Computer News

The HP 2631G #200 Factory Data Printer Completes the Data Capture System

Computer News

On the Cover

Factory Data Printer provides variety of features to meet the distributed printing needs of data capture systems. Article begins on page 26.

Sections

HP Computer Museum
www.hpmuseum.net

Computer Marketing

CSD

All CEs, SEs Now Look to Support Update
By Ted Tazeau/CSD

At the Software Support Council meeting, held at Palo Alto December 8 '80, the need for an SEO field communication vehicle was discussed. It was decided to use *Support Update*, to reach the SEO, in part because everyone has already heard of the publication. This decision enlarges the scope and charter of *Support Update*, originally chartered for the CEO. This publication should now be the major source of timely information for CEs and SEs, whereas *Computer News* serves the sales organization.

Articles of timely and technical value to the SEO will be reported in *Support Update* in the same sections already set up, with a "Software" head behind each section for software articles. It is not planned to resume a "Closed Loop" column or any listing similar to bug listings. Work around articles are seen as benefiting both the SEO and CEO.

If you are in the SEO factory or field organizations you will again be receiving *Support Update*, but only if you are listed on the CMG ROSTER data base. Francine Tarmina, Computer Marketing Group, (408) 996-9383 ext. 278, handles ROSTER inquiries.

SE Marketing at CSD
By David Carver/CSD

A separate marketing department at CSD has been formed to build on the success of the SEO in making software support even more of a competitive advantage. Our tactical plan and organization for '81 are contained in the CSD Marketing Plan, available from your District Sales Manager. We work with the SEO and the Software Distribution Center to continue to improve the quality of our services, expand our product offering to better meet our customers' needs, and increase the marketing focus for our business.

Your Sales Development contact is in Olen Morain's group in CE Marketing at CSD. We're ready to help with customer visits, specials, and any problems you encounter regarding our services. We need your input to achieve our goals, so please call on us any time.

CSO

New Computer Documentation Index
By Dan Brumm/CSO

An extremely useful reference (that will soon be in the field for HP and customer use), the Spring 1981 *Computer Documentation Index*, includes manuals, binders and a variety of non-promotional publications for HP computer systems (from the HP-85 through the HP 3000, and for terminals and peripherals, including plotters).

The Index is arranged "By Subject (model number)", which will be most useful to customers and HP people searching for documentation items, but not knowing the specific Part Number; and a "Numerical" listing which will provide a fast way to find documentation when the Part Number is already known. Both listings include description, print date, latest update, and (US version only) the current list price.

Computer Supplies Operation, which stocks all documentation for regular trade sales, will be distributing this index this month. Copies will automatically be sent to all individuals in the SE organization. In addition, reference copies will be distributed to all SR/CE District (and up) Managers, and to Tech Center and Order Processing Managers.

Additional copies will be available on a controlled basis from the Corporate Literature Center: US order 5953-2460D; all others order 5953-2460.

Order Supplies by Credit Card
By Larry Curfman/CSO

US customers ordering supplies and accessories from Computer Supplies Operation directly by toll-free phone may now pay for their purchases by credit card — American Express, Master Card or Visa.

CSO's new credit card program provides two key contributions: improved customer service and better accounts receivable control. Most importantly, in keeping with CSO's high service level objectives, honoring credit cards offers customers both the case of obtaining credit (without risk to HP) and an efficient method of doing business with HP. (Some customers will find it easier to purchase supplies with their own credit card, for reimbursement by their company from petty cash — rather than wait for their company to issue a purchase order.)

Also, credit card sales allow CSO to take on more responsibility for clearing credit before we commit HP resources, thus freeing field credit personnel to handle more important (higher-ticket) credit and collection opportunities.

Remember, our Direct Order phone lines for US customer use. (800) 538-8787; and in California, (408) 738-4133.

DSD

L-Series Applications

By Scott Spielman/DSD

Through our conversations with you in the field, we have found that customers have bought the L-Series for varying reasons. Four key reasons are:

- Software features–languages, RTE operating systems, subsystems

- I/O capabilities–DMA/channel, I/O bandwidth

- Traditional HP strengths–service, support reliability

- Single vendor solution

You have also told us that many successful sales stories are based on the selling of "applications" *and* solutions. Important to these successes has been an early definition of the customer's problem, and subsequently an L-Series solution that simultaneously solves the problem and satisfies the customer's specific needs, whether in a micro- or minicomputer environment.

Following is an actual industrial automation application. We welcome your suggestions for other application articles. Please contact your DSD sales development representative with comments.

The Application

This long-term HP customer is heavily involved in the defense electronics industry and manufactures radar equipment for the US Government. Recently, it made a commitment to automation in a major effort to improve productivity. One objective is to automate as much of its production processes as possible, and a number of areas for automation improvement have been identified.

In one of these areas, the company has connected an L-Series computer to a previously purchased Model 45 in a laser-assisted manufacturing operation (See Figure 1). This operation aligns a drill to drill holes and make
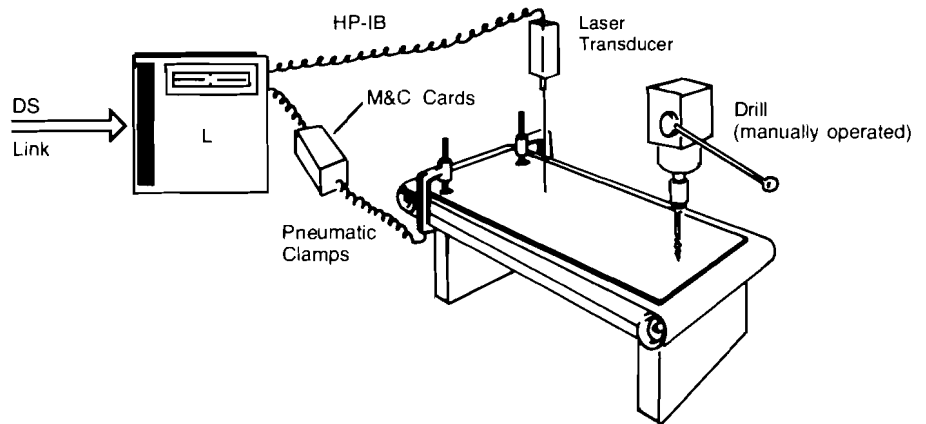
Figure 1

indentations in metal stock. Subsequently, the metal stock becomes a component of radar equipment.

Location data is downloaded to the "L" through a DS link. Employing the downloaded data, the L then controls movement of metal parts through laser transducers and pneumatic clamps. The laser transducer is an HP product (5501A) which monitors six axes of rotation of the metal parts.

Additionally, this application allows monitoring of both raw materials and work-in-process inventory through data bases on the Model 45.
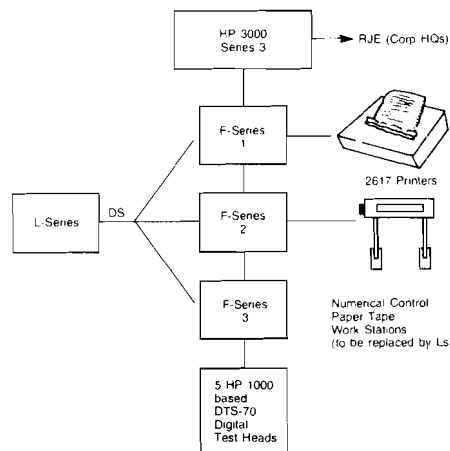
Figure 2

Configuration

This manufacturing operation is only a part of a large system configuration which includes three Model 45s with common access to eight 7920 disc drives, three 2617 line printers, and two numerical-control paper tape workstations. In addition, the 45s are connected to an HP 3000 Series III. (See Figure 2).

Deciding Factors

The L, which replaces a less sophisticated TI programmable controller that lacks an HP-IB interface, brings a unique package of computer capabilities to the factory floor that the customer was unable to purchase from competing firms. The customer selected the L because:

1. HP is a leader in distributed systems. DS provides the customer with capabilities to:
   - Apply data base management to its manufacturing process. In this application, part of the manufacturing data is downloaded to the L from remote discs.
   - Protect discs and printers from harsh factory environments. Since only the CPU and terminal are on the factory floor, the system configuration minimizes equipment exposure to metallic particles.

2. HP provides a single vendor solution (systems and instruments).

3. The L minimizes servicing time. Modular boards provide quick access once self-test and diagnostics pinpoint a problem.

4. HP is a reliability and support leader. Our service is valued.

5. The customer desired a quick, inexpensive solution to his factory automation problems. The L and its DS capabilities solved their problems, while providing state-of-the art software capabilities at a low price.

Sales Process

This sale resulted primarily from our long-term commitment to solving the customer's problems. However, short-term strategies also contributed. The SRs involved with the customer over the previous five years adhered to a four-step strategy: 1. They identified specific automation problems. 2. They assessed the feasibility of solving the problems by using HP products and strategies. 3. They solved each problem as a specific node. 4. And finally, they pursued a plan to link the nodes together in a systems network.

An important aspect was the commitment to educating the customer on networking capabilities of HP computer systems, e.g. the SR provided a continuous flow of information to the customer regarding DS enhancements and HP's ability to maintain compatibility of its computers. Customer visits to the factory every 6-9 months were also effective in communicating HP's commitment to the customer's success, and affording HP a better understanding of the customer's needs.

The networking and factory automation capabilities in this operation provide an excellent basis for expansion into other automation and testing areas. Possibilities include using the L in a PC board manufacturing facility to direct numerical control machines and control material handling

equipment; and networking the engineering department to manufacturing to enhance inventory management by encouraging engineers to specify parts that are common; offer potential for improved engineering products through interactive design processes between the two departments; and facilitate engineering changes.
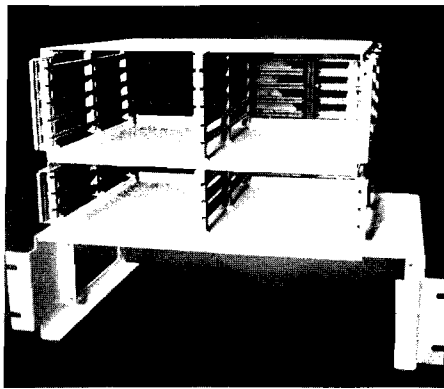
16-Slot Card Cage for the "L"
By Scott Spielman/DSD

To satisfy requests from our customers, DSD has developed a 16-slot card cage for the L-Series. The L-Series now offers five, 10 and 16-slot card cages. Typical customers will be OEMs who need expanded I/O capabilities, plan to imbed the card cage in their systems, and do not wish to design their own backplanes.

The card-cage product is a kit and includes the L-Series power supply frame (shown below the 16-slot card cage in the photo). This product is identical to the card cage/power supply configuration in the Model 9 or 10. Kit assembly takes about 35 minutes and only requires the use of a screwdriver and rivet gun.

The details: Slots — 16; price — $940; availability — 4-6 weeks; dimensions (including power supply frame) — 19 by 12¼ by 12 inches); order number — 12031A; mounting — can be supported below power supply frame; cooling — requirement similar to other cages (see L-product data book). For further info, contact DSD sales development.

"L" Delivery Improved
By Dave Yewell/DSD

In response to your needs, we have taken steps to provide better delivery on the L-Series, both boxes and systems. Beginning February 1, the 2145A and B and the 2146A and B will be on 8-week delivery, and the 2103L and 2103LK will show four weeks. Sales Development can improve this in special situations — big deals and especially new OEMs. By the way, December was a record month for L sales. Thanks a lot!

New M, E, F-Series Power Supply
By Rocky Gunderson/DSD

Beginning this month, all M, E, F-Series computers and extenders (2108M, 2112M, 2109E, 2113E, 2111F, 2117F, 12979B, 12990B) will be shipped with a new release of the 'Rev B' power supply. This change incorporates several design improvements which have resulted in increased power supply reliability.

In general, the three power supply boards have been redesigned, as have the power transformer and several of the power supply's internal components. These changes have led to: significantly improved reliability; reduced assembly time; fewer adjustments; and improved performance.

Customers may choose to replace their old power supplies with the new, improved version. The field service organization will replace defective power supplies in the field with the new power supply (for customers on support services or requesting service). Thus, power supply improvements will be experienced by many current customers as well as all future customers.

The power supply change and support strategy have been designed for ease of implementation. Current HP customers will be affected by the changeover in the following ways:

- *Customer on HP Support Contract:* will see a slight increase in the Monthly Maintenance Charge (MMC) of the computer. The lower failure rate of the new power supply should increase customer satisfaction. The new power supply is backward compatible, so any 'Rev B' power supply may be replaced with the new power supply in order to take advantage of the improved reliability and performance.

- *Customer Who Performs Own Repair via CSD Exchange Program:* (i.e., repairs the computer by exchanging the power supply as a complete unit and exchanging the unit through the local HP office.) These customers will see an increase in the Net Exchange Price (NEP) of the power supply assembly. For the increased cost the customer will receive the new improved power supply. Customers must plan to purchase the new power supply assemblies from the Corporate Parts Center (CPC) or the Parts Center Europe (PCE) for their support of any computers with serial prefix of 2102 or greater.

- *Customer Who Performs Own Repair, Stocking Own Subassemblies:* These customers stock the individual subassemblies for repair purposes. These subassemblies are not on the CSD Exchange Program and must be repaired/replaced by the customer. The obsoleted assemblies will be available from CPC/PCE, allowing customers to maintain support of their existing inventory and installed base.

To support the new power supply at this same subassembly level, the customer must purchase inventory of the new subassemblies used in the new power supply from CPC/PCE.

Customers performing subassembly/component level repair should have the Hardware History Library (92851A/Q), detailing all changes at the component level.

L-Series Programmed I/O and DMA
By Colleen Obergfell/DSD

Recently it was discovered that when attempting to do programmed I/O on the L-Series, it is not possible to do an OTA, LIA, or MIA to a select code greater than 30 octal with the global register disabled. Because of the infrequent use of programmed I/O without the global register and the high cost of changing the I/O Master to fix the problem, this feature will no longer be supported.

L-Series documentatin will be updated to remove this feature. Programmed I/O without the global register is slow and inefficient and was included only for compatibility with M, E, and F-Series software. The software, however, must be altered anyway to run on the L-Series. Therefore, the omission of this feature should not be a major problem. Contact me with any comments on this.

A timing problem has been found in the L-Series IOP chip which may cause a programmatic reconfiguration of DMA to fail. The problem is aggravated by changes in temperature and/or power supply voltages. It is easily solved through software. If a CLC 21 is executed at the beginning of each programmatic DMA transfer, the problem will be eliminated. It does not occur during self-configured DMA. A typical configuration would be:

```
CLC   21
LDA   CW
OTA   R21
LDA   ADDRS
OTA   R22
LDA   COUNT
OTA   R23
STC   21, C
```

M, E, F-Series Loader ROM Capabilities
By Rocky Gunderson & Billie Myers/DSD

There is some confusion in the field as to the capability of loading programs from an external device to an HP 1000 M, E, or F-Series CPU. The following chart summarizes these capabilities, and specifies which features come as standard with the CPU or system and which capabilities require that the customer order an additional loader ROM:

CPU/System	Paper Tape ROM	Combo Disc ROM — Not RPL — for 7900, 7905/6, 7925/26	RPL Disc ROM for 7905/6, 7925/26 (12992B)	Terminal ROM for 2645/48 (12992C)	Mag Tape ROM for 12970/72 (12992D)	Flex. Disc ROM for 9885M (12992E)	7906 Disc ROM-RPL (12992F)	H-Disc ROM-RPL (12992H)
2108M 2112M	STD	STD	*	*	*	*	*	*
2109E 2113E	STD	STD	*	*	*	*	*	*
2111F 2117F	STD	STD	*	*	*	*	*	*
2176C/D	STD	STD	STD[1]	STD	*	*	*	*
2177C/D	STD	STD	STD[1]	STD	*	*	*	*

Note:

STD — this ROM (capability) is a standard part of the order.

STD[1] — for these system orders, an RPL compatible disc loader ROM comes as a standard part of the system order with the disc interface. A system order specifying a MAC disc will come with a 12992B RPL disc loader ROM, while a system order specifying an H-disc will come with a 12992H RPL disc loader ROM.

* — this ROM (capability) must be ordered separately (note the loader ROM product number).

Also:

1. The paper tape loader ROM and combo disc loader ROM are a standard part of all M, E, and F-Series CPUs at the board, box, and system level.

2. All CPUs have space for four loader ROMs. E and F-Series CPUs come with four sockets available for loader ROMs (and thus customers may use any four loader ROMs of their choice in these locations).

   M-Series CPUs supply three sockets for these loader ROMs; (the fourth location is used by the standard paper tape loader ROM, soldered to the CPU board).

3. Most of the above loader ROMs are available on the CPL and may be purchased at a US domestic list price of $100.

DSD/ICON Marketing Development

DSD's ICON Market Development group is growing! Peter Philipp, who was with HP in Australia for six years, is the primary support person for Australia, New Zealand, Korea, Hong Kong, Taiwan, Singapore, Malaysia, and Japan.

Ed Brumit is primary support for South Africa, Mexico, Guatemala, Venezuela, Brazil, Argentina, India, and People's Republic of China. Peter and Ed will also act as backup for each other.

Chris Carney coordinates factory visits and is our internal liaison with your Order Processing contact, Teresa O'Neill.

DSD Wins 1980 Support Award

The Technical Computer Sales Team in South Africa has named DSD's ICON Market Development group the best ICON support group for 1980. In honor of this support, Ed Brumit was presented with an ensemble of Zulu war gear on his recent NPT stop in Johannesburg. It will soon be prominently displayed in the Marketing area. Thanks, South Africa! We hope to do as well in '81.

The ICON Market Development team ready for battle!

New Ad for 9915A
By Orrin Mahoney/DSD

This ad appeared in January in *Electronic Design, Machine Design* and *Electronic News*. The response pieces for written inquiries generated by this ad will be the 9915 Brochure, P/N 5953-4550 and the new HP OEM Catalog, P/N 5952-0151.

IBM Flexible Diskette Support for L-Series
By Linda Haar/DSD

Software support can now be purchased from a third party to permit, under RTE-L, reading and writing in IBM-compatible mode (3740) to the HP 1000 L-Series Model 9 and 10 flexible disk drives. This software support is in the form of a subroutine which enables reading and writing to a logical unit in IBM format. This subroutine module can be accessed in Assembler or FORTRAN. Appropriate hardcopy documentation is also supplied.

For example, the FORTRAN programmer has the ability to access IBM compatible diskettes in the following manner:

```
DIMENSION IBUF(64)
    .
    .
    .
CALL IBM ( [ICODE], [LU#],
IBUF, [# WORDS], [TRACK],
[SECTOR] )
```

where

ICODE = 1 for read, 2 for write
LU# = logical unit # of
diskette drive
WORDS = # words to
read/write
TRACK = track to read/write
(0-76)
SECTOR = sector to
read/write (1-26)

The third party supplies the "IBM compatibility" package on an HP-compatible diskette with all necessary binary modules and written documentation. For more information, contact Fred Crow in HP Cleveland office.

Roseville

16-Channel Multiplexer Incompatibility
By Glenn Talbott/Roseville

The 16-Channel Multiplexer package (12920B Hardware and 91731A Software) is not compatible with the new screen mode editor 92074A EDIT/1000. EDIT/1000 issues a terminal status update control 25 to the terminal driver to ensure that the terminal and driver agree on strap settings. The 91731 Multiplexer driver, LDVR5, interprets a control 25 as an attach logical driver request. Improper issuance of a control 25 request to the 91731A Multiplexer has been known to crash the system.

The new FORTRAN 4X 92834A package also has problems with the 91731A 16-Channel Multiplexer. When a READ statement is used without an error return and a zero length record is entered, the FORTRAN 4X program aborts with a Run Time Error message. The problem is that the 91731A Driver sets the EOT

bit on zero length record input, and FORTRAN 4X interprets this as an error return. If a zero length record is a valid entry, the READ statement must include an ERROR= label declaration to avoid being aborted on a zero length record. Other terminal drivers do not set the EOT bit on zero length records so this is not a problem.

Since the 91731A Multiplexer Software is used by an extensive set of customer programs, we are not going to change the control functions or error returns to be compatible with EDIT/1000 or FORTRAN 4X.

'A' Signal Conditioning Cards Obsoleted
By Pete Stine/Roseville

With the introduction of the 'C' suffix Signal Conditioning Cards (see *Computer News*, Nov. 15, '80), Roseville has obsoleted the 'A' version, and replaced it with the conveniently packaged 'C' version.

The signal conditioning cards do *not* reside in the 2240 Processor or 2241 Extender. They are a different size than the 2240A function cards and must be mounted in a tray and cabled to the backplane of the 2240 or 2241. The 'A' version only gives you the card, whereas the 'C' version gives you the card, tray, and cable.

One exception is the 22914C which does not include the cable. It must be ordered separately since it is a multi-function breadboard card with different cable requirements depending on whether it is configured for analog or digital usage. Since the card will not work without the tray and cable, we have obsoleted the card alone, and replacement boards are available through CPC. Hopefully, this will eliminate many of the ordering problems with the 2240. Please call Roseville Sales Development with any questions.

DS Card Ordering
By Bob Bessin/Roseville

Both the 12044A L-Series and the 12825A M,E,F-Series DS/1000-IV Interface Cards have somewhat complicated ordering structures. They contain five options, but only three can be ordered at the same time. If Options 001 or 002 are ordered, no other options may be specified. For reference, Option 003 adds a 75 meter interconnection cable, Option 004 adds a Connector Kit, and Option 005 adds the Kit and 300 meters of cable to the standard product.

Option 001 is a set of updated firmware for customers who already have the interface. It is clear that any other options along with 001 would be inappropriate. Option 002 consists of one interface card without cables or verifier hoods. Since the standard product provides two cables, Option 002 is for the second HP 1000 in a HP 1000-1000 connection. In this way, you can order the 12825A or 12044A and always be sure your customer receives compatible (one male and one female) cables, whether directly connecting two M/E/F Series, the L-Series, or an M/E/F to an L.

Ordering Option 002 must mean that another order has been taken for an interface card without an Option 002. Therefore, instead of ordering Option 002 and another option together, it would make more sense to specify the other option as a part of the other DS/1000 order to obtain the same results. For example:

Don't Order ...	When You Can Order ...
12825A card, two cables, two hoods	12825A card, two cables, hood
	Opt. 003 75 meter interconnection cable
+	+
12044A } card Opt. 002 } only	12044A } card Opt. 002 } only
Opt. 003 75 meter interconnection cable	

It is much easier for you to keep track of all necessary cabling requirements in this manner. If extra or replacement cabling is needed, order them separately by their own part numbers.

YHP

Data Show '80 in Japan
By Yoshie Hashima/YHP

Data Show is the biggest show of computer related equipment and systems in Japan. This year's Data Show (October 3-8, '80) had as its theme "Information Processing Systems for Launching the New Decade", and was a joint exhibition with IFIP '80 (International Federation of Information Processing) and MENDINFO '80 (Medical Information — International Conference of). Attendance averaged 20,000 per day.

YHP's theme was "One Vendor Solution for Manufacturers". On display was a computer line-up, from the microcalculator Model 41C to the computer system HP 3000 Series 30. We distributed 20,500 fliers, and achieved our target of acquiring 2,000 inquiries.

This Data Show was much more active and glorious than the previous one, which tells the severeness of increasing competition.

DCD
New Mass Storage Capability On 9835/45
By Phil Farley & Chuck Reese/DCD

Two additional mass storage devices that provide enhanced capability for the HP System 35/45 Desktop Computers have recently been introduced by Boise Division and DMD. (See article under DMD in this issue.)

7970E Now Supported on 9835/45

The 7970E Opt. 826 is the same 9-track 1600 bpi magnetic tape drive which has been so popular in commercial applications, packaged in a lo-boy cabinet with an interface compatible with the 9835 and 9845. This interface requires the 98041A disc interface. If the customer already is using a 98041A with a disc drive, he does not need an additional interface. Please note that *no* mass storage ROM is required with the 7970E. A mass storage ROM is required to drive any other external mass storage device.

Also included in the Opt. 826 is the 7970E Tape Utility Software Pack. This pack features a binary which gives the desktop's unified mass storage commands the ability to control mag tape. The Utility also features program modules which allow the novice programmer to retrieve, back up, and catalog tape files. To use the program modules, the configured system must include an internal or HP-IB printer, 128K memory, and, in the case of the 9835A, an Advanced Programming ROM (which allows use of the CAT TO command). Please note that the program modules are not supported on the 9835B, however, the binary is.

Mag tape capability will allow System 35s and 45s to address several new applications. The easy programmability of tape formats makes it possible to transfer data between desktops and other computers. Furthermore, Opt. 826's capability to code characters in EBCDIC provides a second medium on which to transfer data to

IBM machines. The 9895 Opt. 135 or Opt. 145 provided the first medium. Other possible applications include back-up of hard and fixed discs and data logging where an inexpensive 30 Mbyte personal medium is desired.

The 7970E Opt. 826 is orderable through Boise Division at a total price of $13,200 (US) — 12-week availability. While the 98041A disc interface is available from Greeley Division for $3,000 (US) — 5-week availability.

7910H also Supported on 9835/45

The 7910H 12 Mbyte Winchester disc provides a lower cost fixed disc alternative for 35/45 users requiring more than floppy disc capacities. The unit's single disc platter is fixed within a sealed module, allowing use in a more hostile environment than allowable for other discs. By implementing new technologies that reduce mechanical complexity, DMD was able to both increase reliability and lower cost. Also, the need for periodic head alignment has been eliminated.

For the 7910H to be supported on the 9835A/B or a 9845B/C, a new mass storage ROM is required: the 98331B ROM on the 9835A/B and the 98413B ROM on the 9845B/C. Existing 9845B/C customers who already own a 98413A ROM must buy the new ROM in order to use this new capability. Beginning February 1, please order the 98413B ROM whenever any mass storage ROM is needed. The 98413A ROM will be taken out of production at that time.

Refer to the "New" 9835A/B Discs article by John Boose in the September 1, '80, *Computer News* for a complete discussion of the 9835A/B mass storage capability.

Since the 7910H is an HP-IB device, a 98034A card must be used to interface to the disc. Another 7910H or a 9895 can be connected on the same HP-IB line, thus providing a reasonable method of backing up the disc. The 7910H does not work with the 98041A disc interface.

Order the 7910H Opt. 035 or Opt. 045 from Disc Memory Division. The cost is $8,350 (US) for the 7910H plus $100 (US) for the options (10-week availability). The options provide the Hard Disc Utilities for either the 9835A/B or the 9845B/C. See Greg Funk's article in the November 1 '80 *Computer News* for a complete description of these utilities. The 98034A card should be ordered from DCD at $500 (US) (4-week availability).

9835A/B Pricing Info & Data Sheet Errors
By Phil Farley/DCD

You should have received recently the new 9835A/B pricing information, effective November 1, '80. On page 6 of this document, there is a fairly serious error: it shows incorrectly that a 98041A is required with the 7910H Opt. 035. The 7910H requires the 98034A; it will *not* work with the 98041A interface. The description of the 7910H Opt. 035 in the technical data sheet is correct.

On page 6 of the new 9835A/B technical data sheet there is an error in descriptions of the 7906H, 7920H and 7925H mass storage devices. The indication that an Option 102 must be ordered with these H-series disc drives is incorrect; no option should be ordered.

The technical data sheet also indicates incorrectly that a 98032A Opt. 385 should be ordered with a 9885S (slave). The proper interface is included with the 9885S to allow connection to the 9885M (master); no other cable is necessary.

Please note that *all* external mass storage devices require the mass storage ROM, 98331B.

These errors will be corrected in the next printings of the data sheet and the pricing sheet.

The December 15, '80 *Computer News* contains a matrix describing the mass storage capability for all DCD products. Please refer to this for answers to mass storage questions.

Battery Replacement Kit
By Jeff Bork/DCD

Up to now, changing the battery in a 98035A Real Time Clock has required a field service call. The reason: changing the battery incorrectly can damage the interface.

Our SEs have now solved the problem by producing a customer kit for re-placing the rechargeable ni-cad battery in the 98035A. The kit, P/N 98035-67100, became available January 1, '81, at a list price of $17.25 (US) and $20 (International). It contains a new ni-cad battery and a detailed installation note. The installation note can also be ordered separately as P/N 98035-90010.
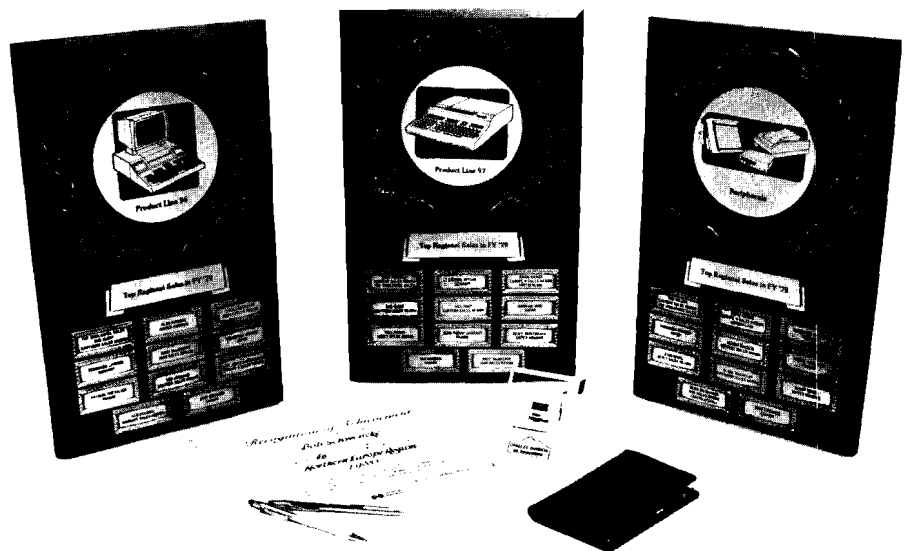
Desktop Computer Sales Awards
By Steve Forbes/DCD

Congratulations to the FY'80 sales winners for desktop computing products! Beginning in FY'79, each product line within DCD has given an award to the top salesperson in each of the 12 HP regions worldwide. The award includes a laser-engraved desk or wall plaque identifying the individual's achievement, and a personalized gift. The personalized gifts from each product line for FY80 are:

PL96 (computation) — Leather wallet for pocket-diary; PL97 (controllers) — Pen set; PL98 (Greeley Division) — Desk clock.

In addition, each product line will have a worldwide plaque identifying each of the regional winners, which will reside permanently at the manufacturing divisions in Colorado. All these items were distributed to the winners in January.

The regional winners are listed here. Please join us in congratulating these people on their significant achievement, and wishing them continued success during FY'81. Special thanks go to Heinz Baur, Seiji Miyajima and Gary Wessely, who were the top worldwide salespeople for PL96, PL97 and Greeley Division, respectively. Together, they generated more than $4M in DCD product sales in FY'80, and Heinz Baur nearly reached the $2M mark!

Technical Computers

FY'80 Sales Winners

PL-96	PL-97	Peripherals
1. Heinz Baur/Germany	Seiji Miyajima/Japan	Gary Wessely/Neely
2. Phil Watkins/UK	Peter Nyiroe/Southern Europe	Peter Nyiroe/Southern Europe
3. Bill Manak/Neely	Pat Fobes/Neely	Bob Galizia/Eastern
4. Maureen Caudill/Eastern	Heinz Baur/Germany	Gerard David/France
5. Makoto Satoh/Japan	Gerard van Beek/Northern Europe	Heinz Baur/Germany
6. Sally Haas/Southern	Gerard David/France	Tom Henshaw/Midwest
7. Bob Berlon/Midwest	John Carapella/Eastern	Dick Folga/Southern
8. Patrick Chevalier/France	Alan Arnette/Southern	Mervyn Brown/UK
9. Anthony Wood/ICON	Tom Henshaw/Midwest	Mitsuhiro Kawai/Japan
10. Karl-Heinz Hinteregger/Southern Europe	Peter Starmer/UK	Bruce Miller/ICON
11. John Edwards/Canada	Jansen Ek/ICON	Bob Schwencke/Northern Europe
12. Bo Rehn/Northern Europe	Clive Warren/Canada	Will Vezina/Canada

9845 DBM Customer Course
By Janet Beyers/DCD

Customer materials for the HP 9845 DBM Course are now available for ordering. The customer pack, P/N 11141-70350, includes a printed copy of the overhead slides presented in the course, a tape of lab solutions, and a set of manuals in a binder.

The instructor's kit will be issued upon request. If an instructor wishes to conduct a DBM course, he/she should send me three 9845 initialized discs. I will then copy and return one disc of lab solutions and an unloaded data base, and two discs of files for generating overhead slides.

The 9845 DBM Course was first presented to customers November 3-7, '80, in Fort Collins and was well received. If you have any questions, please call me at DCD in Fort Collins, ext. 2990. In Europe, contact Eddie Rackow at BDD.

Series 80 SE Starter Kit
By Tim Mikkelsen/DCD

As you know, the HP 9915 uses HP-85 I/O but many of you do not have I/O documentation yet. Corvallis now has the SE starter kit in stock. This contains a great deal of information that is directly applicable to the 9915. To get your Series 80 SE starter kit, order: Order Type: HEART 12, ID code 35; Product Line: 68; Part Number: 5955-6088; Sales Force: 09; Description: Series 80 SE starter kit; Marketing Div.: 39; Supplying Division: 5006; Price: Please advise. Contact Joe Fazzio in Corvallis with any questions.

How to Expand Sales in Manufacturing Accounts
By Mike Radisich/DCD

Do you know what an "Industrial Engineer" is? Have you ever met one? Industrial Engineers are acknowledged as the "Renaissance Engineers" of America and will be largely responsible for improving industrial productivity in the '80s.

Sounds like a big claim, but this often-overlooked engineering discipline is becoming involved in practically every aspect of a modern manufacturing company.

They're the people who did time-and-motion studies in the past, but today they're having more and more influence on the application of computer power, especially DCD and DSD's kind, outside of the DP/MIS group.

Find out who's the leader of your local AIIE (American Institute of Industrial Engineers) Chapter. Volunteer to give the new "Technical Computer Applications in Industry" slide show at their next meeting, and include a demo of the HP 9845C!

You'll be glad you did, because you'll discover some new and powerful allies within the accounts to which you're already selling. If you want more information, call me.

9825 Manuals
By Al Jackson/DCD

The HP 9825AB/T desktops have replaced the 9825A/S. After the last 9825A is shipped from the factory, we'll formally replace the manuals with the new 9825 Manual Set. You can still order the following individual 9825A manuals from CSO during '81:

9825A Operating & Programming Manual (09825-90000) $15; 9825A Quick Reference (09825-90011) $5; Strings Programming (09825-90020) $5; Advanced Programming (09825-

90021) $5; *Matrix Programming* (09825-90022) $5; *9862 Plotter Programming* (09825-90023) $5; *General I/O Programming* (09825-90024) $5; *Extended I/O Programming* (09825-90025) $7.50; *9872 Plotter Programming* (09825-90026) $7.50; *Systems Programming* (09825-90027) $5; *HPL Interfacing Concepts* (09826-90060) $10.

For more complete documentation, order the new 9825 references shown below. All the mainframe and programming ROM info has been reorganized into one comprehensive binder, the *Operating and Programming Reference*. Similarly, all interfacing and I/O ROM info is now in one binder, the *I/O Control Reference*. We've also reorganized the *Quick Reference* into an A-to-Z listing of HPL and error codes.

You can get the new manuals either separately or in one of two kits. The *9825 Manual Kit* is the standard set shipped with the 9825B; it includes both new references, the handy *Quick Reference* and a copy of *HPL Interfacing Concepts*. The *9825 Documentation Kit* has all that plus each of the standard 98000-series manuals, 98032A through 98037A, and the new 9825 Disc Programming Manual. The new 9825 manuals and kits are:

9825 Manual Kit (09826-87901) $75; *9825 Documentation Kit* (09825-81010) $100; *Operating & Programming Reference* (includes Strings, AP and Systems programming) (09825-90200) $40; *I/O Control Reference* (includes General & Extended I/O and Plotter programming) (09825-90210) $40; *HPL Quick Reference* (09825-90012) $5; *9825 Disc Programming* (covers both 9885 and 9895 disc drives) (09825-90220) $10; *9825A/B Service Manual* (09825-91030) $10.

Digital Simulation Back in Production
By Tom Pritchett/DCD

The HP 9845 application program, Digital Simulation, is back in production. This pack was released many months ago, but was placed on hold when many bugs were found in the program. To refresh your memory, Digital Simulation is one of our more powerful EE programs. The pack allows the user to input arbitrary digital signals to a logic circuit, and then look at these signals as they travel through the circuit. This pack depends heavily on both the computational and graphic power of the 9845.

Because of this, it makes an excellent demo for potential EE desktop customers.

The pack is in good shape now, after being back in the lab for several months; all known bugs have been fixed. Extensive QA, including alpha and beta test sites, has also been completed. This QA effort was missing on the first release, but is now a key part of all application pack releases.

To order this pack, use P/N 09845-12610; the cost is $750. The demo is contained on the EE demo tape, P/N 11141-10504.

Corvallis
Series 80 Software
By Jim Balsom/Corvallis

The HP-83 and three new Application Pacs are our latest efforts in broadening the solutions we provide to professionals. The Information Management Pac and the Graphics Presentations Pac are additional business software we've developed to more completely meet the needs of business professionals.

Information Management Pac:
(IMPac), gives Series 80 systems a data management tool for accessing, modifying, searching, and sorting data. Within IMPac, each data file can contain up to 99 fields (a field can be a name, address, phone number, etc.), and from 1 to 10,000 records. With the graphics capabilities of IMPac, Series 80 users can create line, curve, bar, and pie charts for use in reports and presentations. IMPac also includes a HELPER program, which acts as a mini-users' manual, a querying system and report writer, sorting capabilities, and data base statistics (like totaling). IMPac (00085-13045) is $200 (US) including manual, Quick Reference Card and disc.

Graphics Presentations Pac: allows the user to create four-color overhead projection transparencies or report copies of text, bar charts, pie charts, and line charts. It provides nine letter sizes and three type styles which can be either upright or slanted. Several special characters are included. Charts can be titled and labeled automatically. Six hatching techniques and line types are available. Two side-by-side pie charts of up to 25 slices each can be exploded independently. The Graphics Presentations Pac (00085-13040) is $200 (US) including manual, two discs and two tapes.

Surveying Pac: contains a group of programs chosen to aid surveyors in many of their most often encountered computations. It includes an executive program that permits easy access between programs without losing stored data. Most of the programs provide the ability to plot or layout data on the CRT or a peripheral plotter. This Pac is not meant to compete with and is not in the same class as the HP-3842A Surveying Computation System. The Surveying Pac (00085-13046) is $150 (US) and includes manual, tape, and disc. Note that a 16K Memory Module is *not* required for this Pac.

Business Computers

BCG

Who Makes the Buy Decision?

By Larry Hartge/BCGM

Knowing the answer to this question is essential in mounting an effective marketing and sales effort. *The Wall Street Journal* conducted a 1980 market survey on "Minicomputers and Small Business Computers" which sheds light on this question.

It surveyed customers and prospects of seven small computer vendors, including Wang, DEC, DG and others (not HP or IBM). The general business profile showed that for the most part, the customers and prospects for minicomputers and small business computers are concentrated in industry and business services. The survey included a fairly even distribution of top and middle management. These customers and prospects represented companies of every size. A more complete description of the survey respondents is given in Table I.

Just who does make the decision to buy? There is no single person — the decision process includes several steps: evaluation of need, establishment of specifications, make or model selection, with the culmination being approval or authorization. Along the way many people are involved to varying degrees. Based on this *WSJ* survey, Chart A below shows those that say they are involved in the decision process and the approval or authorization of the purchase.

For this survey, management categories were defined as:

- **Top Management,** including President; Vice President; Assistant Vice President; Controller, Treasurer, Financial Officer, Financial Manager; Other Corporate Officers and Assistants; Owner Partner.
- **Data Processing Management,** including Director/Assistant Director; Manager/Assistant Manager; Supervisor/Assistant Supervisor; Head/Chief.
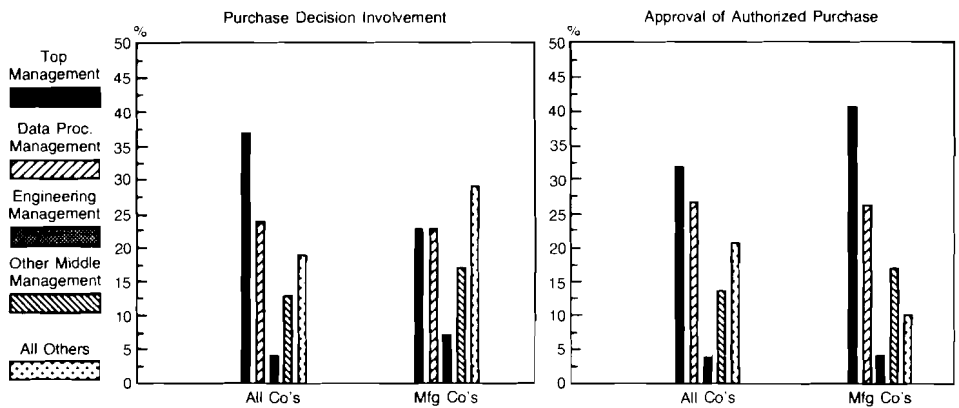
Chart A

- **Engineering Management**
- **Other Middle Management,** including Educational; Scientific; Technical; Systems/Program Analysts.
- **All Others**

Top management, particularly in manufacturing companies, need to be "sold" on HP's solutions. They are also heavily involved in the whole decision process. Chart B shows where management feels they are involved in three early decision-making areas (for all companies in the study).

The decisions for specification and solution of models are essentially shared equally between top and middle management. However, the final purchase approval rests with top management. Getting an HP Business Computer recommended is the first solid step in the decision process which concludes with top management approval. Every step of the way requires that management be sold on HP's business computer solutions.
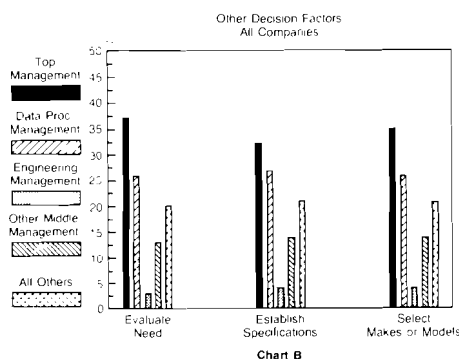
Chart B

Table I

Survey Respondent Profile

Primary Line of Business	Number	Percent
Manufacturing	342	27
Transportation, Communication, Public Utilities	107	9
Wholesale/Retail Trade	167	13
Finance, Insurance, Real Estate	137	11
Business Services, Non-Profit Organizations	214	17
Medical Services	53	4
Legal Services	3	*
Educational Services	92	7
Government	89	7
All other	27	2
Not Stated	26	2
All Respondents	1,257	100

*Less than five-tenths percent.

Company Revenue/ Gross Sales (1979)	Number	Percent
Under $1 Million	144	12
$ 1-1.9 Million	82	7
$ 2-4.9 Million	118	9
$ 5-9.9 Million	64	5
$ 10-24 Million	76	6
$ 25-49 Million	53	4
$ 50-99 Million	49	4
$100-249 Million	79	6
$250-499 Million	55	4
$500-999 Million	60	5
$1 Billion or more	243	19
Not Stated	108	9
Not Employed by Private Company, Business Firm	126	10
All Respondents	1,257	100

Title	Number	Percent
Owner, Partner	69	6
President	149	12
Vice President	150	12
Assistant Vice President	11	1
Controller, Treasurer, Financial Officer, Financial Manager	46	4
Other Corporate Officers and Assistants	32	3
Data Processing, Information Systems, Computer Operations Software, etc.		
Director/Assistant Director	96	8
Manager/Assistant Manager	158	13
Supervisor/Assistant Supervisor	15	1
Head/Chief	13	1
Education		
Educational Management	6	1
Educators	23	2
Engineering		
Engineering Management	46	4
Engineers	115	9
Scientific		
Scientific Management	6	1
Scientists	17	1
Technical		
Technical Management	29	2
Technical Staff	21	2
Systems Analysis		
Systems Analysis Management	34	3
Systems Analyst	31	2
Directors, Assistant Directors (unspecified)	22	2
Managers, Assistant Managers (unspecified)	66	5
Supervisors, Assistant Supervisors (unspecified)	13	1
Miscellaneous Other	45	4
No Answer to Title or Position	45	4
All Respondents	1,257	100
Top Management		36%
Middle Management		40%

MSO

NEW
Materials Management/3000
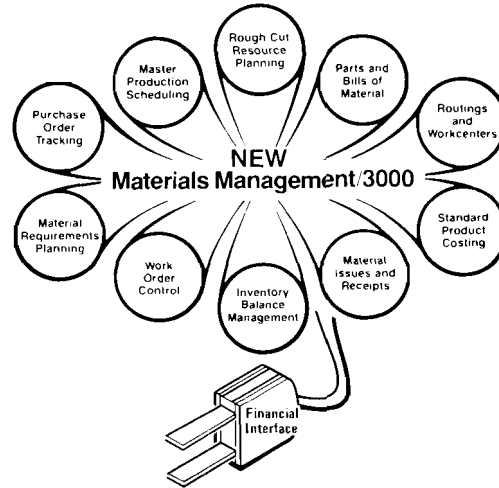
Major Enhancement for Materials Management/3000

By Mike Kalashian/MSO

For the past six months, while you have been off to a fast start selling and installing Materials Management/3000, the factory team has been busy enhancing this product in response to the many opportunities you have told us about. You have recently received a Sales Training Manual that covers a variety of useful topics, but the most significant is the availability of the new Financial Interface.

Materials Management/3000 has been enhanced to make it easier for your customers to install the product as an integral part of their total information management system, and more importantly, to make Materials Management/3000 easier for you to sell!

What it does for your customers

The Financial Interface uses inventory movement information stored in the Materials Management/3000 data base as the basis for creating journal entry inputs to a user-supplied financial system. By selecting the inventory movement transactions that occurred during a selected timeframe, the user can request that these be costed, separated into labor, material, and overhead components, and formatted into journal entries. The file containing the journal entries can then be easily accessed by the external financial system for further processing.

What it does for you

Did you ever have a customer say, "I like Materials Management/3000, but ..."? Well, now you have some better answers. The Financial Interface Reference Sheet and Sales Training Manual provide information to help you eliminate the completeness issue as a sales obstacle. The Manual includes:

- How to expand your list of potential customers for Materials Management/3000.

- How to locate software suppliers who provide financial software for the HP 3000, and, in particular, those who have taken advantage of the new interface.

- How to qualify potential customers by gaining a better understanding of the latest industry buzzwords like process and continuous flow.

What you can do

The Sales Training Manual and your local Application Specialist can help you get the details you need to close sales. Get up to speed on Materials Management/3000 and its enhanced set of features. The new software commissions and the larger than average hardware configurations sold with Materials Management/3000 can help you exceed quota.

Business Computers

HP a Sucess at INFO/MFG
By Beth Eikenbary/MSO

HP participated in the first annual INFO/MFG conference and trade show in Chicago November 18-20, as an exhibitor and with conference speakers. The Business and Technical Computer Groups, together with the Computer Marketing Group, cooperated to exhibit a wide range of computer hardware and application tools for use in the manufacturing environment.

Mike Kalashian, product manager for HP's Manufacturing Systems Operation, chaired a seminar session on "Determining the Requirements for a New Materials Management System", which included Barry Brown, MIS Director for CBS Musical Instruments, Inc., and Paul Haefner, Information Systems Planning and Services Manager for HP. Barry discussed CBS Music's evaluation of a new materials planning and control system. CBS chose HP's Materials Management/3000 as the most flexible and complete materials solution for use in a centralized organization.

The 4,500 attendees (an excellent attendance for a new trade show) were evenly divided between data processing professionals and manufacturing managers.

Mfg. Sales Seminar
By Dave Viale/MSO

A new 2½-day Manufacturing Sales Training Seminar for Senior SRs and DMs, introduced recently by the Manufacturing Systems Operation, emphasizes the features, advantages and benefits of Materials Management/3000, including hands-on labs; key manufacturing concepts; specific sales tools (financial justification, quantifiable benefits, success stories); and ends with a workshop on developing specific plans for successfully selling manufacturing applications. To schedule a seminar in your area, contact Dave Viale, (408) 725-8111, ext. 3802.

Computer Systems
Peripheral Increases Affect HP 3000 System Prices
By Rich Edwards/Computer Systems

The DMD and DTD price changes on peripherals in the minimum HP 3000 system configurations (effective January 1), affect the following systems:

	Minimum Systems Affected	Old Price	Jan. 1 Price
DTD			
2649E	S30, 33	$6,350	$6,650
DMD			
7906M*	S30, 33	15,000	16,000
7906S	(add-on)	11,000	12,000
7920M*	SIII, 44	18,000	19,000
7920S	(add-on)	14,000	15,000

* Option 102 ($1,000) is also required on master discs for S30, 33, 44.

The following chart outlines the minimum HP 3000 system configurations.

A Grizzly Encounter ...

Canadian RSM, Sherif Alaily, and friend, during the Grizzly NPT Tour.

HP 3000 Computer Systems
Minimum Configurations (Q1-FY81)

Configuration	Series 30 Previous	Jan. 1	Series 33 Previous	Jan. 1	Series III Previous	Jan. 1	Series 44 Previous	Jan. 1
System Processor Unit	$24,925	$	$36,700	$	$60,545	$	$73,100	$
Terminal Ctlr (30018A-030, 30018A, incl. 30018A-044)	1,600		1,600		0		1,600	
Console (2649E, 2649E, 2621A, 2621A)	6,350	6,650	6,350	6,650	1,495		1,495	
Cable (incl. 13222Y, 13222Y)	0		0		50		50	
Disc (7906M-102, (7906M-102, 7920M, 7920M-102)	16,000	17,000	16,000	17,000	18,000	19,000	19,000	20,000
Backup (9895A-010-033, 9895A-010-033, 7970E-324, 7970E-426)	4,825		4,825		11,910		13,200	
Total	$53,700	$55,000	$65,475	$66,775	$92,000	$93,000	$108,445	$109,445

ISD

IMAGE/3000 Rated #1 DBMS

By Orland Larson/ISD

Two different software surveys have again verified that IMAGE/3000 is the number one Data Base Management System in the world.

The results of a survey of users known to have specific packages installed, appeared in the December issue of *Datamation.* The survey, conducted jointly by Data Decisions and Beta Research used a 10-point scale from superior to inadequate as the basis for the survey. Table 1 shows the ratings of the Data Base Management Software.

A second survey appeared in the December 22 issue of *Computerworld* and was conducted by Datapro Research Corporation. A 4-point scale, with 4 being excellent and 1 as poor, was the basis for the survey. For the results of that survey, see Table 2.

IMAGE/3000 received the highest ratings in all categories except for troubleshooting, documentation, and user education, where it was second to none other than our own IMAGE/1000.

Unfortunately, Datapro has stopped presenting honor roll awards because IMAGE/3000 would be the *only* DBMS with an overall satisfaction rating of 3.5 or better to qualify for that award.

Note that Prime, DEC, Data General, Harris Microdata, etc. show no or very little DBMS user response to these surveys.

Some additional notes concerning DBMS software:

- IMAGE/3000 has been the highest rated DBMS since 1976.

- The two other DBMS software products which have received the Datapro Honor Roll Award since 1976 are ADABAS, priced at $132,000 ($40,000 for a minicomputer version), and IDMS, priced at $62,000.

Table 1
DBMS Software User Ratings
by: Beta Research and Data Decisions

Vendor	Product	Number of Responses	Overall Satisfaction	Installation/Initial Use	Service (Bug Fixes/ Enhancements)	Operations (Backup/ Recovery/ Utilities)	Input/Output
Hewlett-Packard Cullinane	IDMS	29	7.9	7.5	7.1	7.5	6.7
Software Ag	ADABAS	27	7.5	7.3	6.2	6.4	6.7
Burroughs	DMS II	11	7.5	7.5	6.8	4.4	5.7
Intel	System 2000	9	7.4	6.8	6.7	6.7	6.2
Sperry Univac	DMS	6	7.2	6.3	5.6	6.5	6.1
Mathematica	Ramis II	6	7.1	7.8	4.3	5.3	5.5
Cincom	TOTAL	23	6.8	7.2	5.8	4.9	5.7
IBM	IMS	15	6.8	5.6	5.5	7.2	5.5
IBM	DL/1	22	6.1	5.8	6.1	5.5	5.2

Source: *Datamation* Magazine, December, 1980

Table 2
DBMS Software User Ratings
by: Datapro Research Corp.

Vendor	Product	Number of Responses	Overall Satisfaction	Reliability	Efficiency	Ease of Installation	Ease of Use	Troubleshooting	Documentation	User Education	Vendor Maintenance
Hewlett-Packard	IMAGE/3000	18	3.7	4.0	3.6	3.7	3.7	3.3	3.4	3.2	3.5
Software Ag	ADABAS	14	3.3	3.8	3.1	3.4	3.5	2.9	2.7	3.1	3.2
Cullinane	IDMS	35	3.2	3.3	3.1	2.9	3.1	3.0	2.8	3.2	3.0
Cincom	TOTAL	45	3.1	3.5	3.1	3.2	3.2	2.9	2.8	3.0	3.0
Intel	System/2000	10	3.1	3.5	2.8	2.8	3.1	2.7	2.9	2.6	3.2
Mathematica	Ramis II	9	3.1	3.8	3.1	3.7	3.7	2.9	2.3	2.9	2.9
Hewlett-Packard	IMAGE/1000	3	3.0	3.7	2.7	3.3	3.0	3.5	3.7	3.7	3.0
Burroughs	DMS II	28	3.0	3.3	2.9	3.1	3.1	2.5	2.3	2.5	2.6
IBM	IMS	29	2.9	3.4	2.4	2.3	2.5	3.0	2.8	2.7	3.0
Digital Equip.	DBMS-10	3	2.7	3.3	2.7	2.7	2.7	1.7	2.7	2.7	2.0

Source: *Computerworld,* December 22, 1980

- The average price of a DBMS software product is about $64,000.

- IMAGE is the most installed DBMS in the world with over 8,000 installations.

- Although IMAGE has been bundled into the fundamental operating system for the past 18 months, we know that over 90% of our customers are really using this product.

Business Computers

2680 Pre-Sales Support Package
By Chris Kocher/ISD

Since the introduction of the HP 2680 Laser Printing System, both ISD and Boise Division have received numerous inquiries for factory visits, demos, and presentations. We are extremely pleased with the high level of interest and will do everything possible to support your sales efforts.

One of the most effective selling tools is the demo. Although demo units of the 2680 Intelligent Page Printer are not available presently, preliminary versions of the Interactive Design System (IDS/3000) and Interactive Formatting System (IFS/3000) software may be ordered by SEs for demos.

In December, the availability of the pre-sales support package (# 30,000-60004) was announced in a TWX to all SEs. This package may be obtained from Louise Watkins at Computer Systems Division via a HEART I2 order. It will not appear on the Corporate Price List since it will never be sold to customers. In addition to preliminary versions of IDS/3000 and IFS/3000, it contains: an overview of the 2680 Intelligent Page Printer; a preliminary copy of the Forms Design Reference Manual, Character Design Reference Manual, and Interactive Formatting Reference Manual; a 2680 Operator Manual; a list of Character Sets available; and a list of File System Changes and New Intrinsics.

This package is designed to bring SEs up to speed on the software and hardware in the 2680 Laser Printing System. Two SEs from each area are being trained in classes at Santa Clara, January 12-16; Paramus, February 2-6; and Boeblingen, to be announced. The pre-sales package should help them train others.

As SRs, it will be invaluable for you to get some preliminary exposure to this exciting new system. Check that at least one SE in your office has received the package and can assist you in your selling efforts.

HP 300 Product Positioning
By Tim Haney/ISD

When the HP 300 was introduced, many of you aggressively sold it. Unfortunately, software and market focus problems resulted in some customer problems, and we asked that you restrain from further selling efforts until the operating system could be improved.

Our lab has done an outstanding job with the operating systems reliability and feature set. We continue our efforts to provide a greater degree of product focus, develop successful OEMs, add new features and enhancements to the HP 300, and act upon your feedback and suggestions.

With the release of the operating system in July '80, A.04, the software was solid. New features included performance increases, conversion utility, command facility, menu mode, printer spooling, power/fail auto restart and many more enhancements.

The operating system released in January (A.05) extends our commitment for additional features, performance and product enhancements. You'll see European character support, collating, paper sizes, etc. The HP 300 is the first HP computer to offer it. You'll see increased performance and reliability. And you'll find that the HP 300 offers a four-user, 100Mb system for a list price of around $70,000. The larger the system the better we compete, especially against our primary competitor, the IBM System/34 — and that's true regarding performance also.

Whereas the S/34 performs well in batch jobs or where small programs and few users are involved, we are very competitive for interactive, multi-user, on-line applications. For large applications involving large programs, a lot of data, several users running the same program, or several users running different large programs we can outperform the S/34 and in some cases, execute applications which cannot be run on the S/34.

The HP 300 has features unavailable on the S/34. A primary qualification guideline for end users is: if they can justify a 50Mb or larger disc capacity, there is an excellent chance that the HP 300 can provide a better fit than the S/34. Ask any knowledgeable RPG professional to compare the features of the HP 300 with any other RPG system available today. You'll find them highly enthusiastic about its competitive stance in its price range.

You said we couldn't approach major accounts and the Fortune 1000 without data comm. Today we offer RJE/300 and when you see it in action, note its ease of use — you'll see something unavailable on any other system!

Today the HP 300 has a strong market focus; it's HP's *best* solution to the RPG marketplace and the best system available as a stand-alone application engine, dedicated to specific tasks of a business or department. Examples include financial modeling, forecasting, strategic planning, transportation; virtually any application which requires a powerful and sophisticated dedicated computer.

The HP 300 should be sold to the Fortune 1000 and small business market. As the strongest competitor to IBM's System/34, the HP 300 offers delivery, growth and price which will help you outsell IBM. It offers four times the memory and twice the disc space of a S/34, and adding additional capacity or terminals is relatively simple. Adding additional programs or additional users can be accomplished without program modification on the HP 300. Where growth is concerned, the HP 300 is the winner. The S/34 is an excellent machine and we do not recommend trying to displace it. However, you can win against it and the factory stands ready to help. The HP 300 offers flexibility: it fits throughout the corporation — from the executive office as a turnkey planning tool, to satellite offices and warehouses as an easy-to-use system requiring minimal support and training.

The small business community is also a natural. There are many software houses offering RPG applications for the small business customer. The HP 300 offers the hardware and software utilities to allow these software houses to preserve their existing investment in applications. The conversion process is straightforward and it works.

You said there was no factory commitment. Today the HP 300 is a marketable product, and we continue to invest in new products and enhancements.

You said there is no market. Many surveys agree that in 1981 over 30,000 systems in the $20,000-$100,000 price range will be sold into the RPG marketplace. IBM is planning on taking 80% of that with the System/34! The HP 300 is solid, there are OEMs in place with applications software and the market is huge. The HP 300 is the *best* RPG business system or dedicated application engine available from HP today. The factory continues to support this product because it's worth supporting. You can be successful selling it.

BGD

Europe Announces New Products to Press

By Geoff Kirk/BGD

You've all read in *Computer News*, January 1, about the December 4 press conference in Cupertino announcing the HP 2680, the Series 44 and 99% Uptime. But did you know that nine hours earlier (because of the time difference across the Atlantic), on December 4, BGD staged the European press conference to announce these three products plus the localized versions of Materials Management/3000?

Thirty-seven of Europe's major computer publications from eight countries were represented at the press conference. Klaus-Dieter Laidig, Alan Nonnenberg and Heiner Blaesser addressed HP's overall strategy, including the challenges of the '80s, HP's move into the office environment, and implementation of uptime in Europe.

Product presentations were given by BGD product management assisted by US guests, Elik Porat and Gary Atkins. And there was a lively question-and-answer session.

Editors were given demonstrations (in French, English and German) of the Series 44, the 2680 laser printer, and German, French and Finnish versions of MM/3000. Preston Frey, from Boise, demonstrated the laser printer.

There are, of course, some differences in organizing a press conference in Europe, from the obvious, such as language, to the not-so-obvious, such as frequency of European electric power.

In Europe each country has a public relations group, and some countries even have one person dedicated to Computer Groups' public relations. These groups establish close ties with the press, handle local PR activities, and translate and distribute press releases.

So, when BGD plans a factory press conference, we rely on these groups in the 13 European countries to invite and escort editors, and translate the press releases into the 10 European languages. Another resource (in Geneva) is Roger Whittle, Europe's equivalent to Bob Ingols, the Computer Marketing Groups Public Relations Manager (in Cupertino).

The December 4 press conference required a major effort from all these people, particularly to get the press releases translated in time. Boise quickly manufactured a "special" 50 Hz version of the 2680, which arrived just two days before the conference.

Despite an unplanned snowstorm, which threatened to strand some editors, the reaction to the press conference was very positive. Several cover stories throughout Europe have been promised.

UK editors show interest in the Series 44 demonstration.

Terminals

DTD

2640B Sales Climbing!
By Ed Washington/DTD

Thanks for the HP 2640B orders! Sales for both December and January have been really terrific! Many customers have taken advantage of the reduced $2,300 price tag which includes display enhancements, a 13232A cable and V/3000 compatibility. And remember, all discounts may be applied to this already low price. So keep those orders coming!

1980 Top Terminal SRs in North America
By Tom Anderson/DTD

DTD would like to recognize our top salespeople for their outstanding performance in terminal sales in fiscal 1980.

A personalized gift has been sent to the following salespeople in North America who are either among the top 10 terminal SRs worldwide or top terminal SR in each region. This is our way of saying "Thank You from DTD". International award winners will be announced in a future issue.

Ram Agarwal — Lexington
Jim Cooper — San Antonio

Tom Hughes — Rolling Meadows

Tony Lepone — King of Prussia (top terminal SR worldwide)
Dennis McDonnell — Neely Santa Clara

Tom Montella — Paramus
Gerhard Schmidt — Calgary
Eddie Slaven — St. Paul
Brian Tasch — Manhattan

We at DTD are excited about the prospect of sales in the new year. We've got the products and a strong marketing emphasis to help you exceed sales quota. Give us a call.

Terminal Cloth Covers
By Jerry Erickson/DTD

From time to time, you probably receive requests for cloth covers for terminals similar to those that San Diego Division provides for their plotters. We have not been able to provide these in the past.

Recently, I have found a commercial vendor (one of the same vendors SDD uses to make their covers) who is willing to make covers for HP 264X or 262X terminals to order in small quantities for under $10/cover. The covers will be of the same material, color etc., as the present SDD plotter covers and will feature the HP logo.

Should any of your customers desire covers for terminals, have them contact the vendor directly (these covers are *not* HP products — do not contact DTD or SDD). The vendor is:

Cali Coverups (Attn: Betty Cali)
356 West 7th Street
San Pedro, California 90731
(213) 548-0388

Page Formatter Special Offer
By Peter Taylor/DTD

That's right, the tremendous timesaving capability of the HP 13257A page formatter is being offered free until April 30, '81.

The page formatter allows text processed by the HP 2642A terminal to be conveniently transferred to a printing device (such as the new HP 2601). Some of the features:

● Automatic page breaks with variable length

● Alternate offsetting (for staples or punched holes)

● Footing/Heading text with flexible positioning

● Menu and/or command driven

● Page number positioning flexibility

● Dispatch preview

● File merging

Plus lots more . . . All *free* when ordered with a 2642A terminal until April 30, '81 (when orders are entered a HEART override must be used to specify the price as $0.00 and it must be on the same section as the 2642A).

HPG

Wie Geht's?

2649D Speaks Your Language!
By Marc Nodier/HPG

The HP 2649D speaks your language . . . well many of them anyway! Please ensure that when your customer orders a remote HP 250 terminal he/she specifies the correct national option.

There is no upgrade kit if he/she forgets the local language keyboard, so check the order now for the following No Charge options:

2649D
Option 252   French keyboard
Option 253   German keyboard
Option 254   British keyboard
Option 255   Swedish keyboard
Option 256   Spanish keyboard
Option 257   Italian keyboard
Option 500   Danish keyboard

Boise

Upgrading HP 3000 System Printer to Series 44

By Ormond Rankin & Ron Whiteleather/Boise

To utilize an existing HP 2608A when upgrading from an HP 3000/30 or 33 to the HP 3000/44 (all HP-IB configurations), use the same cable, I/O connector and board used with the previous system. The same feature support applies (print and space, downloading the VFC, and programmable left margin). To upgrade an HP 2613A, 2617A, or 2619A from an HP 3000/30 or 33, simply order the cables indicated in the table opposite, from CPC.

If upgrading a system line printer from an HP 3000 Series II/III (which utilizes a parallel differential interface) to the HP 3000/44 (HP-IB), an interface kit must be ordered. For a 2608A, the 26002A kit with option 046 must be ordered. The kit includes an HP-IB I/O PCA, an HP-IB adaptor and installation instructions. An HP-IB cable for the 2608A (31389B) must be ordered through Computer Systems Division since the old cable will not work in the new configuration. For a 2613A, 2617A, or 2619A, the 26069A kit with option 344 must be ordered to make the conversion. The 26069A kit contains the CPU resident translator PCA, interconnect cable, a 15 metre printer I/O cable, and installation instructions.

The following table summarizes what must be ordered from Boise to upgrade an HP 3000 system line printer to an HP 3000/44 system.

From System	HP 3000/30	HP 3000/33	HP 3000/II, III
Printer 2608A	Nothing	Nothing	26002A w/Opt 046 (and 31389B from Computer Systems Division)
2613A/ 2617A/ 2619A/	(26069-60002 and 26069 — 60003 from CPC)	(26069-60002 from CPC)	26069A w/Opt 344

2608A BMMC Drops!

By Wayne Eskridge & Ormond Rankin/Boise

The HP 2608A has become a very reliable printer. Within its performance range, it actually sets a reliability criteria for the industry to emulate. In recognition of this, the monthly maintenance charges were reduced as of January 1, '81. (See Price Changes section, January 1, *Computer News.*) The new prices are: SMMC $99 (was $125); BMMC $79 (was $100).

These new service charges place the 2608A among the least expensive printers to maintain in the industry. While response times, service hours and service areas may differ, Table 1 (Datapro, 1980, IBM Survey, July 1980) shows how the 2608A printer in general compares with some system vendor alternatives.

A reduction of this magnitude in cost of ownership during a period of rapid inflation is the clearest possible demonstration that the 2608A can be considered a cornerstone for the HP printer line.

Table 1

Product	BMMC	Speed (64 char. set)	$/lpm
IBM			
5203-M1	$106	225 lpm	$.47
3262-M11	115	250	.46
3262-M1	157	500	.31
1403-M2	427	825	.52
NCR			
6440-0202	75	125	.60
Wang			
2273-1	89.50	250	.36
2263-1	157	400	.39
2273-2	124	600	.21
2263-2	168	600	.28
Data General			
4323	85—101	240/300	.34
4219	115-127	240/300	.42
4244	200—208	660/900	.23
Hewlett-Packard			
2608A	79 (BMMC)	400	.20
	99 (SMMC)	400	.25

Peripherals

2680 Promotional Literature
By Sue Brault/Boise

Bulk quantities of the following have been shipped to US, Canada, and Europe. Order additional copies from the Literature Distribution Center, Palo Alto, California.

2680 Laser Printing System (P/N 5952-9460) 10-page color brochure describes the product, the software, 2680 printing features and the 3000 System environment.

Electronic Data Processing Centers (P/N 5952-9462) four-page flier discusses the advantages of replacing preprinted forms with easy-to-design electronic forms with the 2680.

Management and Financial Reporting (P/N 5952-9464) four-page flier for a financial audience, discusses printing features for areas that use large volumes of numerical data daily.

Output Design Simplicity (P/N 5952-9463) four-page flier discusses the use of IDS and IFS in the design of characters, logos, signatures, forms and page formats.

HP 2680A print sample package (P/N 5952-9466) 12 continuous fan-fold pages of 2680 print output: logos, signatures, highlighted data, shaded areas, reduction, bar codes, etc.

New Packaging
By John Fisher/Boise

Effective January 1, '81, the HP 2608 line printer and the 7970 low boy tape drive will be packaged in new shipping containers that are more compact and stronger. The unloading ramp has been eliminated and the new packaging base itself now doubles as a ramp by sliding out the side skids. Unpacking instructions will be included with each package.

New improved shock absorbent pads on the base of the pallet are designed to eliminate transit damage from excessive movement of the instructions within the container.

The Boise Division Marketing Services Department would appreciate any comments on the packaging.

COS
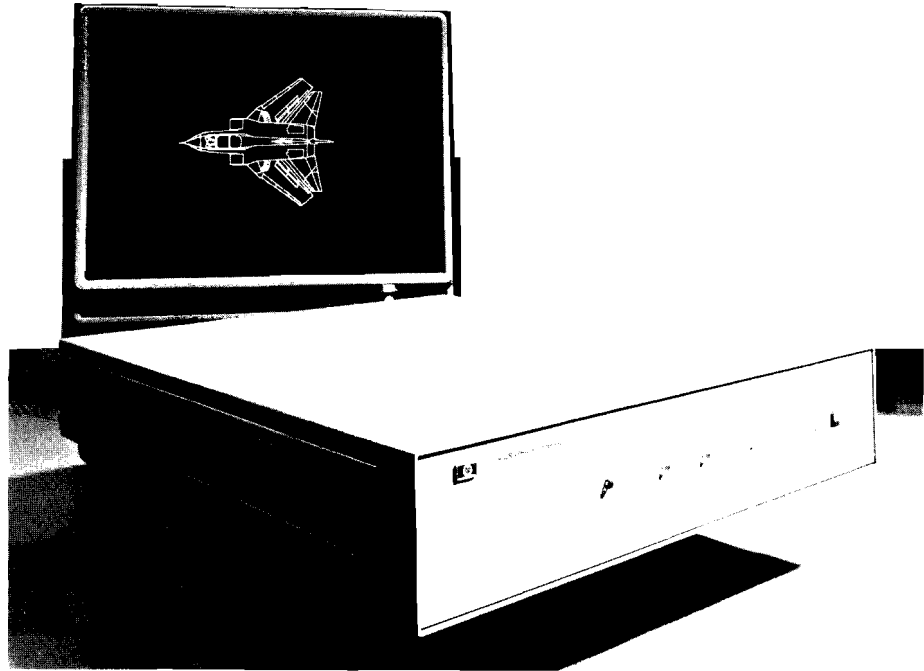
1351A Graphics Generator Targets CAD/CAM Market for Displays
By Joe Hunter/COS

The HP 1351A, the newest graphics generator for use with the 1300 Series Large Screen Displays, accepts a digital signal and generates vector drawings on the large screen displays. It is packaged the same as the 1350A (3" System II cabinet) and supports the HP-IB, RS-232C or 16-bit parallel interfaces.

For those who have sold the 1350A with the large screen displays, you know that the 2K vector capacity has been a limitation for most Computer Aided Design (CAD) applications. The new 1351A Graphics Generator is designed to remove this limitation, but this is just one of the significant changes on the 1351A.

The 1351A takes your customer's digital signal (from almost any computer) and generates line (vector) drawings on the large, bright, sharp HP displays. Important new features of the 1351A include:

- Digital to Analog Interface for the Large Screen X-Y Displays — adapts to most processors.
- 8192 (8K) Vector Capacity — enough for most CAD/CAM applications.
- 64 addressable files — allows selective viewing.
- Fast Blank Vectors (Moves) — decreases overall drawing time to improve refresh rates.
- Special 128 character PROM — allows for special symbols.
- Intensity highlighting — Different brightness levels; allows lighter graticules, cursors, or identifiable parts of a drawing.
- Same mechanical package as the 1350A — compact design.
- Memory scanning in 512 vector increments — maintains brightest image possible.

- High throughput — capability for up to 250,000 vectors/sec (16-bit parallel).
- Modular architecture — three choices of interfaces for most computing systems (HP-IB, RS-232C, or 16-bit parallel).
- 18 two-character mnemonics — simple to program even the most complex drawings.
- Reliability proven with the 1350A's architecture — for low maintenance cost.

The 1351A opens up the CAD/CAM market especially for OEM sales. Many system and turnkey vendors are seeking alternatives to the slow, dim, bistable storage tubes. They are evaluating raster type displays with stair-stepped, jagged lines, and are not fully aware of HP's display capabilities.

"Now that I have them, can I refresh 8K vectors without flicker?"

The answer is linked directly to the length of the vectors used, i.e., the shorter the vector, the more vectors that can be drawn without flicker. Figure 1 shows a curve relating the number of vectors of a given length drawn at a 50 Hz picture refresh rate as a function of the vector length. It shows that 8,000 3% vectors, 6,667, 6% vectors, etc. can be displayed at a 50 Hz refresh rate. This performance is very competitive and slightly better than most of our competition.
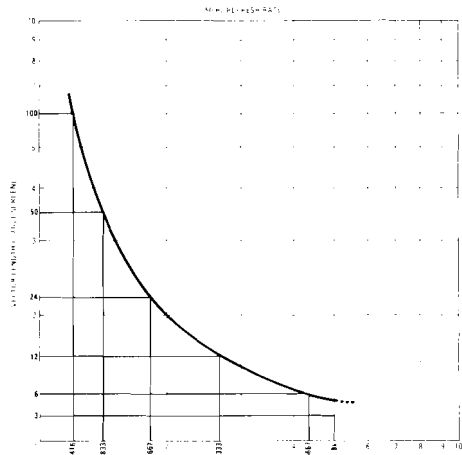
Figure 1.

New Applications

The 1350A has found its primary application in data acquisition, training and simulation. Other exciting markets which use vector graphics are CAD and mapping. The 1351A with its 8K memory is well suited for these markets. If your customer needs more than 8K, remember that our Specials Department at COS supports an analog multiplexer which can be used to connect two 1350As or 1351As together, the latter providing 6K vectors. This multiplexer also allows a customer to mix interfaces; e.g., one 1351A with HP-IB and the other with a 16-bit.

The 1351A represents a significant step forward in the area of large screen graphics. Contact your RSE if you have any questions.

DMD

Mass Storage for Desktops — Savings of $10,600!
By Mike Gordon/DMD

"H" SERIES DISC DRIVE CONFIGURATION 9845
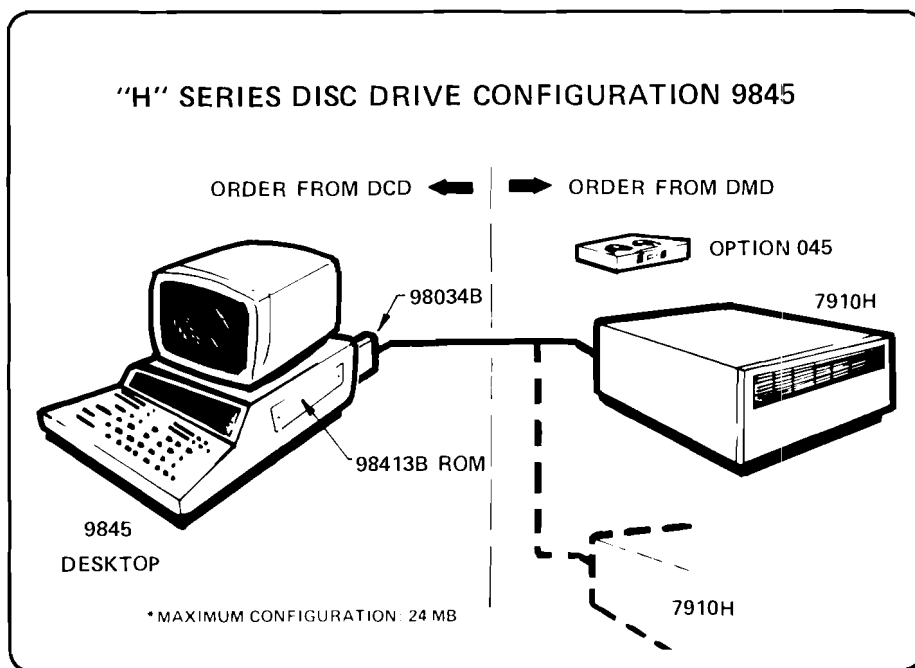
Until now, the only entry level mass storage choice to offer your HP 9845B/C customers was a hard disc solution for $20,050 (7906M Option 102). However, beginning February 1, '81, you can provide your customers with a true *low-cost* mass storage solution. Using the new mass storage ROM from DCD (98413B for $500), the popular 7910H Winchester disc drive can be configured with the 9845B/C desktop computers for only $9,450 — a savings of more than $10,000!

This new mass storage solution gives the 9845B/C computers a competitive advantage in applications requiring modest mass storage capacities. In addition, the 7910H should be very attractive to those 9845B/C installed base customers who are operating with floppy-based systems, data base applications or graphics applications. In fact, some customers may want to utilize the 7910H as the main mass storage medium while using their existing floppies for back-up and I/O.

The 7910H is DMD's lowest cost disc offering, utilizing Winchester technology and providing 12 megabytes of formatted storage capacity. The mechanical simplicity inherent in this fixed disc design assures the utmost in reliability and serviceability (no preventative maintenance). In this instance, the major advantage of the 7910H lies in its low purchase price and low BMMC contributing to an entry level system solution.

Ordering Info: 7910H Option 045 appeared on the CPL February 1, '81. The cost is $8,350 for the 7910H plus $100 for the Option 045. (Option 045 consists of a tape cartridge and an instruction manual providing hard disc utility programs). The 98034A Interface and 98413B Mass Storage ROM must be ordered from DCD. The cost is $500 each, including all cables and hardware.

9845B/C Desktop Computer Entry Level Mass Storage Solutions

Previous Solution

7906M Opt. 102	$17,000
98041A	2,550
98413A	500
	$20,050

New Solution

7910H Opt. 045	$8,450
98034A	500
98413B	500
	$9,450

7910 Data Sheet Error
By Gary Lyons/DMD

The HP 7910HR disc drive is designed for rack mounting in a standard 48.3 cm (19 inch) wide system cabinet (i.e., the HP 29400 or 29420 series cabinets). The ordering information section of the 7910 data sheet (P/N 5953-3613(48)) incorrectly indicates that you will receive rackmount hardware when you order the 7910HR. On the contrary, to obtain the proper rackmounting hardware, you must order P/N 12679A or 07910-60069 for 29400 and 29420 series cabinets, respectively.

Greeley

New Graphics Tablet Software Summary
By Rosemary Kramer/Greeley

A four-page software summary is now available on the HP 9111A Graphics Tablet Utilities developed for the HP System 45B Desktop Computer. It gives a clear overview of the three software programs available — drawing, graphics editor and menu driver — along with sample menus and key definitions for a close-up look at how the graphics tablet and utilities work. To order, ask for P/N 5953-4543(58).

Graphics Show Joins DCD's PL96
By Rosemary Kramer/Greeley

You'll now find the HP '81 All Star Graphics Show through DCD's Product Line 96. Call Marianne Halleran (303) 226-3800, ext. 3505 with any questions on this sound-on slide projector show.

This "graphics extravaganza", a 27-minute, entertaining tutorial geared for audiences of up to 50, has been a tremendous success in the field since its introduction by Greeley Division in October. To order, override HEART and order as: Product Number '81 All Star Show, Product Line 98, Marketer 58, Supplier 5800, Cost "Please Advise". Order type 12. The English version, including four carousels with 320 slides in a custom-made traveling case, is $350.

9895A Rack Mount Kit
By John Hettrick/Greeley

A field-installable rack mount kit (P/N 09895-88022) is now available for the HP 9895A Flexible Disc Memory. It sells for $58 and is available from CPC and PCE. The kit contains a top cover, four screws and an installation note. If your customer's rack does not have rails, we offer 30-inch support rails (P/N 12679B). Allow 2-4 weeks for delivery.

SDD

Introducing 8-Pen Plotters . . . at 4-Pen Prices!
By Peggy Wyman/SDD

San Diego Division has made a good thing even better! And it won't cost you a penny more! We have improved and enhanced our entire line of 4-pen plotters. On February 2, '81, we introduced six new 8-pen models that fully replace the 4-pen plotter family. *8-pen plotters for the same price as 4-pen plotters!* On that date, the 4-pen plotter became a thing of the past. The products affected are the HP 9872 HP-IB plotter and the RS-232C/V.24 versions: 7220 and 7221. The new 8-pen model numbers have "C" suffix to designate the standard unit and a "T" suffix for paper advance: 7220C, 7220T, 7221C, 7221T, 9872C, and 9872T.

What's different about the 8-pen plotters? Well, we have:

- added four more pen stables next to the existing ones
- rearranged the front panel control buttons to make room for the additional stables
- increased the front-to-back dimension of the plotter by 22mm (.7")
- improved the plotters' internal character font to make letters more readable and higher quality
- removed the plug-in ROM slot from under the front panel of all models
- removed the 9815 connector from the rear panel of the 9872
- added a sixth switch to the rear panels of the 7220 and 7221 called DTR BYPASS/NORMAL to facilitate data communications with certain modems
- reduced the number of internal printed circuit boards from 12 to six

The most important changes, from a customer's point of view, are the additional pen stables and the improved character font.

New Pen Colors & Line Widths

Eight pen stables means there's room for twice as many pens as before. We are introducing six new ink colors and two line widths (see the following article). A customer can have different pen colors and widths loaded at one time in an almost unlimited number of combinations. Or the digitizing sight can always be loaded, ready for immediate use. Or paper pens can be loaded along with transparency pens. Automatic pen-capping keeps the pens from drying out.

The professional quality output of the 8-pen plotters has been greatly enhanced with a newly designed internal character font. The letters are full, open, and rounded; and we took the slash out of the zero! The new font is used in the five character sets that are common to the six plotter models.

Although the 8-pen plotters include a new electronics design, the firmware of the plotters has been designed and extensively tested to be fully backwards compatible with current 4-pen units. So you can sell the 8-pen models in the same applications as before. Some users may want to enhance their existing programs to access pen stalls 5 through 8; no other program modifications will be needed to fully utilize the C/T models.

Also, the C/T plotters were designed and tested to meet all external licensing requirements, both new and old.

For more information about the 8-pen plotters, data sheet 5953-4059 is available. A field training manual and copies of the data sheet have been sent to you. The training manual includes information on demonstrations and sales aids, software support, and ordering information.

8-pen plotters for 4-pen plotter prices! List price (US) for the "C" versions is $5,300, for the "T", $7,250. Delivery is 6-8 weeks.
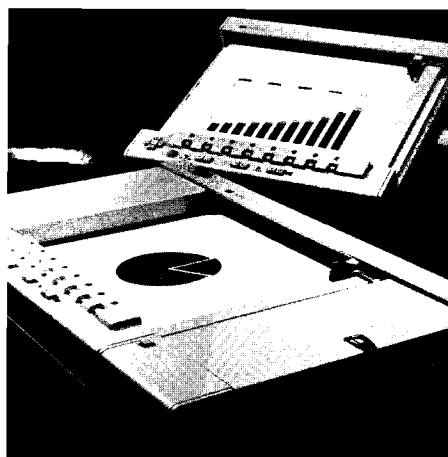
New 8-pen plotters

8-Pen Plotter Software & ROM Support

By Peggy Wyman/SDD

The new 8-pen plotters are software compatible with the older 4-pen models and can be used in the same applications where you have been selling the 4-pen plotters. Software written for the 4-pen models will run on the 8-pen plotters with no modification; minor program changes only will be needed to access pens 5-8.

Throughout HP, software and ROMs that supported the 4-pen models are being or will be modified to support the C/T plotters. The following table summarizes this support by mainframe:

Mainframe	Software	Pen Support	Comments
HP 3000	HP-DSG/3000 32250A	Supports 4 pens.	Future release will support 8 pens. Support planned for next E-MIT; contact ISD for availability date.
HP 1000	GRAPHICS/1000 (Graphics Plotting Software) 92840A	Supports 4 pens.	Programmer can use HP-GL commands to access pens 5-8. See GPS manual for HP-GL use.
	GRAPHICS/1000-II 92841A & 92842A	Supports 8 pens.	
HP 9825	Plotter ROM 98215A/98216A (ROM included with 9825B/T)	Supports 8 pens.	Current graphics ROM allows user to call any number of pens.
HP 9835	Plotter ROM 98337A	Supports 4 pens.	
	98337B	Supports 8 pens.	Available March 1, '81.
HP 9845B/T	Graphics ROM 98411A	Supports 4 pens.	
	98411B	Supports 8 pens.	Available March 1, '81.
HP 9845C	ROM supplied	Supports 8 pens.	
HP 2647A	Basic/Multiplot Rev F 02647-13301	Supports 8 pens.	Available April 1, '81.
	All other revisions	Support 4 pens.	
HP Series 80 Personal Computers	Plotter/Printer ROM 00085-15002	Supports 4 pens.	Programmer can use HP-GL commands to access pens 5-8. Future update will support 8.
Non-HP Computers	HP-ISPP (Industry Standard Plotting Package) 17580A	Supports 8 pens.	Allows many existing application packages to use the 7220 C/T plotters.
Non-HP Computers	HP-PLOT/21 72021C	Supports 8 pens.	For use with 7221C/T.

Peripherals

ISPP and PLOT/21

The last two packages in the Table are offered by San Diego Division.

HP Industry Standard Plotting Package (HP-ISPP, P/N 17580A) supports all HP RS-232C graphics plotters with HP-GL (HP Graphics Language) command language. Supported plotters are: 7220C/T 8-pen "B/A3"-size plotter; 7580A "D/A1"-size drafting plotter; 7225A A/A4 single pen plotter with either 17603A or 17604A RS-232C personality modules; and 7240A long-axis thermal printer/plotter.

It is a collection of subroutines with common industry-wide subroutine names, calling syntax, and functions. The subroutines are PLOT, FACTOR, NEWPEN, SYMBOL, NUMBER, PLOTS, LINE, AXIS, SCALE, WHERE, OFFSET, and plotter initialization. They allow the customer to use many existing graphics application programs with HP plotters with only minor software modifications.

To use ISPP, the customer replaces the subroutine library that drove his non-HP plotter with the ISPP subroutines. Then he compiles his graphics application program, and he's ready to plot on his HP plotter. The package is written entirely in ANSI FORTRAN (X3.9-1966). Check the ISPP data sheet 5953-4086. Price is $200.

Revision C of HP-PLOT/21

HP-PLOT/21 Rev. C (72021C) supports our 7221 plotters. It is fully compatible with ANSI FORTRAN (X3.9-1966). PLOT/21 is a set of 77 user-callable subroutines to provide the programmer highly flexible control over the four basic plotting functions: initializing the plotter, drawing the axes, scaling and plotting data, and drawing titles, labels and legends.

Revision C of HP-PLOT/21 has been tested to be fully compatible with the previous versions of the software. Check the HP-PLOT/21 data sheet 5953-4060. Price is $500.

VCD
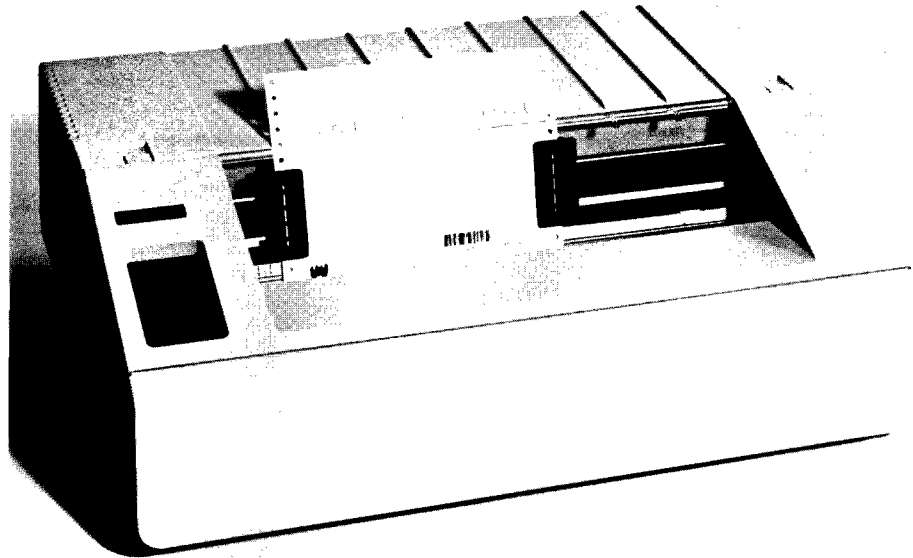
Factory Data Printer: Features for Distributed Data Capture
By Ron Forster/VCD

Bar code printing, mark sense card printing and forms generation are all "standard procedure" to the new HP 2631G Opt. 200 Factory Data Printer. Now HP data capture systems can have distributed printing of both alphanumeric text and machine-readable output. Everything from routing sheets and bar code part labels to order forms and reports can be printed with the Factory Data Printer at distributed workstations.

Bar codes, the easiest, most-versatile form of data capture, are easily generated with the Factory Data Printer. Three of the code types most commonly used for industrial data capture reside in the Factory Data Printer: the highly-readable Industrial 2 out of 5 code, the compact Matrix 2 out of 5 code, and the alphanumeric Code 39. Any of these code types can be tapped by an application program to print documents such as work orders, checklists, or routing sheets, all of which may be read at data capture stations with the HP 3075 Bar Code Reader (see *Computer News*, May 1, '80, for more information on HP bar code data capture).

With its ability to mix bar code and text, the Factory Data Printer eliminates problems of accidental mislabeling and lost cards; machine-readable data is printed directly on documents, rather than stuck on with a label or carried separately as a data card. Lost or damaged forms may be remotely duplicated by means of an application program for additional time and money savings.

Mark Sense Card Printing: Using high-contrast ink, the Factory Data Printer can print system-generated data on mark sense cards. Through an application program, information such as order numbers or quantities may be printed on cards to be used as order travellers. As cards circulate through the plant, additional information, like location or order status, may be inscribed with a soft pencil and read into the system by an HP 3075 multifunction reader.

Form Generation: The line drawing feature of the Factory Data Printer, along with the standard forms-handling features, especially suits the

printer for most light-duty forms generation applications. The standard printer features, including 180 cps alphanumeric printing, allow fast and easy form completion.

Because the printer can simultaneously print forms and fill in the required alphanumeric or bar coded information, forms can be modified during the print cycle to smoothly accommodate variations in text length. Use of the line drawing set also allows several different kinds of forms to be printed consecutively, without changing the paper.

System Configuration: The Factory Data Printer is equipped with HP-IB to interface with the 3075 Data Capture Terminal for remote printing of system-generated data. Interfaced to a 3075, the Factory Data Printer can be accessed over Factory Data Link, Multipoint, or RS-232C data communication lines for system output from an HP 1000 or HP 3000.

Ordering Information: HP Factory Data Printer 2631G Option 200 includes: Barcode & Mark Sense Printing capability, Line Drawing Character Set, High Contrast OCR Ribbon, and Bar Code & Mark Sense Printing Guide. Price: $600.

Factory Data Printer Sells Systems
By Ron Forster/VCD

Over a dozen companies are already considering ordering HP data capture systems with the HP 2631G Option 200 Factory Data Printer. Most of these are large manufacturing companies interested in a total system for work-in-process monitoring, material tracking, or inventory control. A typical system consists of 10-15 Factory Data Printers, 30-40 HP 3075A Data Capture Terminals, and one or more HP 1000 or HP 3000 mainframes. Some companies are evaluating HP data capture as a possible standard system to be used at several manufacturing facilities.

As production efficiency becomes necessary for growth in cost competitive markets, manufacturing companies are increasingly receptive to the cost savings offered by a distributed data capture system. By providing an almost instantaneous report on changes in order status, inventory levels, or machine usage, a data capture system can tighten the customer's control of the production system, saving time and labor.

With the introduction of the Factory Data Printer, HP offers a complete hardware system for data capture, with everything from printers and readers to the full computer system. This single-vendor solution is a key selling point.

Here in Vancouver, we have been receiving inquiries prior to the actual printer introduction, and most of the customers have been interested in a full data capture system, of which the Factory Data Printer is only a part. Most inquiries have come from manufacturing companies, but as a group, manufacturers are only a fragment of the total market. The HP Data Capture System and Factory Data Printer are designed for any manufacturing, process or service companies with the following needs: counting or tracking products, parts, orders, or time; monitoring order status or manufacturing process; allocating production resources; or controlling inventory levels. The potential is tremendous, and the versatility of the system suits it for a range of customers from parts manufacturers to libraries.

Jump into the data capture market. The time is right, and the customers are actively interested. If you need any information or demo materials, call Vancouver Division.

Factory Data Printer Woos Key Accounts
By Ron Forster/VCD

As the newest addition to the HP Data Capture system the HP 2631G option 200 Factory Data Printer has sparked widespread interest throughout business and industry. One key account has tested bar code printing of the Factory Data Printer and responded favorably. It is considering using the HP Data Capture system to track work-in-process. Another customer is interested in using bar code data capture and the Factory Data Printer to track the manufacturing of office equipment and other products. It is considering using the HP system in several divisions.

A missile manufacturer is thinking of using the Factory Data Printer and data capture system to track expensive alloy parts in an effort to boost production efficiency. Bar code data capture can help reduce capital tied up in work-in-process inventory through on-the-spot status updates.

A California library is interested in using the bar code system to help with book identification and inventory.

Our own Computer Support Division is implementing a tracking system for part boxes, using the Factory Data Printer to generate part labels. The labels are read into the system to access information on the history of each part.

New 2675A Videotape

"HP 2675A Features Demonstration" (Color), a 16-minute videotape in which Gary Peck of the Vancouver Division demonstrates the HP 2675A portable printing terminal and emphasizes its outstanding features, is now available. To order: Transmit a HEART (COCHISE) I2 order to Video Products, Palo Alto; Sales Force 09, Product Line 95, Marketing Division 07, Supplying Division 07. Order 90257RZ for a videocassette.

Price Changes

Computer Groups Price Changes Effective February 1, '81

These prices, effective February 1, '81, will appear on the Corporate Price List on that date, available in your office. Prices are US List unless otherwise noted. Orders at old prices will be honored at the factories for 30 days (or 60 days in the case of government quotes, see exception, III. GSA) after the effective date of an increase. All quotations, either verbal or written, shall be made at the new prices upon the effective date of the new price list. The customer should be notified that his order will be honored at the lower price if it is received within the 30-day grace period. Price decreases are effective immediately and in-house orders shipped 5 working days prior to the announced decrease date will be billed at the new lower price.

Note: Shaded area indicates price decrease.

BGD

Product No.	Description	Current Price	New Price
45180A Opt. 252	French lang. Opt. to MFG/250	— 0 —	— 0 —
45180S Opt. 252	French lang. Opt to SSS for French version of MFG/250	— 0 —	— 0 —
45210A Opt. 252	French version of European Gen Acct pkg. for HP 250	— 0 —	— 0 —
45210S Opt. 250	French opt for SSS of Fr. Gen. Acct. pkg. for HP 250	— 0 —	— 0 —

Computer Supplies Operation

Product No.	Description	Current Price	New Price
92153A	Print Wheel	70	55
92153B	Print Wheel	70	55
92153C	Print Wheel	70	55
92153D	Print Wheel	70	55
92153E	Print Wheel	70	55
92153U	Print Wheel	70	65
92153V	Print Wheel	70	65
92153W	Print Wheel	70	65

CSD Hardware Support

Product No.	Description	Current Price	New Price
7580A SMMC	Drafting Plotter		79
BMMC	Drafting Plotter		64
PMMC	Drafting Plotter		60
FMMC	Drafting Plotter		45
7220A/S STREP	Graphics Plotter		250
83A PMMC	Personal Computer		20
FMMC	Personal Computer		12
98034B BMMC	HP-IB Interface		4
PMMC	HP-IB Interface		3
FMMC	HP-IB Interface		2

Product No.	Description	Current Price	New Price
7920M + 16G	Guaranteed Uptime Serv. mo/maint for 7920M		191
7920S + 16G	Guaranteed Uptime Serv. mo/maint for 7920S		131
7925M + 16G	Guaranteed Uptime Serv. mo/maint for 7925M		174
7925S + 16G	Guaranteed Uptime Serv. mo/maint for 7925S		114
13037B + 16G	Guaranteed Uptime Serv. mo/maint for 13037B		60
13037C + 16G	Guaranteed Uptime Serv. mo/maint for 13037C		60
30016A + 16G	Guaranteed Uptime Serv. mo/maint for 30016A		4
30017A + 16G	Guaranteed Uptime Serv. mo/maint for 30017A		4
30018A + 16G	Guaranteed Uptime Serv. mo/maint for 30018A		16
30019A + 16G	Guaranteed Uptime Serv. mo/maint for 30019A		16
30020A + 16G	Guaranteed Uptime Serv. mo/maint for 30020A		67
30072A + 16G	Guaranteed Uptime Serv. mo/maint for 30072A		365
30073A + 16G	Guaranteed Uptime Serv. mo/maint for 30073A		365
30079A + 16G	Guaranteed Uptime Serv. mo/maint for 30079A		21
30087A + 16G	Guaranteed Uptime Serv. mo/maint for 30087A		43
30089A + 16G	Guaranteed Uptime Serv. mo/maint for 30089A		365
30090A + 16G	Guaranteed Uptime Serv. mo/maint for 30090A		242
30090K + 16G	Guaranteed Uptime Serv. mo/maint for 30090K		26
30090P + 16G	Guaranteed Uptime Serv. mo/maint for 30090P		11

Product No.	Description	Current Price	New Price	Product No.	Description	Current Price	New Price
30091A + 16G	Guaranteed Uptime Serv. mo/maint for 30091A		365	22969B	DS/1000-IV Internals Course		1,000
30092A + 16G	Guaranteed Uptime Serv. mo/maint for 30092A		16	22969X	DS/1000-IV Internals On-Site Course		10,000
30094A + 16G	Guaranteed Uptime Serv. mo/maint for 30094A		18	22969X			
32440A + 16G	Guaranteed Uptime Serv. mo/maint for 32440A		407	Opt. 001	One extra student in 22969X		100
32441A + 16G	Guaranteed Uptime Serv. mo/maint for 32441A		407	22970B	DS/1000-IV to DS/3000 Course		400
63909F + 16G	Guaranteed Uptime Serv. Mo/Maint for 63909F		32	22970X	DS/1000-IV to DS/3000 On-Site Course		4,000
				Opt. 001	One extra student in 22970X		100

CSD Software Support

Product No.	Description	Current Price	New Price	Product No.	Description	Current Price	New Price
09825-30030	9825 I/O Training Course	500	600	22971B	DS/1000-IV Upgrade Course		400
09835-30020	9835 Assembly Training Course	625	750	22971X	DS/1000-IV Upgrade On-Site Course		4,000
09845-30030	9845/35 BASIC I/O Training Course	500	600	Opt. 001	One extra student in 22971X		100
09845-30040	9845 Data Base Management Training Course	625	750	22974B	RTE FORTRAN IV Plus FORTRAN 4X Course		625
22950C	Introduction to HP 1000 Computers Course		625	22978B	Advanced RTE L/XL Programming & System Manager Course		625
22950X	Introduction to HP 1000 Computers On-Site Course		6,250	22978X	Advanced RTE L/XL Programming & System Manager On-Site Course		6,250
22950X Opt. 001	One extra student in 22950X		100	Opt. 001	One extra student in 22978X		100
22953B	RTE L/XL Programming Course		625	22990B	RTE-IV Driver Writing Course		1,000
22953X	RTE L/XL On-Site Programming Course		6,250	22990X	RTE-IV Driver Writing On-Site Course	6,000	10,000
22953X Opt. 001	One extra student in 22953X		100	Opt. 001	One extra student in 22990X		100
22959X	RTE FORTRAN IV plus FORTRAN 4X On-Site Course		6,250	31369A	Application optimization training course using FORTRAN 77/300		750
22959X Opt. 001	One extra student in 22959X		100	31443Q	MUS for FORTRAN 77/300		3
22968B	DS/1000-IV User Course		600	31443S	SSS for FORTRAN 77/300		30
22968X	DS/1000-IV On-Site User Course		6,000	31443T	CSS for FORTRAN 77/300		50
22968X Opt. 001	One extra student in 22968X		100	31443V	Extended CSS for customers with an additional system for FORTRAN 77/300		25
				32262B	MM/3000 Customer Training Course		450

Price Changes

Product No.	Description	Current Price	New Price
92841Q	MUS for DGL/1000		3
92841S	SSS for DGL/1000		20
Opt. 020	Updates on Minicartridges		20
Opt. 041	Updates on flexible disc		— 0 —
Opt. 050	Updates on 800 BPI mag tape		— 0 —
Opt. 051	Updates on 1600 BPI mag tape		— 0 —
92841T	CSS for DGL/1000		40
Opt. 020	Updates on minicartridges		20
Opt. 041	Updates on flexible disc		— 0 —
Opt. 050	Updates on 800 BPI mag tape		— 0 —
Opt. 051	Updates on 1600 BPI mag tape		— 0 —
92841V	Extended CSS for customers with an additional system for DGL/1000		15
92841W	Extended SSS for customers with additinal system for DGL/1000		10
92842Q	MUS for AGP-3/1000		3
92842S	SSS for AGP-3/1000		20
Opt. 020	Updates on minicartridges		30
Opt. 041	Updates on flexible disc		— 0 —
Opt. 050	Updates on 800 BPI mag tape		— 0 —
Opt. 051	Updates on 1600 BPI mag tape		— 0 —
92842T	CSS for AGP-3/1000		40
Opt. 020	Updates on minicartridges		30
Opt. 041	Updates on flexible disc		— 0 —
Opt. 050	Updates on 800 BPI mag tape		— 0 —
Opt. 051	Updates on 1600 BPI mag tape		— 0 —
92842V	Extended CSS for customers with an additional system for AGP-3/1000		15
92842W	Extended SSS for customers with an additional system for AGP-3/1000		10

Product No.	Description	Current Price	New Price
Comp. Systems Div.			
30072A	Opt. to delete 2649E to a 2645A when HP 3000 Series 33 is upgraded to Series 44 (60Hz)		69,500
30073A	Opt. to delete 2649E to a 2645A when HP 3000 Series 33 is upgraded to Series 44 (50Hz)		69,500
30089A	Opt. to delete 2649E to 2645A when HP 3000 Series 30 is upgraded to a Series 44 (60Hz)		69,500
30091A	Opt. to delete 2649E to 2645 when HP 3000 Series 30 is upgraded to a Series 44 (50Hz)		69,500
30341A	Series III HP-IB Interface Module		14,500
DCD			
98413B	Mass Storage ROM for 9845B/C Desktop Computer		500
DSD			
2109K + 20	Twenty-pack of E-Series Board Computers		44,000
22953B	RTE L/XL Programming Course		625
22953X	RTE L/XL Programming (on site)		6,250
Opt 001	RTE L/XL Programming (on site) add'l student		100
22958C	FORTRAN IV plus FORTRAN 4X Independent Study		1,350
22950C	Intro to HP 1000 Computers		625
22950X	Intro to HP 1000 Computer (on-site)		6,250
Opt. 001	Intro to HP 1000 Computer (on-site) add'l student		100
22968B	DS/1000-IV User Course		600
22968X	DS/1000-IV User on-site		6,000
22968X	DS/1000-IV User (on-site) add'l student		100
22969B	DS/1000-IV Internals		1,000
22969X	DS/1000 Internals (on-site)		10,000

Product No.	Description	Current Price	New Price
22969X			
Opt. 001	DS/1000-IV Internals (on-site) add'l student		100
22970B	DS/1000-IV to DS/3000		400
22970X	DS/1000 to DS/3000 (on-site)		4,000
Opt 001	DS/1000 to DS/3000 (on-site) add'l student		100
22971B	DS/1000-IV Upgrade		400
22971X	DS/1000-IV Upgrade (on-site)		4,000
Opt. 001	DS/1000-IV Upgrade (on-site) add'l student		100
22978B	Advanced RTE L/XL Programming & Sys. Mgr. Course		625
22978X	Advanced RTE L/XL Prog. & Sys. Mgr (on-site)		6,250
Opt. 001	Advanced RTE L/XL Prog. & Sys. Mgr. (on-site) add'l student		100
22990B	RTE-IV Driver Writing Course		1,000
91740P			
Opt. 001	DS/1000 Right to Copy Products	— 400	— 640
91740R			
Opt. 001	DS/1000 Right to Copy Products	— 400	— 640
92068E			
Opt. 020	Minicartridge media		— 0 —
Opt. 050	800 BPI mag tape media		— 0 —
Opt. 051	1600 BPI mag tape media		— 0 —

Product No.	Description	Current Price	New Price
92841A	Graphics/1000-II Device Ind. Graphics Library (DGL)		2,000
92841R	Graphics/1000-II Device Ind. Graphics Lib. RTC 92841A		800
92842A	Graphics/1000-II Adv. Graphics Pkg. (AGP-3)		4,000
92842R	Graphics/1000-II Adv. Graphics Pkg-3D RTC 92842A		1,600
92843X	Graphics/1000-II Skeleton Device Handler		200

ISD

Product No.	Description	Current Price	New Price
31443A	FORTRAN 77/300 Right to use		3,000

VCD

Product No.	Description	Current Price	New Price
2631G			
Opt. 200	Factory Data Printer		600
*2631G	Graphics Printer	4,500	4,900

Instrument Group

Colorado Springs

Product No.	Description	Current Price	New Price
1351A	Graphics Generator		5,000
1351S	Graphics Generator & 1311B		10,450
52104A	HP-IB Interface for 1351A/S		650
52105A	RS-232C Interface for 1351A/S		925
52106A	16-bit Parallel Interface for 1351A/S		650

*In the January 1 Price Changes section, the new price for this product was incorrectly listed as $5,900. Please note it should have read $4,900.

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