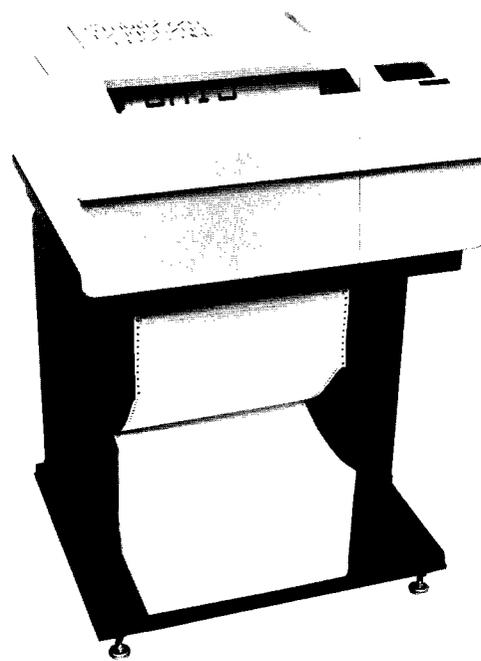


Computer News **SEM**

International/June, 1982

edition

Announcing the HP 2608S System Printer



 **HEWLETT
PACKARD**

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On the Cover:

The new HP 2608S printer has remote spooled printing capability for HP 3000 systems. See page 15 for more information.

Reaching Out

Why Vertical Markets Are Important For OEMs

Over the last 20 years, the market for computer systems has become increasingly sophisticated. Customers who were once willing to purchase a simple product, (a box which added and subtracted rapidly), will now only purchase products which will provide solutions (boxes which reduce uncertainty in the operation of a business). The impact of all this on the OEM is an increasing emphasis by customers on *solutions* for the range of problems they face within their industry.

No longer can the OEM be everything to everybody. Each industry segment wants a broader range of solutions to meet its particular requirements and thus the OEM needs to make definite decisions about what markets to approach.

The concept of target vertical markets is the key to continuing success. It is not possible to serve a diverse range of markets well. With no strength in any single market, the OEM can end up doing marginally well in all areas with a high exposure to focused competition in every one of them. If the OEM only offers a horizontal package such as AR/AP/GL, other competitors who offer a solution that spans a broader vertical range will knock the OEM off the customer's "short list."

In the technical OEM marketplace for systems that are dedicated to specific tasks, there is some justification

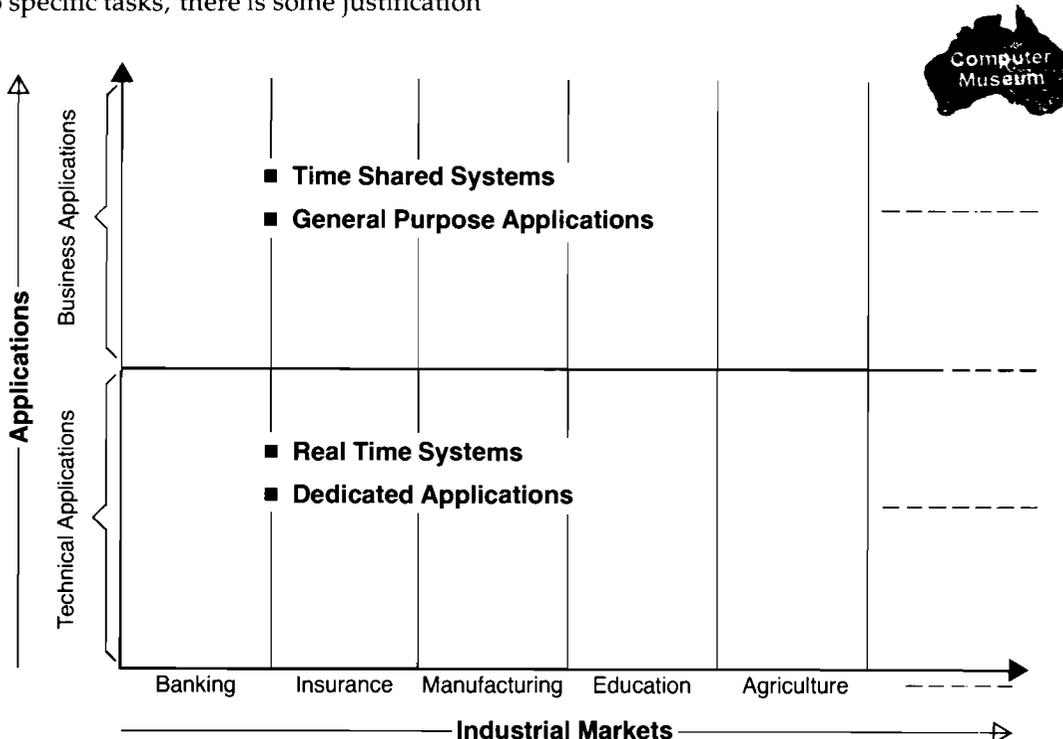
for OEMs focusing on applications that may span across a number of industries. This works because the customer buys the system for one specific purpose. The customer will purchase other computers to do all those other things. Computer Aided Drafting is a good example of this. These systems can be used in architecture, aerospace, engineering, etc.

For the OEM, the overall prescription for success is:

"Focus Resources on the Strengths of Your Offering in Market Segments You Know and Understand."

A lack of marketing focus can have a rather severe impact on the long run survival of the OEM. Figure 1 portrays the kind of thing that can happen by plotting the blend of functional activity within the OEM as more custom installations occur in different market areas. "M1" is the marketing activity that was undertaken to sell the first system and "I1" is the blend of activities required to actually install it. Each system installed requires follow-on support and development activities to meet the diverse needs of the different customers.

The following wave of demand for enhancements and support of the products eventually can capture the OEM completely. This completely annihilates the marketing program and prevents the OEM from reaching further into the marketplace.





Handheld Data Collection for Surveyors

This concept article will explore the use of HP's 41C handheld computer to collect survey data in the field. It will also describe how to link a 41C to an HP-85 personal computer to plot surveys, print reports, and analyze the data.

Throw Away Those Clipboards, Papers and Pencils

The biggest advance for surveyors since the invention of the transit is now available. This field data collection system is composed of an HP-41C or CV handheld computer, an HP-IL interface, and an HP-85 personal computer. Here's how it works:

Handheld Data Collection with the 41C

The HP-41C handheld computer is a very powerful tool for portable data collection. With the "CV" version or the "C" version with a "QUAD" memory module, over 250 data points can be stored in memory! The remaining memory registers could easily hold a 41C program which would prompt the surveyor for job number and a transit reading. That means a whole day's surveying (even on different jobs at different locations) could be stored in memory until needed to complete reports, plots and other documentation that surveyors prepare.

Verifying Data and Field Reports

Let's say you're a surveyor assigned to a very large construction project. You might be at one location for months. Many transit sightings are taken, even multiple

times of the same location, to verify squareness of building corners and foundation levelness, etc. The need is to be able to analyze the survey data while you're in the field — or back in the construction trailer. Enter the HP-IL interface and the HP-85 personal computer.

After doing your field work, head back to the trailer to print a report or plot a layout of the data you've collected. Simply plug the HP-IL interface into your 41C and connect it into the HP-85 personal computer. You can now pass the data to the HP-85 and graph it on the HP-85's screen, get a copy of the graph on the HP-85's built-in printer, or simply print out the data to review it for accuracy.

Finished Quality Plots and Reports

Another option to consider is a small portable plotter, like HP's new 7470A. It takes a minimum of counter or desk space and can be configured into your "system" for finished quality multi-color plots of your surveys. Finished reports can be generated using HP's "WRITE/IDEA" software and printed out on the HP 82905 matrix printer. And, remember, you are still working out of the trailer with a minimum investment and first-class results.

Conclusion

Many projects exist on the market today that can increase the productivity of "out-of-office" or "field" related professionals. The 41C and the HP-85, with their ability to "communicate" with each other, will be one of the biggest contributors toward increasing field-to-report productivity to come along in a long time.

Converting HP-85 Software to HP-87 is Easy, Says OEM

Software transportability, a major selling feature of Series 80, was demonstrated recently by one of our OEMs. This OEM has developed a solution for laboratories doing chemical analysis using gas and liquid chromatography. The original system consists of an HP-85, extra 16K memory module, I/O ROM, HP-IB Interface, 2671 Printer, an A to D converter and software for GC/LC analysis.

When it came time to evaluate the HP-87 for its larger screen and memory and faster graphics, protecting his software investment was an important consideration. Overall, the conversion of software from the HP-85 to HP-87 was an easy process.

The OEM had six basic programs (each taking about 30Kb of HP-85 memory). There were no binaries. These programs (stored on disc) were loaded on an HP-87 and run. In the conversion process, the HP-87 recognizes that the program is an HP-85 program, says "please wait" and automatically converts it into HP-87 code. It then says "done". The OEM then listed the programs to insure that all lines were converted. The lines that weren't recognized were commented (!) for easy editing. In this OEM's case the only command not recognized was "copy" (an HP-85 specific command). It was necessary to exchange "copy" with a dump graphics command to the 2671 printer. Again, with the Series 80 easy editing, these few changes were accomplished quickly.

Graphics conversion was also straightforward. Graphics from the HP-85 transported directly across to the HP-87 with no need to re-scale or reposition.

Here are some additional comments from the OEM on the features of the HP-87:

- 80 character screen makes programming easy.
- Extra memory not only allows larger programs but also speeds up processing because it is now possible to load all data points (instead of selected sections) into internal memory at one time, eliminating time used in accessing the disc.
- In graphall mode the extra CRT size has been excellent for generating X, Y plots.
- Graphics generation is very fast.
- 14 special function keys offer flexibility and make operator interaction easy.
- Blinking power light is useful, especially when compiling a long program or when trying to determine with a customer over the telephone whether or not his system has crashed!
- CP/M will enhance the HP-87 by offering additional capabilities, such as text editing and other business management tools, making the HP-87 a complete solution.

This OEM now offers the HP-85 (Low End), HP-87 (Mid Range), and the HP 9826 (High End), to meet the range of their customer's needs. The HP-87 fills the gap between the HP-85 and the HP 9826 offering a midsize system for the customer who handles more data and needs faster access by disc.

In conclusion, this OEM feels that the HP-87 is an excellent product that will provide them with good hardware to complement their comprehensive software offering.



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HP 125 Update Plan

This article describes the process which General Systems Division and OEMs are following to update HP 125 customers. It is specifically written to cover the HP 9134/9135 Op Sys, Block/Format, and HP 7470 software updates.

Background

Operating System

The original release of the HP 125 operating system, A.01.01, supports the new Block/Format Utility and the new version of GRAPHICS/125. The HP 9134A and 9135A disc drives are supported by the new A.01.20 release of the operating system. There are corresponding updates to the Owner's and Getting Started manuals.

Block/Format Utility

The Block/Format Mode Utility will be on a new HP 125 Utilities Disc. At this time, Block/Format Mode is the only utility on this disc. The Utility disc will be shipped with each system. There is a new manual, the Utilities Manual, which covers the Block/Format capability.

GRAPHICS/125

GRAPHICS/125 has been updated to level A.01.01 to support the new 7470A Two-Pen Plotter. It does not require the new A.01.20 Op Sys. There is also an update to the GRAPHICS/125 Manual.

Manual Updates for Other Products

There are updates to the VISICALC/125, WORD/125, and LINK/125 manuals which are now available.

Part numbers for all of the software, manuals, and updates are listed in the two tables at the end of this article.

Determining the Version(s) in a Software Box

A typical Op Sys box label now looks like this:

OS A.01.20
UTL A.01.00

If there is no such label, the box contains an earlier Op Sys and no Utility disc.

A typical Graphics box label now looks like this:

A.01.01

If there is no such label, the box contains an earlier version.

Software Update Kit Part Numbers

Product No.	Disc	Update for	Supports	Price
45500-15800	5"	HP 125 OpSys & Util	9134/9135A	
45500-18800	8"	HP 125 OpSys & Util	9134/9135A	
45532-15800	5"	GRAPHICS/125	7470A	
45532-18800	8"	GRAPHICS/125	7470A	

Future Op Sys Update Kits will always include the Utility Disc current at that time — but only the Op Sys disc will have to be returned as proof of purchase. Therefore, customers who do not have a Utility Disc will get one as part of the Op Sys update process, whether they update now or later.

Manual Update Part Numbers

Distribution Method	Part Numbers and CSO Prices	
	Manual Title	Original Update
Manual updates included in the Operating System Update Kit:		
	HP 125 Owner's Manual	45500-90000
	Getting Started With HP 125	45500-90010
New Manual included in the Operating System Update Kit:		
	HP 125 Utilities Manual	45500-90105
Manual updates included in the GRAPHICS/125 Update Kit:		
	GRAPHICS/125 Reference Manual	45532-90001
To be sent to Base System SIS subscribers:		
	VISICALC/125 Reference Manual	45531-99001
	WORD/125 Reference Manual	45533-99001
	LINK/125 Reference Manual	45534-99001

Procedures

Customers Outside the US

All previous purchasers of LINK/125 will automatically be sent a copy of the Block/Format Utility by General Systems Division at no charge.

To purchase the Operating System Update Kit and/or the GRAPHICS/125 Update Kit, contact the local HP office. The old disc must be returned to the HP office. For quantities of 20 or more, there is a 35% discount.

SIS subscribers will automatically receive the VISICALC/125, WORD/125, and LINK/125 manual updates listed previously. If you do not have SIS, you can order the updates from your local dealer or HP office. Those customers who waited to order SIS may have missed a mailing and thus will need to order manual updates. 

Managing Your HP 250

Are your HP 250 customers asking you questions about system backup and error handling?

There is a new HP 250 manual which is needed by every existing HP 250 installation. *Managing Your HP 250* will help you counsel your customers on these and related topics.

The manual is written in plain language — and with a light touch — for the HP 250's Principal Operator. This is our term for the person who has general day-to-day responsibility for a system.

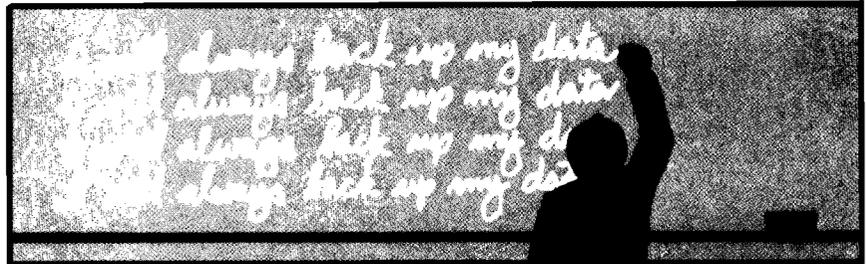
In addition, the manual recognizes the role of Third Parties and their support representatives. For example, if there is a software problem, it says: "Call your support service — HP or Third Party."



What is in the manual?

The topics covered in *Managing Your HP 250* include:

- **Computer Supplies** — With Computer Supplies Operation's US and German phone numbers
- **Media** — How to set up a media library; effects of environment and magnetic fields; naming files
- **Protecting Media from Alteration** — The cartridge protect peg, floppy protect tab, and HP 7906 write-protect switch



- **Backup** — Why backup is important (including the customer responsibility paragraph from the Customer Support Services Agreement); how to set up a procedure, including diagrams of a typical backup cycle; backup overviews for 7908, 7906 and floppy-based systems (sample: "Unfortunately, some people never give serious thought to backup until a system failure occurs.")
- **Logging** — Why logging is important ("Although it may be a routine, mundane task, logging can save a lot of grief and frustration later on."); sample log forms
- **Preventive Maintenance and Upgrades** — Coordinating with the CE; installing new hardware and software products; incorporating documentation updates
- **Support** — An overview of the hardware support services; a table comparing software support services, including the point that CSS-V provides "support of additional site via central site"
- **In Case of Difficulty** — Defining an error; where to start; the problem might be hardware ("Workstation is Hung," "System or Multiple Terminals Hung", "Peripheral Acting Strangely", "Power Failure"); reporting the problem; enhancement requests
- **Index.**

How to Receive Copies

Copies are being shipped to CSS, SSS, and MUS subscribers with HP 250 Operating System B.04.



HP 1000 Models 40 and 45, Option 019 to be Deleted

Starting on the May 1 HP Price List Option 019 for the HP 1000 Models 40 and 45 Systems will be removed. This action will not change the net system price but will make the quoting, ordering and processing of orders much easier.

When ordering a 2176C/D or 2177C/D, the customer will still be required to order an approved disc, disc interface and system console, but need not order Option 019.

Updated Model 60/65 Console Requirements

The HP 1000 Models 60 and 65 support the following terminals as the standard system console.

2642A-032,070 2647A-032
2645A-007,032 2648A-007, 032

The Option 005 for these systems will support the following terminals.

2621A/P 2624A/B
2622A 2626A
2623A

The new Option 006 (April 1 HP Price List) for the Models 60 and 65 will support the 2621B terminal. This option includes an HP 12966A-002 Interface and a 40242Z Cable.

Other terminals are not supported as system consoles at this time.

Note: The Option 050 (printer option) on the 2621B has not yet been certified. If a customer needs the printer, order the 2621P.

Problems With HP 9111A Graphics Tablet and A/L-Series Computers

There is a recently discovered problem with the HP 9111A Graphics Tablet on the A/L-Series HP-IB bus which impacts 9111A support under GRAPHICS/1000-II on these computers. Erroneous data may be returned if the tablet stylus is positioned over certain areas on the tablet platen. The correction requires a change to the 9111A. San Diego Division hopes to correct the problem in six to nine months.

GRAPHICS/1000-II support for the 9111A on A/L-Series computers is suspended until the problem is corrected.

If you have already sold a 9111A graphics tablet for use on an L- or A-Series computer using GRAPHICS/1000-II, have your HP sales rep contact DSD on-line support for more technical details.

HP 12555B Obsolescence

The 12555B Dual D-to-A Converter for the M-Series Computer, will be obsoleted as of November 1, 1982. This is necessary because a certain part is no longer available from our supplier. Customers who want this product should order a lifetime buy as soon as possible to ensure delivery.

RTE-6/VM Right-to-Copy Caution

Until the 2226 PCO, RTE-6/VM software will be shipped to customers as a generated Primary system only. The reason for shipping only primaries (without options for relocatables) is the inability to install (SWITCH) an RTE-6/VM system from an RTE-IVB system. A possible problem has been noted as a result of this restriction. If a customer owns two systems with different disc types (e.g. one system on a 7906 and the other on a 7925), and wants to upgrade to RTE-6/VM via one 92084A Option 001/002 and one 92084R Option 001/002, the system targeted for the "R" copy will not have a primary system, since "R" products do not include software.

This situation will be solved at the 2226 PCO with the reinstatement of Options 050/051 and the ability to generate and install an RTE-6/VM system from an RTE-IVB host. Until July, on-line support will offer an interim solution to the problem, which is expected to be very low volume. If your customer has this type configuration and upgrade problem, call your sales rep and give the following information: Sales order number for "R" product ordered by customer, Disc type of target system, and Mag Tape bpi (800/1600). A Mag Tape with the proper primary system for the "R" product will be shipped immediately. If your customer encounters this problem and does not have a mag tape unit, a temporary patch to the driver is required.

RTE-6/VM Bulk Upgrades

There is an economical method to upgrade your high-volume installed base that is not being used. The 92085A Bulk Upgrade license, with the 92086A Upgrade Kit, allows customers with a minimum of 15 RTE-IVB products, who were on services as of November 1, 1981, to upgrade to RTE-6/VM at a very low cost. This upgrade is especially useful to OEMs who purchased at least 15 systems (Model 40/45) but cannot upgrade them to RTE-6/VM using the "R" product (because "R" products cannot be used to upgrade RTE-IVB purchased with a system).

Our OEMs can take advantage of these products by ordering one 92085A product, then ordering as many 92086A kits as RTE-IVB Operating Systems they have to upgrade to RTE-6/VM. In the case of interstate corporations, one site may order the license (and software), then other sites may order the upgrade kits (firmware and manuals) by referencing the order number of the license in the special instructions section of the order, along with the required CSS/SSS HEART order number.

I feel this is an excellent opportunity for OEMs who want to upgrade their customers to our most powerful Operating System. The price is unbeatable, and there should be many customers who are eligible to take advantage of this deal. 

Expanded Peripheral Support on HP Series 30, 33, and III

Good news! Testing is complete and Computer Systems Division is happy to announce that we have expanded the support of the new CS 80 devices on the HP Series 30/33 and III systems.

Series 30/33 and 30R/33R

The HP 7911/12P discs, the Integrated Cartridge Tape drive, and the 7933H disc drives are now supported on the Series 30, 33, 30R and 33R. Specifically, one Integrated Cartridge Tape is supported on a dedicated GIC. In addition, a maximum of three 7911P, 7912P or 7933H disc drives are supported in any combination. Only one of the 7911/12P drives may be ordered with the cartridge tape and Option 001 is required for the second controller. When additional drives are purchased, Option 140 must be specified to delete the tape.

Does this mean your customer can replace his/her existing disc with one of these new disc drives and take advantage of the integrated cartridge tape for system backup?

No! Please keep in mind that a cold load *cannot* be performed from the Integrated Cartridge Tape, the 7911/12P, or the 7933H disc drives on the Series 30/33 and 30R/33R. "Cold load" is defined as the following system operations: Warmstart, Coolstart, Update, Coldstart and/or Reload. This means that any customer may add these devices to their existing configuration, but they must keep their present tape drive** for MPE backups and partial backups of programs and user data, and they must keep their 7906M/7920M, or 7925M disc drive as the primary system disc (LDEV 1).

In summary, the Integrated Cartridge Tape drive can be used for

personal I/O (storing of complete files, programs, or user data) or for transportation of software to other systems. The 7911/12 disc drives can be used as add-on discs within the "system domain." These drives, however, cannot be used for private volumes or as serial discs. The 7933H can be used as a "system domain" disc or as a private volume; it can also be used as a serial disc, although this may not be practical since the media is nonremovable.

** If a Series 30/33 or 30R/33R customer does not currently have a 1600 bpi magnetic tape drive or dedicated serial disc for system backup and they wish to add a 7911/12 or 7933H disc drive to their present system, they must either purchase a 7970E, 7971A, or 7976A tape drive or provide a 7906/20/25 dedicated serial disc.

How will these new devices be configured on my customer's system?

The Series 30/33 and 30R/33R each support a maximum total of eight disc drives. These discs *must* be attached to the *same* GIC and may be configured in any combination as long as the following rules are adhered to:

Device	Maximum Allowed
7906M, 7920M, 7925M	1
7906S, 7920S, 7925S	7
*7911P, 7912P, 7933H	3
Total Disc Drives	8

* Maximum of one Integrated Cartridge Tape per system

No more than eight devices (this does not include 7906/20/25 slaves) may be connected to the system disc GIC. It may be necessary, therefore, to purchase an additional GIC or to make certain trade-offs on the Series 30, 33, 30R, and

33R where the Configuration Guide indicates that discs may share a GIC with other devices (such as INPs, Line Printers, and Flexible Discs). In addition, the 2608A Line Printer *cannot* be connected to the system disc GIC.

Finally, as mentioned above, the Integrated Cartridge Tape drive will require a dedicated GIC, regardless of how it will be used.

Series III and IIIR

The Series III and Series IIIR will support a maximum of four add-on 7933H disc drives. Therefore, the Series III/IIIR will now support a maximum of 12 disc drives — one 7920/25M disc, seven 7920/25S discs, and four 7933H discs. The 7933H disc drives will be fully supported as system domain discs or private volumes with the one exception that, like the Series 30/33, the 7933H *cannot* operate as the primary system disc (LDEV 1) on the Series III/IIIR. Therefore, it cannot be purchased to operate as the only disc on the system.

These 7933H drives must be configured through the HP-IB Interface Module. This interface, P/N 30341A (sometimes referred to as STARFISH) will support a maximum of eight electrical device loads. The following table shows the only peripheral devices which are supported on the HP-IB Interface Module on the Series III/IIIR. The three devices shown may be configured in any combination provided the maximum device and HP-IB load specifications are not exceeded.

Device	Maximum Allowed of Each Device	HP-IB Electrical Device Loads
2680A	2	3 per device
7933H	4	1 per device
7976A	1	2 per device

Note: Maximum Devices = 5
Maximum "loads" = 8

The above information should be used to supplement the specifications and configuration rules in the HP 3000 Upgrades Configuration Guide and the Re-Marketed Systems Configuration Guide. You may want to clip out this article and keep it with your configuration guide.

HP 3000/64 Performance Benchmarks

Since the October 1981 IMPACT, the Performance Engineering Team of the Business Computer Sales Center has been providing technical support for customer benchmarks on the HP 3000/40 and HP 3000/64. Here are some highlights from the benchmarks we've run so far.

Twice the Load, Half the Time

An international shipping company, currently running HP Series IIIs, projects its transaction volume to increase by a factor of four over the next two years. The main application is an IMAGE-based inventory control system with 52 datasets in the database plus 2 KSAM files, and some transactions that can trigger up to a thousand disc I/Os. The application software is 0.5Mb (100K lines) of COBOL II code. On these heavy duty transactions the customer is getting 15-second throughput time with 30 users on the Series III. The customer's requirements include a 10-second transaction throughput

time with 80 users accessing the database (after it's segmented three ways).

Results on the 64, with a 40 and a 44 driving 84 TEPE terminals (plus a few for OPT and other monitors): 9 seconds.

It was 12 seconds on the first shot, but Performance Specialist Ray Cheng engineered four 7925Ms on two GICs and two IMBs with six Meg of Main Memory down to 8.97 seconds.

What Do You Do With the Other Half of a 64?

A west coast financial organization recently ran some batch jobs (IMAGE) in parallel on the III and the 64.

Here are some of the timings:

	Wall Minutes	CPU Seconds
III	132	3723
64	63	997
Difference	(69)	(2726)
%	52	73
III	32	591
64	18	168
Difference	(14)	(423)
%	44	72
III	139	4356
64	108	1366
Difference	(31)	(2990)
%	22	69
III	29	1202
64	16	318
Difference	(13)	(884)
%	45	74
III	66	1196
64	48	414
Difference	(18)	(782)
%	27	65

The customer liked the timings and, since OPT showed the 64 consistently around 60 percent

paused-for-I/O, is already planning how to use the other half-computer that was just standing there.

Exceeding Expectations

Another customer has a more extreme "problem." This California manufacturer was hoping their Series 64 would sort their 185,000 40-byte records in a "reasonable" time — like a few hours. Imagine their surprise when the whole job took only eight minutes — without tuning!

Simple Arithmetic Won't Work

In characterizing the 64 we've all been impressed with its raw horsepower. But the Migration Math is not simple. The 64 has twice the CPU power of the 44. And the ATP can give 1-second response time to 80 terminals concurrently in simple dialog with MPE.

But don't do a one-for-one transplant of a single IMAGE database with 30 users and expect to get 1-second response time or even a 50 percent improvement in response time. You may well have a DBCB bottleneck or other constraint in the application design that may make the Migration Math more complex.

SMOPE

The 64 has the power. We see this with each benchmark. Harnessing that power is another matter, a Small Matter of Performance Engineering. As the first case above shows, this can make a big difference! We'll continue to provide information to HP sales reps as we get it, to help everyone understand better what each individual customer might expect, and how to structure use of this powerful system to unleash its maximum performance.

HP 7911 and 7912 Now Supported on HP 9845B/C

Both functional and environmental testing of the HP 9845B/C/7911P and HP 9845B/C/7912P systems are now complete. The systems pass class A, VDE, so you can start selling 7911P, 7912P discs with the 9845B/C worldwide. These discs require the new 98413C Mass Storage ROM (shipped with all 9845s since February 1, 1982).

MSUS for the 7911P is "R" and for the 7912 is "S". Remember, if a customer wants this new capability, they must buy the new 98413C Mass Storage ROM even if they already have a 98413A or 98413B ROM.

The HP 7908/9845 Backup Utility is required for media backup/restore and for individual file backup/restore on all three discs: 7908P, 7911P, and 7912P.

The diagnostics used with 7908P are used with the 7911P and the 7912P.

Change sheets have been added to the 9845B/C Mass Storage ROM manual and the 7908P/9845B/C Backup. Utility manual, and have been shipped with all manuals since April 1, 1982.

Computer-Aided Presentations/45

April 1 marked the introduction of Computer-Aided Presentations/45 (CAP/45), a new, dynamic, general presentations software product for use on the HP 9845B/C. It allows characters, drawings, and charts to be combined on one slide. The program runs on the 9845C or the 9845B with the enhanced graphics CRT.

CAP/45 offers the choice of nine font types, a sketch and draw capability, and four standard chart types. The area-fill feature allows the user to choose any of the 4,913 colors available on the 9845C CRT, or the 17 shaded patterns available on the 9845C CRT, or the 17 shaded patterns available on the 9845B CRT. The program is menu-driven. An HP 9111A Graphics Tablet acts as an input device for providing control and data to the programs.

CAP/45 consists of three programs: Text, Pictures, and Charts. These programs are used to create the slide image. Images then can be plotted on paper or acetate, photographed directly from the CRT, or

output to a special video camera via the HP 98776A Video Interface. The direct screen photography produces 35mm slides, and instant 3x4-inch color prints.

There are two types of prospective customers that need CAP/45:

- Graphic designers who work for the audio/visual departments of manufacturing companies. In-house graphic designers do design and layout, and produce presentation media, such as 35mm slides and overheads, for other employees.
- General presenters who design and create the presentation image, and media for their own presentations. These prospective customers work as a support function to various departments within manufacturing firms.

For the in-house graphic designer, CAP/45 would be the only reason for purchasing a 9845C. The general presenter would want a desktop computer like the 9845C to create and produce presentation media, and for forecasting, project management, etc. CAP/45 would be a secondary justification for purchasing a 9845C.

The features that in-house graphics designers would find attractive about CAP/45 are how easy it makes creating pictures; coloring a drawn shape; combining text, pictures, and charts; and editing the slide image as to position, location, size and color. These attributes will enhance the graphic designer's productivity.

Being able to photograph the graphic raster directly using the HP camera attachment reduces the material cost of a 35mm slide to less than 50 cents. This compares to \$5 to \$120+ by other techniques. Also, if one uses Ektachrome film, it is possible to have 35mm slides back between one and 24 hours. 

RS-422 Availability

The RS-422 on the DSN/ATP was announced during IMPACT. The new RS-422 options for the HP 264X and 262X terminals will go on the May 1 HP Price List. Anticipated availability is six to eight weeks. The RS-422 offers several advantages over the older RS-232-C standard. Users can expect greater noise immunity and the ability to hardware devices up to 1.2KM (4000 ft) from the HP 3000 Series 64 CPU.

Remember, the DSN/ATP Direct Connect Port Controller (30145A) comes standard with 12 RS-422 ports. Any terminals connected to the RS-422 interface require either Option 035 or the upgrade option 13260E or 13266E.

For further details, contact your HP Sales Rep.

A Colorful New Special Option: K07 Orange Phosphor CRT

Occasionally, terminal operating environments have a lighting situation which makes viewing of the normal white phosphor CRT display difficult to the user. We have provided an alternative with Option K07. Option K07 provides an orange CRT display with the same high resolution characters as produced by the white phosphor CRT.

Option K06 Green Phosphor Now Standard

The green phosphor CRT (Option K06) is now a standard option available on the HP 262X terminal family as Option 061. Option K06 can no longer be ordered as a Special. Price will remain at \$50. Please refer to the HP Price List for further information.

HP 13238A and 13250B Printer Interfaces

The HP 13238A is our terminal 8-bit duplex register interface. This product is an HP 8-bit parallel interface. Please note that it is not an industry standard. Present product that supports this interface includes the HP 2671A Option 044, the 9871A and the 2631A/B Option 044. The 13232J cable is required for the 13238A. This interface is supported for up to 1.8 meters/6 ft.

The 13250B is our serial printer interface. This product is an RS-232 industry standard. This product presently supports the 2631B, 2635B and Option 40 of the 2671A, 2671G, and 2673A and most RS-232 printers. The 13232G or 13232H cables are required for the 13250B (see DTD cabling manual). This inter-

face is supported for up to 15 meters/50 ft. Note: Device support firmware (13261A see DTD price guide for correct Options) is also required.

HP 1000 Point-to-Point Terminal Configuration

The HP 2623A, 2382A, 2622A, 2621B, and the second port on the HP 2624B and 2626A terminals do not have an external clock. The standard configuration of the HP 12966A requires an external clock from the terminal. Certain modifications must be made by a CE in order to have the above terminals work with the 12966A I/F card. These changes are done standardly when the CE installs these terminals as part of a system installation. If one of the above terminals and the 12966A I/F card are bought as an add-on to existing system, the cost of doing the modification is not included in the purchase price.

The directions to make the change are in the *HP 12966A Installation, Service and Reference Manual*, pg. 4 - 2. The customer has the choice of paying to have a CE do the installation or using the documentation to do it himself/herself. 

HP 2608S Introduction

Boise Division is proud to announce the newest member of the system printer product line, the HP 2608S. The 2608S is designed for reliability and versatility and is the solution to your system printing needs.

The 2608S is priced the same as its predecessor, the 2608A, but offers the following important differences:

- An optional multipoint interface for remote spooled printing capability (HP 3000 only)
- High density print mode
- Access to all features on all supported systems
- Improved forms handling capabilities
- Easier operation
- Pedestal stand for easy loading
- Optional passive paper stacker for improved stacking capability
- BMCC and SMCC reduced from the 2608A

The standard features, such as double-sized character set, raster graphics capability, support for up to 16 character sets, paper jam de-

HP 1000 M/E/F
 HP 1000 A600/A700
 HP 3000 30, 33
 HP 3000 40
 HP 3000 44
 HP 3000 64
 HP 3000 III
 HP 250
 Desktops

2608 (HP-IB)
 Option 210
 Option 214
 Option 333
 Option 340
 Option 344
 Option 364
 Not supported
 Not supported
 Not supported

2608S (Multipoint)
 Not supported
 Not supported
 Option 055
 Option 055
 Option 055
 Option 055
 Option 055
 Not supported
 Not supported

tection and downloadable VFCs, are supported on both HP 1000 and HP 3000 systems. New standard features include:

- Direct visual alignment for forms loading ease
- Print-one-line button
- Wider left margin
- Forms length control button
- Non-volatile memory
- New high density print mode.

The standard character set prints uppercase characters at 400 lines per minute. When in high density, the print speed slows to 350 lpm for uppercase characters, but prints up to 40% more dots per character cell.

The optional multipoint interface will solve HP 3000 remote site printing needs in either hardwired or modem configurations. Multipoint is supported on the HP 3000 only. The 2608S with Option 055 is designed to operate using an INP and MTS/3000 software. This solution provides greater data integrity, power fail recovery, and spooler capability. For more details on remote 2608S configurations, check with your HP sales rep.

The accompanying table shows the systems supported.

The 2608A will remain on the price list for systems not supporting the 2608S for approximately six months.

Post Processing Equipment for the HP 2680

The HP 2680's use of continuous fan-fold paper may require post-processing to separate and cut output. While Hewlett-Packard does not produce or support post-processing equipment (PPE), a wide variety is offered by third party suppliers.

Industry Overview

PPE is divided into online and offline equipment. Online equipment has an electronic or mechanical connection between the printer and the PPE. Offline equipment is not controlled by the printer, but rather is under its own control. Types of equipment can be divided as follows.

Burster-Stackers (BS)/Cutter-Stackers (CS)

At the low cost end of the market, these machines burst or cut the continuous form into single sheets. Tractor feeds are not removed. Output is stacked for removal from the equipment. Volume is normally low and the equipment is generally used in remote print sites.

Burster-Trimmer-Stackers (BTS)/Cutter-Trimmer-Stackers (CTS)

This is the machine used in most EDP and office operations. This equipment bursts or cuts sheets, removes (cuts) the tractor feeds, and stacks the output. Additional features offered are slitters (which can make additional cuts down the paper) and page counters. A majority of the vendors produce a machine in this product segment. Local vendor support must be a major consideration for purchase selection.

Burster-Trimmer-Stackers (Connected BTS(c))/Cutter-Trimmer-Stackers (Connected CTS(c))

BTS(c)/CTS(c) are new on the market and are designed to be offline but work in a connected mode to a printer. Output from the 2680 can be fed to the machine directly, bypassing the stacker on the 2680. Paper feed is controlled by a floor switch which monitors a loop of paper as it is fed from the printer to the BTS/CTS.

Special Systems (SS)

These are special post-processing systems that are designed for dedicated needs. One example is a machine that cuts and then trims, folds and stuffs into envelopes and applies postage to the envelope. These custom systems are engineered to meet strict customer requirements. If a prospect requires this type of application, customer engineers from the vendor will be required to prepare a proposal.

When working with a customer on selection of PPE, remember that their present equipment will probably work with 2680A output. Tractor spacing on the 2680A is narrower than on line printers, but most machines can be adjusted. A key factor in PPE selection is the availability of service.

For information regarding vendors and price ranges for post processing equipment for the 2680, contact your sales rep.



How To Qualify HP 2680 Prospects

Do you have a laser printer prospect? Are you sure they're well qualified? If they are, how are you going to move them through the sales process?

The results of our study show that there are three key steps in the early stages of the sales cycle that have a tremendous impact on the success of the sale.

These three steps are summarized below:

Step 1

Assure yourself that the prospect meets the minimum applications requirements.

- Do they print over 100K pages per month (i.e., they are currently operating with at least one 1000 lpm printer and probably have more than one printer)?
- Do they wish to increase their printing capacity, quality, and/or flexibility?
- Do their printing requirements fall within the supported capability of the hardware and software (i.e., that they don't want to print photographs on 80# card stock while hooked to their DEC computer)?
- Are they prepared to make a purchase if the product meets their needs (i.e., they have the funds budgeted or available)?

If the answer is yes to all four questions you should proceed; if not, you are probably wasting your time.

Step 2

Position the laser printer based on the prospect's application.

The HP 2680 or 2685 can be positioned four different ways. It's important to identify the appropriate way to position the laser printer for your customer based on their application. These four positions are:

- As a *System Printer* on an HP 3000 computer — This means that the primary application for the HP 2680 is as a replacement for impact line printers. The type of printing will usually be routine "print and space" output with the possibility of some unique or special print jobs.
- As a *Printing System* on an HP 3000 computer — In this position, the primary application is the printing of system output that requires a special format or high print quality. This may be such things as special forms, word processing output, manuals or management reports.
- As a stand-alone, *Specialty Print Station* — This application is one where the specialty printing requirements justify a dedicated system to do nothing but print. This is typically the case in a large, centralized data processing environment (i.e., for use in conjunction with a large mainframe).
- As a *Remote Print Station* — This application is typically found in a large data processing environment where there is a desire to decentralize some of the printing from their central computer system. The objective is to generate "print and space" output in remote locations.

Once you have categorized your prospect into one of these four groups, you are ready to plan the appropriate sales activities.

Step 3

Implement sales activities that match the appropriate product position.

History has shown that each of the above described categories have certain sales activities that best fit the need of the buyers.

- For the *System Printer* prospect, the buyer is usually a DP manager whose principal interest is in the operating features and cost effectiveness of the printer.

For this type of customer, it is best to provide a cost analysis of the HP 2680 versus their impact printers.

- For the *Printing System* prospect, the buyer is usually (or should be) an administrator or general manager. Their principal interest is the satisfaction of the end users of the output. This requires that they be convinced, usually through actual demonstration, that their output can be generated in a form that meets their needs.
- For the *Specialty Print Station* prospect, the buyer and sales activities are similar to that of the printing system prospect. Their principal concern is their ability to bring this print station into their operation without having to buy another computer. The HP 2685 print station is an appropriate solution.
- For the *Remote Print Station* prospect, the buyer is usually a DP operations manager or systems consultant. They are looking for a stand-alone print station that can receive data either by transferring magnetic tape or via a data comm link. This type of prospect needs to be convinced that the configuration is feasible and that remote printing can cost-justify itself.

As you can see, the buyers' concerns may seem very fundamental. However, if you follow them, the probability of success will be significantly increased.

The Making of a Quiet, Clean Room

All of us are aware of the consequences that even the smallest particle can present to a disc drive. As technology pushes ahead, the tolerances for scientific applications continue to grow smaller and smaller. The HP 2670 Series Printers seem to be the ideal output device for "clean room" environ-

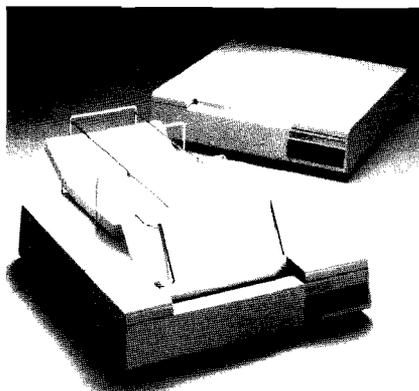
ments. Thermal printing is a non-impact technology that simply means nothing is striking the paper on which the characters or graphics are being formed. The print head rides on the surface of the paper which is coated with a chemical that dries to a smooth, glossy finish. Dots are formed on the paper by 15 tiny resistors embedded in the head. The resistor heats up as the head moves across the paper and somewhere between 110 and 120 degrees a dot is formed by the resulting chemical reaction. This process significantly reduces particles being torn away from the paper as is the case for most impact printers.

Another advantage of thermal printers like the 2670 Series is the low sound level that results from the non-impact process. Clean rooms are usually technically oriented and the absence of noise is undoubtedly a major benefit.

The only mistake one could make in considering a 2670 Series Printer would be in assuming you have to give something up. A wide variety of interfaces (RS-232C, HP-IB, 8-Bit Parallel and Centronics), fast output (120 characters per second) and a low price underscore the fact that nothing has been sacrificed.

Thermal Printer Discounts

The 2670 Series Printers appear on Exhibit A-43 entitled "OEM Pro-



ducts Subject to Discount, HP-Printer Products". The 2671A and G models earn 0.1 functional units while the 2673A earns 0.15 functional units. All three printers are asterisked items and can earn up to a 38 percent discount when purchased in substantial quantities.

The 13287A Thermal Print Mechanism also appears on A-43, Revision No. R3-82 and earns 0.05 functional units. It is also an asterisked item and can earn up to a 38 percent discount with a volume of 200 functional units.

HP 2671A/2671G/2673A Printer Differences

The HP 267X Series of thermal printers include three models that, although upward compatible, have feature differences. This article will provide a brief review of those differences. No attempt is made to list all of the features of any of these printers, only those where some differences exist between models. Please refer to the data sheet for a full list of printer features.

HP 2671A

This printer is alphanumeric only supporting the full USASCII 128 character set. There are no graphic capabilities. In addition to USASCII, the line drawing and Roman Extension character sets are standard. There are no optional character sets available. Interfaces available are HP-IB, RS-232C, 8-bit parallel, and Centronics parallel. This printer has the ability to print either 80 columns on a 8½ inch wide page at 10 characters per inch (normal mode), or 132 columns at 16.2 characters per inch compressed mode).

HP 2671G

The 2671G printer is identical to the

2671A printer with the exception that it also supports HP Raster Graphics. All other features are identical.

HP 2673A

The 2673A is the top of the 267X printer line. It supports all of the alphanumeric printing features of the other two printers. Additionally, the 2673A supports EXPANDED mode print five characters per inch, bold print (for emphasis), character framing, horizontal TAB control, auto page control (manages bottom of text and top of text according to user defined text length regardless of page length), and six additional ISO character sets (standard). The 2673A supports all of the 2671G graphics features plus auto centering, offsets, and windowing.

AUTO CENTERING allows the graphics image to be automatically centered on the printed page regardless of the size of the image.

WINDOWING allows the user to send only a selected portion, or window, of the graphics image to the printer.

OFFSETS allow the user to define the placement of the graphics image on the printer by defining the starting X-Y coordinates for the upper left corner of the image.

The HP 2673A also has additional user features. For example, the user can define margins, tab stops, print mode, character set selection, communications parameters, and other user definable characteristics from the control panel. On the 2671 printers, user definable features can only be defined with escape sequences from the host system. Furthermore, with the 2673A, these user definable characteristics are non-volatile and therefore are not lost when power is shut off.

The net result is that the 2673A is more flexible and is more user oriented than its lower cost counterparts.



Put Some Graphics in Your HP 9826A and HP 9836A

The new HP 9826A and 9836A desktop computers are powerful systems for hard and soft copy graphics. CRT graphics is standard in both and graphics language support is featured in all three programming languages. These 68000-based desktops are powerful engines for fast graphics computation and offer full support for the HP 9872C and 9872T 8-pen plotters, the 7580A drafting plotter, the 9111A graphics tablet, and the new 7470A low-cost plotter.

In Computer-Aided-Test applications, the 9826A offers graphics output that is easy to program in HPL, BASIC, or PASCAL. For Computer-Aided-Engineering, the 9836A makes high level graphics commands available for custom graphics applications, plus interactive graphics capability using the 9111A graphics tablet in either BASIC or Pascal. Many CAE application packs are also available, including AC Circuit Analysis, Linear System Analysis, and, of course, the Graphics Presentations Pack. These packs utilize graphics for hard and soft copy output.

Graphics support is available in all three 9826A and 9836A programming languages, HPL, BASIC, and Pascal. HPL offers easy-to-use statements for programming graphical output on the complete family of HP plotters. Though the 9111A graphics tablet is not supported in HPL's graphics language, programming the tablet using its own HP-GL command set is fast and straightforward.

From BASIC, the graphics language provides high level capabilities for generation of graphics on the display or an HP plotter. Like HPL, BASIC supports the complete HP plotter family. The 9111A tablet is also supported with a binary program currently supplied with the 98627A Color Video Interface card. A number of graphics demos are available in BASIC. The 9826A/9836A system demo supplied with each unit includes several demos that show plotter capability. A new SDD demo for the 9872C/T and 7470A (P/N 09872-18012) was distributed to the field in April and a new 7580A demo (P/N 07580-18007) will be available this month.

BASIC's application software packs also support graphics. The 98815A Graphics Presentation Pack is similar to the 9845B/C's GPP which has been the best selling application pack on the HP 9845. Other packs include: 98817A Project Management, 98818A Forecasting, 98820A Statistics Library, 98825A AC Circuit Analysis, 98826A Linear System Analysis, 98827A Waveform Analysis, and 98828A Digital Filter Design.

PASCAL includes DGL (Device-independent Graphics Library) as a standard feature. The initial Pascal data sheet does not mention DGL, *but it is included*. DGL has powerful capabilities for 2D graphics with excellent display and plotter support and 9111A tablet support for interactive applica-

tions. The 9826A and 9836A DGL is a subset of DGL in GRAPHICS/1000-II (982841A) to allow users an upward growth path. For Pascal graphics demos, send an initialized floppy to Jeff Bork at Desktop Computer Division, (303) 226-3800 — he has several good graphics demos and he'll be glad to send you a copy.

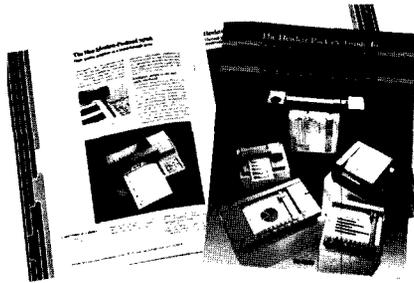
Not to be forgotten is the Inte/GraL/60 software written for the 1360S Graphics System. Inte GraL/60 provides a sophisticated graphics programming language for interactive, object-oriented, graphics applications. It supports the 9111A graphics tablet, the 9872C and 9872T 8-pen plotters, the 7580A drafting plotter, and other HP graphics peripherals.

This amounts to an impressive range of HP desktop computer graphics capabilities. With these products and your application expertise, you can offer the customer the most competitive combination of hardware and software tools for most applications. You'll benefit by selling more systems. Also, with graphics as inexpensive to add as the new 7470A graphics plotter and as effective and colorful as the 9872C plotter, you'll sell larger systems as well.

New HP Guide to Graphics Plotters

We have recently updated the SDD plotter family brochure that brings together in a high quality, full-color, 12-page guide our full line of graphics plotters that will help you in almost every HP computer sales situation — end-user as well as OEM.

The brochure begins by emphasizing the outstanding technology and engineering that have gone



San Diego Division's new brochure, Hewlett-Packard Guide to Graphics Plotters.

into the whole line of HP plotters. It discusses each device in detail:

- The 8-pen, D-size (A1) HP 7580A Drafting Plotter
- The 8-pen, B-size (A3) 7220/7221/9872 family
- The thermal 7240-7245 plotter/printer with long-axis capabilities
- The 2-pen, A-size (A4) 7470 for low-cost applications

The most important part of the brochure, however, is a section devoted to helping your customer choose the right plotter for his needs. This is done by first discussing plotter considerations in general — such things as:

- What size paper is needed?
- What types of media are needed?
- How many colors are enough?
- What is resolution and why is it important?
- What is accuracy and why is it important?
- What interfaces does the system require?
- What software support is needed?
- What is a command language?
- What things does an OEM have to consider in choosing a plotter?
- What about service?

Then the brochure helps your customer decide which HP plotter will do the job.

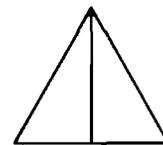
In the US, the brochure (P/N 5953-4121D) contains a bound-in reply card. A foreign version with no reply card also exists (P/N 5953-4121).

You have The Graphics Edge! Use it!!

Give Your System the Edge with Color Graphics Output

Set your system apart from the rest by offering color graphics hardcopy. HP's family of 8-pen plotters makes high-quality color hardcopy affordable. In fact, while a pen plotter is one of the least expensive forms of color hardcopy, it offers the highest resolution available. The result is professional, publication-quality charts and graphs, on paper and overhead transparencies. This quality makes the features of your system stand out clearly and vividly. Graphics does communicate information more quickly and efficiently than tables of numbers.

Development of the graphics package for your system will be fast and straightforward. The HP 9872 and 7220 plotters use a command set known as HP-GL, or Hewlett Packard Graphics Language. These two-letter mnemonic commands utilize the very useful intelligence of the plotter. Character sets, line types, and scaling are all internal to the plotter. To quickly demonstrate HP-GL's simplicity, the following character string draws a triangle and its altitude with each line segment a different color.



```
"SPI; PA500, 1000;
PD; PA0, 0; SP2;
PA1000, 0; SP3;
PA500, 1000; SP4;
PA500, 0"
```

SP is the Select Pen command while PA Plot points in Absolute (user) coordinates.

Peripherals

The HP 7221 is meant to be used with a low baud rate modem and uses very efficient compacted binary commands.

For faster development, all HP computers offer high-level graphics languages. On desktop and Series 80 personal computers, the graphics language may be a standard integral feature (9826, 9836) or available as an optional ROM (85, 87, 9825, 9835, 9845). The HP 1000 family offers DGL (Device-independent Graphics Library), a set of high-level graphics subroutines as part of GRAPHICS/1000-II. The HP 250 offers graphics utilities as GPL/250, for Graphics Plotting Language. The DSG/3000 package brings high-level graphics tools to the HP 3000. In each case, the graphics language uses a single, more intuitive command like MOVE or DRAW to replace a longer HP-GL string. Other computers may be able to utilize HP's Industry Standard Plotting Package (ISPP) or PLOT/21 for higher-level graphics application development.

These plotters carry eight pens at a time, selectable manually or, as shown in our HP-GL example, through program control using the "SP" (select pen) command. Pens come in ten colors and two line widths. Paper up to 11" x 17" (A3) can be used. HP makes available a broad line of high quality plotting papers and overhead transparencies.

The HP 9872 uses the HP-IB (IEEE-488) interface, the 7220 and 7221 have an RS-232-C/V.24 interface. All three models are available with automatic chart advance for unattended operation. 

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For further information on any of the products and services discussed in **OEM News**, please contact your HP sales rep.

Note: Not all HP computer products are sold and supported in all countries. Please check with your local HP Sales Office.

If you have any suggestions, comments, or letters about **OEM News**, please send them to:

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