COMPUTER SYSTEMS NEWSLETTER

For HP Field Sales Personnel

New Products from BOISE, DSD, DTD and GSD
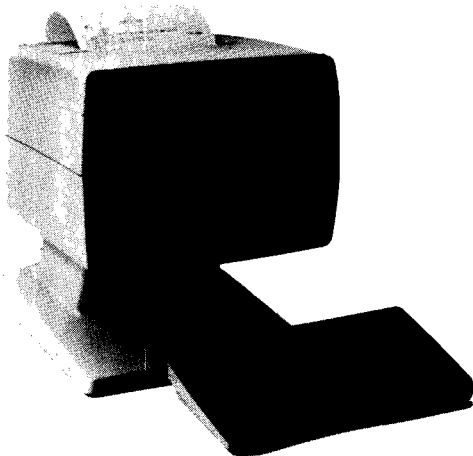
HP 300

HP 1000 MINIRACK

HP 2608A

HP 2631G

HP 2621

HP 2639A

HP 7970E/HP-IB

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Product News

Boise Division Makes History
By: Bill Murphy/Boise

September 18 will undoubtedly be remembered as a significant date in the history of the Boise Division. On that day, our division announced four new products which should substantially enhance our competitive position in the marketplace.

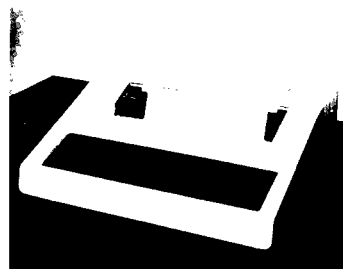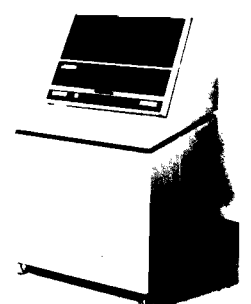The 2608A, a 400 line per minute dot matrix printer, will become the primary line printer on HP computer systems. Not only is the 2608A a major milestone for us in Boise, it is a significant step for HP in the computer business, in that we are now the only small computer company manufacturing a line printer of its own design. Exploiting the unique features designed into the 2608A should give us an edge on our competition.

HP-IB compatibility for our 7970E tape drive extends the capabilities of the highly reliable mag tape product line. Employing a self-contained controller and formatter, the HP-IB will allow us to connect tape drives to a number of new HP systems. Residing in its own stand-alone cabinet, the HP-IB 7970E will be a very attractive addition to our systems.

The 2639A is a new product in the 2630 family of dot matrix printers and terminals. This new "communications terminal" has considerable interface flexibility and should allow us to connect to a wide variety of non-HP computer systems. This capability will extend our potential market allowing us to bring the power and versatility of our hard copy terminals to a much broader segment of users.

Finally, the 2631G expands on the capabilities of the 2631A printer with the addition of graphics. As exemplified by our product theme "Graphics Plus", the 2631G has very powerful graphics output capabilities, as well as the complete set of printer features which has made the 2630 family one of the industry leaders.

All four of these products have been announced to the press, and we are now accepting orders. If the initial reaction to the announcement is any indication, the 2608A, HP-IB tape, 2639A, and 2631G will meet with quick market acceptance, as did our first new products, the 2631A and 2635A.

HP — The First Manufacturer of Small Computers to Design and Manufacture Its Own Line Printers
By: Gary Atkins/Boise

A new dot-matrix 400 LPM line printer, the 2608A, is the first line printer designed and manufactured by Hewlett-Packard. In fact, we are the first small computer company

to reach this level of vertical integration. The 2608A is a low cost, highly reliable, medium-speed dot matrix line printer designed for use in most computer applications. Printing at 400 lines per minute, utilizing a high resolution matrix, offering special user features such as graphics, multiple character sets, 16-channel VFC and double size characters, the 2608A offers a price/performance combination previously unavailable. Above all, the 2608A is a printer designed with today's systems in mind, rugged enough for EDP applications, yet quiet enough to be compatible with most office environments.

The 2608A is designed to be the "workhorse" printer in the HP line. We feel that within a year the 2608A will represent over 75% of the line printers sold on HP systems.

At introduction the 2608A will be fully supported on the HP 1000 under RTE-M and RTE-IV. This includes full graphics applications support from Boise Division with GRAPHICS/1000.

Toothpick and Amigo will both support the normal line printer functions of the 2608A at their introductions.

Option 300 to the 2608A will be on the Corporate Price List on November 1, announcing support on the HP 3000 Series II and III. This support will intially be limited to the basic print and space operations of the 2608A.

The 2608A is not just another printer. It offers ruggedness, flexibility, and versatility not found in "just another printer". For additional information on this exciting new product, refer to your new product training material from Boise.
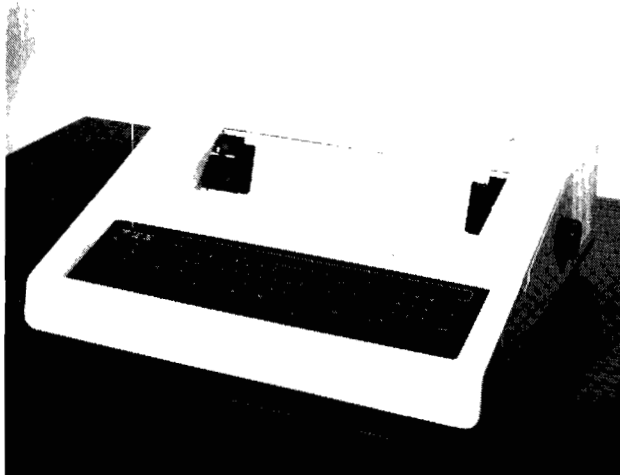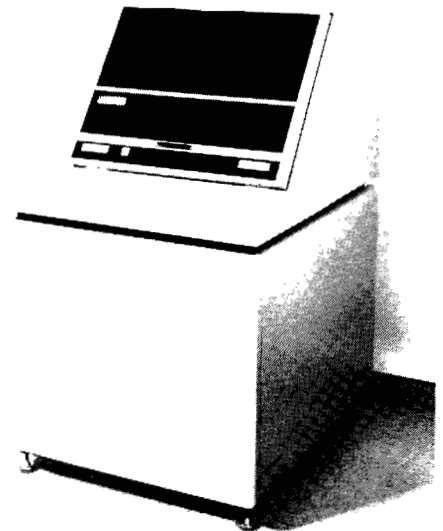
HP-IB for the 7970E Mag Tape Drive
By: Mike Harrigan/Boise

Boise Division is proud to announce that HP-IB interfacing is now available for the HP 7970E mag tape drive. The new interface, unlike previous mag tape controllers, is located inside the mag tape drive rather than inside the CPU. Instead of three bulky data cables going from the CPU to the tape drive, only one standard HP-IB cable is used.

A microprocessor is used for efficient data handling. The new interface will perform all tape functions performed by other HP mag tape controllers. Three more slave drives may be daisy-chained into one controller for a total of four tape drives per controller.

HP-IB is available only on the HP 7970E (1600 bpi, PE), not on the HP 7970B (800 bpi, NRZI).

At initial introduction, the HP-IB interface will be available only for use in conjunction with the HP 3000 Series 33 computer system.

For use with the HP 3000/33, the HP 7970E mag tape drive, HP-IB controller, and Lo-Boy cabinet are available as subsystem Option 426. This subsystem also includes installation and documentation. The matching slave mag tape drive, Lo-Boy cabinet, and cables are designated Option 421.

Concurrent with introduction of HP-IB compatibility for the mag tape drive, the new Lo-Boy cabinet will be available on both the 7970E and 7970B mag tape drives. The Lo-Boy cabinet provides a low profile design with lower initial cost and easy installation.

Now: Hard-Copy Graphics!
By: Steve Richardson/Boise

The 2631G, 180 CPS dot-matrix graphics printer is now available to connect to your 2647A or 2648A CRT.

The 2631G incorporates all the print speed and versatility features of the 2631A, plus the capability to dump the CRT's graphics memory. Now you can offer the one-vendor solution to your graphics users!

The 2631G offers other new features like high density print for letter quality, the line draw character set so you can print your form and data at the same time, and programmable page and text length.

The 2631G can be ordered now! Let's go back to those customers who were screaming for graphics hard copy and sell them a winner!! For the additional information you'll need to do this, refer to the material in your Boise new product training package.

2639A Offers Communications Flexibility, OEM Discounts
By: Larry Andrews/Boise

Designed for use with a wide variety of systems, the 2639A vastly increases the accessible market for HP printing terminals.

Its capability to interface to more non-HP systems makes it a natural for the OEM marketplace. It is, therefore, the only printing terminal offered with component OEM discounts ("*" on A1, A3, and A4 of Computer Products purchase agreement).

The 2639A includes all of the features of the 2635A plus the following data communications capabilities:

- 1000-character buffer.

- 103 and 202 type modem control.

- Current-loop capability (full duplex only) for operation up to 2000 feet from CPU.

- Selectable control characters for data stream protocols.

- X-on/X-off (DC1/DC3) type protocol.

- ENQ/ACK type protocol.

- Printer busy (buffer full) signal.

- Selectable buffer full limits at 1000, 900, 800, 700, 600, 500, 400, or 300 characters.

- Selectable buffer empty limits at 0, 100, 200, 300, 400, 500, 600, 700 characters. (Selectable buffer limits allow the interface to be configured to work with various communication links.)

- Split baud rates: baud rate for receive and transmit can be set independently.

- Baud rates selectable from front panel: 110, 150, 300, 1200, 2400, EXT.

- In EXT position, 15 rates are selectable on the interface card.

- Parity selectable between ODD, EVEN and NONE. In no parity position, transmitted data is selectable with "mark" or "space" as parity bit. Incoming parity errors cause printing of an "@".

- 30 position PC edge connector allows various interface cables to be used. Refer to 2640 series terminals "Cabling Application Brief", HP part #5952-9975.

- An external clock is supplied at 8 or 16 times the actual baud rate. This clock may be gated by the printer busy status.

Since not all OEM customers need the full communications capability of the standard 2639A, a non-configurable interface option is available with the following capabilities:

- 227 character buffer.

- 103/202 type modem control.

- Baud rates of 110, 150, 300, 1200, 2400, EXT selectable from the front panel. In EXT position, 15 rates selectable on the interface card.

- Parity selectable between ODD, EVEN, and NONE. In no parity position, parity bit is always "space".

- 30 position PC edge connector or 25 pin EIA RS-232C type connector.

- An external clock is supplied with the PC edge connector option. This clock is not gated by buffer status.

The 2639 can be ordered as follows:

2639A

180 character per second printing terminal, 136 characters per line at 10 characters per inch. Expanded and compressed print modes for 68 and 227 characters per line respectively. Automatic underline and display function modes. 8 channel fixed VFC. Horizontal tabs. Flexible EIA RS-232C interface. 120 volts, 48-66 Hz $4,025*

-015	220V, 48-66 Hz	$	0*
-016	100V, 48-66 Hz	$	0*
-017	240V, 48-66 Hz	$	0*
-041	Non-configurable, RS-232C interface with RS-232C type connector	$	485*
-051	Non-configurable, RS232C interface with 30 position PC edge connector	$	485*
-102	Modem cable for use with standard and Option 051 (13232N).	$	75*
-103	Modem cable for use with Option 041	$	60*
-715	Service documentation	$	15*

*U.S. List Price   Availability is 12 weeks ARO.

Please refer to the data sheet and field training manual contained in your Boise new product material for further information.

Remember, the contribution of the 2639A is communications flexibility, which greatly increases your potential customer base. If a customer wants a micro-programmable terminal, the 2649A is the answer.

Split Availability for 2631A Printers
By: Thad Webster/Boise

While perusing your latest Availability Schedule, you may have wondered what a 6*10 means for the 2631A printer. These two numbers represent our best effort to help you get printers to interested customers for use and evaluation as quickly as possible.

We have split the availability of the 2631A based on the number of printers you order. If you order 1 – 3 printers, we want to ship them at our lowest availability (in this case 6 weeks). Order 4 or more printers and we will ship at our standard availability (10 weeks). Our interest is to get at least a few units to a customer as soon as possible. We hope this shipping strategy helps you sell more 2631 printers!

Special Length Cables on Printers
By: Thad Webster/Boise

One of the most popular "specials" the Boise Division manufactures is the longer-than-standard-length cables. First, let me explain the standard length cable matrix, then follow with the special length cable policy.

The Boise Division presently handles the 2607, 2613, 2617, 2618, and 2631 printers. When you order a printer and

cable to connect to an HP 3000, the standard cable length is 50 feet. When you order a printer and cable to connect to an HP 1000 the standard cable length is 25 feet (the cable is provided when both the printer and interface are ordered).

Boise Division will build cables longer than standard as a "special". You can order a longer-than-standard cable by itself or with a printer order. The maximum length of a printer cable depends on both the printer model and the HP system. Some cables require the printer to be modified if certain lengths are planned. With so many alternatives, we suggest you call your Sales Development Engineer (SDE) to discuss your particular sales situation. Your SDE can give you all of the details for your customer's special length requirements as well as a price quote and order instructions.

Remember, the Boise Division can and will build special length cables for system printers, but call your SDE for the special considerations.

HP Assumes Manufacture of Terminal Print Heads
By: Mary McNally/Boise

HP Boise Division is in the process of introducing their own dot-matrix print head into the 2631A/2635A product line. When these terminals were introduced last fall, they featured a 9-wire dot-matrix impact print head which was designed and manufactured by Hydra Corp. HP decided to purchase the manufacturing rights, and produce the print head in-house, for several reasons. Specifically:

Cost Reduction - The cost/print head is reduced by more than 50% by in-house manufacture as opposed to OEM purchase.

Process Control - As the print head is a critical, high volume item, production will not be limited by their availability from the vendor.

Maintenance - As the number of terminals in the field increases, the quantity of additional print heads required for maintenance could exceed the quantity available from the vendor.

Technically, the HP print head represents no major design changes. It is felt that it will give better print quality, however, largely as a result of better tooling and tighter tolerances. The MCBF on test print heads was approximately 115 million characters, and the print head will be rated conservatively at 100 million characters.

The print head underwent several months of RVT, during which several failures and production assembly problems were corrected. The first group of print heads was introduced into the production line the last week of June. Through the end of July, approximately 350-400 HP print heads had been installed in terminals. Our target for the month of August was to have used HP models for more than 80% of our production, thereby moving closer to the goal of total phase-out of the Hydra print head.

Special Character Sets for Line Printers
By: Steve Davis/Boise

During the years that HP has been offering the 2613A, 2617A, and 2618A line printers, our customers have required a number of different special character sets to meet the needs of their applications. Special printers which are currently available are:

Special Option No.	Applicable Printers	Description
-H01	2613A, 2617A	64-Character Swedish/Finnish
-H02	2613A, 2617A	96-Character Swedish/Finish
-H06*	2613A, 2617A, 2618A	96-Character Cyrillic
-H08*	2613A, 2617A, 2618A	96-Character Arabic
-H10*	2613A, 2617A	96-Character Farsi
-H11	2613A, 2617A, 2618A	64-Character Spanish
-H13	2613A, 2617A	64-Character BM-79 font (identical to standard 64-character set except characters are shorter).
-H14	2613A, 2617A, 2618A	64-Character Arabic
-H15	2613A, 2617A	64-Character OCR-B1 font (same characters as standard 64-character set except # replaced by British Pound Sign).
-H16*	2613A, 2617A	96-Character Danish
-H17	2613A, 2617A	64-Character OCR-B1 font (identical to standard 64-character set except for font).
-H19	2613A, 2617A	64-Character OCR-A font (identical to standard 64-character set except for font).
-H20*	2613, 2617A	96-Character DPC-A font w/yen and British Pound Signs.
-H21	2613A, 2617A	64-Character Norwegian/Danish
-H22	2613A, 2617A	64-Character Swedish
-H23	2613A, 2617A	64-Character U.K.
-H24	2613A, 2617A	96-Character Hebrew
-H25	2613A	64-Character large character set (includes most characters on standard 64-character drum plus five segments which can be combined to form large characters).
-H26	2613A, 2617A	96-Character U.K.
-H27*	2613A, 2617A	96-Character Hangeul (Korean)
-H28	2618A	64-Character BM – S font (identical to standard 64-character set, except for font).
-H29	2613A	64-Character German
-H30	2613A, 2617A	64-Character (identical to standard 64-character set except for special minus sign).
-H32*	2617A	96-Character DPC-A font (with true underscore).
-H33	2617A	96 Character U.K. (with true underscore).

These options require special rewiring of the printer and should be cleared with the factory before quoting.

The price of each of these special options is $500. For 96-Character drums, Option 001 (96-Character capability) must also be ordered.

Before ordering, contact your Boise Sales Development Engineer for a quote of availability and cancellation charges, or if you need more information, give us a call. We are here to help you sell!

DATA SYSTEMS NEWS

Product News

Introducing the HP 1000 Computer Minirack
By: Bill Elmore/DSD
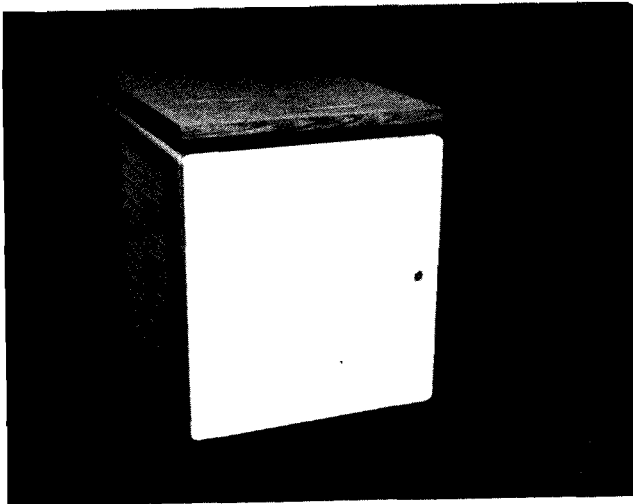
The HP 1000 Computer Minirack

For those of you who have wished for a lower-priced cabinet for configuration involving only a computer or a computer and disc, the HP 1000 Computer Minirack is here! The HP 1000 Computer Minirack is an attractive cabinet in which any HP 1000 M-Series, E-Series, or F-Series computer may be mounted. The minirack provides a small table surface suitable for a terminal or other desktop peripheral, and complements similar cabinets available with HP discs and magnetic tape units.

Features

• Attractive rack for computer, or DISComputer set.

• Low cost alternative to 56" cabinet.

• Lockable doors protect from unauthorized access.

Matching Peripherals

The HP 1000 computer minirack matches the lo-boy cabinet of the 7906M 20Mb disc, thus providing attractive packaging for this popular DISComputer combination. The minirack also goes very well with the 7920 disc and new lo-boy cabinet for the 7970 magnetic tape drives.
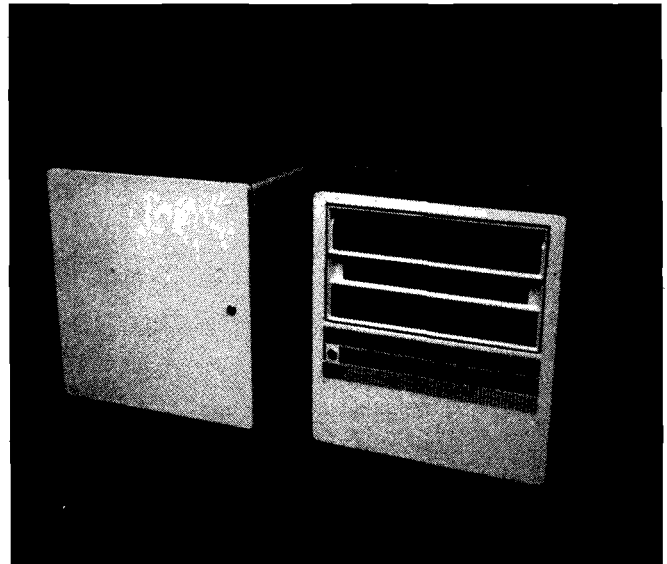
Less Expensive

Not only is the new computer minirack an attractive cabinet, but it is also a substitute in many configurations for the 29402B 56" cabinet. As shown in the accompanying figure, configurations including the minirack can save the customer up to $1350 in cabinetry for certain configurations. Also, since the computer is installed in the minirack for shipment, there are no additional racking charges to contend with.

Ordering Information

The minirack is available as a computer option for all HP 1000 computers (excluding the 2105A) as shown in the following table. The computer will be shipped installed in the minirack. The HP 1000 computer product structure, including new minirack options, is summarized in a separate table.

Pricing Comparison: Minirack vs 29402B 56" Cabinet

Single CPU
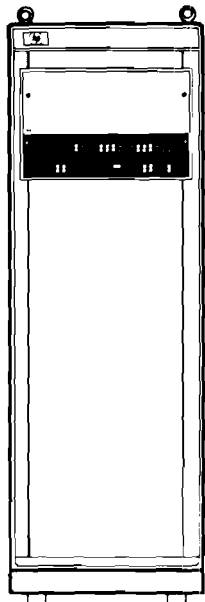
Computer

**2108M Computer
in 56" Cabinet**

Price: $9,625

Disc/Computer
Combination

Computer

19.6 Mbyte
Disc Drive

Plenum
Blank panel
Disc
Controller

**2111F/7906MR
in 56" Cabinet**

Price: $27,675*

Computer

Blank panel

**2108M Computer
in Minirack**

Price: $8,275

19.6 Mbyte Disc Drive
in low-profile cabinet

Computer

Blank panel
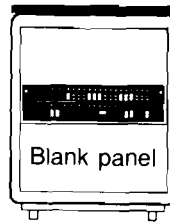
Plenum
Disc
Controller

**2111F/7906M
in separate cabinets**

Price: $27,100
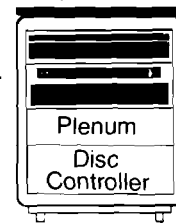
*Racking charges not included.

CPU	Option	Description	List Price
2108M, 2112M 2109E, 2113E 2111F	300	Mount CPU in a low profile minirack cabinet. Power is provided by the computer power cord connected to wall outlet.	$ 850
2117F	301	Mount CPU in a low profile minirack cabinet. Since the 2117F has two power supplies, this minirack contains a power distribution unit (PDU) equipped for 115V operation. Computer power supplies are plugged into the PDU, and the PDU power cord is connected to a wall outlet. Comes with a 10 foot power cord and 20 ampere plug.	$1000
2117F	302	Same as Option 301 except that the PDU is wired for 230V operation. Option 015 must also be ordered to provide 230V operation for the CPU power supply. Option 302 does not include a power cord.	$1000
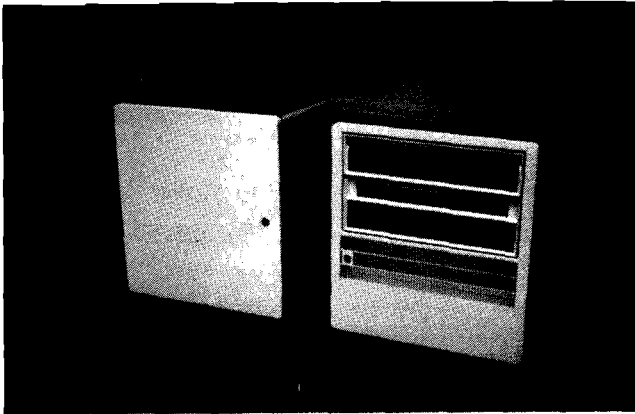
Minirack shown with matching 7906M disc . . .
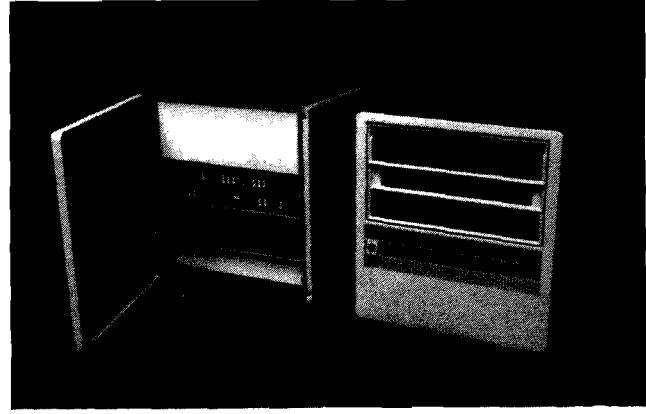
and with door open exposing an HP 1000 F-Series Computer.

HP 1000 CPU Product Structure

CPU/Option	Description	List
2105A	M-Series Computer	$ 4,750
-015	Provides 230 Volt operation	0
2108M	M-Series CPU with 64Kb standard performance memory	7,425
-014	Delete Memory System (A)	(3,300)
-015	Provides 230 Volt operation	0
-300	Mount CPU in minirack	850
2112M	M-Series CPU with 128Kb standard performance memory	10,450
-013	64Kb Standard Performance Memory	(1,750)
-014	Delete Memory System (B)	(5,250)
-015	Provides 230 Volt operation	0
-300	Mount CPU in minirack	850
2109E	E-Series CPU with 64Kb standard performance memory	9,250
-012	64Kb High Performance Memory	950
-014	Delete Memory System (A)	(3,300)
-015	Provides 230 Volt operation	0
-300	Mount CPU in minirack	850
2113E	E-Series CPU with 128Kb standard performance memory	11,740
-012	64Kb High Performance Memory	(800)
-013	64Kb Standard Performance Memory	(1,750)
-014	Delete Memory System (B)	(5,250)
-015	Provides 230 Volt operation	0
-300	Mount CPU in minirack	850
2111F	F-Series CPU with 64Kb high performance memory	12,250
-014	Delete Memory System (A)	(4,250)
-015	Provides 230 Volt operation	0
-300	Mount CPU in minirack	850
2117	F-Series CPU with 128Kb high performance memory	16,000
-014	Delete Memory System (B)	(6,500)
-015	Provides 230 Volt operation	0
-301	Mount CPU in minirack with 115V power module	1,000
-302	Mount CPU in minirack with 230V power module	1,000

(A) Option 14 requires at least 64Kb of memory to be ordered via a memory package or components.

(B) Option 14 requires at least 128Kb of memory to be ordered via a memory package or components.

HP 1000 Multipoint Enhanced

By: Bill Stevens/DSD

The HP 1000 Multipoint Terminal Interface Subsystem has been enhanced to provide two new features:

1. Transparent transmission of binary data to and from terminals on the multipoint line, and

2. Programmatic access to 2645A/2648A Minicartridges and Peripheral Printers.

The enhancement is being distributed on the 1840 update of the 91730S Software Subscription Service for Multipoint Software. All 91703A Multipoint Software shipped starting October 1st, 1978, will include the enhancement. The production level firmware on the 12790A Multipoint Interface card has already been modified to support transparency; therefore, with the exception of four customers worldwide (who have been contacted by DSD and provided with the new firmware), no 12790A Multipoint Interface firmware changes in the field have been or will be required. Data Terminals Division is now shipping the new 500-Series ROM's for 2645's and 2648's. These new ROM's allow minicartridges and peripheral printers to operate on multipoint lines. If your customer needs to update a multipoint 2645A or 2648A already installed so that it can use its minicartridges, or peripheral printer, contact Sales Development at DTD for further information.

Transparent Transmission

When HP 1000 Multipoint was first introduced last May only ASCII screen-displayable characters could be sent up or down the multipoint line. Since that time, DSD has devised an efficient way to utilize Multipoint Bisync's Data Link Escape (DLE) sequences to prevent a random binary data byte from being interpreted as a protocol character — such as End of Test (EOT). Therefore, any binary data sequence, including of course, ASCII characters, can be sent to or from a multipoint terminal and its peripherals; no data sequence can interfere with the line protocol in any way. This means, for example, that a user program can write binary data records to a multipoint terminal's left minicartridge.

2645A/2648B Peripheral Support

Multipoint 2645A/2648A Minicartridges and Printer Peripherals (i.e., the 13246A/B and 2631A Option 240) can now be accessed from user programs using HP 1000 Multipoint software subroutines. These FORTRAN or Assembly Language callable subroutines provide for Read, Write and Control capabilities. These subroutines reference peripherals as subchannel unit numbers to the multipoint terminals Logical Unit (LU) number. Therefore, there is no direct interface between the terminal's minicartridges and the RTE-IV File Manager or Editor. However, the advantage to this approach is that 2645A peripherals on Multipoint do not consume any of the valuable 63 RTE LU's — e.g., 4 LU's for every terminal equipped with minicartridges and a

printer. And, using the multipoint subroutines, the user can write a simple program to copy a disc file to a multipoint terminal's minicartridge, or vice-versa.

By the way, HP 1000 Multipoint sales have been very strong. Thank you and . . .

GOOD SELLING!

7221A Multicolor Graphics Plotter Now Supported on GRAPHICS/1000 Graphics Plotting Software

By: Mike Scott/DSD

The October 1, 1978 (1840) software release of the 92840A Graphics Plotting Software will add support for San Diego Division's 7221A Multicolor Graphics Plotter. This increases the number of supported GRAPHICS/1000 devices to four: 2648A Graphics Terminal, 7221A Multicolor Graphics Plotter (RS-232C), 7245A Plotter/Printer (HP-IB), and the 9872A Multicolor Graphics Plotter (HP-IB).

The 7221A supports the RS-232C/CCITT V.24 serial interface. It can be interfaced to the HP 1000 computers either with a modem or handwired directly to the computer as shown in the figure below. There will be constraints as to how the customer can connect the 7221A to an HP 1000. The 7221A must be on the same line as a 2640B, 2645A, or 2648A terminal with the 7221A first. The reason for this is that the 7221A cannot respond to status requests from the CPU when a read or write command is executed. The GRAPHICS/1000 device subroutine is written such that every time anything is directed to the 7221A, the plotter is first turned on and then turned off after writing the message. This allows the system to talk to the 264x terminal between writing to the 7221A. The 7221A configuration will not be compatible with Multipoint.

Like the 9872A, the 7221A offers the same microprocessor-based motor drive for high resolution (.001" or .025mm), quality multicolor plots. Selectable baud rates (75 to 2400 baud) and a choice of half or full duplex provide an easy means to adapt the 7221A to a selection of terminal speeds and echo settings.

In order to reduce connect time and maintain maximum plotting speed, an 1158 byte buffer has been incorporated into the 7221A to store incoming instructions and plotting data. As an option, an additional 1928 bytes of buffer storage can be ordered (Option 001).

Most of the advanced capabilities of the 7221A can be accessed directly from the GRAPHICS/1000 software; these are: programmable automatic pen selection; programmable character size, slant, and direction; internal character generation; error-free off-scale data handling; multiple dashed-line fonts for easy trace differentiation; and point digitizing. These features are also available on the 9872A plotter.

7221A Configurations on the HP 1000

Modem Environment

HP 1000 with RTE-M or RTE-IV DVA05 92840A

12966A-002 I/F Card

12966-60006 (included with 12966A-002)

Modem —— Modem

Male-to-Male Cable RS-232C 07221-60157 (included with 7221A)

7221A
Modem Connector   Terminal Connector

13232N Modem Cable (must be ordered)

2640B or 2645A or 2648A

Direct Connection

HP 1000 with RTE-M or RTE-IV DVA05 92840A

12966A-004 I/F Card

12966-60011 (included with 12966A-004)

7221A
Modem Connector

Terminal Connector

12966-60012 (included with 12966A-004)

2640B or 2645A or 2648A

However, the 7221A offers two additional capabilities which are not available on the 9872A. These features are of particular importance to sophisticated users and OEM's with specialized graphics applications. The 7221A microprocessor can generate a circle or arc at any location on the plotting surface when it is provided with only a radius and starting and stopping angle. The ability to generate circles locally substantially reduces computer plotter communication. When this capability is not provided, the coordinates of each line segment (chord) making a circle must be generated in software and transmitted to the plotter. The second useful feature allows the user to store up to 64 macroinstructions in the 7221A's buffer. Each macroinstruction is a user-defined series of graphics instructions which can be invoked by a single command, reducing program size and computer connect time. For example, special symbols can be stored as macroinstructions and executed at any point in a program without retransmitting the coordinates that define each symbol each time it is used.

Because they are specific to the 7221A, the circle arc and macroinstruction capabilities are not accessible from the GRAPHICS/1000 software. However, the user can include programming statements which transmit escape sequences directly to the 7221A's microprocessor in order to take advantage of these capabilities. Information on circle/arc and macroinstruction generation is contained in the 7221A Operating and Programming Manual. Part Number 07221-90001.

Another factor that will help determine whether the 7221A or 9872A should be used in a particular application are the

distance constraints. The maximum spacing between HP-IB devices (i.e. 9872A) is two meters whereas the 12966A-004 comes with a 16-meter cable for hardwire connection between the HP 1000 and 7221A. The 7221A can also be easily remoted over a modem for long distances.

The 7221A modem configuration requires a 12966A-002 I F card plus a 13232N modem cable as shown in the figure This configuration is described in the 1840 revision of the 92840A Graphics Plotting Software Manual (92840-90001)

The 7221A direct connection requires a 12966A-004 I F card. This option includes both of the cables required to connect the 7221A and the 264X terminal to the HP 1000. Customers that already have the required 12966A I F card can order the two cables separately. The 12966A-004 will appear on the November 1, 1978 Corporate Price List. The cables can also be ordered after November 1. The 92840A manual will document this configuration in the 1901 revision although the only change should be to document the hardware configuration I have described here.

The 7221A sells for $4600 while the 9872A sells for $4200. Since the 7221A is sold by several sales forces, you should include the Product Support Option 952 (no charge) in order to assure proper quota credit and commission. The 12966A I/F card sells for $600 and the Option 004 (11/78 CPL) will add an additional $100. The 7221A is very well described in the training manual developed by the San Diego Division and distributed during the April NPT Tour. In that manual they discuss the 7245A Plotter Printer. 7221A, and 9872A Plotters.

HP-IB Bus Stop

New Microwave Application Note Describes Automatic Sensor Calibration
By: John Minck/SPD & Neal Kuhn/DSD
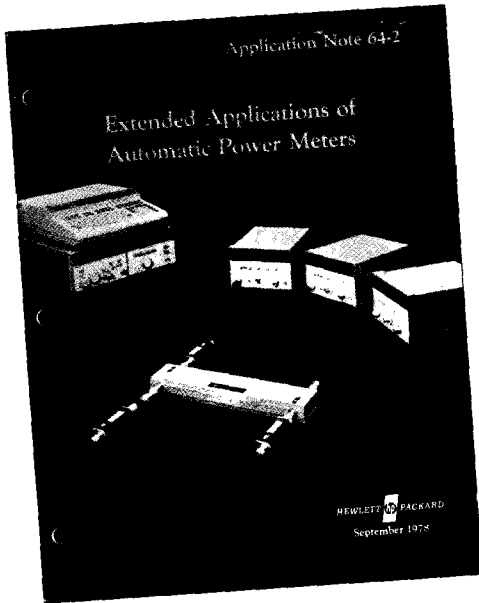
One of the more difficult and tedious jobs done in metrology laboratories is the periodic recalibration of microwave power sensors for calibration factor and effective efficiency.

Application Note 64-2 (*Extended Applications of Automatic Power Meters*) describes a microwave mini-system which combines an HP-IB computing controller with a 2-18 GHz programmable signal source, three programmable power meters, and several other coaxial components to compare calibration factor against a standard sensor with NBS traceability. The system computes its own measurement uncertainty at each cardinal frequency by using stored calibration data for the system components used, e.g., coupler directivity.

Since the power meters easily measure power ratios, a second major application of the system is accurate attenuation measurements. The usual 40-50dB of dynamic range of power meters can be doubled to 80dB+ by use of two 436A power meters and a signal source with programmable output level. In this way, the sensor which monitors input power uses up its 40dB range after which the 40dB range of the transmission sensor is used. A broadband coupler allows both SWR and attenuation to be measured at one time.

Modern power sensors are particularly well-suited for measuring attenuation because of their broadband low SWR. Thus, measurement uncertainty is improved yielding higher accuracy results.

Theory and practice of the equipment setup is covered in detail with comprehensive listings of demonstration software included. In addition to software subroutines applicable to the HP 9830 and 9825 desktop computer, this is the first HP Application Note to include software routines for use on

HP 1000 Computer Systems. Such systems are finding increasing use in production floor applications, so production test stands and metrology labs which have access to such distributed computing capability can now employ more automated equipment at modest cost.

If you are interested in reviewing a copy of this note, ask your literature librarian for AN64-2 (*Extended Applications of Automatic Power Meters*), or order publication number 5952-8197 from the literature depot.

Sales Aids

Prices Slashed on HP 1000 Systems
By: David Carver/DSD

As a further step in making it easier for you to sell HP 1000 Computer Systems, the prices on both disc-based versions have been reduced by $1500 effective October first. The new prices are:

| HP 1000 Model 45 (2177AB) | $45,000 |
| HP 1000 Model 40 (2176A/B) | $38,500 |

The primary motivation for the reduction is to make the systems more attractive in all cases than the sum of the components. As a specific example, consider configuring an HP 1000 Model 40 by the components versus simply ordering the system. Figure 1 shows a comparison of the two alternative ways of ordering the same system; the software charge of $2000 is for a repeat purchase of RTE-IV, and the services are based on prevailing rates for SE/CE time. Note that, on a list price basis, the system is less expensive by over $3200!

Components		System
Hardware	$35,995	
Software	2,000	
Field Integration[1]	1,680	
Services		
90 day warranty	732[2]	
Site Prep/Inst	810[3]	
CSS	525[4]	
Total Services	2,067	
Σ Components	$41,742	$38,500

[1] 20 hrs CE time, 8 hrs SE time

[2] 3 months' basic monthly maintenance charge for the hardware.

[3] Site prep at 5-½ hours; installation at 8 hours.

[4] 3 months' Comprehensive Software Support at $175 per month.

What happens when we take the different discount schedules for components and systems into account? Figure 2 shows the prices for the two alternatives at the different numbers of systems purchased. As you can see, the system prices are better in every case than the components, when all services are sold. Remember that the customer who purchases more than 8 systems per year may elect to delete the 90-day on-site warranty, site prep and installation, and CSS for an extra 5% discount (the line labeled "systems w/o services" graphs this case).

**SYSTEMS vs. COMPONENTS PRICING
HP 1000 MODEL 40**
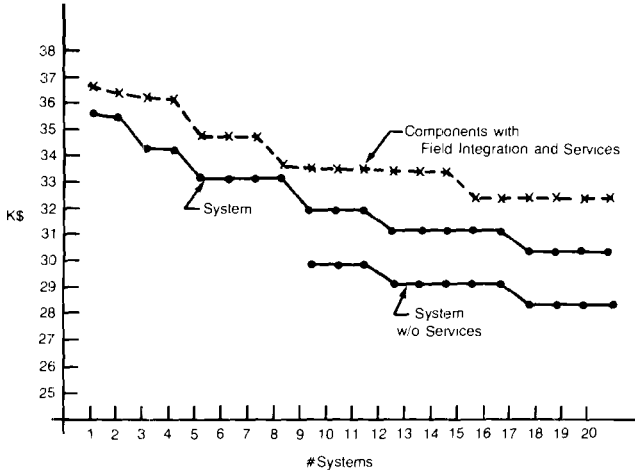
Figure 3 charts the same system prices, but shows the price of the sum of the components *without system integration* and *without any services*. The only condition we place on the customer who wants no services is that he do enough business with us to buy at least nine systems per year. We think that those who do less volume with us will be more successful by taking advantage of our system integration and service efficiencies.

**SYSTEM vs. COMPONENTS PRICING
HP 1000 MODEL 40**
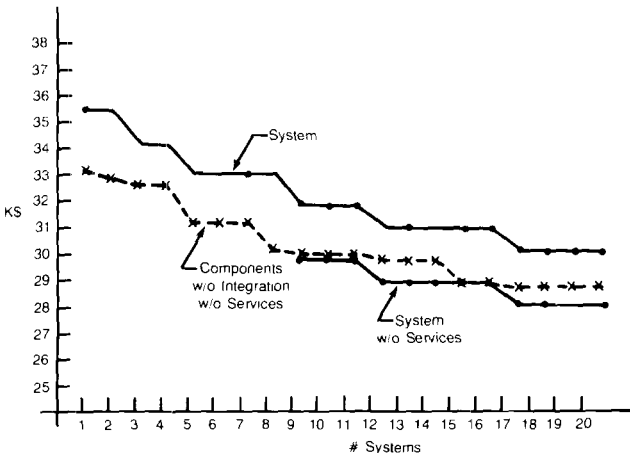
In summary, the changes we've made to effective system prices since the April NPT Tour have removed almost all of your objections to system-versus-components pricing. The message is, *sell systems;* they are priced better for your customer, they're easier to configure, easier to order, they have the benefits of the coordinated shipments program, and they have more Hewlett-Packard product content. Say good-bye to those four-hour components pricing exercises!

Summary of HP 1000 System Price Changes

- 3 Functional Units per System
- Model 40 Price Reduction
  $40,000 ——► $38,500
- Model 45 Price Reduction
  $46,500 ——► $45,000
- Delete Services for >8 Systems

RJE/1000 Updated
By: Bill Stevens/DSD

The RJE/1000 product has been updated to meet two important objectives:

1. To make RJE/1000 compatible with the majority of scheduler and access method software on the more recent medium-to-large Virtual Storage IBM 370 Systems.

2. To make the product more easily supported in the field.

All 91780A RJE/1000 software and documentation shipped from the factory as of October 1st will reflect this update. All customers on the 91780S Software Subscription Service will receive the updated RJE/1000 software on their 1840 software update. The new RJE/1000 Programmer's Reference Manual is shown below.
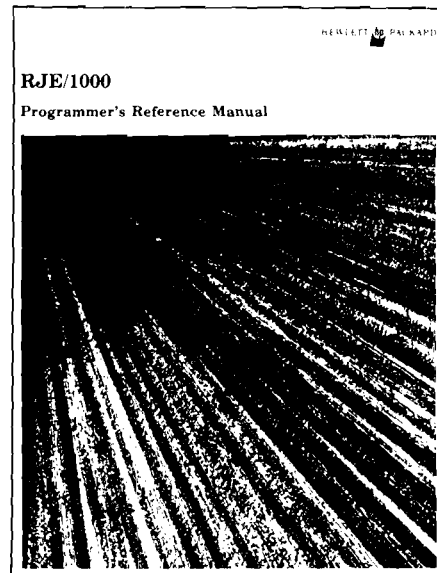
A Changed IBM Environment

Emulation of an IBM 2780 Remote Batch Terminal will still continue to be one of the very most important de-facto communications standards, in the computer industry today. RJE/1000 software was first invented for HASP scheduler software on IBM System 360's. IBM's introduction of the System 370 brought mainframe users new features such as Virtual Storage, semiconductor memory, a microprogrammed CPU and Systems Network Architecture support. The 370 also brought a host of new scheduler and access method software to which RJE/1000 could be interfaced. This update was implemented to provide compatibility with the most important of these. A very short summary of the evolution of typical IBM 360/370 configurations is shown below:

SYSTEM 360 WORLD

Increasing System 370 Processing Power

Model ——▶

SYSTEM 370 WORLD { Microprogramming Semiconductor Memory Virtual Storage SNA }

115   125   135   145   158(3032)   168(3033)

DOS ——▶ DOS/VS
(Disc Operating System)

[5 Partitions
16 Mbyte Virtual Storage
Power/VS
BTAM,TCAM,VTAM]

OS/MFT ——▶ OS/VS1
(Operating System
Multi-programming with
a fixed number of Tasks)

[15 partitions
16 Mbyte Virtual Storage
JES/RES
BTAM,TCAM,RTAM,VTAM]

OS/MVT ——▶ OS/VS2(Rel. 1.X)   OS/VS2(Rel. 2.X)
(Operating System   (SVS)   (MVS)
Multi-programming with
a variable number of Tasks)

[63 Partitions
16 Mbyte Virtual Storage
Batch & TSO
HASP
BTAM,TCAM,RTAM,VTAM]

[63 Partitions
16 Mbyte Virtual Storage
per Partition
JES/2, JES/3
BTAM,TCAM,RTAM,VTAM]

Features of the Update

The 91780A RJE/1000 product update includes three important new features:

1. Specified support for the RTAM Access Method:

   RTAM (Remote Telecommunications Access Method) access method software is similar to BTAM (Basic Telecommunications Access Method) and TCAM (Telecommunications Access Method) access method software already supported by RJE/1000. BTAM, TCAM and RTAM provide IBM 360/370 operating systems with the ability to send messages to or receive them from the IBM 2701/2703 or 3704/3705 control units that front-end the actual System 360 or 370 hardware. They are analogous to drivers (like DVR00 and DVR05) in our RTE systems. RTAM is the access method software built into RES (Remote Entry Subsystem) scheduler software that is typically found on 370 Model 145's as part of the OS/VS1 operating system. RTAM is built into HASP (Houston Automatic Spooling Program) scheduler software which is part of the OS/VS2 Release 1.1, 1.2 etc. operating system; these OS/VS2 Releases are commonly referred to as SVS (Single Virtual Storage) and typically run on 370 Model 158 computers (or 3032's). RTAM also supports JES/2 (Job Entry Subsystem/2) scheduler software which is built into the OS/VS2 Release 2.1, 2.2, etc. operating system. This is commonly referred to as MVS (Multiple Virtual Storage). OS/VS2 (MVS) with JES/2 is typically run on 370 Model 168 (or 3033) computers.

In short, RJE/1000 is now compatible with the majority of medium-to-large IBM 370 Systems (i.e., the 145's and above likely to be supporting RJE stations) and with most IBM 360 systems. How do you now qualify an IBM installation for RJE/1000 compatibility? Make sure the IBM 360 or 370 system meets all of the following prerequisites:

- The access method software is BTAM, TCAM, or RTAM or, alternatively, the scheduler software is RES, HASP or JES/2. This is important because no other IBM access method or scheduler software is supported by or tested to be compatible with RJE/1000.

- The operating system is DOS, DOS/VS, OS, OS/360, OS/MFT, OS/MVT, OS/VS1, or OS/VS2 (SVS or MVS).

- The control units must be 2701, 2703, 3704, or 3705, or equivalent.

- IBM 2780 communications must be supported.

The new RTAM (and therefore RES and JES/2) compatibility is being achieved by restricting RJE/1000 from bidding for the communications line unless it has something to send and by including a new #P command. The #P command waits a specified time period for a specified number of output files from IBM.

2. Inclusion of a TRACE Utility:

The new RJE/1000 TRACE utility, which can be turned on or off by operator command, logs the communications line conversation to a mag tape or disc file on RTE-III or RTE-IV based systems. A TRACE DUMP utility formats a report for easy use by a System Engineer. This TRACE capability will be invaluable in isolating any compatibility problems between RJE/1000 and an IBM System.

3. RJE/1000 Console Messages:

RJE/1000 Console Messages will have ASCII explanations instead of only two digit numbers (e.g., "RJE:34 LOSS OF DATA SET READY SIGNAL" instead of only "RJE:34". These ASCII messages will make the product more friendly at a small cost in memory utilization.

RTE Operating System Support

The updated RJE/1000 product (91780A) is supported by RTE-IV, RTE-III and RTE-II (with the File Management Package). RJE/1000 is no longer supported by RTE-II without the File Management Package or RTE-C; further investment of valuable development time in these operating systems provides an extremely poor return. The software and manuals for the old version of RJE/1000 which supported RTE-II without FMP or RTE-C uniquely retain their original part numbers. This allows replacement orders (for a software module somehow lost or destroyed, for example) to be filled by the Corporate Parts Center.

It is our hope that this RJE/1000 update will allow you to far more effectively leverage the sale of HP 1000's into operations management and production testing applications that require IBM communications.

GOOD SELLING!
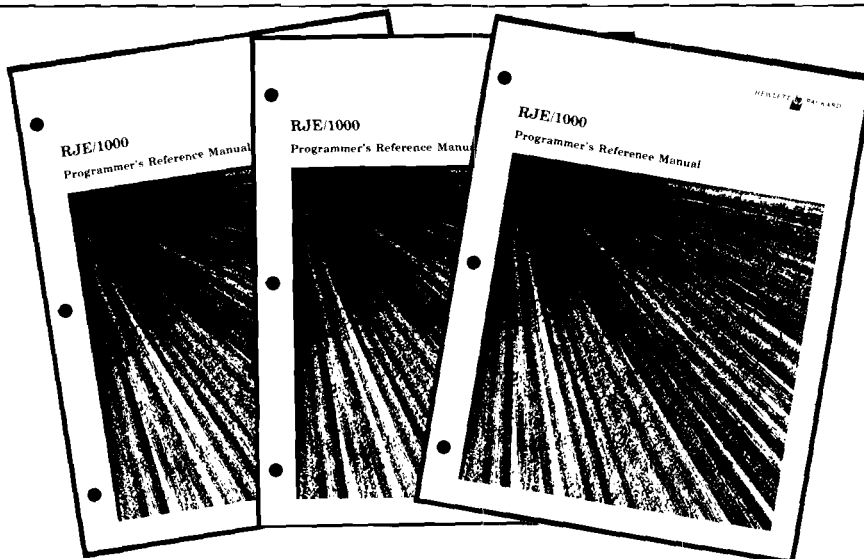
RJE/1000 Price Reduction
By: Bill Stevens/DSD

And more good news! Effective October 1st, the price of the 91780A RJE/1000 Communication Subsystem (which includes the 12618A Synchronous Communications Interface) has been reduced to $3000 from $4500! This brings it into line with our other communications product pricing and reflects our confidence that HP's overall cost of selling and supporting RJE/1000 will be lower because of the features contained in the product update.

Due to an oversight in review of our manufacturing documentation, we did not realize that Option 001 on 91780A had previously been used to specify a communications message coding feature. Unfortunately, therefore, Option 001 which appears on the October 1, 1978 Corporate Price List is not valid and should be ignored. A new option number will be implemented to provide for an update allowance to prior purchasers of the 91780A. Stay tuned to this channel for a fix to the bug.

GOOD SELLING!

Software Option 001 Offers Price Discount To Customers that Wish to Upgrade
By: Mike Scott & Van Diehl/DSD

A discount option (#001) has been set up for software products with a list price greater than $500. Option 001 provides an upgrade path for people that need the current software revision on a one-shot basis or want to commence Software Subscription Service (SSS) or Comprehensive Software Support (CSS). This option is only available to customers who have previously purchased the software product.

The creation of SSS introduced a problem for customers that did not subscribe to the service when they initially purchased the software product. If at a later date the customer wanted to subscribe to SSS or simply needed a more recent revision of the software, the full list price had to be paid. Option 001 addresses this problem.

Option 001 is priced so that there is still a strong incentive to subscribe to SSS or CSS if future software revisions are desired. The following products have had Option 001 added to the October 1, 1978 Corporate Price List (CPL):

Product Number	Product Description	List Price	Option 001 List Price	Effective Upgrade Price
91740A	DS/1000 M-Series	$2,500	–$1,250	$1,250
91740B	DS/1000 E/F Series	2,500	– 1,250	1,250
92061A	Microprogramming	1,000	– 500	500
92063A	IMAGE/1000	2,500	– 1,250	1,250
92101A	BASIC/1000D	1,000	– 500	500
92903A	DATACAP/1000	2,500	– 1,250	1,250

RJE/1000 (91780A) has also had Option 001 added to the 10/78 CPL. This was a mistake and will be removed in the 11/78 CPL. 91780A-001 had already been allocated for another purpose and therefore could not serve as an upgrade option. Orders for 91780A-001 cannot be accepted. We will establish a different RJE/1000 option as the upgrade option and will notify you as soon as it has been set up.

Service Kit Update
By: Rick Held/DSD

We have received lots of inquiries in the last couple of months about service kits for current DSD products (see Mike Cohn's article in the June 15th issue of the CS Newsletter, "If The Kit Fits, Buy It!"). Some of those questions indicate a misunderstanding of the basic purpose for the kit.

Each kit is intended to provide tools and certain spare components to provide for field repair of those particular parts of the product that are most likely to fail in the field. A comprehensive set of spare components or parts is not included. If spare assemblies (i.e., a spare 2109B power supply) are required, they should be ordered from the CPC. In that case, a service kit for that assembly will not be required. Contact your DSD Sales Development Engineer for more information.

2608A Line Printer is a Major Addition to HP 1000 Computer Systems
By: Mike Scott/DSD

The 2608A just introduced by the Boise Division will become the "work horse" line printer for the HP 1000. The 2608A is a low cost, medium speed (400 lpm) dot matrix line printer designed for use in most computer applications. The 2608A sells for $9250 plus $650 for the HP 1000 I/F card (26099A). The 2608A uses RTE driver DVB12 which will be added to the 1840 (10/78) revision of the 92062B RTE driver's package (furnished with RTE-M and RTE-IV). The 2608A will be compatible with HP 1000 Computer Systems that have RTE-M or RTE-IV operating systems (1840 revision or later).

The 12987A (2607A) line printer subsystem (200 lpm, $8,325 with I/F) is being removed from the next HP 1000 Peripherals Data Book. For only $1575 more, your customers can get more than twice the performance with a 2608A.

We will continue to offer the 2613A (300 lpm, $11,475 with I/F) and 2617A (600 lpm, $16,350 with I/F) although the 2608A is a much better printer for the money. The only possible advantage of the 2613A or 2617A is that they are full-character printers rather than dot-matrix. Dot-matrix characters on the 2608A are very high quality and it is unlikely that the extra cost for character printing can be justified.

The 2618A line printer (1800 lpm, $36,050 with I/F) is also being removed from the next HP 1000 Peripherals Data Book. A line printer with that speed and cost does not make sense on an HP 1000 Computer System.

The 2631A printer will continue to be the most popular HP 1000 Computer System printer. The 12996A (9866A) line printer subsystem is also a viable alternative.

To summarize, the 2608A, 2631A, and 12996A are the printers you should emphasize as the best alternatives for the HP 1000 Computer System. The table below should help distinguish these printers.

HP 1000 Computer System Printer Summary

	2631A	12996A(9866A)	2608A
List Price with I/F	$3,800	$3,700	$9,900
HP 1000 I/F Card	12845B	12566B-004	26099A
HP 1000 RTE Driver	DVA12	DVA12	DVB12
Type of Printer	Dot Matrix Char. Impact Character Printer	Dot Matrix Char. Thermal Line Printer	Dot Matrix Char. Impact Line Printer
Maximum Speed	180 cps	240 lpm	400 lpm
Multiple Copy Capability?	Yes	No	Yes
Preprinted Forms Capability?	Yes	No	Yes
Noise	Medium	Low	Medium
Maximum # of columns/line	227	80	132
Paper Type	Fanfold Edge Punched	Thermal Roll	Fanfold Edge Punched
Paper Width	1.22 – 15.75"	8.5"	4 – 15.125"
Paper Cost/Page	≈1¢	≈3¢	≈1¢
Monthly Maintenance (BMMC)	$34	$20	$72 – 147
Graphics Capability?	No	No	Yes
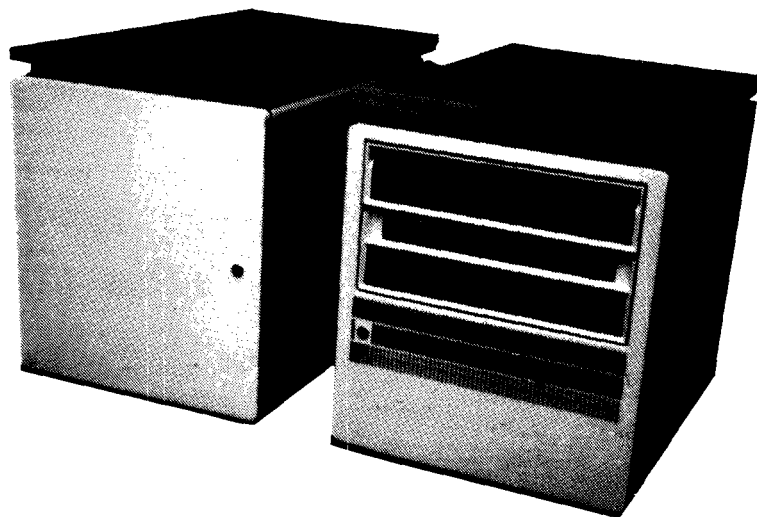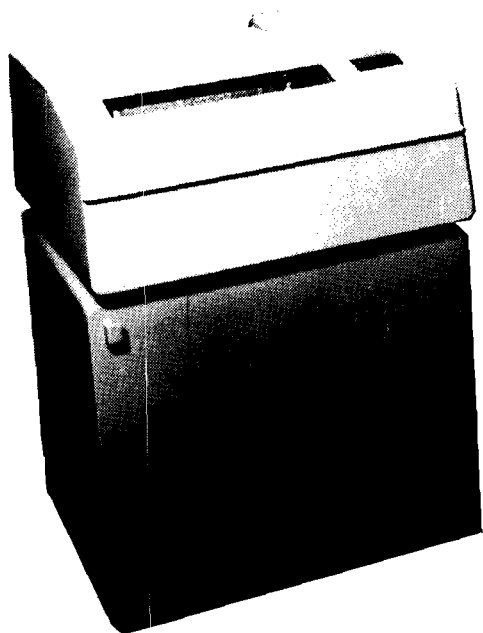
DATA TERMINALS NEWS
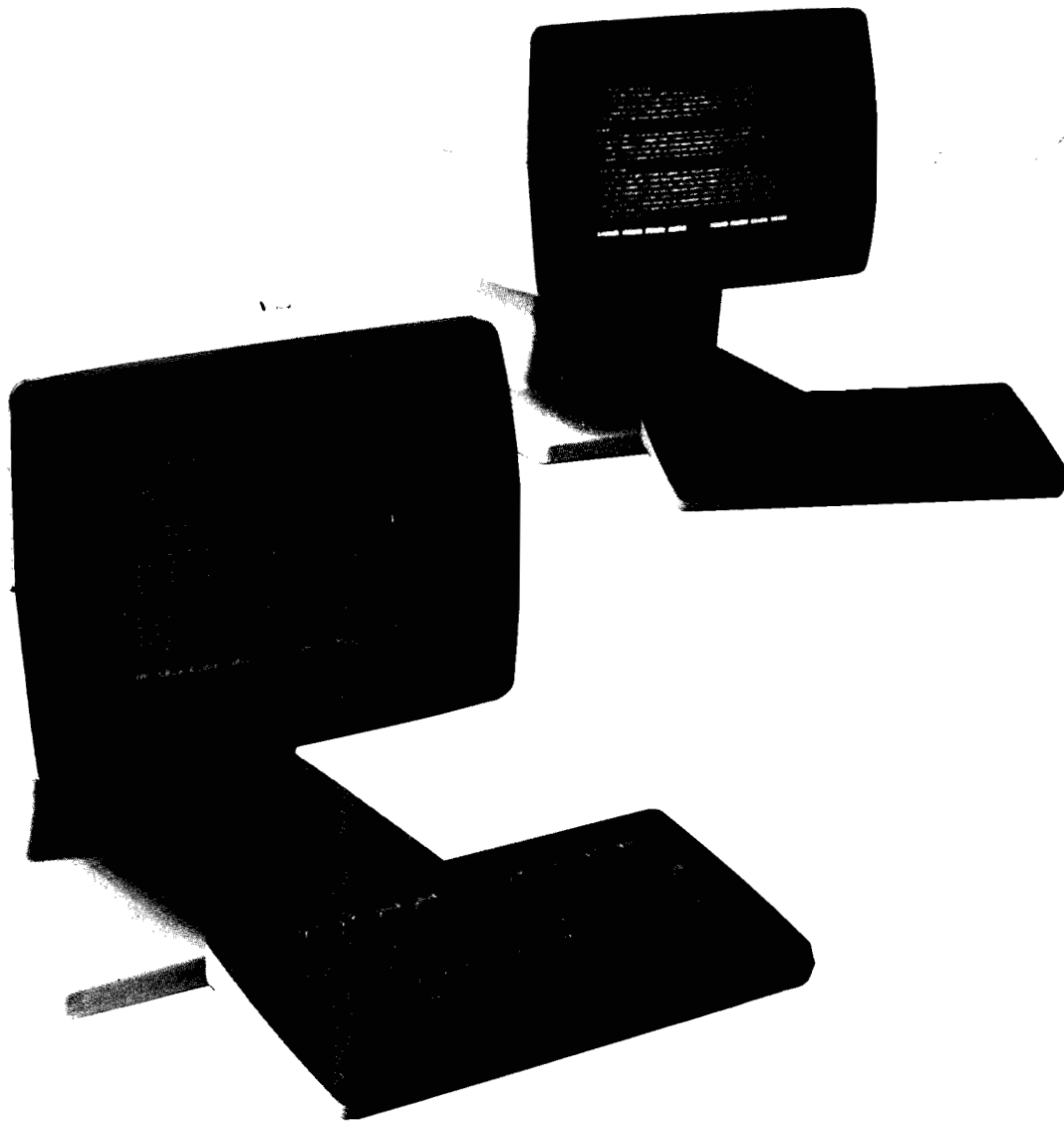
Product News

Introducing the HP 2621A and 2621P Interactive Terminals
By: Bruce Miller/DTD

The 2621A and 2621P broaden the Hewlett-Packard terminal family to include the low-end character-mode CRT terminal market. The two new products are intended for interactive computer sessions but with a feature set to improve user productivity and satisfaction on this type of application. They represent an opportunity for incremental business.

The 2621 terminals are supported on HP systems. The HP 1000, for example, requires the 12966 buffer interface card with an option 005 cable which will be included on the November 1 price list.

The following is a copy of the press release used to announce these two new terminals to the technical press:

Two new character-mode CRT terminals designed for ease of operation in both local and distributed data inquiry applications have been introduced by Hewlett-Packard. The teleprinter-compatible terminals, the first models of HP's new 2620 Series, offer a high resolution display, silent operation through high-frequency scan rate, easy-to-use typewriter-like keyboard, editing capability and 48 lines of data storage. One of the models features an integral 120-character-per-second thermal printer.

Attractively styled to fit into today's office environment, Models 2621A and 2621P (the printing version) are the lowest-cost HP CRT terminals available, with prices of $1,450 and $2,550 respectively. The new series is specifically designed for conversational applications and expands HP's family of computer terminals that already includes data capture terminals, printing terminals, and CRT terminals designed for data entry, APL, microprogramming development and graphics applications.

Display

Designed to ease sessions at the terminal, the HP 2621 units offer users a 15.2 cm by 21.6 cm (6" × 8-1/2") high-resolution screen that displays sharp upper and lower case and control characters. Because of the units' 9 × 15 dot matrix character cells, even complex characters are accurately represented. For better character definition each character can take advantage of half-dot shifts on a row by row basis. Also, wide separation between characters and lines makes the display easy to read.

Memory

The terminals' 4 Kbytes of memory can store 48 lines of data (80 characters per line) that can be viewed 24 lines at a time, page by page, or by scrolling.

Hardcopy

Using the built-in printer of the HP 2621P, the operator can copy the entire display memory, the screen display or only selected data lines. The terminal, whose printer can be controlled by the computer, has a data-logging mode that provides the user with a printed record of all interactive transactions.

The thermal printer uses a long-life, thin-film printhead that is highly resistant to abrasion and chemical erosion. As with the CRT display, the printer uses a 9 × 15 dot matrix to form upper and lower case and control characters. Microprocessor-controlled, the unit prints in both directions at 120 cps. Up to 300 pages of 24 lines each can be printed from one roll of the printer's nonperforated paper. There is automatic page spacing after 60 lines of printed data if desired.

Easy-To-Use Keyboard

The layout of the detachable HP 2621 keyboard is like that of a typewriter. Although it is simple to operate, the user does not have to sacrifice traditional features found in more complex, conventional CRT keyboards. It provides an embedded numeric key pad and has eight additional function keys that control editing, cursor positioning and (on the 2621P) the printer. These keys also can be used to call computer-resident routines. To guide the user, selected control keys are labeled in a command window on the screen along with a cursor column position indicator.

Absent are the traditional mechanical switches selecting baud rate (up to 9600), parity, automatic line feed and communications parameters. This information is stored in nonvolatile memory which can be displayed and changed easily with the keyboard.

Editing

The HP 2621 terminal features editing functions designed to work in interactive, character-mode applications without any need for system software modification. Because the HP 2621 can distinguish between data sent by the computer and keyboard-entered data, operators locally can edit replies to computer-generated questions by inserting or deleting lines and characters. In modify mode, any line in the terminal's 48-line memory can be edited and then transmitted. With line mode, each line of data entered from the keyboard is buffered until the return key is pressed.

Other features include margins, tabs and a diagnostic self-test that checks the terminals' random access memory, verifies the firmware operation and displays the character set on the screen.

Price and Delivery

The Hewlett-Packard 2621A and 2621P are priced at $1,450 and $2,550 respectively. (U.S. prices only.) Estimated deliveries are 8 weeks from date of order.

2648A Raster Dump Is Now Available!

By: Eric Grandjean/DTD

The HP-IB 13296A interface has a new 048 option. It costs — nothing!!!

The part number, if you want it separately, is 1818-0746. (See your service friends for installation).

In the future, the 2648 Raster Dump ROM will be shipped as a standard part of the 2648A. This additional firmware will allow dump of the graphics display memory on an HP-IB-compatible hardcopy device (7245A, 2631G) and/or on cartridge. You will also be able to read the graphics data back from cartridge.

SELL GRAPHICS — SELL 2648!!

Sales Aids

DTD Price Guide Has New Format And New Products

By: Eric Grandjean/DTD
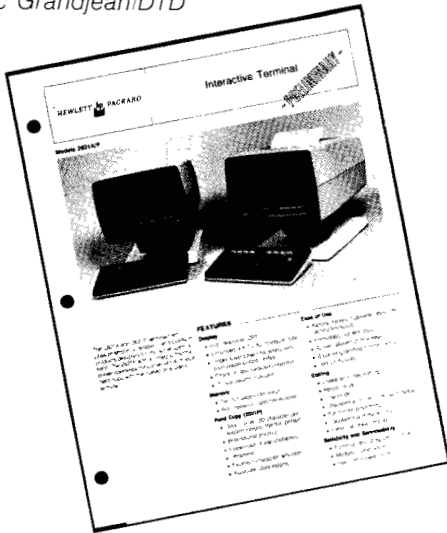
A Famous DTD Quote: "You wanted it, you've got it!"

The DTD Price Guide now includes Boise Terminal Printers. Big new stars are the 2631G with HP-IB and the 2639A OEM discountable. (See Boise section of the *CS Newsletter* for details.)

DTD's own new bright stars are the new 2621A and P competition killers. Both are alphanumeric interactive terminals. "P" stands for printer, which is a thermal 120 character-per-second printer (DTD's own design).

2621 Data Sheets are in stock with and without prices, P/N 5953-2021(42)D (with prices), or F (without prices).

2621 availability is 8 weeks ARO subject to change without notice. Consult your weekly availability schedule for up-to-date availability. Supplying division is 4200 only.

Please also notice the new 13222X comm cables. They are specifically designed for the 262XX series.

2647A Quick Reference Guide

By: Eric Grandjean/DTD

Computer Museum

The 2647A Quick Reference Guide is now in stock (P/N 02647-90006).

DTD DELIVERS!

New!! 2647A Four-Color Flyer!
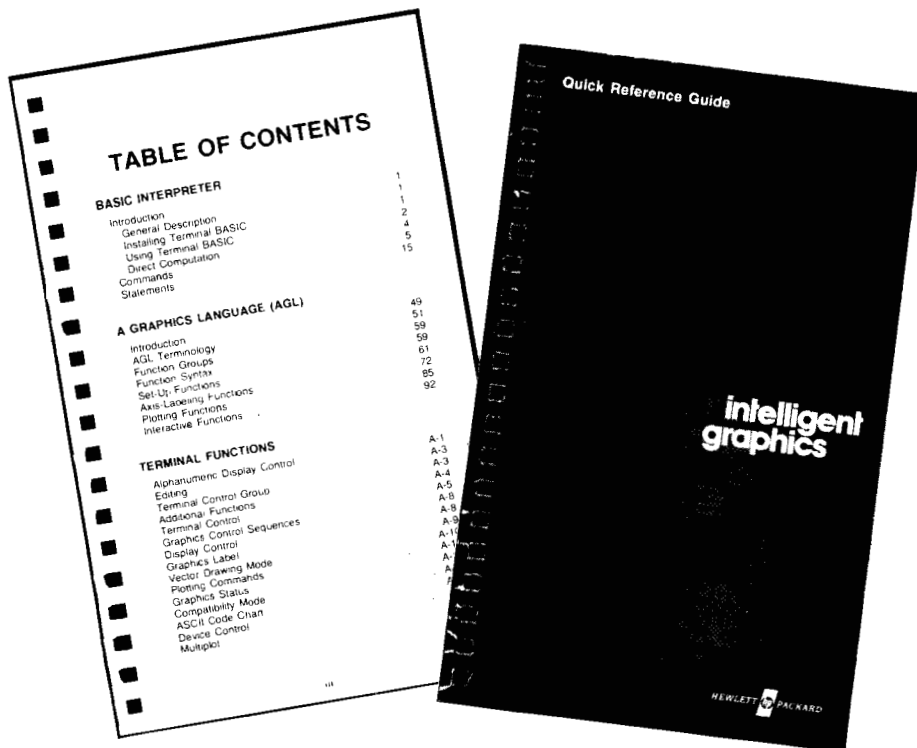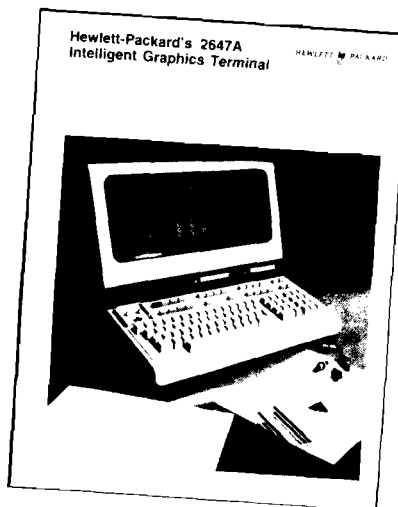By: Eric Grandjean/DTD

This new flyer is perfect for your shows, customer seminars and for your office library!

The part number is 5953-2013 — we've got them in stock. Order now!!

Please check supplies before you order large quantities.

Hewlett-Packard's 2647A
Intelligent Graphics Terminal

Terminal Applications Review
By: Martin Gonzalez/DTD

SELL APPLICATIONS!! For this is the proven and most successful method of selling our products. Terminal applications offer solutions to your customer's problems. And HP's family of terminals represent excellent products which are used in a multitude of business applications.

Be a winner! Use the guide below to match business applications with the features of our terminals.

Terminal Review by Application

Application	2621A/P	2640B	2645A	2647A	2648A	2649*	2631A/G	2635A	3070B	7260A
Inquiry	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
Inquiry with Display	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
Inquiry and Update	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
Interactive	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
Computer aided instruction	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
Program Development	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
Data Capture	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Data Entry	Ltd.	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Data Entry-Removable Media (Tapes)	No	No	Yes	Yes	Yes	Yes	No	No	No	No
Distributed Database	No	No	No	Prog only	No	Prog only	No	No	No	No
Distributed Processing	No	No	No	Prog only	No	Prog only	No	No	No	No
Remote Batch	No	No	Ltd. (CTU's)	Ltd. (CTU's)	Ltd. (CTU's)	Ltd.	No	No	No	Mark Sense only
Remote Job Printing	Ltd. (2621P)	No	No	No	No	No	Yes	Yes	No	No
Graphics	No	Ltd+	Ltd+	Yes	Yes	Yes	Yes 2631G	No	No	No

*Per Customer configuration and design
+With line drawing set (or customer generated set-264X)

HAPPY SELLING!

2649A Automatic Test System For Corvallis

By: Mike Tarens/DTD

You have all heard of the many diverse applications for which the 2649A has been utilized by OEM's. Well, we now have an automatic test system up and running at our Corvallis Division (calculators) that uses an HP 3000 and 2649A's. The system is used to test, debug and certify future software and hardware prototype systems by Corvallis Lab Engineers. The entire system consists of a central CPU and peripherals to which one or more remote test stations (2649A) are connected and controlled. Each test station is designed to interface with a product under development.

The actual operation of the test system is fairly sophisticated. A number of data files are present which are accessed by a central control program. These files consist of information that describes the product and its unique test procedures. After accessing the files, the control program directs the operation of the 2649A test station which will execute a predefined test procedure. Upon completion of the task, the test station will reply to the central system. The reply may consist of an answer to be checked, a plot value or even a request for more instructions. In this way, the product under test is actually simulated by the 2649A which, in turn, contributes to the final design of the product.

This new test system will provide four major benefits to HP:

- *Reduction of software test costs* as the purchase price of the Test Station is substantially less than the equivalent labor costs;

- *Reduction of software test time* in that the 2649A will execute at approximately four times the speed of a manual test;

- *Automatic hardware testing* for new breadboard hardware configurations;

- *Centralized test facility* which will facilitate access to libraries and documentation.

Only four months were required from the time the specifications for the subsystem were generated until the actual implementation. The hardware and accessories purchased from DTD consisted of:

*HP 13290B Development System
*HP 2649A/2645A Test Station
 HP 13297A Option 003 32 Kbyte RAM Memory
 HP 13238A (2) 8-Bit Duplex Register Cards
*HP 13294A Applications Training Course
*HP 13255A Option 003 Technical Information Package

With these products and the dedication of the development team at Corvallis, this Automatic Product Testing System has become an integral part of developing new products from this division.

What does this mean to you? Well, not only does this provide an example of a valuable 2649A application within HP, but it also demonstrates the abbreviated development cycle from inception to implementation and the versatility of the product. This quote from the subsystem specifications:

"Thus, the 2645A Terminal can be whatever one wants it to be."

This may be a slight overstatement, but it exemplifies how successful 2649A customers feel about the product. DTD 2649A program is viable and profitable, not only for Hewlett-Packard but for our customers as well.

Should you need additional information concerning this application or the 2649A program, please contact me at DTD.

SELL 2649A! SELL OEM!

*(*The asterisked items are essentially the pieces and parts that are required by most OEM's developing their own applications.)*
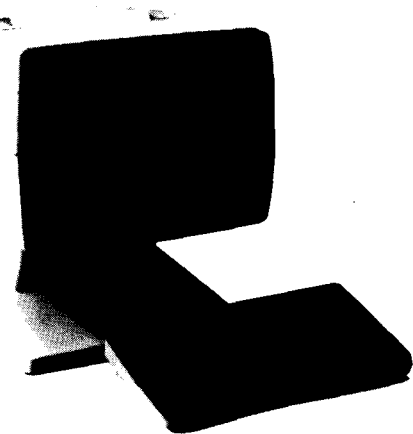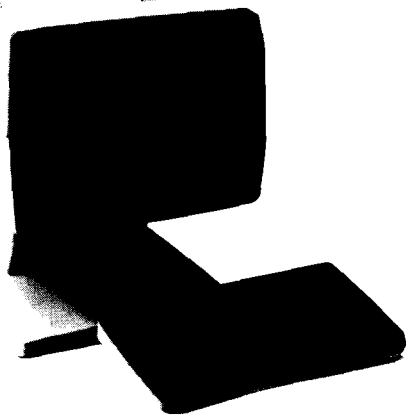
GENERAL SYSTEMS NEWS

Hewlett-Packard 300 Computer System.

Product News

The HP 300 is Here!
By: Vijay Kapoor/GSD

General Systems Division is proud to announce the HP 300, known internally as AMIGO.

On October 3, at a press conference in New York City, HP will formally announce the start of a major new Hewlett-Packard computer family, the HP 300. This advanced, office-oriented, multi-terminal computer system will significantly strengthen HP's business computer system offerings in the $40K-$80K price range.

New Product Training in the field began September 18 in Chicago and Dallas, and continues through late October in Europe. During the NPT tour we're spending considerable time discussing the product and our introduction program, so I won't go into the details in this article. But here are some highlights:

The base price of $36,500 includes the AMIGO/300 operating system, a program language (either Business BASIC/300 or RPGII/300), 256 Kbytes of error-correcting main memory, a 1 Mbyte flexible disc drive, a 12 Mbyte fixed disc drive, and an integrated display terminal that greatly increases programmer and operator productivity. The system can be expanded to 1Mbyte of main memory, 260 Mbytes of disc memory and up to 16 terminals. Customer deliveries are expected to start in January.

The HP 300 product marketing team, headed by *Vijay Kapoor*, will expand its activities to also include sales support, with the following regional responsibilities effective immediately:

Neely — *Dave Iuppa*

Midwest/East, Midwest/West — *John Whitesell*

East — *Bob Ashford*

South — *Steve Wilk*

Canada — *Vijay Kapoor* (Acting)

HPSA Support will be provided by *Peter Rosenbladt* in Boeblingen. In the way of additional factory support, *Walter Utz* heads up our S.E. Support and User Publications team, *Bill Dalton* leads our C.E. Support team, *John Holden* is our Order Processing Manager and *Nancy Justice* is our O.P. Lead. You'll be hearing more about them and their teams in the near future.

Our advertising program will start in mid-October with a four-page cover spread in *Business Week* presenting the HP 250, HP 300 and HP 3000. Other advertising will follow shortly after in such publications as the *Wall Street Journal*, as well as the major technical trade publications.

The following sales literature is available immediately and is now being distributed to the sales offices:

1. General Management Brochure (18 pages) P/N 5953-3700
2. Technical Flyer (8 pages) P/N 5953-3701
3. General Information Manual (104 pages) P/N 5953-3704 (one copy distributed to each CSG salesperson)
4. OEM Brochure (10 pages) P/N 5953-3703
5. Price/Configuration Guide P/N 5953-3702
6. Performance Data Sheet (8 pages) P/N 5953-3705
7. Field Training Manual (HP-Private)

We have shipped 20 systems to NPT Tour sites in September and plan to ship another 40 systems to demo sites in October/November, so as you can see, our manufacturing operation is in full swing. We encourage you to bring your prospects to visit the factory to meet with us and to see our production facility for themselves. We are located in Bldg. 43L in Cupertino. Just give your sales support contact a call to set up a visit. And if any of you are in the Bay Area, we hope you will stop by.

WE AT THE FACTORY ARE EXTREMELY EXCITED ABOUT THIS NEW PRODUCT, AND WE'RE LOOKING FORWARD TO HELPING YOU WIN IN A BIG WAY WITH THE HP 300!

Press Release
By: Vijay Kapoor/GSD

The following HP 300 press release is being distributed to all major business and computer-oriented publications:

SOS TECHNOLOGY YIELDS TOTALLY NEW BUSINESS COMPUTER SYSTEM

With new silicon-on-sapphire (SOS) LSI technology, Hewlett-Packard has created a totally new, low-cost general-purpose business computer that takes no more space than a free-standing terminal.

The new HP 300 features a unique integrated display system that greatly simplifies developing and controlling dedicated on-line business applications. Styled for office use, it is priced from $36,500 and can support up to 16 terminals in transaction processing environments.

The standard $36,500 system takes no more space than a computer terminal on a stand, operates from an ordinary 10 amp 115-volt wall outlet, and is quieter than most office copiers. It includes either HP Business Basic or RPG-II language, 256 thousand characters of 16k RAM main memory, a one million character flexible disc drive, and a 12 million character fixed disc. The system can be expanded to 1 million characters of error correcting main memory within the basic enclosure, and up to 240 million characters of external disc memory can be added. Initial markets are system OEMs serving business users and application development teams within large companies.

"The HP 300 has few of the arbitrary restrictions normally associated with computers in this price class," said Edward R. McCracken, General Manager, HP General Systems Division. "Our own experience convinced us that dedicated computer solutions will, more and more, be developed on general-purpose machines like the new HP 300. Because of advances in LSI technology, there is little additional cost, if any, in building a general-purpose computer for use as an applications engine in dedicated environments. By offering the flexibility and growth potential of computers costing two or three times its price, the HP 300 can help protect the customer's investment in dedicated applications software."

The HP 300 is based on an entirely new virtual memory operating system called Amigo/300 which, in conjunction with the intelligent integrated display system (IDS), greatly simplifies the development and control of dedicated on-line business applications. Amigo/300 gives the HP 300 the personality of a multi-programming, multi-tasking system capable of managing background jobs — such as printing reports or sorting data files — while higher priority data entry, validation, or inquiry operations are taking place from application terminals.

The IDS is used to schedule, monitor, and control these concurrent activities, as well as to simplify the process of program development and testing. Its screen can be split into multiple 'windows', each of which can be attached to a data file and scrolled both horizontally and vertically to make entries or changes. One window is used to dynamically label a column of eight softkeys at the right of the screen, allowing pushbutton selection of operating system functions and/or application menus. An 'attention' key and message light allow the operator to communicate with the Amigo/300 operating system (and vice versa) without interrupting on-line operations.

Amigo/300 supports six different file structures including keyed sequential. IMAGE/300 data-base management is available as a $2,000 option. It is subset-compatible with the award-winning IMAGE/3000 for HP 3000 computer systems, and is programmatically accessible via Basic. IMAGE/300 is supplemented by the Data Base Inquiry (DBI) facility to interactively retrieve and update data base contents directly from the IDS without writing a special program. Other software development tools include a text editor, SORT/MERGE, HELP, and various other utilities designed to simplify and shorten application program development. Data communications facilities for HP Distributed Systems Networking are not available now but are planned for the future.

The HP 300 is offered with a complete list of optional peripherals designed and manufactured by Hewlett-Packard. These include the HP 2640-series of CRT terminals, the recently-introduced 2631 180-cps dot-matrix serial printer, and the just-announced HP 2621 low-cost CRT terminal. Any two of Hewlett-Packard's removable-pack disc drives — including the 20-megabyte 7906, the 50 megabyte 7920, or the 120-megabyte 7925 — may also be added.

Price and Delivery

U. S. list price of the HP 300 is $36,500, including one language, 256K byte main error-correcting memory, 12-megabyte fixed disc, 1-megabyte flexible disc drive, and integrated display. Both OEM and unit volume discounts are available. Customer deliveries will begin in January, 1979.

Hewlett-Packard 300 Computer System supports as many as 16 terminals.

Hewlett-Packard 300 Computer System with optional HP 7925 125 Mbytes disc equipment and HP 2631 180 CPS serial printer.

Selling HP 3000's?
Consider Our Point of VIEW
By: Carolyn Morris/GSD

What newest software advantage does HP offer customers with interactive business applications? VIEW/3000! It's the super data entry product introduced last month for use on the HP 3000.

VIEW/3000 offers customers a double bonus: it performs as both a stand-alone source data entry facility and as a data entry "front-end" to transaction processing applications. What does all this mean? Well, simply this . . .

For the account implementing on-line data entry applications, VIEW provides a full range of data entry, editing, reformatting, and reporting capabilities. By filling in "menus", your customer can design forms in minutes by drawing them on an HP CRT screen. Comprehensive data editing and validation can be specified using VIEW's standard defaults. VIEW controls the flow of forms to a terminal, edits and validates the input data, and records that data in a special file, which allows the operator to "browse" through and make changes as desired. This entire process can be accomplished without writing a single program.

For those customers who have existing applications on the HP 3000, VIEW/3000 can function as a data entry front-end to these programs, whether they are written in COBOL, RPG, FORTRAN, SPL, or BASIC. A library of high level procedures provides extensive terminal and data handling capabilities which facilitate a programmatic interface between the application, the terminal, the forms and edits created by the forms design facility, the entered data, and the data file.

What's the bottom line? For your customer:

- Increased programmer productivity for fast, easy forms design and data editing.

- Increased on-line data entry capabilities for transaction processing applications.

For you:

- A powerful new product to help close orders for on-line transaction processing applications.

- Increased customer satisfaction for current HP 3000 users.
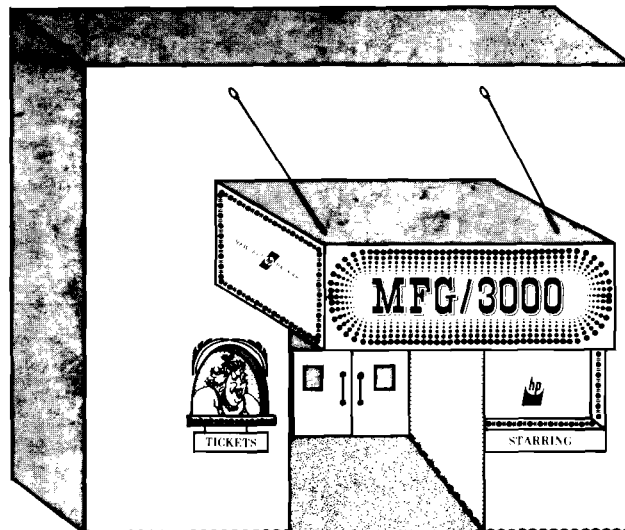
VIEW/3000 — orderable today.

Refer to the VIEW/3000 Sales Training Manual for more details.

GOOD LUCK and GOOD SELLING!

MFG Goes to Hollywood!!!
By: Mike Kalashian/GSD

That's right, starting October 24th MFG/3000 will be on stage at the APICS conference in Hollywood, Florida.

Based on the successful reviews of last year's performance, we are returning with the talented combination of MFG/3000 and the HP 3000 to reaffirm our commitment and contribution to the manufacturing industry.

APICS (American Production and Inventory Control Society) is the foremost professional organization in the area of Production and Inventory Control (PIC). This technical exhibit and conference is their largest gathering of the year. APICS officials predict an audience in excess of 5,000; including PIC managers, materials managers, DP managers, and other management personnel. In terms of generating interest in HP products, this is an excellent mix of people who can appreciate the applications capabilities of the HP 3000 and MFG/3000.

Our participation in this show offers unique promotional opportunities:

- Sales References

  In many instances the sales lead for our application products will come from the end-user of the product. The typical attendee at this show will be an end-user whose interest and commitment is very important in the sales process. Our participation at APICS enables us to develop awareness and credibility among the people who help generate the demand for our products.

● **Brand Recognition**

The introduction of MFG/3000 during the past year initiated our entry into the manufacturing applications marketplace. This has generated a significant amount of interest in both our products and our company. The APICS exhibit should further this interest and reinforce the image of HP's commitment to the manufacturing industry.

● **Demonstration of Capabilities**

The estimated audience is well suited to appreciate and understand an applications-oriented presentation.

The conference is being held in Hollywood, Florida (20 miles north of Miami), beginning on October 24th and ending on October 27th. It might be useful to point out the existence of this show to some of your existing and potential customers, and to inform any who plan to attend about our exhibit. Customers who need further information should contact APICS, 2600 Virginia Avenue, N.W., Suite 504-Watergate Building, Washington, D.C., 20037.

If any of you plan to attend the show, please contact me to request exhibitor passes.

PROMOTE APICS and GOOD SELLING!!!

MFG/3000 Customer Training — A Pre- and Post-Sales Tool
By: Don Crosby/GSD

Customer training courses for the MFG/3000 Standard Products are now available locally from the Systems Engineering Specialists.

The training materials cover the three MFG/3000 Products (EDC, IOS, and MRP); and includes slides, an instructor guide, student workbooks, and lab tapes.

In general, the training courses cover the following topics:

● **User-Related Information**

Product Capabilities/Features
Data Entry
Retrievals
Reports

● **Systems Administrator Information**

Account Structures
Naming Conventions
Database
Installation Procedures
Scheduling
Operational Considerations
Product Modification

All of the MFG/3000 courses are first given at GSD on a pilot basis for actual customers before field distribution. The EDC and IOS classes have also already been given by some field offices with additional courses scheduled through this year. Customer feedback has been positive — training is viewed as an essential part of a successful installation.

To order the training materials, Industry Specialists should contact Don Crosby (X3395) at GSD.

The Conference To Make Your Selling Job Easier
By: Lynn Gardner/GSD

Have you ever visited a client or potential client and just as you're about to close a sale, they wanted to know what other HP customers are doing with their computer systems? Here's how your customer's question can be answered and make your selling job easier.

Your customer and potential customer are cordially invited to attend the 7th International Meeting of the HP General Systems Users' Group (formally known as the HP 3000 User Group) in Denver, Colorado, October 30th through November 3rd. By encouraging them to attend the meeting, you're able to offer them the opportunity to meet and communicate with other customers who are using their HP computer systems in all types of processing environments.

This conference will also offer practical up-to-date information relating to more effective management and utilization of their HP 3000 System.

Encourage your customers to attend the conference. The potential information and experience obtained through this conference are invaluable and should make your job of selling easier.

A formal invitation has been sent to all current members of the HP General Systems Users' Group, to the *Communicator* mailing list, and to your local sales office manager. If your customer has not received an invitation, please check with your District Manager, as they will be receiving a limited number of information packets. Remember the deadline for pre-registration is only one week away (October 6, 1978).

When Your Prospect Is Concerned About an Economic Downturn
By: Greg Norton/GSD

All businesses have their ups and downs. In this series of two articles, the concerns of a company president during an anticipated downturn are addressed.

Last issue you learned how *Reluctant Ralph*, the HP 3000 prospect, was convinced he needed the system to control his Accounts Receivable to survive a downturn in the economy.

Now, let's take a look at another side of the business and how the HP 3000 can help him solve inventory problems and lead to generous cash savings.

Inventory Performance

Inventory performance is measured in "Turns" or the number of times inventory "turns over" in a year. Inventory turnover is a measure of efficiency which shows how many sales dollars a firm gets for each dollar of inventory. It is figured by dividing annual sales by inventory. In 1973 HP had 3.3 turns. The 1974 inventory was down and turnover had increased to 4.2. This meant that we had $56M *less* inventory than if turnover had remained at the 1973 level.

Inventory Tradeoffs

There are two opposite pressures on inventory. First, it takes cash to finance inventory. The controller wants to keep it down. On the other hand, you have to keep parts in house to do work, and stock on the shelves to make sales. If inventory is *too* low, production will stop; or perhaps you will be unable to fill a customer's order rapidly and he will go elsewhere. (You all know about availability problems.) Naturally, the sales manager and production manager would like inventory to be high so that they never run out of anything.

Most firms have too much inventory. Stopped production and lost sales are *very* expensive, so the trade-off is in favor of safety stock. Safety stock is kept because the firm typically knows neither what it will need (inaccurate forecasting and planning) nor exactly what it has (lack of accurate on-line inventory information).

How Did HP Do It?

We didn't just stop buying; although *total* inventory was high, we had shortages of some items. We improved our planning and control. We improved our inventory tracking. We reviewed the requirements for every part. And we used computers. Data Systems and other divisions went to on-line inventory control using the HP 3000. We improved our materials requirements planning on the Corporate IBM 370. We improved our sales forecasting and we managed the heck out of everything! Turnover improved from 3.3 to 4.2 times per year. By the end of 1977, it was up to 4.4 times per year.

What about your prospect?

How does your prospect handle his inventory? Does he plan his purchases or does he order only after he runs low? Are his plans kept up to date? Does he know how much stock he has on hand: On-line inventory?

Materials purchases, by the way, can represent from 30% to 80% of the cost of goods sold for a manufacturer. For a distributor or wholesaler, the figures could be 50% to 90% or higher. Thus, efficiency in purchasing can have a significant impact on profitability as well as cash flow. For instance, you want to take advantage of vendors with lower prices or quantity discounts, yet avoid buying so much that you risk spoilage or obsolescence.

Ask your prospect how he handles purchasing and inventory control. He probably has several ideas about how he could improve it, but has he thought about the cash he could raise by better inventory management?

One of the Beta test sites for our MFG/3000 materials management package reduced his inventory by 10% within six months and at the same time reduced parts shortages which stop production. A Los Angeles wholesaler reduced its inventory investment by 20% after going on-line with the HP 3000, and cut the number of stock-outs in half. (A stock-out almost always means a lost sale to them.) In another case, an office products distributor increased inventory turnover from five times per year to seven times per year.

How much cash is involved? Suppose our hypothetical $10 million company turns its inventory over four times per year. This means it has $2.5 million ($10 million/4) invested in inventory. Reduce this by ten percent and the firm has $250 thousand to invest elsewhere.

Does your prospect need an HP 3000 to do all this? Well, maybe not. If he works hard maybe he can do it manually or with his other vendor system. . . . Maybe, maybe?

Paradise Regained!

Can your prospect afford the system? (Presumably, he already decided he could afford it if sales continued to grow.) Our $10 million company could raise $100K by reducing receivables by four days and another $250K by reducing inventory ten percent. So it could spend $100K on an HP 3000 System, some terminals and software, and still have $250K cash to help it through a slump and put it in a better cash position for the recovery. But implementation takes time so it had better start early.

What about your prospect? First of all, DON'T guarantee him any reductions or savings. That's a trap: *he* has to implement it — not you. You can, however, encourage him to go through his own calculations. Remember, he already wants to buy — you just have to help him find reasons to justify the purchase. Ask him questions, let him talk to some references.

Get your prospect to realize that the efficiencies he will get from the HP 3000 will help his profitability and cash flow making it easier to ride out the slump, if it occurs. Furthermore, if he waits two months to see where business is going, it may be too late to take full advantage of the benefits.

GSD Customer Reference Database

By: Taylor Pohlman/GSD

Customer References

GSD has created a new tool to assist you in situations where references will help close that HP 3000 sale. Many times prospects will want to hear from an HP 3000 user that "My System/3 conversion was a snap!" or "Sure you can run 25 terminals in timesharing. Here's how . . ." or "Yes, we're running CDC RJE with the 3000" or "Our payroll was easy to do with COBOL and IMAGE" or any of a hundred application or product strong points about the HP 3000 where "hearing is believing".

The objective of the Customer Reference Database project is to centralize our knowledge of the way HP customers use the HP 3000. In this way you can find out about customers and systems worldwide from a single source, GSD Sales Development. This minimizes your reference selling effort and improves the chances of answering your customer's questions with well-qualified references. It will be Sales Development's responsibility to keep this data *up to date, accurate,* and *available* for your good use (with a little help from our Field sales friends).

Let's review a typical scenario of a request for reference information to show how you can optimize your use of this facility.

You've visited a prospect and he has doubts about the HP 3000. Sure, it seems to be a great terminal machine, but he's been running lots of batch on his IBM 360/30 and thinks the transition to on-line operation will be slow in his company. At most they'll be doing some program development and they're just not sure about the HP 3000 as a batch machine. How to counter their fears? Obviously, put the company in touch with a user from a similar background who is successfully running lots of batch (and hopefully, at least one other user who has come from batch to an on-line environment).

Ideally you would like a local reference for your customer to contact. So returning to your office you check with the other sales representatives in the office for a good reference. Today if you were unable to find a reference, you would reach for your COMGRAM pad and send one of those reference "broadcast" messages which may or may not produce results and which certainly adds to everybody's workload. The better way is the next time you talk to your Sales Development person, ask him or her to inquire against the customer reference database for all IBM 360/370 replacements which primarily run batch jobs.

In the "next" mail, you'll receive a list of customers that match your request. (In fact, we have 26 customers who have replaced IBM 360/370's with an HP 3000.) Included for each reference will be information about how to contact the account rep on the ones that look really good. Our goal is to meet your information requirements. We plan to collect the kind of reference data you have asked us for and make it easily available to you.

For example, do you need to know of a manufacturing company which runs RJE, (we've got 23 on the database with more to be added!), or perhaps you need a college reference running a mix of administrative and academic work on a 512Kb machine, (we know of 16 like that), or maybe it's a manufacturing company with general applications, (there are 236 of those on the database). How about HP 3000's running personnel applications, (16 of those). The list goes on, but you get the point. For almost any question about applications, competition, replacement (and that means information about conversion), or environment, the database stands a good chance of being of help.

Help is really the key word when talking about the database, because although we feel it can be a big *help to you* in closing those reluctant "show me" prospects and in providing valuable data on what our customers are up to, we know that it is *your help* which can really make this database successful. Soon you will receive the second set of pre-printed update forms. Fill in the information you know about your accounts and return it to GSD. You're helping everybody in the effort we share, to make GSD products and our GSD customers the most successful anywhere.

Customer Reference Database Overview

The response you have shown to our initial requests for database ideas and updates on your accounts has been excellent. You have motivated us to provide the information you have requested. The design is flexible, so if you have any additional ideas for data items, please pass them along to us at GSD Sales Development.

Today's database contains information on five major reference categories for each account. The following is by no means all the items, but will show you the highlights:

A. Customer Description
1. Customer Name
2. Customer Address
3. Customer's Business Description
4. Size of Company
5. HP Sales Office
6. Sales Order Number
7. Current Sales Representative
8. Original Sales Representative

B. System Description
1. Ship Date
2. Model Number
3. $ Value
4. Terminal Configuration
5. Memory Size
6. Disc Capacity
7. Computer to Computer Communications Ability
8. HP Peripherals on the System
9. Foreign Peripherals on the System

C. Software Description
1. DS3000, DS1000, DS2026, COBOL, RPG, BASIC, FORTRAN, APL, DBMS, KSAM, RJE, MRJE, DS, DEL, VIEW, CIS, SIS, MFG, and the Programmable Controller

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

D. Application Description

   1. Customer's Business Description
   2. General Application Description
   3. Specific Application Codes

E. Competitive/Conversion Information

   1. Computer Replaced
   2. Competitor Names
   3. Competitors' Machines

Updating the Database

Key to the success of this database is the accuracy of the information in it. Accurate data must come from you and your customers, and GSD is willing to help you make this an easy process. First, we have updated our database with the information you sent us this summer. We'll return updated printouts to you by September 30 along with updated forms on new shipments since the last printout. They should be filled out and returned, as before, to GSD.

Then, when you call GSD Sales Development for reference information, you should find that all personnel, including clerical support, are familiar with the database and can run a search for you. Simply specify the things you're looking for and the kind of report you need, and it will be sped on its way.

Remember, we are committed to super-fast turnaround on your requests and believe you will have no problems in getting the information in a timely fashion.

Only you can make this happen. As you enter data about your accounts, remember that others are doing it too. We all benefit!

GOOD REFERENCE SELLING!

Order Processing

Details, Details . . . Ordering VIEW/3000
By: Carolyn Morris/GSD

Just a summary of the ordering specifications for VIEW/3000.

Your customer will need the following items to run VIEW:

- HP 3000 Computer System running MPE-III Operating System Software

- HP 2640B, 2641A, 2644A, 2645A, or 2648A or equivalent terminals. Both point-to-point and multi-point terminal operation are supported by VIEW.

- KSAM/3000 Subsystem Software (32208A)

- VIEW/3000 Subsystem Software (32209A)

Two points are important here. One is that KSAM and MPE-III are required. The other is that most HP 264X terminals are supported.

In addition, you should remember:

- The product number for VIEW/3000 is 32209A

- VIEW has been orderable since August 1, 1978, but availability is scheduled for November 1, 1978

- Price is $1500 (U.S.)

- 22823A Option 020 Monthly software fee is $75 (U.S.) (Required for 48 months)

- 32209A Option 002 Prepaid Purchase Option is $1350. The monthly software fee for 12 months (12 × $75) is $900, giving a total prepaid purchase price of $375 (U.S.)

- Monthly Software Subscription Service is $25 (U.S.)

That should wrap it up. For further information, consult your new training manual on VIEW/3000, the data sheet, or call us at GSD.

MFG Manuals Ordering Simplified
By: Pete Van Kuran/GSD

Once again, your feedback has produced results. Instead of having to order five separate manuals to receive complete MFG/3000 documentation, one product number does it all. Simply by ordering 32379A, your customer receives the following:

   EDC/3000 User's Reference Manual
   EDC/3000 Administrator's Reference Manual
   IOS/3000 User's Reference Manual
   IOS/3000 Administrator's Reference Manual
   MRP/3000 User's/Administrator's Reference Manual

The price for the five-manual set is $80.

In addition to completely describing MFG/3000 for customers who are using the product, this manual set makes an excellent pre-sales tool. They are an impressive example of the quality and depth of HP's commitment to the Manufacturing market.

So, use the manuals to help sell MFG/3000.

A Note from Order Processing
By: Nancy Justice/GSD

Now that initial orders are beginning to arrive for the HP 300, it seems appropriate to review O.P. procedures relating to multiple system orders. Because of its low price and OEM orientation, we are expecting a large percentage of HP 300 orders to be of the multiple system variety. When multiple systems and their accessories are transmitted on a single order section, problems can occur with the issuing, shipping and billing procedures that are followed in the factory.

Orders can be handled far more efficiently if separate systems and associated accessories are placed on separate order sections.

Help us process your orders in a more timely fashion — please split your multiple system orders into separate sections. We appreciate your cooperation.
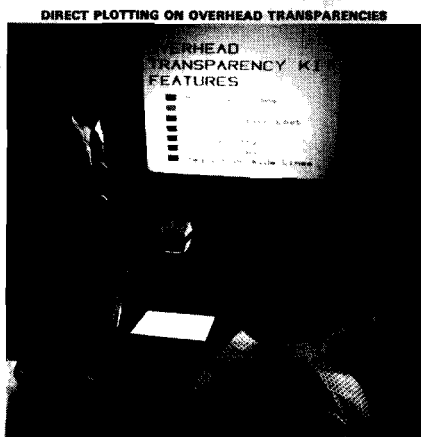
If you have any questions, please call *John Holden* or myself at GSD.

CS GROUP NEWS

Product News

Data Sheet for SDD's New Overhead Transparency Kit Now Available
By: Greg Diehl/SDD

A data sheet for the new 17055A Overhead Transparency Kit is hot off the press and is now available. The Hewlett-Packard Overhead Transparency Kit contains supplies to prepare overhead projection transparencies of charts, graphs, diagrams, and text with HP 7221A and 9872A graphic plotters. Seven vivid colors are available to professionally highlight presentations at meetings, seminars, lectures, or training sessions. (See September 1st, 1978, issue of the CS Newsletter for additional information on the kit.)

This attractive, single-page data sheet is in full color and is an excellent sales aid for HP 7221A and 9872A Plotters! There should be copies of the data sheet (5952-2885) in the literature section of your local sales office — if not, give your San Diego Regional Sales Engineer a call and we will be happy to mail additional copies to you.

New 7245A Data Sheet Features Hard Copy Raster, Vector Graphics and Alphanumeric Printing
By: Bruce Woolpert/SDD
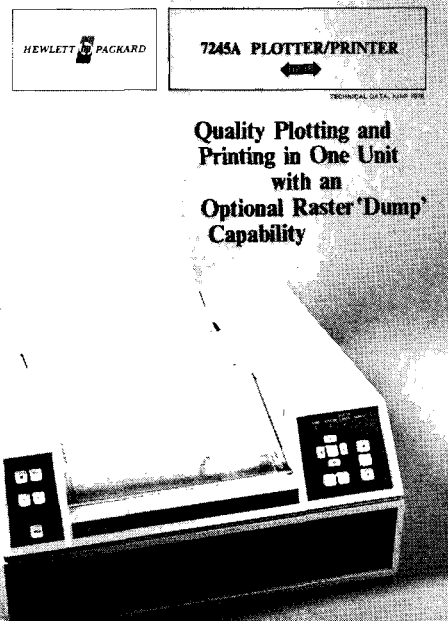
The three major 7245A capabilities are featured in a new full color, 8-page data sheet. These capabilities include dot-matrix alphanumeric printing and two methods of producing graphical hard copy output.

The two most popular technologies for generating hard copy graphs are vector and raster. Each method has advantages. Vector plotting devices draw graphs as a draftsman would draw them by connecting graph coordinates (X,Y pairs) with solid, straight lines. For example, curves drawn by a vector plotter are a series of straight lines stepped around a curved path. The high resolution lines produced by HP vector plotters can create curves in steps so small that they are undetectable by the eye. High resolution vector graphs are produced by the 7245A, 9872A, 7221A, and 7225A. Vector devices are used to produce high resolution, finished hard copy.

In addition to vector graphics, the 7245A produces dot-for-dot raster display copies from the 2647A and

2648A Graphics Terminals. The HP 2647A/2648A raster display is a grid of 360 × 720 dots. A raster line is represented by illuminating the dots located along the path of the line. Raster hard copy is a dot-for-dot printout of graphics as they appear on the 360 × 720 dot screen. In general, raster hard copy graphs are produced 4 to 5 times faster than vector graphs. The 7245A produces raster graphics display copies in 40-65 seconds depending on whether or not all the raster lines are used. In addition, the 7265A produces raster copies with higher dot densities (106 dots/inch) than many other devices.

With the 7245A, the user has both high resolution vector plotting (for producing finished copy) and raster graphics display copying (for producing fast working copies) in a single desktop unit. This combination is not available in any other device presently on the market.

The third 7245A feature is dot-matrix alphanumeric printing with common printing control capabilities, such as margin and tabbing, from standard ASCII control characters. The 7245A's quiet thermal operation makes it ideal for remote operation in the office or laboratory. Either vector or raster produced graphs can be combined with text to produce completely illustrated reports.

The new 7245A data sheet (P/N 5952-2880) should now be available in your sales office.

SELL HP GRAPHICS!