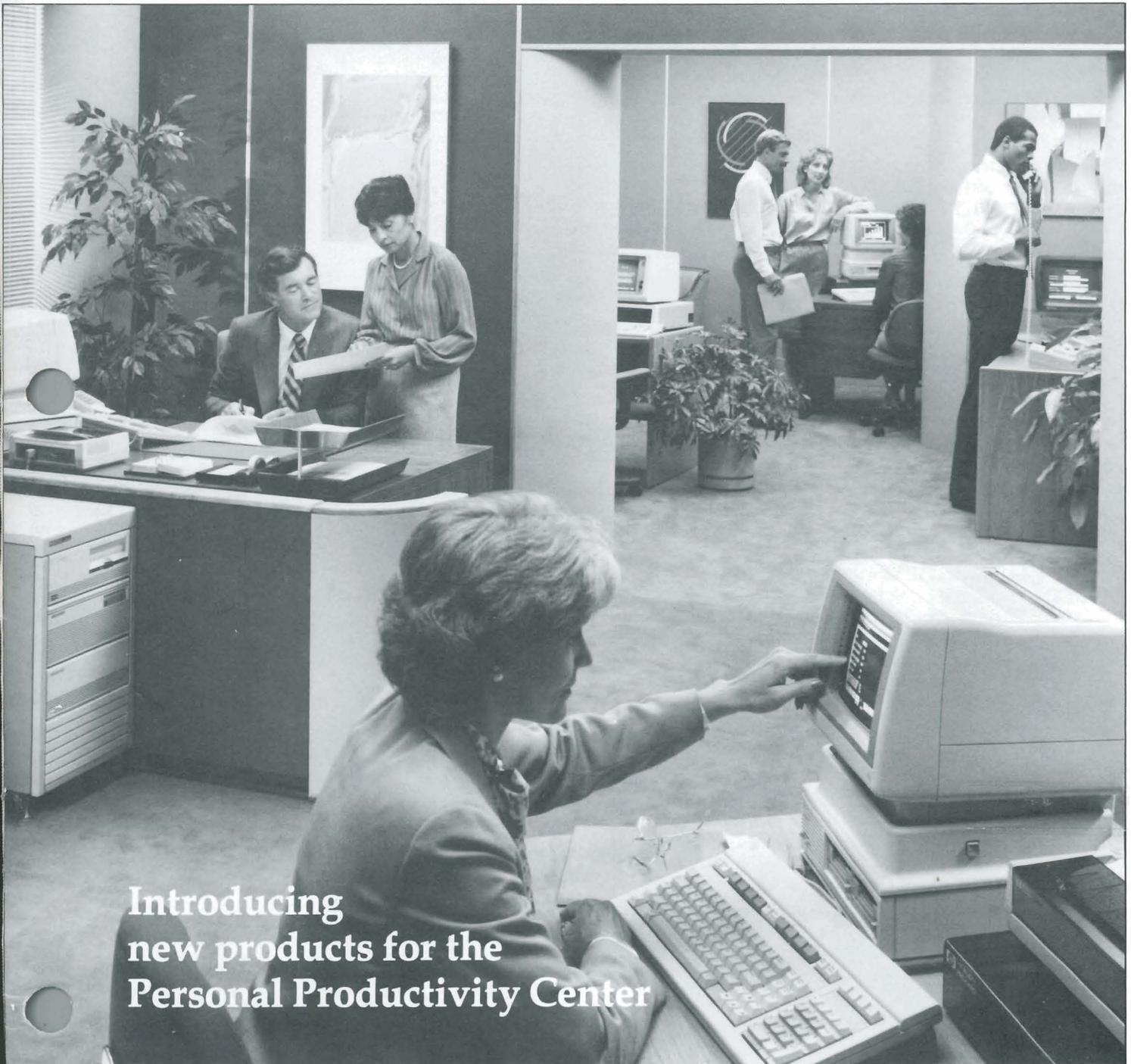


# Computer News

For HP Field Personnel Worldwide  
October 15, 1984



Introducing  
new products for the  
Personal Productivity Center

For HP Use Only

# Computer News

Vol. 9, No. 23

Editor

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*Computer News* is published biweekly for Hewlett-Packard field personnel to keep you informed of new HP products and services.

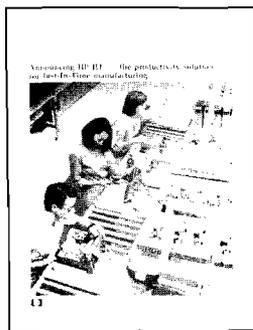
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### On the Cover:

With the introduction of significant new products and capabilities for the Personal Productivity Center, Hewlett-Packard continues its commitment to bringing integrated office solutions to our customers. See articles beginning on page 19 for details on enhancements, exciting new products, and cost saving bundles.



### Back Cover:

HP JIT, Manufacturing Productivity Division's newest application solution, is perfect for manufacturers using Just-In-Time production techniques. HP JIT runs on the HP 3000 and is the first HP application to use the HP Touchscreen MAX personal computer as a workstation. See story on page 14.

## MARKETING & INTERNATIONAL SECTOR

### US Field Operations

### European Operations

### Intercontinental Operations

### Major Accounts Marketing

### Corporate Marketing

MIC Marketing Information Center  
FRD Systems Finance/Remarketing Division  
CSD Computer Support Division  
ISD Instrument Support Division  
CSO Computer Supplies Operation  
IPO Instrument Products Operation  
CPC Corporate Parts Center

## MEASUREMENT, DESIGN & MANUFACTURING SYSTEMS SECTOR

### Microwave & Communications Group

MCG Microwave & Communications Group  
SPD Stanford Park Division  
NMD Network Measurements Division  
SAD Signal Analysis Division  
SPK Spokane Division  
CTD Colorado Telecommunications Division  
QTD Queensferry Telecommunications Division

### Electronic Instruments Group

EIG Electronic Instruments Group  
NJL New Jersey Division  
SDD San Diego Division  
SCD Santa Clara Division  
BID Boeblingen Instrument Division  
YID YHP Instrument Division  
ICD Integrated Circuits Division

### Design Systems Group

DSG Design Systems Group  
FSD Fort Collins Systems Division  
LSD Logic Systems Division  
COL Colorado Springs Division  
BCD Boeblingen Computer Division  
LSID Lake Stevens Instrument Division

### Manufacturing Systems Group

MSG Manufacturing Systems Group  
DSD Data Systems Division  
MPD Manufacturing Productivity Division  
LID Loveland Instrument Division  
MTD Manufacturing Test Division

## INFORMATION SYSTEMS & NETWORKS SECTOR

### Information Systems Group

ISG Information Systems Group  
CLL Computer Language Laboratory  
CSY Computer Systems Division  
FSO Financial Systems Operation  
BGD Boeblingen General Systems Division  
YCD YHP Computer Division  
OPD Office Productivity Division  
CID Computer Integrated Circuits Division  
GCO Guadalajara Computer Operation  
IRO Information Resources Operation

### Personal Computer Group

PCG Personal Computer Group  
RTD Roseville Terminals Division  
PCD Portable Computer Division  
GPCD Grenoble Personal Computer Division  
POD Personal Office Computer Division  
VCO Vancouver Division  
PSD Personal Software Division  
PCDO Personal Computer Distribution Operation  
PCGO Personal Computer Group Operation

### Information Products Group

IPG Information Products Group  
BOI Boise Division  
DMD Disc Memory Division  
GLD Greeley Division  
CPB Computer Peripherals Bristol Division  
RND Roseville Networks Division  
IND Information Networks Division  
GND Grenoble Networks Division  
CNO Colorado Networks Operation

## ANALYTICAL, COMPONENTS, MEDICAL & TECHNOLOGY SECTOR

### Analytical Group

AVD Avondale Division  
SID Scientific Instruments Division  
WAD Waldbronn Division

### Components Group

MSD Microwave Semiconductor Division  
OED Optoelectronics Division  
OCD Optical Communication Division

### Medical Group

AND Andover Division  
BMD Boeblingen Medical Division  
MCM McMinnville Division  
WAL Waltham Division Medical Supplies Center  
HCP Health Care Products Operation

### HP Labs

Corporate Manufacturing  
Corporate Engineering

**HP Computer Museum**  
**[www.hpmuseum.net](http://www.hpmuseum.net)**

**For research and education purposes only.**

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Low-cost solutions to office automation needs  
Amber CRT now a standard option on HP 262X terminals

## PRICE CHANGES

- 29 Computer groups price changes effective October 1, 1984

## GENERAL

### HP to develop Ada compilers

*Bruce Stowell/CLL*

Ada is the new Department of Defense (DoD) language designed for programming large scale and real-time systems. The American National Standards Institute (ANSI) has standardized the Ada language (ANSI/MIL-STD-1815A, 22 January 1983) and the DoD Ada Joint Program Office validates Ada compilers which comply with the standard.

#### Why we need it

Use of Ada within the DoD is required by DoD policy. Two key points of this policy are that Ada will be the single computer programming language for "mission-critical" applications and that only compilers which have been validated by the Ada Joint Program Office will be used for software delivered to or maintained by the government.

#### When will it be available?

HP and Alsys, Inc. have signed a multiyear contract for Alsys to supply HP with the Alsys root compiler software, documentation, training, technical consultation, and ongoing support. Alsys was founded by Jean D. Ichbiah, the head of the team that DoD selected to design Ada.

The root compiler software represents 80% of the work needed to develop a full Ada compiler. HP will create Ada compilers by developing code generators and run-time support systems targeted to HP machines.

CLL is assessing market requirements for Ada on the various HP machines and expects to have an implementation plan and schedule by November 1984.

#### In the meantime

Until Ada compilers are available from HP, customers can obtain Ada for HP computers from third party vendors. Solutions Plus, Fort Collins, CO, 303-226-3880, offers a compiler for the HP 9000 Series 200 Pascal workstation. NuSoft, College Place, WA, 509-529-9820, offers a sub-set compiler for the HP 3000.

### FRD has moved

*Raymond Dean/FRO*

Finance and Remarketing Division (FRD) has a new home. Please note the following changes for your Market Development contact:

New address—

Finance and Remarketing Division  
972 East Arques, Bldg. 70  
Sunnyvale, CA 94086

Your Market Development contacts —

Midwest & Canada

Carol Robertson  
408-720-4160

Southern, Eastern & ICON

Raymond Dean  
408-720-4158

Neely (Central & South Bay)

Liza Lopez  
408-720-4164

Neely & Europe

(SW, NW, Rocky Mts., and LA Areas)

Que Dang  
408-720-4162

Used Lease Equipment

Rhonda Willens  
408-720-4165

Make sure to change your notes. We'd hate to lose you in the move. This change became effective on September 17, 1984.

### Also in this issue

**Selling to and through consultants  
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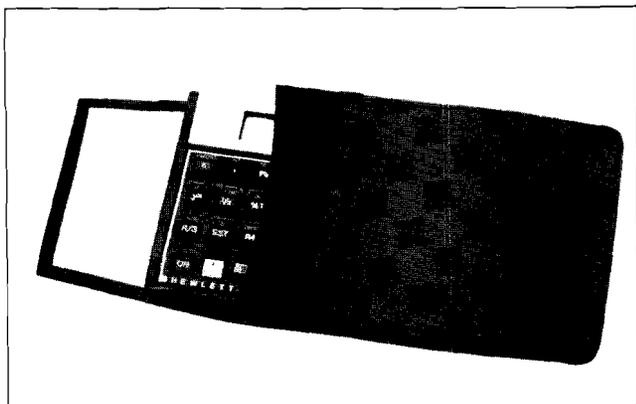
## CALCULATORS

## SERIES 100

### Leather cases for Series 10 calculators

*Paul Jurata/CSO*

Your customers can dress up their Series 10 calculators with new high-quality leather cases. The cases are crafted of exceptionally soft cowhide and lined with a second layer of leather. They are available in three colors: black, brown, and burgundy. Each case is embossed with the HP logo.



For promotional purposes, dealers will be able to have their store name or their customer's name engraved on the case. (HP does not do custom engraving.)

Suggested retail price for the cases is \$15. Employees will be able to order leather cases for personal use, at a 50% discount, through Computer Supplies Operation.

#### Ordering information

P/N	Product	Price
92169A	black leather case	\$15
92169B	brown leather case	15
92169C	burgundy leather case	15

### Programmer's Tools for The Portable now shipping

*Dave Bufford/PSD*

Have any of your customers been looking for more in-depth technical information on The Portable? Do you have any OEMs, ISVs, or Major Accounts who wish to do program development for The Portable? Then you may wish to tell them about Programmer's Tools, a product designed for the software development engineer developing in assembly language. This product includes the following documentation:

Document	Description
<i>MS™-DOS User's Guide</i>	Describes MS-DOS and how to use it
<i>MS-DOS Programmer's Guide</i>	A technical reference manual for systems programmers
<i>MS-DOS Macro Assembler Manual</i>	Utility programs for developing assembly language programs
<i>HP 110 System Reference</i>	Portable Personal Computer

The first three manuals are standard MS-DOS manuals. The fourth manual describes the HP 110 hardware, the LCD controller and the device drivers. The Personal Applications Manager (PAM) and the interrupt system are described, and the manual includes a section comparing The Portable with the HP 150.

*MS is a US trademark of Microsoft Corporation.*

### Two new formats for The Portable Utilities Disc

*Keith Omdalen/PCD*

HP is now offering the utilities disc for The Portable in two new replacement sets that will accommodate HP 3½" single-sided formatted disc drives and the 5¼" disc drive used with the IBM PC and the IBM XT. Until now, the HP 110 Utilities Disc was available

only in a double-sided 3½" format that could only be used in the HP 9114A disc drive.

The 3½" single-sided and formatted replacement set (P/N 00090-12011) includes four discs:

- Utilities — Self-test and format
- Lotus™ 1-2-3™ Print/Graph
- Tutorial 1 and 2 for Lotus 1-2-3.

If you are using the HP 82973A HP-IL Interface to link The Portable to the IBM PC or IBM XT, then you can order the 5¼" IBM formatted replacement set (P/N 00090-12012) that comes with two discs:

- Utilities/Lotus 1-2-3 Print/Graph
- Tutorial 1/Tutorial 2.

The price for either format is \$42. You can order your replacement set through Computer Supplies Operation.

*1-2-3™ and Lotus™ are US trademarks of Lotus Development Corporation.*

## WordStar® sales tool available now

*Marilyn Ruel/PSD*

A videotape is now available for you to show your customers the power of WordStar on the Touchscreen computer. This sales tool will be effective for demoing WordStar to those who are already familiar with WordStar as well as to those who have never used a word processing package before. This 12-minute videotape features the power of soft keys and touch with WordStar.

If you would like to preview this tape, see your local PC field marketing manager, who has received a copy of this demo. To order the videotape, place a HEART order through the Corporate Parts Center — *WordStar Videotape* — P/N 90314H.

*WordStar® is a US registered trademark of MicroPro International Corp.*

## MultiMate™ is here

*Kathy Weiler/PSD*

MultiMate is a new word processing package available for the Touchscreen computers. This Wang look-alike has taken over the number one spot as the best-selling word processing program on the market, according to many of the "Top 30" publications.

For years Wang stand-alone word processors have been selected as the word processors of choice in many corporate accounts. Consequently, there are many users in *your* accounts who have experience with this product. They're all trained and ready to go.

Priced at \$495, MultiMate on the Touchscreen computer is much more than just a word processor. It also includes a spelling checker, merge printing capability, and file transfer utilities. And the 80,000-word spelling checker can be expanded with a custom vocabulary.

The MultiMate product (P/N 45424A) includes a lesson book, all of the latest documentation customized for the Touchscreen computer, a Quick Reference Guide, and a template for the keyboard. MultiMate provides support for 9 Hewlett-Packard printers and 13 of the leading non-HP printers (see list below).

Best of all, the product is wonderful. Several of our major accounts have been Beta testing MultiMate for us, and they love it. MultiMate's versatility, when coupled with our tree of softkeys, makes it much easier to use than the standard product.

### Requirements

Touchscreen or Touchscreen MAX computer with 384K bytes memory.

### Optional printers supported are

#### *HP printers:*

HP 2601A, 2602A, 82905B, 82906A, 2674A, 2934A, 2932A, HP LaserJet or ThinkJet printer.

#### *Non-HP printers:*

Brother HP-15, Diablo 620 and 630, Epson MX, FX-80 and RX-80, Tally Spirit 80 (MT-80), NEC 3510 and 7715, Okidata 2410 and 92, Qume Sprint 11 and C.ITOH/TEC Starwriter F10-40.

Support is also provided for the HP 2601 and 2934 sheetfeeders.

### Ordering information

MultiMate (P/N 45424A)	US List Price \$495
------------------------	---------------------

## **Personal Computer Software List available**

*Marilyn Ruel/PSD*

Hewlett-Packard now offers hundreds of packages for the Touchscreen personal computer and The Portable. To help you keep up to date, read the *Personal Computer Software List*, published bimonthly. You can receive a copy by sending a COMSYS message to Rhonda Rick in Corvallis, COMSYS 3900. Featured Touchscreen products on the October Corporate Price List are:

Product	P/N	Touchscreen PC
MultiMate	45424A	Touch
BPI Payroll	45458A	•
HP AdvanceLink	45431A	Touch

## **Announcing HP Integration Notes**

*Moe Rubenzahl/PSD*

Now that the personal computer has become the workstation of choice for most professionals, users are looking for ways to efficiently access the information and resources in their existing computer systems from their personal computers. *HP Integration Notes* is a new publication that documents techniques based on existing Hewlett-Packard products.

The first issue is available now. It discusses ways to transfer text between The Portable and the HP 3000 and between The Portable and the Touchscreen PC, using simple serial (RS-232) connections. It describes the procedure in detail, including setup, configuration, cabling, and the text transfer.

We are shipping copies to all sales offices in areas where The Portable has been introduced. In addition, you can order a copy from the Literature Distribution Center, P/N 5953-5879.

By the way, your ideas for future Integration Notes are welcome. Send them via HP DeskManager to "Integration Ideas/HPD600/TR" or to Personal Software Division, 3410 Central Expressway, Santa Clara, CA 95051, Attn: Personal Computer Integration Center.

## **Also in this issue**

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## GENERAL

### HP Draft solution helps make successful sales

*John Twaalfhoven/BEO*

Two more SRs have discovered that the Series 200/HP Draft CAD solution leads to successful sales.

Dennis Shrake, SR in the Novi office, just sold another HP Draft station to a division of a car manufacturer in Dearborn, MI. This division specializes in mechanical and electro-mechanical components and assemblies, with major product lines including starter motors, electrical coils and suspension systems. The office already had two HP 9836C HP Draft stations installed in two departments when a third department saw it and realized that it was also the solution for them. They are now considering an SRM to share peripherals among the three departments.

The competition was stiff — the division was using an internally designed CAD system that had been the standard for the company, but was not meeting this division's needs. Selling was slow, but the price/performance of the HP system convinced them that the HP solution was the way to go. SEs Ron Ringel and Gary Corte demonstrated ease of use and short training period, and were instrumental in making the sale. Dennis also used the HP Draft video demo, which he considers an excellent sales tool.

Silvio Ferrera, SR in Toronto, sold eight HP 9920s and an SRM to run HP Draft and HP/EGS 200 to Centennial College. The college will be using HP Draft to train students in tool and die, and machine design. Sixteen NC lathes and boring mills will link to HP Draft via Weber, an OEM for NC machine part program systems. This automated factory inside Centennial will also be used to teach an introductory CAD/CAM course to students, as well as private companies.

Centennial College was using HP 9836s for mechanical drawings, but was not satisfied with their present software, and was looking for a system with numerical control links. When HP Draft added NC links, Weber gave the college a demo. This was the turning point in making the sale, as they saw that HP Draft could now meet all their demands. SE Judy Cooke assisted by showing HP Draft's ease of use, short learning curve, and price/performance.

There are several messages to these successes. Expose the product through shows, seminars, classes and demonstrations; use your SEs — they can really help you make the sale, and *sell solutions*.

## HP 1000

### RJE/1000-II replaces RJE

*John Zoglin/IND*

The introduction of the superior HP RJE/1000-II (91781) obsoletes the old RJE (91780). RJE (91780) will remain on the CPL only until February 1, 1985, giving it a four-month grace period.

The new RJE/II works with HP 1000 A-Series computers with the RTE-A operating system or with E/F-Series computers with the RTE-6/VM (version 2340 or later) operating system. RJE/II uses the same PSI board as MRJE and PMF: 12043A for the A-Series and 12260A for E/F-Series computers. With less than 2% CPU utilization at 4.8K bps, RJE/II is 20 times as efficient as RJE/I. RJE/II also operates at speeds up to 19.2K bps, four times as fast as RJE/I.

#### Trade up for more speed and throughput

The purpose of the trade up program is to encourage users with RJE/I (91780) on a particular E-Series or F-Series computer to trade up to RJE/1000-II (91781A) for that system, thereby receiving a superior product. This program gives users, as described below, 40% off the "A" copy price of the new RJE/II software product.

To qualify for this offer, a user must:

- Have RTE/6 OS version 2340 or greater
- Have at least 128K bytes memory
- Transfer only disc files
- Use EBCDIC mode only
- Purchase PSI card
- Purchase "A" copy upgrade for E/F-Series (P/N 91781A Option 701).

This procedure should be followed for each copy of RJE/I (91780) that is traded up. The usual rules regarding "A" and "R" copies apply for all new sales. Upgrade copies *do not* count as "A" copies.

## Trade up considerations

RJE/II's efficient code that enables the performance improvement over RJE/I also results in a few changes in the implementation:

- RJE/II offers greater simplicity and improved functionality in its interface. However, RJE/I and RJE/II do have different user interfaces which would require users to learn the new commands.
- RJE/II interfaces only with disc files, but can automatically schedule a user-written post processor to send a file to the printer. This post processor achieves the same result as RJE/I where the user could specify input and output from LUs (e.g., a "hot" printer for output).
- Only EBCDIC transmission mode is supported by RJE/II while RJE/I supported both EBCDIC and ASCII line code transmission modes. Users who have been using the ASCII line code will need to configure their line for EBCDIC on both the local (HP 1000) and remote computers.

## Existing customers for RJE/I

Existing customers that do not want to trade up to RJE/II will still be able to obtain the product; RJE/I has an unlimited right-to-copy and the hardware board (P/N 12618A) will still be available.

For more information on the new RJE/1000-II, see the data sheet or field training manuals that arrived in your office earlier in the month.

# HP 9000

## HP Series 200 terminal emulator restrictions

*Rita Wigglesworth/CNO*

Terminal emulators for the Series 200 BASIC, Pascal, and HPL workstations are the HP 2622A, VT100™/HP 2622A, TEK 4010®/HP 2622A, IBM™ 3278, and asynchronous terminal emulators. These products were developed to run as stand-alone applications on the Models 216 and 236, and on the Model 220 with the HP 82912A or HP 82913A monitor. These applications are written in Pascal 2.1 and 68000 Assembly language. With the introduction of Pascal 3.0 in July, these products have the following restrictions:

- The emulators do not support the Models 217, 237, and 220 with the 14" monitor, and the Model 226
- The emulators do not support the new peripherals, such as the HP 9122D and the ThinkJet printer
- None of the emulators can be executed from the Pascal 3.0 operating environment.

We realize that these limitations are an area of concern for many of your customers. We plan to move the HP 2622A emulator to the Pascal 3.0 environment. We have not decided if we will revise the other emulators as well. Meanwhile, we suggest the following alternative.

Customers who need character- or line-oriented asynchronous terminal emulation capability on the new workstations or with the new peripherals, should evaluate the new Pascal-based Context MBA™, P/N 45481B. MBA now includes some asynchronous data communications capabilities.

*VT100 is a trademark of Digital Equipment Corporation.*

*TEK 4010 is a registered trademark of Tektronix, Inc.*

*IBM is a trademark of International Business Machines Corporation.*

*Context MBA is a trademark of Context Management Systems.*

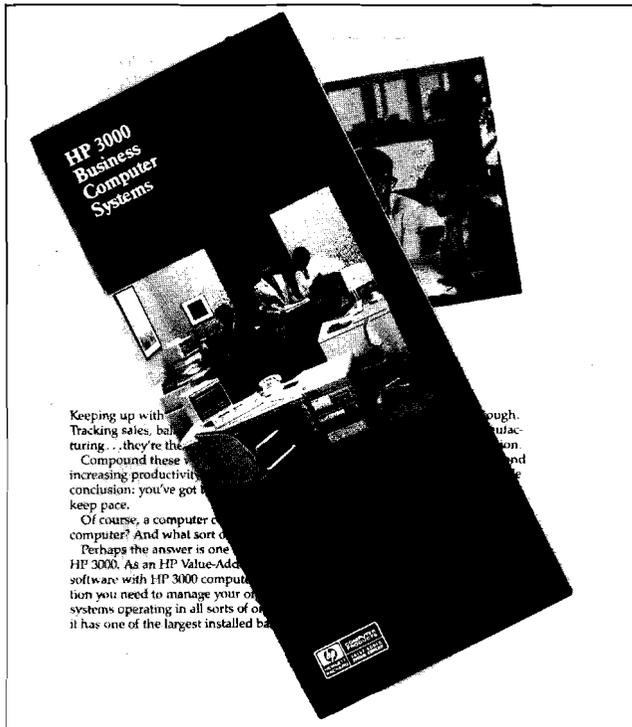


## GENERAL

### New flyer promotes HP 3000 business for OEMs

Jerry Epps/BDG

Now you can help your OEMs reach out and touch more prospects. We have just published a new four-color direct mail flyer (P/N 5953-7657) that you can give to your OEMs in quantity without charge.



Written from the OEM's viewpoint, the flyer presents the full HP 3000 family line-up and strongly promotes software solutions offered by value-added suppliers. The piece fits inside a #10 business envelope so that it's economical for OEMs to mail out alone or with other promotional materials. A copy of the flyer has already been mailed to each OEM with a note stating that they can order them through you.

We haven't put a limit on the quantity you can order. However, we suggest that you use your best judgment in determining realistically what quantities your OEMs will use. That way, we should be able to accommodate every SR's needs. Send your orders to the

Literature Distribution Center in Palo Alto. (Note: OEMs cannot place orders with the Literature Center.)

This piece has also been translated and published in several other languages. Germany, France, Italy, Spain, and The Netherlands should order from their Europe stock point.

## HP 3000

### MPE-V/E is now supported on the HP 3000 Series 39/40/44

Larry Russell/CSY

CSY is pleased to announce support of MPE-V/E (G.A0.00) on the Series 39/40/44. This is very good news for many of your customers. MPE-V/E is the most thoroughly tested release of MPE to date, and has already been installed on several hundred customer and field office systems. (Please note that disc caching is not supported on the Series 39, 40, 44, or 64.)

MPE-V/E can be a real benefit to Series 39/40/44 customers for several reasons. First, many long-standing problems existing in MPE-IV based releases were fixed during the V/E reliability engineering effort. Second, V/E offers customers many MPE, subsystem, and applications software enhancements. Please refer to the *Communicator* for V/E (Volume 2, Issue 1) for more details. Third, virtually all significant software-related HP 7974/78 tape drive problems are fixed in V/E. Fourth, our performance data indicates that the performance of V/E without disc caching on Series 4X systems is comparable to that of MPE-IV-based MIT releases, including MPE-V/P with caching turned off. Fifth, customers who gain experience with V/E will be better prepared for T-MIT, the second release of V/E. T-MIT will support the new Series 37, associated low cost peripherals, and many highly beneficial ease of use features supported across the current HP 3000 family.

Finally, MPE-V/E will allow Series 39/40/44 customers to expand their system tables as needed. Many important tables, such as the DST, can be expanded using the firmware already installed in the

system. Certain customers, such as those requiring CST expansion, will need to upgrade their microcode. These customers can purchase product 30400A (US List Price \$2,850) to obtain these expanded capabilities. An SE will be able to determine whether a customer requires the firmware upgrade. (Note that Series 39/40/44 customers must purchase this firmware. The no-charge firmware upgrade program discussed in another article in this issue of *Computer News* applies only to High-Performance Series 39/42/48 customers who have already accepted or will accept delivery of a system with MPE-V/P by December 31, 1984.)

## High-Performance Series 39/4X MPE-V/E firmware upgrade promotion eligibility extended

Larry Russell/CSY

In response to requests from the field, all customers who take delivery of a High-Performance Series 39/42/48 with MPE-V/P by December 31, 1984 will be able to receive MPE-V/E firmware later at no charge using the M05 discount. This eligibility cutoff date has been moved to December 31 from September 10. In particular, this eligibility extension will allow customers who have multiple systems on order, and who centrally support many systems on V/P, more time to manage the future rollover to MPE-V/E.

Please note that this does not affect the period of time that eligible customers have to obtain the no-charge firmware. Eligible customers still have until July 10, 1985 to accept delivery of the no-charge firmware, if desired. Note that if customers accept delivery of a system with MPE-V/P after December 31, 1984 and later wish to move to MPE-V/E, they will be required to purchase the V/E firmware (product 30400A), if they wish to take full advantage of the expanded tables.

If you are perplexed as to why you need to concern yourself with firmware, the following should be illuminating. Series 39/4X systems that currently support MPE-I/V-based operating system table structures (including MPE-V/P) have either CTL/PCS or CPS firmware boards in them. If a customer wants to install MPE-V/E on a Series 39/4X containing either CTL/PCS or CPS boards, MPE-V/E will run, but the

operating system tables can only be expanded within Bank 0 — that is, within the first one-eighth megabyte of main memory. Additionally, the Code Segment Table and the Extended Code Segment Table in MPE-V/E cannot be expanded beyond current MPE-IV or MPE-V/P limits using these older firmware boards.

To obtain the full capabilities of the expanded MPE-V/E tables, the old firmware must be replaced with a new firmware board, the CPS-E. (Note that while MPE-V/E will run on CTL/PCS, CPS, or CPS-E firmware boards, neither MPE-IV nor MPE-V/P will run on the new CPS-E firmware.) In summary, a customer currently running MPE-V/P should obtain the new CPS-E firmware board, if they want to move to MPE-V/E. However, they are not required to do so, because MPE-V/E is supported on both old and new firmware boards.

## MPE and HP 3000 subsystems support native languages

Larry Russell/CSY

Native Language Support (NLS) has been added to the large and growing feature set of MPE. NLS allows application programs to be easily designed and written so that end users will experience a natural, local language interface. With NLS an application can be designed so that two users from different countries can access the application on the same system, yet communicate in their respective native languages. NLS will greatly enhance the productivity of applications programmers, because NLS intrinsics handle the idiosyncrasies of languages such as collating sequences, character sets, and formatting conventions.

The first release of NLS will be supported on both MPE-V/P Delta 1 and on T-MIT, which is the second release of MPE-V/E. This first release of NLS supports 15 languages including: American English, Canadian-French, Danish, Dutch, English, Finnish, French, German, Italian, Katakana (phonetic Japanese), Norwegian, Portuguese, Spanish, Swedish, and "Native 3000" (the way English was processed on the HP 3000 before NLS). NLS is offered to HP 3000 customers free-of-charge as part of the Fundamental Operating Software. In addition to MPE, the following HP 3000 software has been enhanced to support NLS: SORTMERGE, VPLUS, KSAM,

IMAGE, QUERY, FCOPY, and COBOLII. The major features of NLS are summarized in the *Communicator* for P-Delta-1 (Volume 2, Issue 2; P/N 5958-3124) and for T-MIT (Volume 2, Issue 3; P/N 5958-3125). NLS is described in detail in the *Native Language Support Reference Manual* (P/N 32414-90001).

## NLS requires "8-bit" peripherals

NLS requires terminals and printers that can support "8-bit" character sets. These 8-bit character sets are needed to encode and properly process alphanumeric, numeric, and special characters. HP has been making printers and terminals which support 8-bit operation for some time now. There are, however, some limitations to native language support on some of the earlier peripherals. A complete description of NLS printer and terminal support can be found in an appendix of the *Native Language Support Reference Manual*. The following is a summary of native language support on HP printers and terminals:

**Fully Supported:** HP 150 (terminal), HP 2563A, HP 2565A, HP 2566A, HP 2621B, HP 2622J, HP 2623J, HP 2625A, HP 2628A, HP 2932A, HP 2933A, HP 2934A, and HP 2703

**Partial/Limited Support:** HP 2392A, HP 2382A, HP 2608A/S, HP 2622A, HP 2623A, HP 2626A/W, HP 2627A, HP 2631B, HP 2635B, HP 2645J, HP 2680A, and HP 2688A

**Not Supported:** HP 2624B and HP 2687A

When configuring hardware listed as allowing partial/limited support for NLS, make certain that you have checked the *Native Language Support Reference Manual*. While some restrictions are significant, other limitations are very minor.

## HP 7974 Option 800 support on the HP 3000

*Jonathan Goulden/CSY*

Computer Systems Division announces HP 3000 support of the dual density 800/1600 bpi HP 7974 tape drive on MPE-V/E, MPE-V/P Delta-1, and MPE-V/P. The following chart defines tape drive, HP 7974 and 7978, support.

System	MIT	Patch
Series 39/40/42/44/48/64/68	V/E	none
Series 39/40/42/44/48/64/68	V/P Delta 1	none
Series High Perf 39/42/48/68	V/P	F006

The extensive testing that has been performed on these MITs to fully certify both the 7974 and 7978 is now complete. You can utilize either tape drive, with any option, on these three MITs and feel confident that your customer has a solid system.

## Introductory financing for the Series 37

*Phil Rosenzweig/FRD*

The Finance and Remarketing Division (FRD) is offering an aggressive financing program for the Series 37. Under this plan, customers can try a fully-configured Series 37, complete with software, for three months at just 6% of list price per month. At the end of three months, the customer can:

- Purchase the equipment for 89.2%, less discounts,
- Convert to a long-term lease,
- Renew for three additional months, or
- Return the system with no further obligation.

This new program is designed to give customers a low-cost trial with no obligation to buy. For example, a Series 37 system with a list price of \$25,000 would call for payments of just \$1,500 per month during the trial period. Conversion to a lease would then lower the payments to around \$400, depending on the customer's discounts and credit rating. By combining low payments with a no-risk trial, this plan is an important sales tool that will make the Series 37 affordable and attractive.

Other points about the program:

- 100% quota and commission is granted up front, to be reversed if the equipment is returned after three months
- Customer discounts are applied when the system is bought or converted to a lease.



Look to HP's special financing for the Series 37 as an excellent sales tool. It provides a low-cost trial with no obligation.

For more information about the plan, and for a supply of full-color sales brochures, please contact your sales finance representative.

## HP Toolset demo kit a big success

*Marnie Grube/MPD*

The free HP Toolset demo kit offered through an ad in *Interact* magazine and through a direct mailing has generated an overwhelming response. We have been inundated with orders. Feedback from users of the demo kit has been very positive. Users like this vehicle for previewing a product; they can install the demo themselves in minutes, and the accompanying script walks them step-by-step through use of major features. Users are also pleased with the functionality and capabilities of HP Toolset.

We have provided the Area Sales Manager with a list of customers in each area who have requested a copy of the demo kit. These customers should be ready to sign a purchase order for HP Toolset right now, so see your Area Sales Manager for a list of these leads.

## New application note — HP 3000 remote printing via modems

*Rich Suyehira/BOI*

The RS-232-C interface in our HP 2563A, HP 2687A, and LaserJet printers has raised a number of questions about modem support. Although there is no HP modem support for these printers, we have published an application note on remote printing to assist the AEO and CEO in working with customers requiring this type of solution. This note (AN #415-1; P/N 5954-0789) provides information on term types, configurations and printer performance in remote printing applications.

Order additional copies of this note from the Literature Distribution Center (LDC).

## HP Series 4XR and 1M byte memory board prices reduced

*Raymond Dean/FRD*

Effective September 1, Finance and Remarketing Division's already low prices became even lower. FRD has reduced its Series 4XR and 1M byte memory board prices up to 16%. Now you can sell to those cost-sensitive accounts that know the value of a dollar.

When you run across those price-sensitive sales situations, remember FRD's high quality refurbished systems. All of FRD's products carry the same terms and conditions as new systems. The same 90-day warranty, purchase agreement discounts, and freight costs (US only), are all included in FRD's low price.

The availability of these low cost solutions is still on a first-come-first-served basis, so call your market development contact and reserve a unit today.

## Remarketed Series 42R and Transform/3000 convert IBM user to HP

*Que Dang/FRD*

With the help of the low price of a remarketed Series 42R, Larry Santora of Valley Forge has the following success story to add to the Transform/3000 list of IBM users who have converted to HP.

**Customer name:** Whipples Building Materials

**Business type:** Building supply and lumber

**Geographic location:** Northeastern Pennsylvania

**Size:** \$15 million

**HP 3000 system purchased:** Remarketed Series 42R

### Reasons for purchasing Transform/3000:

Customer wanted to add new applications to the existing system. After re-evaluating his computing needs, he found that the additional demands would push him beyond the limits of his then-current equipment. IBM proposed the System 38; however, this would have entailed a major rewrite of the applications. The consultant having been updated about Transform/3000 and the HP 3000 line, gave them the highest accolades.

## Reasons for purchasing remarketed Series 42R:

Once the decision was made to purchase HP, brokers came in and tried to undercut FRD's price. Larry proved to the customer that HP's system pricing includes hidden costs such as installation, warranty, freight and documentation.

**Why the customer left the IBM fold:** The customer had been dissatisfied with IBM support for some time and was looking for a solution. With the cooperation of the consultant, SR Larry Santoro proved to the customer that the HP 3000 with its extended growth path, higher performance, and better application solutions was a far better alternative.

**Customer quote:** "I have confidence that as my business grows Hewlett-Packard will have a system solution for me."

## MANUFACTURING

### HP JIT: The productivity solution for Just-In-Time manufacturing

*Jim Heeger and Steve Baker/MPD*

Manufacturing Productivity Division announces HP JIT — an application solution for Just-In-Time manufacturing that runs on the HP 3000 and HP Touchscreen MAX personal computer. HP JIT is a powerful planning and control application that is designed to help manufacturing personnel manage production and materials. It is based on HP's widely-recognized Just-In-Time experience in over a dozen



manufacturing divisions. With HP JIT, Hewlett-Packard establishes itself as the leader in providing application solutions for the Just-In-Time market.

Just-In-Time is a concept that is sweeping manufacturing circles. Simply stated, Just-In-Time says "make only what is required, only as it is required." To implement Just-In-Time requires a commitment to continually improving the manufacturing process.

Just-In-Time yields significant benefits such as improved product quality, increased asset utilization and better customer responsiveness.

A good example of what can be achieved is HP's own Vancouver Division, which in the last year has accomplished the following:

- Work-In-Process reduced by 82%
- Floor space reduced by 40%
- Scrap/rework down by 30%
- Labor efficiency up by 50%.

At the same time, shipments increased by 20%.

#### Target market

HP JIT opens up new opportunities in markets in which we are well-established. Industries that have shown particular interest in Just-In-Time include electronics assembly (computers, office and telecom equipment), household appliances, consumer packaged goods, and automotive supply. The ideal HP JIT customer would represent one of these industries and would be a repetitive manufacturer that assembles discrete components that is already practicing Just-In-Time manufacturing.

#### HP JIT versus HP Materials

##### Management/3000: sell the one that fits best

HP JIT is designed for the repetitive manufacturers who are practicing Just-In-Time. HP Materials Management/3000 is appropriate for batch-oriented manufacturing that requires work order control. Now HP offers a manufacturing solution for either need, or sell them together for environments which require both types of control.

#### Available now

HP JIT is available now. US list price is \$60,000 for HP JIT and \$1,000 for HP JIT Touch, the portion of the product which runs on the Touchscreen MAX personal computer.

More information is on the way in your introduction package, including the HP JIT flyer, sales training manual, and data sheet. Look for more details in your Sales Training Manual.

## HP JIT features powerful capabilities

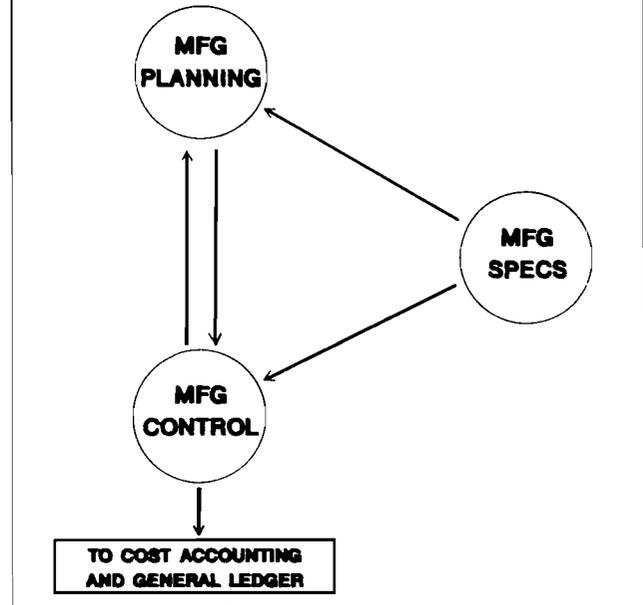
Mike Kosolcharoen/MPD

HP JIT is an on-line, interactive, and customizable software application for Just-in-Time manufacturing. Based on the experience of several HP manufacturing divisions, HP JIT was designed from the ground up to address the needs of Just-In-Time manufacturers with repetitive environments. HP JIT is a true rate-based system which can also be fully integrated with HP Materials Management/3000 for environments requiring both Just-In-Time and traditional workorder control.

HP JIT offers an array of powerful capabilities such as:

- *Production planning on the HP Touchscreen MAX personal computer.* Rate-based master production scheduling is provided using HP Series/100 VisiCalc® and HP JIT Touch. The planner can also perform "What-if" simulations and produce graphic reports of monthly plans.
- *Selective Materials Requirement Planning (MRP) for Just-In-Time production.* Users can select their MRP runs by data range, part number range, controller/buyer range, or another user-defined attribute such as vendor. Moreover, the action report can be summarized on a daily or monthly basis or a combination of both.
- *Manufacturing control.* Your customers can easily monitor their actual production using HP JIT's Post-Deduct and production reporting functions. Post-Deduct is a comprehensive method to update inventory balances that is similar to, but much more powerful than, the common "backflush" capability. Components consumed are automatically accounted for upon completion of the parent part. In addition, many inventory control features, including subcontract management, are provided by HP JIT.
- *Manufacturing specifications.* HP JIT maintains information on parts, manufacturing bills, engineering changes, and product options. HP JIT is flexible to accommodate changes to the manufacturing specifications.

## HP JIT MODULES



HP JIT incorporates the Just-In-Time manufacturing techniques proven by HP divisions. By now, some of the printers, plotters and systems that your customers are receiving were built with HP JIT. For more information, refer to the sales training manual which you will receive soon.

## HP JIT sales aids bring home the concepts

Kristine Johnson/MPD

Sales aids for HP JIT will help you sell Just-In-Time manufacturing concepts as well as HP JIT product features. This has several advantages. First, manufacturing companies are eager to learn more about JIT. With HP knowledge and experience, you have something to catch their interest right from the start. Second, HP JIT is not suited for all manufacturers. Education can help to qualify prospects as well as move your customers toward manufacturing practices more suited to JIT.

The following aids are available now:

- *Just-In-Time slide pitch.* This 35mm slide pitch is ideal for lead generation seminars. It describes Just-In-Time manufacturing, how HP has derived

significant benefits from it, and sets the stage for further discussion of the role of systems in the Just-In-Time environment. This pitch is being presented for the Answers '84 seminar series. Check to see if it will be presented in your area. For more information, contact your sales center.

- **HP Greeley videotape.** The infamous Greeley videotape can be made available to your customers on a loaner basis. This 30-minute video consists of a skit in which many of the principles of Just-In-Time manufacturing are demonstrated. The videotape is part of the customer training materials.
- **Just-In-Time reference materials.** These two books are complete and informative guides to Just-In-Time concepts and their implementation. Both are available at bookstores. They include *Zero Inventories* by Robert Hall and *Japanese Manufacturing Techniques* by Richard Schoenberger.
- **HP Just-In-Time plant tours.** Seeing is believing. Twelve HP divisions are now practicing Just-In-Time manufacturing techniques. As your customer gets close to making a decision to use HP JIT, a factory tour may be just the thing to close the deal. Contact your sales center for more detail on factory tours.
- **HP JIT functional demo.** SEs who have been trained on HP JIT can quickly put together a functional demo using the self-paced user guide and the training data base.
- **HP JIT product literature.** The four-color, two-page HP JIT flyer, P/N 5954-0403, introduces the product's features and benefits to manufacturing materials and production managers. The six-page data sheet, P/N 5954-0402, is a good overview of the product functions and its customization capabilities.

In December we plan to have available the *HP JIT General Information Manual* and a stand-alone demo on the HP Touchscreen personal computer.

## HP JIT training and documentation materials generate enthusiasm

Christine N. Witzel/MPD

The first HP JIT SE class was a resounding success; attendees were excited by both the SE course and the HP JIT materials. Since comments from the field were solicited and used in developing the materials, we expected a positive response. However, our expectations were exceeded by SE evaluations of the course which ranged from "Information will be used for initial qualification during sales process" to "Great documentation idea. Well blended between self-paced, user and implementation" and "The new format (self-paced user guide, etc.) is very good. It's a great improvement and will help with implementing this product."

Why such excitement? Partly it's due to several new approaches. First, the customer training course, (Implementing HP JIT) covers both the product and Just-In-Time concepts. While the target audience is the customer's implementation team, conceptual material is included in case some of the attendees need more background. Secondly, the guide that accompanies the course, *Implementing HP JIT Guide*, contains thorough explanations of the slides, room for notes, and an index so the customer may use the guide as a reference document after the class.

Third, the customer training course includes self-paced exercises which permit "hands-on" practice in using the product. The exercises are part of the *HP JIT Self-Paced User Guide* which was designed both for the customer training class and as an aid to the customer who will be doing end user training. The *HP JIT Self-Paced User Guide* is available as a product from Manufacturing Productivity Division (MPD) and comes with a preloaded training data base. Fourth, the *User Reference Manual* and *System Reference Manual* complement the training materials to form an integrated package.

*Continued on page 17*

# Managing today's information for tomorrow's success

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## Multivendor Networking

This *Computer News* insert features Multivendor Networking — the third HP AdvanceNet focus area.



Multivendor networking encompasses not only HP to IBM and HP to other vendor's communications but also HP to HP systems. The days of a dedicated one-vendor system are gone. To satisfy customer's needs, networking capabilities between similar and different computer systems are imperative.

Computer networks are a combination of software and hardware. Network software services provide the capabilities users require such as virtual terminal, remote file access, remote database access, network file transfer, remote output access, interprocess communication, and remote command execution. Communication links provide the physical connection and protocols necessary for communications. Links include point-to-point, IEEE 802, and X.25 packet switched networks.

To accomplish our multivendor networking goals, HP has committed to both international and de facto standards. The primary advantage of standards is easier compatibility with other vendor's equipment whose products are also standards based.

For communication with vendors who also subscribe to international standards, HP AdvanceNet products are developed in accordance with the International Standards Organization (ISO) Open System Interconnect (OSI) layered model architecture. By building products based on the OSI model, HP can offer a range of price/performance alternatives, greater reliability, connection cost reduction, and the ability to complement our products with third party products.

IBM's System Network Architecture (SNA) is a network de facto standard. To fulfill our commitment to communicate via de facto standards, HP has developed products that emulate batch or interactive terminals and systems to communicate with IBM mainframes in an SNA environment.

# HP AdvanceNet

## Current Capabilities

### HP to HP Multiuser System Communication

HP's early accomplishments in communicating between our various computer systems put us at the front in system-to-system networking. Intercommunication between HP 1000 technical computers was achieved in 1972 and between HP 3000 business computers in 1977.

HP's Distributed Systems (DS) allows HP 3000s, HP 1000s and HP 250s to communicate within and between product lines. DS allows customers easy access to remote data and resources through the network. DS makes it simpler to design applications that span a network using program to program calls or interprocess communication utilities. Customers can choose from a wide variety of both local and remote links.

In the HP 9000 workstation family, LAN/9000, a high-speed local area network, provides communication capabilities between UNIX-based HP 9000s. In addition, HP 9000s running under HP-UX may emulate terminals to communicate with HP 1000, 3000 and 9000 systems. The Shared Resource Manager (SRM) provides the capability to share peripheral resources among desktop workstations in a local cluster.

### HP to IBM System Communication

To communicate batch files to and from an IBM mainframe from a remote site, HP offers Remote Job Entry (RJE) and HASP Multileaving Remote Job Entry (MRJE) for use in the non-SNA (or bisync) environment. For batch communication in the SNA environment, HP offers Network Remote Job Entry (NRJE).

Interactive Mainframe Facility (IMF) allows terminals and programs on the HP 3000 to emulate IBM interactive terminals on the IBM mainframe in both the non-SNA and SNA environments.

On the HP 1000A, E and F Series, HP has announced enhanced RJE and program-to-program communication supported by a powerful interactive facility. On the HP 1000E and F Series, RJE is available and on the HP 1000A Series, MRJE is available. For interactive communications between an HP 1000A and an IBM mainframe, PMF/1000 is available. On the HP 9000 running under UNIX and the HP 250, RJE capabilities are available. Also the HP 9000 Series 200 offers IBM 3278 terminal emulation capabilities with file transfer.

In the Personal Computer area, we offer the HP 150 3278 emulation capability. The 3Com Etherseries network provides a local area network capability that allows HP and IBM PCs to share data, peripherals and electronic mail.

### HP to Other Vendors Communication

Links and several terminal emulation packages enable communication with DEC and other vendors. The HP 9000 (Series 200) emulates a DEC VT100 and TEK 4010 terminal while the HP 2622 terminal emulates a DEC VT100. Generic file transfer is also possible on the HP 9000.

HP also offers X.25 capabilities on the HP 3000 and 1000 systems and Ethernet compatibility on the HP 9000 — standards which are also supported by DEC.

## Future Directions

HP's networking future directions also include the development of products to provide communication capabilities for HP to HP systems, HP to IBM systems, and HP to other vendors systems.

### HP to HP System Communication

Users who want to do a simple task like a file transfer, don't want to concern themselves with how the network is configured. Transparent access eliminates this need to know the network topology or log-on to intermediate nodes. Network transparency is available now on the HP 1000 and is a future enhancement for the HP 3000. Another planned product is a Local Area Network based on 802.3 that can accommodate up to 100 nodes across any HP product line with four to five times improvement in throughput performance. A factory LAN, based on 802.4, is also being developed. An overall goal for future network products is ease of installation and compatibility with current HP to HP Multiuser System products.

### HP to IBM System Communication

In the SNA environment, a gateway product based on the HP 3000 will allow the HP 1000 and HP 9000 to communicate with the IBM mainframe in batch and interactive modes.

### HP to Other Vendors System Communication

Reliable file transfer communication over an IEEE 802.3 link to DEC will be provided by HP software. Additional X.25 connections are also planned.

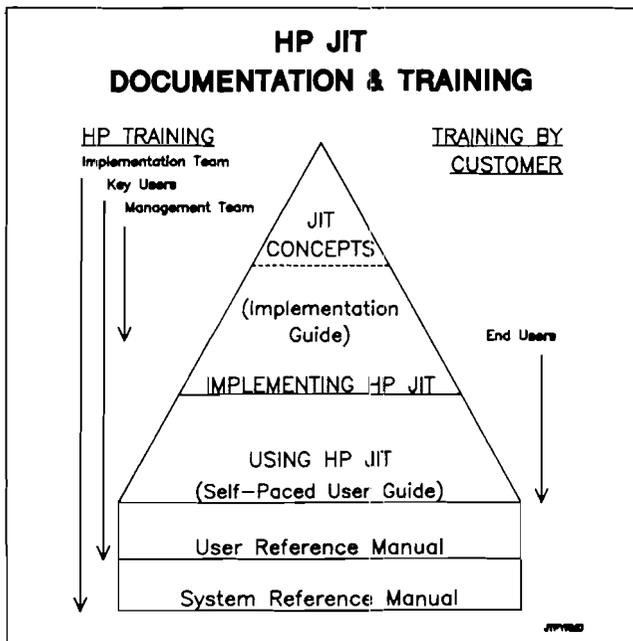
Hewlett-Packard's multivendor networking products improve your sales opportunities by offering door-opener opportunities in IBM and other computer vendor's environments.

## SR Resources

On its way to you is an HP AdvanceNet Product Reference Guide (5953-9455) which is a comprehensive reference binder on HP's networking products.

Included in the binder are one page summaries of major networking products, competitive information, list of sales tools, and a large section for you to add frequently referenced documentation on the products.

This Guide will be updated periodically by IPG with inserts focusing on new product introductions and updates on existing products.



We had two goals in mind when developing the materials. The first was quality, the second, flexibility. As there is no way to predict if any one customer will be adept at Just-In-Time manufacturing or will need reinforcement, and if HP JIT will be used stand-alone or in a mixed environment, we designed the materials to be modular so the instructor could select sections as appropriate. We hope you will agree with the SE who told us, "We in the field can really work with what's provided."

## HP JIT — Introduction in Las Vegas

*Steve Baker/MPD*

More than 5,000 people at the 27th Annual APICS Conference in Las Vegas (October 8-12) had a chance to learn more about HP JIT and the impressive results HP has achieved using Just-In-Time manufacturing techniques.

### Product demonstrations

HP JIT was demonstrated on four HP Touchscreen MAX personal computers. With over 22 hours of tradeshow time, hundreds of people had a chance to use HP JIT.

### Customer forum

Customers planning to implement a Just-In-Time solution appreciated the chance to talk with people

who have already done it. A by-invitation-only forum gave customers time to talk with five HP manufacturing experts who have implemented Just-In-Time techniques at their divisions.

### Conference sessions

HP is a recognized leader in using Just-In-Time manufacturing techniques. Three of the conference sessions on JIT were given by HP experts.

Introducing HP JIT in Las Vegas was no gamble. The APICS members have been looking for someone like HP to take a leadership role with a Just-In-Time application solution. We will be contacting you soon with the qualified leads from the show.

## HP MM/PM update — keeping the competition honest

*Mike Morel/MPD*

HP Materials Management/3000 is a very sophisticated package by most standards. When competing with less elaborate or older packages, keep the competition honest. By looking at typical characteristics of older or smaller packages, you can identify missing features that make our competition's solution a bad fit for your customer. Consider some of the following features available with MM that are *not* found in some of the older packages you compete with daily:

- ability to handle multiple warehouses,
- automatic allocations or releases,
- inventory pick list by location (not confined to part number),
- individual component yielding,
- two stage cycle count (i.e., with security),
- "What if" MPS,
- excellent data editing.

Determine whether these are important to the customer early in the sell. If they are, suggest the competition demonstrate them. Most of the time they can't.

### Editor's Note:

In "New Pricing for HP 3000 family" [*Computer News*, September 15, 1984] the price for ½M bytes of Series 37 memory (P/N 30461A) was listed incorrectly as \$12,500. The correct price is \$2,500.

## DISTRIBUTION

### **Success of vertical marketing for distribution products**

*Paul Sievers/IRO*

"Vertical Marketing," the buzzword in today's business marketing, has been IRO's strategy for well over a year now, and we are proud to announce that our efforts have met with resounding success. Last year we targeted four distribution vertical markets for our sales efforts: office products, paper products, industrial supply and electronics distributors. So far this year, as compared to the same period last year, our sales have increased 371%. Of these sales, 76% have been to our vertical markets. A highly targeted approach to our marketing strategy has proven itself to be a tremendous success. The marketplace is receptive to the approach, and our sales force and marketing plans are more highly leveraged.

Our vertical marketing emphasis has proven to be effective for us. We've had the opportunity to establish HP as a force in markets heretofore undeveloped. It's been fun for us and we highly recommend a similar approach to others. We're looking forward to continuing our momentum, and enjoying an even more successful year next year.

### **New HP SFD/3000 training course**

*Dav Dulberg and Andy McKennan/IRO*

Information Resources Operation (IRO), together with several CSRs in the field and Computer Support Division, has developed a new course that employs distinctively different educational approaches than we have used before. The new class, entitled "SFD/3000 Training," is a replacement for the Intro and Advanced courses for HP SFD/3000 (System for Distributors) customers.

The modules of this new course provide customers with experiences which will give them the knowledge and confidence they need to be more self-reliant during implementation of the HP SFD/3000 or HP OM/3000 system. As specific system features are taught, students learn an implementation process which can

be duplicated at their individual sites and applied to any other system features.

Because documentation is the backbone of an implementation in the field, it is also the backbone of the new training. Students gain familiarity with this resource and learn how to use it. Within the course, it is impossible to implement a new system feature without going to the documentation first.

Customers are required to study the *SFD/3000 User's Self-Study Guide* and complete the related problems and solutions before attending the class. These materials introduce them to the system and allow the class to cover the necessary material in the time allotted.

Students are given an overview of the entire business process and how SFD/3000 relates to it. In every module of the course, there is an emphasis on business functions and their correlation to SFD/3000 or OM/3000.

Probably the most unique feature of this course is that students have seven days of instruction about the system and the implementation process, followed by a three-day exercise simulating a mini-implementation. During this exercise, students bring up each subsystem of SFD/3000 with only a limited amount of assistance from their instructor. This exercise gives our users a better understanding and reinforcement of the implementation process and what it takes to accomplish it successfully.

Customer reviews of the first classes have been very favorable. General comments indicate that the three-day mini-implementation was the favorite part of the course. As a result, the customers have said that they feel much better prepared to implement SFD/3000 at their own sites.

We expect that this new course will result in smoother implementations, reduced customer support requirements, and greater customer satisfaction.

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### **Also in this issue**

**Announcing *HP Integration Notes***

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## OFFICE SYSTEMS

### Personal Productivity Center expands

Rudy Batties and Brenda Greeley/ISG

(US and UK Only)

You first heard about the Personal Productivity Center in the Spring of '84 — a coherent strategy for establishing HP in the office systems marketplace by merging office automation, data processing, data communications, and personal computing into one integrated office solution.

Today, HP takes the Personal Productivity Center a step further with the integration of significant new products and capabilities — *and* — the introduction of a range of new bundled office information systems and products to make the purchase of a Personal Productivity Center much simpler (and less costly) for your customers.

#### Personal Productivity Center enhancements

Enhancements to HP DeskManager and the introduction of new personal computer software offer your customers the close integration they've been asking for.

Personal computers can now communicate with each other and HP 3000 users via a simple, yet sophisticated electronic mail facility, HP Message. HP Touchscreen personal computer users can now access HP 3000 departmental computer applications and public data bases directly from their personal computer applications manager, PAM, with HP AdvanceLink.

HP MemoMaker documents created on a personal computer can be viewed and edited by HP Word and vice versa. And the Touchscreen can now be used in terminal emulation mode to run HP Word — what you've all been asking for.

For more information on HP Message, and the P-P-C enhancements to HP Word and HP DeskManager, read the series of articles which follow and the *P-P-C Field Training Manual*. And, check the October 1 issue of *Computer News*, page 10, for an article which tells all about HP AdvanceLink for the HP Touchscreen personal computer.

#### New integrated office systems

The new entry-level office system bundles build on the price/performance of the HP 3000 Series 37 to extend the benefits of the Personal Productivity Center to small offices and workgroups.

- **Personal Productivity Center Professional System**

The Personal Productivity Center Professional System is targeted at the professional workgroup with sophisticated communications and needing only basic word processing. This system includes an HP 3000 Series 37 Office Computer with 1M byte main memory, 55M byte disc storage, cartridge tape backup, and four HP Touchscreen personal computers. HP DeskManager III is bundled with the system providing electronic mail, basic word processing, electronic filing and calendaring; plus HP DeskManager-Assist (training and customer site implementation assistance).

And, each Touchscreen will come complete with MemoMaker, HP Message (NEW), HP AdvanceLink (NEW), HP Series/100 Graphics, and HP Series/100 VisiCalc.

The Professional System is priced at \$43,510, or about \$11,400 per workstation — 23% less than the total price of purchasing the products separately. An additional 1M byte of memory can be added for \$4,000.

- **Personal Productivity Center Workgroup System**

The Personal Productivity Center Workgroup System gives customers all the capabilities of the Professional System plus full-function word processing support package. The Workgroup System includes a Series 37 with cartridge tape and two discs — giving a total of 110M bytes, three Touchscreens, and one HP 2628A secretarial word processing workstation. Bundled software includes HP Word, HP ListKeeper, HP Spell, HP DeskManager, plus HP Word-Assist and HP DeskManager-Assist. Each Touchscreen comes with the bundled personal computer software above.

The Workgroup System sells for \$57,615, a 22% savings over individually purchased products. An additional 1M byte of memory can be added for \$4,000.

Check your *P-P-C Field Training Manual* for performance considerations on these systems.

## Customers can choose from convenient packages

In addition to the complete entry-level systems, three system level software packs and two personal computer packs are available for customers to choose to configure with any new HP 3000.

- **Personal Productivity Center Base Pack (27510A)**  
This entry level pack provides the foundation for the Personal Productivity Center capabilities. It contains the newest release of HP DeskManager and HP DeskManager-Assist to ensure a successful implementation. This pack is priced at \$14,200.
- **Personal Productivity Center Secretarial Word Processing Pack (27511A)**  
Besides the Base Pack, secretaries who are heavily involved in word processing will want to have the Secretarial Word Processing Pack. This pack consists of: HP Word, HP ListKeeper, HP Spell, and HP Word-Assist. This pack sells for \$12,800, 19% less than the price of the products if purchased individually.
- **Personal Productivity Center Advanced Pack (27513A)**  
For the user who needs the full range of office automation software, this pack offers all the products included in the first two packs plus three decision support tools — VisiCalc/3000, HP EasyChart and HP Draw. The purchase price of this pack is \$32,500, 18% less than the price of products if purchased separately.
- **Personal Productivity Center Touchscreen Pack (45407A)**  
This pack gives the HP Touchscreen user the tools to easily exchange information with other PC or HP 3000 users and create graphics and spreadsheets locally. It includes: HP Message, HP AdvanceLink, Series 100/Graphics and Series 100/VisiCalc; every Touchscreen personal computer comes standard with MemoMaker and PCF. The Touchscreen Pack sells for \$840, a full 23% less than the price of the products if purchased individually.
- **Personal Productivity Center IBM-PC Pack (36569E)**  
This pack allows the IBM-PC to become a Personal Productivity Center workstation and send and receive mail messages through HP DeskManager. The pack includes HP Message/IBM and Personal Productivity Center Overview Manual. The pack is priced at \$300.

## Product availability

These exciting new products were announced October 1 at Info'84 in New York. Customers and press were told that they would be orderable November 1, 1984 (November 1 CPL) with 16 week availability. Complete product and ordering information is in the *P-P-C Field Training Manual* which was mailed to your office this week. A demo version of the software will be available in the field for customer demonstrations by November 1.

## HP Word in the Personal Productivity Center

Jay Young/OPD

HP Word is the secretary's key to the Personal Productivity Center, providing the secretary with the means to support and improve the productivity of the entire work group.

HP Word provides not only powerful word processing, but also integration with other major support functions: list processing, business graphics and organizational communications.

The Personal Productivity Center features a release of HP Word that supports the HP Touchscreen running in terminal emulation mode. Now secretaries, managers and professionals can have access to HP Word from their recommended workstation, giving instant document sharing capability with no file conversion required.

Although the capability now exists to run HP Word on the HP Touchscreen, be sure your customers know that the HP 2628A is still the recommended workstation for the secretary supporting a workgroup with more than light word processing requirements.

With this ease of file sharing, together with its powerful shared printing capabilities through the wide range of supported printers, HP Word provides the major document creation and production functionality for the Personal Productivity Center.

**Note:** For a description of an HP Word full-feature demonstration, see "HP Word demonstration pack now available [*Computer News*, July 15, 1984].



## New HP Word sales brochure

Jay Young/OPD

HP Word now has a new sales brochure, P/N 5953-8265. The brochure gives your customers all the information they need on the features, advantages and benefits of HP Word, and it gives you all the information you need to sell HP Word successfully.

The theme of the brochure is HP Word and the Personal Productivity Center and explains the strengths of HP Word as a secretarial tool when used with HP's other office products such as graphics, list processing and electronic mail.

HP Word's key word processing features are fully described with the emphasis on the competitive advantages.

The brochure is being distributed as part of a package of information on HP's word processing, to all SRs, SEs, CSRs and field management. This package will be arriving in your offices during November.

A bulk distribution from LDC to all the sales offices worldwide is also being made, and the brochure should be in your office soon.

## HP Message for the HP Touchscreen and IBM personal computers

Richard Gamblen/OPD

The major contribution of the Personal Productivity Center is the integration of the personal computer with the electronic office. The personal computer or workstation is fast becoming an important part of the executive and professional work environment. Until recently, however, these users were forced to give up connectivity to other members of the workgroup and organizational resources in favor of the friendly PC environment.

With the introduction of HP Message this is no longer the case. HP Message gives HP Touchscreen *and* IBM PC users the ability to exchange, read, print and edit application files with other personal computer users and HP 3000-based application programs.

HP Message also provides document conversion between HP MemoMaker and HP Word. Now a manager or professional can draft a document using HP MemoMaker, send it to the secretary for editing in HP Word, and receive a review copy back on the personal computer before it is distributed via HP DeskManager.

The HP Message user gains access to the worldwide communication networks via HP DeskManager. This includes HP DeskManager to HP DeskManager communication, HP DeskManager to foreign systems via the Foreign Service Connection, and HP DeskManager to HP Telex.

HP Message is designed for professionals who use their personal computer as a tool for financial modeling, graphics presentation, word processing and business data processing, but require a powerful communications system as well.

### Ordering information

Product	P/N	Price* (US List)
HP Message for the HP Touchscreen Computer	36568A	\$300
HP Message for the IBM PC	36569E	300

\*CPL date: November 1, 1984

Availability: First customer shipments are expected to begin March 1, 1985

**Software requirements:** HP DeskManager III (A.03.00) HP MPE V or later

### Sales aids and documentation:

Document	P/N
<i>HP Message Field Training Manual</i>	5957-4606
<i>HP Message for the HP Touchscreen Data Sheet</i>	5953-8274
<i>HP Message for the IBM PC</i>	5953-8275
<i>HP Message for the HP Touchscreen Reference Guide</i>	36568-90001
<i>HP Message for the IBM PC Reference Guide</i>	36569-90002
<i>HP Message for the HP Touchscreen Quick Reference Guide</i>	36568-90002
<i>HP Message for the IBM PC Quick Reference Guide</i>	36569-90002

## HP DeskManager more powerful

*Richard Gamblen/OPD*

HP DeskManager is even more powerful with the enhancements included in the Personal Productivity Center release (A.03.00).

New features include the hooks and converters for HP Message, enabling the HP Touchscreen or IBM PC user to access the HP DeskManager network without leaving their personal computer environment.

Also included in this release are the HP MemoMaker to HP Word and HP Word to MemoMaker converters. Secretaries, managers and professionals will readily appreciate the benefits of this new tool to facilitate their working relationship.

These new features, in addition to the integration of HP Word, HP Telex, HP VisiCalc™/3000, and the Foreign Service Connection (HP DeskManager II features), make HP DeskManager the most powerful electronic mail system in the industry.

Anticipated field delivery for HP DeskManager III is March 1985.

## Personal Productivity Center sales aids

*Brenda Greeley/ISG*

Be sure to take advantage of the many excellent sales and merchandising aids we now have to help you sell the Personal Productivity Center. Below is a description of each new literature piece available for customer distribution, as well as the field training resources for you. Availability for all these items is November, unless otherwise specified. In addition to these new sales aids, a key part of our merchandising campaign is a new series of Personal Productivity Center ads which will be running in major business publications this fall. We will use the literature to respond directly to the ads.

- The "HP's System for Unifying Your Company" brochure (P/N 5953-7669) describes HP's unique ability to provide a single solution for a company's integrated information needs. This conceptual overview of our Office/DP/PC integrated solution is aimed at executives and decision makers concerned with their total organizational needs.

"Unity in the office begins with HP" is also the theme of the corresponding eight-page ad which will run the third week of September through November. Reprints of this ad are also available (P/N 5953-7679). These could be used effectively as part of a direct mail campaign.

The advertisement is titled "Beyond OA: the Personal Productivity Center." It features a black and white photograph of five people in business attire standing in a row. Below the photo is a diagram showing the architecture of the Personal Productivity Center, with various components and their interconnections. The HP logo and "HEWLETT PACKARD" are visible in the bottom right corner of the ad.

## VERTICALS

- “The Single Solution for the Modern Office” (P/N 5953-7639) is a management brochure highlighting the benefits that can be gained by organizations and individuals using the Personal Productivity Center.
- The “Integrated Office Solutions from Hewlett-Packard” brochure (P/N 5953-7668) provides a more detailed look at the Personal Productivity Center product features and capabilities. *It’s available in December.*
- *Personal Productivity Center Data Book* is a compilation of more specific product information on all systems, software, and peripherals related to a customer’s Personal Productivity Center needs. *It’s available in December.*
- *Personal Productivity Center Data Sheets* present each of the products in detail.

Data sheet	P/N
P-P-C Base Pack	5953-8267
P-P-C Secretarial Word Processing Pack	5953-8268
P-P-C Advanced Office Pack	5953-8269
P-P-C Workstation Pack	5954-0409
P-P-C Professional System	5953-7699
P-P-C Workgroup System	5954-0400
P-P-C Office-ASSIST for P-P-C	5954-0148
P-P-C Application Sheet	5953-8276

### Customer Videotape

- *The Personal Productivity Center Videotape* (P/N 90891R) is a professionally designed and produced visual demonstration of personal productivity capabilities from the perspective of the end-user. This brief video is available to augment your customer presentations.

### Customer demonstration pack

- *Personal Productivity Center Demonstrations Pack* (P/N 36574-60100) showcases our products with a “real time” demonstration of how the products are used in a typical business environment. Included are a demonstration tape, and demonstration script and cards.

### Field selling aids

- *Personal Productivity Center Field Training Manual* (P/N 5957-4607) distribution will be mid-October.
- *Personal Productivity Center Performance Guide* (P/N 5957-4608) includes a spreadsheet configurator to determine system requirements.

## Selling to and through consultants brings in large sales

*Eva G. Johnson/ISG*

Recognizing consulting firms as both direct customers and important resources to help leverage customer sales can help you be successful. Here are two examples of SRs who translated their knowledge into sales dollars.

Combine a casual meeting, lucky circumstance and Michealyn Park, an astute commercial SR, and what you get is a \$180,000 sale.

During an open house in the Palo Alto sales office, Michealyn met the director of the chemical industries division at SRI. SRI is one of the most respected research and consulting firms. Its board of directors is composed of many industry leaders, including John Young.

At the open house, Michealyn learned that the director and his organization were involved in the preparation and publication of research reports which are marketed to the chemical industry. The process included using timesharing and a service bureau for input and text generation. This process was costly, slow, and did not allow SRI much control over quality or easy modification of material. Michealyn was quick to spot an excellent application for the HP 3000 and the new desktop laser printer

Competition included several vendors, with Wang as the key player. Michealyn dealt with them by emphasizing HP’s ability to deliver the total solution and highest quality support. Next came even fiercer competition from SRI’s internal MIS department. The centralized DP organization was proposing to manage publishing of the reports in-house and hoped to use this application to justify expansion of IBM equipment. Michealyn was able to align the director as both an internal salesman and coach. They worked together as a team, with Michealyn as the strategist who “trained” the customer to represent HP during SRI internal meetings.

# Business Computers

This resulted in a \$180,000 sale of an HP 3000 and laser printer (the first HP 3000 at SRI), a win against IBM and a congratulatory letter to Michealyn from John Young, who through his close contact with SRI knew that it took great perseverance to make it all happen. Last-minute update: Michealyn is now showing the HP 110 to SRI.

Another success story which resulted in a sale of more than \$130,000 to a famous wine company in the Bay Area is a great example of leveraging your approach with a consulting firm to help you get the order.

The wine company found itself strapped for computer resources. The installed base of several Apple workstations could not keep up with the firm's growth and increased demand for DP resources. The San Francisco Arthur Andersen & Co. team was brought into the picture to recommend a solution. Fred Doar of Arthur Andersen & Co. and Greg Cronin, HP commercial SR, Mel Smith, distribution application SR and Bill Fryar, SE responsible for the account, established close communications. The HP team provided Arthur Andersen & Co. with great support during their evaluation process. Apple was quickly eliminated as not being able to provide a total solution in the face of the fast growth of the company. Next came IBM. After a quick but thorough evaluation (the entire sales process took two and one-half months), Arthur Andersen's recommendation was: HP can offer a stronger solution than IBM because of the greater flexibility of HP SFD/3000 and the growth path of the HP 3000.

Arthur Andersen & Co. and the HP team continue to work closely to provide customization service, a fine example of working with a consulting firm to provide post-sales support and customer training.

These two scenarios emphasize the importance of getting to know your local consultant. The time you spend with the consulting firm can give you an opportunity for direct sales. Remember, consultants, just like you, have to deliver many presentations and reports. This gives you a great opportunity to sell graphics and laser printer solutions. The Portable also is a great solution for consultants. Also, keep in mind that the time you spend with consultants gives you and HP leverage in two areas: first, while selling to consultants, you also educate the firm on HP solutions and thus increase HP's probability of being recommended by consultants; second, for those of you who are focused on third party solutions, keep in mind that the Big Eight, as well as many smaller consulting firms develop and support software solutions. Many packages have been developed for the System 34, a great introduction for Transform/3000, especially with the Big Eight. You can leverage consultants' knowledge of the IBM installed base (they not only know the scoop, they know where to find System 34s), their worldwide support and presence.

Have you thought about including consultants in your FY85 Business Plan? Stay tuned, and in the meantime, put some time in your schedule to visit consultants. If you need to know how to approach which consultants, call Eva Johnson, HP Consultants Program in Cupertino, 408-725-8111, ext. 3690.



## NETWORKS

### Also in this issue

**New single channel adapter provides flexible HP 3081A-to-host connections** 27

## MASS STORAGE

### Use HP media for 1/2" tape drives

*Sandy Hansen/GLD*

Urge your customers to use HP media on their 1/2" tape drives. It meets all of the ANSI specifications for 1/2" unrecorded magnetic tape and reels. The temptation to buy tapes not meeting ANSI specs is far outweighed by the advantage of HP quality. Backup is futile if there is a chance that there will be problems reading the tapes back into the system.

#### Media spec is industry standard

Since the introduction of the HP 7974A and HP 7978A tape drives, we have had some questions regarding the specification for tape media used by these drives. The media for all HP tape drives should meet ANSI specification X3.40-1976 for 1/2" unrecorded magnetic tape and reels. Hewlett-Packard media meets this spec as well as the later version X3.40-1983. It is particularly important to use high quality tape on the high density HP 7978A and HP 7976A GCR drives.

Long length tapes (3,200 or 3,600 feet long) are usually only 1 mil thickness and are *not* covered by the ANSI specs. This type of media is not sold by HP and is not recommended for use with HP tape drives.

#### Ordering information

Order P/N 92150F from Computer Supplies Operation to get a box of 10 - 2,400 ft. reels of tape. Media is also available in 600 and 1,200 feet. Refer to your CSO catalog for other tape media part numbers on these and other supplies.

### HP 7974A hits the spot for Pepsi Cola

*Sandy Hansen/GLD*

Pepsi Cola wanted a cost-effective tape drive to back up HP 3000, Series 42 systems at about 75 distribution facilities throughout the US. Previously, Pepsi had been using a Linus cartridge drive with each 64M byte disc, but upgraded to a 400M byte disc at every location. With the larger disc they needed a tape drive with more speed and capacity. When the new HP 7974A 1/2 inch tape drive was introduced last fall, Bob Nobile, a commercial SR from White Plains, NY, realized that it would be a good match for the higher capacity discs. The 1600 CPI drive can back up a 400M byte disc in about the same time as Linus can back up the 64M byte disc — more than six times the data stored in approximately the same time. Pepsi's joined the HP generation of greater productivity.

### Also in this issue

**HP 7974 Option 800 support on the HP 3000** 12

## PLOTTERS

### Used flatbed plotters available

*Rhonda Willens/FRD*

#### For North America Only

Many customers may still prefer flatbed plotters to HP's newer plotters; some customers' needs can only be satisfied by a flatbed plotter. We want to help satisfy these customers' needs. FRD has used flatbed plotters available at a substantial savings.

The flatbed plotter line includes HP 7220A, 7220B, 7220C, 7220S, 7220T, 7221A, 7221B, 7221C, 7221S, 7221T, 7225A, 7225B, 9872A, 9872B, 9872C, 9872S and 9872T.

Now that you know where to find these plotters, don't send these customers to brokers; instead, call Rhonda Willens, TELNET 720-4165 or 408-720-4165 to reserve your flatbed plotter today. Remember, if you can't find a computer workstation product on the Corporate Price List, call FRD's Used Workstation Program — we may have it.

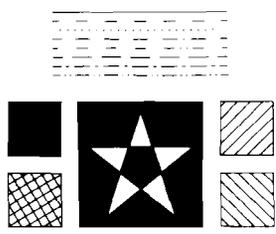
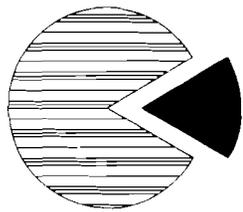
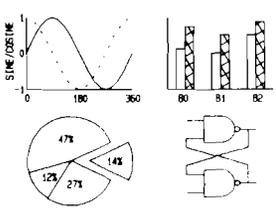
## PRINTERS

### High-speed vector graphics for the HP 2563A, 2565A and 2566A printers

Cathy Lyons/BOI

Boise Division announces an optional high-speed vector graphic capability for the HP 2563A, 2565A and 2566A dot matrix line printers. This option was developed to enhance system performance by offloading vector-to-raster conversions to the printer.

This capability gives the user fast output (converting 500 vectors per second) with good quality graphics at 72 or 144 dpi. This is particularly useful when you need to quickly review complex charts, graphs, schematics or slides. Rather than wait for high quality output from your plotter or laser printer, the card can print a sharp draft image to your dot matrix printer in a fraction of the time.

<b>VECTOR GRAPHICS 26061A</b>		 <b>HEWLETT PACKARD</b>	
<b>TEXT</b> CAN BE: F A T THIN, <b>THICK</b> , SMALL, SLANTED, ALIGNED AND ROTATED		<b>LINES/POLYGONS</b> 	
<b>CIRCLES &amp; ARCS</b> 		<b>APPLICATIONS</b> 	

There are two board versions, distinguished by memory and printable page sizes:

Factory Installed Option	Field Upgrade Kit	Memory	Speed (ipm)*	Page Size (Inches)	DPI	Price**
2563A/022	26061A/022	128K bytes	14.5 or 29	13.2 x 15.6	72	\$1,495
			7	7.3 x 7.1	144	
2565A/022	"		66.7	"	72	1,495
			16.7	"	144	
2566A/022	"		50.0	"	72	1,495
			16.7	"	144	
2563A/023	26061A/023	512K bytes	14.5 or 29	13.2 x 62.7	72	2,995
			7	13.2 x 15.6	144	
2565A/023	"	"	66.7	"	72	2,995
			16.7	"	144	
2566A/023	"	"	50.0	"	72	2,995
			16.7	"	144	

\*ipm = inches per minute

\*\*Field Upgrade Kit costs an additional \$100.

Each option's feature set includes selectable fill areas, line width styles, character sets and orientations, and viewports and clipping.

Currently, there is no support for this card through any HP software. To use the card you must obtain either a special utility from the HP International Users Group Library or write your own driver. This HP 3000 utility, FIG2GPIS, converts the HP figure file format from HP Draw, DSG, and HP EasyChart to an internal format which is modeled after the ANSI Virtual Device Metafile (VDM). The utility will be listed by the library under "Converts Figure Files to 26061A Graphics" and comes with instructions, program files and two example figure files.

Support by selected HP software packages will be forthcoming; we will keep you posted on support dates.

If you have customers experiencing degraded system performance due to vector-to-raster conversions, order the options as specified in this article. To our knowledge, no other vendor offers this unique capability. Once again, HP offers a quality graphics solution.

**Note:** HP 2563As shipped prior to August 1, 1984 must include the HP 26067A special Option E01. See *Computer News*, August 1, 1984, page 10.

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## Also in this issue

**New application note — HP 3000  
remote printing via modems**

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## TERMINALS

### **New single channel adapter provides flexible HP 3081A- to-host connections**

*Michel Bart/GPCD*

You've heard of the HP 3081A Industrial Workstation Terminal — the easy-to-use terminal designed for industrial data collection. Now the new HP 92923A Single Channel Adapter provides a cheaper and more flexible 3081A-to-host connection.

The HP 92923A interfaces the HP 3081A to a host computer, providing both the power and RS-232C/RS-422 data connection for one HP 3081A. When compared to connections using the existing HP 92922A four-channel RS-232C adapter, the new HP 92923A substantially reduces the connection costs when only one or two HP 3081As are used. In addition, the HP 92923A includes the following new data connection features:

- Combined RS-232C/RS-422 CPU port (available as standard on the HP 92923A). The RS-422 allows the 92923A to be connected up to 1,200 meters (4,000 feet) from the computer.
- Compatibility with short-haul modems (using full duplex, asynchronous transmissions at 2400 bits per second).

The HP 92923A Single Channel Adapter was added to the CPL October 1.

### **"Six Pac" bundled promotion on used workstation terminals**

*Rhonda Willens/FRD*

*For North America Only*

FRD understands your customer's cost-sensitive problems, like big ideas and small budgets. We want to help you meet their needs.

The Used Workstation Program is providing a *Six Pac* promotional offer on a select number of our used workstation terminals. Now, while supplies last, your customer will receive an additional \$200 per unit discount when purchasing six or more of the terminals listed below.

This discount of \$200 per unit is in addition to any existing discount your customer may already receive. All units receive a full warranty and can ship within two weeks after receipt of order at FRD.

P/N	Description	FRD Price (US List)	"Six Pac" Price
2382A	Display Terminal	\$ 950	\$ 750
2621B - 050	Display Terminal w/Printer	995	795
2621P	Display Terminal w/Printer	950	750
2623A - 050	Graphics Terminal w/Printer	2,690	2,490
2624B - 050	Display Terminal w/Printer	2,750	2,550
2626A	Display Station	2,700	2,500
2645A	Display Terminal	2,250	2,050
2647A	Graphics Terminal	3,200	3,000

To reserve your Six Pac products, call Rhonda Willens, TELNET 720-4165 or 408-720-4165 today.

## Low-cost solutions to office automation needs

*Rhonda Willens/FRD*

*For North America Only*

Does your customer need a low-cost word processing terminal? Why not recommend the HP 2626W HP Word terminal from FRD? Standard features of the terminal include:

- HP Word capability
- HP Slate capability
- 6 pages of memory
- More features than the HP 2628A (when not in its word personality mode it has the personality of an HP 2622A and an HP 2626A).

In addition to the above features, the price of the 2626W has been attractively set at \$2,650 — 18% below that of a 2628A. Some of these terminal are new and some have been refurbished to current standards. All terminals can be shipped to your customers within 1-2 days after receipt of order at FRD.

Act fast, quantities of these new and refurbished HP Word terminals are limited. Call Rhonda Willens, TELNET 720-4165 or 408-720-4165 to reserve one today.

## Amber CRT now a standard option on HP 262X terminals

*Patti Alcorcha/RTD*

Due to the demand for orange (amber) phosphor CRT displays, special Option K07 is now available as standard Option 062 on HP 2621B, HP 2622A, HP 2623A, HP 2624B and HP 2626A terminals. Option 062 already exists for the HP 2625A and HP 2628A terminals. More good news — standard Option 062 costs only \$100, compared to the \$125 CPL price for former Option K07.

Amber is *not* available on the new HP 2392A display terminal — it comes exclusively with a green CRT. You can order Option 062 from Roseville Terminals or Puerto Rico.



## Computer groups price changes effective October 1, 1984

These prices, effective October 1, 1984, appear on the Corporate Price List on that date, available in your office. Prices are US List unless otherwise noted. Orders at old prices will be honored at the factories for 30 days (or 60 days in the case of government quotes, see exception, III. GSA) after the effective date of an increase. All quotations, either verbal or written, shall be made at the new prices upon the effective date of the new price list. The customer should be notified that his order will be honored at the lower price if it is received within the 30-day grace period. Price decreases are effective immediately and in-house orders shipped 5 working days prior to the announced decrease date will be billed at the new lower price.

Product No.	Description	Old Price	New Price				
09885-90045	9825A Initl Disc	22	15				
22974B	Fortran IV Class	650	725				
22974X	Fortran IV Onste	6,600	7,250				
2621B	CRT Terminal	1,295	1,695				
2626A	Display Station	4,400	4,900				
31389A	HP-IB Cable; 1M	81	80				
31389B	HP-IB Cable; 2M	91	90				
31389C	HP-IB Cable; 4M	101	100				
32133A	VisiCalc/3000	4,000	2,500				
32133M	VisiCalc R-T-C	2,800	1,750				
32270A+65A	PIA PM3000 Mod30	18,300	1,525				
32275A+63A	ITT Maint Mod 20	5,500	2,800				
32275A+65A	PIA Maint Mod 20	12,800	1,295				
32276A+63A	ITT Maint Mod 30	7,000	3,700				
32276A+65A	PIA Maint Mod 30	17,200	1,710				
32276X	Inventory Mod	2,900	4,300				
32277A+63A	ITT Main Inv Mod	3,000	2,100				
32277A+65A	PIA Main Inv Mod	10,000	920				
32312A+65A	HP 32275A	7,450	625				
32412A+H41	Flexible Disc	40	200				
32412A+H51	1600 bpi Mag Tape	-0-	160				
32412A+S41	Flexible Disc	40	160				
32412A+S51	1600 bpi Mag Tape	-0-	120				
32412A+T41	Flexible Disc	40	440				
32412A+T51	1600 bpi Mag Tape	-0-	400				
32430A+H41	Flexible Disc	40	200				
32430A+H51	1600 bpi Mag Tape	-0-	160				
32430A+S41	Flexible Disc	40	150				
32430A+S51	1600 bpi Mag Tape	-0-	110				
32430A+T41	Flexible Disc	40	440				
32430A+T51	1600 bpi Mag Tape	-0-	400				
32435A+H50	800 bpi Mag Tape	10	200				
32435A+H51	1600 bpi Mag Tape	-0-	190				
32435A+S50	800 bpi Mag Tape	10	145				
32435A+S51	1600 bpi Mag Tape	-0-	135				
32435A+T50	800 bpi Mag Tape	10	460				
32435A+T51	1600 bpi Mag Tape	-0-	450				
32440B+H22	Tape Cartridge	-0-	210				
32440B+H51	1600 bpi Mag Tape	-0-	210				
32440B+S22	Tape Cartridge	-0-	135				
32440B+S51	1600 bpi Mag Tape	-0-	135				
32440B+T22	Tape Cartridge	-0-	530				
32440B+T51	1600 bpi Mag Tape	-0-	530				
32445A+H22	Tape Cartridge	-0-	145				
32445A+H51	1600 bpi Mag Tape	-0-	145				
32445A+S22	Tape Cartridge	-0-	110				
32445A+S51	1600 bpi Mag Tape	-0-	110				
32445A+T22	Tape Cartridge	-0-	350				
32445A+T51	1600 bpi Mag Tape	-0-	350				
32446A+H22	Tape Cartridge	-0-	145				
32446A+H51	1600 bpi Mag Tape	-0-	145				
32446A+S22	Tape Cartridge	-0-	110				
32446A+S51	1600 bpi Mag Tape	-0-	110				
32446A+T22	Tape Cartridge	-0-	350				
32446A+T51	1600 bpi Mag Tape	-0-	350				
32460B+H51	1600 bpi Mag Tape	-0-	280				
32460B+H51	Opt. 411 1600 bpi Mag Tape	-0-	280				
32460B+S51	1600 bpi Mag Tape	-0-	175				
32460B+S51	Opt. 411 1600 bpi Mag Tape	-0-	175				
32460B+T51							
32460B+T51	Opt. 411 1600 bpi Mag Tape	-0-	690				
32468B+H22	Tape Cartridge	-0-	280				
32468B+H22	Opt. 411 Tape Cartridge	-0-	280				
32468B+H51	1600 bpi Mag Tape	-0-	280				
32468B+H51	Opt. 411 1600 bpi Mag Tape	-0-	280				
32468B+S22	Tape Cartridge	-0-	175				
32468B+S22	Opt. 411 Tape Cartridge	-0-	175				
32468B+S51	1600 bpi Mag Tape	-0-	175				
32468B+S51	Opt. 411 1600 bpi Mag Tape	-0-	175				
32468B+T22	Tape Cartridge	-0-	690				
32468B+T22	Opt. 411 Tape Cartridge	-0-	690				
32468B+T51	1600 bpi Mag Tape	-0-	690				
32468B+T51	Opt. 411 1600 bpi Mag Tape	-0-	690				
32514B+H22	Tape Cartridge	-0-	145				
32514B+H22	Opt. 408 Tape Cartridge	-0-	145				
32514B+H51	1600 bpi Mag Tape	-0-	145				
32514B+H51	Opt. 408 1600 bpi Mag Tape	-0-	145				
32514B+S22	Tape Cartridge	-0-	110				
32514B+S22	Opt. 408 Tape Cartridge	-0-	110				
32514B+S51	1600 bpi Mag Tape	-0-	110				
32514B+S51	Opt. 408 1600 bpi Mag Tape	-0-	110				
32514B+T22	Tape Cartridge	-0-	350				
32514B+T22	Opt. 408 Tape Cartridge	-0-	350				
32514B+T51	1600 bpi Mag Tape	-0-	350				
32514B+T51	Opt. 408 1600 bpi Mag Tape	-0-	350				
32542B+H22	Tape Cartridge	-0-	145				
32542B+H22	Opt. 409 Tape Cartridge	-0-	145				
32542B+H51	1600 bpi Mag Tape	-0-	145				
32542B+H51	Opt. 409 1600 bpi Mag Tape	-0-	145				
32542B+S22	Tape Cartridge	-0-	110				
32542B+S22	Opt. 409 Tape Cartridge	-0-	110				
32542B+S51	1600 bpi Mag Tape	-0-	110				
32542B+S51	Opt. 409 1600 bpi Mag Tape	-0-	110				
32542B+T22	Tape Cartridge	-0-	350				
32542B+T22	Opt. 409 Tape Cartridge	-0-	350				
32542B+T51	1600 bpi Mag Tape	-0-	350				
32542B+T51	Opt. 409 1600 bpi Mag Tape	-0-	350				
32548B+H22	Tape Cartridge	-0-	210				
32548B+H22	Opt. 410 Tape Cartridge	-0-	210				
32548B+H51	1600 bpi Mag Tape	-0-	210				
32548B+H51	Opt. 410 1600 bpi Mag Tape	-0-	210				
32548B+S22	Tape Cartridge	-0-	135				
32548B+S22	Opt. 410 Tape Cartridge	-0-	135				
32548B+S51	1600 bpi Mag Tape	-0-	135				
32548B+S51	Opt. 410 1600 bpi Mag Tape	-0-	135				
32548B+T22	Tape Cartridge	-0-	530				
32548B+T22	Opt. 410 Tape Cartridge	-0-	530				
32548B+T51	1600 bpi Mag Tape	-0-	530				
32548B+T51	Opt. 410 1600 bpi Mag Tape	-0-	530				
32903A+65A	PIA MM3000 Mod 20	13,900	1,160				
32904A+65A	PIA MM3000 Mod 10	7,000	585				
32911A+65A	PIA PM3000 Mod 20	13,600	1,135				
32912A+65A	PIA PM3000	7,000	585				
32916A+65A	PIA MM3000 Mod 30	25,200	2,100				
36401A+65A	SFD-Assist PIA	31,500	2,625				
36415A+65A	OM-Assist PIA	19,500	1,625				
45230B+H22	Tape Cartridge	-0-	75				
45230B+H22	Opt. 252 Tape Cartridge	-0-	75				
45230B+H22	Opt. 253 Tape Cartridge	-0-	75				
45230B+H22	Opt. 254 Tape Cartridge	-0-	75				
45230B+H22	Opt. 255 Tape Cartridge	-0-	75				
45230B+H22	Opt. 256 Tape Cartridge	-0-	75				
45230B+H22	Opt. 257 Tape Cartridge	-0-	75				
45230B+H22	Opt. 258 Tape Cartridge	-0-	75				
45230B+H22	Opt. 500 Tape Cartridge	-0-	75				
45230B+H41	Flexible Disc	5	80				
45230B+H41	Opt. 252 Flexible Disc	5	80				
45230B+H41	Opt. 253 Flexible Disc	5	80				
45230B+H41	Opt. 254 Flexible Disc	5	80				
45230B+H41	Opt. 255 Flexible Disc	5	80				
45230B+H41	Opt. 256 Flexible Disc	5	80				
45230B+H41	Opt. 257 Flexible Disc	5	80				
45230B+H41	Opt. 258 Flexible Disc	5	80				
45230B+H41	Opt. 500 Flexible Disc	5	80				
45230B+S22	Tape Cartridge	-0-	55				
45230B+S22	Opt. 252 Tape Cartridge	-0-	55				
45230B+S22	Opt. 253 Tape Cartridge	-0-	55				

# Price Changes

Product No.	Description	Old Price	New Price			
45230B+S22	Opt. 254 Tape Cartridge	-0-	55	92064A+T40	Sng/Sd Flex Disc	10 330
45230B+S22	Opt. 255 Tape Cartridge	-0-	55	92067A+H20	264X Minicartridge	30 185
45230B+S22	Opt. 256 Tape Cartridge	-0-	55	92067A+H50	800 bpi Mag Tape	-0- 155
45230B+S22	Opt. 257 Tape Cartridge	-0-	55	92067A+H51	1600 bpi Mag Tape	-0- 155
45230B+S22	Opt. 258 Tape Cartridge	-0-	55	92067A+S20	264X Minicartridge	30 115
45230B+S22	Opt. 500 Tape Cartridge	-0-	55	92067A+S50	800 bpi Mag Tape	-0- 85
45230B+S41	Flexible Disc	5	60	92067A+S51	1600 bpi Mag Tape	-0- 85
45230B+S41	Opt. 252 Flexible Disc	5	60	92067A+T20	264X Minicartridge	30 330
45230B+S41	Opt. 253 Flexible Disc	5	60	92067A+T50	800 bpi Mag Tape	-0- 300
45230B+S41	Opt. 254 Flexible Disc	5	60	92067A+T51	1600 bpi Mag Tape	-0- 300
45230B+S41	Opt. 255 Flexible Disc	5	60	92067X+S50	800 bpi Mag Tape	-0- 125
45230B+S41	Opt. 256 Flexible Disc	5	60	92067X+S51	1600 bpi Mag Tape	-0- 125
45230B+S41	Opt. 257 Flexible Disc	5	60	92068A+H20	264X Minicartridge	45 225
45230B+S41	Opt. 258 Flexible Disc	5	60	92068A+H50	800 bpi Mag Tape	-0- 180
45230B+S41	Opt. 500 Flexible Disc	5	60	92068A+H51	1600 bpi Mag Tape	-0- 180
45230B+T22	Tape Cartridge	-0-	160	92068A+H52	800MT:7905/06	-0- 180
45230B+T22	Opt. 252 Tape Cartridge	-0-	160	92068A+H53	1600MT:7905/06	-0- 180
45230B+T22	Opt. 253 Tape Cartridge	-0-	160	92068A+H54	800MT:7925	-0- 180
45230B+T22	Opt. 254 Tape Cartridge	-0-	160	92068A+H55	1600MT:7925	-0- 180
45230B+T22	Opt. 255 Tape Cartridge	-0-	160	92068A+H56	7906H/20H 800 bpi	-0- 180
45230B+T22	Opt. 256 Tape Cartridge	-0-	160	92068A+H57	7906H/20H 1600 bpi	-0- 180
45230B+T22	Opt. 257 Tape Cartridge	-0-	160	92068A+H58	7925H 800 bpi	-0- 180
45230B+T22	Opt. 258 Tape Cartridge	-0-	160	92068A+H59	7925H 1600 bpi	-0- 180
45230B+T22	Opt. 500 Tape Cartridge	-0-	160	92068A+S20	264X Minicartridge	45 145
45230B+T41	Flexible Disc	5	165	92068A+S50	800 bpi Mag Tape	-0- 100
45230B+T41	Opt. 252 Flexible Disc	5	165	92068A+S51	1600 bpi Mag Tape	-0- 100
45230B+T41	Opt. 253 Flexible Disc	5	165	92068A+S52	800MT:7905/06	-0- 100
45230B+T41	Opt. 254 Flexible Disc	5	165	92068A+S53	1600MT:7905/06	-0- 100
45230B+T41	Opt. 255 Flexible Disc	5	165	92068A+S54	800MT:7925	-0- 100
45230B+T41	Opt. 256 Flexible Disc	5	165	92068A+S55	1600MT:7925	-0- 100
45230B+T41	Opt. 257 Flexible Disc	5	165	92068A+S56	7906H/20H 800 bpi	-0- 100
45230B+T41	Opt. 258 Flexible Disc	5	165	92068A+S57	7906H/20H 1600 bpi	-0- 100
45230B+T41	Opt. 500 Flexible Disc	5	165	92068A+S58	7925H 800 bpi	-0- 100
45610A	HP 150 PC	3,150	2,795	92068A+S59	7925H 1600 bpi	-0- 100
45610AC	HP 150 PC	3,150	2,795	92068A+T20	264X Minicartridge	45 420
45610AK	HP 150 PC	3,150	2,790	92068A+T50	800 bpi Mag Tape	-0- 375
45610AL	HP 150 PC	3,150	2,795	92068A+T51	1600 bpi Mag Tape	-0- 375
45610AM	HP 150 PC	3,150	2,795	92068A+T52	800MT:7905/06	-0- 375
45630A	HP 150 128K Card	610	390	92068A+T53	1600MT:7905/06	-0- 375
45631A	HP 150 256K Card	860	610	92068A+T54	800MT:7925	-0- 375
45632A	HP 150 384K Card	1,120	860	92068A+T55	7906H/20H 800 bpi	-0- 375
45636A	128K Lang. Card	710	530	92068A+T56	7906H/20H 1600 bpi	-0- 375
45637A	256K Lang. Card	760	750	92068A+T57	7925H 800 bpi	-0- 375
45650A	HP 150 w/9121D	3,995	3,195	92068A+T58	7925H 1600 bpi	-0- 375
45650AC	HP 150 w/9121D	3,995	3,195	92068X+S50	800 bpi Mag Tape	-0- 135
45650AK	HP 150 w/9121D	3,995	3,190	92068X+S51	1600 bpi Mag Tape	-0- 135
45650AL	HP 150 w/9121D	3,995	3,195	92070A+H41	Flexible Disc	20 175
45650AM	HP 150 w/9121D	3,995	3,195	92070A+H51	1600 bpi Mag Tape	-0- 155
45655A	HP 150 w/9133V	5,850	5,350	92070A+H52	800MT:05/06	-0- 155
45655AC	HP 150 w/9133V	5,850	5,350	92070A+S41	Flexible Disc	20 105
45655AK	HP 150 w/9133V	5,850	5,345	92070A+S51	1600 bpi Mag Tape	-0- 85
45655AL	HP 150 w/9133V	5,850	5,350	92070A+S52	800MT:05/06	-0- 85
45655AM	HP 150 w/9133V	5,850	5,350	92070A+T41	Flexible Disc	20 320
45660A	HP 150 w/9133XV	6,450	5,195	92070A+T51	1600 bpi Mag Tape	-0- 300
45660AC	HP 150 w/9133XV	6,450	5,195	92070A+T52	800MT:05/06	-0- 300
45660AK	HP 150 w/9133XV	6,450	5,190	92070B+S41	Flexible Disc	20 75
45660AL	HP 150 w/9133XV	6,450	5,195	92070B+S42	5" Flexible Disc	20 75
45660AM	HP 150 w/9133XV	6,450	5,195	92070B+S51	1600 bpi Mag Tape	-0- 55
5957-8401	HP Ref Service	225	175	92070B+S52	800MT:05/06	-0- 55
82820E	Stan Pac Spanish	-0-	95	92070X+S41	Flexible Disc	20 130
82831G	Opt. 650 Graphics Pac Ger	250	-0-	92070X+S50	800 bpi Mag Tape	-0- 110
91823A+W00	Ex.Sms-Control/1	5	-0-	92070X+S51	1600 bpi Mag Tape	-0- 110
92001A+H10	Paper Tape	-0-	165	92071A+H22	Tape Cartridge	-0- 160
92001A+H20	264X Minicartridge	-0-	165	92071A+H41	Flexible Disc	45 205
92001A+S10	Paper Tape	-0-	110	92071A+H42	5" Flexible Disc	45 205
92001A+S20	264X Minicartridge	-0-	110	92071A+H50	800 bpi Mag Tape	-0- 160
92001A+T10	Paper Tape	-0-	320	92071A+H51	1600 bpi Mag Tape	-0- 160
92001A+T20	264X Minicartridge	-0-	320	92071A+S22	Tape Cartridge	-0- 90
92060A+H10	Paper Tape	-0-	165	92071A+S41	Flexible Disc	45 135
92060A+H20	264X Minicartridge	-0-	165	92071A+S42	5" Flexible Disc	45 135
92060A+S10	Paper Tape	-0-	110	92071A+S50	800 bpi Mag Tape	-0- 90
92060A+S20	264X Minicartridge	-0-	110	92071A+S51	1600 bpi Mag Tape	-0- 90
92060A+T10	Paper Tape	-0-	320	92071A+T22	Tape Cartridge	-0- 300
92060A+T20	264X Minicartridge	-0-	320	92071A+T41	Flexible Disc	45 345
92064A+H20	264X Minicartridge	-0-	165	92071A+T42	5" Flexible Disc	45 345
92064A+H40	Sng/Sd Flex Disc	10	175	92071A+T50	800 bpi Mag Tape	-0- 300
92064A+S20	264X Minicartridge	-0-	110	92071A+T51	1600 bpi Mag Tape	-0- 300
92064A+S40	Sng/Sd Flex Disc	10	120	92071X+S41	Flexible Disc	20 130
92064A+T20	264X Minicartridge	-0-	320	92071X+S50	800 bpi Mag Tape	-0- 110
				92071X+S51	1600 bpi Mag Tape	-0- 110
				92077A+H22	Opt. 600 Tape Cartridge	-0- 135

# Price Changes

Product No.	Description	Old Price	New Price				
92077A+H22	Opt. 700 Tape Cartridge	-0-	160	92151C	M/S 12pk Ribbons	85	78
92077A+H22	Opt. 890 Tape Cartridge	-0-	195	92151H	Ribbons, 2602A	110	98
92077A+H41	Opt. 600 Flexible Disc	45	180	92171B	Desk Copy Holder	62	59
92077A+H41	Opt. 700 Flexible Disc	45	205	92171E	Foot Rest	50	43
92077A+H41	Opt. 890 Flexible Disc	45	240	92171H	CRT Tray	20	17
92077A+H42	Opt. 600 5" Flexible Disc	45	180	92185A	Toner	90	78
92077A+H42	Opt. 700 5" Flexible Disc	45	205	92185B	Cleaning Pads	82	72
92077A+H42	Opt. 890 5" Flexible Disc	45	240	92185D	Ozone Filters	62	53
92077A+H50	Opt. 600 800 bpi Mag Tape	-0-	135	92185E	OPC Belts	235	220
92077A+H50	Opt. 700 800 bpi Mag Tape	-0-	160	92194E	5.25 in. Flexfiles	49	36
92077A+H50	Opt. 890 800 bpi Mag Tape	-0-	195	92194F	8 in. Flexfiles	49	36
92077A+H51	Opt. 600 1600 bpi Mag Tape	-0-	135	92194M	Vinyl Insert Pgs	22	19
92077A+H51	Opt. 700 1600 bpi Mag Tape	-0-	160	92195A	Vinyl Insert Pgs	22	19
92077A+H51	Opt. 890 1600 bpi Mag Tape	-0-	195	92195A	9895 Flex Discs	94	75
92077A+S22	Opt. 600 Tape Cartridge	-0-	100	92195F	Initial Discs	130	85
92077A+S22	Opt. 700 Tape Cartridge	-0-	110	92195L	8in Flexfile 50	400	335
92077A+S22	Opt. 890 Tape Cartridge	-0-	110	92229A	Crimp Tool	410	290
92077A+S41	Opt. 600 Flexible Disc	45	145	97050A+H42	5" Flexible Disc	-0-	90
92077A+S41	Opt. 700 Flexible Disc	45	155	97050A+S42	5" Flexible Disc	-0-	55
92077A+S41	Opt. 890 Flexible Disc	45	155	97050A+T42	5" Flexible Disc	-0-	245
92077A+S42	Opt. 600 5" Flexible Disc	45	145	97070A+H22	Tape Cartridge	-0-	110
92077A+S42	Opt. 700 5" Flexible Disc	45	155	97070A+S22	Tape Cartridge	-0-	70
92077A+S42	Opt. 890 5" Flexible Disc	45	155	97070A+T22	Tape Cartridge	-0-	285
92077A+S50	Opt. 600 800 bpi Mag Tape	-0-	100	97079A+H22	Tape Cartridge	-0-	110
92077A+S50	Opt. 700 800 bpi Mag Tape	-0-	110	97079A+S22	Tape Cartridge	-0-	70
92077A+S50	Opt. 890 800 bpi Mag Tape	-0-	110	97079A+T22	Tape Cartridge	-0-	285
92077A+S51	Opt. 600 1600 bpi Mag Tape	-0-	100	97080A+H22	Tape Cartridge	-0-	130
92077A+S51	Opt. 700 1600 bpi Mag Tape	-0-	110	97080A+S22	Tape Cartridge	-0-	80
92077A+S51	Opt. 890 1600 bpi Mag Tape	-0-	110	97080A+T22	Tape Cartridge	-0-	330
92077A+T22	Opt. 600 Tape Cartridge	-0-	220	97089A+H22	Tape Cartridge	-0-	130
92077A+T22	Opt. 700 Tape Cartridge	-0-	310	97089A+S22	Tape Cartridge	-0-	80
92077A+T22	Opt. 890 Tape Cartridge	-0-	390	97089A+T22	Tape Cartridge	-0-	330
92077A+T41	Opt. 600 Flexible Disc	45	265	98360M	RTU HP-Draft	6,000	8,400
92077A+T41	Opt. 700 Flexible Disc	45	355	98601A+H42	5" Flexible Disc	-0-	45
92077A+T41	Opt. 890 Flexible Disc	45	435	98601A+H43	5" Ext. Flex Disc	-0-	45
92077A+T42	Opt. 600 5" Flexible Disc	45	265	98601A+H44	3 1/2" Flex Disc	-0-	45
92077A+T42	Opt. 700 5" Flexible Disc	45	355	98601A+S42	5" Flexible Disc	-0-	5
92077A+T42	Opt. 890 5" Flexible Disc	45	435	98601A+S43	5" Ext. Flex Disc	-0-	5
92077A+T50	Opt. 600 800 bpi Mag Tape	-0-	220	98601A+S44	3 1/2" Flex Disc	-0-	5
92077A+T50	Opt. 700 800 bpi Mag Tape	-0-	310	98602A+H42	5" Flexible Disc	-0-	70
92077A+T50	Opt. 890 800 bpi Mag Tape	-0-	390	98602A+H43	5" Ext. Flex Disc	-0-	70
92077A+T51	Opt. 600 1600 bpi Mag Tape	-0-	220	98602A+H44	3 1/2" Flex Disc	-0-	70
92077A+T51	Opt. 700 1600 bpi Mag Tape	-0-	310	98602A+S42	5" Flexible Disc	-0-	5
92077A+T51	Opt. 890 1600 bpi Mag Tape	-0-	390	98602A+S43	5" Ext. Flex Disc	-0-	5
92077X+S22	Opt. 600 Tape Cartridge	10	130	98602A+S44	3 1/2" Flex Disc	-0-	5
92077X+S22	Opt. 700 Tape Cartridge	10	130	98611A+H42	5" Flexible Disc	-0-	45
92077X+S22	Opt. 890 Tape Cartridge	10	130	98611A+H43	5" Ext. Flex Disc	-0-	45
92077X+S41	Opt. 600 Flexible Disc	20	140	98611A+H44	3 1/2" Flex Disc	-0-	45
92077X+S41	Opt. 700 Flexible Disc	20	140	98611A+S42	5" Flexible Disc	-0-	15
92077X+S41	Opt. 890 Flexible Disc	20	140	98611A+S43	5" Ext. Flex Disc	-0-	15
92077X+S50	Opt. 600 800 bpi Mag Tape	-0-	120	98611A+S44	3 1/2" Flex Disc	-0-	15
92077X+S50	Opt. 700 800 bpi Mag Tape	-0-	120	98613A+H42	5" Flexible Disc	-0-	55
92077X+S50	Opt. 890 800 bpi Mag Tape	-0-	120	98613A+H43	5" Ext. Flex Disc	-0-	55
92077X+S51	Opt. 600 1600 bpi Mag Tape	-0-	120	98613A+H44	3 1/2" Flex Disc	-0-	55
92077X+S51	Opt. 700 1600 bpi Mag Tape	-0-	120	98613A+S42	5" Flexible Disc	-0-	20
92077X+S51	Opt. 890 1600 bpi Mag Tape	-0-	120	98613A+S43	5" Ext. Flex Disc	-0-	20
92084A+H20	264X Minicartridge	70	260	98613A+S44	3 1/2" Flex Disc	-0-	20
92084A+H22	Tape Cartridge	-0-	190	98615A+H42	5" Flexible Disc	-0-	65
92084A+H50	800 bpi Mag Tape	-0-	190	98615A+H43	5" Ext. Flex Disc	-0-	65
92084A+H51	1600 bpi Mag Tape	-0-	190	98615A+H44	3 1/2" Flex Disc	-0-	65
92084A+S20	264X Minicartridge	70	190	98615A+S42	5" Flexible Disc	-0-	25
92084A+S22	Tape Cartridge	-0-	120	98615A+S43	5" Ext. Flex Disc	-0-	25
92084A+S50	800 bpi Mag Tape	-0-	120	98615A+S44	3 1/2" Flex Disc	-0-	25
92084A+S51	1600 bpi Mag Tape	-0-	120	98615B+H42	5" Flexible Disc	-0-	75
92084A+T20	264X Minicartridge	70	470	98615B+H43	5" Ext. Flex Disc	-0-	75
92084A+T22	Tape Cartridge	-0-	400	98615B+H44	3 1/2" Flex Disc	-0-	75
92084A+T50	800 bpi Mag Tape	-0-	400	98615B+S42	5" Flexible Disc	-0-	40
92084A+T51	1600 bpi Mag Tape	-0-	400	98615B+S43	5" Ext. Flex Disc	-0-	40
92084X+S50	800 bpi Mag Tape	-0-	130	98615B+S44	3 1/2" Flex Disc	-0-	40
92084X+S51	1600 bpi Mag Tape	-0-	130	98619A+H22	Tape Cartridge	-0-	50
92130A+61A	HP QDM Assist CAA	2,100	2,100	98619A+S22	Tape Cartridge	-0-	20
92130A+63A	HP QDM Assist ITT	4,300	4,300	98670A+H22	Tape Cartridge	-0-	130
92130A+65A	QDM Assist PIA A	10,500	10,500	98670A+S22	Tape Cartridge	-0-	55
92130J+65A	QDM-Assist PIA -J	7,900	7,900	98670A+T22	Tape Cartridge	-0-	230
92131A+65A	PIA QDM/1000	9,000	750	98680A+H22	Tape Cartridge	-0-	165
92131A+65X	PIA HP QDM/1000	7,900	660	98680A+S22	Tape Cartridge	-0-	65
92150D	600' Mag Tape 10pk	145	135	98680A+T22	Tape Cartridge	-0-	265
92150E	1200' Mag Tape 10pk	185	175				
92150F	2400' Mag Tape 10pk	250	240				



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