attributes and reports statistics about
             disc usage, files, and devices
SUBMIT       Allows streaming of batch jobs without action by
             the user
XSUB         Expands the features of SUBMIT for batch jobs
COPY         Provides an alternative to PIP for copying
             material from one disc to another
FORMAT       Initializes discs and verifies their format
             PROGRAMMING UTILITIES (see the System Reference
             Manual for details)
ED           Character-oriented text editor; useful in
             creating ASCII text files and program files.
             (See Chapter 14 of the System Reference Manual.)
ASM          The CP/M 8080 Assembler; generates machine-
             language output from source-file input. (See
             Chapter 15.)
```

DDT	The Dynamic Debugging Tool; helps verify the correct execution of a loaded assembly file. (See Chapter 16.)
LOAD	Loads an assembled .HEX file and produces from it a corresponding .COM file. (See Chapter 13.)
DUMP	Displays the contents of a file in hexadecimal form. (See Chapter 13.)

ENTER ANY COMMAND. <> TYPE ''WELCOME'' TO RESTORE THE WELCOME MENU.

filename: GUIDE.WEL

1	GUIDE TO UTILITIES—A help display by QK/osb, 1984
2	GUIDE TO UTIL
3	TYPE GTU.MSG
4	[intentionally blank line]
5	[intentionally blank line]
6	GTU.MSG
7	ASM.COM
8	DDT.COM
9	DUMP.COM
10	ED.COM
11	LOAD.COM
12	PIP.COM
13	STAT.COM
14	SUBMIT.COM
15	XSUB.COM

Our thanks to Quentin Kathol, O.S.B., of Conception Abbey, Conception, MO for contributing this article.

Transferring Fixed-Length ASCII Records via DSN/Link

Earl Mortensen

At present, when fixed-length ASCII files are transferred from an HP 300 to an HP 150 Touchscreen personal computer, the fixed-length attribute of the records is lost. In order to transfer the files and keep the attribute, you must convert the file to a binary file on the HP 3000 before transferring it to the HP 150. The command file described in this article automatically performs this function.

Some applications create fixed-length records on the HP 150. If you want to transfer these files to an HP 3000, you must transfer them as binary files. If the files are edited and saved on the HP 3000, they are saved as ASCII files. If a fixed-length-record file is transferred from an HP 3000 to an HP 150 as an ASCII file, spaces disappear and the records no longer have a fixed length.

The command file shown below asks you for the name of the file on the HP 3000, the name of the file to be created on the HP 150, and the number of bytes (characters) in each record. The number of bytes per record that you enter in the command file must be the same as the number of bytes per record in the file on the HP 3000. If these numbers don't match, an error message appears and the procedures stops. Remember: on the HP 3000, one word equals two bytes.

To create and use the command file, follow the steps listed below:

1. Use a text editor to create a file named FIXEDREC.
2. Store the file named FIXEDREC on the same disc on which the DSN/Link program is stored.
3. Run DSN/Link on the HP 150 and make the connection with the HP 3000.
4. Press the [COMMAND] function key (f3).
5. Press the [COMMAND FILE] function key (f1).
6. When the screen prompts you for the name of the command file, type "FIXEDREC" and press [RETURN].
7. When the first question appears on the screen, type the name of the file on the HP 3000 and press [RETURN].
8. When the second question appears on the screen, type the name of the file to be created on the HP 150 and press [RETURN]. (If the file already exists on the HP 150, it will be replaced by the new file.)

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9. When the third question appears on the screen, type the number of bytes (characters) per record and press [RETURN]. The number you type must be the same as the number of bytes per record in the file on the HP 3000.

If you've followed this procedure exactly, the fixed-length records of the file that is transferred to the HP 150 will be preserved.

Here is a listing for the command file "FIXEDREC":

```
&!  This command file sends an HP 3000 fixed-
        length ASCIIE file from an HP 300 to an
        HP 150, preserving the length of the records
        in the file.
&MSG  "You will be prompted to:"
&MSG  " "
&MSG  "  1.  Enter the name of the file on the
                HP 3000"
&MSG  " "
&MSG  "  2.  Enter the name of the file to be
                created on the HP 150"
&MSG  " "
&MSG  "  3.  Enter the number of bytes per record"
&MSG  ""
&!
&INPUT "NAME OF HP 3000 FILE TO BE
        DOWNLOADED",&P1
&INPUT "NAME OF FILE ON HP 150 AFTER
        DOWNLOADING",&P2
&INPUT "RECORD LENGTH IN BYTES
        (CHARACTERS)",&P3
PURGE TEMPFILE
&SEND "FILE TEMPFILE"REC =
    -",&P3,",,F,BINARY"
&SEND "FCOPY
FROM =",&P1"Ø = *TEMPFILE"NEW"
Y

&DSCOPY TEMPFILE TO &P2, LOCAL; BINARY
(this line must be entirely blank)
&!                                              ☐
```

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A Feature-by-Feature Comparison of the HP 150 and HP 2623A Terminals

Kevin Folan,
Alex Morgan

When you use your HP 150 Touchscreen personal computer as a terminal, you enjoy the benefits of enhanced data communications, forms-generation and other graphics capabilities, and HP TOUCH. These features make your computer different from HP 2623A terminals, and may require changes in programs written originally for the HP 2623A. The table below lists the major differences between these two types of terminals.

FEATURE	150A	2623A
ALPHA SCREEN		
Size	9 inches (diagonal)	12 inches (diagonal)
Color	Green on black	White on black
Lines of Text Displayed	24 lines	24 lines
Number of Lines Occupied by Softkey Labels	2 lines	2 lines
Status Line	Yes	No
Total Number of Lines in Display	27 lines	26 lines
Size of Display Memory	3 Kbytes *(Note 1)*	4 Kbytes
Real-Time Clock	Yes	No
GRAPHICS		
Resolution	511 x 390 pixels	511 x 390 pixels
Text	Vector-drawn *(Note 2)*	Cell overlay
Rectangular Area-Filling	Yes	Yes
Polygonal Area-Filling	Yes	No
Rubber-Band Line	Yes	No
Tablet Supported	No	Yes

DATA COMMUNICATIONS

Speed	19,200 bits per second	9600 bits per second
RS-442 Interface	Yes	Optional
HP Interface Bus (HP-IB)	Yes	No
Current Loop	No	Optional

Note 1: The HP 150B (and the HP 150A with Revision B firmware) report 4 Kbytes of display memory.

Note 2: In JAM mode, the HP 150B's background is not cleared. (The 150B treats JAM mode the same way it treats SET mode.)

□

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Saving HP 150 Screen Graphics

Brian Rainie

You've just written a fascinating BASIC program that draws complex images on the screen of your HP 150 Touchscreen personal computer. Now you want to save a copy of what's on the screen so that you can recall it later from a disc. If you're programming the HP 150 and using a BASIC interpreter, this task is easier than you might think.

The Graphics Plane

The dots you've placed on the screen reside on what is known as the "graphics plane." This is a memory location reserved for graphics. The graphics plane contains 24,960 bytes (512 dots per row x 390 rows, at 8 bits per byte).

For the HP 150, the graphics plane begins at location C0000 hex, and is contiguous for all 24,960 bytes. (Please keep in mind that this address may change in future releases of the HP 150 or follow-on products.)

You can gain access to the graphics plane in either of two ways. One is to use the "PEEK" statement to read the contents of graphics memory one byte at a time. If you're planning to copy the entire graphics plane to a disc, this could take a while. The other way is much more efficient, and a whole lot easier.

The Easy Transfer...

The easy way to store the contents of the graphics plane on a disc relies on the fact that both of the BASIC interpreters that are available for the HP 150 support the "BSAVE" statement. This statement lets the user copy segments of memory to a disc. For example, the following lines in a program would copy the entire graphics plane to a disc file named "GPLANE":

```
100 DEF SEG = &HC000
110 BSAVE "GPLANE",0,24960
```

In this example, Line 100 defines the starting address for the segment, and Line 110 causes the contents of memory to be copied from the graphics plane to the disc file.

	This example defines the temporary segment address as being equal to the start of graphics memory. (The segment address is equal to the absolute address divided by 10 hex.) The DEF SEG address is used only by special memory-specific commands (such as BSAVE), and has no effect on the general operation of the interpreter. The BSAVE statement then copies 24,960 bytes from memory location C0000 (C000*10 + 0) to the file named "GPLANE." The entire copying operation takes from 5 to 20 seconds, depending on the interpreter and disc drive used.
...And the Easy Recall	Once the contents of the graphics plane have been copied to a disc file, you can easily recall them by using the "BLOAD" statement. You need not specify the segment address or length when you BLOAD the file. These values are stored in the file and are set automatically. For example, the following statement would copy the contents of the GPLANE file back into the graphics plane, replacing any other data that was stored there: 200 BLOAD "GPLANE"
No Ghostly Cursors	It appears that whenever the graphics cursor is activated, it is overlaid onto graphics memory. Therefore, be sure to turn off the cursor before you do a BSAVE. Otherwise a faint imprint of the cursor will be stored in the disc file along with the rest of the dots. □

BAT/150: A Fast, Easy Way
to Obtain an .EXE File

Helen Morimoto

If you have a simple program that needs to be compiled and linked many times, you can save the time that would be required to recompile the program for each run by creating an execution file (that is, a file whose name has the extension .EXE). To do so, you need to initiate a compilation, go through a second pass (when required), and link the default libraries.

The easy way to perform these tasks is to use a batch file. Once you've created the file and entered its name, the system automatically produces the .EXE file.

Creating the batch file is not hard at all. For example, if you are working in FORTRAN, you could create a file and assign the extension .BAT to its name, thus: "FORTRAN.BAT". The contents of the batch file are brief, and depend on the language you are using. Here are typical contents of the batch files for BASIC, COBOL, FORTRAN, and Pascal:

The contents of the BASIC.BAT batch file:
```
A:BASCOM %1,,NULL
A:LINK %1,,NULL,A:
```

The contents of the COBOL.BAT batch file:
```
A:COBOL %1,,NULL
A:LINK %1,,NULL,A:
```

The contents of the FORTRAN.BAT batch file:
```
A:FOR1 %1,,,NULL
A:PAS2
A:LINK %1,,NULL,A:FORTRAN
```

The contents of the PASCAL.BAT batch file:
```
A:PAS1 %1,,,NULL
A:PAS2
A:LINK %1,,NULL,A:PASCAL
```

In these examples, the compiler and the linker are located on the disc in Drive A:. The contents of each batch file should reflect the drive in which the disc containing your application is located. Although the default drive is independent of this location, the source name and the name of the drive for the source do depend on what you enter when you type the name of the batch file.

For the FORTRAN example above, you would initiate the compilation process by typing "FORTRAN" in MS™-DOS along with the source name. Thus, if you type "FORTRAN MYPROG", an error-free compilation should result in the creation of an .EXE file. □
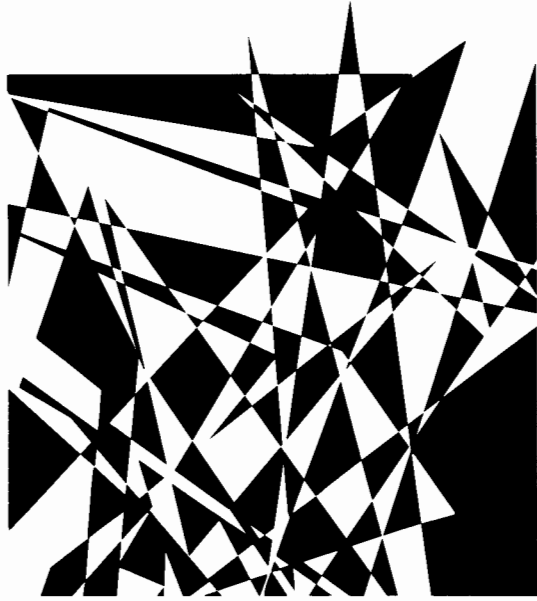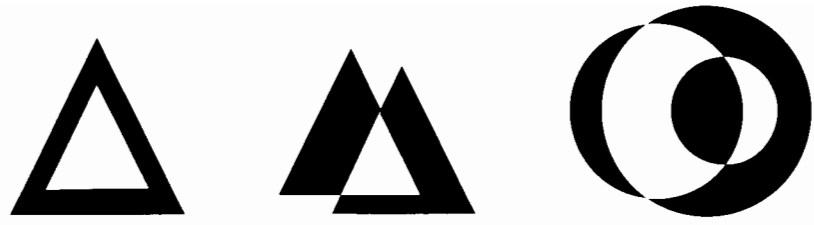
There are two ways to fill areas in graphics on the HP 150 Touchscreen personal computer. The first method, which is standard for HP graphics terminals, is the rectangular area-filling option. By specifying the lower-left and upper-right coordinates of a rectangle on the screen, you can cause that area to be filled with either a solid array of dots or another pre-defined pattern. But your computer also lets you specify the filling of polygonal areas. In this method, you can outline a regular or irregular multi-sided shape and cause it to be filled with a pattern.

Although you could use the rectangular filling routine to fill the bars in a bar chart, this method wouldn't work to fill the segments of a pie chart. For the latter task, you need to use the polygonal filling option. Fortunately, filling a graphic area is not much different from drawing a polygon. The following two escape sequences show the different formats. The first escape sequence draws a simple triangle on the screen. The second escape sequence not only draws the triangle but also fills it with a pattern.

```
ESC*pa 100,200 300,200 200,300 100,200Z
ESC*psa 100,200 300,200 200,300 100,200T
```

In these examples, "ESC*p" specifies point plotting. The "a" lifts the pen before moving to the first point (the pen "drops" automatically once the first point is found). The "Z" in the first example is a non-operating code that simply indicates the end of the escape sequence. In the second example, the "s" designates the beginning of the area to be filled, and the "T" indicates the end of the area to be filled (as well as the end of the escape sequence).

As you may gather from these examples, it is possible to start an area-filling operation, draw a polygon, use the "a" parameter to raise the pen, draw another polygon, and then end with a "T" to fill this area. If you use this method, the terminal will draw and fill the second polygon over the first polygon. Where the polygons overlap, the dots on the screen will be off instead of on, thus leaving a portion of the area "dark" (that is, unfilled). If the two polygons were filled separately, this dark area would not appear. If you draw multiple polygons one inside another, the dots are either on or off, depending on the overlay level of each polygon.

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The first program listed below draws patterns on the screen and then fills them in. The second program draws multiple random polygons and uses the area-filling option to create interesting patterns.

```
10   REM * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
20   REM *              Polygonal Area Fill example program #1           *
30   REM *                  © Copyright 1984 by Brian Rainie            *
40   REM *                                                              *
50   REM * This program performs the following steps:                  *
60   REM *    1)  Clears the alpha display                             *
70   REM *    2)  Clears the graphics display                         *
80   REM *    3)  Draws a single triangle, then fills it.             *
90   REM *    4)  Draws one triangle inside of another, then performs a *
100  REM *        polygon fill.                                        *
110  REM *    5)  Draws one triangle partially overlaying another.     *
120  REM *    6)  Draws three overlapping circles.                    *
130  REM * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
1000 WIDTH 255                    ' Set print width to infinity
1010 EC$=CHR$(27)                 ' Define escape-character variable
1020 PRINT EC$;''h'';EC$;''J'';   ' Clear the alpha display
1030 PRINT EC$;''*wR'';           ' Reset/clear graphics display
1040 DIM START$(2),FINISH$(2)
1050 START$(1)=EC$+''*p''         ' Simply draw polygon
1060 START$(2)=EC$+''*ps''        ' Draw and fill polygon
1070 FINISH$(1)=''Z''             ' End of draw sequence
1080 FINISH$(2)=''T''             ' End of fill sequence
1090 REM
1100 REM  Define sine and cosine values of a circle
1110 REM
1120 DIM SINE(24),COSINE(24)
1130 DATA  0,.2588191,.5,.7071068,.8660256,.9659259,1
1140 FOR K=0 TO 6
1150 READ SINE(K)                 ' Read sine values 0-90 deg step 15 deg
1160 SINE(12-K)=SINE(K)           ' 90-180 deg is opposite of 0-90 deg
1170 SINE(24-K)=-SINE(K)          ' 270-360 deg is negative of 90-180 deg
1180 SINE(12+K)=-SINE(K)          ' 180-270 deg is negative of 0-90 deg
1190 NEXT K
1200 FOR K=0 TO 24
1210 COSINE(K)=SINE((K+6) MOD 24) ' Cosine values are 90 deg off sine values
1220 NEXT K
1230 REM
1240 REM  Draw a single triangle and fill it
1250 REM
1260 FOR D=1 TO 2
1270   PRINT START$(D);           ' Start of draw or fill
1280   PRINT ''a70,250'';
1290   PRINT ''  170,250'';
1300   PRINT ''  120,350'';
```

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```
1310    PRINT '' 70,250'';
1320    PRINT FINISH$(D);                ' End of draw or fill
1330 NEXT D
1340 REM
1350 REM  Draw two triangles, one inside the other, and fill them
1360 REM
1370 FOR D=1 TO 2
1380    PRINT START$(D);                ' Start of draw or fill
1390    PRINT ''a340,250'';
1400    PRINT '' 440,250'';
1410    PRINT '' 390,350'';
1420    PRINT '' 340,250'';
1430    PRINT ''a360,265'';
1440    PRINT '' 420,265'';
1450    PRINT '' 390,325'';
1460    PRINT '' 360,265'';
1470    PRINT FINISH$(D);                ' End of draw or fill
1480 NEXT D
1490 REM
1500 REM  Draw two triangles, one overlapping the other
1510 REM
1520 FOR D=1 TO 2
1530    PRINT START$(D);                ' Start of draw or fill
1540    PRINT ''a70,110'';
1550    PRINT '' 150,110'';
1560    PRINT '' 110,190'';
1570    PRINT '' 70,110'';
1580    PRINT ''a100,100'';
1590    PRINT '' 180,100'';
1600    PRINT '' 140,180'';
1610    PRINT '' 100,100'';
1620    PRINT FINISH$(D);                ' End of draw or fill
1630 NEXT D
1640 REM
1650 REM  Draw three overlapping circles
1660 REM
1670 FOR D=1 TO 2
1680    PRINT START$(D);                 ' Start of draw or fill
1690    RESTORE 1700
1700    DATA  360,150,50
1710    DATA  390,150,60
1720    DATA  400,150,30
1730    FOR K=1 TO 3
1740      READ CX,CY,R
1750      PRINT ''a'';
1760      FOR K1=0 TO 24
1770        X=CX+CINT(R*COSINE(K1))
1780        Y=CY+CINT(R*SINE(K1))
1790        PRINT X:Y;
1800      NEXT K1
```

```
1810    NEXT K
1820    PRINT FINISH$(D);              ' End of draw or fill
1830 NEXT D
1840 WIDTH 80                         ' Set print width back to default of 80
1850 END


10   REM * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
20   REM *              Polygonal Area Fill example program #2        *
30   REM *                  © Copyright 1984 by Brian Rainie          *
40   REM *                                                            *
50   REM *  This program performs the following steps:                *
60   REM *    1)  Clears the alpha display and removes the function-key *
70   REM *        status lines.                                       *
80   REM *    2)  Until a character is typed, performs the following: *
90   REM *         1)  Clears the graphics display                    *
100  REM *         2)  Starts a polygonal area-fill command           *
110  REM *         3)  Outputs points for numerous random geometric shapes *
120  REM *         4)  Initiates the drawing of the polygon           *
130  REM *    3)  Pressing a key on the keyboard causes the program to *
140  REM *        clear the graphics display and terminate.           *
150  REM *                                                            *
160  REM *  Modifications you can try for different results:          *
170  REM *    1)  Enter the following statement, which will cause the *
180  REM *        design to be drawn dark on a light background       *
190  REM *        instead of light on a dark background:              *
200  REM *        1085   PRINT''a0,0,511,0,511,389,0,389,0,0'';       *
210  REM *    2)  Replace the statement at line number 1070 with the new line *
220  REM *        1070 below, to cause overlaying of designs:         *
230  REM *        1070   PRINT EC$;''*m3A'';                          *
240  REM * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
1000 RANDOMIZE VAL(TIME$)*1000+VAL(MID$(TIME$,4))*100+VAL(MID$(TIME$,7))
1010 WIDTH 255                        ' Set print width to infinity
1020 IF INKEY$<>'' '' THEN 1020       ' Clear input buffer
1030 ECS$=CHR$(27)                    ' Define escape-character variable
1040 PRINT EC$;''h'';EC$;''J'';        ' Clear the alpha display
1050 PRINT EC$;''&j@'';                ' Turn off function-key and status lines
1060 WHILE INKEY$='' ''                ' If no character typed, perform draw
1070    PRINT EC$;''*wR'';            ' Reset/clear graphics display
1080    PRINT EC$;''*ps'';            ' Start of area fill
1090    FOR K1=1 TO 4+10*RND          ' Loop which creates 4-14 polys
1100      PRINT ''a'';                 ' Lift pen to start a new poly
1110      FOR K2=1 TO 3+3*RND         ' Loop which creates a given poly of 3-6 pts
1120        PRINT INT(512*RND);        ' Random X coordinate
1130        PRINT INT(389*RND);        ' Random Y coordinate
1140      NEXT K2                      ' End of a given poly
1150    NEXT K1                        ' End of the group of polygons
1160    PRINT ''T'';                   ' Initiate the draw of the area fill
1170    PRINT EC$;''@'';EC$;''@'';     ' Wait 2 seconds before starting next
1180 WEND                             ' End of conditional loop
1190 PRINT EC$;''*wR'';                ' Reset/clear graphics display
```
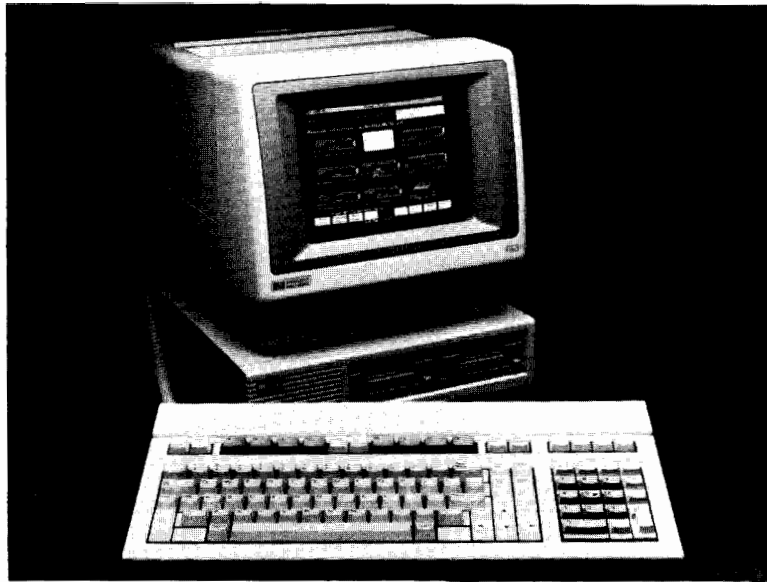
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```
1200 WIDTH 80                    ' Reset print width to default of 80
1210 IF INKEY$<>'' '' THEN 1210  ' Clear input buffer
1220 END
```

Computer Museum

The Newest Members of the HP 150 Family

Thayer Adams, Gary Evans, Mona Matsumoto

The HP 150 family of personal office computers has two new members: the HP 150B with a high-capacity dual flexible-disc drive (known in the United States as the "Touchscreen" PC), and the HP 150B with a 14.8-Mbyte fixed-disc drive and a single flexible-disc drive (referred to in the U.S. as the "Touchscreen MAX").

New Documentation

The HP 150B comes with new documentation, and also brings you improvements in the Personal Applications Manager (P.A.M.). Applications software for Memomaker and Personal Card File is also included with the HP 150B.

The documentation contains more pictures and uses color extensively. Headings and subheadings have been added to make the manuals easier to read and use. That's right—"manuals" with an "s." Instead of offering one manual for users at all levels of experience, we are providing three books: an introductory guide with step-by-step instructions for novice users, a task-oriented "users' guide" that lets experienced users look up detailed information about specific procedures, and a compact quick-reference guide to keep near the computer.

Fast New P.A.M.

P.A.M. now runs faster and occupies less space in the computer's random-access memory (RAM). The new version of the INSTALL utility lets you use sub-directories (that is, directories within other directories). P.A.M. now displays all of your applications, whether they are installed in your root directory or in a sub-directory. These features make it easier than ever before to organize your files within P.A.M.'s File Manager utility. (*NOTE: Once you have used the new version of INSTALL, please do not use the old version again.*)

The new P.A.M. also includes a utility called Easy Config that lets you select the one or more printers, plotters, disk drives, or host computers you want to connect to the HP 150B—all by touching pictures of these devices on the screen. (Of course, the DEVICE CONFIGURATION utility is still available for more advanced configurations, such as those involving a RAM disc or local-area networking.)

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More Mass Storage	Each double-sided diskette for the flexible-disc drives has a formatted capacity of 710 Kbytes. This increase in capacity means that you'll be able to store more information on each diskette and work with fewer diskettes—as well as boot, load, and run applications more quickly. The HP 9122D flexible-disc drive is a dual drive that uses double-sided diskettes; the HP 9133D drive has one 14.8-Mbyte fixed-disc drive and one flexible-disc drive that uses double-sided diskettes. The HP 9133D drive can transfer data at a rate of 30 Kbytes per second.
Networking	Users of the HP 150B will also be able to take advantage of the new machine's networking capabilities. For example, you will be able to link HP personal computers in a group with IBM PC's and PC-compatible machines. By using the HP 150B as a network server with the EtherSeries local-area network made by 3Com Corporation, users will be able to share disc drive and printers with other computers, and will be able to send messages to those computers electronically. Each EtherSeries network will support up to 3000 feet of cabling and 100 personal computers. If you would like to convert your current HP 150 to an HP 150B, please contact your authorized HP personal computer dealer or your local HP sales and services office for information about buying the HP 150B ("Touchscreen") Upgrade Kit. □

Two New Programming Tools
for HP 150 Users
Brian Feldman

	We are happy to announce that the Icon Design System and the BASIC Programmer's Library are now available. These new programming tools are intended for users who are working with graphics or with Series 100/BASIC on the HP 150 Touchscreen personal computer.
The Icon Design System	Have you ever found it frustrating to write graphics programs for the Hp 150? Or have you ever considered creating pictorial menus for your programs, so that the user can make a selection or enter a command simply by touching a picture on the screen? In either case, HP's Icon Design System (IDS) will help make your work easier.
What IDS Does	You can use the IDS to create complex pictures either by itself or in conjunction with the optional HP 9111A Graphics Tablet. IDS lets you refine the picture as much as you like and then save it in a file from which it can be called by your program. The procedure of calling the picture is very similar to the procedure of reading a file.

IDS works with Series 100/BASIC, GW-BASIC, and Pascal. Its graphics editing features let you create circles, ellipses, and polygons. You can also fill polygons with any of nine different patterns. Other options let you move, change the size, or create mirror-images of pictures. IDS also provides grid overlays that help you program the touchscreen.

Other important IDS features are listed below:

- You can enter IDS menu commands simply by touching the function labels that are displayed on the screen.
- For each command, "help" information is displayed on request.
- An "undo" command cancels the immediately preceding command.
- Pre-written routines (in Series 100/BASIC, GW-BASIC, and Pascal) that display your icons on the screen.

The BASIC Programmer's Library	The BASIC Programmer's Library (BPL) is a collection of subroutines, definitions of variables, and definitions of functions that save you the effort of having to learn first-hand all of the details of how the HP 150's hardware works. Once you integrate the BPL directly into your BASIC program, using the features of the computer is as easy as calling a subroutine. BPL gives you the following advantages: ■ Access to screen-control functions ■ Control of the keyboard ■ Control of the touchscreen ■ Control of the user-defined function keys ■ Access to character sets for mathematics and line-drawing ■ Access to BIOS (basic input-output system) routines via calls to the HP 150's AGIOS (alphanumeric and graphics I/O subsystem) ■ Access to data-communications devices and plotters
"Touch Me"	Here's an example of how a Series 100/BASIC programmer might use BPL. Suppose you want to incorporate HP TOUCH into a program and have the words "Touch Me" appear on the screen starting at Column 10 in Row 10. Without BPL, this procedure would require a somewhat complex series of steps. But with BPL, you need only include the following statement in your BASIC program: 5000 print($FNTOUCH(10,10,"Touch Me")); It's that simple!
To Order These Products	Anyone who is developing software for an application that uses the HP 150 Touchscreen personal computer can benefit from using both the IDS and the BPL. The Icon Design System (Product Number 45311A) and the BASIC Programmer's Library (Product Number 45310A) are available from your authorized HP Personal Computer dealer or from your local HP Sales Office. See also "How to Order" in the Current Information section of this issue. □

Double-Sided Disc Drives for the HP 150B

Barbara Bennett-Brown

When a product's benefits double, you might also expect its price to double. Not so for the new 3.5" disc drives for the HP 150B ("Touchscreen" and "Touchscreen MAX") personal office computers. In fact, these new disc drives give you well over twice their predecessors' storage capacity, along with excellent reliability and data compatibility with HP's hand-held, portable, and personal computers—at considerably less than twice the price of single-sided drives.

Impressive Capacity

Because the new drives can read and write on both sides of a diskette, each double-sided 3.5" microfloppy has a typical formatted capacity of 710 Kbytes. With these diskettes, you can carry the equivalent of an entire filing cabinet full of data in a pocket!

Savings Increase as Cost per Byte Drops

The following chart shows the recent dramatic decrease in the cost of storing information using 3.5" drives.

COST/BYTE

9121D   9122D

CENTS/BYTE

9121D

9121D

9121D

9122D

NOV '82   SEPT '83   JUNE '84   JULY '84

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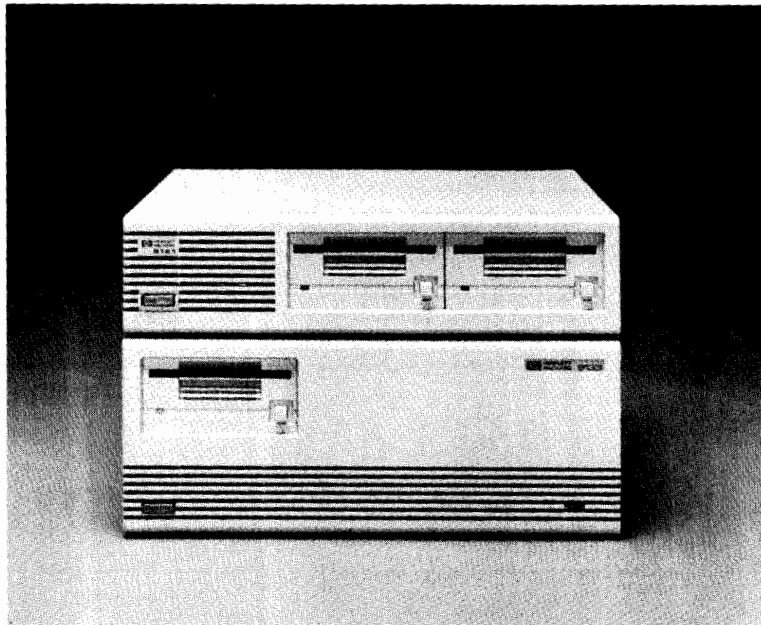|	
Meet the Family	The HP 9122D is a 3.5″ dual double-sided disc drive intended for use with the HP 150B computer. The diskettes used with this drive have a formatted capacity of 710 Kbytes, making them ideal for word-processing, spreadsheet, and graphics programs. Each diskette can store up to 175 typical pages of text or 85,000 eight-digit numbers.
	Fast access to large amounts of data is easy with the HP 9133D disc drive. This product combines a 14.8-Mbyte (formatted capacity) Winchester drive with a 710-Kbyte flexible-disc drive. The Winchester drive offers high-speed data-transfer rates as well as the convenience of one single place to store all your applications programs. The flexible-disc drive's 710 Kbytes of storage make it possible to back up selected files, load new software into the Winchester drive, and exchange data with other HP computers.
	An excellent accessory for the HP 150B flexible-disc system is the new HP 9134D fixed-disc drive. This stand-alone Winchester drive has a formatted capacity of 14.8 Mbytes.
High Reliability	The new 3.5″ flexible diskettes are several times more reliable than their 5.25″ predecessors. The protective features of the new diskettes include a hard plastic case and an automatic metal shutter that work together to prevent damage to the diskette inside the case. A metal centering hub ensures accurate positioning for reading and writing. Last, HP's media-wear monitor lets you know when the diskette is approaching the end of its life, giving you time to back up the contents of the diskette and replace it without losing data.
Formatting for Compatibility	The key to compatibility between single-sided diskettes and double-sided ones is the FORMAT command. To use the new double-sided diskettes in a single-sided-diskette drive (such as the HP 9121D), you need only specify 'single-sided' when you format the double-sided diskettes. However, it is cheaper to use single-sided diskettes in single-sided drives. Single-sided drives that do not have the auto-shutter feature (that is, drives shipped before March 1, 1983) cannot use double-sided diskettes.
	To protect your diskettes from excessive wear, we suggest that you use single-sided diskettes in single-sided drives, and double-sided diskettes in double-sided drives, except when you are transferring data from one kind of diskette to the other.

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The New Standard

The 3.5″ disc drive is the new standard for HP computer products. The company supports these drives for all types of HP computers, from Series 40 hand-held calculators to the HP 1000 minicomputer. The 3.5″ diskettes make it possible to exchange data between systems (such as the HP 150B and The Portable) that use similar disc formats.

To Order

Product Number	Description
HP 9122D	Dual 3.5″ double-sided flexible-disc drive
HP 9122S	Single 3.5″ double-sided flexible-disc drive
HP 9133D	3.5″ double-sided flexible-disc drive with 14.8-Mbyte Winchester drive
HP 9134D	Stand-alone 14.8-Mbyte Winchester drive
HP 92192A	Double-sided diskettes (box of 10)
HP 92191A	Single-sided diskettes (box of 10)

□

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3Com AP Network Server	Touchscreen Personal Computer Node	IBM PC Node	Texas Instruments Node

Thick Cable

Repeater	IBM PC-XT Network Server	Texas Instruments Node	IBM Compatible PC Node

Thin Cable

LaserJet Professional PC Printer	Touchscreen MAX Network Server	Touchscreen Personal Computer Node	IBM PC Node

Hewlett-Packard Supported LAN
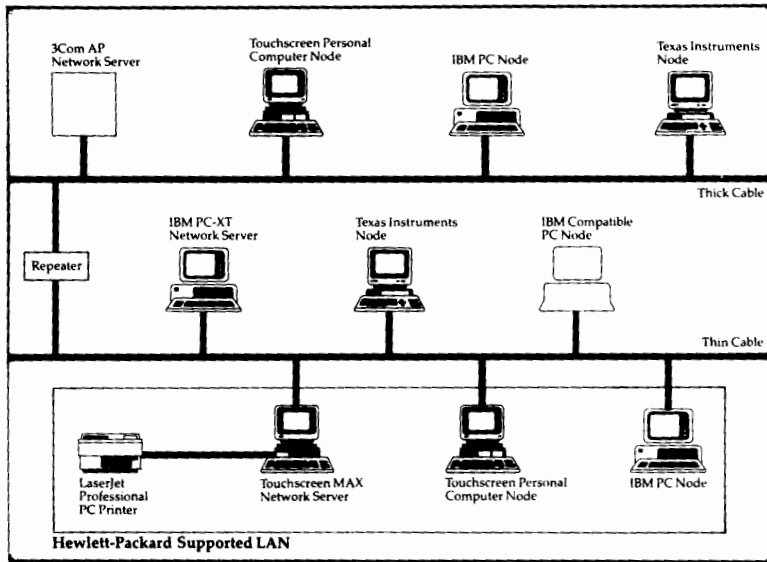
HP is now distributing and supporting 3Com Corporation's EtherSeries local-area network (LAN) for the HP 150 family of personal office computers.

EtherSeries/150 consists of hardware and software that lets HP 150 computers share information and the use of peripheral devices with other computers that are compatible with the EtherSeries network. Among these other computers are the IBM PC, the P.C-compatibles, and the TI Professional. The EtherSeries/150 software makes full use of HP Touch and the Function keys of the HP 150 computers.

EtherSeries/150 is based on the EtherNet coaxial-cable network standard that was developed in the mid-1970's. The hardware and software that make up the EtherSeries/150 family are described below.

Network Software

EtherShare/150 lets HP 150 computers or other EtherSeries-compatible computers share the fixed-disc drive of an HP 150B (known in the United States as the "Touchscreen MAX" computer). EtherShare/150 manages requests when several users want access to the fixed disc at the same time. With EtherShare/150, data and programs can be made public for a specified number of users, can be shared by a given group of users, or can be made private for use by a single designated person.

EtherPrint/150 lets network users share a printer, thereby eliminating the need for a separate printer for each HP 150 computer. Users select the desired printer(s) (up to two printers per network server) by entering simple commands. By sharing printers, organizations save money, reduce office noise, and give all users access to specialty printers.

EtherMail/150 lets networked computers communicate via electronic mail. Users create a message by means of a screen-oriented editor that lets them position the cursor and implement tasks via HP Touch. Mail can be transmitted between HP 150 computers and any other computers that 3Com Corporation supports for EtherSeries operations.

Network Hardware	EtherLink/150 is the hardware accessory card that plugs into an NP 150 computer, enabling the computer to send and receive data over the network at a rate of 10 Mbits per second (MBPS). This accessory card includes the software that an HP 150 computer access to disc drives and printers located elsewhere on the network. Each HP 150 computer on the network must have an EtherLink/150 card.
	EtherShare/150, EtherPrint/150, and EtherMail/150 all reside on the network server. The server, which is a specially configured HP 150B ("Touchscreen MAX"), provides centralized access to disc drives, printers, and applications software. Serving the network is the sole purpose of this HP 150B. The server, which can support from two to eight personal computers at a time, needs 384 Kbytes of system memory and must have an EtherLink/150 card.
Configurations Supported by HP	Any personal computer that 3Com Corporation supports for EtherSeries use will function as a user system or a network server in the EtherSeries/150 network. However, Hewlett-Packard only supports networks that have one or more HP 150B computers as network servers and that have HP or IBM PC user systems. The network printers that HP supports are the HP 2932, the HP 2934, and the HP LaserJet printer.
	An EtherSeries/150 local-area network can be up to 300 meters long and can support up to 100 user/ server connections. The EtherSeries/150 LAN must be based on a Thin EtherNet cable.
HP Network Support	HP's first network-support product is the Network Support Contract. This contract provides phone-in software assistance for networks that meet the configuration and equipment criteria mentioned above. For a nominal monthly fee, a network administrator or designated alternate can telephone HP Coach for help in solving software problems.
EtherSeries and the HP 150A	The EtherSeries/150 products are intended for use with the HP 150B personal computers with either a flexible-disc drive or a fixed-disc drive. (These computers are known in the U.S. as the "Touchscreen PC" and "Touchscreen MAX," respectively.) Users of the HP 150A personal computer can enjoy the benefits of networking by purchasing and installing the appropriate upgrade

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package. In order to use an HP 150A on the EtherSeries/150 network, you will need to buy the Touchscreen Operating System Exchange Kit (Part Number 45626-63007). If your HP 150A has a fixed-disc drive, you can use the computer as a server on the network by adding both the Touchscreen Operating System and new Read-Only Memory (ROM) IC's. To do so, you can order either the Mini-Upgrade Kit (Part Number 45626-63003) or the Full Upgrade Kit (Part Number 45626-63005). For more information, contact your authorized HP personal computer dealer or an HP sales and service office.

Product Literature

The documents listed below provide comprehensive information about EtherSeries/150 products:

Title	Part Number
The EtherSeries/150 Data Book	5953-5873
The Touchscreen PC Configuration Guide	45626-90003
The EtherSeries/150 User's Guide	45644-90001
The EtherSeries/150 Administrator's Guide	45644-90003

Placing Orders

The EtherSeries/150 hardware and software listed below is available through your authorized HP personal computer dealer.

Product	Product Number
EtherLink/150	45644A
EtherShare/150	45645A
EtherPrint/150	45647A
EtherMail/150	45648A
EtherMail/150 User Software (required only for networks whose server is not an HP 150B computer)	45639A

EtherSeries/150 products are ideal for users who have three or more HP 150 computers or IBM PCs and who want to share data, programs, or access to peripheral devices. EtherSeries/150 products also let you add HP 150 personal computers to groups that already use 3Com EtherSeries networks. Remember: once a network is installed, it only gets bigger! ☐

The HP 150B and the IBM PC
Speak to Each Other

Barbara Bennett-Brown

The HP 150B ("Touchscreen") personal computer and the IBM PC are now on speaking terms. The new HP 9125S single 5.25" disc drive lets the HP 150 (which normally uses 3.5" discs) read, write, and initialize 5.25" IBM PC discs, thus enabling easy two-way communication between these two different systems.

What Could be Easier?

To exchange data between HP and IBM computers, just insert the IBM PC disc directly into a 9125S disc drive that is connected to an HP 150B via the Hewlett-Packard Interface Bus (HP-IB). Read or modify the data and return the disc to the drive of the IBM PC. That's all there is to it!

The 9125S reads and writes to discs formatted for use on the IBM PC under PC-DOS 1.0 and 2.0. With the HP 150B and the 9125S drive, you can create IBM-compatible diskettes. PC-DOS 2.0 (which is currently the most widely used format) provides the convenience of a per-disc storage capacity of 360 Kbytes.

Stack It

The 9125S drive is designed to fit neatly under your HP 150B and any other disc drive(s) you may be using. The size of your system's footprint stays the same.

To Order

To purchase the HP 9125S 5.25" flexible-disc drive, contact your authorized HP personal computer dealer or your nearest HP sales and service office. To order one box of ten 5.25" diskettes for the drive, specify Product Number 92190A.   ☐

Enhanced Condor Software Now Available
for the HP 150   Chris Walker
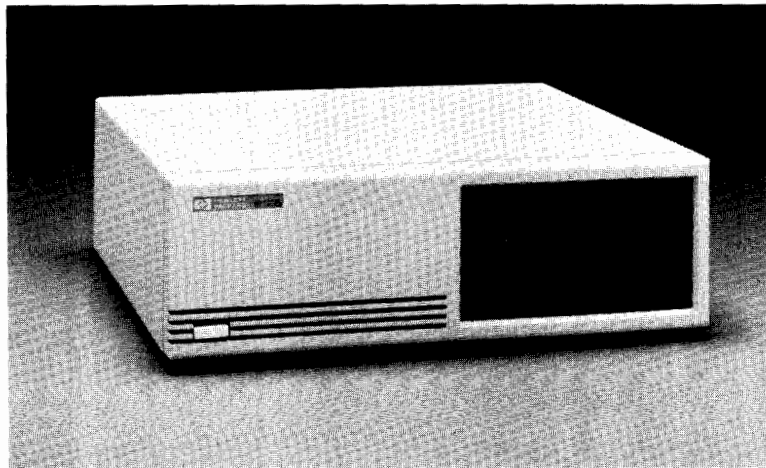
HP 150 users who work with Condor 1 or Condor 3 will be happy to learn that they can now order the new enhanced Condor Data-Base Management System. Version 2.11 includes revised manuals and major improvements in program features.

The Enhancements

Condor has been improved in several ways that make the product even easier to use than it is now. Data files created under the current version of Condor are compatible with data files in Version 2.11. File transfer is easy. Other improvements are listed below.

■ **Improved User's and Reference Guide.** This guide now includes a 70-page interactive tutorial, clarifications in the section describing Report Writer, and more information about data integration. Data compatibility with products such as Lotus™ 1-2-3™, Personal Card File™, WordStar™, MailMerge™, and VisiCalc™ is thoroughly documented. A new section describes how to down-load data from the HP 3000 Image data base.

■ **Condor 3 on a single disc.** With this arrangement, you no longer need to swap the RUN and BUILD discs.

■ **Two-screen data-entry form.** The new data-entry form is twice as large as before (that is, two screens long), thus improving readability and enabling better forms design. (However, the number of fields allowed is still 127 fields per record.)

■ **Expanded record limit.** The expansion of the record limit from 32,767 to 65,534 doubles the capacity of the data base.

■ **More decimal places in numeric fields.** The expansion of the number of decimal places from 2 to 18 provides greater accuracy in calculations.

■ **INSERT mode during data entry.** This mode lets you revise data or correct typing errors quickly and easily. Instead of having to re-type an entire field (depending on the extent of the revision), you can use the INSERT key, which toggles back and forth between the REPLACE and INSERT modes.

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- **Changes in the COMPUTE command.** This command now has the following three new features:

  –It supports a WHERE condition. This feature eliminates the steps needed until now to select the desired records.

  –A single command can contain up to eight computations. This feature eliminates the need to retype long command lines.

  –Field values can be replaced globally. This feature lets you replace alphabetical or numerical information stored in one field with values stored in any other field, and do so throughout an entire data set. This feature is similar to the "search and replace" feature in word-processing programs. For example, the command
  COMPUTE DONORS ST AMOUNT.DUE = @PLEDGE
  moves each value in the PLEDGE field to the AMOUNT.DUE field, record by record for all of the records in the DONOR data set.

  Field values can also be changed globally to a single value. For example, the command
  COMPUTE CUSTOMERS ST CITY = DETROIT
  places "Detroit" in each CITY field for each record in the CUSTOMERS data set.

- **In-string searching.** This feature lets you search for any part of a field, including characters located within the field. For example, for a field that contains entries such as "555 Main Street", you can select all entries related to "Main Street"—instead of being able only to search forward from the first characters found in the field.

How to Order	Owners of Condor 3 for the HP 150 can order Version 2.11 through their authorized HP Personal Computer dealer, or by mail as a standard update kit from HP's Computer Supplies Division (Product Number 45416-63002). The kit contains one new Condor 3 program disc and a set of new manuals. One original HP 150 Condor 3 disc must be returned as proof of purchase with each order for the Update Kit.

All orders for update kits and for regular Condor products are being filled with Version 2.11 of Condor 1 or Condor 3.

Owners of Condor 1 for the HP 150 who want to upgrade their software to Condor 3 can order an Upgrade Kit for this purpose (Product Number 45417A) and receive the Version 2.11 Update Kit at the same time. □

MicroPlan, a power spreadsheet program developed by Chang Labs for financial modeling, has been enhanced for use with the HP 150's touchscreen. You can now enter all of the MicroPlan commands and specify execution of all of the MicroPlan functions simply by touching the HP 150's screen. The program is particularly well suited to large, complex spreadsheets—especially ones that require mathematical, statistical, or financial functions such as variance, menu sum, division, growth rate, inverse, absolute value, and exponential smoothing.

An optional Consolidation Module lets you post data from the HP 3000 to a MicroPlan program running on an HP 150, and also lets you consolidate the data in several spreadsheets into one.

All orders for MicroPlan are now being filled with the enhanced version of MicroPlan (Product Number 45465A) together with the Consolidation Module (Product Number 45466A). An update kit is available for the original version of MicroPlan (Version 4.04T1, which does not use the touchscreen features).   □

Encyclopedia

Encyclopedia

Computer
Museum

From the Coach

latest information about Series 100 questions, problems, and solutions

Batteries...

Did you know that your HP 150 uses batteries as well as
AC power? The batteries let the computer save the system
configuration when the AC power is turned off and also
keep the time-and-date clock running. You can expect to
replace them every **nine to ten months.**

But -- how do you know when your computer needs new
batteries? Clues: ● the time or date display stops
changing; ● the internal clock doesn't keep time while
the computer is turned off; ● the system configuration
disappears between working sessions.

Where do you find the MN 9100 **N-size batteries** that the
HP 150 uses? Try a **camera shop** -- these stores often
carry batteries you won't find in drugstores, hardware
stores, or supermarkets. How do you change the batteries?
Your **Terminal Users' Guide** explains how.

Printers...

Time-out problems with your 2602A printer? Check the
serial prefix. If this number is less than 2419, you may
need to order a **firmware upgrade kit** for your computer.
Some users have reported these problems with a 2602A
printer that is connected to an HP 120, HP 125, HP 150,
or Series 80 computer.

We're been told that HPSLATE does not print **underlined
text** correctly on an HP 2601 printer that is connected to
an HP 150. (The "underline" appears above the text
instead of below it.) One way to circumvent this problem
is to specify "typewriter" instead of "2601" when you
configure HPSLATE.

If you receive 50-Hertz AC power and are using (or plan-
ning to use) an HP 293x printer with your HP 150, you
should position the printer to the right (or at least 12
inches from the left side) of your HP 150. Otherwise,
magnetic interference between the 60-Hertz refresh rate
of the HP 150's display and the 50-Hertz fan motor of the
printer may cause wavy lines to appear on the display
screen of the HP 150.

Operating Systems...

You may be one of the HP 150 users who have experienced a problem **loading the operating system** from an HP 9122D disc drive, or difficulty using the HP 9133D flexible disc drive after using Easy Config. The new (B.02.03) version of the operating system eliminates these problems. If you haven't received yours yet, please contact your dealer or HP service office.

The Portable...

If the **operating system** in The Portable re-boots with EDISC full and available program memory less than 112 Kbytes, then P.A.M. (the Personal Applications Manager) may destroy the contents of one sector of EDISC. If this happens, the "DATA ERROR READING DRIVE A:" message will appear. To eliminate this problem, use the system-configuration routine to set program memory to be always at least 112 Kbytes.

When power to The Portable is disconnected or if the RESET button on the printed-circuit board for the battery is pressed, the **battery-level indicator** shows 99%. You should recharge your Portable for 12 hours (off) or 20 hours (on) in order to make the indicator level show the actual battery charge.

Documentation...

Casey Fagan of Los Osos, California has notified us of the following errors in the sample functions program on pages B-3 and B-4 of the **BASIC Users' Guide:**

```
              DEF)
    1040 FNKEY$(K,A$,B$)=ESC$+"&f2a"+STR$(K)+"k"+
         STR$(LEN(A$))+"d"+STR$(LEN(B$))+"L"+A$+B$
```

is incorrect; instead, it should read:

```
    1040 DEF FNKEY$(K,A$,B$)=ESC$+"&f2a"+STR$(K)+"k"+
         STR$(LEN(A$))+"d"+STR$(LEN(B$))+"L"+A$+B$
```

Furthermore,

```
    1050 DEF FNIV$(A$)=ESC$+"&dB"+A$;ESC$+"&d@"
```

should read:

```
    1050 DEF FNIV$(A$)=ESC$+"&dB"+A$+ESC$+"&d@"
```

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.
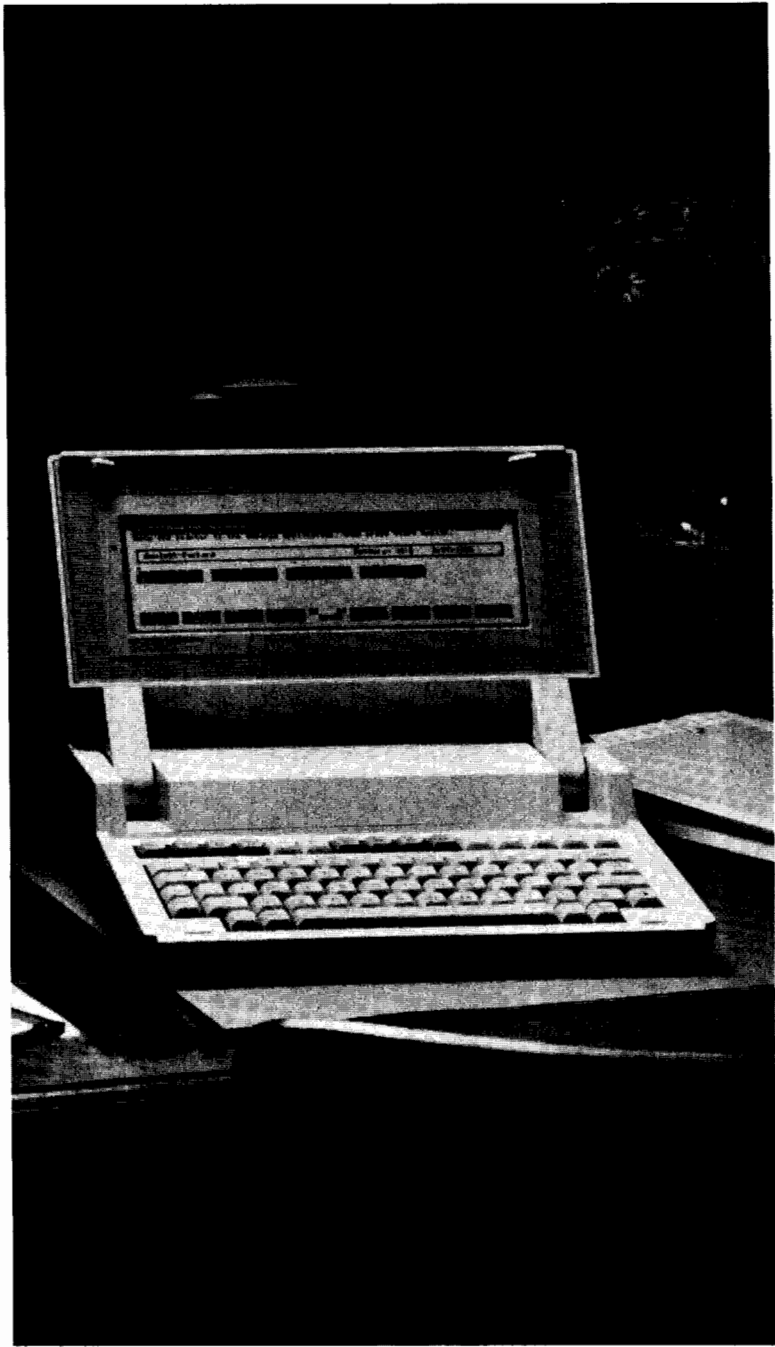
This section covers:
- MS-DOS Operating System for the Portable
- P.A.M. (Personal Application Manager) for the Portable

Refer to the articles in the applications section of the "Encyclopedia" for information on the Portable's built-in application programs:
- Lotus 1-2-3...for the Portable
- Terminal...for the Portable

Most Frequent
Questions

Q. **I own a desktop computer. How can I share data and programs between it and my Portable?**

A. *The Portable may share data with a desktop computer in any connection, over an RS-232 cable, or over an HP-IL connection. ASCII text (such as MemoMaker files) can be shared with virtually any computer. Transfer of binary files (such as 1-2-3™ spreadsheets or programs) is more restricted. The following table summarizes the options available.*

File Transfer

Between HP 110 and...	File Type	
	ASCII	**Binary**
Another HP 110	Disc	Disc
	Phone/RS-232	Phone/RS-232
	HP-IL	HP-IL
HP 150	Disc	Disc
	Phone/RS-232	HP-IL
	HP-IL	
HP 3000	Phone/RS-232	No
HP Series 80	Disc[1]	No
	Phone/RS-232	
HP Series 40/70	Disc[1]	No
	Phone/RS-232	
IBM PC/XT	Disc[2]	Disc[2]
	Phone/RS-232	Phone/RS-232[3]
	HP-IL	HP-IL
Other computers	Phone/RS-232	Phone/RS-232[3]

[1]Requires third-party utility to convert back and forth from MS-DOS format to LIF format. Series 80 also requires utility for LIF to Series 80 format conversion.

[2]Assumes Portable-Desktop Link is used either by the IBM to access a 3.5-inch disc drive, or by The Portable to access IBM disc drives.

[3]The other computer must have software which supports the Modem7 file transfer protocol (also known as Xmodem, Umodem, or CP/M block protocol).

Note that programs transferred as binary files may or may not be usable on the second machine due to differences in display size, device drives, etc. Copyrights on the software may, in fact, forbid the transfer. For guidelines on how to port your own software, refer to the HP 110 Programmer's Toolkit, 45419C.

Q. Will Portable Desktop Link work with IBM "compatibles?" What about the IBM AT?

A. *The HP-IL interface for the IBM PC/XT has been used successfully on the Compaq transportable and the Columbia MPC. This interface, however, has never been qualified for use on machines other than the PC and XT. We have not yet tested the IBM AT.*

Q. I had a low battery warning while the battery indicator showed plenty of power left. What is going on?

A. *Pay attention to the "Low Battery!" warning if it appears in the lower left corner of the display. This is based on a direct measure of battery power remaining and is more accurate than the battery indicator in PAM.*

There are two ways the battery indicator in PAM can become confused and give inaccurate readings:

1. The reset button on the battery was pressed when the battery was not fully charged. In this case, the PAM battery indicator will read too high until the battery is fully charged. This means leaving it attached to the charger for 12 hours (20 hours if the display is on).

2. The RS-232 interface is turned on. The PAM battery indicator is a calculated value, and the power used by the RS-232 interface is not included in the calculation. As a result, the low battery warning will come on at relatively high indicator readings. Subsequent recharging to an indicated 99% level does not actually fully charge the battery, so after recharging to 99% several cycles, the low battery warning comes on at progressively higher indicated levels. The solution is to always charge the computer for several hours after it reaches the 99% level.

Because the RS-232 interface does use a significant amount of power, avoid turning it on unless necessary. The RS-232 interface is turned on whenever the display is on and:

* *PAM's Datacomm Config has the interface set to RS-232 instead of Modem. Leave this field set to Modem unless you are actually using an RS-232 peripheral.*

• *You are in the Terminal program and the Device field in Terminal Config is set to Serial.*

Q. Can I connect an external display to my Portable?

A. Yes and no. You can connect and use a display, but it is treated as a printer, not as a copy of the built-in display. It will only display the text you send to the printer.

There are two ways to connect an external display: with the HP-IL Video Interface (92198A), or with Portable-Desktop Link. In either case, the display behaves as an HP-IL printer.

Problem Reports	**MS-DOS Firmware**

Problem: Rapid striking of control-C will sometimes get echoed to the application display.

Workaround: Don't 'hammer' at the keyboard.

Problem: If the display is in graphics mode and either the MENU key is pressed or the escape sequence to put up the menu is sent to the CONsole, then the display starts scrolling and the machine must be re-booted (via control-shift-break). This does not happen in Lotus 1-2-3, due to its keyboard handling.

Workaround: For software developers, take control of the MENU key interrupt vector and handle accordingly. For applications users of software incorporating graphics, avoid the use of the MENU key from graphics if the special handling described above is not provided within the application.

Problem: If you have set the time-out (in P.A.M. system configure) to .5 minutes, *and* you have a CONFIG.SYS file that defines the SHELL and COMMAND.COM so that you get the MS-DOS prompt rather than P.A.M., *and* you press control-S or the STOP key, followed by any other key, then the machine goes to sleep within a second. When you turn the machine back on by pressing the contrast key, it turns itself back off again after about one second.

Workaround: Press the RETURN key quickly several times immediately after pressing the contrast key.

P.A.M. Firmware

Problem: P.A.M. may clear the contents of one sector on the electronic disc if program memory is less than 112K, *and* EDISC is very full, *and* the system is re-booted. This is indicated by "Data Error Reading Drive A:" The particular file containing that sector may be rendered completely inaccessible from some applications.

Workaround: Set program memory greater than, or equal to, 112K.

Problem: Date does not roll over for timezone + 13h, impacting times on a longitude through eastern Siberia and the Aleutian Islands.

Workaround: Select time zone − 11h.

Problem: The first time a new month is displayed, the old date is overwritten leaving

$\qquad$ x/x/19844

in the display.

Workaround: Any newly generated display will clear the extra digit.

Problem: Command names beginning with PRINT, PROMPT, PATH, and SET may not be invoked from P.A.M. Thus a file named PRINTIT.BAT could not be invoked from P.A.M. because it has PRINT at the front which is not legal from P.A.M.

Workaround: Use command names which do not start with the reserved words listed above.

Courses

■ *Getting Started With The Portable*

If you're a novice computer user interested in learning how to use the Portable, this workshop is for you. It includes instruction on P.A.M., MemoMaker, and Terminal, along with an introduction to 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 (one day)

Books

Touring Datacomm: A Data Communications Primer
Hewlett-Packard, 1983
HP Product Number 5957-4622

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 thorugh 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

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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.

NEW!

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)*		*Front Panel* *(Right Switch)*	
1 Duplex	OFF	1 Lines Per Inch	OFF
2 Parity	OFF	2 Print Pitch	OFF
3 Parity	OFF	3 Print Pitch	OFF
4	OFF	4 Perforation Skip	OFF
5 Baud Rate (2400)	OFF	5 Length	OFF
6 Baud Rate (2400)	ON	6 Length	OFF
7 Baud Rate (2400)	OFF	7 Length	OFF
8 Baud Rate (2400)	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.

NEW!
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).

NEW! 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.

NEW! 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.

NEW! 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 &p5D

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.

NEW! 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 <b>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>l" with "<string length>L."

Manuals	Getting Started with your HP 150 45621-90022
	HP 150 MS-DOS User's Guide 45624A
NEW!	HP 150 Technical Reference Manual 45625A
	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

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)

BASIC Interpreter
...for the HP 150 Touchscreen

Brian Rainie

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. How do I access the serial ports from BASIC?

A. *Use the following statements:*
1. OPEN "O", #1, "COM1"
2. PRINT #1, list of data
The logical file names such as COM1 (Port 1) can be found in the Device Configuration Program.

NOTE: Output is buffered. Data will not be sent until the buffer (128 char default) is filled or the file is closed. OPEN was designed for data transfer, not time-critical operations or device control.

If you want to write programs that access data-communications ports, we recommend that you use GW-BASIC or assembly language.

NEW!

Q. Does BASIC allow you to use all your memory?

A. *No. After the BASIC interpreter is loaded into memory it allocates a free block of up to 64K bytes for the user workspace. This area will hold the user's file buffers, source code, variables, strings, and stack.*

Q. What are the escape sequences for Device Mapping on the 150?

A. *Unlike CP/M, MS-DOS does not require selection of a device through the use of device mapping. Devices can be accessed directly by name. You can OPEN "PRN", "LST", or "AUX" and print directly to them. The BASIC LPRINT and LLIST commands automatically send their output to "PRN".*

You can also use escape sequences to "log" information to devices recognized by the terminal part of the HP 150. Please refer to the section "Device Control" in your HP 150 Terminal Users Guide.

Q. Why does the terminal lock up when I try to use the transmit function key option when creating my own Function Keys in BASIC?

A. *This type of operation requires correct terminal handshaking. See the article "Block Mode Transfers" in* Communicator #7.

Manual Corrections	**BASIC/150 Manual** **First Edition—9/83**
	Pages C-19 through C-21. Headings indicate that the escape sequences are of the form "ESC &"; they should be "ESC*".

Quick Reference Guides	BASIC/150 Quick Reference
	  Guide 45445-90000
	Quick Reference Guide to
	  Microsoft™ BASIC 45445-90006

Communicator **Articles**	–"A BASIC Subroutine Library" . . . . Issue #2
	–"Accessing a Plotter from BASIC" . . . . Issue #4
	–"BASIC/150: Block Mode Transfers" . . . Issue #7
	–"BASIC/150: Block Mode Transfers" . . . Issue #7
	–"HP 12x BASIC Compared to HP 150
	  BASIC" . . . . Issue #7
	–"Subtle Differences: HP 12x/150 BASIC
	  and Other BASICs" . . . . Issue #7
	–"Accessing Plotters from BASIC/150" . . . Issue #8
	–"BASIC—How Do You Make RND More
	  Random?" . . . . Issue #8
	–"Install Your BASIC/150 Application
	  in PAM" . . . . Issue #8
	–"Decrease BASIC/150 Debugging Time with
	  Cross Reference Utility" . . . . Issue #;

Books	**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;* 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—written in Microsoft® BASIC.

HP Product Number 92234G

COBOL by Microsoft
...for the HP 150B

To order this product, please refer to "Software Available from HP" in this issue.

Most Frequent Questions

Q. When I try to use the SORT command mentioned in the COBOL manual, I get an error message. Why?

A. *The SORT utility is a separate utility supplied by Microsoft that Hp has not included on the COBOL language disk. HP is now looking into ways to address this concern.*

Q. Are there any major differences between the Microsoft COBOL and the 3000 COBOL?

A. *Yes. The Microsoft COBOL has had the ACCEPT and DISPLAY statements rewritten to support the Touchscreen terminal functions. These enhancements let the user send escape sequences to the terminal (for example, to program function keys) and to accept the codes that are returned when a function key is pressed.*

Q. How can I create HP-150 screen graphics through COBOL?

A. *You can use escape sequences to create graphic images and touch fields. Information about escape sequences appears in the* HP MS-DOS User's Guide.

Q. How does Microsoft COBOL handle overlays?

A. *There are two types of COBOL subroutines: "Chained" and "Called." When the user uses either of these, the subroutine code is swapped into memory, and the main program code is "overlaid" or replaced. By using subroutines, the user can create code that takes up more than 64K of memory.*

Q. When I am programming in the screen section and I define a field in inverse video or underline, the enhancement seems to run off through to the end of the screen. Is there a way to get around this?

A. *The current workaround is to define two small fields following the specially enhanced field. The problem seems to be that the enhancement runs one field over the one defined, so if two small PIC X fields are defined following the enhanced field, the enhancement should stop.*

Q. When I am compiling one of my COBOL programs, the system seems to hang, and I cannot get control back without doing a hard reset. What could be causing this?

A. *A likely cause is that the system is running out of memory. To prevent this, try to break up your program into smaller subprograms and compile them separately.*

Q. Does COBOL come with an editor?

A. *No, you will need to buy an editor separately. HP offers Wordstar and MemoMaker, either of which can be used as a program editor.*

Q. The manual says to use a program called Link.exe to link my programs together. I was only given link.v1 and link.v2; am I to use these?

A. *Yes. Rename LINK.v2 as LINK.EXE. LINK.v1 is for an old MS-DOS version; LINK.v2 is for the current version. You probably have an older copy of COBOL, because in products now being built we supply only LINK.EXE.*

Quick Reference Guide	Quick Reference Guide to COBOL by Microsoft 45448-90002

Compiled BASIC by Microsoft　　　　　David Newcomer

To order this product, refer to "Software Available from HP" in this issue.

Because this is a companion product to the BASIC by Microsoft interpreter, the references to books and articles for that product apply to this product as well.

Most Frequent Questions	**Q. I can't find the LINK.EXE file. Where is it?** A.　*It's called LINK.v2 on your disk. Rename it as link.exe to execute it. Please see page 1–2 of your manual.* **Q. Can I access the datacomm ports with BASIC?** A.　*No. The only Microsoft language that will allow you to access the datacomm ports is GW-BASIC. You can also use assembly language to access the ports.*
Software Problem Reports	**Problem:** If ON ERROR is not enabled, a RETURN without a prior GOSUB is not properly handled. The system hangs or goes crazy. It appears to be doing a random branch. **Workaround:** None available at this time. One safeguard might be to use ON ERROR in all programs or to take special care for the placement of RETURN statements.
Manual Corrections	**BASIC/150 Manual** **First Edition—9/83** **Pages C-19 through C-21.** Headings indicate that the escape sequences are of the form "ESC &"; they should be "ESC*".
Quick Reference Guide	BASIC/150 Quick Reference 　Guide 45445-90000
Communicator **Articles**	–"BASIC/150: Block Mode Transfers" . . . Issue #7 –"HP 12x BASIC Compared to HP 150 　BASIC" . . . . Issue #7 –"Subtle Differences: HP 12x/150 BASIC 　and Other BASICs" . . . . Issue #7 –"Microsoft BASIC Compiler" . . . . Issue #6 –"Accessing Plotters from BASIC/150" . . Issue #8 –"BASIC—How Do You Make RND More 　Random?" . . . . Issue #8 –"Install Your BASIC/150 Application 　in PAM" . . . . Issue #8 –"Decrease BASIC/150 Debugging Time with 　Cross Reference Utility" . . . . Issue #8

Books

BASIC For Home Computers
Albrecht, Finkel, and Brown; Wiley, 1978

HP Product Number 92234D

Microsoft BASIC
Knecht; Dilithium Press, 1983

HP Product Number 92234E

The Investor's Computer Handbook
Packer; Hayden Books, 1982

This book gives programs and examples directed toward the stock market—written in Microsoft® BASIC.

HP Product Number 92234G

Condor
...for the HP 150 Touchscreen

Kathy Sulgit, Randy Kahle,
Janet Underwood

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.0.2.11

If you have Version 2.10, order an exchange kit to
obtain Version 2.11. 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**

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 dBaseII database?**

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

   While in Condor
   B>>WRITE CONDORDB NEWNAME.TXT®
   (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 dBaseII
.CREATE DBSEIIDB
(Create a data base structure in dBaseII 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 dBaseII database.)

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.*

NEW!

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

A. *Version 2.10 of Condor allows one screen per form. Version 2.11 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.*

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. 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.

NEW!

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:** May be caused by not using 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 45415-90000
Communicator **Articles**	–"Transferring IMAGE/3000 Data to a Condor Database" . . . . .Issue #5
	–"Condor Tips". Issue #7
	–"Plotting Condor Data with HP Graphics". . . . . Issue #8
Books	**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

Courses

■ *Condor/150 20-1*

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)

■ *Condor/150 3*

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)

■ *Condor/150 20-1 and 3* can be ordered as a single unit.
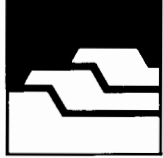
35124A (1½ days)

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.

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.)*

NEW!

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 ESCAPE	Creates a program file called ESCAPE
SET FORMAT TO PRINT @ 0,0 SAY CHR(27) + "&k2S"	Sends @,SAY commands to the printer

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).*

NEW! 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.*

NEW! 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 "&k0S" for the "&k2S"

Software Problem Reports	**dBASE II/150 OriginalVersion—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

**Q. Can Calculator receive or send data from or to
other programs?**

A. *Calculator can create DIF files using the Transfer
Functions soft key and then Marking the results to
be saved. This procedure is discussed in the manual
entitled* Financial Calculator for the HP 150
Personal Computer *in the sections called
"Sending Numbers to Other HP 150 Applications"
and "DIF (Data Interchange Format) Files." DIF
files can be read by Lotus, VisiCalc, and other
application-software programs.*

*There is currently no way to input data into
Calculator.*

**Q. Can I print out programs or registers from
Calculator?**

A. *Only indirectly. Calculator prints only the material
that appears in the display. To print out registers or
programs, the result or program step must appear
in the display.*

FORTRAN by Microsoft
...for the HP 150B

To order this product, refer to "Software Available from HP" in this issue.

Most Frequent Questions

Q. How do you program escape sequences in FORTRAN?

A. *Here is an example program:*

This program homes the cursor, clears the screen, moves the cursor down 20 lines and prints in inverse.

```
10  CHARACTER HOMEUP,CLR,ESC
20  DATA HOMEUP/'H'/,CLR/'J'/
30  ESC = CHAR(27)
40  WRITE(#,#) ESC,HOMEUP
50  WRITE(#,#) ESC,CLR
60  WRITE(#,#) ESC,'&a10c20R'
70  WRITE(#,#) ESC,'&dBTHIS IS
    INVERSE',ESC,'&d@'
    END
```

In FORTRAN/150, the escape character is an ASCII 27 and is declared through an intrinsic function CHAR.

Q. How can I send output to the primary printer or the secondary printer?

A. *Here is a sample program:*

```
character line*60
line = 'this is a very long line'
open(3,file = 'prn')
write(3,10) line
10  format(a)
    end
```

NOTE: replace "prn" with "Lst" if your printer is connected to the Lst device.

Q. The manual says I should have MS-LINK; where is it?

A. *MS-LINK is called "LINK.v2" on your disk. Rename it as LINK.EXE to execute it.*

Q. Can I call BASIC from FORTRAN? What about Pascal?

A. *No. You cannot call Microsoft BASIC from FORTRAN. However, you can call Pascal routines from FORTRAN.*

Q. Can I access the datacomm ports with FORTRAN?

A. *No. The only Microsoft language that will allow you to read and write through the datacomm ports is GW-BASIC. You may also use assembly language to access the ports.*

Q. FORTRAN will not load into the Pam menu. Why not?

A. *FORTRAN is not an installable application. Use the COPY function to make backups of the master.*

Q. How can I program the Touchscreen?

A. *Touchscreen escape sequences are listed in the HP 150 MS-DOS User's Guide (Product Number 45624A).*

Q. How do you declare an indexed array of character type?

A. *Here is an example program:*

```
character name
dimension nname(20)
write(*,*) 'please enter a name'
read(*,10) (nname(i),i = 1,20)
10 format(20A1)
```

Q. Are substring functions available?

A. *There are no substring functions in FORTRAN. You will have to write your own functions.*

Q. What are the limits on program size using the FORTRAN compiler?

A. *You can have a program with total source code size up to 354k. However, each module cannot exceed 64k. The data segment is also limited to 64k.*

Quick Reference Guide

Quick Reference Guide
to FORTRAN by Microsoft 45449-90002

Books

Agelhoff, R., and Mojena, Richard. *Applied FORTRAN 77, Featuring Structured Programming.* Wadsworth, 1981.

Ashcroft, J., Eldridge, R. H., Paulson, R. W., and Wilson G. A. *Programming With FORTRAN 77,* Granada, 1981.

Friedman, F., and Koffman, E. *Problem Solving and Structured Programming in FORTRAN.* Addison-Wesley, 2nd edition, 1981.

Wagener, J. L. *FORTRAN 77: Principles of Programming.* Wiley, 1980

GW-BASIC by Microsoft
...for the HP 150B

To order this product for the Touchscreen, refer to the "Software Available from HP" in this issue.

Most Frequent Questions

Q. How does GW-BASIC compare with BASICA on the IBM PC?

A. *The two are very similar. Most programs will transfer with only minor revisions. Of course certain hardware-dependent statements (such as those dealing with the touchscreen and with sound) will not transfer.*

Q. Can I do escape sequence programming in GW-BASIC?

A. *It is not recommended. GW-BASIC keeps track of cursor positions, and escape sequence programming will disturb this tracking.*

Quick Reference Guide

Quick Reference Guide
to GW-BASIC by Microsoft 45450-90008
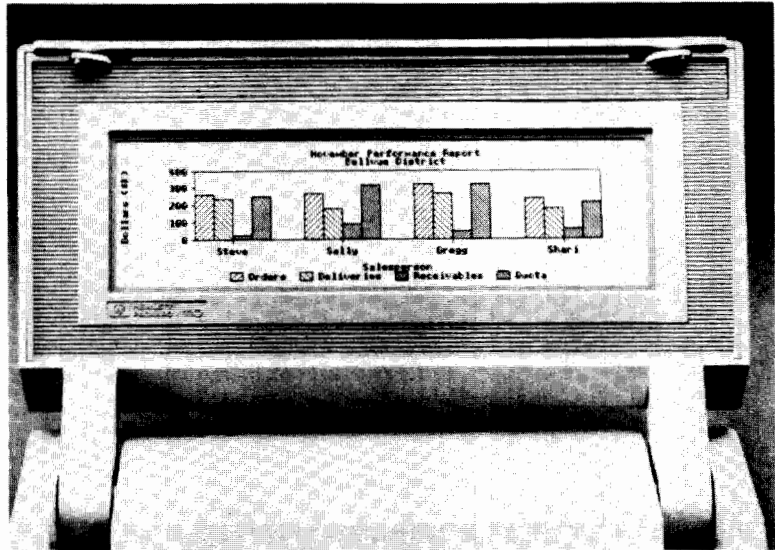
This product is built into the Portable.

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

NEW!

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

NEW!

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

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 consideratons 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.

NEW!

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: \027\038\107\048\083 (Escape &k2S)
***Communicator* Articles**	–"Introducing 1-2-3 for the HP 150" .... Issue #8
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)

MemoMaker
...for the HP 150

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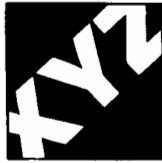
To order this product, refer to "Software Available from HP" in this issue's Current Information Insert. For information on replacing damaged media, refer to "Software Exchange Kits" in the Current Information Insert.

Most Frequent Questions

Q. 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. 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* Print Memo *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 Print Memo *softkey, only the contents of the memo from the cursor to the .PA command will be printed.*

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.*

NEW!

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.

Quick Reference Guide	MemoMaker/150 Quick Reference

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. **How do I view a second screen in the File Manager?**

A. *There is a simple way to view more than one screen of files.*

Step 1: Select the TRANSFER LOAD command

Step 2: Press any cursor-control key

Step 3: Look for the last file name (lower-right corner in the list of file names)

Step 4: Press the ESCAPE key

Step 5: Select the TRANSFER LOAD command again and type the file name from Step 3

NEW! *Step 6: Press any cursor control key*

The next page of files should appear.

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.*

Pascal by Microsoft

	To order this product, refer to "Software Available from HP" in this issue.

Most frequent questions	**Q. I can't find the file LINK.EXE. What should I do?**
	A. *You should rename LINK.v2 as LINK.EXE.*
	
	Q. How do I print to the PRN device?
	A. *Here is a typical program:*
	PROGRAM ex(input,output);
	VAR
	  prn-var:text;
	BEGIN
	  assign(prn-var,'PRN');
	  rewrite(prn-var);
	  write(prn-var,'this is a test');
	END.
	
	Q. Does Pascal come with a built-in editor?
	A. *No. You will need to buy an editor separately. HP offers Wordstar and MemoMaker, either of which can be used as an editor.*

Quick Reference Guide	Quick Reference Guide to Pascal by Microsoft 45447-90002

Terminal
...for the Portable

Mike Steed, Kent Henscheid
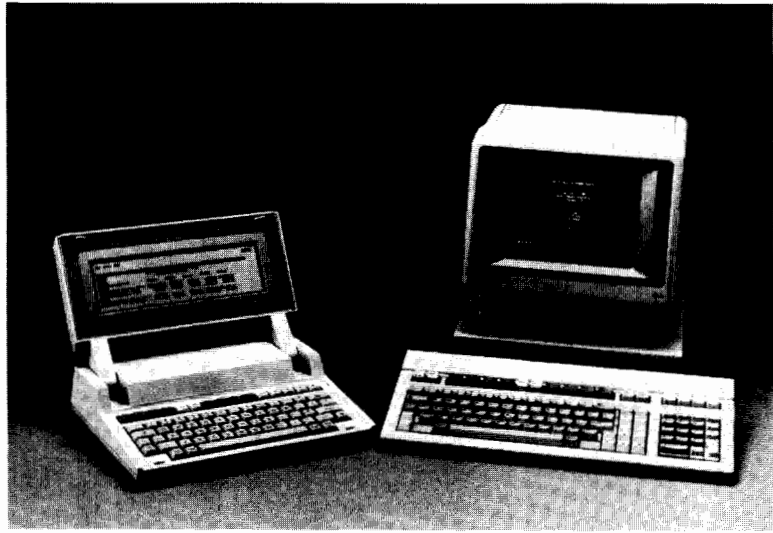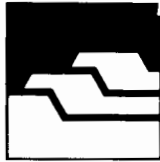
This product is built into the Portable.

Most Frequent Questions

NEW!

Q. How do I configure the terminal to talk to an HP 3000?

A. *The Terminal Config menu shown on p. 1-11 of the terminal manual is wrong and is being revised. The correct configuration is:*

HandShake:	Enq/Ack
Xmit Pacing:	None
Recv Pacing:	None
EOL Sequence:	CR
Parity Check:	either On or Off, no check is done
Echo:	Off
Data Bits:	8 7
Parity:	None *or* Even

NEW!

Q. When using the terminal program, is there any way to get a printed copy of the conversation?

A. *Yes, there are two ways. If you just want to print selected portions, use [Shift] [Print] to dump a copy of the display to the printer.*

To get a continuous printout, set up a download to the printer. Fill out the Download Config menu with To Local File PRN (PRN is the printer device as defined in System Config), Protocols Off, and all other fields blank. Then start the printer by pressing From Host.

Some words of caution when downloading to a printer:

1. Pressing From Host *causes the end-of-line sequence to be sent to the host, so only press this key when an EOL is allowable.*

2. The printer must be connected via the HP-IL interface; the built-in RS-232 interface is inoperable when the modem is in use.

3. There is a 2K buffer in The Portable which accumulates text before printing it, so nothing will appear on the printer until over a page of text has been accumulated. You can force the buffer to be dumped by pressing Exit *to terminate the download.*

NEW!

Q. **I put an automatic log-on string in my Terminal Config menu, but it doesn't seem to work. Why not?**

A. • *Did you store the Terminal Config, exit from Terminal back to PAM, then reenter Terminal? Remember, automatic log-on only works when you first enter Terminal, not when you press* Dial *or* Connect.

• *When you put command letters (E or W) in the string, did you remember that these letters must be capitalized?*

If you did all of that correctly, you might try a one-second wait as the first item in the string; some hosts are not ready to accept characters at the moment the connection is made.

NEW!

Q. **How do I connect two Portables to each other by telephone?**

A. *The Portable can easily communicate with another Portable when correctly configured. Because both machines are configured as terminals (not host computers), you need to do three things:*

1. Turn the local echo on so that the characters you type will be displayed, as well as sent to the other machine.
2. Set the end-of-line sequence (EOL) to CR/LF so that the cursor drops to a new line each time you press Return.
3. Turn off the ENQ/ACK handshake; this only works when connected to a host computer. Use XON/XOFF pacing instead.

All other items on the Terminal Config menus after phone number must match.

One computer should dial the other's number. The second computer must have an A (and only an A) in the phone-number field. When the phone rings, it must be answered manually by pressing Dial. *The only way to answer automatically is to be in PAM and have an AUTOANSR.BAT file which invokes terminal and answers the phone.*

Note that the internal modem uses power from the telephone line; you cannot, therefore, connect two Portables directly together with a phone cable. You must actually dial through a switchboard or a phone company.

Problem Reports	**Terminal Firmware**
	Problem: Multiple menus may be placed in the display by rapidly pressing the MENU key.
	Workaround: don't 'hammer' at the MENU key.
	Problem: When in 7-bit mode with protocols on, file transfers are limited to 127 blocks.
	Workaround: For large files (greater than 127 blocks) change your file type to "8-bit Text."
	Problem: Pulse-dialing is always done at 20 pulses per second instead of the standard 10 pulses per second.
	Workaround: contact your dealer or HP Field Repair Center if a problem phone system is encountered, or use tone-dialing as an alternate.
	Problem: When a host defines the softkeys via escape sequences, pressing the SYSTEM key while already in system key mode results in loss of all softkey definitions (back to default). Keylabels imply system mode, but the Portable is in user mode, and the host key definitions are lost.
	Workaround: Do not press the SYSTEM key while in system key mode.
Manual Corrections	**HP 110 Terminal Emulator User's Manual First Edition—3/84**
	Page 1-18: Add the following note: "HANGUP" turns off the serial port in addition to the modem.
	Page 1-18: Add the following note: Exit to "MAIN" when using the modem causes the modem to hang up the phone.
	Page 1-22: Add the following clarification: The HP PROMPT mode of file transfer is for 7-bit Text files only. If 8-bit Text is used, the file transfer may halt for no apparent reason.
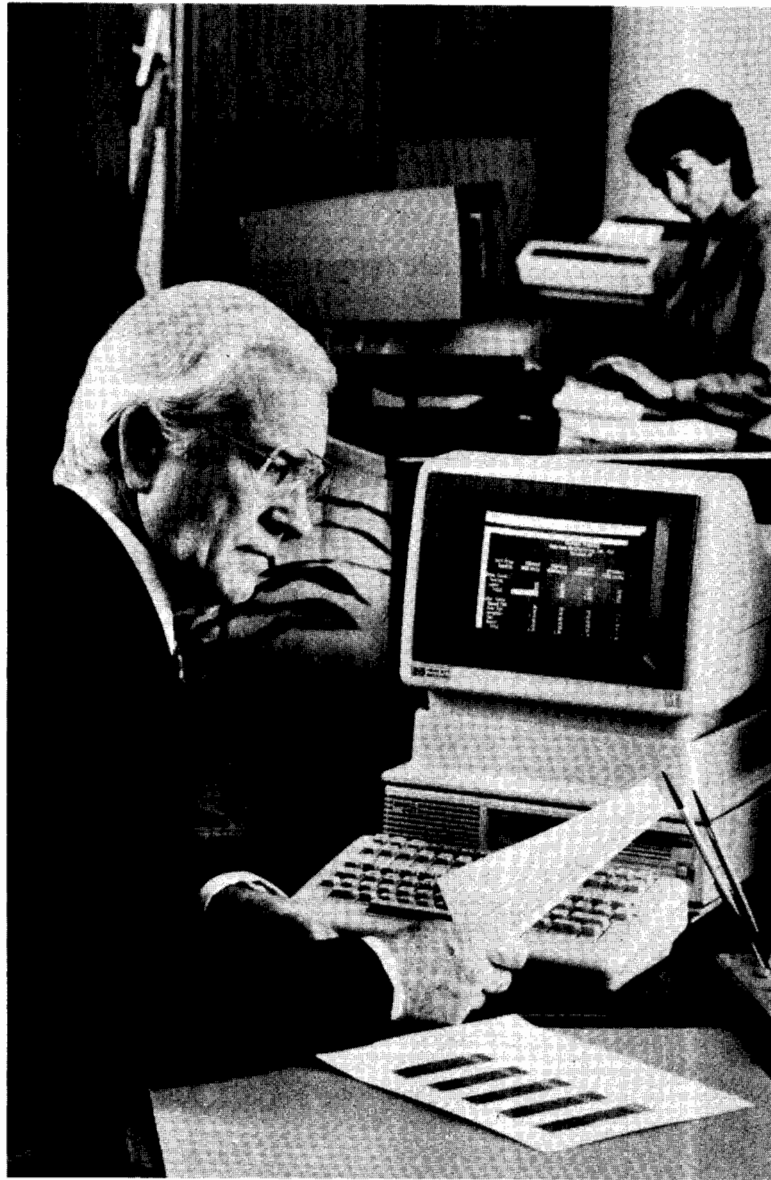
VisiCalc
...on Series 100 Personal
Office Computers

Paula Dieli, Louise Fettgather

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. Why is it that when I input the number 65.6 it appears on the command line as 65.599999999999?

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.*

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).

NEW!

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.

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

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	■ *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)

Current
Information

Current Information

Answers to Your Questions   Curt Gowan

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:
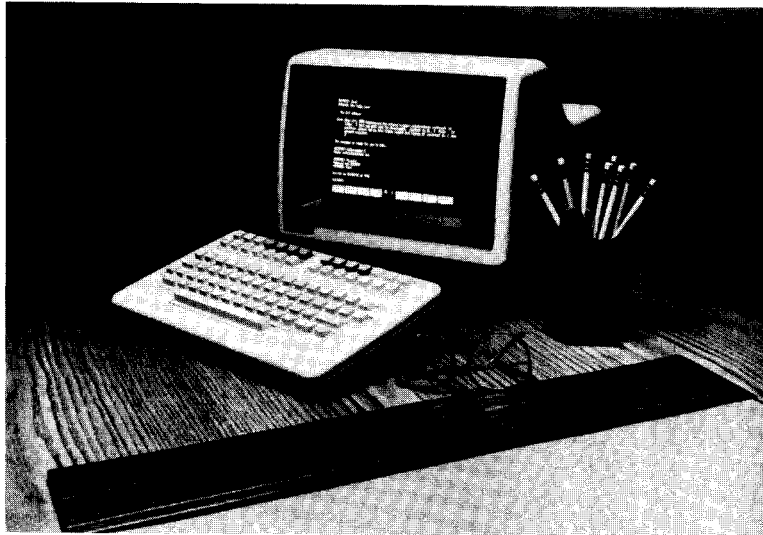
Your Direct Line to Hewlett-Packard

To provide answers to your questions on software distributed by Hewlett-Packard, HP's Phone-In Software Assistance service is available to you at no charge. You call a Phone-In Software Assistance Center in your region or country; a phone-in coordinator determines the type of question and arranges 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 resolve your question.

For assistance *before* your purchase:

–In the U.S., call 800/FOR-HPPC (800/367-4772)
–In Canada, call 800/387-3867
–In other countries, call your HP Sales and Service Office—ask for "Personal Computer Sales."

For assistance *after* your purchase:

–In Australia, call 008/033-055.
–In Canada, call 1-800/267-6115.
–In the U.K., call 0344-54123
–In the U.S., call 800/HPCOACH (800/472-6224)
–In other countries, call your HP Sales and Service Office—ask for "Personal Computer Phone-In Assistance."

Assistance via CompuServe

HPCOACHLINE, a 24-hour electronic bulletin board on CompuServe, is now available to HP personal-computer users. In addition to accessing the "Answers to the Most Frequently Asked HP 150 Questions" document in an on-line form, users may post questions to HPCOACH instead of calling the telephone number. HPCOACH personnel monitor the HPCOACHLINE for these questions and respond as they think best, often posting the answers for other HPCOACHLINE users to see.

To gain access to HPCOACHLINE, you must have an account with CompuServe (you are billed for connect time to CompuServe) and be able to send and receive data via 300- or 1200-baud modems. HPCOACHLINE is part of a set of services provided to HP users by CompuServe.

The "Standard-Plus" class of membership in Interex, the International Association of Hewlett-Packard Computer Users, includes a subscription to CompuServe's Executive Information Service.

For details on Interex, refer to the article entitled "User Group" in this *Communicator.*

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 unique operating and networking procedures ... plus 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.

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 *Intercom* (the Series 100 newsletter) and one disc from the Interex Contributed Software Library.

Standard Membership:
North America $50
Outside North America $100
(U.S. funds)

■ **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, software downloading, online conferencing, the Intercom newsletter, and the HPCOACHLINE link to HP's Personal Software Assistance Center.

Your Standard-Plus Interex Membership gets you started with a CompuServe Executive Information Service account and documentation . . . plus 2 hours of daytime connect time on the network. CompuServe bills you directly for additional on-line time. (If you already subscribe to CompuServe, then you have all you need to access the Interex online services.)

Standard-Plus Membership
(not available outside North America). . . $100

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
69 Grasmere Gardens
Harrow Weald, Middx.
HA3 7PS England

Interex

*The International Association
of Hewlett-Packard Computer Users*

Application for
Series 100 Membership

Enclosed is my full payment for:

Standard Membership
___ North America $50
___ Outside North America $100
(U.S. funds)

Standard-Plus Membership (Not available outside North America)
___ North America $100
(U.S. funds)

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___ Check Enclosed   Check Number _____
                          (If a company check)

___ Bill Visa # _____ Expires _____

___ Bill MasterCard # _____

   Interbank # _____ Expires _____

Member Information:

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City _____ State _____ ZIP _____

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Telephone _____

Computer: ___ The Portable ___ HP 120 or HP 125 ___ HP 150A or HP 150B

Disc Format: ___ 3½" ___ 5¼"

Are you currently an HP 1000 or HP 3000 Interex member?

___ No ___ Yes, Membership # _____

(over)

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:
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    Bank File #61054
    P.O. Box 60000
    San Francisco, CA 94160
        U.S.A.

John Wiley and Sons publishes the *Hewlett-Packard Software Catalog*. It 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 through your HP dealer—or from the publisher at 800/526-5368 (201/342-6707 in New Jersey). Outside the U.S., write to John Wiley and Sons, 605 Third Ave., New York, NY 10158.

HP personnel should order the catalog (Part Number 5953-5880) from the PCG Literature Distribution Center, Corvallis—Comsys 3900.
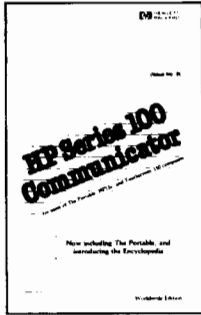
The *Series 100 Communicator* is the heart of the support program for The Portable, the HP 150 Touchscreen, and the HP 12x.

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 *Communicator* 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-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"
٠ –"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*

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*

Portable, HP 150 **Touchscreen, HP 12x**	Issues #9 and onward cover the Portable, HP 150 Touchscreen, and HP 12x. (5½" x 8½" page size.) **Additional copies of this current issue are available:** *Communicator* Issue #10—Worldwide. . 5958-0250*

Binders

Three-ring binders are available to organize your *Communicator* back issues.

8½" x 11" page size; 1½" capacity 5955-3982
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*If 10 or more copies of a single Communicator *issue are ordered from HP at the same time, the price is discounted by 25%.*
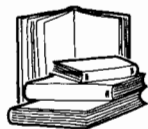
This section lists several personal computer books which we have found helpful.

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 Chisausky 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
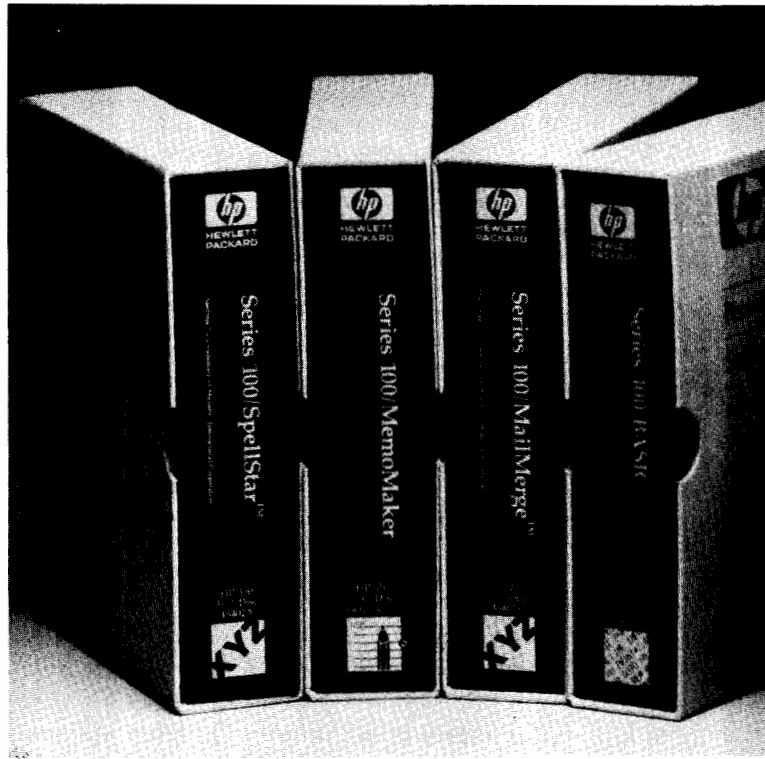
Training Courses

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

For information on software packages supplied by other vendors, refer to the *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 form 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.

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.

		System		
Name	Product Number	Portable	HP 150 Touchscreen	Notes*

Word Processing:

Name	Product Number	Portable	HP 150 Touchscreen	Notes*
WordStar®	45400A		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™	45401A		●	
	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	
SpellStar™	45402A		●	
WordStar/ MailMerge/ SpellStar	45404A		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	

Electronic Spreadsheets:

Name	Product Number	Portable	HP 150 Touchscreen	Notes*
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

*See notes at end of table

Name	Product Number	Portable	HP 150 Touchscreen	Notes*
	45405AE Spanish		Touch	4
	45405AF French		Touch	4
	45405AH Dutch		Touch	4
	45405AN Norweg.		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	
Condor™ 20-1	45415A		Touch	1
Condor 20-3	45416A		Touch	1
Condor Upgrade	45417A		Touch	1
dBASE II®	45468D	●	●	
	45468A International		●	
	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 Accntg.	45459A		●	

*See notes at end of table

		System		
Name	**Product Number**	**Portable**	**HP 150 Touchscreen**	**Notes***
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		●	
FORTRAN by Microsoft	45449A		●	
GW™-BASIC by Microsoft	45450D	●	●	
	45450A International		●	
Cross Reference Utility	92248BA		●	
Lattice-C Compiler	45452A		●	
Programmer's Tools for The Portable	45419C	●		
Programmer's Tools for the HP150	45435A		●	
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	

*See notes at end of table

| Name | Product Number | System | | Notes* |
		Portable	HP 150 Touchscreen	
Communications:				
Advance Link	45431A		Touch	
DSN/Link	45425A		Touch	
	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	
Monitor/IBM PC	45439A			6
VT 100 Terminal Emulator	45412A		Touch	

*See notes at end of table

Name	Product Number	110	150	Notes*
Entertainment:				
Adventure: The Original by Crowther and Woods	92243AA		Touch	
BARON: The Real Estate Simulation™	92243KA		Touch	
Cyborg	92243NA		Touch	
Deadline™	92243VA	●	●	
Enchanter™	92243UA	●	●	
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	●	●	
Sorcerer	922434A	●	●	
Starcross™	92243DA	●	●	
Suspended™	92243FA	●	●	
Temple of Apshai™	92243GA		Touch	
Touch Games 1	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	●	●	

*See notes at end of table

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†	Portable	HP 150 Touchscreen	Code, Notes
HP 150B Operating System		45626-63007		●	C
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				
MSDOS	B.02.02				
MSDOS COMMANDS	B.02.02				
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†	Portable	HP 150 Touchscreen	Notes
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		●	
Advance Link	A.01.02	45431-63002		●	
FORTRAN	A.01.00	45449-63001		●	

*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)
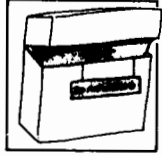
This section lists the software exchange kits available for The Portable, the HP 120/125, and the HP 150. These kits contain the latest software and any manual updates issued since the original release. **Exchange kits are provided at a nominal charge.** You return your original master disc and, as proof of purchase continue operating as usual with your work copy of the software.

Software Exchange Kits are provided for different purposes:

- **Upgrades.** When major features are added to a software product, you can order a Software Upgrade 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. Should this occur, 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 plus 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.

			System		
Name		**Product Number**	**Portable**	**HP 150 Touchscreen**	**Notes***

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		●	
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		●	
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: File & Report	A.2.41	45488-63001		●	
Prog. Tools/110	A.01.00	45419-63001	●		
Prog. Tools/150	A.01.00	45435-63001		●	
SpellStar	A.03.30	45402-63001		●	
VisiCalc	B.01.02	45405-63004		●	
WordStar	*A.03.3B	45400-63001		●	

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. 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 return 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 software 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 (2,9)	*A.02.00	45900-13800	45900-15800
VisiCalc (9)	*A.02.01	45531-13800	45531-15800
Graphics (9)	*A.01.03	45532-13800	45532-15800
Word/12x (9)	*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 (8)	A.02.00	45550-13800	45550-15800
Condor 3 (7,8)	*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 introducton 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—Either a Condor 20-2 disc or a Condor 20-1 to 20-2 Upgrade disc may be exchanged for the Condor 20-2 disc.

7—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.

8—To *upgrade* to Condor 3, order product 45550K, 45550N, or 45550P. See the "Software Available from HP" section in this Current Information Insert.

9—Exchange Kit includes complete new 5½" x 8½" manuals.
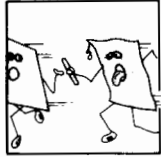
Here is a list of the most popular Series 100 supplies and accessories.

A full list of HP computer supplies matched to your system for optimum performance is shown 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 Insert.

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
92171K	Keyboard Park
92171T	System Turntable
92240C	Display Tilt Unit
92240D	Display Swivel Unit
92250D	Dust Cover
92220R	Right-Angle HP-IB Cable

■ 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

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 Flex 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 (2500 sheets)
92261S	Desktop ThinkJet printer stand.

■ HP 2601A Daisywheel Printer

92151C	Multistrike 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	Multistrike 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, 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

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 cartridge type font—courier and line printer, compressed
92286B	Plug-in cartridge type font—proportional space

■ 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 Plotters

■ HP 7225A/B, 7470A, 7475A Plotters

5060-6787	Black Pens (Package of 4 pens)
5050-6810	Multi-Color Pens (Package of 4 pens; 1 each red, blue, green, and black)
5060-6818	Multi-Color Transparency Pens (Package of 4 pens; 1 each red, blue, green, and black)
5061-5010	Black Transparency Pens (Package of 5 pens)
9280-0589	Plotter Paper, English (Pad of 50 sheets, A size)
9280-0588	Plotter Paper, Metric (Pad of 50 sheets, A4 size)
92171S	Desktop Stand (7470A)
92177T	Acrylic Pen Caddy (for short pens)
92177U	Acrylic Pen Caddy (for tall pens)
92250N	Dust Cover (7470A)

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
  08-75020208

- 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 Hewlett-Packard Attn: Software Product Marketing P.O. Box 60008 Sunnyvale, CA 94088
	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.

HEWLETT PACKARD

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
M					
1				●	●
2				●	●
3				●	●
4				●	●
5				●	●
				Subtotal	●
Tax Exempt? ☐ No ☐ Yes				State/Local Taxes	●
Tax Exempt or Resale Number				TOTAL	●

Ship To

Company _____

Attn Of _____ Bldg/Room _____

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)

☐ MasterCard   ☐ American Express   ☐ VISA

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 _____

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Computer Supplies Operation
P.O. Box 60008
Sunnyvale, CA 94086

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