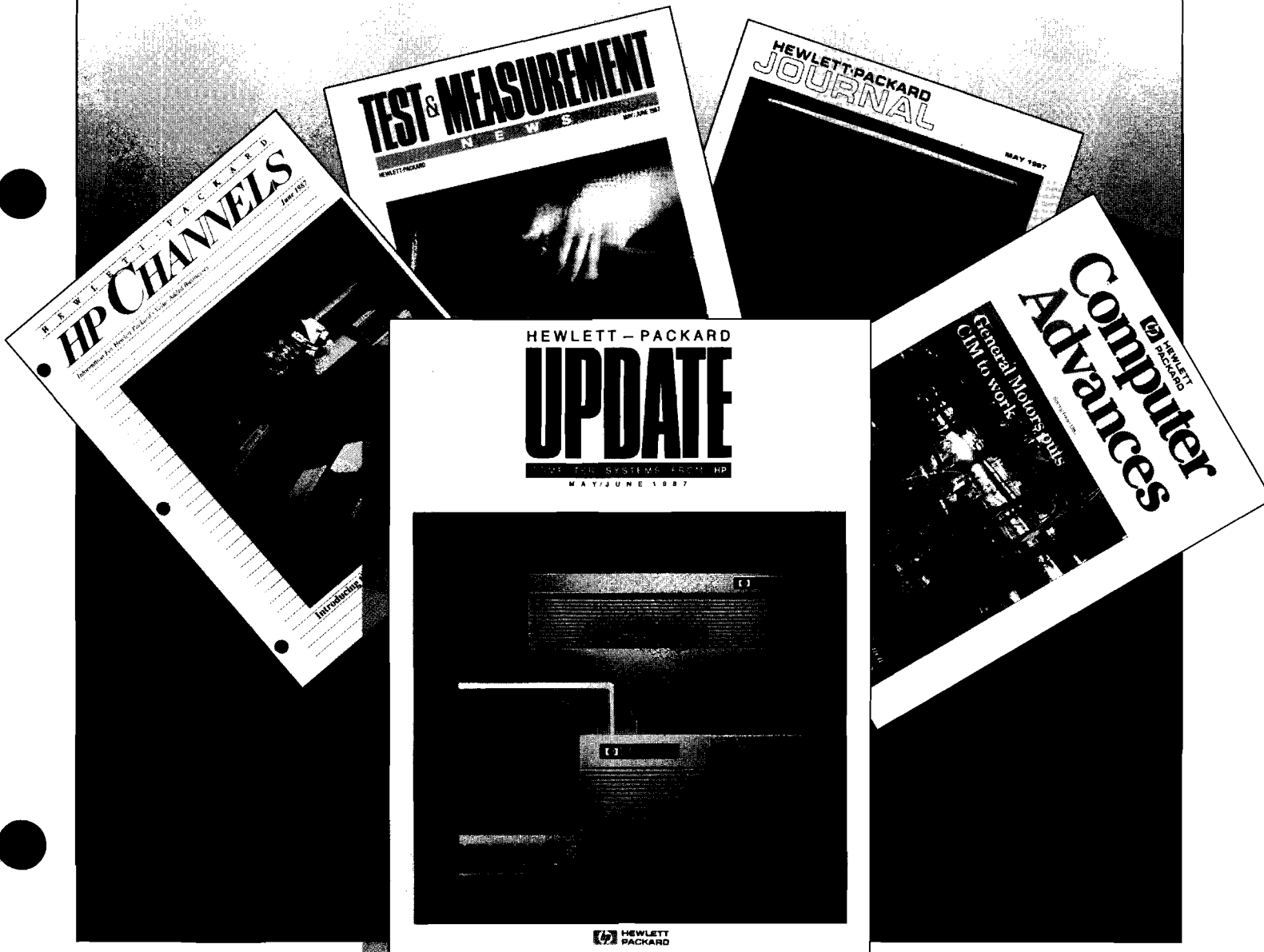


# Information Systems & Manufacturing News

Information for HP sales reps selling MIS, office automation, and manufacturing solutions □ July 1, 1987

*Update* your customers  
with new computer publication



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

**For research and education purposes only.**

# Information Systems & Manufacturing News

Vol. 12, No. 17

Formerly *Computer News*

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Assistant Editor

**Tracy Wester**

*Information Systems & Manufacturing News* is published biweekly for Hewlett-Packard field personnel to help you sell HP solutions by *organizing, summarizing, and highlighting* sales and marketing information.

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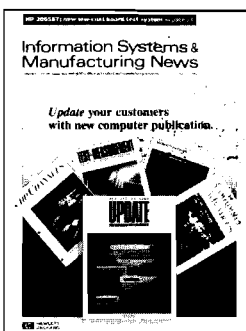
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## On The Cover

The HP 3065ST — the first complete board-test system for under \$100,000 — expands HP's addressable market to manufacturers who previously had concerns about system costs and programming difficulty. See article on page 23.

## MARKETING & INTERNATIONAL SECTOR

US Field Operations  
Europe/Middle East/Africa Operations  
Intercontinental Operations  
Worldwide Major Accounts Marketing  
Federal Marketing Operation  
Direct Marketing Division  
Value-Added Channel Marketing  
Customer Support  
ASD Application Support Division  
PRSD Product Support Division  
FRD Finance and Remarketing Division  
Corporate Marketing Communications

## SYSTEMS TECHNOLOGY SECTOR

**Circuit Technology Group**  
PID Printed Circuit Division  
NID Northwest IC Division  
SIO Singapore IC Operation  
CICD Colorado IC Division  
SCTC Santa Clara Tech Center  
**Information Technology Group (ITG)**  
HPSO High-Performance Systems Operation  
ISO Information Software Operation  
ESO Entry Systems Operation  
**Information Networks Group (ING)**  
CND Colorado Networks Division  
GND Grenoble Networks Division  
RND Roseville Networks Division  
IND Information Networks Division

**Peripherals Group (PPG)**  
GLD Greeley Division  
CPB Computer Peripherals Bristol Division  
GTO Greeley Tape Operation  
DMV Disc Memory Division  
BOI Boise Division  
VCD Vancouver Division  
ICO Ink-Jet Components Operation  
AHCN Asian Hardcopy Operation  
SDD San Diego Division  
BPO Barcelona Peripherals Operation

## BUSINESS SYSTEMS SECTOR

**COMMERCIAL SYSTEMS**  
GCO Guadalajara Computer Operation  
MPD Manufacturing Productivity Division  
BGD Böblingen General Systems Division  
ASO Australian Software Operation

**OFFICE SYSTEMS**  
OSD Office Systems Division  
OPD Office Productivity Division  
PSD Personal Software Division

**PERSONAL COMPUTER**  
SPCO Sunnyvale PC Operation  
MHP Microcomputadoras HP  
APCO Asian Personal Computer Operation  
RTD Roseville Terminals Division  
HPRP Puerto Rico Operation  
GPCD Grenoble Personal Computer Division  
PCD Portable Computer Division  
BPC Brazil Operation  
HCCO Handheld Computer & Calculator Operation  
CPS Computational Products Singapore  
PCDO Personal Computer Distribution Operation

## TECHNICAL SYSTEMS SECTOR

**Manufacturing Systems Group (MSG)**  
DSD Data Systems Division  
AMSO Advanced Manufacturing Systems Operation  
PAO Panacom Automation Operation  
MTD Manufacturing Test Division  
LMSO Lyon Manufacturing Systems Operation  
TCO Technical Computer Operation  
IAC Industrial Application Center

## Engineering Systems Group (ESG)

**TECHNICAL WORKSTATION**  
FSD Fort Collins Systems Division  
TWO Technical Workstation Operation  
SSO Systems Software Operation  
CWO Corvallis Workstation Operation  
BCD Böblingen Computer Division  
SLCO Salt Lake City Operation

**DESIGN SYSTEMS**  
LSD Logic Systems Division  
LDO Logic Design Operation  
FEO Fort Collins Engineering Operation  
LSD Lake Stevens Instrument Division  
MBO Mechanical Business Operation  
BEO Böblingen Engineering Operation  
TSC Technical Software Center

## Corporate Manufacturing

### Corporate Engineering

## MEASUREMENT SYSTEMS SECTOR

### Microwave and Communications Group (MCG)

SPD Stanford Park Division  
NMD Network Measurements Division  
SAD Signal Analysis Division  
SPK Spokane Division  
CTD Colorado Telecom Division  
QTD Queensferry Telecom Division  
MWTD Microwave Technology Division  
QMD Queensferry Microwave Operation

### Electronic Instruments Group (EIG)

NJD New Jersey Division  
SCD Santa Clara Division  
BID Böblingen Instrument Division  
YID YHP Instrument Division  
YCO YHP Computer Operation  
COL Colorado Springs Division  
ISL Instrument Systems Labs  
LID Loveland Instrument Division

### Analytical Group (APG)

AVD Avondale Division  
SID Scientific Instruments Division  
WAD Waltham Division  
HPG HP Genschem

### Medical Group (MPG)

AND Andover Division  
BMD Böblingen Medical Division  
MCM McMinnville Division  
WAL Waltham Division  
MSC Medical Supplies Center

### Components Group (CPG)

MSD Microwave Semiconductor Division  
OFD Optoelectronics Division  
OCD Optical Communication Division  
SAO Southeast Asia Operation

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GENERAL

**New computer publication now available for your customers**

*Debbie Geiger/Corporate Marcom*

In May, *Measurement/Computation News* split into two new publications for customers: *Update* and *Test & Measurement News*. The goal of these new publications is to increase selling efficiency by providing customers with timely HP product information.

*Update* and *Test & Measurement News* will:

- Provide a high-quality, consistent source of information from HP.
- Make customers aware of offerings from HP that may not be significant enough to warrant active selling or heavy publicity and advertising.
- Inform customers of new HP applications information and other product-related information that will add value to products they own.
- Generate requests for literature that may turn into sales leads.
- Serve as an alternative to some of the field-generated customer newsletters currently in circulation.

Are your customers on the distribution list?

Both May/June 1987 issues of *Test & Measurement News* and *Update* have been sent out. In the U.S. and Intercon, most of the customers on the *Measurement/Computation News* list were transferred to *T&M News*. The *Update* list is composed of some *M/C News* names and about half the *Computer Advances* names. If you want to know if your customers are receiving these publications (in the U.S. or Intercon), send an HP Desk message to ELM/HP0000/53 — listing the zip codes you are interested in. Or call Winston Lin at 415-857-5964. In Europe, please refer to the country marcom manager or the mailing list coordinator in the Marcom department.

In addition to the two new publications, Corporate Marketing Communications publishes three other major customer publications (*HP Journal*, *Computer Advances*, and *HP Channels*). Descriptions of the five major HP customer publications follow — complete with information on how to add customers and HP employees to the distribution lists.

**Update**

*Editor* — Julia Leighton

*Description* — Bimonthly 8 to 12-page, four-color magazine. Translated into five languages. Contains articles on new products and services: information systems, personal computers, technical computers, design systems, manufacturing, networks, peripherals, and computer supplies.

*Target audience* — Computer customers (end users).

*Distribution*

- To add U.S. or Intercon customers, please complete an ELM/CAPS profile card (P/N 5954-0207), write UPDATE on it, and send to Winston Lin, Hewlett-Packard, 3200 Hillview Avenue, Palo Alto, CA 94304. To add multiple customers at the same company with the same product needs, you can use one profile card for all the names. If you have questions, call Winston Lin at 415 or TELNET 857-5964 or send an HP Desk message to ELM/HP0000/53.
- In Europe, contact the mailing list coordinator in your country's marcom department. Customer profile cards are available.
- Internal additions, please send an HP Desk message to WORLDWIDE ROSTER (U.S.), ROSTER ADMINISTRATOR (Europe), or Pam Akina (Intercon), with this information: Employee number, Name, Division/Office Name, Comsys number, Bldg. number, Job Title, Sales Force, Manager's Name, and Manager's Employee number. Remember to mention which publication you wish to receive.

**Computer Advances**

*Editor* — Debbie Geiger

*Description* — Quarterly four-color customer magazine for managers in major and target accounts. HP strategies, results-oriented case histories, and new product introductions are included.

*Target audience* — Computer customers (mid- to upper-level managers only)

*Distribution*

- To add customers in the U.S. or Intercon, send customer's name, company name, *customer's title*, and address to Darleen Brettes, Hewlett-Packard, 3200 Hillview Avenue, Palo Alto, CA 94304. Only qualified customers will be added.
- Internal HP subscriptions (U.S./Intercon) are limited due to cost.

*continued on next page*

- In Europe, most countries are responsible for their own version and list. (Due to legal problems in some countries, the new publication *Update* may use the name *Computer Advances*.)

## **HP Channels**

*Editor* — Tracy Wester

*Description* — Monthly magazine to keep our value-added channels customers current on new products, updates, obsolescences, seminars/conferences, and policies.

*Target audience* — HP's value-added channels customers (OEMs, ISVs, VARs, software suppliers, etc.)

### *Distribution*

- External customers go through their HP sales rep and complete a VALID Data Kit (P/N to be assigned).
- Internal HP people should contact Tracy Wester, Hewlett-Packard, 3200 Hillview Avenue, Palo Alto, CA 94304, 415 or TELNET 857-8973, to get on the distribution list.

## **HP Journal**

*Editor* — Dick Dolan

*Description* — Monthly publication that communicates technical information from HP's laboratories to all of the fields served by HP.

*Target audience* — Technical professionals.

*Distribution* — On a temporary basis (until November 1), distribution is limited. The following procedures are in effect:

- To add a customer in the U.S. or Intercon, customer (not sales rep) needs to fill out an ELM subscription card (P/N 5954-0207) and return it to: Hewlett-Packard, 3200 Hillview Avenue, Palo Alto, CA 94304.
- In Europe, contact the mailing list coordinator in your country's marcom department. Profile cards are available.
- Internal HP: In the U.S. and Intercon, there is a bulk distribution to the sales offices and divisions. Additions to the bulk or individual subscription lists are currently not possible.

## **Test & Measurement News**

*Editor* — Julia Leighton

*Description* — Bimonthly 8 to 12-page, two-color magazine. Translated into five languages. Contains articles on RF & Microwave, general-purpose instruments, computers/controllers, telecom, and components.

*Target audience* — Test and measurement customers.

*Distribution* — See *Update* instructions. Write *T&M News* on the card.

## **Get ready for the 1987 Technical VAB Conference**

*Doug Newlin/TSC*

Mark your calendars now for the 1987 Technical Value Added Business Conference that will be held in Steamboat Springs, Colorado, on September 21 through 25. The first two days will be dedicated to value-added technical sales rep (VATSR) training and workshops, the last two days will be for VAB customers.

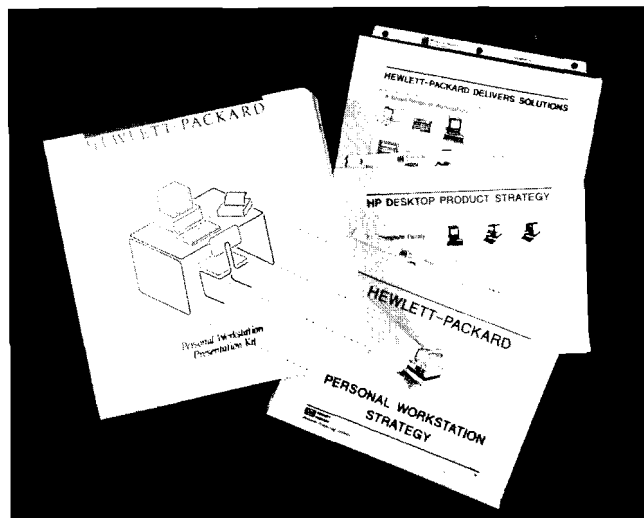
We're putting plans together now for this year's VATSR training/VAB seminar which will be built around a "Mountain Rendezvous" theme. The rendezvous theme was chosen because of the scenic mountain setting, and the fact that a rendezvous, or *rondy* as the old Mountain Men call them, was where all the trappers, hunters, and guides got together each year to swap stories, trade furs, tell tall tales, and generally have some fun before going back into the hills for another cold winter. We felt that was just what the VAB program needed — a chance for VATSRs and HP management to get together, share success stories, trade information, and get to know each other in a relaxed atmosphere. The conference theme statement will be "Sharing Strategies for Success."

The setting for the conference will be the Steamboat Springs Sheraton Hotel, located at the bottom of the famous Coors Silver Bullet Ski Lift on Mt. Werner. We have planned a full agenda of first-rate workshops, product reviews, program updates, and recruiting/development ideas. We've planned some interesting leisure and entertainment activities as well.

As more details become available, we will keep you informed. Look for a mailing in the next few days and another in early August. We'll be coming to you for ideas on what you would like covered at the '87 Mountain Rendezvous in Steamboat.

## Personal Workstation Presentation Sets still available

Sandra Jeung/Business Systems Sales Center



There are a few sets remaining of the original Personal Workstation Presentation as well as the Fall updates. These high-quality presentation overheads are extremely beneficial in communicating HP's solutions in the personal computer, portable, terminal, and peripherals areas.

The presentation is updated regularly and revisions are based upon the original presentation, initially introduced in Fall 1986. The first revision was made available in Winter 1986 and the next revision is scheduled for the summer.

If you would like to save time and resources, yet effectively communicate HP's excellent workstation solutions, order the Personal Workstation Presentation Set.

### Ordering information

P/N	Description	U.S. list price
5958-8574	Personal Workstation Presentation (original version) - 70 overheads and script providing an overview of HP's strategies and product solutions for personal productivity.	\$150
5958-8574F86	Personal Workstation Presentation Fall 1986 Update - 35 revised overheads and script covering current product solutions, including DTP, HP Vectra Office, and the HP LaserJet printer family	100

Order by contacting Helene Cranstoun, BSS Marcom Graphics, 408-973-7617, TELNET 125-7617, or HP6646/01. Please provide the requestor's name, mailing address, telephone, title, product specialty code, entity/sales region, location code/sales office, and manager's name and title.

## Precision Architecture Club — the race goes on

Linda Cunha/Business Systems Competitive Programs

Competition between the sales regions is mounting as the Top Gun contest continues. Here's the current scorecard as to how each region is performing in accumulating wins against DEC.

	Eastern	Midwest	Region Southern	Neely	Intercon	Total
Top Guns (5 wins)	1	0	0	2	0	3
Aces (3 wins)	1	2	1	2	0	6
Fighters (1 win)	16	14	17	22	7	76
Total wins	31	25	28	45	8	137

Remember, you have until August 31 to submit your documented PAC forms to 19091 Pruneridge Avenue, Cupertino, CA 95014, Attn: Linda Cunha, Mailstop 46U4.

## Competitive Programs group: send those cards and letters

Linda Cunha/Business Systems Competitive Programs

Since the start of our Competitive Program group a year ago, we have received a lot of feedback on HP's competition. We really appreciate hearing from you. This communication has helped us invent new tools such as Competitive Clippings, which provides consolidated information to a large audience.

Although there are many sources for competitive information available to us, you provide the best source because you encounter the competition every day. Your experiences help us focus our efforts as well as allow us to pass on best practices in the form of Strategies For Success.

If you discover a winning technique, a new tactic being used by the competition, or just some useful information



relating to our competitors, please send it to us. Our address is 19091 Pruneridge Avenue, Cupertino, CA 95014, Attn: Competitive Programs, M/S 46U4. We will continually try to incorporate this information into our deliverables.

In the coming months, you will continue to see more useful, sales-winning information. In the meantime, keep those cards and letters coming.

## SALES SUCCESSES

*Sales Successes reports on successful sales strategies and HP solution installations. Information Systems & Manufacturing News welcomes contributions for this column from the field and divisions alike. Articles should be brief, informative, and contain the following information: (1) A description of the customer and the problem, (2) the competition's answer to the problem, (3) HP's solution and why the customer chose HP, and (4) who to call for more information about the sale.*

### HP wins at Standard Chartered Bank of London

Rodney Yap/HP Malaysia

Hewlett-Packard Sales Malaysia has just sold a complete integrated office-automation package in Malaysia to a major international banking group — the Standard Chartered Bank. The London-based bank, which has an office in Malaysia, will be using the full range of the Personal Productivity Center products. The deal was closed by senior sales rep Robert Leong with support from David Stubbs, market development manager, business systems marketing center, Far East Headquarters, and from Stephen Lim, office specialist at Hewlett-Packard Singapore Sales.

The Standard Chartered Bank PLC group is a multinational bank with more than 2,000 offices in over 60 countries. It has group total assets of £32 billion. The Malaysian office was so convinced of the benefits of the Personal Productivity Center that they strongly recommended to their EDP headquarters in London that HP's office systems strategy was the best.

#### Full range of Personal Productivity Center products

Standard Chartered Bank will be purchasing an HP 3000 Series 58 with HP ThinLAN to network an initial 35 PC

workstations in the Kuala Lumpur head office and remote links at 35 branches throughout Malaysia. They will also buy the full range of PPC products — HP Desk, Information Access, Resource Sharing, File/Library, Scheduler, and AdvanceMail. An IMAGE database will eventually be created on the HP 3000 server using data downloaded from their NCR V86XX banking systems mainframe to provide PC to mini integration over ThinLAN. Remote branch PCs will access the HP 3000 over leased lines via CODEX multiplexers and eventually via COMTEN front-end processors. It is possible that in the future, Standard Chartered will also install HP-connect-to-PROFS to provide services to their IBM mainframe in the London headquarters.

#### Success factors

The SCB Group evaluated proposals from four other competitive office offerings — IBM, DEC, Wang, and NCR. However, HP came out on top against these competitors. HP's success was attributed to the factors listed below.

*Good account coverage* — Senior sales rep Robert Leong covered the account well — from the top management to the technical users. HPSM's management and the Far East Region's management also visited the account regularly to affirm HP's commitment to the OA market.

*Excellent PC to mini integration* — In the words of Mr. A.G. Izat, SCB's technical services manager, "HP is the only vendor to offer easy access to the database via the same PC workstation. IBM, DEC, and NCR could only do it with terminal emulation." Information Access ran away with the prize.

*Open architecture/industry standard LAN* — The bank was a user of many IBM-compatible PCs that HP ThinLAN easily accepted. DEC and NCR simply could not.

*IBM connectivity* — The bank needed to know that the local HP Desk electronic-mail services could be integrated to IBM PROFS being used in the London headquarters. The HP-connect-to-PROFS provided the solution.

*Separate OA server strategy* — The bank was sold on the idea of using a separate OA server instead of using their banking mainframe, so performance on the on-line banking system would not be degraded.

*Security* — Since there is a separate OA server, users will not be able to access *live* files in the mainframe. Hence, there is better security in the banking operations. The bank was also very keen on the idea of using a separate OA server to the banking mainframe, so that direct

access by end users to the banking mainframe could be avoided.

If you would like more information about this deal, please send an HP Desk message to Robert Leong/HP6800/00.

## DS/LAN — a success story at BOSCH

*Eric Gewalt/Grenoble Software Center*

In 1984, BOSCH, a large major account in Germany, well known for their car accessories, started to think about extending their HP 1000 DS network to new manufacturing plants.

A proven and successful DS 1000 network with memory-based systems existed in one of the plants. The harsh environment does not allow them to use discs in the factory. The planned extension to 280 systems made an HDLC point-to-point connection not feasible.

This was the time HP started to talk about LAN/1000 and NS/1000 to the customer. NS/1000 unfortunately does not have the discless capability. The idea came up to use the DS 1000 services via LAN. The account team (sales rep Wilfried Naegele, and applications engineer Wolfgang Schmitt, Böblingen office), BOSCH, and a software house decided to implement a Device-Driver to make the LAN transparent to the DS/1000 services.

The system-downloading feature has been added by Manfred Hoekendorf from the AEO Hamburg.

With this feature, we were able to run DS/LAN successfully in the BOSCH manufacturing area since the end of 1986. This was a door opener for at least an additional two million dollars in new BOSCH manufacturing plants.

If this kind of tailored application could help your account, please contact the German Application Center for more details.

Wolfgang, Wilfried, and the whole BOSCH team, thank you for keeping BOSCH among the top HP 1000 European customers.

## HP QuietJet printer family success story results

*Debbie Bell/VCD*

Sales force 12 reps in the U.S. and Intercon recently participated in the HP QuietJet printer family success story contest. The purpose of the contest was to collect information about the HP QuietJet printer sales so that vertical markets and market segments could be identified for

these products. The reps talked with their dealers to find out such information as the application the printer is being used for, the type of business that purchased the printer, and who made the purchase decision.

The contest was structured so that sales reps accumulated prizes according to the number of entries submitted. Vancouver Division (VCD) awarded 24 hardbound books containing color photographs of the Pacific Northwest, 13 travel alarms, and 13 portable cassette players. With an outstanding 12 entries each, Connie Chihlas and Bill Vonachen of the Lexington office, and Joe Mastropaolo of the Paramus office, tied for submitting the most success stories. This three-way tie for tie monogrammed leather briefcase was broken by a random drawing that declared Joe Mastropaolo the briefcase winner. A second briefcase was awarded by drawing a name from all of the entries submitted. The lucky winner of this briefcase was Carrie Malsen of the Baltimore office.

Look for the article about the use of HP QuietJet Plus printers by accounting departments in this issue of *Information Systems & Manufacturing News* (page 21.)

## CUSTOMER SUPPORT

### United States Courier Return Service discontinued

*Joe Campbell/PRSD*

The United States Courier Return Service (CRRS) program has been discontinued. The program has been generating decreasing sales over the past year and requests have been received to remove the program as an active support offering. The following support product numbers (SPN) are being removed from the list of active support products offered in the U.S.

SPN	Description
<i>Instruments</i>	
25A	CRRS-Full Service Agreement
25B	CRS-Repair Agreement
25C	CRRS-Calibration Agreement
25F	CRRS-STREP
25G	CRRS-Per-incident Calibration
25H	CRRS-Per-incident Repair + Calibration
25Q	CRRS-Mil-Std Per-incident Calibration
25X	CRRS-Mil-Std Calibration Agreement
25Y	CRRS-Mil-Std Full-Service Agreement
25Z	CRRS-Mil-Std Per-incident Repair + Calibration
<i>Workstations</i>	
02M	CRRS-Repair Agreement
17M	CRRS-STREP

*continued on next page*

Current CRRS agreement customers will be offered other support services upon the expiration of their current agreements.

If you have any sales presentations, literature, or other media that make reference to the United States Courier Return Service program, please remove such references.

If you have any questions, please contact Joe Campbell, PRSD, at 415 or TELNET 691-5610.

## Update to ordering HPTREND manuals

*Tony Wong/ASD/PRSD Sales Development*

The article in the May 1 issue of *Information Systems & Manufacturing News*, entitled, "Extra HPTREND manuals available," encouraged you to order free HPTREND manuals for your customers by placing a HEART order through SDC. Please disregard these instructions.

There are *two* procedures for ordering HPTREND manuals: internal and external.

### External

Customers can now order extra HPTREND manuals through Direct Marketing Division (DMK). To place an order, customers can call toll-free 800-538-8787. The product number for the manual is 35136-90001, and there is a charge. (A sales rep or systems engineer can also order through DMK and pay the TAC price.)

### Internal

HPTREND manuals can still be ordered free through SDC; the procedure is the same as described in the original article: A HEART order can be placed for 35135A (Qty. 1 per order) at zero cost. (Ordering free manuals through SDC is limited to internal HP employees. Customers must pay for extra manuals by ordering through DMK as described above.)

If you have any questions, please call Tony Wong, Sales Department, at 408 or TELNET 447-1298.

## SPECIAL OFFERS

*Promotion programs and special offers announced in Information Systems & Manufacturing News may not be valid outside of the U.S. Before promotions are valid in other countries, they must be announced by the Country Marketing Organizations.*

## HP 9000 Plus-A-Plus promotion

*Custis Cline/VCD*

The HP 9000 Plus-A-Plus promotion is for those of you selling the HP 9000 Series 200/300/500 computers. It's designed to give you a logical opportunity to increase the size of your systems sales and save your customers money.

When your customers place a single order for an HP 9000 Series 200, 300, or 500 host and an HP 2227BQ QuietJet printer, they will receive \$100 off the printer's \$799 U.S. list price, in addition to their regular discounts.

The HP 2227B QuietJet Plus printer with one HP-IB interface was introduced May 1. Besides the primary HP-IB commands, it also features the secondary, or Amigo-mode, commands as well as parallel polling by identifying itself as an HP 2673A printer. It then works in a multitasking way with the Amigo mode hosts. In addition, it has the 8K RAM input buffer instead of HP 2227A's 2K RAM.

When you're closing a sale, the Plus-A-Plus promotion gives you a natural lead in to sell hardcopy peripherals. It motivates your customers to buy the HP-IB version of the HP QuietJet Plus printer right then or lose the \$100 savings. And you can easily expand the sale to other printers and plotters before you close.

The Plus-A-Plus promotion helps you present HP as having a complete one-vendor system solution. It saves you and your customers time — you make a one-stop, one-time sale and avoid follow-up hardcopy peripherals sales. And, you keep out competitors' products that your customer might otherwise buy from a dealer, distributor, or non-HP direct sales rep.

The promotion runs from June 1 through November 30, and best of all, the promo is a snap to administer. For each HP 9000 Series 200/300/500 on an order, one HP 2227B printer is entitled to an M07 promotion adjustment of \$100. That's one M07-discounted printer for each host providing that both are on the same order.

So, sell HP 9000 systems Plus-A-Plus and save your time and your customers' money.

GENERAL

## Diagnostic Utility Subsystem available on cartridge tape

Tom Petrillo/CSY

With more customers moving toward centralized administration of distributed systems, HP has now made it possible for your customers to order the DUS software on cartridge tape media for HP 3000 Series 68 and 70. You will recall, the DUS is the Diagnostic Utility Subsystem software and is used as an off-line operating system to diagnose hardware problems.

For customers with remote sites who cannot invest in a tape drive, they can use Option 022 to obtain a cartridge tape version of the DUS tape. The option has been added to the products listed below.

Series 68	Series 70
30468A	30443A
30468B	30443B
32468CH	30444A
32468C	30444B
	32471AH
	32471A

The no-charge option can be ordered as of July 1, 1987.

Additional information may be obtained by reading the two articles published in the December 15, 1986, issue of *Information Systems & Manufacturing News* on pages 8 and 9 entitled, "HP 3000 Series 44-70 systems now support HP 9144A as a cold load device," and "How to obtain HP 9144A cold load support on Series 64/68/70 systems."

## ATP direct- to modem-connect upgrade kits

Francoise Descleves/GND and Karla Rosen/IND

Two upgrade kits — HP 30155U and HP 30274U — will be introduced on the July 1, 1987, Corporate Price List (CPL). They allow customers to upgrade from ATPs with direct connections (HP 30145A or HP 30273A) to ATPs with modem connections (HP 30155A or HP 30274A).

### What are the benefits to HP customers?

The new upgrade kits provide a low-cost means for customers to upgrade their workstations from direct to switched (e.g. PBXs, data switches) or multiplexed (e.g.

HP 2334 PLUS) host connections. These connections require the additional functionality of modem ATPs to provide security and reliability on the HP 3000.

### Why do customers want switched and multiplexed connections?

- With switched connections, a single terminal can access multiple hosts. This is particularly useful when information and applications are distributed across many computers.
- Customers with a large number of users who only access the host occasionally can save port costs by using switched connections. Multiple terminals can share a single port; when one user logs off, the next user can access the port.
- Customers can save line costs between remotely located host computers with multiplexed connections.

### Product structure

P/N	Description	U.S. list price
30155U	Kit to upgrade an ATP with 12 direct connections to an ATP with 12 modem connections, when no free-standing junction panel is required. For use on HP 3000 Series 39/4X/5X/6X/70	\$3,000
Opt. 048	Provides expansion package cable for HP 3000 Series 44/48/58	0
30274U	Kit to upgrade an ATP with 12 direct connections to an ATP with 12 modem connections, when a free-standing junction panel is required. For use on HP 3000 Series 39/4X/5X	3,600
Opt. 048	Provides expansion package cable for HP 3000 Series 44/48/58	0

### Ordering instructions

HP 3000	Direct connect ATP installation	30155U	30274U
Series 39/40/42/52	In a free-standing junction panel	If two or more slots are available on a free-standing junction panel. No option required	If zero or one slot is available on a free-standing junction panel. No option required
Series 44/48/58	In a system junction panel	If two or more slots are available on a free-standing junction panel. Opt. 048 required	If zero or one slot is available on a free-standing junction panel. Opt. 048 required
	In a free-standing junction panel	If two or more slots are available on a free-standing junction panel. No option required	If zero or one slot is available on a free-standing junction panel. No option required
Series 64/68/70	In a system junction panel	Always order No option required	N/A

## HP 3000 Series III trade-in offer

Michael Watt/FRD

*For North America only*

HP 3000 Series III owners are a loyal bunch. They've continued to hold onto their Series III despite its discontinuance in November of 1985. They haven't upgraded to the current HP 3000 product line despite the fact that add-on products are no longer available from HP, and, increasingly, value-added channel software vendors are choosing not to support the Series III on their new software releases.

### \$30,000 return credit

What will it take to help migrate these customers to HP's current HP 3000 product line? How about a \$30,000 return credit for their Series III system with the purchase of a remarketed HP 3000 Series 58 system from the Finance and Remarketing Division (FRD)? This is more than ten times the current market value for the Series III, and \$26,000 more than the standard upgrade credit.

Because the Series III and Series 58 don't communicate with their attached peripherals in the same way, this promotional program is designed to give the customer two alternatives in configuring an optional system:

- Upgrade their peripherals to the current HP-IB products lines
- Upgrade their existing peripheral interfaces

### Ordering information

To qualify for the \$30,000 return credit, customers need to order, at minimum, the following products:

- One HP 3000 Series 58R, such as the HP 32558AR
  - Option 603, upgrade credit from the Series III (– \$4,000)
  - M55 quote adjustment (– \$26,000)
- One asynchronous data-communications controller (ADCC), such as the HP 30018AR
- Either an HP 7933HR disc drive, *or* a controller and/or interface to upgrade their existing HP 792X disc drive to HP-IB
- One tape drive such as the HP 7970ER, HP 7974AR, or HP 7978BR

After receipt and installation of the above equipment, the customer must return the HP 3000 Series III and any peripherals that are replaced. Please note that in the case of a bundle such as the 34202BR, whose elements are already discounted by \$15,500 from the stand-alone list prices, the customer will receive an M55 quote adjust-

ment of –\$10,500 (in addition to the standard –\$4,000 return credit).

Now's the best time ever to call on those HP 3000 Series III customers who you may have forgotten. This program, which runs through October 31, 1987, gives you a chance to get in the door and present an attractive package deal. This program is for North America only. FRD will also help migrate HP 3000 Series 30 and Series 33 owners to a remarketed Series 58. If these customers don't need all the performance improvement offered by the HP 3000 Series 58, an upgrade to a remarketed Series 42 may be the answer.

For more information, call your market development contact listed below.

Region	Contact	Phone
Neely and Europe (NW, SW, Rocky Mountain, and LA)	Que Foor	408-720-4162
Eastern and Neely (Central and Southbay)	Raymond Dean	408-720-4158
Midwest	Kevin Lernihan	408-720-4160
Southern and Intercon	Bill Brennan	408-720-4159

## CEs can help identify HP 3000 Series III owners

Michael Watt/FRD

*For North America only*

When the HP 3000 Series III was discontinued in November of 1985, many Series III owners chose to stop using HP's standard monthly maintenance agreements. Many switched to a time and materials basis, calling HP only when service was absolutely necessary.

This situation leaves the field with an incomplete list of the HP 3000 Series III installed base. Therefore, many accounts may not hear about Finance and Remarketing Division's (FRD) new Series III promotional program (see previous article entitled, "HP 3000 Series III trade-in offer"). This is where your customer engineer (CE) can help. Ask your local CE if he or she has performed service to any Series III owners recently. Maybe they know of a customer who has other HP systems, with a Series III dedicated to a specific task in one department. We're sure that all Series III owners will want to hear about FRD's \$30,000 return-credit offer.

Remember, we're offering more than 10 times the current market value for the HP 3000 Series III, and \$26,000 more than the standard upgrade credit if your customer upgrades to a remarketed HP 3000 Series 58 system. Now is the time to migrate these customers. This program will end October 31, 1987.

**Also in this issue**

**NS 3000/V — the alternative to DS** 30

PRECISION ARCHITECTURE

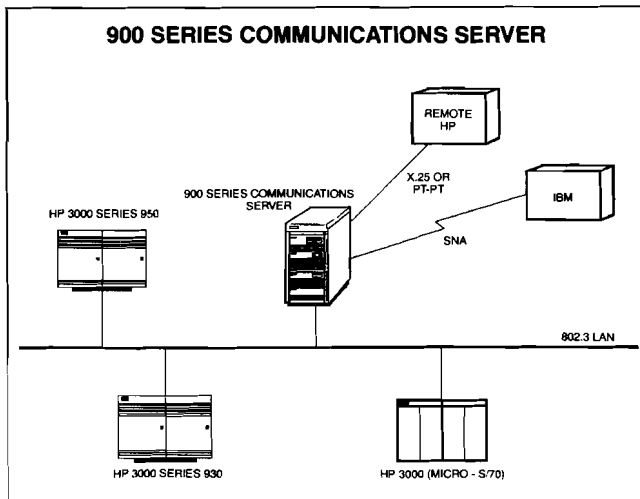
**HP 3000 Series 950 wide-area networking and IBM SNA communications — correction**

*Matt Ragen/IND*

*The following article appeared in the June 1 issue of Information Systems & Manufacturing News. It appears here with updated prices.*

Customers requiring wide-area networking to either remote HP systems or IBM from the HP 3000 Series 900 systems can take advantage of the low-cost rental program on the Series 900 communications servers. For first-release HP 3000 Series 930 or Series 950 systems, HP SNA Server/Access provides HP-IBM SNA connectivity.

HP SNA Server/Access collectively refers to a group of three products that provides transparent access to an IBM system through an HP 3000 gateway. These products are: HP SNA Server on the gateway system, HP SNA Server Access/V, and HP SNA Server Access/XL on the user system. HP SNA Server Access/XL has been announced previously for the HP 3000 Series 930 and is now available for the HP 3000 Series 950.



The HP SNA Server/Access products permit an HP 3000 user to transparently access IBM systems through an HP 3000 gateway. The HP 3000 gateway supports interactive (SNA IMF), batch (SNA NRJE), and DISOSS (LU6.2 BASE with HP OfficeConnect to DISOSS) connections.

The user node must run HP SNA Server/Access/XL for Series 930/950 systems or HP SNA Server Access/V for MICRO 3000 through Series 70 systems. The HP SNA Server Access software products allow the HP 3000 end-user to transparently input data to, and receive data from, an IBM mainframe through a single HP 3000 gateway system.

The gateway node must run the HP SNA Server software. The HP 3000 gateway system can be any CPU ranging between a MICRO 3000 through a Series 70. HP SNA Server takes output from SNA IMF, SNA NRJE, and LU6.2 BASE and directs it to the appropriate end user via the LAN. (SNA IMF, SNA NRJE, and LU6.2 only have to be installed on the gateway system.)

The HP SNA Server products provide a low-cost alternative to the standalone SNA communications products for customers who do not require high performance. Users receive transparent access to the IBM system via the gateway HP 3000. Output is automatically routed back to the end-user node.

**Ordering information**

P/N	Option	Description	U.S. list price	
			"A" Copy	"R" Copy
30254		HP SNA Server		
	310	For Series 37, MICRO 3000	\$1,020	\$715
	320	For Series 39-70, MICRO 3000 XE	1,020	715
30255		HP SNA Server/Access/V		
	310	For Series 37, MICRO 3000	1,020	715
	320	For Series 39-70, MICRO 3000 XE	1,020	715
30256		HP SNA Server/Access/XL		
	426	Upgrade from 30255, Opt. 320	610	430
	430	For Series 930	1,225	855
	440	For Series 950	1,225	855

For more information, refer to the 900 Series Networking Sales Guide (P/N 5954-6339), the 900 Series Networking Specification Guide Supplement (P/N 5954-6341), the HP SNA Server/Access Sales Brief (P/N 5954-6336), and the Communications Servers: 900 Series HP 3000 Sales Guide (available August 1986).

## OFFICE SYSTEMS

### HP PC LAN performance comparison

Becky Matsuoka/RND

The relative performance of HP StarLAN for PCs, HP ThinLAN for PCs, and HP SERIAL Network, has been a key issue of concern. A number of multiple user tests and work environment studies have been made to provide a comparison of the relative performance of the three links.

Studies indicate that in a typical office environment using applications such as spreadsheets, word processors, and office graphics applications, 10 to 15 percent of the users connected to the LAN are simultaneously accessing the server. Based upon these usage studies and the multiple user file read tests done, we have found that in this type of environment, there would be little to no difference between the perceived performance of an HP StarLAN or HP ThinLAN network.

Office environments can be affected by special situations. If applications have unusually large data files or abnormally high rates of use by most of the office workers, response times may increase. In these cases, the customer can use the address filtering capabilities of the bridge to separate the network into smaller subnetworks to reduce the traffic that would reduce the response times.

As a terminal user over the network, the effective file transfer rate using AdvanceLink provides similar performance to the user regardless of whether HP StarLAN or HP ThinLAN is used. The perceived performance of a networked PC in terminal emulation mode will be about 5 to 30 percent less than a 9600 baud point-to-point connection.

HP SERIAL Network, a point-to-point connection, is a slower type of link than the LAN connections and can be positioned as a remote link to a host server. The effective transfer rate of files from an HP 3000 server is about half the line rate of the link and has little degradation as more users are added.

For your business environment, HP StarLAN provides the best price/performance networking solution for your

customer. And for those additional requirements of remote connectivity, HP provides HP SERIAL Network. For more detailed performance information, see the July issue of *Performance News Notes* (PNN).

### HP LaserJet Series II printer price increase

Arlene King/BOI

The HP LaserJet Series II printer will increase in price effective July 1, 1987, to the following factory based price (FBP):

P/N	Voltage	New FBP	Old FBP
33440A	115V	\$2,560	\$2,460
33440AB	220/240V	2,690	2,590
33440AU	220/240V	2,690	2,590
33440AQ	220/240V	2,690	2,590
33440AY	220/240V	2,690	2,590
33440AA	220/240V	2,690	2,590

The U.S. list price will increase to \$2,595, from \$2,495, effective July 1, 1987.

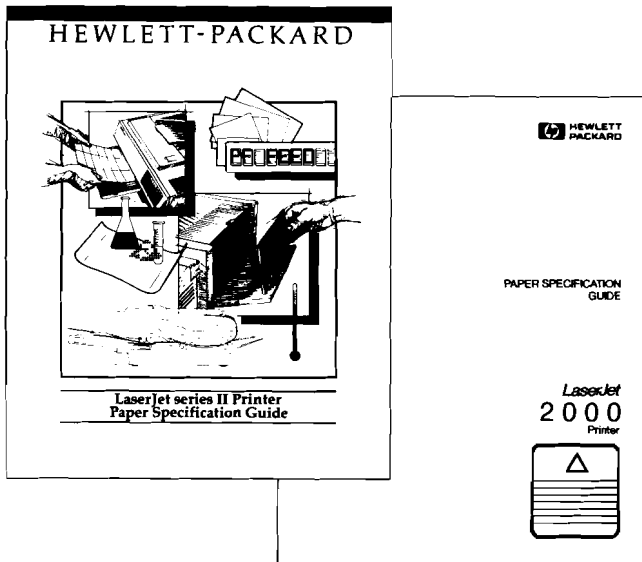
### New paper spec guides for HP LaserJet Series II and 2000 printers

Zevada Lundin/BOI

Boise Division (BOI) has developed two new pieces of literature that can be ordered through the Literature Distribution Center (LDC) in Palo Alto, California. There is no charge for the literature, but the order limit is 25.

Both the HP LaserJet Series II printer paper specification guide (P/N 5954-7339) and HP LaserJet 2000 printer paper specification guide (P/N 5954-8953) provide the following information: general information about the printer; paper selection guidelines, e.g., types of media; paper basics; specifications, e.g., choosing paper, and paper handling and storage; troubleshooting; and paper checklist.

Using these paper specifications is one means of maintaining the level of confidence and satisfaction associated with HP's laser printers.



## New HP LaserJet printer family accessory packaging

Jeri Peterson/BOI

New exciting packaging is coming soon for the HP LaserJet printer family font cartridges, soft fonts, and HP LaserJet Series II printer memory boards. The new packaging is consistent with other HP supplies packaging which has been implemented for HP plotter and inkjet products. HP will begin rolling in the new font and memory-board packaging in the August timeframe. The part numbers for all products will remain the same.

Several advantages to the new packaging will be immediately evident. First, the slightly larger package is crush proof. The new molded plastic bifold case protects fonts and memory boards better than ever. The case can also be saved by end users to store their fonts.

Second, the graphics and information on the outside of the package have been improved. The graphics are attractive and colorful with consistently placed and easily identifiable product information.

This adds up to better-looking, more-durable packaging for HP LaserJet printer family fonts and HP LaserJet Series II printer memory boards.

## HP 92286W font cartridge unsupported on HP LaserJet Series II and 2000 printers

Larry Haley/BOI

It has recently been discovered that the 9.3 characters-per-inch (cpi) bar code 3-of-9 on the HP 92286W font cartridge is incompatible with the HP LaserJet Series II and HP LaserJet 2000 printers. The following is a description of the problem, information on how Boise Division (BOI) is handling the problem, and ordering information.

The HP LaserJet Series II and LaserJet 2000 printers' larger dots reduce the white space between the bars. The result is that many bar code readers cannot read the bar codes. The 9.3 cpi bar codes are not readable at all and the 4.6 cpi bar code and the OCR-A are not recommended for use.

HP has always recommended that customers test bar code printer/reader combinations prior to making a purchase decision, and states this in the HP LaserJet printer font catalog, on the W cartridge packaging and in the user's manual.

All current literature specifies that the W cartridge is compatible with the HP LaserJet Series II and LaserJet 2000 printers. Since we are unable to immediately correct the problem, and because it would be impossible to notify everyone, we have removed the product from the Corporate Price List (CPL). We are taking the position that a standard 3-of-9 bar code cartridge does not exist.

BOI has also recalled all HP 92286W font cartridges in stock and is controlling the distribution. In order to meet customer commitments, we will make the remaining limited inventory available for *existing HP LaserJet and LaserJet PLUS customers only (not for new business)*. In addition to recalling stock, we are reworking it to delete all documentation reference to the 9.3 cpi. We are not removing it from the cartridge, but it will be documented as unsupported.

BOI is investigating a replacement cartridge that will be compatible with all members of the HP LaserJet printer family. At this time, there is no availability schedule. In the meantime, please let your customers know about the situation.

Sales Force 12 (dealer) reps who need the W cartridge for current commitments should call their usual BOI contact or 208-323-3335; Sales Force 15 (direct) reps should also call their usual BOI market development contact, or 208-323-3227 for ordering instructions.



### Portable insurance provider selects HP ThinkJet printer

Dennis Hoff/VCD

*For North America only*

The Aid Association to Lutherans (AAL), an insurance provider located in Oshkosh, Wisconsin, has purchased over 1,000 battery-powered Centronics HP ThinkJet printers (2225P) to complement their host systems. This portable system will be used by their sales staff to increase productivity on the road. The primary host for AAL is the DG One laptop computer. However, the HP 2225P ThinkJet printer is also compatible with the Zenith 181, Toshiba 1100, NEC Multispeed, Kaypro 2000, and several other laptop computers. AAL bundles the 2225P with the host, adds custom software, then sells the complete system, including a specially designed carrying case, to their agents. Other portable printers were evaluated by the AAL, but the 2225P proved to be the best printer for their needs. The rugged design (based on eight hours power-on, the MTBF is 65,000 hours), longer battery life, and a full 200 pages printed on a single charge were the main reasons for selecting the 2225P. The 2225P has more than twice the printing capability on a single charge than the Diconix 150, our nearest competitor.

The portable industry has recently expressed a great deal of interest in this newest HP ThinkJet printer model. Portable systems requirements are on the increase and a reliable printer is the necessity. Portable growth in the last year has been quite rapid. In fact, in 1986, 14 new portable computers were introduced, 12 in 1985, and 11 in 1984. The number of laptops projected to be sold in 1987 exceeds 400,000 units and will reach 900,000 units by 1990. Vancouver Division (VCD) has estimated that 25 percent of these portables will be connected to a portable printer, which represents a significant business for you.

For more information on portable printing opportunities, applications, or a packet of presentation materials, call the Vancouver Division OEM group, 206-254-8110.

### New product release process from PCBU

Richard Deep/PCBU

On July 1, 1987, the Personal Computer Business Unit (PCBU) released a series of new products for its HP Vectra PC family (see the accompanying articles in this section). What distinguished this release from past announcements is the process under which these new products were developed and tested.

This is the first of a series of *platform releases*, a process in which products are developed and tested as a system, using configurations similar to those in customer applications. In the past, products have been developed as individual components, with little formal thought to their function in an HP Vectra PC system. This new process provides a methodical set of test structures to measure how the individual components will function in a system, and ensure that there are no adverse reactions among the new components.

Each new component is built into an HP Vectra PC system similar in configuration to an HP Vectra 3000 PC or an HP Vectra Publisher PC, complete with peripheral equipment. The systems are then tested in four areas: regulatory (including FCC and VDE), compatibility/functionality, environmental, and integration (how well the components function together).

All together, each new component is tested against over 100 different software packages, and against over 100 different hardware peripherals and accessories — in each of five different system configurations. The results are the most thoroughly tested set of new components we have ever introduced for HP Vectra PCs.

This directly translates into greater reliability and performance for your customers, and a greater selling advantage for Hewlett-Packard.

## New HP Vectra PC Model 60 bundle

*Richard Deep/PCBU*

With the introduction of the new 40-Mbyte hard disc drive on July 1, 1987, Personal Computer Business Unit (PCBU) will introduce a new HP Vectra PC Model 60 bundle (72460B). This new product will feature the improved 40-Mbyte half-height hard disc drive that provides a 35 percent performance increase over our current 40-Mbyte hard disc drive.

This new HP Vectra PC bundle will be especially attractive to customers whose applications are disc-access intensive, such as CAD or desktop publishing. In addition, the new half-height size allows the use of the B shelf for an additional floppy drive.

This HP Vectra PC bundle offers several advantages to your customers. Because it comes preassembled from HP, the customer does not have to install any of the drive components. This means there is no need to open the HP Vectra SPU, and there is less set-up time required.

The HP Vectra PC Model 60 also features an attractive U.S. list price of \$3,995, and represents a savings of \$1,145 over the individual component prices. That's a 23 percent discount, and it's fully assembled.

The 72460B will replace the 72460A, and will start shipping on July 1, worldwide. If your customers have placed orders for the 72460A product, with deliveries scheduled beyond July 1, 1987, it would be a good idea to convert those orders to the B version. The 72460A will be removed from the Corporate Price List (CPL) on July 1 (see accompanying article).

## New HP Vectra PC upgrade kit

*Richard Deep/PCBU*

The new HP Vectra PC upgrade kit will be available for shipment on July 1, 1987. This expanded version of our current upgrade kit will provide HP Vectra PC users the opportunity to take advantage of the enhancements we have made in the product during the last year.

The HP Vectra PC upgrade kit contains the items listed below.

- Two new BIOS ROM chips (A.01.06)
- A new 8041 keyboard controller chip
- A new hard disc controller card chip

- A new HP HIL mouse and pointing device driver
- Installation and instruction manual

### Why would my customers want to upgrade their HP Vectra PCs?

The primary reason is if they wish to add HP's new 40-Mbyte half-height hard disc drive to their system. To do this requires an HP Vectra PC with serial prefix 2621 or greater and BIOS ROMs version A.01.06. The BIOS ROMs are available in the upgrade kit.

To determine the version of the BIOS ROMs in an HP Vectra PC, turn the system on; or if it is already on, hold down the CTRL and Alt keys together and press the DEL key. The information is displayed as the system comes up. Press the CTRL and S keys to halt the screen, as the information may roll by very quickly. Press the CTRL and Q keys to continue.

If the screen shows ROM BIOS A.01.05 or less, then the upgrade kit will supply the latest ROMs. Note that if your customers have RAM BIOS MS<sup>®</sup>-DOS 3.1 version A.01.02, they will also have to purchase a new DOS operating system before they install the upgrade kit.

Also, if your customers are experiencing difficulties with Microsoft<sup>®</sup> Word with Extended/Expanded Memory applications, the latest version of the 8041 keyboard controller chip solves this problem. Note that there are also some problems with the HP mouse and Microsoft Word, that are solved by the new HP HIL Mouse and Pointing Device driver. While this driver is included in the upgrade kit, if this is the only problem you are having, you may simply want to get the driver as a separate product.

For information on what the HP HIL mouse and pointing device driver solution offers, and how to receive it, see the accompanying article.

### Is the upgrade kit user installable?

In the U.S. and Canada, the upgrade kit is user installable. However, customers will have to open their HP Vectra PC and replace several microchips. While the procedure is well documented and illustrated in the installation manual, if they are not familiar with electronic equipment, they may wish to find someone to assist them.

Because the installation and instruction manual is available in English only, in Europe and Intercon, the installation may require the services of an HP engineer or qualified HP dealer technician.

You can order the HP Vectra PC upgrade kit (45938A) after July 1, 1987. The U.S. list price is \$150.

*MS-DOS and Microsoft<sup>®</sup> Word are U.S. registered trademarks of Microsoft Corp.*

## HP Vectra PC Model 60 A to be discontinued

Richard Deep/PCBU

On July 1, 1987, all versions of the HP Vectra PC Model 60 A (72460A) will be removed from the Corporate Price List (CPL).

At the same time, we will be introducing a new Model 60 B (72460B), with faster performance and greater flexibility. The Personal Computer Business Unit (PCBU) will continue to honor orders for the Model 60 A until October 1, 1987. However, it is in your customer's best interest to convert to the Model 60 B as soon as possible.

Basically, your customers will be getting a faster hard disc drive (28 ms average seek time versus 40 ms for the A version); and more flexibility (the new drive is half height, so it allows the B shelf in the HP Vectra PC to be used for a second floppy drive, if desired).

If you have orders on the backlog for 72460A, with deliveries scheduled after July 1, 1987, you should contact your customers and convert the orders to 72460B.

## New HP Vectra PC 40-Mbyte hard disc available

Steve Wise/PCBU

Personal Computer Business Unit (PCBU) now offers a high-performance, half-height 40-Mbyte hard disc drive for use with the HP Vectra PC. The table below highlights the advantages of the new drive relative to the old drive. Please see the related articles describing the new 40-Mbyte HP Vectra PC system and subsystem.

Feature	Old 40-Mbyte drive A version products	New 40-Mbyte drive B version products*
Form factor	full height, 5¼-inch (no second floppy)	half height, 5¼-inch (frees B shelf for second floppy)
Formatted Capacity	42.5M bytes	42.8M bytes
Typical Average Seek Time (Disc Performance Spec)	40ms	28ms
U.S. list price Subsystem HP Vectra PC bundle	\$1,995 (45897A) \$3,995 (72460A)	\$1,995 (45897B) \$3,995 (72460B)
Shock, Operating Non-operating	6Gs 25Gs	10Gs 40Gs
MTBF (Mean Time Between Failure) – reliability spec	12,000 power-on hours	20,000 power-on hours (67% more reliable)
Power Requirements Seeking (typical) Nonseeking (typical)	37.5 Watts 25.5 Watts	Low Power Consump. 14.8 Watts 11.0 Watts
Drive Type	17	44 requires system ROMs version A.01.06

\*The new B version products are identical to the A version products they replace except for the substitution of the new drive and improvements made to the hard disc Multi-Voluming Utility and to the SETUP program.

As the specs demonstrate, the new drive offers considerable advantages in addition to form factor and performance. These advantages include higher reliability, greater shock resistance, and reduced power consumption. The A products will be dropped from the Corporate Price List (CPL) beginning this month. Now is the time to switch your 40-Mbyte customers over to the new B version products and to pitch the products to performance/form factor sensitive prospects.

## 40-Mbyte subsystem: configuration/system requirements

Steve Wise/PCBU

The new HP Vectra PC 40-Mbyte hard disc described in the previous article, "New HP Vectra PC 40-Mbyte hard disc available," may be purchased as part of an add-in subsystem (P/N 45897B). At \$1,995 U.S. list price, the subsystem includes an IBM PC/AT compatible controller, cabling, new improved Multi-Voluming software, installation instructions, and the new half-height, 28ms average access time, 40-Mbyte hard disc drive. The product replaces the 45897A.

Like the 45897A, the B version requires HP Vectra PCs with serial number prefixes greater than or equal to 2621A. In addition to this requirement, the new subsystem requires version A.01.06 system ROMs (provided in all new HP Vectra PCs including the new Model 60B, product number 72460B). These ROMs may be obtained by purchasing the HP Vectra PC upgrade kit, product number 45938A, which lists for \$150. See the article entitled, "New HP Vectra PC upgrade kit," in this issue of *Information Systems & Manufacturing News* for more information.

Sell this product as an add-in subsystem for previously purchased HP Vectra PCs only. The Model 60B Vectra PC bundle substantially discounts the component parts and provides the best value to your new systems customers.



## Introducing HP Vectra PC MS-DOS 3.2

Miles Mikasa/PCBU

The U.S. English version of the new HP Vectra PC operating system, HP Vectra PC MS-DOS 3.2, (45951B) will begin shipping on July 1, 1987, and will have a U.S. list price of \$95. Preassembled HP Vectra PC systems, such as HP Vectra 3000 PC and HP Vectra Publisher PC, shipped on July 1 or later will include the new operating system. Localized versions will ship later. The U.S. English HP Vectra PC MS-DOS 3.1 product, HP 45951A, will be discontinued on January 1, 1988.

HP Vectra PC MS-DOS 3.2 is intended to be a compatible superset of IBM PC-DOS 3.2. It will support the features and applications that IBM PC DOS supports (except IBM's BASIC), including token-ring local area networks. The product will also include additional HP utilities that improve usability and functionality, such as the Personal Applications Manager, File Manager, Multi-Voluming Utility, and Multiple Character Set Utilities.

The Personal Applications Manager (PAM) and File Manager make computer use easier than using the C> MS-DOS prompt. The Multi-Voluming Utility allows use of hard discs larger than the 32-Mbyte limit imposed by MS-DOS. The Multiple Character Set Utilities allows translation of extended character sets (international, math, and line drawing characters) between the HP Vectra PC (and IBM compatibles) and HP 3000s, HP Touchscreen PCs, and HP printers.

How does the HP Vectra PC MS-DOS 3.2 product differ from MS-DOS 3.1? The changes likely to affect the most users are the new FORMAT and SYS commands and new HP software. In the interests of compatibility, the new FORMAT and SYS commands will no longer have the /P switch to transfer PAM onto work discs. Instead, the new PAMINSTL utility will install or remove PAM. The new HP software includes the Multi-Voluming Utility and the Multiple Character Set Utilities described above.

Programmers wanting detailed information about HP Vectra PC MS-DOS 3.2 may purchase the MS-DOS 3.2 Programmer's Reference, P/N 5061-8971, which has a U.S. list price of \$50.

## New HP-HIL driver for the HP mouse

Mary Cunneen Lion, Lucy Rempel/PCBU

A new HP-HIL mouse and pointing device driver, designed to work with the HP mouse on the HP Vectra PC, is now available. This new HP-HIL driver is user-installable and compatible with the Microsoft® mouse driver Version 6.0. It also resolves problems existing with the HP mouse and some software applications (such as MS Word 3.1).

In current HP Vectra PCs (systems with A.01.02-A.01.06 ROMs), the HP-HIL mouse driver is located in the firmware, or ROMs. Past problems have occurred because of inconsistencies between the HP ROM-based driver and evolving industry standards. This new HP-HIL driver, developed by Microsoft, is located in RAM and links the HP mouse to an industry-standard software interface; this allows the HP mouse to look like a Microsoft mouse but communicate via the HP-HIL interface and retain its HP-HIL capabilities.

### What problems *will* it fix?

The HP-HIL driver will solve compatibility problems customers are now experiencing with the current ROM-based mouse driver, specifically with those software applications that depend on an industry-standard mouse driver located in RAM.

The most prominent example is MS Word 3.1 on the EGA (Enhanced Graphics Adapter); without this driver, the HP mouse generates cursor key output that only allows the user to access the text portions of the screen (in other words, the mouse acts like a cursor keypad instead of like a mouse).

### What *won't* it fix?

The new HP-HIL driver *does not* fix:

- Applications that depend on physical Input/Output to the Microsoft mouse's hardware interfaces. Some CAD/CAM applications do this and consequently ship with their own mouse driver which may or may not support the HP-HIL mouse; for instance AutoCAD® ships with its own HP-HIL mouse driver.
- Environment managers that do not currently support the HP mouse. Packages, such as off-the-shelf Microsoft Windows, typically interact directly with the hardware rather than through the BIOS, and, therefore, do not support HP-HIL. HP's Microsoft Windows for the HP Vectra PC will continue to support the HP mouse.
- MS Word/MS Spell with Extended/Expanded Memory problems; i.e. system lock ups. This problem is solved

by an updated 8041 chip that is included in the new HP Vectra PC upgrade kit; see below on how to order this kit.

## A word about HP applications

If you have Graphics Gallery or Executive MemoMaker (EMM) on your HP Vectra PC, and you have installed this new HP-HIL mouse and pointing device driver, you will need to update Gallery and EMM to successfully use your HP-HIL mouse or pointing device. Details on where to find the Gallery/EMM update files are listed below.

*Note: For new Gallery/EMM customers, the next release of these software packages will contain the update files.*

## How will I get this driver?

- Systems engineers and other HP reps who receive software through the Software Distribution Center (SDC) subscription service will be receiving the HP-HIL driver/Gallery/EMM Update files in July.
- HP reps not on SDC's subscription service may obtain this driver for customers or themselves through the Literature Distribution Center (LDC) by ordering P/N 5954-7686. To order: U.S./Intercon countries should send an HP Desk message to: Literature Order; in Europe, order the same part number by sending an HP Desk message to: Falk Tobias.
- If you buy a new HP Vectra PC in Europe after August 1, 1987, you will automatically receive this HP-HIL mouse and pointing device driver with your system. In the U.S. and other countries, you will receive the driver with new HP Vectra PCs after July 15, 1987.
- If your U.S. customers have an HP mouse, an HP Vectra PC with A.01.02 through A.01.05 ROMs, and have experienced any of the problems mentioned above in the section called What problems will it fix?, they can directly obtain the HP-HIL driver/Gallery/EMM Update files for a limited time. U.S. customers can call 800-FOR-HPPC and order P/N 5954-7686 at no charge — offer begins July 1. Europe and Intercon customers should call their local HP sales rep to obtain this driver.
- If you have experienced the MS Word problem with Extended/Expanded Memory mentioned above in the section called What won't it fix?, then you do not need this driver. Instead, order the new HP Vectra PC upgrade kit (45938A); this kit contains the ROM chip needed to fix this problem.

- If you have not experienced any of the problems mentioned in the What problems will it fix? section and do not have an HP-HIL pointing device, (i.e. HP mouse, HP graphics tablet) you do not need to obtain this driver.

*AutoCAD is a U.S. registered trademark of Autodesk, Inc.  
Microsoft® is a U.S. registered trademark of Microsoft Corp.*

## HP-IB cable: one part number

*Dennis Shak/PCBU*

Customers who need an HP-IB cable to connect peripherals, instruments, or accessories can now obtain the cables direct from Direct Marketing Division (DMK) by ordering P/N 10833A and 10833B. These part numbers from DMK will allow HP to consolidate two duplicate part numbers into one. As a result, the HP-IB cable (P/N 45529A and 45529B) will be discontinued on September 1, 1987, and will be available through DMK as listed below.

P/N	Description	U.S. list price
10833A	1-meter HP-IB cable	\$80
10833B	2-meter HP-IB cable	90

## EtherMail/150 discontinuance

*Dennis Shak/PCBU*

EtherMail/150 (P/N 45639A) software will be discontinued and removed from the November 1, 1987, Corporate Price List (CPL). For HP Touchscreen PC customers who need networking capabilities, the Officeshare ThinLAN solution is still available.

## HP 150/Touchscreen PC: price increase

Dennis Shak/PCBU

HP 150/Touchscreen PC product and accessory prices will increase by about 2 percent effective July 1, 1987. Please inform all affected customers.

P/N	Description	U.S. list price	
		Old	New
<i>HP 150 systems</i>			
45846A	HP 150 terminal to PC upgrade	\$ 200	\$ 204
45847A	PC kit, U.S.	355	365
45847AK	PC kit, Intercon-English	350	360
45847AX	PC kit, all others	355	365
45848A	Terminal kit	255	260
45849A	SPU	2,075	2,120
45850A	Terminal	2,330	2,380
45851A	SPU and PC kit, U.S.	2,430	2,480
45851AH	SPU and PC kit, Dutch	2,425	2,475
45851AK	SPU and PC kit, Intercon-English	2,425	2,475
45851AV	SPU and PC kit, Arab-English	2,380	2,630
45851AX	SPU and PC kit, all others	2,430	2,480
<i>HP 150 accessory cards</i>			
35723A	12-inch HP Touch accessory	495	505
45632A	384K memory accessory	365	375
45637A	256K language accessory	440	450
45640A	Ventel internal modem	475	485
45643A	Extended I/O accessory	175	181
45885A	8087 coprocessor	595	610
45890A	512K expanded memory accessory	695	710
45891A	256K EMB memory upgrade	180	184
45914A	HP-HIL interface card	155	158
45915A	HP-HIL/384K accessory	440	450
<i>HP 150 cables</i>			
13242D	Centronics cable	50	53
13242N	RS-232 modem cable	100	104
92241A	HP-HIL cable	20	21
92951VM	Videotex cable	80	82

P/N	Description	U.S. list price	
		Old	New
<i>HP 150 software tools</i>			
45310A	Basic Prog. Library	110	113
45311A	Icon Design System	99	102
45314A	HP-Tel VTX, Terminal	395	405
45435A	Programmer's Tools	295	305
45443A	Forms Master	295	305
45445D	MS-BASIC	300	310
45446D	MS-Compiled BASIC	395	405
45447D	MS-Pascal	350	360
45448A	MS-COBOL Compiler	750	765
45449D	MS-FORTRAN	395	405
45450D	MS-GW BASIC	395	405
45875A	MS-Windows	175	179
45919A	HP-HIL Touchscreen Tools	85	87
92248BA	BASIC cross-reference utility	49	50
<i>HP 150 documentation</i>			
45624A	MS-DOS users guide	50	53
45625A	Technical reference manual	60	62
45918A	HP-HIL technical reference manual	40	41

## Show and sell HP 2227B printer

Custis Cline/VCD

Introduced on May 1, the HP QuietJet Plus printer (2227B) with an HP-IB interface should be ordered into demo consignment right away.

In measurement applications, the HP 2227B version has the I/O most instruments require. In many technical applications, it has the HP-IB Amigo-mode commands that many systems demand by responding to parallel polling by identifying itself as an HP 2673A printer. And, in connections to the HP 150 or the HP-IB HP Vectra PCs, you can't show off the increased productivity that the 8K-RAM input buffer provides without it.

All sales offices with assigned-account, technical, or instrument districts should have the HP 2227B QuietJet Plus printer in consignment. Consign or order a unit today and show and sell tomorrow.

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## HP QuietJet Plus printers perfect for accounting

*Debbie Bell/VCD*

As a result of the HP QuietJet printer family success story contest, accounting departments within financial, as well as other institutions, emerged as a strong target market for HP QuietJet Plus printers. Sales of over 50 HP QuietJet Plus printers into accounting departments were reported.

Spreadsheets created with 1-2-3® from Lotus® were the most popular application used in this environment. Also mentioned were word processing, tax calculating, and auditing applications. A variety of hosts were found in the accounting departments including HP 150/Touchscreen PC, IBM PC/XT/AT, Kaypro, Compaq, HP Vectra PC, and the Toshiba 3100.

The purchase decision was most often made by the department manager, followed by the end user and purchasing agent. In addition to the HP QuietJet Plus printer, Epson, Okidata, and NEC printers were often considered. The features that helped to win the sale were quiet operation, price, compressed print, wide carriage, near-letter-quality print, speed, portability, light weight, ease of use, and HP's reputation for quality.

Next time you call on a customer, visit their accounting department to see if they could benefit from the HP QuietJet printer's quiet, quality print.

## HP QuietJet Series printers and DisplayWrite support

*Joan Schultz/VCD*

*For North America only*

DisplayWrite 2, 3, and 4 users now have an option to use HP QuietJet and QuietJet Plus printers with their software.

JetWriter is a unique software package that provides IBM DisplayWrite 2, 3, and 4 users with full-featured printing on the HP QuietJet printers.

All of DisplayWrite's special printing features are supported: underline, bolding, Sub and Super scripting, cursor draw, and scientific symbols.

JetWriter is easy to use as it works in the background to your software package. It also will help out with other software that may not have an HP QuietJet printer driver. JetWriter emulates all of the text modes of an IBM graphics printer. You can use it with almost any program that requires an IBM Graphics Printer.

JetWriter costs \$49 and can be purchased through Insight Development, Suite 140, 1024 Country Club Drive, Moraga, California 94556, 415-376-9451.

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## GENERAL

### Low-cost HP 3065ST widens board-test market

*Jim Ormsby/MTD*



On July 1, Manufacturing Test Division (MTD) introduced the first complete board-test system for under \$100,000 (U.S. list) — the HP 3065ST. This important product expands our addressable market to manufacturers who previously had concerns about system costs and programming difficulty. Even before announcement, several HP 3065STs have already been ordered, indicating strong sales potential for the new system.

The HP 3065ST has a surprisingly low cost while retaining many powerful features that make the HP 3065 family an industry leader. These features provide high yield tests for digital, analog, and mixed technology PC boards, and make programming these tests easier than ever.

Digital in-circuit tests can be performed at rates of up to 2.5 MHz for testing of SSI, MSI, and VLSI devices. Programming time is significantly reduced due to automatic generation of digital tests. These shorter times are possible because the software includes a library of high-quality tests of over 4,000 components, including 16- and 32-bit microprocessors.

Tests for advanced devices, such as application-specific ICs, are easier to provide, because HP's Pattern Capture Format allows easy transfer of test vectors from CAE

systems. In addition, HP CAD-VANTAGE custom interface software provides links to physical design systems for quick and efficient test fixture assembly.

The HP 3065ST implements HP's industry-standard analog in-circuit and functional test. The easy to use, but powerful, in-circuit program generator automatically creates 2, 3, 4, and 6-wire tests for analog components, and complete shorts and open tests for the PC board. The quality of these tests is proven by the fact that over 90 percent of them will not require any debugging. In addition, functional tests are easy to program because voltmeter and stimulus and hardware control is built right into the system's software.

As board technologies evolve, users require increased node count or advanced test capabilities from a system, without sacrificing earlier investments. In the standard HP 3065ST mainframe, users can expand to 1408 dedicated analog and 1056 dedicated digital test points for economy, or they can have 1320 fully hybrid test points for maximum scanner flexibility. In addition, the system is fully upward compatible with the rest of the HP 3065 family. Thus, programs developed today for the HP 3065ST can be transported without modification to 3065L, 3065X, and 3065AT systems as needs expand.

The HP 3065ST is the only low-cost system to offer a separate test development station as standard equipment. A multitasking environment allows users to develop tests without sacrificing production throughput on the test station. This capability dramatically improves the return on investment since programmers can work without slowing down the production test cycle. Furthermore, to simplify test development and maintenance, the HP 3065ST supports network software for transparent access to files and programs within the test area.

The new system is expected to have only minimal impact on the sales of HP 3065 CL/HL systems. Though the system does not have all the capabilities of the rest of the HP 3065 family, it is still very impressive by industry standards.

This, along with low price, will attract new users of ATE who are typically very cost conscious and are not sophisticated in ATE use. Another major customer group is manufacturers of high-volume, low-priced products. They may need a number of testers to meet volume requirements, but don't need digital functional test or sophisticated Q-STATS II functions.

In either case, these manufacturers are looking for an in-circuit tester to detect manufacturing defects. They have



defined their test-effectiveness goals, and will not require advanced test capabilities.

The HP 3065ST has the low-cost, high-test effectiveness, high reliability, and high-node count to answer these needs. Because of this, a great deal of industry interest is expected when the system debuts at the ATE & Instrumentation Show in Boston, Massachusetts.

Shipments are scheduled to begin in August. So, if you don't have your field training manual, contact your sales development engineer.

## FACTORY AUTOMATION

### **HP 2934A — printer of choice for HP Industrial Touch terminal**

*Kraig White/VCD*

With the recently introduced HP Industrial Touch terminal (3082A), HP has successfully enhanced its offering of rugged products for shop-floor applications. Because the 3082A can withstand extremely harsh environments, your customers will require a printer that can keep the pace. Which choice do you recommend? The HP 2934A from Vancouver Division (VCD).

The HP 2934A can tolerate a wide range of environmental factors, and is highly reliable. Operating from 0 to 55 degrees Centigrade, the HP 2934A easily handles the

3082A specs, provides a plug-compatible RS-232-C interface, and offers both bar coding and large-character print capabilities in the standard unit, further enhancing the HP 2934A as the solution for factory floor applications.

Because it handles up to six-part forms, it is a perfect fit for uses in manufacturing environments, shipping, receiving, and on the warehouse floor. The HP 2934A is also HP's lowest-cost factory data printer, offering features critical to factory applications.

#### **HP 2934A features**

- Operating temperature 0 to 55°C
- Reliability — 13,000 hours MTBF
- Five bar codes at no additional cost (Code 39, Interleaved 2 of 5, Industrial 2 of 5, Matrix 2 of 5, and user-defined codes)
- Large-character printing
- Multipart forms up to six parts
- Last-form tearoff
- Easy of use
- Speed is 200/67/40 CPS
- U.S. list price \$2,995

Remember the HP 2934A as a versatile, low-cost, plug-compatible solution to bundle with the HP Industrial Touch terminal for customer's needing impact printing for their transaction applications.

## HP 9000 Series 500 5.2 supports Ada

*Gretchen Snowden/TSBU*

Release 5.2 of HP-UX for the HP 9000 Series 500 is scheduled for July. The primary reason for this release is support of the upcoming Ada compiler. The Ada product consists of a validated compiler, library manager and utilities, and run-time libraries.

Other features in this release include:

- A new FORTRAN compiler with HP-15 support for Kanji
- Fsclean flag support in the file system
- Commands parity with HP 9000 Series 300 HP-UX Revision 5.2

Defect fixes:

- Bring <dvio.h> to HP 9000 Series 300 level
- Updating device file times

Kernel-specific command maintenance:

- vtune, monitor, ioconfig, and stackconfig

This release will maintain object code compatibility with previous releases. The product structure will also remain unchanged. Systems engineers and customers on support services will receive an update. Because of the compatibility with the 5.1 products, this release will simply be substituted for that revision within the current products about July 15.

This is the last scheduled release of HP-UX for the HP 9000 Series 500. As members of the HP-Precision Architecture family have become available, upgrades to these products have been offered to the installed base of HP 9000 Series 500 users. This provides an attractive upgrade path and lasting value to these long-time customers.

## HP EGS update

*Larry Dassow/FEO*

In June, the entire HP EGS product family was updated and a new product named High Performance HP EGS made its debut. A future product, HP EGS on the HP Vectra PC, was introduced and enthusiastically received at the Design Automation Conference in Miami, Florida, on June 29.

Standard HP EGS, P/N 74305A/R or 98305A/R Revision 2.3, now supports all HP 9000 Series 200 and 300 workstations, including Models 330 and 350. High Performance HP EGS, 74308A/R takes advantage of the floating point processor in Series 300 workstations to provide a 1½ to 2 times improvement in system performance. Customers who already have standard HP EGS may convert to the high-performance version by purchasing P/N 74308-17440 for \$2,000.

The HP EGS Photoplotter Utility, Revision 1.3, released in June, provides customers with a significant performance improvement; file size is reduced by up to ½ and photoplot time is proportional to file size.

HP EGS IGES Translator, Revision 2.0, supports the latest IGES 3.0 specification for all 2-D artwork entities defined in HP EGS. The product has been successfully tested with files from all the major CAD vendors. To get specific test result information, contact Fort Collins Engineering Operation (FEO) Technical Support, 303 or TELNET 229-4333, or HPFEO/SE.

HP TechWriter, Revision 1.3, to be released this summer, will support HP QuietJet and QuietJet Plus printers (HP 2227A/B), and HP 9000 Model 330/350 workstations. Also the code size has been reduced so that customers can call the TechWriter Editor from HP EGS.

Introduced at DAC, HP EGS on the HP Vectra PC will not be available for customer shipments until the end of this fiscal year. Performance is expected to be equivalent to that of an HP 9836C (HP 9000 Model 236C) workstation.

Revision 3.0 of HP EGS, due around October 1, will support the HP-UX Hierarchical File System (HFS) to the

extent that it will create or accept HFS files. HP EGS files and UNIX® operating system files from other HP-UX-based systems will be able to share the same HP-UX configured disc. To take advantage of this feature, customers will need to install a full Pascal 3.2 operating system.

These new HP EGS products may be ordered as follows.

P/N	Revision	Description
98305A/R	2.3	Standard HP EGS, including the Engineering Graphics, Schematic Drawing, Printed Circuit Layout, and Mechanical Drawing Modules.
74305A/R	2.3	Modular Standard HP EGS including the Engineering Graphics Module. Other modules are optional.
74306A/R	2.3	Add-on modules to standard HP EGS.
74307A/R	1.1	Hybrid Circuit Design Module.
74308A/R	2.3	High-Performance HP EGS including the Engineering Graphics Module. Other modules are optional.
74308-17440		Upgrade kit to convert a standard HP EGS system to a high-performance system.
98310A/R	1.3	Photoplotter and N/C Drill Utilities.
98311A/R	2.0	HP EGS IGES Translator.

*UNIX is a registered trademark of AT&T in the U.S. and other countries.*

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## Introducing HP Visor/HP-UX

*Dave Stevens/TCO*

HP Visor is a powerful, forms-driven query and report-writing tool for use with the HP SQL data model in ALLBASE/HP-UX. Designed for the nontechnical database user, HP Visor offers a friendly, menu-driven interface for accessing HP SQL data. HP Visor/HP-UX for the HP 9000 Series 800 family will be on the July 1 Corporate Price List.

HP Visor is comprised of three integrated modules: EZAccess, EZReport, and SQLAccess. The EZ modules guide less-sophisticated users through the task of abstracting and reporting information from a database without the need for prior knowledge of database structure and content. Interactive SQL (ISQL) included with ALLBASE/HP-UX is a powerful programmer query tool that does not always match up well with the needs of users who may not have a good understanding of database technology. With the introduction of HP Visor, there is now a complimentary tool to ISQL that can meet a broader range of end-use requirements.

HP Visor is designed to facilitate intramodule information exchange. Information generated through EZAccess can be easily fed to EZReport for terminal or hardcopy display. Users who prefer the speed and power of direct SQL commands for abstracting data, may still benefit from the report writing capabilities of HP Visor by using the SQLAccess module.

As an HP product, HP Visor is not new as it is already available on HP 3000s. HP Visor/HP-UX brings identical HP Visor/V functionality to the new HP 9000 Series 800 family running under HP-UX. It will broaden and enhance the appeal of HP's information management solution for HP 9000 Series 800 processors.

HP Visor/HP-UX does not offer standalone functionality — it works only with ALLBASE/HP-UX. As with ALLBASE, there are separate product numbers by processor.

P/N	HP 9000 processor	U.S. list price
92533A	Model 825	\$ 6,500
92534A	Model 840	10,000
92535A	Model 850	14,000

HP Visor is scheduled to begin shipping in early fall.

## ALLBASE/HP-UX customer training available

*Dave Stevens/TCO*

If you have been wondering how to train your customers on ALLBASE/HP-UX, there are now two courses available: 36217AN is for HP SQL and 36217AP is for HP IMAGE. These courses will be available through the education centers starting in July.

Later this fall, these courses will be supplemented with specific courses focused for database administrators, database engineers, application programmers, and interactive users. Watch for more information on the availability of these courses.



## GENERAL

### Redesigned Computer Peripherals Selection Guide available

*Hannah North/Peripherals Group Marketing*

The *Computer Peripherals Selection Guide* is a 32-page, color sales brochure with photos and descriptions of HP disc drives, tape drives, printers, plotters, scanners, and HP-IB extenders for systems and PCs. The brochure has been redesigned with a handsome new look for use by the HP direct sales force with their customers.

New products included are listed below.

- HP 9153/54B 20-Mbyte discs
- HP 7957/58A discs
- HP 7936/37H/XP discs
- HP 7979/80A tape drives
- HP LaserJet Series II printer
- HP ScanJet desktop scanner
- HP LaserJet 2000 printers
- HP DraftMaster plotters
- HP-IB extenders

A bulk distribution of the redesigned brochure has been sent to sales offices worldwide. Additional copies can be ordered by P/N 5954-9305 from the Literature Distribution Center (LDC) in Palo Alto, California, via HP Desk or COMSYS.

### Updated and available: PC Peripherals Price Guide

*Kathy Castillo/Peripherals Group Marketing*

*For the U.S. only*

The revised *PC Peripherals Price Guide* (P/N 5954-7872) contains information about product numbers, product descriptions, and suggested list prices.

This 24-page document, designed for domestic (U.S.) use, serves as a quick reference for the following peripheral products and their supplies and accessories:

- HP LaserJet printer family
- HP scanners
- HP QuietJet/ThinkJet printers
- HP workstation printers
- HP plotters
- HP data storage

The guide will be mailed in July with the *In-Touch* Update. If you are not on the *In-Touch* mailing list and would like a copy or need additional copies, contact your literature coordinator or order P/N 5954-7872 directly from the Literature Distribution Center (LDC) in Palo Alto, California.

The *PC Peripherals Price Guide* is updated quarterly by Peripherals Group Marketing.

### Updated HP Computer Peripherals Sales and Support Materials Guide

*Kathy Castillo/Peripherals Group Marketing*

The *Computer Peripherals Sales and Support Materials Guide* (P/N 5954-9301, for HP internal use only) supplies you with a current list of titles, part numbers, print dates, and descriptions of peripherals sales literature; demonstration aids; hardware and software set-up instructions; and supplies, accessories, and cable literature.

The *Sales and Support Materials Guide* includes information about literature and other materials you can use to sell and support an HP peripherals solution. The guide features an easy-to-use format that includes a table of contents on the front cover, blue cover graphics to differentiate it from other publications you may use, and a guide indicating where each piece is stocked with detailed ordering information on the back page.

Peripherals Group Marketing sent copies of this updated publication to worldwide sales reps, systems engineers,

and customer engineers in the U.S., Intercon, and Europe in March. The guide is stocked at the Literature Distribution Center (LDC) in Palo Alto, California, P/N 5954-9301.

<i>Computer Peripherals Sales and Support Materials Guide</i> (For HP Internal Use Only) P/N 5954-9301	
<i>Peripherals covered</i>	<i>Pieces listed</i>
HP printers	Flyers
HP scanners	Sales brochures
HP plotters	Data sheets
HP data storage	Application notes
	Output samples
	Demo discs
	Ad slicks
	Sales guides
	Sales tool kits
	Supplies catalogs
	Step-by-step connection instructions



*The HP 4972A LAN protocol analyzer offers extensive measurement capabilities under extreme network-loading conditions.*

chrome display, 20-Mbyte Winchester disc, microfloppy, and high-resolution composite video output for a 25-Khz external monitor.

The HP 4972A offers these unique contributions to the IEEE 802.3/Ethernet test and management market:

- Extensive statistical measurement capability for managing network performance
  - Statistical testing over periods as long as a day, week, or month.
  - Automatic test sequencing with branching based on time or network events.
  - Exact performance information about individual nodes and their relationship to network traffic.
  - Statistical measurements of user-defined parameters.
- Measurement of network access time.
- Measurement of node response time.
- Traffic generation for creating test scenarios.
- Extensive data filtering and capturing capabilities.
- User-definable frame displays.
- Softkey-guided programming language for real time or post-processing of frames.

The most significant contribution is that all of these measurements may be made under extreme network-loading conditions.

The HP 4972A is slightly smaller than the HP 4955A LAN protocol analyzer and weighs approximately 45

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**HP-IB cable: one part number** 20

## NETWORKS

### Announcing the HP 4972A LAN protocol analyzer

*Bill Marbaker/CTD*

On June 15, HP announced the 4972A transportable LAN protocol analyzer for IEEE 802.3 and Ethernet local area networks. The HP 4972A combines all the testing capabilities of the HP 4971S LAN protocol analyzer in a single package.

Standard equipment on the HP 4972A includes LAN performance analysis application software, a 9-inch mono-

pounds. The analyzer is listed on the July 1, 1987 Corporate Price List (CPL).

P/N	Description	U.S. list price
4972A	LAN Protocol Analyzer	\$17,000
Opt. 001	Adds RGB color outputs	1,500
Opt. 002	Adds remote interface (RS-232/V.35)	600
Opt. 004	Deletes LAN performance analysis application	-1,500
Opt. 908	Adds rack mount	30

## NS 3000/V – the alternative to DS

*Diane Leeds/IND*

NS 3000/V links and services are an important part of HP's AdvanceNet strategy and you should sell these products to new customers, plus encourage our installed base to migrate to this family of networking products developed in accordance with industry standards. With the introduction of NS Point-to-Point 3000/V link in March, HP can now provide a remote as well as local-communications alternative to DS 3000.

One part of the cost-effective alternative to DS is NS 3000/V Network Services (32344A/R). Since NS Network Services contains, as a subset, all of the DS Network Services functionality, there are minimal changes needed in programs or job streams. This also means that all of the DS link products are compatible with NS 3000/V Network Services. And because NS 3000/V Network Services provides full communication capabilities with both DS Network Services (32185A/R) and DS/3000 (32189A/R), customers can have a mixture of these services on their network. Bottom line, all customer orders for nodes on both new and existing networks should include NS 3000/V Network Services.

NS Point-to-Point 3000/V Network Link (30284A/30285A) is another piece of the solution and provides remote-communications capabilities with new features not available on DS Point-to-Point, such as transparent routing and NetIPC for the development of distributed applications. In addition, NS Point-to-Point offers up to a 35 percent improvement in throughput over DS Point-to-Point. (See the May issue of *Performance News Notes* for details.) NS Point-to-Point 3000/V Network Link is shipping now.

For local communication capabilities, customers should order HP ThinLAN (30240A) or one of HP's other local area network solutions. Customers will again see an improvement in performance over that of DS Point-to-Point Direct Connect (30270A).

In previous documentation, it had been stated that there was a requirement that an NS link must be installed on a system in order to run NS 3000/V Network Services (32344A/R). This requirement has now been removed with UB-Delta-3 MIT. Therefore, customers can now solely run DS links on a CPU on which NS 3000/V Network Services is installed. So, for example, customers desiring X.25 communications should order NS 3000/V Network Services (32344A/R) along with the DS X.25 link (32187A).

### DS 3000 price increase

Due to the many advantages of the NS family of networking products, effective July 1, 1987, prices on DS Network Services (P/N 32185A/R) and DS Point-to-Point links (30270A/30271A) will be increased by 20 percent. The new prices are as follows:

P/N	Description	New prices	
		U.S.	Factory base
32185A	DS 3000 Network Services		
Opt. 310	MICRO 3000, 3000XE	\$2,400	\$2,400
Opt. 315	Upgrade to Series 39-70	4,200	4,200
Opt. 320	Series 39-70	6,600	6,600
32185R	DS 3000 Network Services RTC		
Opt. 310	MICRO 3000, 3000XE	1,680	1,680
Opt. 315	Upgrade to Series 39-70	2,940	2,940
Opt. 320	Series 39-70	4,620	4,620
30270A	DS PT-PT Direct Connect		
Opt. 135	MICRO 3000, high speed	3,630	3,605
Opt. 145	MICRO 3000, connect to HP 1000	3,630	3,605
Opt. 190	MICRO 3000, software only	2,520	2,520
Opt. 335	Series 33-42, 52, high speed	6,900	6,850
Opt. 345	Series 33-42, 52, connect to HP 1000	6,900	6,850
Opt. 390	Series 33-42, 52, software only	4,830	4,830
Opt. 435	Series 48-70, high speed	6,900	6,850
Opt. 445	Series 48-70, connect to HP 1000	6,900	6,850
Opt. 490	Series 48-70, software only	4,830	4,830
30271A	DS PT-PT Modem Connect		
Opt. 110	MICRO 3000, sync modem	3,630	3,605
Opt. 120	MICRO 3000, V.35	3,630	3,605
Opt. 125	MICRO 3000, auto-call	3,630	3,605
Opt. 190	MICRO 3000, software only	2,520	2,520
Opt. 310	Series 33-42, 52, sync modem	6,900	6,850
Opt. 315	Series 33-42, 52, X.21	6,900	6,850
Opt. 320	Series 33-42, 52, V.35	6,900	6,850
Opt. 325	Series 33-42, 52, auto-call	6,900	6,850
Opt. 390	Series 33-42, 52, software only	4,830	4,830
Opt. 410	Series 48-70, sync modem	6,900	6,850
Opt. 415	Series 48-70, X.21	6,900	6,850
Opt. 420	Series 48-70, V.35	6,900	6,850
Opt. 425	Series 48-70, auto-call	6,900	6,850
Opt. 490	Series 48-70, software only	4,830	4,830

## DS to NS Point-to-Point promotion update

Diane Leeds/IND

In conjunction with the introduction of the NS Point-to-Point 3000/V Network link, existing users of DS Point-to-Point were offered the opportunity to upgrade their link software to NS at no charge. This is a reminder that this free upgrade expires July 31, 1987. Many of you have had questions as to how to order this free upgrade for your customers. What follows is an ordering example for a customer currently running DS Point-to-Point and DS Network Services on an HP 3000 Series 70 computer.

### Order

P/N	Description	U.S. list price
30285A	NS Point-to-Point 3000/V Link	
Opt. D50	Upgrade from DS 3000 Point-to-Point	\$ 0
<b>Plus</b>		
32344A	NS 3000/V Network Services	
Opt. 321	Upgrade from DS Network Services	<u>2,800</u>
	Total cost	2,800

Customers currently running DS Network Services will need to upgrade to NS 3000/V Network Services as well as upgrading the link software. This free link upgrade represents a savings of \$4,025 per link to your customer. (\$4,025 is the price of ordering the software-only option on NS Point-to-Point). But remember, this free upgrade will expire on July 31, 1987, so get those orders in today.

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- HP 3000 Series 950 wide-area networking and IBM SNA communications — correction 13
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## MASS STORAGE

## Winning against EMC<sup>2</sup> update

Melody Armstrong and Cindy Mueller/DMD

In the February mailing of *Megabytes Plus*, Disc Memory Division (DMD) provided information on the latest plug-compatible disc manufacturer, EMC<sup>2</sup>. The Winning Against EMC<sup>2</sup> document contained ample information on effectively competing with them. At the time the document was written, the EMC<sup>2</sup> Falcon drives contained Toshiba mechanisms available in 390 or 780 Mbytes. Now the drives contain NEC mechanisms available in 406 or 812 Mbytes. The box below compares the HP 7936 and 7937 disc drives with the new EMC<sup>2</sup> drives. This information replaces the product information in your Winning Against EMC<sup>2</sup> document.

	HP HP 7937H/XP	EMC <sup>2</sup> Falcon II	HP HP 7936H/XP	EMC <sup>2</sup> Falcon I
Capacity (Mbytes)	571	812	307	406
U.S. list price	\$17,600/19,600	\$23,400	\$13,500/15,500	\$12,900
\$/Mbyte	\$31/34	\$28	\$44/50	\$31
Maintenance (SMMC)	\$50/52	\$65	\$42/44	\$65
Footprint	2/cabinet or 8/cabinet*	2/cabinet	2/cabinet or 8/cabinet*	4/cabinet
Mbytes/ft <sup>2</sup>	354 or 589*	309	192 or 316*	316
Average access time (seek + latency)	28.8/9.9	23.3	28.8/9.9	23.3
Cache	NA/2-Mbytes read + 4-Kbytes write	4-Mbytes read	NA/2-Mbytes read + 4-Kbytes write	4-Mbytes read
I/Os per second	32/66	48	32/66	48
Controller processor	Motorola 68000	Motorola 68000	Motorola 68000	Motorola 68000
MTBF (hours)	50,000	up to 50,000	50,000	up to 30,000
Mechanism vendor	HP	NEC	HP	NEC

\*The 8-Pack is currently scheduled to begin shipments in Q1 FY88.

Recently, DMD had the opportunity to perform diagnostic and performance testing on the EMC<sup>2</sup> Falcon II disc drives. In a continuing effort to provide you with competitive information needed to win against EMC<sup>2</sup>, the following summarizes the key results of these tests.

*continued on next page*



## Performance

EMC<sup>2</sup> claims that the Falcon Series is the first family of disc drive subsystems that outperforms HP's drives in every respect. The Falcon II drive does outperform the HP 7933H and HP 7937H. However, this is not a realistic or fair comparison since the HP 7933H and HP 7937H do not have cache and the EMC<sup>2</sup> Falcon drives do. Comparing the performance of the HP 7937XP to that of the EMC<sup>2</sup> Falcon II drives would be more appropriate. In this comparison, the performance testing indicates that the HP 7937XP emerges the winner:

- Using a series of performance tests that duplicate actual disc I/O patterns from typical HP 3000 customer environments, the HP 7937XP outperforms the Falcon II drive by approximately 18 to 22 percent on an HP 3000 Series 70.
- The EMC<sup>2</sup> drives incur a significant amount of firmware overhead that causes a dramatic performance degradation. On average, all reads and writes to EMC<sup>2</sup> drives incur over 4 milliseconds of firmware overhead. In fact, firmware overhead has actually been measured as high as 7 milliseconds on some transactions. The HP 7937XP firmware overhead compares quite favorably at an average of 1.2 ms for all reads and writes.
- The EMC<sup>2</sup> drives do not have write cache and cannot offer immediate response for writes. In comparison, the HP 7937XP contains a 4096 byte, single transaction, non-volatile write cache that allows immediate response to the host for all writes of 4096 bytes or less. (This write cache comes equipped with a battery backup with a life span of approximately 10 years.) The HP 7937 XP drives will take less time to process most writes than the EMC<sup>2</sup> drives. For example, the HP 7937XP can process a 1024-byte write in approximately 3.2 ms regardless of the seek and latency. On the other hand, the EMC<sup>2</sup> drives take approximately 28.6 ms to process a 1024-byte write (assuming random seeks).

## Channel utilization

EMC<sup>2</sup> also claims that its drives optimize channel utilization. The theory behind this is that by waiting to request the channel for a data transfer until after the data is buffered, the most efficient use of the channel will be achieved. Testing has revealed that the EMC<sup>2</sup> drives may actually hold the channel for more than one full latency before starting the transfer. This implies the drives will require more channel time to complete transfers. This can degrade performance especially in multiple drive-per-channel configurations.

## Diagnostics

The EMC<sup>2</sup> drives do not fully support CS80UTIL. There are several functions within CS80UTIL that are not supported and several functions that are partially supported. Those functions that cannot be executed will return an error message (this is noted in the EMC<sup>2</sup> disc drive installation manual).

- All controller cache commands are not supported. This means the user has no way to disable caching or to view cache statistics to determine how well cache is performing.
- The most valuable troubleshooting features are not supported, i.e., Random Write then Read Error Rate Test, Random Read Only Error Rate Test.
- In general, the use of CS80UTIL with EMC<sup>2</sup> discs is unpredictable and could result in data integrity problems. There is no guarantee that attempts to utilize various diagnostic functions will not result in problems.

## Predictive support

EMC<sup>2</sup> is making claims that its drives are supported by the Predictive Support software. This conclusion is based on the ability of Predictive Support to access the EMC<sup>2</sup> drives and transmit any error messages to the Response Center without causing any problems (processes do not abort and customer data is not corrupted). This, however, is not a valid conclusion. The main purpose of Predictive Support is to assist Hewlett-Packard with early identification of potential hardware problems. In order to do this, HP must be able to examine and interpret any Predictive messages received. Due to the fact that EMC<sup>2</sup> uses a unique method of error coding, the Predictive software cannot process any error messages generated from these drives. Even if the error coding was identical to HP's, the interpretation of these errors is based on the understanding and history of HP products. Unless EMC<sup>2</sup> duplicates HP drives completely, the thresholds for HP discs will not apply to EMC<sup>2</sup> discs. Thus, the Predictive Support messages generated from EMC<sup>2</sup> drives will not be meaningful and probably misleading. The customer loses the true value of Predictive Support.

In addition, the Predictive Support software cannot distinguish the difference between EMC<sup>2</sup> drives and HP drives because the EMC<sup>2</sup> drives are configured as HP 7933/35 drives. This means that HP may spend valuable resources and incur support costs trying to solve a perceived problem with an HP supported device only to discover that the device is foreign and not covered by the

support contract. Also, there is no guarantee that any normal diagnostic activity performed for these drives, as a result of the examination of error messages, will be successful.

## Functionality

The EMC<sup>2</sup> drives are advertised as being fully HP plug compatible. When configured on an HP 3000 they resemble an HP 7933/35XP with additional capacity. Most system activities function properly with the EMC<sup>2</sup> drives. However, the HP 3000 SOFTDUMP function is not supported. This means any system that utilizes an EMC<sup>2</sup> drive as the system disc will not be able to perform memory dumps. This limits the use of these drives as system discs (LDEV 1).

## Cabling

The EMC<sup>2</sup> Falcon II consists of two 406-Mbyte NEC mechanisms that sit side by side in a standard 19-inch cabinet. The controller cards are located at the top of the cabinet. There is approximately three to four feet of internal ribbon cable running between the HP-IB connector at the bottom of the EMC<sup>2</sup> cabinet and the controller card at the top of the cabinet. This needs to be taken into consideration when configuring these devices for maximum cable lengths. In comparison, the HP 7937XP does not have any internal cabling. This means the customer can take advantage of maximum cable lengths without making adjustments for internal cabling.

## Future testing

DMD has ordered two EMC<sup>2</sup> Falcon II disc drives and will perform additional performance and functionality testing upon receipt. More competitive information will be provided in the future.

## Conclusion

Testing clearly indicates that many of the claims made by EMC<sup>2</sup> are unfounded. The performance of the HP 7937XP consistently exceeds that of the EMC<sup>2</sup> Falcon II in typical HP 3000 environments. In addition, the diagnostic and predictive support utilities offered by HP are not fully supported. Unless EMC<sup>2</sup> offers comparable utilities, key troubleshooting tools are not available.

It is also important to remember that HP mass storage offers more than just megabytes. Additional benefits go beyond the basic hardware features of the products. HP is committed to provide customers with a wide variety of solutions and innovations in technology while protecting the investment of the customer and responding to customer needs.

## Disc drive trade-in success stories

*Margo Whale/DMD*

Sales reps in many locations across the U.S. are finding success in selling HP 7937 disc drives with HP 7920/25 and 7933/35 trade-in credits.

One Southern Region account owns 53 HP 7933H disc drives. Barbara Pace was able to close a sale for \$142,000 in just two strategic sales calls. Barbara presented the benefits of the HP 7937 to the president in one call and to the vice-president of MIS in another. Barbara sold the concept of working through the cost justification worksheet from Disc Memory Division (DMD). The account worked through the numbers and came up with the economic justification in payback due to maintenance, power, and air conditioning savings. This resulted in a trade in of 21 HP 7933s to 14 HP 7937s.

Another major account rep used a different, but equally effective, approach to gain over 50 trade ins. After receiving purchased evaluation units, the sales rep organized a technical seminar. The seminar objective was to accelerate the technical customers familiarity with the HP 7937. The local customer engineers presented a technical overview and a hands-on demonstration of the HP 7937. Finally, a short video tape by Disc Memory Division (DMD) management described how the HP 7937 was developed, manufactured, and tested for reliability. The benefits of reliability and cost savings convinced the account to move to the HP 7937 product.

Sales reps are finding it even easier to justify trade ins of HP 7920s and 7925s to their customers. The present trade-in credits allow trade ins on the basis of three HP 7920/25s to one HP 7937, and offer a payback in less than two years in many cases.

The tools to obtain these results are readily available to you. Look in your February and July *Megabytes Plus* mailings for customer letters, cost justification worksheets, and slide presentation materials; or request these materials from the Peripheral Sales Center at 208-257-8907. Copies of the videotape "Reliability by Design — A DMD Success Story," were provided to each NPT site (worldwide) last fall. Additional copies can be ordered from Marion Holtzman, Application Support Division (ASD), 415 or TELNET 691-5160.

## Upgrade credits extended for disc drives

Mike Gordon/DMD

Disc Memory Division (DMD) has extended the upgrade credits on the HP 7920/25 and 7933/35 disc drives toward the highly successful and reliable HP 7936/37 disc drives. Now your customer can take advantage of the trade-in credits through October 31, 1987.

By using the trade-in worksheet supplied in the February issue of *Megabytes Plus*, you and your customer can justify the cost of upgrading to the HP 7936/37. Because of its low cost of ownership, the HP 7936/37's purchase cost can be recovered in less than 36 months.

The return credits are listed below (good through October 31).

Product	Credit
HP 7920 MN	\$ 800
HP 7920 SN	600
HP 7925 MN	1,200
HP 7925 SN	1,000
HP 7933/35 HN	4,000
HP 7933/35 XN	4,500

Your customer may still trade in up to three HP 7933/35s toward two HP 7936/37 disc drives, or up to three HP 7920/25s toward one HP 7936/37 disc drive.

Combine this return credit extension with the new HP 7974/78 return credit offer on tape drives (good toward the new HP 7979/80) to show your customers there is no better time than now to trade up their peripherals.

## HP 9121D/S disc drives discontinued

Ed Knudson/GLD

Both the HP 9121D and HP 9121S, single-sided floppy drives, will be taken off the Corporate Price List (CPL) effective November 1, 1987. Customers interested in a floppy drive will have the HP 9122D/S dual-sided drives as an alternative. Both the HP 9122D and HP 9122S are capable of reading single-sided media. Questions and/or concerns will be addressed by Barb Bennett-Brown at 303-350-4374.

## Disc drive consignment sale extended

Jude Garzolini/DMD

*For the U.S. only*

The consignment inventory sale is being extended through August 31, 1987. Do not miss the chance to pick up HP disc drives at a good price. To obtain a copy of the details, please contact Jude Garzolini at HP Desk 4800 or telephone 208 or TELNET 323-3424.

## PRINTERS

## 50Hz HP Tempest LaserJet printers now available

Jenny Gispem-Schultz/Federal Systems Operation

*For U.S., Canada, Europe, Australia, New Zealand*

Two new versions of the HP Tempest LaserJet printer — the 220V/50Hz and the 240V/50Hz — are now available. The 2686TB and 2686TU, respectively, are intended for use by the U.S. Government abroad, the governments of NATO countries, and those of Australia and New Zealand. The 50Hz printers are available in both HP Tempest LaserJet printer and HP Tempest LaserJet PLUS printer versions. Adding these to the 115V/60Hz U.S. versions of the printer, the product line now offers nine possible printer configurations for use in the U.S. and abroad. The HP Tempest LaserJet and LaserJet PLUS printers are listed on the U.S. Government Preferred Products List.

Description	Voltage/frequencies		
	2686TA	2686TB	2686TU
Tempest LaserJet printer (Serial interface)	115V/60Hz	220V/50Hz	240V/50Hz
Tempest LaserJet PLUS printer			
Opt. 200 (Serial interface)	115V/60Hz	220V/50Hz	240V/50Hz
Opt. 210 (Parallel interface)	115V/60Hz	220V/50Hz	240V/50Hz

Special cables and Tempest-compatible font cartridges must be used in order to ensure the integrity of your customer's system. These are available from HP and are on the Corporate Price List (CPL). Please note that

these cables do not correspond to the commercial HP LaserJet printer cables and cable numbers — care should be used in ordering them.

For ordering instructions and more information on these products, please call the following HP numbers. In the U.S. and Canada, the number is 408-447-1181 at the Sales Response Center; for Australia, the number is 3-895-2805; and in Europe, the number is (49) 7031-14-2503 at the Peripherals Marketing Centre, Böblingen.

## New HP Tempest LaserJet printer datasheet

*Jenny Gispfen-Schultz/Federal Systems Operation*

*For U.S., Canada, Europe, Australia, New Zealand*

The HP Tempest LaserJet printer family datasheet has been updated to include information on the 50Hz versions of the HP Tempest LaserJet printer family as well as the 60Hz domestic printers. These products, the 2686TB (220V/50Hz) and the 2686TU (240V/50Hz), are intended for use by the U.S. Government abroad, the governments of NATO countries, and those of Australia and New Zealand.

The new datasheet also includes an enhanced section on cables. Because Tempest-compatible cables are not the same as those used with the commercial LaserJet printer, we think you'll find this information useful in determining your customer's cable requirements.

The datasheet is available through your literature coordinator or can be ordered from the Literature Distribution Center (LDC) in Palo Alto, California, using P/N 5954-9482.

## SQC makes a difference at Vancouver Division

*Darlene Routledge/VCD*

HP 293X printers have an excellent reputation for being reliable, and we at Vancouver Division (VCD) are continually working hard to improve that reliability. Using simple statistical quality control (SQC) tools, such as control charts and Pareto charts, the HP 293X final assembly team was able to reduce the number of defects by two-thirds in 10 months.

A majority of defects in production are caused by the process itself, so finding the cause results in an overall improvement in reliability. The production workers themselves own the total quality control (TQC) process. They are motivated to constantly improve product quality and ship the best possible products to your customers. SQC tools help provide continuous feedback which is key in driving down defect rates.

When you need to recommend a reliable printer for your customers, be sure to consider the HP 2932A and 2934A printers.

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## Announcing the HP 4972A LAN protocol analyzer

Extensive measurement capabilities  
under extreme network-loading conditions

