Computer News OEM edition

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On the Cover:

New business graphics are introduced on the HP 3000. For more information, See the article on ***page 8.***

A Brief Look at the Coordinated Delivery Program

The Coordinated Delivery Program has a significant impact on the way you place an order, when you receive shipment and when an order must be paid for. It also affects the orders that are not being coordinated. We have recently received a few inquiries reflecting some confusion on how the various aspects of the Program play together. The following article clarifies a few key points about the Program to help make the CD Program work for you.

The Coordinated Delivery Program is designed to provide the delivery of all components of a system order at the designated ship to location in a timely and efficient manner. Our goal is to completely deliver CD orders within a calendar week window. Remember this is a *goal* not a commitment. Actually since its introduction in 1980, we have experienced increasingly successful results.

Key Benefits

The CD Program has several features beneficial to OEM customers.

- By working together to insure a one-week delivery window, HP allows faster installations of your systems and lowers inventory and transportation costs that can be passed on to you through lower prices.
- CD orders receive priority in division booking systems. CD orders can be received much later than non-CD orders and still be scheduled into earlier slots.
- You can receive one invoice on CD orders to keep accounting and payments simple. That invoice will be generated automatically when everything on the order *section* has been shipped.

How It Works

When you specify Coordinated Delivery on your purchase order, you will also need to give HP two dates:

- your required date
- your earliest acceptable date

These dates give the controlling division (usually the division supplying the system) the flexibility to schedule your order. All other divisions involved in the order section are committed to line up appropriately with the controlling division. Published availability will be quoted to you in the event that HP cannot meet either of your requested dates. Published availability is based upon the date your order is actually entered at a factory. This date is shown in the "order date" field of the acknowledgement form sent to you by HP. Two weeks should be allowed for order processing at the sales office.

All divisions on CD orders have visibility over each other, enabling them to schedule orders together. They also receive reports estimating how successful they have been in coordinating orders each month which are used to adjust their scheduling and shipment pattern.

What Is Eligible?

Your order is eligible for the CD Program once you specify it on your purchase order containing one of our designated controlling products. At this time we are offering Coordinated Delivery for a wide range of Computer System products including:

- HP Series 80 Personal Computers
- HP 9800 Desktop Computers
- HP 125 Personal Computers
- HP 250 and HP 3000 Commercial Computer Systems
- HP 1000 Technical Computer Systems
- HP 2647A/2649G Graphics Terminals

Peripherals, terminals and add-on equipment on the Pricing and Configuration Guide for each system are eligible to be coordinated when they are on the same order, specifically the same order section, as the controlling product. HP will enter your CD purchase order in the same section for this purpose unless otherwise instructed by you.

The Coordinated Delivery Program when properly understood and utilized can be a significant tool to promote customer satisfaction. For a more detailed understanding of the Program, review this article with your HP sales rep.

HP Computer Museum
www.hpmuseum.net

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GSD Software Policy Reminder

Many of the software packages sold through Hewlett-Packard on the HP 125 are purchased under license from third party vendors. Typical industry practice and vendor terms and/or conditions require one copy of software for each system sold. Many people have been asking whether a user may buy multiple systems and only one copy of the software.

Unlike the larger systems, such as the HP 3000, there is no "Right-To-Copy" software for the HP 125. Customers who do so are liable to be sued not by HP, but by the original software vendor. Please convey this to your customers, and remember that software is what makes the HP 125 worth having!

HP 125 Software Update Kits

Inexpensive HP 125 software update kits are now available from CSO for customers holding an earlier software version. (These kits also are a low cost way for customers to replace software media they may have damaged.) Each kit contains the latest enhancements (and known bug fixes) on a new disc, along with documentation pages that have been changed. Your customers will view this HP 125 software update program as another value received with their purchase of an HP computer.

Two new releases of HP 125 software are now available as update kits. The HP 125 Operating System (Rev. A.01.20) supports the HP 9134A/9135A; the new GRAPHICS/125 software (Rev. A.01.01) supports the HP 7470A. Update kits are provided on either 5¼" or 8" flexible discs.

Software update kits are offered only to customers who purchased earlier versions of the HP 125 software. Purchase is proven by sending the original disc (containing the software being updated) for each update kit ordered. Original discs will have an official HP label containing the HP software product number and description.

International customers should order HP 125 software update kits from their local Country HP Sales Office. The original disc(s) must be sent to the HP Sales Office before the order is entered. Do not send the disc to CSO; discard or erase locally. Prepayment is not required for International orders.

To provide faster service , European orders will be shipped from PCE, rather than CSO.

CSO will send mail order forms and instructions directly to customers calling toll-free 800-538-8787. In California, Alaska, Hawaii call 408-738-8858, ext. 338. COMSYS address is A500.

P/N	Update for	Disc	Supports
45500-15800	HP 125 Op Sys*	5¼"	HP 9134A/9135A
45500-18800	HP 125 Op Sys*	8"	HP 9134A/9135A
45532-15800	GRAPHICS/125	5¼"	HP 7470A
45532-18800	GRAPHICS/125	8"	HP 7470A

* Includes new HP 125 Utility disc (containing the Block/Format Mode Utility).

New HP 250 Memory Available

With the introduction of new memory boards using 64K RAM technology, and reduction of prices of existing HP 250 memory boards, your customer can now get memory with a savings of up to 58% over the previous memory prices! In addition to these savings, the standard memory configuration of the 250 has been raised to 25Kb from 192Kb with no change in the system price. This means your customer gets 64Kb additional memory for no charge!

New 256K and 512K Memory Boards

These two new memory boards offer a new low in the price of HP 250 memory. By using 64K bit RAM technology, we now offer a 256Kb memory board (45006A).

The new 512Kb board is available only as Option 008 to the HP 250 Mainframe (45251B and 45260A). This option will delete the standard 256Kb board and replace it with a 512Kb board.

Both boards are available for use in all 250 systems, with the only restriction being that the 45265A CPU Upgrade Kit must be installed in 250 systems shipped previous to August, 1981. These boards are *not* supported under the old CPU firmware.

Note that the maximum memory size of the 250 remains unchanged at 576Kb, which is 192K of system memory and six user partitions of 64K each. One other point to note is that these new memory boards are configurable in partitions of 64Kb only. For users requiring 32Kb memory partitions, the existing 64K or 128K boards (45003A and 45004A) should be used.

Standard Configuration of 256Kb

With the introduction of these new memory products, we are also increasing the standard memory configuration of the 250 system (45251B and 45260A) to 256K (a single 256Kb board) from 192K (a 128K and 64K board). Remember that this memory board is configurable in 64Kb partitions only, so the minimum system will now contain 192K of system memory and 64K of user memory in one partition.

For those customers who still wish to use 32Kb memory partitions, the new Option 007 to the 250 system (45251B and 45260A) will delete the single 256K board and replace it with two 128K boards. This Option 007 is replacing the previous Option 006, which will be removed from the price list.

Lower Price for 64K and 128K Boards

We are also lowering the price of the existing 64K and 128K boards!

The 64K board (45003A) has been reduced up to 33% over the previous price. The price of the 128Kb board (45004A) has been reduced approximately 25%.

New Options to CPU Upgrade Kit

Reflecting the reduction in price on the 64Kb memory board which is included in the 45265A CPU Upgrade Kit, the price for this upgrade is being reduced. Encourage your customers to upgrade and take advantage of the new B.04 features!

In addition, to simplify ordering the new 256Kb memory board when the Upgrade Kit is ordered, a new Option 008 will be added, which replaces the 64K board included with the kit with a new 256K board.

For more information, contact your HP sales rep.

Expanded Data Communication Options for HP 250

New data communications capabilities of the HP 250 allow simultaneous support of up to *10 RS-232C* (V.24) asynchronous ports and the DSN/INP.

By designing an external mounting module for the DSN/INP connector panel, up to two Asynchronous Serial Interfaces (45120B) can be installed in the 250 back panel. The DSN/INP External Module is joined to the system with a one meter cable, and contains all connectors for the modem cable, test hoods and auto dial cable, while the DSN/INP board itself remains in the system cabinet.

Because of modifications that were necessary for the back panel and DSN/INP cable, this new capability applies only to the 45260A HP 250 system (Models 20, 30, 40 and 50), and *not* to the 45251B desk model. The desk model continues to support either two ASIs or an ASI and an INP.

The following chart lists the new options for ordering this expanded capability:

Product/ Option	Description
45122B	Intelligent Network Processor, DSN/INP
001	Include external DSN/INP module
002	Include external DSN/INP module with system back panel upgrade.
45120B	Asynchronous Serial Interface for HP 250/30 (45260A).
001	Include external DSN/INP module and cable. Required if this is the second ASI in the system and a DSN/INP is already installed.
002	Include external DSN/INP module and cable with system back panel upgrade. Required if this is the second ASI in the system, a DSN/INP is installed and if a system back panel upgrade is required.

With the new capability of supporting up to two ASIs and one DSN/INP simultaneously, care must be taken when ordering additional ASIs or a DSN/INP for installed systems.

Specifically, one must be aware of:

1. How many ASIs are already present in the system (1 or 2)
2. How many INPs are already present (0 or 1)
3. If the system requires a back panel upgrade. A back panel upgrade is required for systems which do not have the appropriate cutout in the back panel for the DSN/INP cable.

To simplify ordering additional ASIs and DSN/INPs, the following chart can be used to indicate what products and options should be ordered.

Use this new capability to sell to users who have wanted to support greater than five asynchronous terminal ports, and the DSN/INP at the same time. Great for users who wanted five or six 2622D consoles and serial printers and plotters connected, while still having synchronous data communications!

For more information, contact your HP sales rep.

Installed number of:		To add an INP (45122B), order:		To add an ASI (45120B), order:	
ASI	INP	With *old* back panel	With *new* back panel	With *old* back panel	With *new* back panel
1	0	45122B	45122B	45120B	45120B
1	1	N/A*	N/A*	45120B#002	45120B#001
2	0	45122B#002	45122B#001	N/A*	N/A*

NOTE:
* This configuration is not supported because it would exceed the allowable number of ASIs or DSN/INPs.

Disc Drives Now Get Higher HP 250 Discount

Effective immediately, the first HP 7908P/11P/12P disc drive purchased with each HP 250 system now receives the higher Schedule "A" discount (up to 35%) on Exhibit A-6, if the disc drive order is coordinated with the CPU order.

A-Series Cabinets

In response to customer requests, important changes are being made to the A-Series tall systems cabinet. As of July 1, the 29431E one-piece front door will be replaced by a two-piece door, split at the separator panel. Filler panels behind the door in the upper compartment will allow customers to more easily rack equipment or even remove the upper door if desired. The exhaust area in the back will be expanded. The 29431E two-piece door will be on the August 1 HP Price List as a stand-alone item.

The 29429A (A-Series 23" cabinet, used for the 2196B and 2197B SPUs) will not be changed, but it will also be on the August Price List as a stand-alone item.

NOTE: 29402C cabinets cannot be used to rack A600/A700 CPUs or CS/80 discs.

New Media Options for IMAGE/1000

The standard for DSD product options states that Option 40 represents a single-sided flexible disc medium, and Option 41 represents a dual-sided flexible disc medium. However, for IMAGE/1000 (92069A/S/T), these options are reversed.

Some customers have not received the type of media they expected for their IMAGE/1000 updates. To make sure they do, both types of media and a letter of explanation will be shipped with their B.82 IMAGE/1000 updates.

On the July HP Price List, the two options will be reversed to agree with the standard for the IMAGE/1000 Support Contracts (92069S/T). A letter will be sent to Support Customers to inform them of the change and the necessary action required on their part. The switch has already been made for the basic product (92069A).

R.I.P. Standard Performance Memory

As of July 1, 1983, standard speed memory for the M/E/F-Series will no longer be manufactured. However, this should present no problems because the equivalent size high performance module is a perfect substitute (fit, form, function). At that time, high performance memory prices will be lowered to that of standard performance.

The memory controller determines the performance of the memory system. Standard performance memory controllers and memory packages will continue to be offered.

E/F CPU Loader ROM Change

Starting June 1, 1982, all E/F Series CPUs are being shipped with the 2645 loader ROM. The paper tape loader ROM, which was shipped with the E/F CPUs, will no longer be included. E/F-Series customers who need the paper tape loader ROM must now order the 12992K with their CPU. Note the 2645 loader ROM will reside in address 00 instead of address 01. This change does not apply to the M-Series CPU.

Powerful New HP 3000 Business Graphics Software

By reducing the need for outside graphics services, and by encouraging more frequent use of graphics in the organization, the HP 3000 Business Graphics Package can improve the efficiency of information exchange in your organization

The package for HP 3000 Computer Systems extends the Interactive Office and lets you create charts, diagrams and displays to interpret data, to help make decisions, and to explain them convincingly. The results can be presented in eight different languages.

The Business Graphics package is for everyone. It consists of HPEASYCHART, a new "no-experience-necessary" chartmaker for results in minutes, HPDRAW for high-quality visual aids, and newly enhanced DSG/3000 (Decision Support Graphics/3000) for more comprehensive charts using both computer-stored and manually-entered data. You can purchase the package at a discounted price or buy the products separately.

HPEASYCHART

HPEASYCHART uses a "follow-the-example" data entry method designed for managers and secretaries alike. It displays small illustrations of the charts available — pie, bar, line or scattergram. You can enter data manually, and at the press of the DRAW button, the example is plotted. Up to six variables, each with as many as 70 values, may be entered and plotted. HPEASYCHART is ideal for quick charts to make a point, illustrate a memo or letter, or support a decision.

HPDRAW

HPDRAW is a new graphics software system for high-quality visual aid design, production and revision on the HP 3000 HPDRAW lets you designate yourself a beginning, regular or expert user, and then takes you through the steps to produce a visual aid in a way that matches your proficiency.

With a choice of fonts, basic geometric shapes, symbols and simple figures, HPDRAW is especially useful if you need simply illustrated visual aids. Organization charts, flow diagrams and schematics are examples. Charts produced by HPEASYCHART or DSG/3000 can be included directly in an HPDRAW visual aid without recreation.

HPDRAW is for anyone who needs to produce visual aids, including secretaries, administrative support people, business professionals and experienced computer news.

With HPDRAW you can create or modify charts and schematics; figures and text can be scaled and rotated. When HP multi-pen plotters are used, you can present the graphics in various colors on paper or transparency.

Enhanced DSG/3000

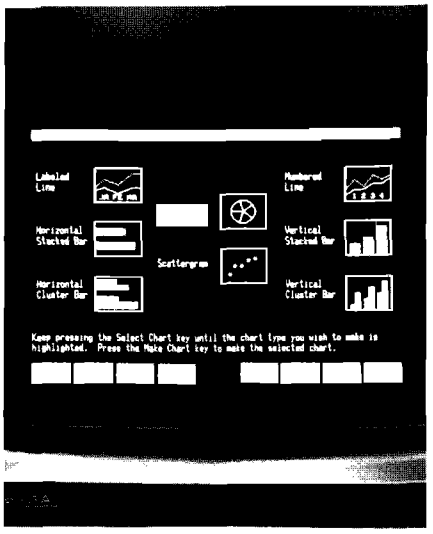
Decision Support Graphics software, introduced in 1980, provides chart design for technically sophisticated users. You can use data from the computer or enter your own without a special command language. Once a chart is designed, you can save it in the chart file and reuse it periodically with different or revised data. This is especially helpful for charts that you update frequently.

DSG/3000 provides plotted charts on paper or transparencies. An interactive option enables you to produce multi-color charts, generated entirely unattended on an HP graphics plotter.

DSG/3000 is newly enhanced with three new types of fonts (Script, Roman and Gothic). Labels, annotations and legends now may be scaled to any size and presented in several colors.

Merge text and graphics; use with HPMAIL

Charts and drawings produced by any of this business graphics software can be included within



text in documents produced on the HP 2680A Laser Printing System. Items such as manuals can be created at the keyboard and then stored for printing as needed. (For the full story, see the article in Peripherals on text & graphics.) This new text and graphics merging capability, and the HP 3000 Business Graphics Package, can be used with HPMAIL Documents, charts and drawings can be transmitted to any HPMAIL user on an HP 3000 network.

Charts and drawings may be reproduced at the receiving locations on an HP plotter; documents transmitted via HPMAIL may be printed on an HP laser printer.

With the HP 3000 Business Graphics Package you can make presentations in English, French, German, Italian, Dutch, Swedish, Finnish or Spanish.

COBOL/3000 Discontinuance

On May 1, 1982, COBOL/3000, HP's implementation of the 1968 ANSI COBOL standard, enters the 5-year inactive period of its software product life cycle. Since the successful introduction of COBOL II/3000 two years ago, the majority of new COBOL sales are for COBOL II, Hewlett-Packard's implementation of the 1974 ANSI COBOL standard.

COBOL/3000 (product number 32213C) will be removed from the HP Price List, and will be available to new customers only as a special. All sales activities should be discontinued for the "A" product, product number 32213C. Current customers will continue to be able to order the Right-to-Copy products (32213M, and 32213R) until May 1987. Both CSS and SSS will continue to be available during the 5-year period.

All COBOL/3000 support customers were sent notification letters on January 29, 1982.

If you have any more questions contact your HP sales rep.

Update on Pascal/3000

With the introduction of Pascal/3000, BCG has taken the first step towards implementing a long term language strategy focused on "HP Standard" languages which are compatible across HP computer systems. HP Standard Pascal is implemented on the HP 1000 and HP 9826/36 computers, and was introduced on the HP 3000 in October 1981.

Where does Pascal fit in the family of HP 3000 languages? Pascal is intended to displace SPL as the language of choice for much, if not most, subsystem software development on the HP 3000. The Pascal compiler itself is written in Pascal, and many new software projects at IND are also being written in Pascal.

Pascal has more capability, at a higher level, than SPL (for example, user-defined data types, record and pointer data types, sets and set operations), and yet it yields execution performance comparable to SPL and FORTRAN. More importantly, since SPL is a machine dependent language, Pascal, rather than SPL, will be available to customers on future generations of BCG computers. (SPL *will* be supported on future systems, but most likely only in a "compatibility mode" — an environment which will ensure backward compatibility with the HP 3000, but might not be able to take advantage of the architectural features of a new processor.)

Therefore, all potential SPL sales in the future should be evaluated critically to determine whether Pascal would be a better choice. Even if your customer does need SPL capabilities such as stack manipulation, which Pascal/3000 does not provide, they still would be well advised to use Pascal as much as possible, and use SPL subprograms only where really needed.

Performance should not be a concern where high level SPL is concerned. Our performance tests showed that the execution performance of high-level SPL, Pascal, and FORTRAN programs were comparable on the three systems tested. Assembled SPL, written by an expert, naturally gave the best performance, and was taken as the base-line performance measurement.

HP-IB Supported Peripherals

Here is a reference table on the HP-IB peripherals supported on the HP 3000 Series Computers.

Devices	STARFISH	S/30	S/33	S/40	S/44	S/64	Notes
Max High Speed GICs	1	1	1	2	2	4	1,2
Max GICs	1	3	4	4	5	10	3
7933H	4	3	3	8	8	16	4
7920/7925M	0	1	1	2	2	16	4
7920/7925S	0	7	7	7	14	14	
7911/7912	0	3	3	4	4	1	4
7906M	0	1	1	1	1	0	
7906S	0	7	7	6	7	0	
Max Disc	4	8	8	8	16	16	
Linus	0	1	1	1	1	1	5
7970E-M	0	1	1	1	2	2	5
7970E-S	0	3	3	3	6	6	
7976A	1	1	1	2	2	2	4,6
Max Tapes	1	4	4	4	8	8	
2617A/2619A	0	1	1	2	4	4	
2608	0	1	1	2	2	4	7
Max LPs	0	2	2	2	4	8	
9895A Opt. 010	0	1	1	1	1	1	
2680	2	1	1	2	2	2	4
INP	0	3	7	3	7	16	8
30106A	0	1	1	1	1	1	5
2631B (RS-232-C)		4	4	8	8	16	
Point-to-point terminals							
Direct connect		32	32	32	64	144	9,10
Modem		31	31	31	59	84	9
Total point-to-point		32	32	32	64	144	9,10,11
Multipoint terminals		47	47	55	95	143	
DS pseudo terminals		47	47	55	95	143	
Max Terminals		48	48	56	96	144	9,11

Devices	STARFISH	S/30	S/33	S/40	S/44	S/64	Notes
Discs that can be LDEV 1		7920	7920	7920	7920	7920	
		7925	7925	7925	7925	7925	
		7906	7906	7933H	7933H	7933H	
				7911	7911		
				7912	7912		
Backup devices	7976	7976	7976	7976	7976	7976	
		7970E	7970E	7970E	7970E	7970E	
		7920	7920	7920	7920	7920	
		7925	7925	7925	7925	7925	
		7906	7906	Linus			12

Notes:

1) Maximum of 6 high speed device controllers per GIC. The number of controllers may be further limited by cable lengths and loads.
2) Only 2 high speed GICs are allowed per IMB on the Series 64.
3) Up to 5 GICs per IMB on the Series 64.
4) High speed GICs only.
5) Requires a dedicated GIC.
6) The minimum main memory requirement for use of the 7976 is as follows:
   1 drive 512Kb
   2 drives 768Kb
7) Cannot be on a high speed GIC with the exception of the Series 30.
8) Up to 16 INPs will function at 19.2K bps (2400 CPS); only 10 will run at 56K bps (7000 CPS).
9) Includes 2631 Bs.
10) Max number of ADCC terminals on the Series 44 is 60.
11) May be further limited by MPE table sizes.
12) Linus is only valid on the Series 40 for systems with less than 130 Mb of disc storage.

Valid through 8/1/82

HP 3000 Performance Guide

The HP 3000 Performance Guide is now available. This guide provides performance data on all HP 3000 systems, including remarketed systems, data on Data Comm products (ATP, DSN/MTS, DSN/IMF, X.25) and HPWORD. This data will help you in the sales process by allowing you to demonstrate the performance of these products in simulated user environments.

The guide includes performance data in graphical form along with interpretive descriptions of the graphs and information on the application mixes used to obtain the data.

For information on ordering the Performance Guide, contact your HP sales rep.

What is Compatibility?

Compatibility is a term applied to both hardware and software systems to describe the ease with which a program running on one machine can be made to run on another machine. Two machines (machine is defined loosely here) are said to be software-compatible with respect to a particular language if programs from one machine in that language will produce *acceptably* (not exactly) similar results on the other machine. Compatibility is a term applied to the language itself; it is not applied to specific programs written in the language. In that sense, it is more of a *macro*scopic term.

Portability is a *micro*scopic term; it is concerned with a specific program written in a language. A program is said to be portable if it has been written in a sufficiently flexible way so a transfer from one machine to another is possible. Transfer involves both the physical movement of the program itself and program execution.

Language implementations on machines are thought of in terms of compatibility, but specific programs are thought of in terms of portability. The problem of running programs on different machines can be broken up into two separate questions:

- How compatible are the languages on the machines?
- Are the programs written to be easily transportable?

If the languages are compatible on the different machines, the problem of transporting them *can* be much easier. However, what exactly is compatibility? How can it be measured? Language compatibility at the source code level is influenced at three levels: syntactic, semantic, and execution.

Syntactic

When we say statements between language implementations are syntactically different, we mean statements in one of the language implementations will not be accepted as valid statements in the other language implementation. This is what most people infer by language incompatibility. As an example, one BASIC may have a WRITE statement for I/O to mass storage, while another BASIC may incorporate the mass storage I/O in its PRINT statement. This is the most obvious and annoying level at which language implementations may differ, but it is potentially the easiest to overcome, provided a programmer knows the syntactic incompatibilities between the language implementations.

Semantic

Semantic level differences are more subtle than syntactic level differences, but are just as important. For example, unary operators may have different precedences on language implementations. Another example is the scope of the FOR variable in BASIC — is the variable still valid if an early exit is made from a FOR loop? Differing language implementations treat this issue differently. These barriers are fairly easy to overcome, given the knowledge that they exist.

ANSI level BASIC and HP Standard Pascal are two attempts to make programs portable at the syntactic and (to a lesser degree) semantic level. Any implementations that conform to these standards are said to be compatible with respect to the standard; i.e., programs will produce acceptably similar results when run on different machines. Why not *exactly* similar results?

Execution

Exactly similar results on differing machines almost never occur because of the most subtle level of compatibility (and where portability problems are most feared); programs behave differently due to fundamental differences in such things as:

- The representation and method of doing floating point arithmetic. Many different anomalies can occur in supposedly "machine independent" programs because of differences in arithmetic implementation in either the hardware or software.
- The range of *integer* variables.
- Hardware configurations, and the degree to which the user programs interact with external world. For example, I/O cards may have different register layouts, CRT sizes and graphics resolution may differ, or the file blocking may be less efficient.
- Many standards leave undefined certain things that are left to the implementer's discretion; hence, program behavior may differ on machines in which implementers took different paths. For example, Wirth's original Pascal definition did not define what happened when the CASE variable did not match one of the variants. As a result, some implementations reported an error while others did not.
- The potentially different behavior of the underlying operating systems on which the language implementations are based.

There are numerous other examples of execution time incompatibilities, many of which are related to the differences among machines as one attempts to use facilities more directly related to (or closer to) the hardware.

Note especially that incompatibilities at this level are almost impossible to control by the language implementer because he or she has little control over the hardware and/or operating system being used.

Conclusions

Compatibility is a global term applied to language implementations, while portability is a parochial term applied to a particular program. It is very possible to program in compatible language implementations, but write totally non-portable programs!

Compatibility does *not* mean complete portability; i.e., that any program written on one machine will run *with no modification* on another machine. Even though the DCD BASIC/HPL/Pascal 68000 language implementations run on either a 9826 or a 9836, programs may have to be modified significantly if they were developed on and for a 9826 and it is now desired to move them to the 9836. However, if they were developed on a 9826 with the express purpose of transporting them to a 9836, they should be easily ported.

Remember especially that language compatibility statements (such as "HPL on the 9826 is compatible with HPL on the 9825", or "BASIC 2.0 on the 9826 is compatible with BASIC 1.0 on the 9826") do *not* imply program transportability! Program transportability is made easier by language implementations that are compatible, but ease of program portability is largely a function of good software design, and requires an understanding of the differences in the language implementations on various machines. Most important, programs have to be written with portability in mind; it is very hard generally to move programs from one machine to another if the programs were designed to run only on a particular machine!

It is unrealistic to expect that programs can be moved from current products to newer products, and run *exactly* the same *with no modification*. It is realistic to expect that newer language implementations will be compatible with older ones at both the syntactic and semantic levels so that the task of transporting the software onto newer hardware is made easier.

HP 9845 B/C Option Discontinuance Schedule

Desktop Computer Division is in the process of discontinuing several HP 9845B/C products that have been replaced by more cost-effective offerings. These products and their suggested replacements are listed in the following chart.

The discontinuance schedule is — *July 1, 1982:* Products removed from HP Price List; *July 31, 1982:* Last North American order accepted; *September 30, 1982:* Last international order accepted.

9845B/C Options To Be Discontinued

Product No.	Description	Replacement
9845B Opt. 100, 200	Mainframe	9826/36
Opt. 150, 190	Mainframe	9845B Opt. 175
Opt. 250, 270 290	Mainframe	9845B Opt. 275/280
9845C Opt. 100, 200	Mainframe	9826/36 with color monitor Opt. (98627A)
Opt. 150, 190, 250, 270, 290	Mainframe	9845C Opt. 275/280
9845B/C Opt. 204, 205, 206, 215, 216	Factory-installed 128Kb RAM board	9845B/C Opt. 207
Opt. 311, 312, 313, 314	Factory-installed option ROMs	Included in "Super Saver"*
Opt. 438, 439	Factory-installed assembly language ROM	Order field-installed version (98438A, 98439A)
Opt. 540, 541, 560, 561	Factory-installed thermal printer	Included in "Super Saver"*
Opt. 060	Specified 8.5" paper, ASCII/ European character set	Standard in "Super Saver"*
Opt. 800	Specifies ASCII keyboard	Standard in "Super Saver"*
Opt. 600	Factory-installed second tape drive	Included in "Super Saver"*
Opt. 700	Factory-installed graphics subsystem for B1XX	Included in 9845B Opt. 175
98425A, 98426A, 98427A	Field-installed 128Kb RAM board	98407A

*9845B Opts. 175, 275, 280; 9845C Opts. 275, 280

Transferring Data Files Between HP 9826/36 and HP 9845

There has been strong interest in data file transfer between the HP 9826/36 and HP 9845 desktops. Here are several ways to do this.

9826/36 to and from 9845 Using 9895 Disc Drive

This method uses a third party software product called "LIF Utilities", Software Catalog No. 51.21017. It enables copying serial data files to and from 9845 and 9826/36 (LIF) format mass storage media. "LIF Utilities" operation requires a disc drive that can be accessed by both the 9845 and the 9826/36; e.g., the HP 9895 Drive.

The "LIF Utilities" program is available in two versions. "LIF Utility 45" runs on the 9845B/C computer and is supplied on a tape cartridge. "LIF Utility 26/36" runs on the 9826/36 and is supplied on a 5¼" floppy disc.

Either program is available from: Structured Software Systems, Inc., Box 1072, Irick Rd., Mt. Holly, NJ 08060.

9826/36 to 9845 Using 8290X Disc Drive

The second way to transfer files uses a program in HP's Exchange Library called "9845 LIF ASCII File Transfer Utility", Software Catalog No. 63.9526. This utility transfers 9826/36 LIF ASCII files from an 8290X disc drive to a file on a 9845 tape. The program reads the 5¼" disc and prints a list of valid ASCII files that may be transferred. You have a choice to either list the file or to store it on tape. If the LIF ASCII file contained a program, you could then do a GET and bring it into the 9845. You would then have to manually translate any lines that will not syntax.

9845 to 9826/36 Using 9895 Disc Drive

A third way to transfer files uses an HP Exchange Library program, "HP 9835/45 to HP 9826/36 Flexible Disc Data Translator Utility", Software Catalog No. 63.9521. This utility allows 9826/36 computers to read 8" flexible disc data files created by a 9835/45 computer.

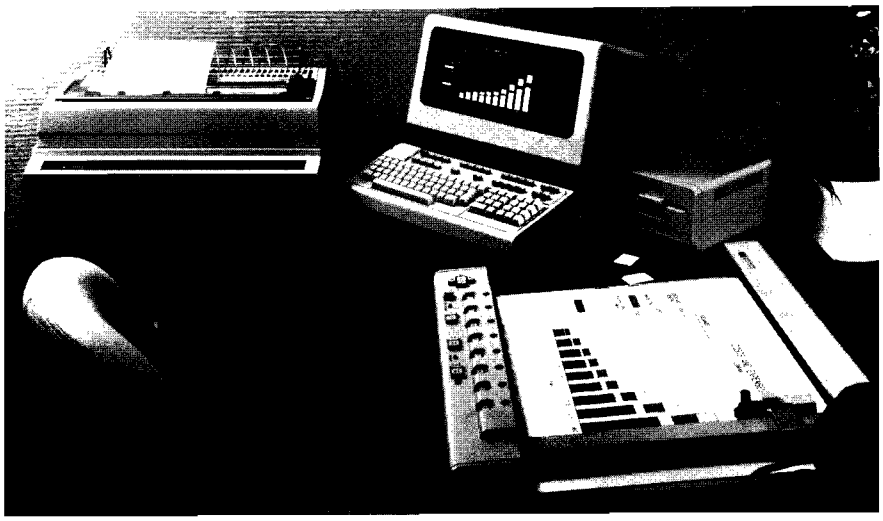
(The "9835/45 to 9826/36 BASIC Language Translator", P/N 09836-10190, does the same job as the Exchange Library program.)

9826/36 to and from 9845 Using HP-IB

Data files can also be transferred via HP-IB by writing special-purpose programs on each machine to transfer data items.

Description

LIF Utility 45
LIF Utility 26/36
9835/45 to 9826/36
BASIC Language Translator



Introducing the HP 2647F Intelligent Graphics Terminal

Data Terminals Division announces the HP 2647F, a new disc-based Intelligent Graphics Terminal.

Compatible with the popular 2647A, the 2647F has major hardware and software changes which will greatly enhance OEM satisfaction. In addition to the well accepted 2647A features, the new product features of the 2647F increase the flexibility of the terminal and make it even easier to use. Standard features include:

- On-screen graphics
- Faster processing
- BASIC with AGL
- AUTOPLOT/47 — Pie, bar, linear, log and SLIDE; and single disc backup utility
- 64K program workspace
- Mini-disc drive — (second drive optional), 270Kb per diskette
- Separate interpreter workspace
- 12K display memory
- Block/character mode — VPLUS compatible
- Command keys
- Softkeys
- Convertible graphics/alpha keypad
- Display enhancements with line drawing, math and large character sets
- Shared peripheral I/F
- Four option slots
- No multipoint
- No cartridge tape drives
- No external load box

To make sure you can take advantage of all these features, HP is also introducing seven new 13257 series software packages (described in the accompanying article).

The 2647F also offers support of the following systems software:

- DSG/3000 from HP
- HP DRAW from HP
- GRAPH/1000 II from HP
- SAS/GRAPH™ from SAS
- PLOT 10® from Tektronix
- TELL-A-GRAPH® from ISSCO
- DISSPLAY® from ISSCO
- DI-3000™ from Precision Visuals
- GRAFMAKER™ from Precision Visuals

When to Recommend the HP 2624B

Both the HP 2622A and the 2624B are block mode terminals. So, you may be wondering, since the 2622 is less expensive, when do you recommend the 2624B?

Just remember that the 2624B offers the following additional capabilities:

- Eleven different *edit checks* that allow customers to reduce the burden on their system
- Up to *nine pages of display memory* are available compared to only two pages in the 2622A thus providing over four times the off-screen storage capabilities
- *Multipoint* is available to reduce communication and installation costs
- A second *RS-232 port* is provided that can be used to connect an external printer or it can be used as an alternate data communication port
- The 2624B offers *Record Mode* which allows information from the data communication line to go directly to the integral printer or to an external printer.

These additional features and benefits are clearly a bargain at any price.

What's Compatible?

At Data Terminals Division we often hear the question, "Can my customer simply replace his/her HP 2645As with HP 2624Bs, since the terminals are compatible?" Well, probably yes.

When you talk to your customer find out what is meant when the word "compatible" is used. Does it mean only ESC sequence compatible? Each DTD terminal will obey the same ESC sequences, if it has the appropriate features. For example, ESC H will home the alpha cursor on all DTD terminals, but the 2622A will ignore graphics escape sequences.

Or does the customer mean HP software compatible? When an HP software package, such as V/PLUS, formally supports a DTD terminal, such as the 2645A or the 2624B, then those terminals can be exchanged on that HP software. (You may need to recompile the application program.)

Or does your customer mean plug compatible on his/her own or any third party software? Even though DTD's terminals understand the same ESC sequences, two different model terminals may not necessarily be interchangeable on non-HP software. At one site, the fact that hard reset takes longer on the 2624B than on the 2645A caused a problem. The customer's application was sending a hard reset to the 2645A followed immediately by a form. That same sequence sent to a 2624B chopped off the beginning of the form, because the 2624 was still resetting.

The HP 262X External Low Cost Printer Combination

Many OEMs are aware that the HP 2623A, HP 2624B and HP 2626A have a second port on the terminal which allows you to hook up an external printer. A few tips on the features of the HP 267X printer family should be helpful in making recommendations to your customers.

The HP 2671A is an alphanumeric printer. It is most appropriately used on the HP 2624A and HP 2626A. The HP 2671G is both an alphanumeric and graphics printer. This printer is most useful with the 2623A. The 2671A and 2671G are essentially detached versions of the 262X integral thermal printer options.

The HP 2673A has three additional features which could make it the printer you recommend with either the 2623A, 2624B, or 2626A. The 2673A has a windowing capability which allows you to select any portion of the graphics screen on a 2623A for output. If you need to select a portion of your graphics screen for hardcopy output, the 2673A is a good match for the 2623A. The 2673A has framing and bold character capabilities which are excellent for output from a 2624B, 2626A or 2623A with display enhancements. The inverse video character from our terminals are mapped to framed characters while blinking and half-bright characters are mapped to bold characters. The underline enhancements on our terminals map to an underline character which is standard on all HP 267X printers. The last major feature of the 2673A printer relative to HP 262X terminals is its support of six ISO national character sets including Norwegian/Danish, Swedish/Finnish, French, German, UK and Spanish. It is ideal for OEMs selling outside the US who need an external printer hooked to a 2623A, 2624B or 2626A.

Pack it with Power

Introducing Powerful Application Software for the HP 2647F

Data Terminals Division announces eight powerful application software pacs for the new HP 2647F Intelligent Graphics Terminal.

For starters, we're introducing the popular HP 2647A application pacs that we announced last year for the 2647A on mini discs for the 2647F:

- GRAPHICS PAC/47
- PROJECT MANAGEMENT PAC/47
- STATISTICAL PAC/47
- MATHEMATICAL PAC/47

We have added numerous improvements to these pacs that make them easier to use. We've improved the user guide by including many more examples. We've improved the user interface, making it easier to select and execute program files. Plus, with mini discs, these program files are loaded considerably faster.

In addition, DTD is adding new application software pacs for the 2647F:

- WORD PAC/47
- LINK PAC/47
- 2647F File Conversion Kit

In summary, these application software pacs are described as follows:

GRAPHICS PAC/47 — contains additional programs which can be used to generate graphical presentation of data. An enhanced version of AUTOPLOT/47 allows the user more flexibility in locally producing pie, bar and linear graphs. Other programs allow users to create flow-charts, organization charts, and electronic circuit drawings.

PROJECT MANAGEMENT PAC/47 — contains programs which assist project managers and planners to improve project planning and control. Programs include critical path analysis, time-event (Gantt) charts and a variety of financial decision programs.

STATISTICAL PAC/47 — used to calculate solutions to the most frequently used statistical functions. Optional graphical output is available to display calculated results. Example functions include histograms, curve fittings, analysis of variance, and confidence limits.

- *MATHEMATICAL PAC/47* — contains programs that provide solutions to a variety of mathematical problems such as differential equations, integration, finding roots of polynomials, simultaneous equations, and interpolations.

  WORD PAC/47 — aids in preparing correspondence, memos, and manual drafts. Word processing features include word wraparound, search and replace, copy paragraph, deletion

of words, sentences and paragraphs, justify and indent. Page formatting software allows the user to output text from the display or disc file in a paged format to a printer, disc file or display.

FORMS/47 — included in *WORD/47*, easy-to-use data entry forms design package that allows your customer to create any form desired. The form can then be uploaded to the host for use with any other 262X or 264X terminal. It utilizes the line drawing character set, protected and unprotected fields and alphanumeric edit checking.

LINK/47 — allows a 2647F user to upload or download both binary and ASCII files to or from a system 3000. This capability is easy for your customer to use.

2647F FILE CONVERSION KIT — a menu driven solution for all 264X customers who wish to use data or programs previously stored on cartridge tape. The program passes ASCII or binary files from tape on any 264X terminal to the 5¼" flexible disc on the 2647F. A 13232U cable is included. Two data comm cables are also required but not included.

With these powerful application software pacs, the 2647F becomes a powerful tool, capable of solving a variety of business or technical problems.

Connecting You to RS-422

HP Computer Terminal Support of RS-422 is here! For availability, please contact your HP sales rep.

Terminal	Product	Description
262X	Opt. 035	RS-422 for new terminals
	13266E	Board for field upgrade. Does not include installation.
	13222P	Direct Connect RS-422 262X Terminal cable, 5 meters, 50 pin male to 3 pin male (Not available on port 2).
264X	Opt. 035	RS-422 for new terminals
	13260E	Board for field upgrade. Does not include installation.
	132321	Direct Connect RS-422 264X Terminal cable, 5 meters, 30 pin edge connector to 5 pin male.

Customers who wish to build their own RS-422 connections can order the following products from Computer Supplies Operation (CSO).

Supplier	Product	Description
CSO	92225A	5 pin male connectors (includes 4 connectors)
CSO	92225B	5 pin female connectors (includes 4 connectors)
CSO	92179D	5 wire 422 cable (Cable length = order quantity × 1 meter)
CSO	92229A	Crimp tool for attaching cable shield to the connector

Note: The crimp tool is required to attach the cable shield to the "cam" of the connector.

HP 2624B — A Powerful Data Entry Display Terminal

The HP 2624B Display Terminal is a powerful terminal that provides many unique features to increase user productivity and, at the same time, decrease datacomm and system overhead.

Local Forms Cache capability allows the system to programmatically download many forms to the terminal at the beginning of a data entry application. This feature not only reduces system and datacomm overhead, but it also improves the response time when transferring forms to the screen.

Advanced edit checks improve data integrity and increase data throughput. The 2624B has eleven unique local edit checks that allow the terminal to detect data entry errors before data is transmitted to the system. In addition, the 2624B provides error messages to notify the user of mistakes. By correcting errors at the terminal, system overhead is reduced.

Another feature unique to the 2624B is the modify data tag. The modify data tag allows the user to send only those fields in a form which have been modified. This powerful feature can greatly reduce datacomm and system overhead.

All of these special features, together with the dynamic capabilities and features typical of HP display terminals combine to make the 2624B the ultimate data entry terminal. The 2624B as a leader in Data Entry Terminals has been proven to be a great door-opener to non-HP customers. Once customers discover the power and versatility of the 2624B, they are sure to consider HP for their total solution.

"Standard Special" Option P03

We are pleased to inform you that we now offer a low-cost external RS-232 printer, option for the HP 2622A. It is the new "Standard Special", Option P03. First shipment is anticipated to occur in September. After September, the availability of the 2622A, Option P03, will add two weeks to the standard 2622A availability.

As you know, the standard 2622A does not offer an external printer capability. For customers that require this ability, the powerful HP 2623A, 2624B, 2626A and 264X products have been the only solution up to this point in time. Today, Option P03 offers a more cost-effective solution.

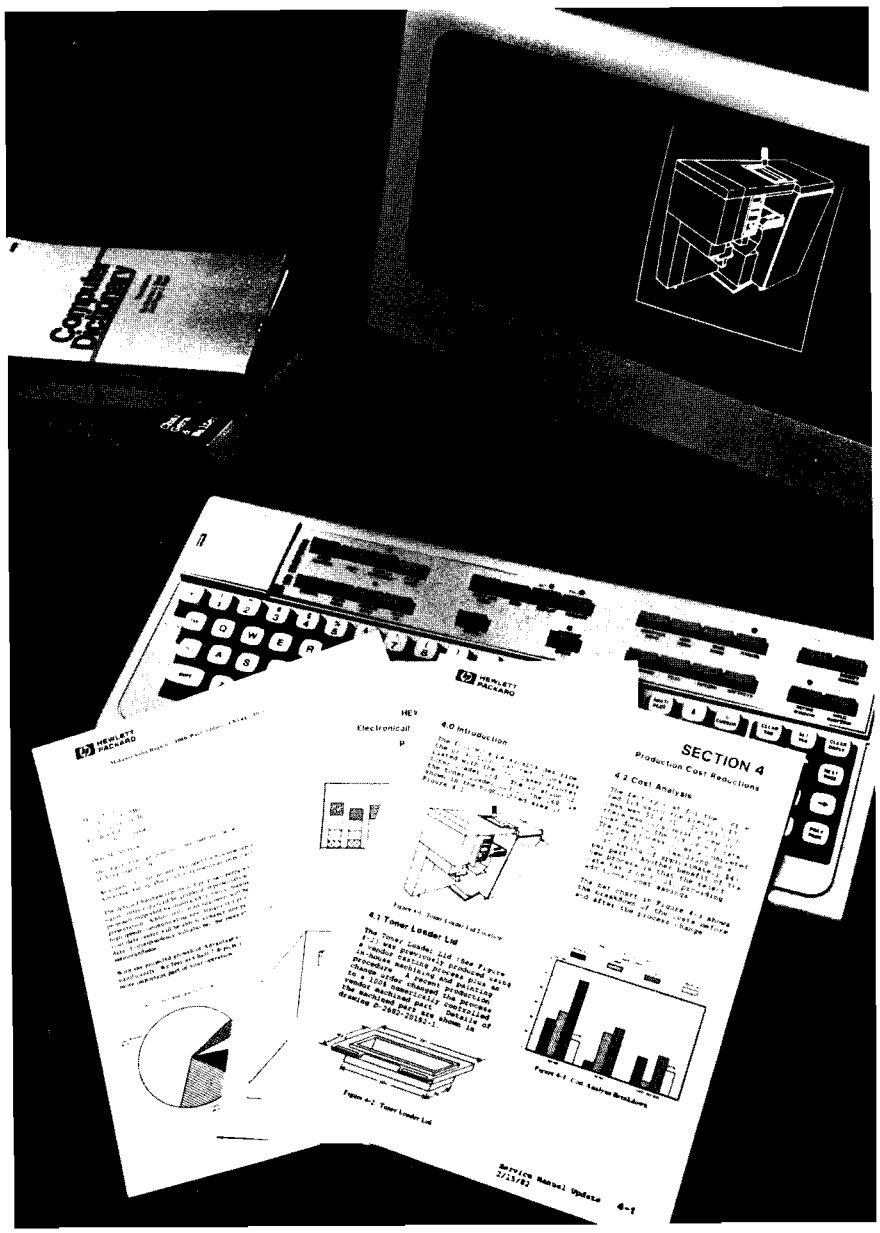
In addition, Option P03 will have the same printer specifications as those found on the 2623A. These features are not only documented in the 2623A Reference Manual, but they can be demonstrated to your customers with a 2623A *today!*

Option P03 is an exciting low-cost external printer support alternative. No upgrade to existing 2622A is available.

Laser Printer now Merges Text and Graphics

Available June 15, Hewlett-Packard's has a new graphics package which will enable users to merge text and graphics onto the same page and output it on the 2680 Laser Printer.

This new capability replaces the traditional document-producing process with an electronic process which is faster and less expensive. Especially useful for producing business reports, and technical documentation, HP's new graphics capabilities eliminate the need for typesetting, paste-up, vendor printing, and collating. Now, documents can be created electronically following three basic steps: preparing graphics on a graphics terminal, producing and editing text on-line, and merging them both into a completed document which is output on the 2680 Laser Printer.



The first step, producing graphics, is made possible through graphics option hardware and two graphics software packages: HPDRAW and DSG/3000. HPDRAW is used to create "figure" graphics using a terminal, and DSG/3000 is used to create business graphics such as bar charts, pie charts, organizational charts, and graphs.

The second step, producing text, uses HP's text and document processing software, TDP/3000. Text can be entered into the system, edited, and formatted with TDP/3000.

The final stage, merging text and graphics into a finished document, is made possible with TDP/3000 software and the 2680 Laser Printer. Graphics can be sized and positioned on the page as the user wishes, then merged with the text to produce the final document — all electronically. The finished product is then printed on the laser printer, which prints at 45 pages per minute.

The advantages to producing documents on the 2680 are numerous. First, the production process is shortened, and corrections can be made much easier. Secondly, the turnaround time is shortened, allowing users to have up-to-date documents quickly. And, publications can be stored electronically and printed as needed (saving storage space) and eliminating the waste that occurs when material is outdated.

The graphics package can also be used with HP's recently announced electronic mail package, HPMAIL. With this software, documents can be transmitted for printing on remote laser printers, eliminating delays and high costs of shipping printed materials.

HEWLETT PACKARD

SECTION 4

Production Cost Reductions

4.0 Introduction

The following paragraphs describe the production cost reductions associated with the 2680 Laser Printer toner loader lid. The location of the toner loader lid in the 2680 is shown in the highlighted area in Figure 4-1.

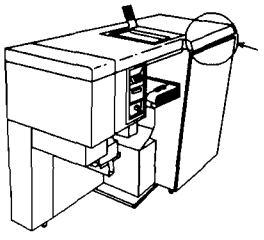


Figure 4-1. Toner Loader Lid Location

4.1 Toner Loader Lid

The Toner Loader Lid (See Figure 4-2) was previously produced using a vendor casting process plus an in-house machining and painting procedure. A recent production change order changed the process to a 100% numerically controlled vendor machined part. Details of the machined part are shown in drawing D-2682-20182-1.

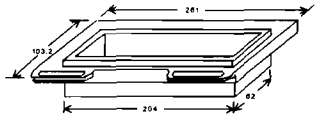


Figure 4-2. Toner Loader Lid

4.2 Cost Analysis

The factory cost for the completed lid using the previous process was $104.31. In addition there was considerable rework cost due to the 30% reject rate. The new process gives a completed cost of $60.92, resulting in a cost saving of approximately $43 per part. Another benefit of the new process is that the reject rate has gone to 0%, providing additional cost savings.

The bar chart in Figure 4-3 shows the breakdown of the costs before and after the process change.

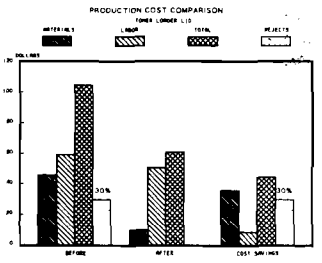


Figure 4-3. Cost Analysis Breakdown

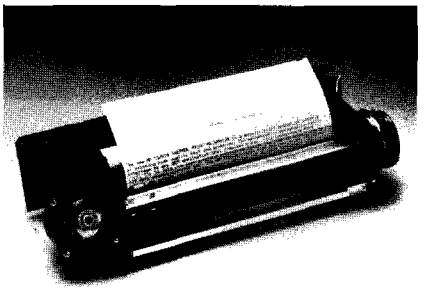
HP 2671A Contract Schedule Change

Effective June 1, 1982, the lowest priced member of the HP 267X Series Thermal Printer Family will change OEM status on Schedule A43. It will shift from an OEM "A" schedule product to an OEM "B" schedule product. Following June 1, then, the 2671A will no longer appear on the schedule with an asterisk.

Please note that this applies only to the 2671A. The 2671G and 2673A will remain OEM "A" schedule products.

Borrow a Thermal Print Mechanism

At present, the Vancouver Division has a number of 13287As (Thermal Print Mechanism). If any OEMs would like to incorporate clean, quiet and reliable thermal printing into their devices, call Vancouver's skilled Sales Development team. At no cost to you, we will loan out the TPM. This same information soon will be published as the 13287A Designer's Guide.



Free Offer for HP 264X Users

Soon, nearly 15,000 HP 1000 and HP 3000 users will receive a direct mail piece. It explains how 264X terminal users can get a free printer stand: "Add a friendly, low cost 2670 Series Printer to your 264X Terminal today, and we'll send you a free printer stand."

Beginning June 15 and ending August 15, recipients of the mailer can order a 2671A, 2671G, or 2673A Printer and specify Option 200 for a free 92171F Printer/Plotter Stand. The option number, which will be removed from the price list at the close of the promotion, will serve as an order incentive as well as a means of measuring the response.

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

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