

COMPUTER SYSTEMS NEWSLETTER

For HP Field Sales Personnel

REINHARDT, HELMUT
FRANKFURT
HPSA

HEWLETT  PACKARD

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DISC MEMORY NEWS

Product News

Overall Disc Drive Performance — How Does HP Stack Up?

By: Jon Bolt/DMD

HP Salesman: "Hewlett-Packard has the highest performance disc drives available in the industry today. In fact, the 7920 is the fastest disc drive of its kind."

Mr. Customer: "Oh, don't hand me that jazz! All the CDC storage module drivers have a data transfer rate of 1200 Kbytes/sec . . . that's 30% greater than your 7920 or 7925!"

Ever been hit with a brick like this before? How should it be handled? Don't back down! Even with their high transfer rates, the 7920 and 7925 are still faster drives!

The approach to explain this to your customer might involve educating him on the subject of disc performance. It might go something like this: True disc performance is not determined simply by transfer rates. Nor is average access time by itself a complete measure of disc performance. To objectively measure disc performance, both average access time and data transfer rates must be considered.

Disc performance can be measured by the time required to execute a complete transaction — the time required to access a particular location of the disc and completely transfer a block of data on or off the disc, beginning at the location accessed.

Access time, in turn, can be computed from the time required to position the read/write heads over a specified data track (seek time), and the "latency" incurred in waiting for a point on the track where the transfer begins to rotate underneath the data head.

Data sheets for most disc drives specify an "average" access time defined by an industry-wide standard. If not supplied on a data sheet, average access can be computed by adding average seek plus average latency times. This average access time can serve as one measure of disc

drive speed. Average transaction time can be figured by adding the average access time to the time required to transfer a given block of data.

Let's examine the overall transaction time to access and transfer a block of data from a disc surface. We'll use a 7920 for this example and later compare it to some of the most respectable drives in the industry.

The required information to determine transaction time for any length of data block are:

HP 7920

Average access time	=	33.3mS (25mS + 8.3mS)
Latency (time for 1 revolution)	=	16.7mS
Sectors/Track	=	48
Bytes/Sector	=	256

Let's use a data block of 4 Kbytes — a typical size for most transactions. Transferring a 4K block of data requires that approximately 16 sectors rotate underneath the data

$$\text{head} \left[\frac{4000 \text{ bytes}}{256 \left(\frac{\text{bytes}}{\text{sector}} \right)} = 16 \text{ sectors} \right]$$

The 7920 has 48 sectors/track. Thus, transferring 16 sectors requires 1/3 of a complete revolution. This rotation time or "transfer time" is $16/48 \times 16.7\text{mS} = 5.57\text{mS}$. Total transaction time is $33.3\text{mS} + 5.57\text{mS} \approx 38.9\text{mS}$.

Let's do this same calculation for a CDC 9764 — a member of their SMD family.

CDC 9764

Average Access	=	38.3mS
Latency	=	16.7mS
Sectors/Track	=	68
Bytes/Sector	=	256

Again, assume a 4 Kbyte block of data is transferred.

1. Average access = 38.3mS
2. 4Kb \approx 16 sectors
3. Transfer time $16/68 \times 16.7 = 3.93\text{mS}$
4. Total transaction time is $38.3 + 3.9 \approx 42.2\text{mS}$



OVERALL DISC DRIVE PERFORMANCE

— TRUE DISC SPEED INVOLVES BOTH ACCESS TIME AND TRANSFER RATE —

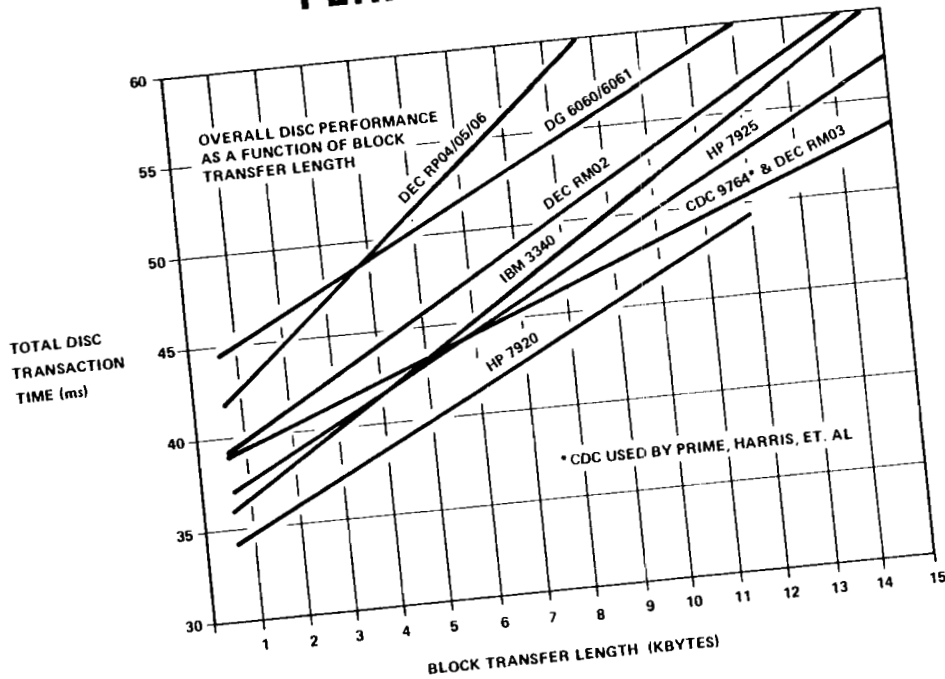
CONSIDER THE TIME REQUIRED TO ACCESS AND TRANSFER
A 4K BLOCK OF DATA (4K BLOCK IS SIXTEEN 256-BYTE SECTORS)

	IBM 3340	CDC 9766	HP 7925	HP 7920
AVERAGE ACCESS	35.1 ms	38.3 ms	36.1 ms	33.3 ms
ROTATION TIME	20.2 ms	16.7 ms	22.2 ms	16.7 ms
NUMBER OF SECTORS/TRACK	48	68	64	48
16 SECTOR TRANSFER TIME	$\frac{16}{48} \times 20.2 = 6.73$ ms	$\frac{16}{68} \times 16.7 = 3.93$ ms	$\frac{16}{64} \times 22.2 = 5.55$ ms	$\frac{16}{48} \times 16.7 = 5.57$ ms
TOTAL DISC SPEED	41.8 ms	42.2 ms	41.6 ms	38.9 ms

HEWLETT PACKARD

DISC MEMORY DIVISION

PERFORMANCE



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DISC MEMORY DIVISION

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

Clearly the 7920 is substantially faster for a 4K block of data, despite the higher transfer rate of the 9764. Of course, as the block of data becomes excessively long, the fast transfer rate of the 9764 will allow it to "catch up" with the 7920 and eventually transfer more data in a finite time period, as shown on the accompanying graph. However, a transfer of 4Kb is typical, not a 2 or 3 track transfer.

Let's now examine a high performance drive, again one of the fastest available, that has a slower transfer rate but faster access time than our 7920 — the IBM 3340.

IBM 3340

Average Access	=	35.1mS
Latency	=	20.2mS
Sectors/Track	=	48
Bytes/Sector	=	256

1. Average Access = 35.1mS
2. 4Kb ≈ 16 sectors
3. Transfer time $16 \cdot 48 \times 20.2 = 6.73mS$

Total transaction time is 41.8mS — still slower than the 7920. Since 3340 transfer rate is slower than the 7920, the IBM 3340 will *never* have a faster transaction time than the 7920 — for any length of data block.

The accompanying graphs detail the characteristics of some of our top competitors' drives. The results confirm our claim. In the range from one to eight kilobyte block sizes, the 7920 is unsurpassed in overall performance. Up to 4Kb, the 7925 shows faster transaction times than competitors' drives.

Only at 15Kb block sizes is the 7920 overtaken by the CDC 9764. But one full rotation of the 7920 is only 12.3Kb. Only a very small percentage of a computer's requests will require over one full track of data transferred. This will

typically happen during back-up cycles, at times when other users are off the system and fast response is not necessary, and when slower speed back-up devices counteract disc speed. It may also occur during spooling operations, but here again the slow speed I/O device offsets disc speed, so a fast drive is of little advantage.

Your customer can see that indeed HP discs are the fastest available — faster than IBM, DEC, DG, CDC (CDC 9764 66 used in Harris and Prime systems), et al. Try this analysis on your own, with *any* drive of your choice! I'd be interested to know if you can find just one that's faster!

"Never Say Die" Declares 7900 Disc Drive

By: Kevin Magenis DMD

A recent fire destroyed a large food processing plant in Oregon. The casualties included nearly all of a 9830 calculator system.

The firemen pressed into the plant dousing everything with water and foam. Moments later, with the computer room in flames, the firemen jerked the cables from the devices (including a still-running 7900 disc drive) and literally tossed the equipment out the window.

The next morning a customer engineer arrived to examine the salvaged equipment. When he encountered the 7900, he found the pre-filter pitch black, the drive charred externally and exposed to high temperatures well in excess of drive specifications. Within 24 hours he had the mighty 7900 up and running on a loaner system with no major repair work. The drive neither suffered a head crash or lost any of the company's valuable data.

Needless to say, the blueprints for the processing company's new plant contain plans for a special HP 3000 computer facility with more of DMD's disc drives.

DATA SYSTEMS NEWS

Product News

RJE/1000 Compatibility Questions

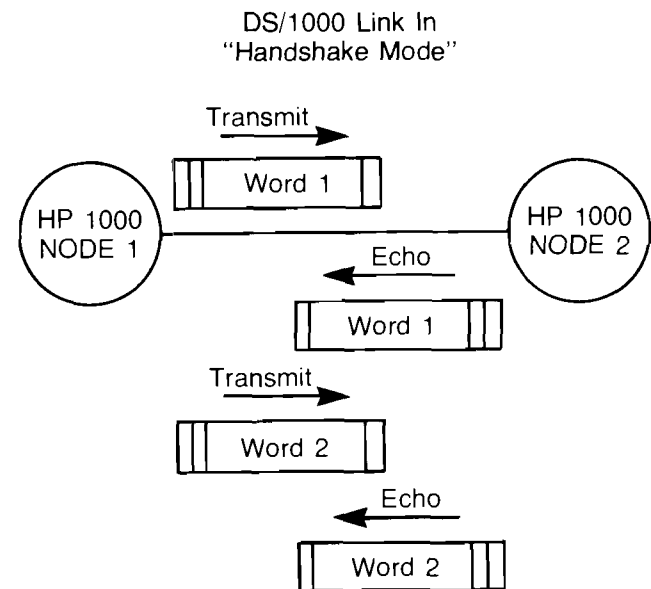
By: Bill Stevens/DSD

Let's suppose your customer, who has built a large DS/1000 network for automated production test, would now like to transfer labor and material results directly to the corporate IBM 370 system. So, he asks "Are DS/1000 and RJE/1000 compatible?" The answer is "Under certain conditions, YES".

RJE/1000 is a privileged subsystem whose 12618A synchronous communications interfaces must occupy the highest priority I/O slot below the 12620A Privileged Interrupt Fence. Privileged Interrupt Control hardware bypasses the RTE operating system guaranteeing that an interrupt will be serviced in about 100 μ sec instead of about 1 msec under RTE software control. The Privileged Interrupt Fence guarantees that no lower priority interrupt can hold off or prevent timely servicing of the 12618A's synchronous interrupts. If two privileged subsystems are in an HP 1000, such as RJE/1000 and DS/1000 modem link (using the 12620A and the 12773A Computer Modem Interface), a potential conflict can arise if both try to interrupt for service at the same time. Therefore, to avoid this potential conflict, privileged DS/1000 communications in the same HP 1000 with RJE/1000 must operate in "handshake" mode. Hardwired DS/1000 lines (using the 12771A Computer Serial Interfaces) always operate in "handshake" mode; therefore, this requirement affects only DS/1000's modem links.

In "handshake mode", when a DS/1000 node transmits a word down the serial communications line, an interrupt is generated at the HP 1000 network node at the other end of the communications line. After that computer has had time to bring the word off of the interface card and into a buffer in main memory, the system echoes the same word back down the communications line to the original sending node. The next word is sent only after the sending node receives this echo. This "handshake" sequencing ensures that the receiving node is always ready for the next word. Obviously, use of "handshake mode" sequencing means that the maximum possible data throughput that will

be seen by a user will be approximately half of the specified bit rate on the communications line less the bits transmitted which are required by the line protocol (see below). However, use of DS/1000's "handshake mode" does allow DS/1000 modem (as well as hardwired) links and RJE/1000 to operate concurrently in the same HP 1000 system.



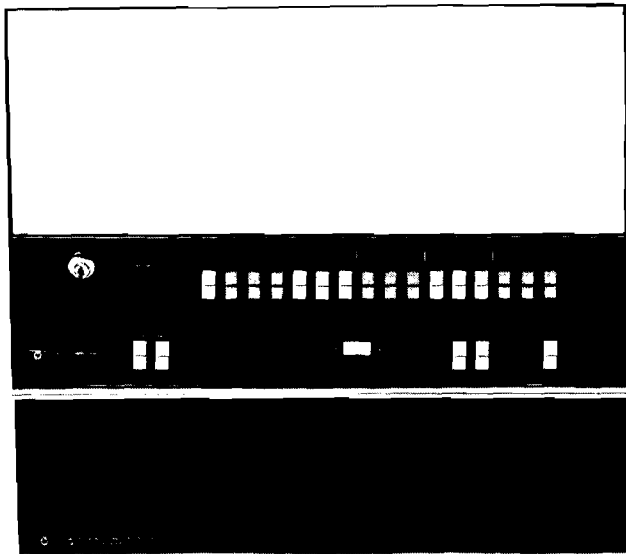
Now, let's suppose that your customer would like to run RJE/1000 with RTE-IV. Are they compatible? Yes, RJE/1000 is compatible with RTE-IV of revision 1826 or higher. Naturally there are a few differences generating RJE/1000 into an RTE-IV based system as compared to an RTE-III based system. These are described in a Systems Analyst Note which will be distributed shortly.

F-Series Shipments Underway!

By: Bill Elmore/DSD

Shipments of the new HP 1000 F-Series computers have begun. The first units will be going to HP sales offices around the world for demo systems. By print time, many offices will have received their HP 1000 Model 45 systems. Remaining consignment units will be shipped in late August and early September.

Response to the F-Series and new HP 1000 systems has been very enthusiastic. Both new and existing customers are discovering the F-Series and its wide range of computation applications. With consignment shipments now underway, you will soon have (or already have) a system on which to demonstrate the high performance member of the HP 1000 Family.



SELL F-SERIES!

Sales Aids

Paramus Road Show a Super Success

By: Neal Kuhn/DSD

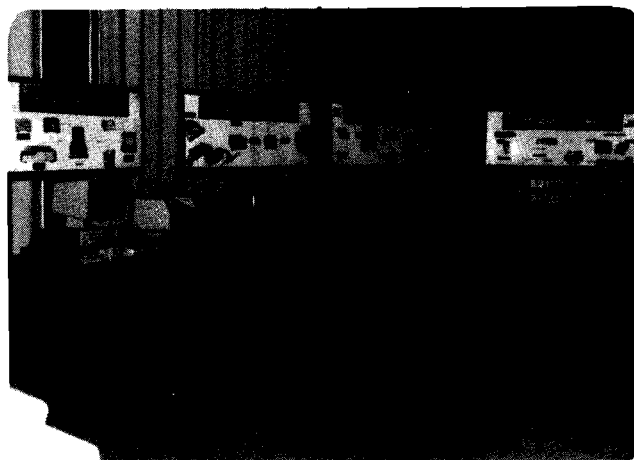


During the months of May and June, the computer and instrument sales people in Paramus, N.J. merged forces and conducted a road show of Hewlett-Packard instrumentation and computational products. The show traveled to customer locations where presentations were given to customers on-site. The show was well received. *Tom Papsan*

(FE-Paramus) stated that invitations were extended to key users at each site, and that over four thousand people responded and attended the presentation.

Tom acted as the Computer Systems liaison with the instrument people, working with *Joe Arcidiacono* and *Dick Bryden* who are Instrument District Managers. With the help of the staff and systems engineers, fourteen portable displays were created. The displays included various instrumentation, computer peripherals, and an operating RTE-M computer system. *Tom* said that everyone in the office helped produce the show. *Bev Mergle*, *Walt Benedetto's* secretary, created the signs and artwork. *Varsha Batia* and *Phil Cooper* aided in creating the computer demonstrations.

The equipment was put to a grueling task of two presentations per day in different locations, and worked well even with the rough handling it received in a U-Haul truck. The show personnel, however, were rotated daily.



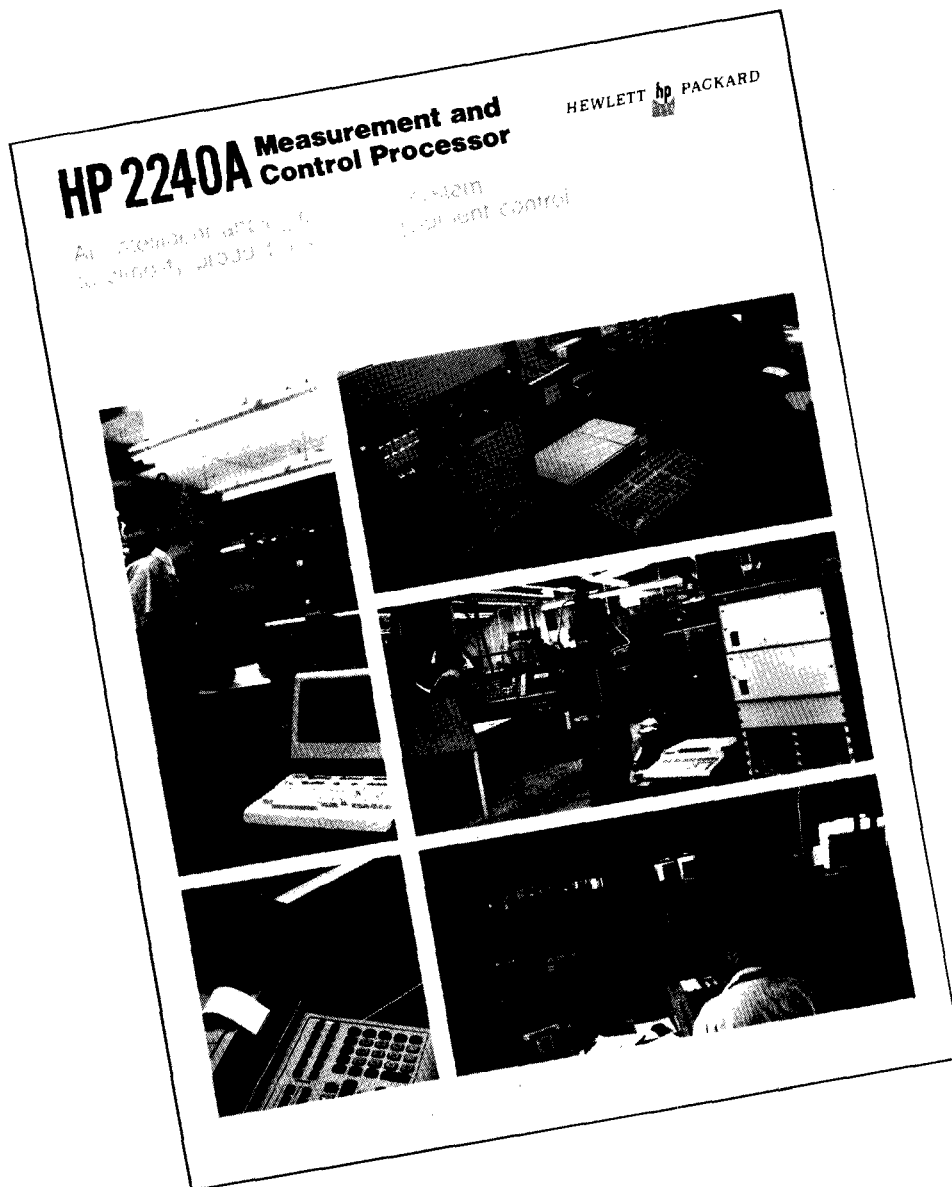
Two of the fourteen displays were allocated to computer products. The first display was a demonstration of our graphic peripheral offerings. The equipment included the 2648 Graphics Terminal, 7221 Plotter, and 2631 Printer.

The second display contained a 2108A CPU with 128Kb of memory, running RTE-M, and demonstrating measurement and control and factory data collection. The highlight of this display was an electric screwdriver that adjusted a potentiometer to demonstrate a closed loop measurement system. People seemed to grasp the principle of the demonstration and enjoyed playing with the screwdriver.

The coordinated effort of the two sales forces generated many qualified leads. Bingo cards were created covering functional areas of interest (such as measurement systems, peripherals, and scopes). The instrument and computer salespeople accompanied the show to their accounts and everyone felt that the show opened better channels of communication between them. We feel that this is an example of a profitable joint effort, and look forward to hearing of similar successful activities.

2240A Direct Mail Advertising Campaign

By: Peter Palm/DSD



At the beginning of July, copies of the 2240A flyer were mailed to 4500 HP 1000 and HP 9825 users in the U.S. and Canada—selected customers concerned with engineering, manufacturing, and lab measurements.

Along with the flyer is a letter from *Bob Puette* describing the add-on capability that a 2240A provides:

"Because you already own an HP computer and are concerned with data acquisition and measurement tasks, the new 2240A Measurement and Control Subsystem is pertinent to your application.

"For as little as \$5,000, you can expand your system measurement and control capabilities considerably. This new microprocessor-based analog/digital subsystem controls up to 128 I/O channels, expandable to 256 channels . . . etc.

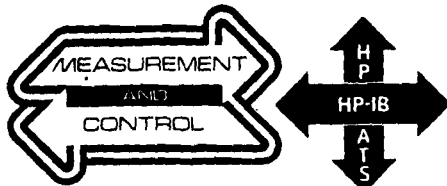
"For a demonstration, please return the enclosed reply card and your HP engineer will arrange one. Detailed information and technical specifications are also available upon request."

All customer demo requests will be TWXed to the appropriate Computer or Instrument DM to ensure prompt attention. Our objective is to generate new 2240A business from familiar HP customers who already own an HP-IB controller.

* * *

P.S. The 2240A 4-page flyer (5953-3022) replaces the 6-page brochure (5952-8541) – same information but in a more concise format—so please use the new document number when ordering copies.

Automated Measurement News



Automated Measurement News

AUTOMATIC TEST SYSTEMS & MEASUREMENT AND CONTROL PROCESSORS FROM DATA SYSTEMS DIVISION

VOL 1

AUGUST 1978

NO 3

ATS CUSTOMER TRAINING

By: Ray Tatman

Happy customers are well-informed customers -- those that understand the HP products they buy, and begin to realize a return on their investment quickly.

That's what customer training for the HP-ATS is all about. Tell your customers of the training available for them. The objective is to, in a relatively short time, help customer-personnel to the point where they will know how to easily and effectively use their HP 1000 controlled HP-ATS system to implement test solutions.

The ATS-related training courses are listed below. Course data sheets are available, as indicated.

<u>COURSE #</u>	<u>TITLE</u>	<u>LENGTH</u>	<u>DATA SHEETS</u>
22951B	Introduction to Minicomputers	3 days	5953-3051
22965B	RTE II-III Operating System	10 days*	5953-3044
22991A	HP 1000 Disc-Based RTE System	10 days*	5953-3049
92780A	HP-ATS Test Programming	5 days	5953-3042

* The first five days of either course is prerequisite to the HP-ATS Course, 92780A.

For scheduled dates and locations of these and other courses, see "COMPUTER GROUP COURSE SCHEDULES", HP literature number 5953-0841.

Early in the sale, be sure that training courses are discussed with your customers. Each is at extra-cost, and must be budgeted for and ordered. Their availability will be a "plus" for you (over the competition) in assuring your customer of HP's interest in his success.

LOW LEVEL CAPABILITY CLARIFICATIONS FOR 2240A

By: Larry Sanford/Jim Gruneisen

Most of you are aware of the new 2240A Low Level Analog Input cards, the 22915A. As you know, two 22915A Low Level Analog Input cards (for a total of 32 differential channels) can interface to one (1) 22900A 16/32 Channel High Level Analog Input card in the 2240A Measurement and Control Processor.

A possible misunderstanding arises, however, when only one (1) 16-channel 22915A card is used with one (1) 22900A (channels 1-16). One might think that single-ended channels 17-32, on the 22900A card, are available for single-ended signal input. The fact is, these channels are not available to the user because of the

Continued.....

FOR HP INTERNAL USE ONLY

-2-

method used to multiplex the common low output to the 22900A High Level Analog Input card. If high level single ended channels are needed a second 22900A must be added.

Another clarification required is whenever a 22915A is used a 22920A Signal Conditioning tray must be ordered to house the 22915A card.

An additional area of misunderstanding about the 22915A card concerns add-ons. To add low level capability to an existing 22900A the customer must purchase a 22900-69600 exchange board for \$400. On approximately September 1, 1978, however, all 22900A cards shipped from DSD will be compatible with the 22915A card. All 22915A cards ordered with 2240A systems will of course receive 22900A cards that are compatible. (Only 22900A cards that are Revision C boards will work with the 22915A. The revision is etched beneath the 22900 on the card.)

Another important point to clarify with the 22915A card is a 22915A option 001 verification kit. This is required for each installation so that a customer may self test and calibrate his 22915A.

I'm sure availability of the low level capability and verification kits will make the 2240A even easier to market.

DISCOUNTS ON ATS

By: Dick Landes

An HP ATS almost always entitles a customer to some discount. First of all, there's the Computer Systems Purchase Agreement discount. The System 1000, peripherals, RTE, and I/O's are all included on the Agreement. If the customer has signed up, the customer is entitled to the normal VEU or OEM discount. Resales to the U.S. Government qualify for OEM treatment. (If the customer doesn't have a Computer Systems Purchase Agreement in effect, here's a great opportunity to get him started.)

Second, ATS orders that exceed \$60,000 in catalog hardware, exclusive of the above System 1000 items, are usually entitled to a volume discount. The size of that discount is determined by the product mix and schedule. All of the IPG instruments, the 9415A, switch, and cards all count. In addition, if the computer products are not ordered under a Computer Systems Purchase Agreement, they can be added to the total. These discounts range from 1% to 2% or 3% for a large system. Consolidation, racking and cabling, and engineering are excluded. It is okay to receive both discounts if your order qualifies. The specific amount of discounts to apply to your order should be obtained from your normal source.

ATLAS/1000 IS READY FOR SALE!!

By: Paul Accampo

DSD has completed its marketing tasks on a revised ATLAS offering, and it is now available for sale. The new product is called HP 92111A, ATLAS/1000. Changes to the product include upgrading to RTE-IV, fixing a number of known bugs, and making changes which enable easier use of the package. ATLAS/1000 will execute approximately

Continued.....

twice as fast on the current version of the HP 1000 using RTE-IV, as on previous systems delivered with ATLAS on RTE-III. ATLAS/1000 is designed to be sold to experienced ATLAS users who wish to acquire a powerful ATLAS compiler without investing the 20 man-years required to design one from scratch. HP's ATLAS/1000 provides a base capability. A user can add new features and grow it into his own customized ATLAS offering.

As part of the product package, we are supplying source code, internal documentation, and an intensive training seminar which will enable users to assume full control and support of the software package. The only licensing requirement is a restriction to use the product on Hewlett-Packard computers. A customer can purchase ATLAS/1000 at a single price, and supply it to as many of his customers as he wishes without paying additional charges to HP (except for licenses of RTE and other standard software).

Should you receive inquiries on ATLAS/1000, call Greg Gillen, End User Sales Manager at DSD, for details. A field training manual and data sheet are available from DSD for those of you who have qualified customers.

OOOPS - Your July issue was labeled Vol 1 No 1 in error - it should have read No 2. Sorry. The Editor



DATA TERMINALS NEWS

OP Corner

Order Processing Organization

By: Larry Roth/DTD

With our rapid growth over the past year, we have had to add several people to help handle your orders. These are the people who want to help you and your customers:

ORDER COORDINATORS:

<i>Marlene Montero</i>		Neely (2400-2410) and Eastern (4408, 4430, 4432)
<i>Kathy Richards</i>	Ext. 2206	Neely (2411-2499)
<i>Gary Traynor</i>	Ext. 3593	Midwest
<i>Leatha Dixon</i>	Ext. 2823	Southern and Canada
<i>Kathy Dull</i>	Ext. 2118	Eastern (except 4408, 4430, 4432)
<i>Marta Kiss</i>	Ext. 2096	Europe and ICON
<i>Shirley Mitchell</i>	Ext. 2043	Factories

LEADS:

<i>Joan Loveless</i>	Ext. 2724
<i>Verdell Van Bergen</i>	Ext. 2849

SCHEDULERS:

<i>Jessica Swanson</i>	Ext. 2808
<i>Joan Loveless</i> (acting)	Ext. 2724

DATA ENTRY:

<i>Jean Myhren</i>	Ext. 2271
<i>Cintra Sharp</i>	Ext. 2808

MANAGER:

<i>Larry Roth</i>	Ext. 2866
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Product News

The HP 2647A and the IEEE-488

By: Steve Stark/DTD

Since the introduction of the HP 2647A Intelligent Graphics Terminal several months ago, DTD has received a large number of inquiries about the Shared Peripheral Interface (HP-IB) accessory. Most of these inquiries have been related to the various aspects of connecting IEEE-488 instrumentation to the HP 2647A via the Shared Peripheral Interface so that the HP 2647A could be used as an instrumentation controller. In responding to these inquiries, DTD has tried to point out that there are several important considerations which should be taken into account before proposing the HP 2647A for such applications. I would like to take this opportunity to reiterate these.

The first is purely technical. The Shared Peripheral Interface was never designed to function as a universally compatible IEEE-488 interface. Instead, it was designed as an interface to a small set of computer peripherals which could communicate via the HP-IB. Since this was the case, no testing has ever been performed to determine if the Shared Peripheral Interface meets all of the IEEE-488 interface requirements. Thus, it is very conceivable that certain IEEE-488 compatible devices, in fact, will not work with our interface.

The second consideration is one of what makes sense for the customer. If the customer truly needs an instrumentation controller, Hewlett-Packard can offer him several excellent products which have been designed to do the job. The HP 9825 and HP 1000 are just two of these. Furthermore, it should be noted that unless the customer can implement the entire application using IEEE-488 compatible devices, he is going to have a serious problem. DTD does not offer any interfaces for relay outputs, digital inputs or other hardware which is typically required in instrumentation applications.

DTD has no interest in marketing our products in the instrumentation market. There are no marketing or engineering programs underway at the present time, and none are contemplated in the future to support sales or customers in this market. Thus, the most Hewlett-Packard could do for a customer who wanted to use an HP 2647A in the instrumentation environment would be to leave it on his doorstep and walk away quickly.

The bottom line of this discussion is that it is the responsibility of the Sales Representative to insure that our customers' interests are respected when doing business with Hewlett-Packard. Clearly, this responsibility is abridged when selling a product into an application for which it is not suited.

Error! Error!

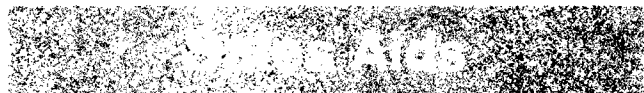
By: Tim Haney:DTD

The July 15, 1978 issue of the *CS Newsletter* indicated that the Opt 202, Line Drawing set was now standard on the 2645.

This should have read that Opt 202 Line Drawing set is now standard on the 13231A Display Enhancement Board.

The 2645 Opt 001 (Lower Case Character Set) is now standard on the 2645.

Therefore the Opt 202 has been eliminated on the 13231A and the Opt 001 has been eliminated on the 2645A as they are now standard parts of their respective products.



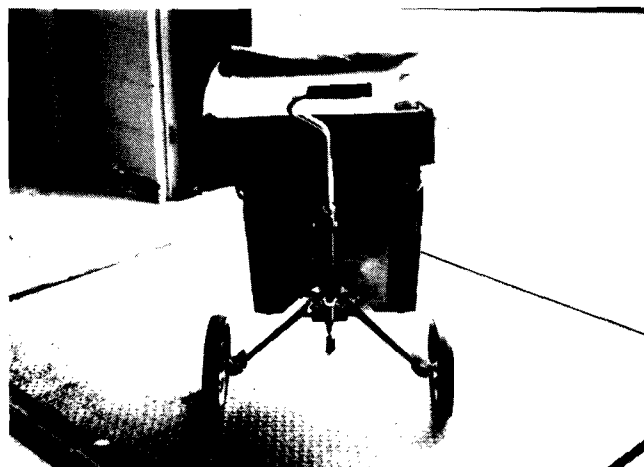
New CRT Carrying Cart

By: George Klein CSR

We have designed a new carrying cart for CRT terminals.

FEATURES:

- 1. Extremely light
- 2. Folds up automatically
- 3. Made of aluminum casting
- 4. Carries the 9872 — securely strapped door (or a briefcase if no 9872 is present)
- 5. *MOST IMPORTANT:*
It fits into the trunk of a car *WITH CRT ON IT* when folded.
- 6. Carries up to 200 lbs.
- 7. Totally interchangeable parts (no need to buy a new case if some parts wear out).
- 8. Delivery from stock.
- 9. Price — \$150.00 U.S. — Quantity — One F.O.B.





NOTE:

It is the best friend that a Terminal Specialist has, apart from the factory support!

COMPANY NAME:

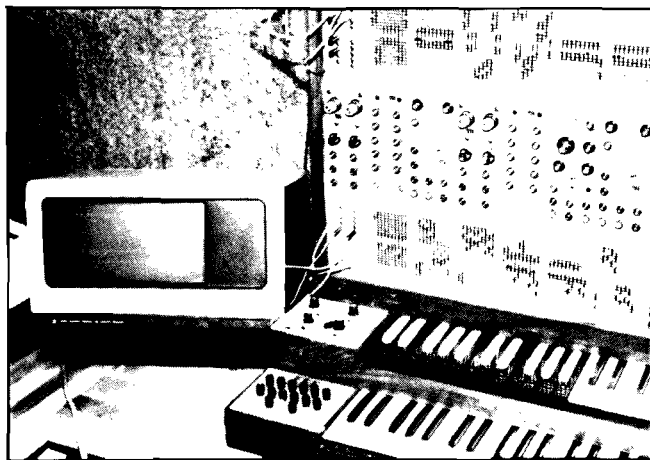
A. Dotan Company
133 Jenny Wrenway
Toronto, Ontario
Canada
(416) 498-1540



The HP 2648A Plays a New Tune

By: Steve Stark/DTD

George Klein from Toronto has sent us an interesting application for the HP 2648A.



An "ARP" Synthesizer has been interfaced to a DEC PDP-11 computer system via a digital/analog converter. When the appropriate keys are pressed on the keyboard of the synthesizer, various tones of different magnitudes are generated to produce music. As a player plays a certain melody, the frequency and magnitude of the tones

generated are stored on the system disc. When the player has finished, the music can be replayed at different speeds and modulation by having the computer control the synthesizer instead of the player.

A program can be used to analyze the musical information stored on the disc and to produce a graphical representation of it on the screen of the HP 2648A. A simple command to the program allows an entire session to be scored on the screen. Optionally, it may be plotted on an HP 7221A Plotter, as shown below:



The OEM who developed this application plans to market this package to recording studios in the U.S.

FORT COLLINS NEWS

Product News

HP 250 Press Clippings

By: Phil Hutchinson/FCD

The HP 250 shared the spotlight with other recently introduced CSG products in a wide variety of noteworthy periodicals. Highlights include:

- A page 1 banner headline and story in *Computerworld*, July 3, 1978.
- A two page spread in *Business Week* featuring quotes by *Alex Sozonoff* and *Paul Ely*, July 17, 1978.
- An article on page 1 of the Sunday *N.Y. Times* Financial Section based on an interview with *John Young*, July 2, 1978.
- Coverage on the Dow Jones and Reuters news wires. The Dow Jones item resulted in a short story in the *Wall Street Journal*. June 28, 1978.
- Favorable mention of the HP 250 in a *Dun's Review* Special Report, July, 1978.
- Extensive coverage in *Dataquest's* Research Newsletter, June 30, 1978.
- An article in *Minicomputer News*, July 6, 1978.
- An article in *Electronic News*, July 3, 1978.
- An article in *Computerwoche* (Computerworld-Deutschland).
- An excellent page 1 headline and article in *Die Computer Zeitung* (Deutschland), June 26, 1978.

In addition to these fine publications, articles appeared in many local newspapers such as:

- *Palo Alto Times*, June 28, 1978.
- *Fort Collins Coloradoan*, June 27, 1978.
- *Loveland Reporter Herald*, June 27, 1978.
- *Rocky Mountain News* (Denver), June 27, 1978.
- *San Jose Mercury*, June 28, 1978.

We at FCD would enjoy receiving copies of articles concerning the HP 250 that have appeared in publications other than those already cited.

HP 250 Customers

By: Phil Hutchinson/FCD

The introduction has passed, the smoke has cleared and in its wake are the first orders from HP 250 customers around the world. Because the 02 sales force has done such an enthusiastic job in taking the HP 250 to potential OEM's and booking their orders, we should have no problem in reaching our worldwide forecast goal for July.

Keep those orders coming folks!

Customer Support Services for the HP 250

By: Mike Chonle/FCD

Three levels of software support services have been made available to HP 250 customers. These levels will permit customers to select that "degree to support" which is necessary for their success based upon their expertise and experience with the HP 250. It's important that you consult with your customers regarding which support level is best for them.

The support services available for the HP 250 are quite similar to those recently introduced by DSD. These services have been reviewed by your System Engineer Managers; if there are any questions which I have not covered in this article contact them or myself.

The services and some QUESTIONS/ANSWERS are summarized below:

- SOFTWARE NOTIFICATION SERVICE (SNS)
 - 45130N. \$150.00/year
 - consists of:
 - Communicator magazine containing useful application data, abstracts and ordering information for new hardware/software, current revision codes of HP 250 software products, and the latest schedules of pertinent training courses.
 - Software Status Bulletin that discusses reported discrepancies in software and manuals and give any available temporary corrections or ways to avoid the symptoms of discrepancies, plus information relating to changes in software which HP has initiated.
 - no prerequisite

- SOFTWARE SUBSCRIPTION SERVICE (SSS)
 - 45130S, \$50.00/month
 - consists of:
 - SNS
 - Provides updates to software and manuals whenever changes are released by the factory.
 - orderable in increments of 6 months (6 months minimum)
- COMPREHENSIVE SOFTWARE SUPPORT (CSS)
 - 45130T, \$150.00/month
 - consists of:
 - SNS
 - SSS
 - Phone-in Consulting Service (PICS) providing a specific telephone "hot-line", which can be used to contact a trained HP System Engineer in regard to questions concerning the use of HP software. If considered necessary, a System Engineer may go on-site, for first-hand observation and assistance.
 - 45103A or 45104A HP 250 Training Course is a prerequisite.
 - This service is available on an 8 AM to 5 PM basis during normal HP working days. Typical maximum response will be a return phone call within 4 hours during normal working hours by a Systems Engineer.
 - Orderable in increments of 6 months (6 months minimum)

Software Support Questions and Answers

Why should you sell software support services?

That's simple:

- HP250 + SUPPORT SERVICES = SATISFIED CUSTOMER
- A satisfied customer is an excellent reference account.

What happens when customers ask why they are being charged for services from SE's which previously appeared to be free?

In the past customers were able to gain access to an SE on a "best effort" basis only. We now provide a method of insuring an SE will respond to their support needs in a timely manner. A customer who chooses not to take advantage of CSS is committing to service from HP on a "best effort" basis. It is important that the customer's expectations be established. Since many (hopefully all) customers will be paying HP to respond to their needs, our primary commitment for support is to them. Also, since hardware costs are continually declining, it is necessary to unbundle the high cost of support from the hardware costs.

What are the customer's responsibilities?

The customer is expected to designate one person as the "system manager". This person acts as a single point of contact to HP. This person should have attended the HP 250 training course. In this way we can help insure that the customer and HP receive maximum benefits from CSS.

What should the customer consider HP responsibilities?

HP should respond to the level of support that the customer has purchased. That is, if the customer has purchased CSS, HP will have an SE answer questions over the phone and go on-site if necessary. If the customer has purchased no support, HP can only respond on a best effort basis.

When should the HP 250 Support Services be discussed with the customer?

It should be discussed early in the sales cycle at every level in the customer's organization. It's important to set the "CUSTOMER'S EXPECTATION LEVEL" regarding support from HP.

What are some methods for proposing support services?

- You should recommend that an OEM purchase CSS for his development system and SSS or SNS for his customers.
- Your END-USER (major accounts) can purchase CSS for the first year, evaluate his expertise and continue on CSS or choose a different support service.

What are the guidelines for the sales organization supplying SSS or CSS for a customer?

It's a field decision for each situation and a DM will need to approve FESS expenditures.

Can the customer purchase lower priced services for the HP 250?

Yes. For multiple installations located in the same building, customers can purchase CSS at reduced rates via Option 002 with 45130T. He can also copy software updates free of charge.

Does an HP 250 customer receive CSS during the first 90 days after installation?

Yes. This happens automatically. Support services beginning after the 90th day must be ordered.

Does the Sales Rep. receive quota credit for selling support services?

Yes. But there is no commission credit. There is both quota credit and commission credit for training and on-site consulting services.

GENERAL SYSTEMS NEWS

Product News

2635A Printing Terminal Supported On HP 3000!

By: Chosen Cheng/GSD

- Hardcopy of system console output!
- A powerful hardcopy session terminal that can be used in a hardwired or modem configuration!

The 2635A printing terminal from Boise solves these customer needs on the HP 3000 (Series I, II and III) and is supported with the first release of MPE III (MPE-C for Series I) as of July 1, 1978.

Supported Features

Customers who have used the 2635A on the HP 3000 report it to be powerful, flexible and reliable. The 2635A is microprocessor-based with printing features controlled by escape sequences either embedded in the data stream or entered at the keyboard. HP 3000 support of the 2635A as a system console or as a point-to-point session terminal certifies that the operating system will interact with the 2635A as a session terminal in the following modes: Log on

as Terminal Type 15, no parity and transmit and receive data in full duplex at a maximum 2400 baud. In addition, as a system console, the 2635A will transmit and receive system messages.

Extra Power

The additional features of the 2635A (such as compressed or expanded printing and auto-underlining) are triggered by escape sequences and can be used to customize printed output. It is the user's responsibility to develop applications software containing the correct escape sequences to produce the desired output.

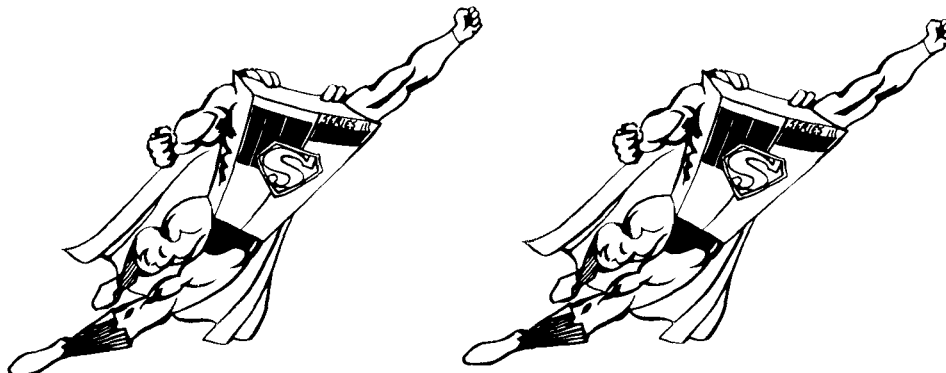
How To Order

Order the 2635A as system console with each Series I, Series II or Series III system by ordering Option 135. This deletes the 2640B standard console and replaces it with a 2635A at a cost of \$850.

Order the 2635A as a session terminal from Boise. The standard 2635A comes with a 12.5-foot male-to-male cable. Cost of the 2635A is \$3450.

The 2635A dot-matrix terminal is HP's answer to your customer's hardcopy terminal and console needs.

GOOD SELLING!



User Application Runs Faster and With No Conversion Effort With MPE III

By: Roy Clifton/GSD

The following Telex is a superb example of how the MPE II to MPE III upgrade affected the MRP explosion run at GSD.

FROM: JOHN PRICE	DATE: JUNE 26, 1978
TO: RAY MCCARTHY	SUBJECT: MRP PERFORMANCE
ALAN HEWER	IMPROVEMENTS
RALPH VENTURA	USING MPE III
MIKE NICKEY	
WALT KUSENER	
PAT GUERRA	
STEVE GOLDSWORTHY	
ROYAL LINDEN	

THIS PAST WEEKEND, THE JUNE MRP EXPLOSION WAS RUN SIMULTANEOUSLY ON BOTH MANUFACTURING 3000'S; THE OPERATING SYSTEM WAS MPE II ON ONE SYSTEM, MPE III ON THE OTHER. THE INPUT DATA, PROGRAMS AND JOB STREAM FILES WERE IDENTICAL ON EACH SYSTEM. BOTH MACHINES HAVE THE SAME AMOUNT OF MEMORY AND ARE SIMILARLY CONFIGURED. THE SYSTEMS WERE ESSENTIALLY DEDICATED TO THE MRP PROCESSING.

IN THE MPE III ENVIRONMENT OUR MRP EXPLOSION RAN IN 22-23% LESS TIME THAN WITH MPE II.

JOBS	MPE II		MPE III		% CHG
	JOB DURATION CPU SEC	ELAP MIN	JOB DURATION CPU SEC	ELAP MIN	
MRP1000 THRU MRP 3000	34050	649 (10.8 HRS)	26090	507 (8.5 HRS)	-23 -22
BACKUP ACTION REPORT SPOOL FILES TO TAPE		33		26	
PRINT ACTION REPORTS		270		---	
TOTAL		952 (15.9 HRS)			

Remember, each application is unique and will be affected by the MPE II to MPE III upgrade differently. However, all tests run to date indicate an increase in performance using MPE III. MORE FEATURES, MORE SPEED, AND IT'S FREE—WHAT A DEAL!

SELL THOSE SYSTEMS!

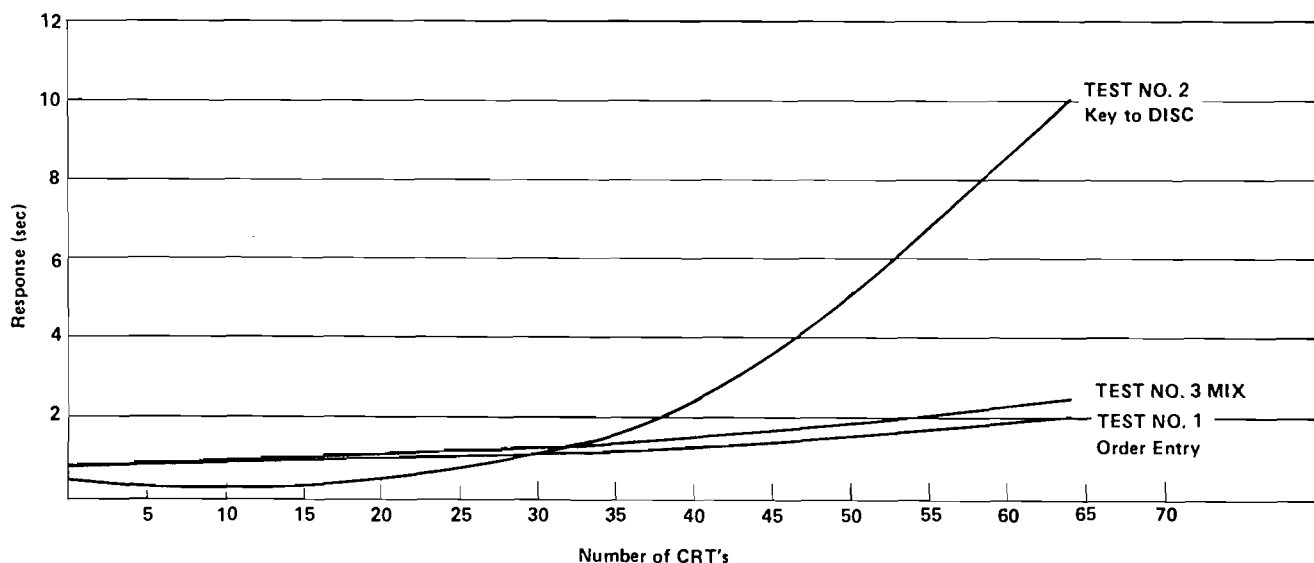
64 Terminals On One HP 2026 System? No Problem!!!

By: Terry Eastham/GSD

Our last HP 2026 article talked about the "High Performance HP 2026". Since that article, we put the HP 2026 to a real performance test involving no less than 64 terminals. All of the terminals were multipoint 2645A's running at 9600 baud on four multidrop lines. We thought you would find the results most interesting since when it comes to doing data entry and file inquiry it's hard to beat the HP 2026!

Test and Results

We found that *response times were in the two to three second range for a typical load!* Even for very high volume "key to disc" type applications, the average response time was less than one second for up to about 30 terminals. Of course in a multidrop terminal environment, a range of response times (frequently less than one second to much longer than the "average") was observed as terminals on the same polling line contended with each other. Response time was measured as the time from when the Enter key was pressed until data (or the next screen) from the system began to appear on the terminal. The following graph shows the response times for three different tests:



TEST #1 All terminals were doing data entry/editing equivalent to our HP order transaction (HEART Message Type 10). This transaction consisted of six different formats varying in size from approximately 200 characters to 1200 characters. One formatted, variable length record was written to a disc file for every six formats.

TEST #2 All terminals were doing a key-to-disc type of application. This application consisted of a single format with 11 fields for a total of 80 characters of input data. The fields were edited for right-justify, zero fill; numeric checks; range checks; a date check and a counter increment. A fixed length record of 90 characters was written to a disc file for each format. Typing time per entry was 15 seconds or about 50 w.p.m.

TEST #3 The terminals were doing the following (ratio) mix of applications:

- 16 terminals doing data entry per TEST #1
- 12 terminals doing key-to-disc per TEST #2
- 12 terminals entering "administrative messages"
- 24 terminals doing inquiries against a 22,000 record HP instrument file, a 148,000 record HP parts file, a 4,000 record HP customer file, a 21,000 record HP open order file, and a 33,000 record HP personnel file.

How It Was Done

But where does one find 64 multipoint HP 2645 terminals to do the testing??? Many thanks to Data Terminals Division, of course, for helping us out. It turned out that it took longer to get the terminals cabled, properly strapped, and powered up (where do you find plugs for 64 terminals?) than it did to run the tests. But finally we got the terminals set up in a horseshoe configuration as shown in the picture below and started looking around for 64 data entry people!



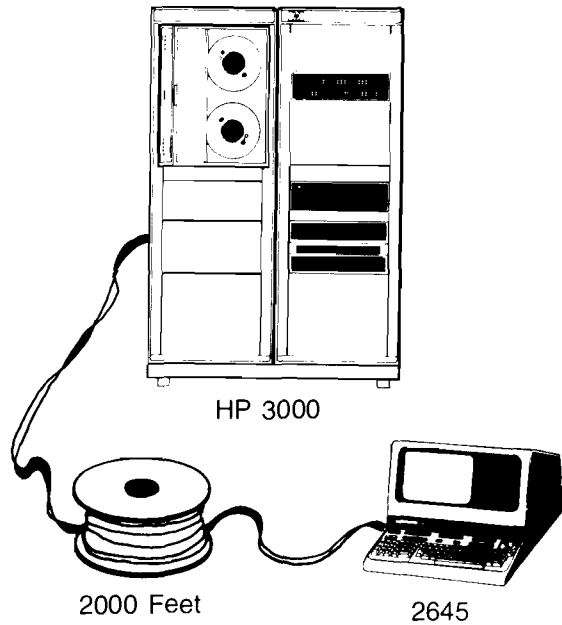
Instead of using people to do the testing, we devised a method to simulate data entry by using several nifty features of the terminals. For example, a data input rate of about 50 words per minute was approximated by inserting a one second terminal delay (esc @) for every four input characters. A few equally nifty features of the HP 2026 system and its Data Entry Applications Language then allowed all 64 terminals to be controlled by only four people!

Conclusion

We think it is evident from our performance testing that the HP 2026 system is by far the fastest data capture and file inquiry system available from HP today. When you couple this kind of performance with data communications performance (2026 to 2026, 2026 to 3000, or 2026 to IBM mainframes) you have a real solution for customers requiring lots of terminals, data communications and fast response times!

Long Multipoint Cables

By: Greg Norton/GSD



How should you quote long cable lengths for MTS/3000 installations? (The longest multipoint cable offered as a standard product is the 100 ft. long 13232R manufactured by Data Terminals.) We do have three solutions, however, one of which should fit any given sales situation:

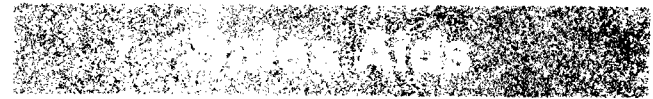
1. State on the quote that *cabling is up to the customer*. The cables and connectors are available commercially, but often your competition will be including cabling costs in their quotes. The customer may not want the hassle of finding his own parts.
2. Ask the factory (GSD or DTD) for an *Engineering Special*. Since this would involve special handling and engineering time, it would be the most expensive way. Furthermore, long cable runs are frequently installed in conduits and pass through walls or floors, so the connectors would have to be removed anyway.
3. Quote the parts and have the customer or a CE install the connector after the cable is installed at the customer's site. The part numbers to order are:

8120-2305 Cable	\$.60/ft.
5061-2401 Connector Kit	\$17.40/ea.

The connector kit includes both the male and female connectors and all necessary hardware.

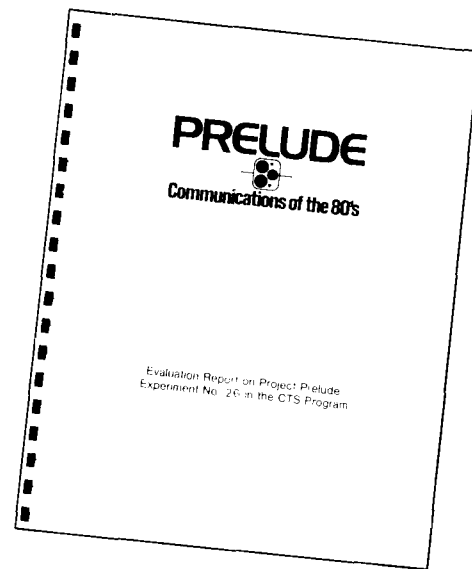
The cable and connector kits are ordered from the Corporate Parts Center (Supplying Division Code 1500). Have your Order Processing Department check on the latest prices and availabilities before you quote.

You should find that *this third alternative is the easiest* for both you and your customer, and it will be only slightly more expensive than having the customer acquire the cable and connectors on his own.



Project Prelude Conclusions

By: Larry Hartge/GSD



Project Prelude officially concluded on June 29, 1978, with the release of the "Evaluation Report on Project Prelude" by Satellite Business Systems (SBS). *Computerworld* featured the results in a front page story in their July 10 issue with more PR for HP.

The actual report elaborates in detail on the responses, by the "participants" in the demonstrations, to an evaluation questionnaire. The major highlights of the evaluation are:

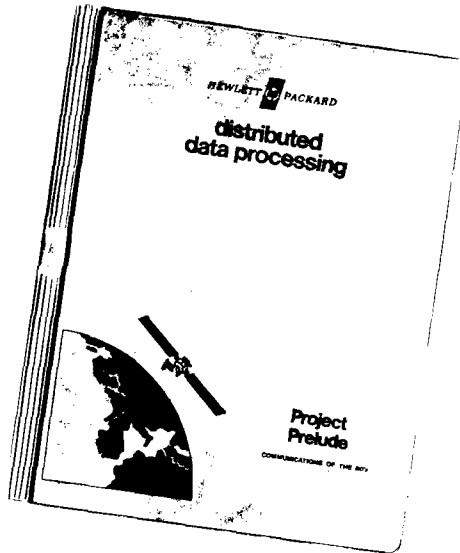
- Almost two-thirds of the participants (64%) said teleconferences are as successful as face-to-face meetings.
- Almost two-thirds of the participants (65%) said megabit transmission speeds of data communications, such as Prelude demonstrated, would be helpful in current requirements.
- More than three-fourths of the participants (77%) said electronic document storage and retrieval would be helpful in current requirements.
- Participants said that more than half (57%) of business meetings would work well with teleconferencing.
- Nearly three-fourths of the participants (74%) said teleconferencing is better than travel as a way of getting meetings organized.
- Reduced travel time and quicker decision-making are the most important benefits of teleconferencing as a substitute for or supplement to business travel. Cost savings are of a lower priority, although still important.
- More than half of the participants (62%) would move toward early implementation of teleconferencing if given final authority.
- More than half of the participants (61%) said freeze-frame video, which requires less transmission capacity than full-motion video, is suitable for most teleconferences.

Other conclusions showed that use of terminals for data inquiry, and use of high-speed, high-quality facsimile for message transmission, would significantly increase if terminals were conveniently accessible to the users.

Single copies of the Project Prelude Evaluation Report may be obtained from the SBS Public Affairs Department, 8003 Westpark Drive, McLean, Virginia, 22102.

Project Prelude Awards

By: Larry Hartge/GSD

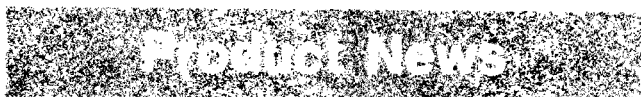


Project Prelude was a great success thanks to the efforts of many dedicated HP personnel. In recognition of their efforts a unique note pad shown here was recently awarded to the following contributors:

SITE	CE	SE	OSS
Clarksburg	Lee Dobyms Lou Soule	Bob Chaffin Neal Kelly	
Seal Beach	Bruce Campbell	Russ Bradford	Steve Bills
Pittsburgh	John Kukuda	Gil Livingston Robert Smith Bill Sluka	Tom Charles
Houston	Larry Rea	Paul Cherry	
White Plains	Phil Ramsden	Mike Grady	
Baltimore	Joe Eckersley	Mike Baker	
Chicago	Jim Loizzo	Debra Bonetsky Conrad Iungerich Jolene Whittie'd Alex Morgan	Bernie Staley
Factory	Ed Ahrens Jack Barbin Sharon Bradley Augie Correia Pete Cressman George Cullison	Nadine Halsted John Kane Larry Kelly Jutta Kernke Howard Morris Don Van Pernis	Mike Philben Lloyd Summers Ray Seijas Elio Toschi Ray Wedemeyer Rita Williams

The entire team deserves all of our thanks since the image-raising PR, generated by this project, benefits all of us.

HP GRENOBLE NEWS



Current Loop, Yes . . . , but How?

By: Jacques Biard/HPG

Current Loop is the solution to a long distance connection, but how to make this connection?

Three different configurations have been checked:

1. 264X to HP 1000

Use DVR00 and 12531D (Internal clock) in the CPU. The communication interface in the terminal must be 13260B (02640-60143) with THE and RHE open. You will have to fabricate your own cable with:

- 30 Pin Connection Kit (HP P/N 5061-1340).
- a 4-wire cable (length your choice; we used 8120-1871).
- 12966-60003 Test Connector from which you will remove all internal connections.

Then make the following connections:

5061-1340 Connector	←→	12966-60003 Connector
Pin 6	to	Pin 4
Pin H	to	Pin 24
Pin 4	to	Pin 16
Pin 5	to	Pin BB

In the 5061-1340 Connector, also jumper pin 1 to pin H.

This connection was 500 meters long and worked OK at 2400 Baud.

2. 2631 to HP 1000

Use DVR00, Subchannel 0 and 12531D (Internal Clock); you must have the Current Loop Interface in the Printer (Input Jumper in position IN, Output Jumper in position OUT).

You still use the 12966-60003 Connector with all wires disconnected; the cable is now 2 wires only. Make the following connections:

2631 Connector	←→	12966-60003 Connector
Pin CL-	to	Pin BB
Pin CL+	to	Pin 16

The connection was 500 meters long and worked OK at 1200 Baud (remember that you may have to reduce this speed, depending on the customer's application).

3. 2631 to 264X Terminals

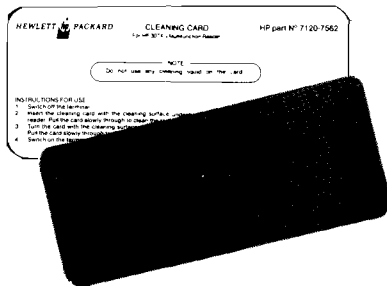
Use 1326B (02640-60143) (THE open, select 8 NULLS or more) as a Printer Interface in the Terminal and the Current Loop Interface in the 2631 (Input Jumper in position IN, Output Jumper in position OUT).

You will use the 5061-1340 Connector and a 2-wire cable.

Make the following connections:

2631A Connector	←→	5061-1340 Connector
Pin CL-	to	Pin H
Pin CL+	to	Pin 6

In the 5061-1340 Connector, jumper pin 3 to pin E (driver requires CB to be high) and pin 1 to pin H. This connection was 500 meters long and worked OK at 1200 Baud (don't forget the possible limitation on the speed).

3070B Cleaning Card*By: John Willett/HPG*

A special card with a layer of felt on one side is now available for cleaning the card path through the 3070B multifunction reader. All that's required is to push the card twice through the reader; once to clean the mirror and once to clean the read head. The whole operation takes less than one minute and ensures consistent, accurate reading even in dirty factory environments using dirty punched cards.

One cleaning card will be supplied free with every 3070B Users' Manual. Extra cards (HP Part Number 7120-7562) can be obtained from CPC, Mountain View or PCE Boeblingen, at a cost of \$2 each.

3070A and 3071A Obsolescence*By: Georges Quin/HPG*

We are now shipping the 3070B to customers and inventory levels for the 3070A are declining rapidly. Furthermore, within a few months we will be introducing an RS-232 compatible version of the 3071A.

The 3070A and 3071A will, therefore, be removed from the Corporate Price List September 1st.

No further quotations for these products should be made: orders from outstanding quotations will be accepted up until September 30th.

Remember the 3070B option 003 (delete reader and printer) provides customers with a functional capability identical to the 3070A. Please contact us if this decision presents your customers with any special difficulties and we will work with you to arrive at a satisfactory solution.

7261A and 12986A Obsolescence*By: Peter Stuart/HPG*

Our strategy of promoting our Optical Mark Readers for Mark Sense reading applications only has proven successful. Correspondingly, sales of the 7260A (the RS232 version used remote from the computer) are increasing while sales of the 7261A (the parallel interface version typically installed in the computer room) have declined to a very low level. The 7261A and the 12986A subsystem for the HP 1000 will, therefore, be removed from the Corporate Price List November 1st, 1978. A few of you have OEM's for the 7261A who still occasionally order them. These customers should be contacted and advised that orders will not be accepted after this time. Naturally, no further quotations should be made for these products effective immediately.

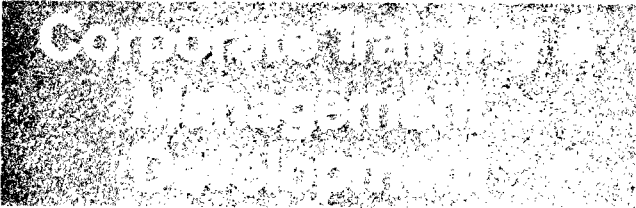
When advising your customers of this decision you may care to point out to them that the 7260A has similar functional capabilities as the 7261A and will continue to be available. The 7260A should only be recommended for Mark Sense or light-duty punch card applications. Should your customers be facing special difficulties with the obsolescence of the 7261A and 12986A subsystem, please contact us and we will see what solutions can be worked out.

7260A Option 45 for Calculator Sales Force*By: Peter Stuart/HPG*

The Calculator sales force may now also sell and receive quota credit for the 7260A Optical Mark Reader used with the 9825 and 9845 Desk Top Computers. Previously, the 9869A Optical Mark Reader was sold uniquely by the Calculator sales force for this application but within a few months the 9869 will be obsolete.

Option 45 ensures that a 7260A is correctly jumpered for operation with the Desk Top Computers and shipped with a Users' Manual with programming examples, etc. Option 45 will appear on the October 1st Corporate Price List.

CS GROUP NEWS



NEW VIDEOTAPE INFORMATION

New Videotapes from Corporate Training

By: Chuck Ernst Corp.

Title: HP 3000 SERIES III NPT HIGHLIGHTS (MONOCHROME)

Audience: ICON Sales Force (02) For Internal Use Only

Purpose: To introduce new Series III to HP 3000 product line.

Content: HP's newest high-performance member of the HP 3000 product line, the Series III, is introduced by its product manager,

Fred Gibbons. Fred announces an increase in semiconductor memory available with the Series III — up to 2 Megabytes — and a reduction in price from \$4K per 64 Kbytes down to \$2K per 64 Kbytes. The Series III offers a substantial increase in throughput; it can handle up to 40 terminals and 4000 transactions per hour in the 2 Megabyte configuration.

Fred also describes enhancements to the MPE III operating system, and improved performance in transaction processing and distributed processing with the Series III.

Time: 45 minutes.

Part Number: 90802Z

Date Released: July 1978

How To Order: Transmit a HEART (COCHISE) I2 order to Video Products, Product Line 95, Division 0700, Palo Alto. Order 90802Z for a videocassette. This program is not for sale to customers.



HEWLETT-PACKARD COMPUTER SYSTEMS GROUP
11000 Wolfe Road; Cupertino, California 95014 USA

Bob Lindsay/CS Group - Editor

JANE GEBERT/BOISE — Editor
OLEN MORAIN/CSD — Editor
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SANDY BETTENCOURT/DSD — Editor
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