COMPUTER SYSTEMS NEWSLETTER

For HP Field Sales Personnel

In This Issue...

FOR INTERNAL USE ONLY

In This Issue . . . Cont.

INFORMATION CHANGE NOTIFICATION

Please update my CSG Internal Distribution and Directory listing as follows:

Type of Change: Add ☐   Modify ☐   Delete ☐

NAME:_____

EMPLOYEE NUMBER (5 digits):_____

OFFICE/DIVISION:_____

REGION/OFFICE NUMBER |___|___|___|___| OR DIVISION |___|___|___|___|___|

HOME TELEPHONE NUMBER:_____

JOB TITLE:_____

PRODUCT SPECIALTIES (i.e.: 264X, 3000):_____

MANAGER'S NAME:_____

If you have changed jobs, location, or product specialty and have not updated the CSG Literature Distribution database, just fill out this card and mail to:

Hewlett Packard
CSG Lit. Distribution
c/o *Carol McKay* - 40
11000 Wolfe Road
Cupertino, CA 95014

BOISE DIVISION NEWS

Product News

Vertical Bay Type Cabinet on New Series III
By: Gene Morel/Boise

The new Series III configuration guide recommends that the magnetic tape unit be purchased in the lo-boy cabinet (Option 324). Some field people have expressed concern over this fact saying that some of their customers need a vertical bay for their applications. This cabinet is still available as Option 314, which includes an interface cable. Add-on drives are also available in the vertical bay. Consult your FTM for more information on these options. One disadvantage of the vertical bay cabinet configuration is the expense. Option 314 is an incremental $3260 compared to $1740 for the lo-boy cabinet configuration.

If your customer wants it, Boise Division can come through!

Service News

2630 Family Operator Service
By: Wayne Eskridge/Boise

It has been reported that many customers fail to perform the maintenance tasks specified in the Operator's Manual. The result will eventually be a service call that should not have been required.

Customers are required to clean the filter once a week and the print head at least every two months. Also, it is a good idea to clean the area around and below the guide rails of dust and accumulated debris. The manual does not address this issue, but it should be done occasionally.

Failure to clean the filter can lead to overheating and a variety of problems. Failure to clean the print head can lead to poor print quality and in extreme cases to destruction of the print head.

When you are in the customer's office, please advise them of the importance of keeping the machine clean. This can save needless service calls and increase the customer's satisfaction with the product.

Customer Service Classes
By: Wayne Eskridge/Boise

The continuing expansion of the capability of the 2630 Family, with the introduction of the 2639A and the 2631G, makes the Customer Service Classes offered by Boise Division very desirable. The classes are designed for customers who do their own maintenance and need in-depth training.

263X classes are scheduled as follows:

April 23, 1979
August 13, 1979
October 15, 1979

The course provides everything a service person needs to understand the operation and failure modes of the family as well as how to troubleshoot and repair the machines. Any company considering internal service should take advantage of this opportunity as it will certainly improve the up-time for their printers. The tuition for the class is $480.00 per student if taught in Boise. As an alternative, it can be taught at a customer site for a fee of $2800.00 plus expenses. The course is four days.

Customers doing their own service should be encouraged to take these classes as they will be happier with the product if they know how to maintain them properly.

A similar course is available for the 7970 tape drives. It is a comprehensive course covering all aspects of the drive. Since it is a mature product, the 7970 is not changing; however, the customer service class should be considered for any customer wishing to do his own maintenance or as a refresher for those already doing it.

7970 classes are scheduled as follows:

7970B	March 12, 1979
7970E	March 17, 1979
7970B	May 7, 1979
7970E	May 14, 1979
7970B	October 1, 1979
7970E	October 8, 1979

Tuition for the course is $600.00 per student if taught in Boise, or $3500.00 plus expenses if taught at the customer site. The course is five days.

If you have any questions regarding customer service training, contact your Boise Division Sales Representative.

COMPUTER SERVICE NEWS

Division News

The Customer Engineer — Part III "Graduate Training Programs"
By: Dick Baumann/CSD

In the last article, we followed the newly-hired CE through the eleven-week "ACE Basic" training program. Although "ACE" (Associate CE) has recently been replaced by Staff CE, the ACE Basic program lives on. It has undergone several structural changes and many improvements since it began in January 1977. Along the way over 400 CE's have graduated from the program in Cupertino or Grenoble.

Eleven weeks of basic training is only the beginning of the CE's days in school. After a four to twelve week on-the-job training period back in the office working in a customer environment with more-senior CE's, he or she will return to be trained on one or more of our systems . . . the HP 250, HP 300, HP 1000, or HP 3000. The objective of that training is preparation for assuming Account CE responsibility after returning to the home office.

There's still more training available for the CE after this stage. Much will depend upon that person's individual career choice . . . to progress toward being a "specialist" on one or more systems or peripherals, a "generalist," or maybe even to move toward management.

Numbers have been assigned to correspond to the various levels of training available. So far we've followed our new-hire CE through the CSD 50, 100 and 200 levels. The CE desiring to be a "generalist" might get 200-level training on several systems and might progress to some 300-level training, e.g. disc specialist training at DMD. The CE wishing to be a technical specialist can progress to 300- and 400-level courses and can further specialize on hardware or operating systems. Specialist-level courses are typically taught at the manufacturing divisions. The prospective manager can branch out of this series of product-related training to begin taking HP's series of management training seminars. For "generalist," "specialist," or "manager-to-be" in the field, there'll always be training sessions on those new products introduced during the year; many of these are held in the field at a Region or Area location.

The CE training program is constantly being improved. To reach our goal of being #1 in service in the computer business, we'll have to continue to recruit only the finest CE's and then give them the finest training available anywhere.

HP Computer Museum
www.hpmuseum.net

C.E. Training Program

CSD 50

Pre-study for Basic Training

- Orientation
- Region conducted
- 3 weeks

CSD 100

Basic Training

- Peripheral P.M.'s
- Intro to Systems
- Customer relations, etc.
- Corp. Neophyte, CSG Overview
- Eleven Weeks

New Product Training

- For Account CE's
- "Add-on" Training

CSD 150

On-the-job Training

- Structured assignments to complete
- Conducted in field
- Four to twelve weeks

CSD 200

Account C.E. Qualifying Modules

- Systems Training
  HP 250, HP 300, HP 1000, HP 3000
- Two to five weeks per module

CSD 300

- Advanced systems concepts modules
- Peripheral specialist qualifying modules (DTD, Boise, DMD, Grenoble, CSD)

CSD 400

Systems Specialist Qualifying Modules

- Hardware or Operating System Specialist
- Presently conducted at DSD, FCD, GSD

DISC MEMORY NEWS

Product News

Winchester Technology

By: Terril Hurst/DMD

The scene is an office occupied by one company vice-president and one HP sales representative. The two are discussing the hardware features of the HP 300 system. The HP sales rep mentions the internal "12 megabyte fixed disc drive" (internally known as the 7910K Opt 020), and states that the 7910 uses Winchester Technology. The vice-president asks, "But what is Winchester Technology?" In TV actor *Carl Malden*'s words, "What *will* you do?!" Suppose that you're the HP sales rep. You want to answer the prospective customer's question without getting too involved in gory details. Maybe *you* don't know what is meant by the phrase "Winchester Technology." In that case, this article was meant for you!

Description of Winchester Technology — IBM is credited with pioneering this state-of-the-art head/media interface conceptually at facilities located in Winchester, England — hence the term "Winchester." The main features distinguishing Winchester Technology from conventional read/write technology are discussed below.

Winchester heads and media are allowed to physically contact each other. This means that a Winchester head can "land" on and "take off" from the magnetic disc, which is coated with a lubricant to reduce the resulting wear. The Winchester head is designed to fly at a height which is less than half the normal flying height of conventional heads. The Winchester heads and media are sealed — under extensive clean room control — inside a compartment for protection from particulate contaminants.

Advantages/Benefits of using Winchester Technology — The overall advantage of using Winchester Technology can be stated simply — a lower cost. If disc drive manufacturers are to maintain their competitive margin against other emerging technologies (such as bubble memories or charge-coupled devices [CCD's]), they must continue the present trend of decreasing the cost per megabyte of mass storage. Since the cost-per-spindle has remained relatively fixed, the decrease in storage costs has been achieved by increasing storage densities. The use of Winchester Technology allows storage densities to increase. In addition, because the low-flying heads can contact the media, the mechanical actuator is greatly simplified — allowing an additional cost decrease for mechanical parts.

Use of Winchester Technology in the 7910 — The 7910 disc drive (Figure 1) includes all of the major features inherent in Winchester Technology. In addition to the contacting heads and media and fixed, lubricated disc, the 7910 includes features not necessarily found on other Winchester disc drives. The disc is formatted using Double Frequency recording for enhanced data integrity. The data head located on each disc surface also reads positioning information which is embedded within the stored data. This positioning information is used to control a tone-arm style actuator to which the heads are attached, so that the heads in effect position themselves — thus eliminating the need (and cost) for a dedicated servo head and surface. These features, together with the self-contained HP-IB controller with extensive self-test capability, make the 7910 a definite technical contribution, as well as providing Hewlett-Packard with a technological base from which to build future Winchester-type disc drives.

Summary — Winchester Technology is one of the means of keeping HP competitive in the mass storage business. Building Winchester disc drives is a demanding process; the 7910 is providing the opportunity for HP to learn just *how* demanding! Meanwhile, the HP sales rep can feel comfortable discussing the compact, reliable 7910's contribution to the HP 300 system's attractive, friendly nature.
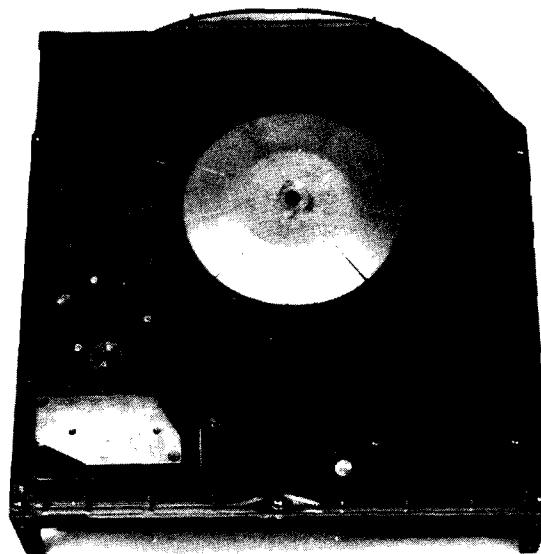

Figure 1 — The 7910 disc mechanism that is mounted in the HP 300 cabinet. Note the sealed disc and tone-arm actuator with Winchester head.

Sales Aids

Impact of Disc Drives on System Sellability — Part III

By: Jon Bolt/DMD

Handling the Issues

In view of the growing size of mass storage (disc) systems and their pricing impact on your ability to sell systems, you may have several concerns. What is HP doing to keep disc prices (and system prices) competitive? What can be done to address your customer's concerns about rising prices associated with disc storage? Finally, what can be done to handle competiiton that may arise for disc sales?

Recognizing the growing impact of disc drives on their system business, HP made the judicious choice of bringing disc manufacturing in-house. The result was the formation of Disc Memory Division in 1977. Aside from profit, the most obvious benefits arise in the area of pricing. This one strategic move towards vertical integration benefits you and your customer most by assuring competitive disc prices. HP is now able to manufacture any of its disc drives in-house for ½ to ⅓* of what our factory cost would be for a comparably sized OEM drive. This cost savings can be passed on to the customer as bargain disc prices. To Ilustrate the savings to customers, let's compare HP disc prices with prices our competitors charge for OEM discs that they purchase.

DEC buys the Memorex 677 and offers it to their customers as the RP-06. To maintain acceptable profit margins they must price this 176 megabyte drive at $34,000 (add-on). Harris buys a 120 megabyte formatted CDC drive and re-sells it as their model 5541 for $30,000. Prime buys the CDC 9877 and offers this 65 megabyte slave drive for $18,000 (Model 4261). HP offers the 7925S, providing 120 megabytes, for $17,000. Against most other competitors that must buy OEM drives, HP maintains these same substantial pricing advantages (see Table 1). Of course, if HP had to buy OEM drives, our disc prices would be comparable to those of our competitors listed above. The move to manufacture disc drives in-house has virtually assured our disc prices will remain competitive through technical innovation. Our long term goal is to keep HP discs from becoming big-ticket items.

Addressing your customer's concern about the rising cost of this mass storage requirements requires he be educated on the nature of the disc business. Explain to your customer that he should not be surprised to find his mass storage needs grow at a rate exceeding 30% per year. New applications, greater responsibilities and more powerful features of his systems, as well as growth of his entire operation will sustain this demand.

However, he can expect advances in disc technology to be on his side continually reducing the $/megabyte of disc storage. The customer may be concerned that the price he

*Prior to announcement of the 7920, HP was given a quote from Memorex for their Model 677 OEM Disc Storage Drive (12/1/76). This drive would provide 150 megabytes of formatted storage capacity. Price quoted by Memorex for quantities comparable to current 7925 production was more than twice our manufacturing cost of the 7925S.

pays for a single spindle (drive) has not decreased over time — after all processor prices decrease constantly. This is certainly true. In fact, the price of a single drive will probably always remain at about the prices found today — but capacities will increase.

Point out to your customer that disc drives, being largely mechanical devices, have sizable fixed costs associated with basic mechanical assemblies — independent of the capacity of the final product. All disc drives require read/write heads, media, a spindle motor, head actuator assembly, and a casting providing the structural framework. These parts alone account for over 50% of the manufacturing cost of the 7925S. In addition, they are labor-intensive products requiring extensive machining and meticulous assembly of high tolerance parts. Dimensions on the order of microinches persist throughout disc drive designs. Holding these tolerances through tooling, machining and assembly becomes expensive. Any moving head drive design begins with fixed costs due to these fundamental parts and required labor. These costs set a "threshold price" on any disc design that is almost independent of capacity. However, technological advances will continue to forge greater bit and track densities out of these basic mechanical assemblies. This reduces the $/megabyte your customer pays for storage.

Thin film heads, thin-film media, and optical storage techniques are all next generation technologies that HP is actively pursuing. Through independence from outside products (and resulting prices), we can use our own innovations in disc technology to continually offer our customers state-of-the-art disc products at very competitive prices. Handling the competition for disc sales that will eventually arise will require a "balanced sales strategy." In the face of this competition, specific attention to the features and benefits of our drives will be required. The salesman will have to use his knowledge of disc products in order to competently evaluate and compare our drives to the competition. We do not suggest that since 40% of your sales dollar comes from discs that you spend 40% of your sales effort on discs. We simply encourage attention to discs during the initial sale for two reasons. First, a successful disc sale with the intitial system will no doubt make the most out of your sale. Even more important, once the customer is locked in to our discs, you have set the stage for a sustained add-on business down the road. With just a little attention to discs, you can score a full 40% of the money you make from our drives.

Table I

Disc	OEM	Capacity (Mb)	Price ($)	$/Megabyte
DEC RP-06	Memorex 677	176	$34,000	$193
Prime 4262	CDC 9762	65	18,000	277
Harris 5541	CDC 9764	120	30,000	250
Basic/Four 2580	Calcomp T-80	75	17,800	237
SEL 9320	CDC 9762	65	17,400	268
HP 7925S	—	120	17,000	141

. . . The next issue will feature a look at how disc drives influence overall system dependability.

DATA SYSTEMS NEWS

Product News

Ivan's Popular "SPECIALS"

By: Carlos Avila/DSD

Ivan Henkle's Special Engineering Group has compiled a list of some of its most popular "specials." The list shown below is far from complete, and is only meant to be representative of the type of solutions that Special Engineering can provide when your customer's requirements cannot be satisfied with standard HP products.

As always, contact your Sales Development engineer for a specific quote and delivery on these products.

GOOD SELLING!

✩   ✩   ✩

12589A-A02 RTE Driver

Option A02 provides an RTE-III/IV driver for "Bell 801" capability.

12894A-E01 Multiplex I/O Board

12894A-E01 provides a multiplex I/O board for 21MX computers and includes an 18 inch cable unterminated at customer's end. This card buffers the data and control signals from the CPU I/O backplane and presents them to the outside world for use with a customer designed interface.

12894A-H01 Multiplex I/O Board

12894A-H01 provides a multiplex I/O board for 21MX computers and includes a connector (hood) kit. This card buffers the data and control signals from the CPU I/O backplane and presents them to the outside world for use with a customer designed interface.

12979B-H01 21MX I/O Extender

Option H01 packages the 12979B in a 12¼ inch box with a top cable tray which allows easy I/O cable routing.

2113B-E06, 2111F-E06, 21098B-E06, 12979B-E06

Option E06 to these instruments provides the capability to operate at 50/60/400Hz and 115/230 volts.

2174A-H01, 2176A-H08, 2177A-H08

These options provide space for a mag tape in the base system cabinet. Contact factory for limitations and prerequisites.

2177A-H06

Replaces 2648A with a 2645A as a system console.

93009A TEK 4010/4012 Interface

This product includes an interface card and modifies Tektronix 4010 software. The converted software supplied is the Plot 10 series terminal control system library package complete with link routine to route library output to the RTE driver. Customer must order and ship to HP the Tektronics equivalent. Order 4010 A01-Opt. 001 from Tek. Contact factory for additional information.

93500A Scanivalve Interface

Provides I/O card, cable, RTE driver, verification for Scanivalve MSS/SSS 48/64 channel scanners. Contact factory for prerequisites.

93537A Current Loop/EIA Multiplexer

Provides 16 channels of current loop or EIA circuits which can be intermixed. Includes driver and integration into an RTE-IV system. Contact factory for specifications and prerequisites.

93546A Current Loop/EIA Converter

Provides up to 16 channels of current loop to EIA circuits for interfacing 264X current loop terminals to 12966A I/O cards. Will allow 9600 Baud operation at up to 1000 feet. Contact factory for prerequisites.

93550A I/O Switch Mainframe

Allows two computers to share up to seven I/O devices. Prerequisite options are added to specify number of lines to be switched, appropriate cables, etc. Two 93550A's may be operated in parallel for switches of up to 14 channels simultaneously. Contact factory for prerequisites.

93551A Remote Program Load

Provides the capability to initiate a remote program load (RPL) on a 21MX-E RTE-M based front end system from a remote DS/1000 RTE-IV operating system; i.e., forced cold load capability (FCL).

93552A General Purpose 16 Bit Driver

Provides a general purpose 16 bit input/output RTE driver (DVS 72).

93590P General Purpose High Throughput Driver

Provides bi-directional data transfers between I/O device (D/A, A/D, Digital) and mass storage device at a continuous synchronous rate of 40–50 KHz (depending upon device) till one disc platter has been filled with data. Will also run with mag tape at a slower rate depending upon mag tape type.

93588B Dual Data Path High Throughput Driver

Provides bi-directional data transfers between two I/O devices (D/A, A/D, Digtal) and two discs simultaneously at a 20 KHz rate (similar to 93590P except for addition of second channel and throughput rate).

93588K High Speed Transient Recorder Subsystem

Provides capability to input data at a 1 MHz rate in blocks of up to 900K words (depending on memory size) and subsequent storage on a 7906 disc at a 180 KHz rate. This cycle is repeatable as soon as the disc is ready.

93592R 3455A/3495A High Speed RTE Driver

Provides a driver for operation with HP 59310B HP-IB interface. Allows subsystem to take 20–21 readings/second with approximately 15% CPU overhead. (A 3–1 improvement over using the standard G.P. HP-IB driver).

93596B Tek Plot 10 Software

Provides Tek 4010 A01 software only for HP computers. This product is same as 93009A Opt. 001 with interface deleted. Contact factory for prerequisites.

93596L Preston (High Speed/High Resolution) A/D Converter Interface Kit

Provides I/O card, cable, RTE driver, verification and integration into an RTE system. Requires drop shipment to DSD the customer's Preston A/D. Maximum transfer rate is up to 500 KHz with 14 bit plus sign resolution, depending on Preston A/D configuration. Contact factory for options, prerequisites and specifications.

93700A Isolated Duplex Reg Card

Provides 16 bit differential output and 16 bit optically isolated inputs plus flag and control. This card is software compatible with 12566B and connector compatible with data lines of 12930A.

93762A High Speed CPU-CPU, Data Only, Link

Provides 16 bit full duplex data only link capable of up to 300K words per second buffer to buffer.

Another Correction to the HP 1000 Compatibility Guide
By: Ted Proske/DSD

Another error has been caught in the HP 1000 Compatibility Guide (Literature stock no. 5953-3094). In the table on page 8, the maximum data rate for 2621A/P Terminals used with hardwired 12531D or 12880A interface is shown as 960 char per second. The rates should be 240 char per second for the 12531D interface and 960 char per second for the 12880A interface.

Sales Aids

HP Journals Now Available
By: Jan Weldon/DSD
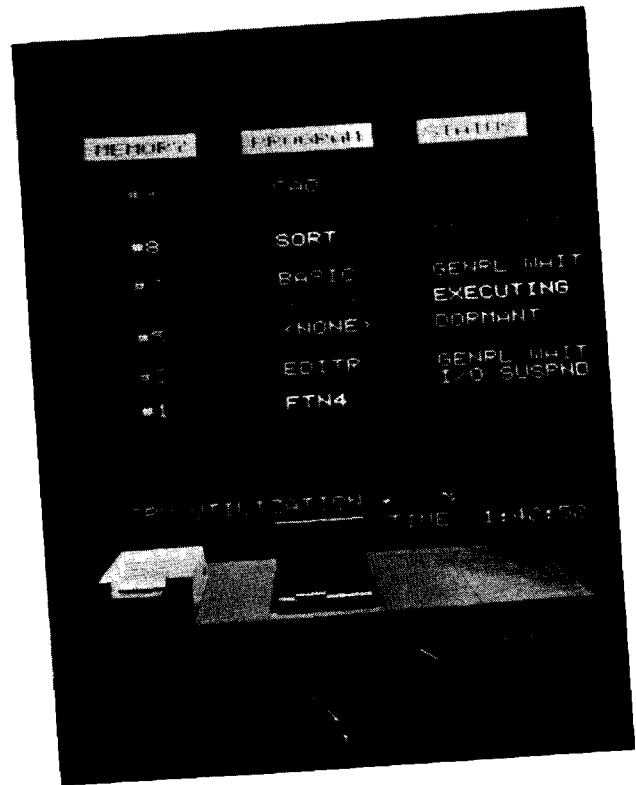
The October 1978 *HP JOURNAL*, which featured the HP 1000, proved to be so popular that our "year's supply" was completely depleted within three months. The excellent articles about RTE-IV and the F-series processor certainly made this issue a best-seller.

Because of the demand for more copies, DSD MARCOM is printing an additional 10,000 Journals. The Sales Literature Distribution Center in Palo Alto will be able to fill orders again starting March 19. So if your stock is running low or if your last order was rejected and returned, try again in mid-March by sending a new order.

Used Equipment at Super Savings
By: Judy Coleman/DSD

The following used equipment is available at great savings and all units carry a full 90-day warranty.

Qty.	Part Number	Description	Price
3	12531D-002-888	I/F EIA W/Modems	$ 283
6	12556B-888	40 Bit Output Register	455
2	12604B-888	Data Source	420
6	12731A-888	Memory Expansion Module	700
16	12741A-888	32 Kbyte Memory Module	1,260
6	12944A-888	Power Fail for A-Series	420
11	12978A-888	256 Word Writeable M-Series	700
18	12979A-888	I/O Extender for A-Series	2,925
3	12990A-888	Memory Extender	2,275
8	12991A-888	Power Fail 2112A, 2113A	420
9	12994A-888	Power Fail 2105A, 2108A, 2109A	420
6	13187A-888	16K Memory Module	980
4	2100A-008-888	8K Computer	8,750
6	2100A-016-888	16K Computer	13,000
6	2102A-888	Memory Controller	420
3	2102E-888	Memory Controller E&F Series	595
2	2109A-888	21MX E-Series	3,802
8	2113A-888	21MX E-Series	3,900
1	2895B-888	Paper Tape Punch	3,087
3	91200B-888	Video Cards	1,190

Availability approximately four weeks after receipt of order.

Please contact Judy Coleman (408) 257-7000, Ext. 3367 for transmitting instructions. Units are available on a first-come, first-served basis.

New ATE Applications Brochure
By: Jan Weldon/DSD

HP 1000 Computer Systems   HEWLETT PACKARD
Automatic electronic test
applications
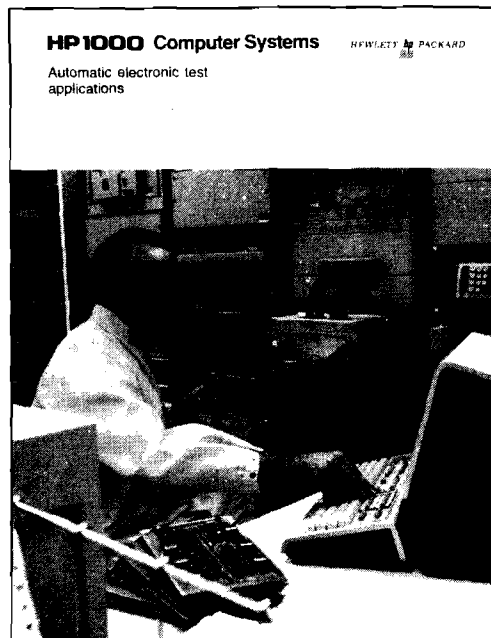
The third brochure in the HP 1000 applications series is now off the press. This 16-page, 4-color promotional piece features seven customers and how they improve testing throughput and accuracy with HP systems. Applications range from small commercial companies to large aerospace corporations.

Copies have already been distributed to the sales offices. Additional brochures (5953-3088) may be ordered from the Sales Literature Distribution Center in Palo Alto.

Automated Measurement News
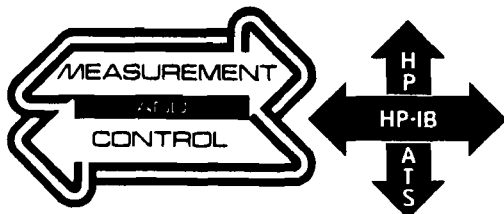
Automated Measurement News
AUTOMATIC TEST SYSTEMS & MEASUREMENT AND CONTROL PROCESSORS FROM DATA SYSTEMS DIVISION

VOL 2	FEBRUARY 1979	NO 3

2240A FEATURE APPLICATION - PRODUCTION MACHINE MONITORING AND CONTROL

By: Dave Hannebrink

PART I: PLASTIC PARTS PRODUCTION

Our next two 2240A Feature Articles look at the broad spectrum of machine
monitoring and control, especially machines used in production applications.
Examples will be chosen from the many diverse uses of 2240A's in production.
Typically, 2240A's are being used 1) to control large iron/ore handling con-
veyors for a well known multi-national corporation, 2) to control machines
that measure out of round forces on rotating tires and then grind the tires
to eliminate the forces, 3) by a large automotive company to control ejection
molding machines that produce automobile interior parts, 4) by a tobacco
company for the automatic control of smoking machines, and 5) by a chemical
company to monitor plastic foam extruders that produce plastic egg cartons,
plates, etc.

We'll concentrate this time on plastic parts production, specifically the
application mentioned in (5), and why a 2240A helped get HP a big order.
For this application (see drawing on next page) it is necessary to measure the
thickness of plastic foam (prior to actually stamping out finished plates)
in order to insure product uniformity. By improving the control of product
quality, the user realizes a *tangible benefit*, i.e., operating costs are
reduced, waste is minimized, and it gives him a price edge in a very competi-
tive market. The 2240A helps to maintain in this product quality by using
analog input cards to sense foam temperature in the extruder, and foam thick-
ness as it is being extruded. Digital input cards interface to proximity
switches on the machine, and BCD inputs from the operators' console. Digital
outputs (most with relays) and stepper motor outputs control the sequencing
of the machine and the positioning of the thickness measuring devices.

The user has also realized an *intangible benefit* because of the increased
process knowledge derived from a careful system study and data collected
from the instrumented extruders. Subsequent system designs have evolved

FOR HP INTERNAL USE ONLY

PAGE 2

from this first one; the user will now order about four systems this year, with more to follow, for various locations around the country.

The customer will use DS/1000 to coordinate the RTE-M based HP1000's (with 2240A's) for each manufacturing facility.

P.S. One final comment from the system designer, a mechanical engineer by
      trade: "The 2240A User's Manual is the best I've ever seen from a
      computer vendor." No productive time lost going to vendor courses
      to learn measurement and control programming. Next time, more on 2240A's
      in production.

PLASTIC PARTS PRODUCTION
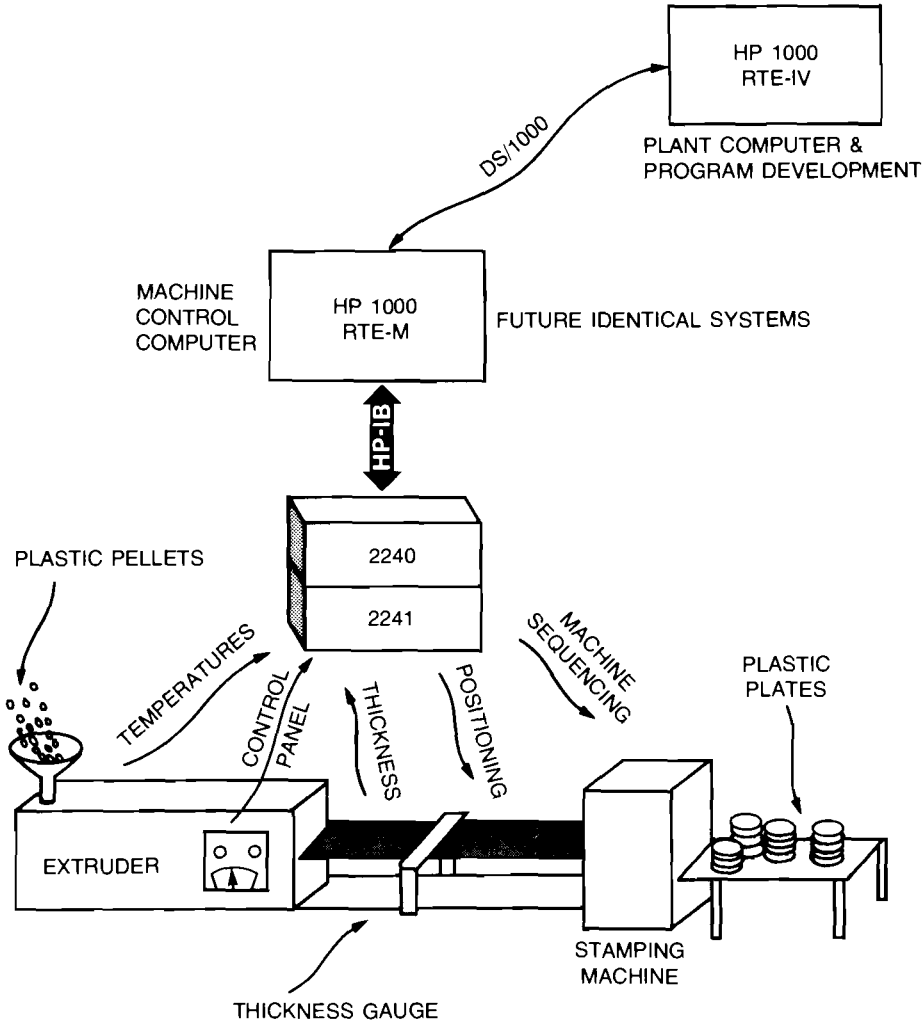
DATA TERMINALS NEWS

Sales Aids

Everything on a 2647A-2631G and/or 9872A Connection
By: Jacques Biard/HPG

Hardware Required:

2647A	: No particular option required.
2631G	: Interface is always HP-IB (02631-60145, not compatible with 2631/35).
13296A	: HP-IB Interface (02640-60128), cable and adapter for the terminal.
9872A	: No particular option required.
10631A, B, C or D	: HP-IB cable.

Installation:

2647A   : Install the HP-IB interface in a vacant slot, and set the switches to the following configuration:

A4	: Closed)	
A11	: Open) This sets module	
A10	: C) address 4	
A9	: C)	
ATN	: O	
ATN2	: C	
PL6	: C	
PL5 through PL0	: O	
FC	: C	
TA	: C	
LA	: O	
B4 through B0	: select the HP-IB address of the terminal (*e.g.* Address 8 is B4 : C; B3 : O; B2 through B0 : C)	
SC	: O	

| 2631G | : On the rear connector. |

Switches 1 through 5: define the HP-IB address of the printer. e.g. Address 6 is:

Switches 1 and 2	: O
Switches 3 and 4	: C
Switch 5	: O
LA	: O (OFF)
SRQ	: O (OFF)

No switch setting to perform in the inside of the printer.

| 9872A | : On the rear connector. |

| A1 through A5 | : define the HP-IB address of the plotter.
e.g. Address 5 is: |

A1	: UP (1)
A2	: DOWN (0)
A3	: UP (1)
A4 and A5	: DOWN (0)

Confidence Test Switch : DOWN (0)

Note that address 5 is used by MULTIPLOT as a default value (PLOTTER ? Y)

Test:

1. Run the terminal, plotter and printer Self-Tests.

2. Simplest way to check the operation of the 9872A is to load the MULTIPLOT, fill up the BAR CHART Menu and answer Y(ES) to Plotter?

3. To test the 2631G, with the 2647A in LOCAL (REMOTE key up), type ESCxdB; all the bits of the graphics memory are turned on; dump the "picture" by pressing the following keys in sequence: COMMAND — NEXT (f1) — NEXT (f1) — TRANSFER (f3) — ALL (f3) — FROM GRAPHICS (f4) — TO HP-IB # (f7) — the HP-IB address of the 2631G (eg. 6.) — RETURN.

4. Do a Hard Reset and enter Text Mode by pressing: SHIFT & ZOOM — SHIFT & ZOOM OUT — 8 — RETURN.
Position the graphics cursor and type some data; dump the graphics memory by executing the same sequence as above.

Note that in the above sequence, TO HP-IB # (f7) may be replaced with SHARED PRINTER (f6), you will simply also get the USER's identification.

It may be necessary to test the HP-IB Interface itself. For that, press the following keys: COMMAND — NEXT (f1) — NEXT (f1) — NEXT (f1) — TEST (f4) — HP-IB (f2) — RETURN.

The maximum combined length of cables is determined by the strapping of the HP-IB interface adapter; see the 2647A Reference Manual for further information.

Everything on a 2648A-2631G Connection
By: Jacques Biard/HPG

Hardware Required:

2631G	: Interface is always HP-IB (02631-60145, not compatible with 2631/35).
2648A	: with Device Support Firmware (ROMs 1818-0406-0407-0408-0409 obtained from Option 007 of the terminal or from 13261A-003).
13296A	: HP-IB interface (02640-60128), cable and adapter for the terminal.
13296A-048	: Raster Dump and HP-IB driver ROM (1818-0746). (Note that in the future, option 007 of the terminal and 13261A-003 will contain this ROM).

Installation:

2648A   : Install the ROM chip on the second Control Memory (the one with the jumper + 24 OUT or OPEN in socket 12).

Install or close jumper 12 on this Control Memory.

Install the HP-IB interface in a vacant slot and set the switches to the following configuration:

A4	: Closed	)
		)
A11	: Open	) This sets
		)
A10	: C	) module address 4
		)
A9	: C	)
ATN	: O	
ATN2	: C	
PL6	: C	
PL5 through PL0	: O	
FC	: C	
TA	: C	
LA	: O	
B4	: C	)
		) This sets HP-IB address
B3	: O	)
		) for the terminal
B2 through B0	: C	)
SC	: O	

Do not forget to check the POWER SUPPLY voltages.

2631G   : On the rear connector

Switch 1 and 2	: O	)
		) This sets HP-IB address 6
Switch 3 and 4	: C	)
		) (default for driver)
Switch 5	: O	)
LA	: O	(OFF)
SRQ	: O	(OFF)

No switch setting to perform in the inside of the printer.

Test:

1. Run the terminal and printer Self-Tests.

2. With the terminal in LOCAL (REMOTE key up), type ESC x dB; all the bits of the graphics memory are turned on; dump this "picture" by pressing GOLD — Insert character — GREEN — REWIND — Insert character.

3. Do a Hard Reset and enter Text Mode by pressing SHIFT & ZOOM — SHIFT & ZOOM OUT — 8 — RETURN. Position the graphics cursor and type some data; dump the graphics memory by pressing GOLD — Insert character — GREEN — REWIND — Insert character.

General Operation:

A — Graphics to HP-IB Printer:

1. Select Alternate I/O as destination:
   GOLD — Insert character   ESC&p5D

2. Rewind the Alternate I/O:
   GREEN — REWIND — Insert character   ESC&p5u0C

B — Alphanumeric to Printer:

1. Select DISPLAY as source:
   GOLD — f3   ESC&p3S

2. Select Alternate I/O as destination
   Insert character   ESC&p5D

3. Copy the data:
   GREEN — COPY ALL (f1),
   COPY FILE (f2) or COPY LINE (f3)   ESC&pM (or F, or B)

It is also possible to save or restore a picture to a tape; in this case, the HP-IB interface card is not required.

C — Graphics to tape:

1. Select Left or Right Tape as destination:
   GOLD — f5 (left) or f6 (right)   ESC&p1 (or 2) D

2. Rewind Alternate I/O:
   GREEN — REWIND — Insert character   ESC&p5u0C

D — Tape to graphics:

1. Select Left or Right Tape as Source:
   GOLD — f1 (left) or f2 (right)   ESC&p1 (or 2) S

2. Mark File on Alternate I/O:
   GREEN — MARK FILE — INSERT CHARACTER   ESC&p5u5C

E — Tape to printer (graphics or alpha data):

1. Select Left Tape or Right Tape as source:
   GOLD — f1 (left) or f2 (right)   ESC&p1 (or 2) S

2 Select Alternate I/O as destination:
   GOLD — Insert character   ESC&p5D

3. Copy the data:
   GREEN — COPY ALL (f1) — COPY FILE (f2) or COPY LINE (f3)   ESC&pM (or F, or B)

Note: Only one terminal is allowed on the HP-IB line.

Multiple destination is allowed (for example: left tape and HP-IB printer).

The maximum distance between the printer and the terminal is determined by the strapping of the HP-IB interface adapter; see the 2647A Reference Manual for further information.

Data Sheets in Local Languages
By: Jean-Pierre Bonneville/HPG
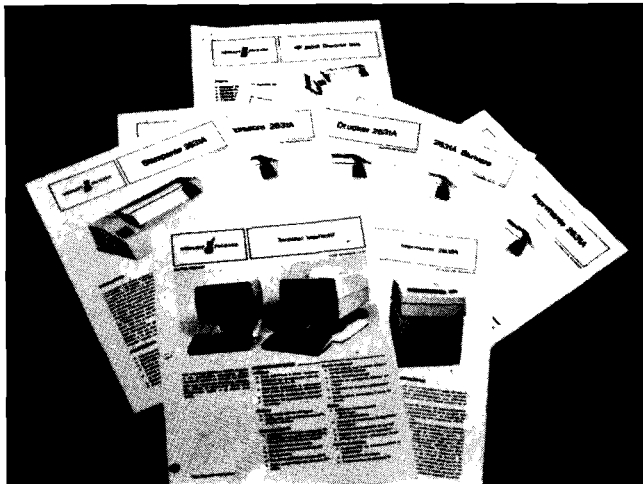
I'm pleased to announce that several data sheets have been translated and printed locally.

- You can ask for the 2631A data sheet in Dutch, French, German, Italian, Spanish and Swedish. The part numbers are 5952-9426 DU, FR, GE, IT, SP and SW respectively.

- Two data sheets are also available in French:
  2608A Printer: 5952-9430 FR
  2621A/P Interactive Terminal: 5953-2021 FR.

- Data sheet P/N 5953-0125 gives full information and print samples on the 2631A European character sets.

- Other data sheets will come in local languages. A dozen 264X family data sheets are under translation into French.

Product News

Support for 2649A
By: Jacques Biard/HPG

Some time ago, DTD introduced the 2649A Terminal and it is very likely that by now you have already been confronted with this product.

From the service point of view you should remember that these 2649A's are terminals in bits and pieces, that in most cases the standard HP firmware is replaced with customer developed firmware, and may require special hardware. All this means that you usually get an incomplete terminal, or a terminal that does not operate as a standard HP terminal, if it operates at all.

That's why the responsibility of installing the customer's application (based on the 2649A) should always rest in the customer's hands.

HP can provide installation (as per the PURCHASE AGREEMENT), but this will be limited to configuring the 2649A as a 2645A or 2648A (removing the customer's firmware and special hardware).

This will also be the method used to provide support or to test the 2649A before delivery to the customer (see IOSM 2649A-0678-02 for more info). Following this policy will surely avoid some difficult situations.

New 2648A User Manual
By: Eric Grandjean/DTD
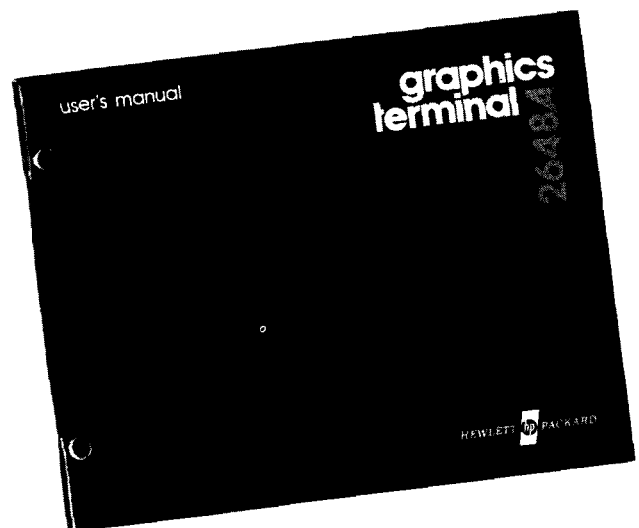
A new 2648A User Manual is now in stock. P/N 02648-90001 (1/79).

This much improved manual now contains sections covering graphic memory storage and retrieval procedures on tape cartridges. It also shows how to use the 2631G printer and the 7245A printer/plotter as graphics hardcopy devices.

Graphics devices on the 2648A are handled as source or destination device #5. On the keyboard, device #5 is represented by "Insert Line" for the "From" device, and "Insert Character" for the "To" device when used in conjunction with the Gold Key.

For full details on how to use graphics hardcopy devices with the 2648A, order your own copy of the new user manual.

Adding Special Comments to Your Multiplot Graphs

By: Tim Haney/DTD

There may be times when you want to add your own text to a bar or pie chart using the 2647 Intelligent Graphics Terminal and the 9872 four-color plotter., It's simple; here is all you need to do:

1. After the plot is finished, press CNTL/A to stop the Multiplot program.

2. Switch to an unused display window (the 2647A has six separate display windows) by pressing CNTL/PREV PAGE.

3. Press RETURN to get the BASIC prompt.

4. Using the positioning arrows on the 9872, move the pen to the area you wish to print your text.

5. Type the following into the BASIC Interpreter:

   >PLOTR (5,1)
   >CSIZE (1.5)
   >PRINT#0; "MY SPECIAL TEXT"

Let's look at what's happening:

A. The PLOTR (5,1) initializes the plotter on HP-IB address number 5. If your plotter were set to an address other than 5, then you would substitute the appropriate number.

B. The CSIZE (1.5) sets the size of the characters to be printed. You can experiment with different size letters. CSIZE (2.0) specifies characters about 1/8 inch square. A size between 1.0 and 2.0 is generally correct.

C. The PRINT#0; "XXXX" prints the text string to the specified HP-IB device.

Try it, I think you'll find it very useful!

P.S. It's dynamite for slides!

2621P Operating Speeds with the 120 CPS Thermal Printer

By: Craig Clark/DTD

As you are well aware, the 2621A/P will run at up to 9600 Baud hardwired. Data coming down the line will enter the terminal at whatever Baud rate has been established. However, the terminal can act on the data only as fast as the slowest device — 9600 Baud for the display and 120 CPS for the printer. To avoid printer overflow and the loss of data you can offer your customers two alternatives.

1. Insert nulls as required after every CR/LF at speeds above 600 Baud. This procedure will alleviate the need for any kind of handshaking.

2. Run at up to 9600 Baud with either the ENQ/ACK handshake protocol used by HP Computers (use capital E for 2621P configuration) or the Xon/Xoff handshake used on certain other CPU's (use capital X).

JOIN THE CROWD — SELL 2621A/P's

Another Current (loop) Connection!

By: Eric Grandjean/DTD

Digital Equipment's DZ-11 20 mA Multiplexer is usable with our 13260B current loop interface (or is it the contrary?). Using this interface, the DEC computer is a sourcing (active) transmitter.

Referring to DEC's documentation (drawing M7814-0-1, page 5 of 16), the active receiver connection is as follows:

   DZ-11 J1 PIN L connected to 13260B PIN 7 (CLP)
        J1 PIN M connected to 13260B PIN 6 (CLA)

Page six of sixteen, active driver:

   J1 PIN 7 connected to 13260B PIN 4 (CL+)
   J1 PIN Z connected to 13260B PIN 5 (CL–)

13260B

| 13232F CABLE | DX-11 DWG M7814-0-1 |
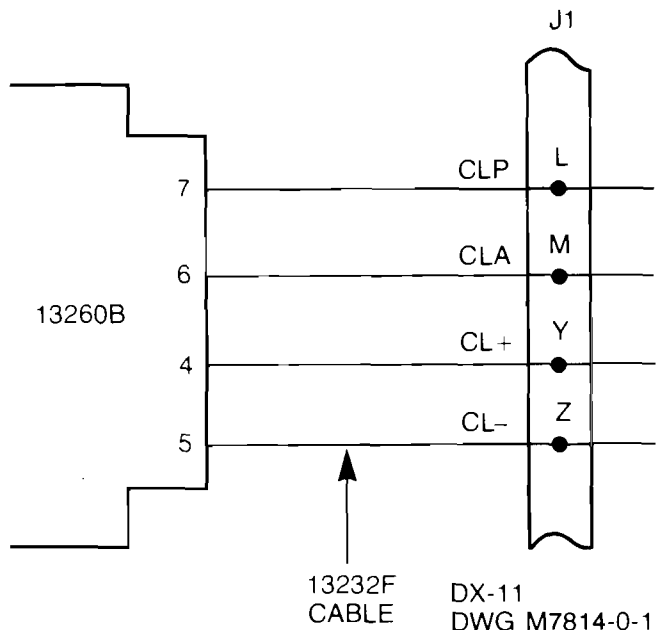
Common Mode potential between the DZ-11 and the terminal should not exceed 10 volts or excessive power will be dissipated in our current driver and may damage it. In this case a resistor can be installed in series with the CL+ line.

This DEC connection is not supported by DTD; proper testing is recommended in each case.

Thank you for selling terminals!

Terminal Review by Feature

By: Martin Gonzalez/DTD

With the introduction of the new 3075A/76A Data Capture Terminals and the 3077A Time Reporting Terminal, we now take the opportunity to present their features along with our DTD and Boise terminals for use as a convenient reference guide.

The following chart gives you a quick review of our terminal's features. We invite you to use this chart in good health and good selling!

Terminal Review By Feature

[STD = STANDARD FEATURE
OPT = OPTIONAL FEATURE
LTD = LIMITED FEATURE]

Feature	2621A/P	2640B	2645A	2647A	2648A	2649X	2631A/G	2635A	3070B	3075A/3076A	3077A	7260A
INPUT												
Keyboard	Simplified	STD	STD	STD	STD	OPT	No	STD	STD	STD	No	No
Reader		Interfaceable					No	Interfaceable	Badges, Mark Sense/ Punch Card	OPT	STD = TYPE V OPT = MFR*	Mark Sense Cards, LTD Punch Card
Cartridge Tapes	No	No	OPT	STD	OPT	OPT	No	No	No	No	No	No
Digitizer	No	No	No	OPT	No	Customer Design	No	No	No	No	No	No
OUTPUT												
Printer	Built-in 26218 Only	OPT	OPT	OPT	OPT	OPT	STD	STD	STD	OPT	No	No
Display		1920 Characters					No	No	15 Char. Numeric	NUM-STD ALPHA-OPT	ALPHA-OPT	No
Cartridge Tapes	No	No	OPT	STD	OPT	OPT	No	No	No	No	No	No
Video	No	OPT	OPT	OPT	OPT	OPT	No	No	No	No	No	No
Plotter	No	No	No	OPT	OPT	Customer Design	No	No	No	No	No	No
DATA ENTRY												
Page Mode	No	STD	STD	STD	STD	OPT	No	No	Buffered Input	Buffered Input	Buffered Input	No
Off-line Editing	STD	STD	STD	STD	STD	OPT	No	LTD	LTD	LTD	No	No
Line-drawing Character Set	No	OPT	OPT	OPT	OPT	OPT	OPT	OPT	No	No	No	No
Input Validation	No	No	Character	Character	Character	OPT	No	No	Input Medium	Input Medium	Input Medium	No
Auto Data Logging	STD	No	OPT	STD	OPT	OPT	No	No	No	No	No	No
Transmit-only Fields	No	No	STD	STD	STD	OPT	No	No	No	No	No	No

* MFR = Multi-function reader.

Terminal Review By Feature (Continued)

```
[ STD = STANDARD FEATURE  ]
[ OPT = OPTIONAL FEATURE   ]
[ LTD = LIMITED FEATURE    ]
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ADDITIONAL FEATURES

	2621A/P	2640B	2645A	2647A	2648A	2648X	2631A/G	2635A	3070B	3075A/3076A	3077A	7260A
User Programs	No	No	No	STD	No	OPT	No	No	No	No	No	No
User-Programmable Keys	No	No	STD	STD	STD	OPT	No	No	STD	STD	No	No
Character Set	128 ASCII	128 ASCII	128 ASCII	128 ASCII	128 ASCII	OPT	128 ASCII OPT Foreign Lang.	128 ASCII OPT Foreign Lang.	15 Char Numeric Display	15 Char Numeric or 64 Upper Case ASCII Display	64 Upper Case ASCII Display	Reads 128 Hollerith XMITS 128 ASCII
Plug-in Character Set	No	OPT (3)	OPT (3)	OPT (3)	OPT (3)	OPT (3)	OPT (1)	OPT (1)	No	No	No	No
Display Memory—STD	4K	5K	4K	12K	8K	0K	No	No	No	No	No	No
Display Memory—OPT	—	8K	12K	—	12K	12K	—	—	—	—	—	—
Display Enhancements—STD	Underline			Inverse Video			Underline	Underline	No	No	No	No
Display Enhancements—OPT	—			Blinking, Half-bright, Underline			—	—	—	—	—	—
Self-Test	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	No
Option Slots—QTY	0	2 +5 with Extender	7	1	4	11	No	No	No	No	No	No

DATA COMMUNICATIONS

	2621A/P	2640B	2645A	2647A	2648A	2648X	2631A/G	2635A	3070B	3075A/3076A	3077A	7260A
Line Configurations: Point-To-Point	STD	STD	STD	STD	STD	OPT	STD	STD	No	STD	STD	STD
Multipoint	No	No	OPT	OPT	OPT	OPT	OPT	OPT	No	STD*	STD*	No
Transmission Modes: Asynchronous	STD	STD	STD	STD	STD	OPT	STD	STD	No	STD	STD	STD
Synchronous	No	No	OPT	OPT	OPT	OPT	No	No	No	No	No	No
20 mA Current Loop	No	OPT	OPT	OPT	OPT	OPT	OPT	OPT	No	No	No	No
Transfer Rates: Bits Per Second	110-9600	110-2400	110-9600	110-9600	110-9600	110-9600	110-2400	110-2400	25,000	110-9600	110-9600	110-2400
External	STD	STD	STD	STD	STD	OPT	STD	STD	No	No	No	No
Custom	No	OPT	OPT	OPT	OPT	OPT	No	No	No	No	No	No

*Also, Multidrop DATALINK with 3074A.

HP 2647A Goes to the Arctic!!!
By: George Klein/CSR

Just off the production line, the 2647A has already been picked to go to the Arctic. A Canadian Federal Agency research group has picked the 2647A as their data capture device. The terminal will be periodically air dropped to one of many research outposts in the Canadian north. A specially designed "Protective Case" has been developed to protect the 2647A from *extreme* temperatures and rough handling.
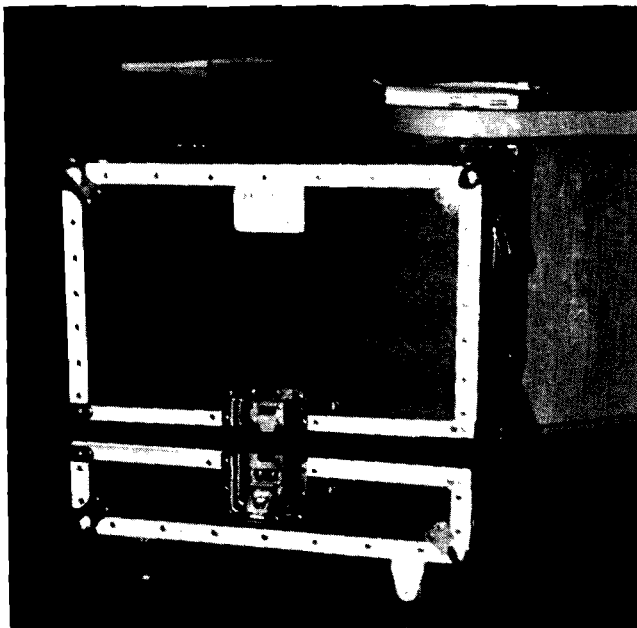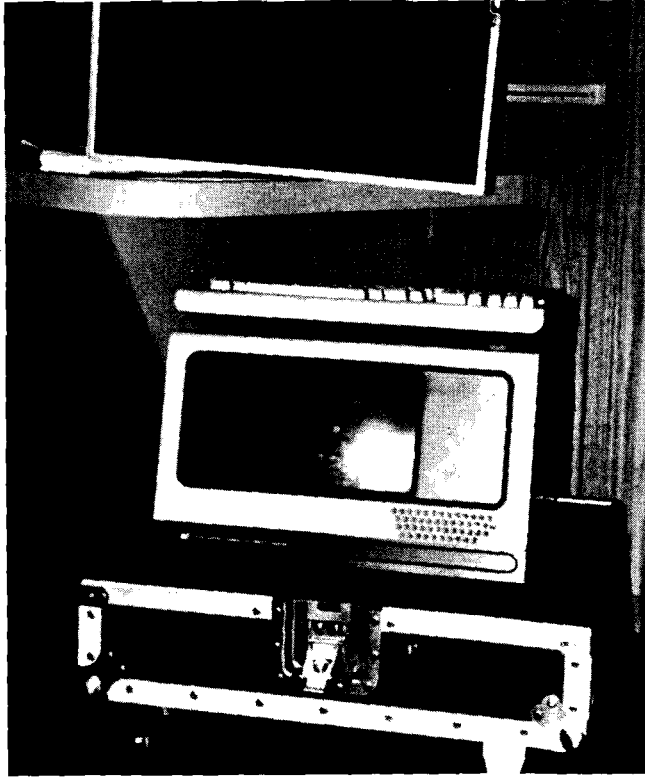
The purpose of the experiment is to gather data on the effect of extreme temperatures on the human body. Data gathered by the scientists will be stored on the cartridges and the results will be mailed back to HP for simulations and processing on two additional 2647A temrinals.

Final data will be plotted on the 9872A and printed on the 2631G. Additionally: 4-2645A's, 2-2621P's, 2631A's, and a 2631G will handle the data on a DEC 11/70 with UNITX operating system. The primary 2647A competition was a TEK-4051.

The HP 2647A was chosen because of

1. Portability
2. Cost
3. BASIC and AGL languages
4. Plotter and printer interface via shared peripheral interface.
5. RS-232 Data/Communications interface.

P.S. Cases can. be made available for sale to other HP customers. Please contact *George Klein* in the HP Toronto office for details.

Thank you *George*, for the chilly but very interesting story. (EAG)

Division News

Customer Classes
= Happy Customers + Dollars!
By: Martin Gonzalez/DTD

CONGRATULATIONS to the SE Team in Rolling Meadows! *Alex Morgan* and *Tom Gancarz* found a way to educate our customers to HP products and generate revenue at the same time.

In between blizzards and record low temperatures, *Alex* and *Tom* conducted an introductory course on HP Data Terminals for customers. And with the high commendations from our customers in the class, we feel it was an unqualified success!

Education is a selling tool. And the Rolling Meadows team used it very effectively. Here are some highlights of the course:

- 3 days, $300
- Content mainly on user fundamentals
- Interactive sessions (to CPU) and off-line exercises
- 80% of the customers from non-HP (CPU) installations
- Customers very impressed with terminals and systems
- Some customer *comments:*

  "I enjoyed the direct hands-on labs."
  "Now I know how neat and powerful the terminals are. Course should be lengthened two more day."
  "I will recommend this course to people in my group."

Again, kudos to *Alex* and *Tom* for their outstanding efforts. No doubt they have contributed to the success of the data terminals program in the Midwest.

The Not-Ready-For-Prime-Time SE's.
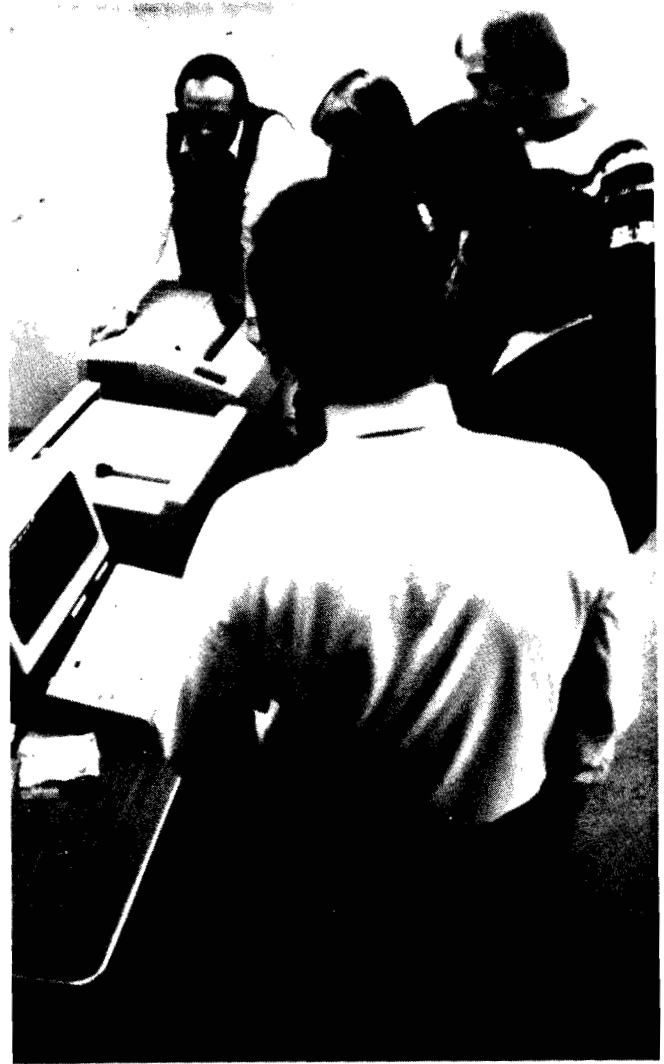
Hey, it even plots left-handed!

When the big hand is at 12 . . .

Them boards, them boards, them mother boards!

Spring 1979 Peripherals Seminars/Shows
By: Martin Gonzalez/DTD

HEAR YE! HEAR YE! HEAR YE!

Announcing HP's Spring Management Seminar Series and Equipment Exhibit. You told us that you wanted a peripherals show early this year — and you've got one!

During the Regional Sales Meetings held in the Bay Area, the Peripherals Divisions solicited your inputs on the value of a "periherals road show." You enthusiastic endorsement of a traveling peripherals show has resulted in a strong, comprehensive plan based upon what you told us your needs are:

1. Early enough to have sales impact in this fiscal year.

2. Provide assistance in selling existing customer prospects.

3. Turn up new prospects.

The HP Spring Management Seminar Series and Equipment Exhibit will do this for you! In addition, the road show has been expanded to include DSD and the HP 1000.

Here are some highlights of the Seminar/Show:

- The show is billed as HP's Spring Management Seminar series.

- The cities and dates are as follows:

Detroit	March 8-9
Chicago	March 12-13
Dallas	March 14-15
Atlanta	March 19
Houston	March 20
Philadelphia	March 22-23
New York/New Jersey	March 26-27
Washington, D.C.	March 28
Baltimore	March 29
Denver	April 2
San Francisco	April 3
Oakland	April 4
Santa Clara	April 5
Seattle	April 6
Boston	April 10-11
Los Angeles	April 17
Orange County	April 19

- More cities/districts will be accommodated in the next tour.

- Format of the show includes both seminars and equipment exhibits

- Invitations have been mailed to upper- and mid-management people with companies from all industries.

- The Divisions involved are: DTD; SDD; DSD; and Boise.

The bottom line is SALES! Working together, this will be a very successful show and an outstanding presentation of HP's salespersons and products.

For more particulars, feel free to call your Sales Development person in any of the participating divisions.

Demo Derby Rolls On
By: Bill Swift/DTD

The Demo Derby is picking up steam, and more entries are rolling in every day. With all the features and power packed into the 2647A, we've known from the start that we have a super product. One of our biggest problems has been finding ways to effectively tell our customers about all the features. Usually we end up spending most of our time demonstrating MULTIPLOT, but MULTIPLOT is only one part of the 2647A; the feature list goes on and on. The better you understand the 2647A, the more impressed you will be with its capabilities. We're convinced of this as we receive your contest entries. You've come up with a lot of fresh ideas for showing off the 2647. Keep 'em coming!

Now, let's talk about the prizes. As you already know, everyone's a winner. We have a small prize just for entering. In addition, we've decided to offer not one grand prize, but TWO! The two best entries will each receive their very own HP-38E. Keep in mind that the contest ends April 30th, so don't delay. Send your entry in "TO-DAY."

DTD DEMO DERBY ENTRY FORM

NAME _____

SALES OFFICE _____

NAME OF PROGRAM _____

I hereby certify that my program is bug-free.

_____
(signature)

Entries must be postmarked no later than April 30, 1979.
Send your entries to: *Bill Swift,*
DTD Sales Development

Names of winners will be announced in the May 15th issue of the *CS Newsletter*.

FORT COLLINS NEWS

Product News

Hard Disc Available for Use on the 9896
By: Don Porter/FCD

The 7906 hard disc is now available as an upgrade to the 9896. In order to make the 7906 work with this system, you must order software utility 88791A (cost: $500) from FCD, via a "special." The utility package includes two flexible discs containing programs for expanding file sizes and for operating FICS in a hard disc environment.

In addition to utility package 88791A, you must also order the following:

- A 7906M with Option 100 (HP-IB Option) from Boise, $14,800.
- An 88790A Hardware Upgrade Kit for the 9831A (2 ROM's and 98034A HP-IB I/F) from FCD, $1,625.
- Additional memory (16 Kbyte board) for the 9831A from DCD, if it does not already contain more than 8 Kbytes.

Features of the 7906 include:

- The ability to expand all FICS software systems except payroll and general ledger.
- All software systems resident on the same removable disc.
- An option to have accounts payable invoices spread to up to fifteen general ledger accounts.
- Procedures allowing for the backing up of specific software packs and/or all data files.
- Significantly faster throughput.

The utilities are designed to set up new file sizes on the 7906, transfer existing data to these new files, and transfer the necessary operating programs to the 7906. (Programs that are no longer necessary to the operation of FICS on the 7906 will not be moved to the hard disc.) The utilities are designed for implementation on a system already up and running with HP-supplied FICS. User changes can be made to adapt these utility programs when transferring a customer 9896 to the 7906.

For more information contact FCD marketing, (303) 226-3800, extension 2050.

TIO/250 Programming Manual
By: Wendy Huard/FCD

Besides having syntax, examples and error messages, the TIO/250 Programming manual has a complete section on programming with TIO — including tips and programming approaches. The LK3000 Utility is also described. This utility lets you log on and off the HP 3000 from the HP 250 and transfer files from either computer to the other.

The TIO/250 Programming Manual is shipped with the 45120A Serial Interface Kit, not with either HP 250 manual kit. If you wish to order your own copy of this manual, the part number is 45251-90001. It became available in mid-February.

Keyboard Overlays Now Available
By: Al Jackson/FCD

The HP 250 has eight special function keys (the softkeys) on the CRT and eight more on the keyboard. The CRT softkey definitions appear above each key. The keyboard softkey definitions are defined by using a plastic overlay. For example:

Five plastic overlays are shipped with each system. Additional overlays are now available via CPC. Order 7120-7597, at only $6.50 each.

Yes, There Is an HP 250 Manual Index
By: Wendy Huard/FCD

The index for all the HP 250 operation and programming manuals is finally available. This index is an excellent cross reference, by subject or syntax, to the manuals. A cross reference is the best way to index our manuals since sometimes you don't know in which manual to start looking. Sorry it took so long to get it out.

You can order the Manual Index (45251-90045) for $5.00. The index is included in the Programming Manuals Kit (45251-87902) and is being shipped to all who ordered the kit. A new index will be generated for each operating system revision.

HP 250 Syntax Reference Versus Quick Reference Documentation
By: Al Jackson/FCD

We reviewed the HP 250 documentation scheme (manuals, prices, etc.) in the January 9th issue of the *CS Newsletter*, discussing manual organization, titles and packaging (for easy selection and use). One of the few items needing further attention involves use of the condensed reference documents: the Syntax Reference and the Quick Reference. Let's take a look at these two items:
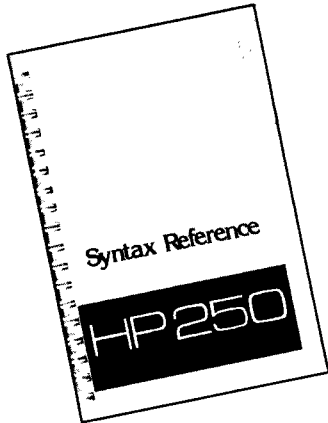
Syntax Reference (45251-90050) This is the handbook for the experienced BASIC programmer. It not only lists all BASIC/250 statements, functions and commands, but covers all software enhancements from IMAGE/250 through TIO/250. You'll also find error codes, reference tables, foreign-language keyboards, and even a handy index. This little book does not, however, show example lines or program sequences. The novice programmer must go to the programming manuals for a complete discussion of each operation.

Quick Reference (45251-62500) This is the system operator's reference and is kept in the main console drawer. Its tabbed, plastic cards cover system loading, keyboard operations, handling printer ribbons and paper, etc. Error codes are collected here for ready-reference. The Quick Reference is intended to be a permanent part of the main console; it's not a give-away item.

We will be updating the Quick Reference as new software and peripherals appear. Currently, the only add-on card is the Operating System Disc card (45251-13000) which describes where to find documentation on the OS disc file.

If you have a problem with any HP 250 manual, or have a topic for a future manual update, I'd like to talk with you. Call (303) 226-3800 extension 2029.

HP 250 Operating System Revised
By: Phil Hutchinson/FCD

A revised operating system, REVISION 1.C, for the HP 250 was recently released by FCD. HP 250's shipped after 12/18/78 include this latest operating system.

Additionally, under the terms of the HP 250 warranty program which extends 90 days of Comprehensive Software Support, the SEO has sent REVISION 1.C of the operating system (on flexible disc) and corresponding documentaiton to those purchasing systems shipped prior to 12/18/78.

Enhancements included in Revision 1.C are:

- TIO, a new DISC RESIDENT OPTION MODULE to facilitate terminal handling and data communication via 45120A.
- LK3000, a utility program which allows the HP 250 to emulate a 264X terminal to the HP 3000 for program development and data file transfer.
- RFIG, a utility program to configure the data communications ports of the 45120A.
- CONFIG, modified to allow direct branching to RFIG.
- PFORM, a utility program for listing FORMS/250 attributes to a printer.

In addition to these enhancements, bugs in the following areas *were identified and corrected* in REVISION 1.C.

- FORMS/250   CLEAR FORM command would leave extraneous invisible characters in fields if European or line drawing characters had previously been entered or displayed.
- IMAGE/250   Restructuring a data set via DBLOAD could result in lost data elsewhere in the database if the SINGLE SET and RE-ORDERING options were not specified.
- SORT/250   SORT BY would not work for sub-items (arrays) in a database.

  Synthetic LINK clause of the WORKFILE IS . . . statement did not function correctly.

  FIND operations performed while the TRACE DROM was also memory resident resulted in a .5 probability of causing parity errors.

- QUERY/250 Incorrect FIND operations due to string comparisons done in ASCII instead of local language codes (problem only in Europe).

- BASIC/250 Spurious door open errors (#'s 97, 99, & 142) following execution of DOOR LOCK, ASSIGN and SPOOL commands.

Division News

Care of the 9896 in Obsolescence — Clarifying the Commitment
By: Don Porter/FCD
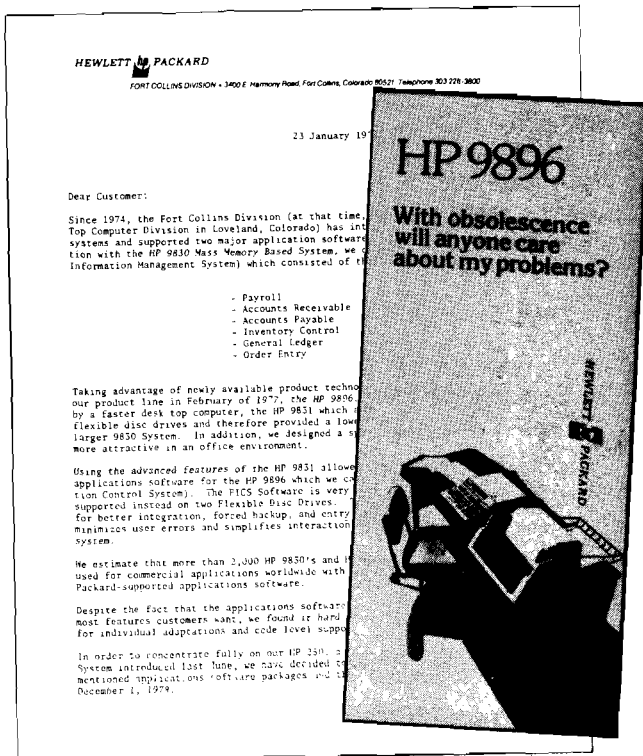
"With Obsolescence Will Anyone Care About My Problems?" That's not the lament of a brontosaur but the name of a new flyer from FCD. The flyer explains to your customer the support HP offers should trouble strike his 9896, now that HP has deleted it from the product line.

FCD mailed the flyer, plus a cover letter, January 23, 1979 to all affected customers — we relied on you to provide their names and addresses. We assumed customer names not received were omitted because you chose not to include them in this factory support program.

The FCD offer provides each 9896 customer with a free (that is, at factory expense) update of all FICS, if he or she *responds to a local HP office* by March 15. After that date, any customer upgrade will be at the customer's expense. The actual installation of the current revision software will depend on the availability of a field installer and an agreeable date for the customer.

Current revision discs will be offered on an exchange basis from FCD to those HP field people who request them. In order for the factory to accept installation charges for this 9896 update offer, the field should relay the names, addresses, and contact names of all consenting companies to FCD by March 22.

The "Obsolescence" flyer is effectively divided into three parts. The first informs the customer what he or she will receive without charge:

- Notification of any reported discrepancies in software or manuals — with temporary corrections to help avoid problems.

- Notification of software changes that correct the reported bugs in HP-supplied application software.

The second part answers seven anticipated questions. Topics covered include software revision, who should do it and when it can be done; the question of whether HP will help solve problems in software someone else modified; purchasing FICS at later dates; procedures to follow should the system stop during operation; and the 7906 hard disc just made available, which allows for mass memory expansion.

The final section outlines support responsibilities for FICS software in nine categories.

HP 250 Customer Training Course ... Is Almost Born!
By: Mike Chonle/FCD

FCD, in conjunction with the SEO, has just completed giving the HP 250 training course to customers for the third time.

During this period we have had an opportunity to thoroughly QA the materials, content and approach and now have a well-tested training course for your customers. Quite frankly, we thought the course reviews given by those customers attending these first three classes were too kind, since it was in a developmental stage throughout. At any rate, based upon the reviews, we feel that the course is on the "right track" in meeting HP 250 customer training needs.

Our plan now is to begin transforming these preliminary materials into final copy (professional slides, printed student workbook, student guide, instructor's narrative, data sheet) so that it can be kitted and made available to local sales offices and SE centers. We are targeting to have the final version of the course material available March 1, 1979. In the interim, HP 250/300 SE's can request a copy of the preliminary materials if required for local customer training. (Remember, HP 250 customer courses were held and are scheduled at the Systems Engineering Center in Cupertino February 26 and again April 16.)

You'll be notified when the finalized customer training materials are orderable.

Order Processing

APO's Enter Pending Orders into the Queue — Temporarily
By: Judy Perdue/FCD

Advance Purchase Orders (APO's) let you reserve one or more HP products for a customer for a period of up to thirty days.

You should place an APO only when you have actually made the sale, and know there will be a delay in issuance of a formal purchase order. Thus, the APO becomes an important tool when quick delivery is critical to your customer.

You enter an APO by sending a TWX to FCD Order Processing with the following information: customer name; sales order number; date required; rating and contract number, if applicable; model number and options; quantity and other appropriate information.

APO's are scheduled according to current availability. We cannot schedule "inside" availability except when a DO or DX rating has been applied and when the required date is inside availability. Deliveries cannot be scheduled within the validity period (30 days) of the APO.

Finally, unless a HEART order has been received, the APO automatically cancels thirty days after the transmission date of the TWX. So make sure you get the formal purchase order finalized and a HEART order entered quickly — otherwise you will lose the order priority established by the APO.

Production Hold Lifted from HP 250
By: Dick Hanson/FCD

You just can't keep a good computer down.

The production hold placed on the HP 250 several weeks ago has been lifted as a result of discovering the cause of the flexible disc problems and the implementation of a tested and valid fix.

All current orders on the books at FCD will be reacknowledged within the next five days so customers will know when to expect their shipments.

New orders will be quoted from the Corporate Availability Schedule.

With the reliability of the HP 250 now assured, HP can confidently provide its customers a truly reliable small business computer.
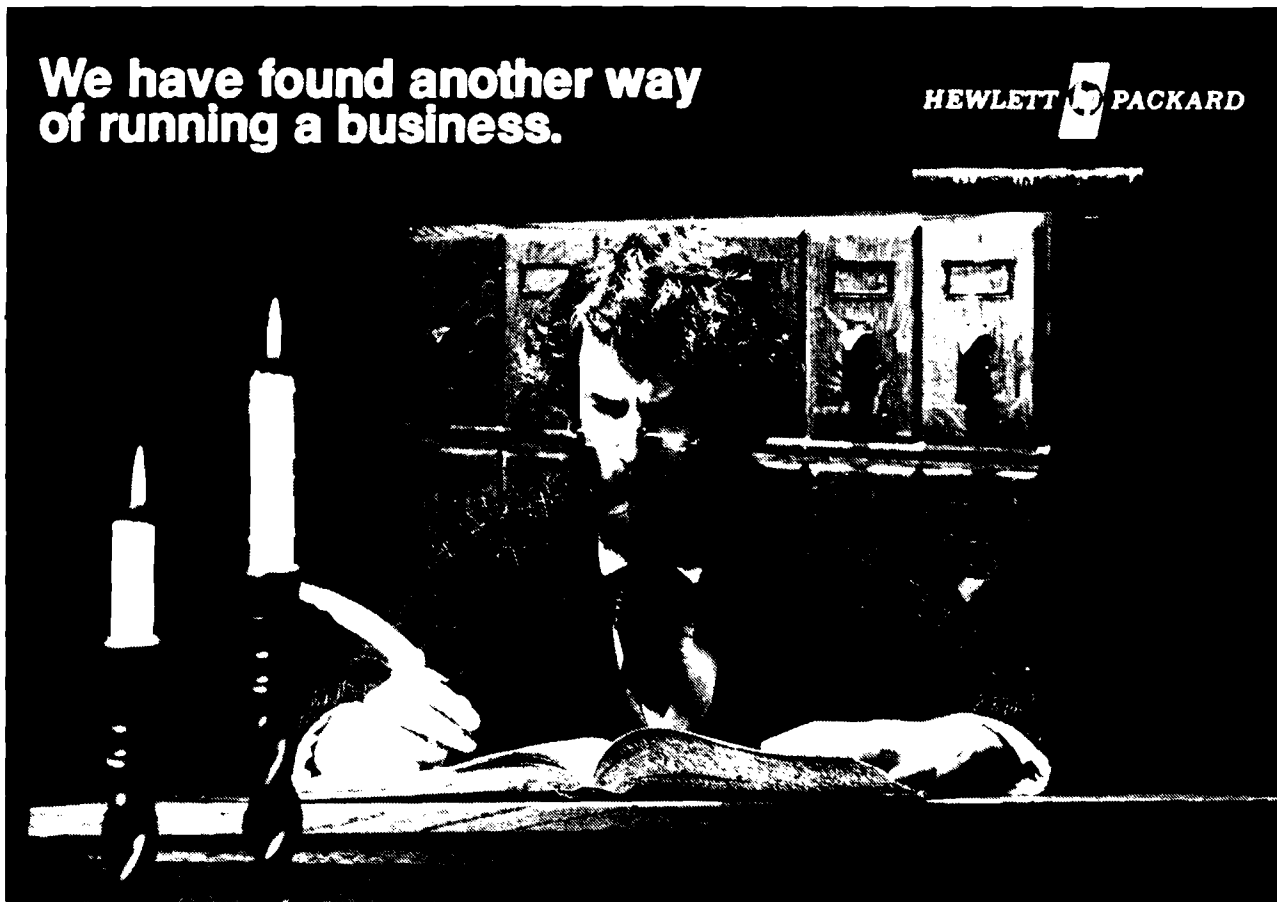
Hewlett-Packard ends the computer compromise.

Now you don't
have to put up with a
computer that doesn't really fit
your needs or shop around
hoping to find one that does.
HP has created a range
of business systems, priced
from £15,000 to £150,000*
designed to work
the way you
work.

This is the first sophisticated computer that's simple to operate. By designing the keyboard like an electric typewriter and the numeric pad like an adding machine, we've made it possible for a clerk-typist to sit down at the computer and feel right at home. The adjustable video screen makes viewing easy, too. And the data base manager, which consolidates information into easily accessible files, gives you vital management data that's immediate and up-to-date. The price is from £15,000.*

The HP 250

This advanced system can handle up to 16 users from its compact console, which features an innovative display. Eight special keys on the right side of the screen can be programmed to lead you step-by-step through each task. Again, data base management is a vital ingredient in organising your information. And an efficient operating system lets you access data at remote terminals at the same time the computer is sorting and processing other jobs. The starting price is £24,000.*

The HP 300

This puts the flexibility of our popular HP 3000 computer into a compact desk-sized unit. It will interact with people at terminals all around your company handling both on-line and batch processing jobs simultaneously. The Series 33 can work with five high-level languages, and also has our award-winning data base management capability. The price? From just £44,000.*

The HP 3000 Series 33

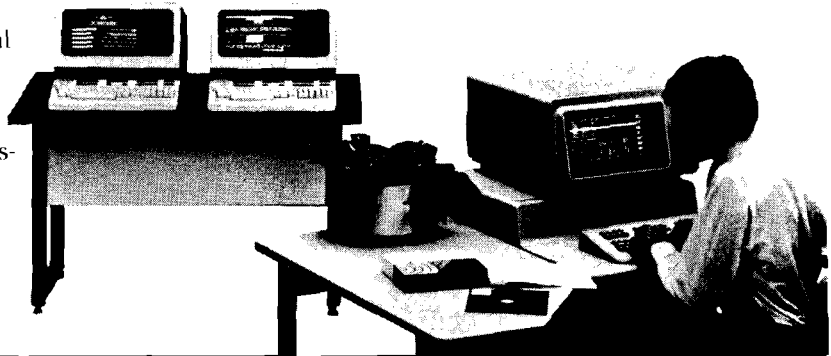Our most powerful system, it can process 4,000 transactions an hour at multiple terminals. The main memory expands up to two megabytes, with another 960 MB available on discs. It also has both data base management and networking software, including the ability to link with our technical computers in a factory information system. It's priced from £72,000.*

The HP 3000 Series III

So don't compromise between price and performance. Write or fill in the coupon for complete information about Hewlett-Packard's powerful, versatile and economical computer family.

HEWLETT **hp** *PACKARD*

Winnersh, Wokingham, Berks. RG11 5AR. Tel: Wokingham 784774.

*Prices correct at time of going to press.

To: Hewlett-Packard Ltd., King Street Lane, Winnersh, Wokingham, Berks. RG11 5AR.
Please send me details on:

☐ HP 250   ☐ HP 300
☐ HP 3000 Series 33   ☐ HP 3000 Series III
☐ HP Terminals

My area of application is:_____

☐ Please phone me/my secretary for an appointment.
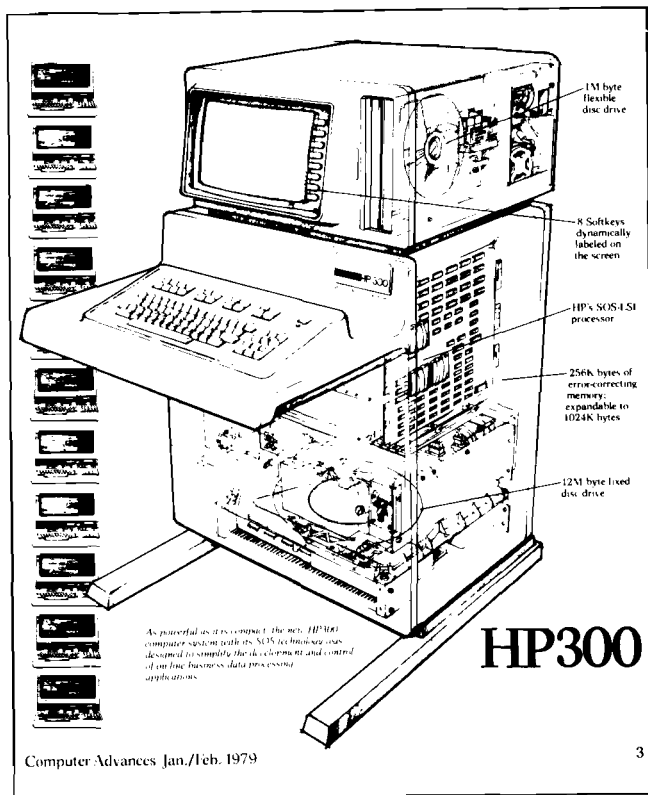
Name_____ Position_____

Organisation_____

Address_____

Postcode_____ Tel. No._____ Ext._____

GENERAL SYSTEMS NEWS

Sizzle, Sizzle
By: Carol Scheifele/CSG

- 1M byte flexible disc drive
- 8 Softkeys dynamically labeled on the screen
- HP's SOS-LSI processor
- 256K bytes of error-correcting memory; expandable to 1024K bytes
- 12M byte fixed disc drive

As powerful as it is compact, the new HP 300 computer system with its SOS technology was designed to simplify the development and control of on-line business data processing applications.

HP300

Computer Advances Jan./Feb. 1979   3

The HP 300 article in the January/February issue of *Computer Advances* has produced more hot leads than any article in the three year history of the publication. There are 55 sizzling leads — people who want an HP Sales Representative to call them immediately — not people who just want literature.

Upon receipt of the reply post card requesting a contact, CSG sends a COMGRAM to the appropriate DM who, in turn, informs the appropriate Sales Representative. GSD Sales development, under *Vijay Kapoor's* direction will be contacting you to ensure that the leads did reach you.

These are an important prospect source — someone's got to be excited and interested in the HP 300 to want an HP contact. An equally significant number of people wanted literature, in fact 900. And the post cards are still pouring in!

Just to give you an idea of the caliber of these leads — here's a sampling of the companies — any of them in your territory?

Firestone Akron, OH 44319	Univ. of Pennsylvania Philadelphia, PA 19174
The Upjohn Co. La Porte, TX 77971	Boeing Computer-Services Lexington Paris, MD 20653
Midstate Tool & Supply Altoona, PA 16601	Organization Change Assoc. Somers, CT 06071
Ernst & Ernst Hartford, CT 06103	Hopkins Mfg. Emporia, KS 66801
Computoll Services New York, NY 10017	University of Utah Salt Lake City, UT 84112
Tenneco, Inc. Houston, TX 77001	Denny's, Inc. La Mirada, CA 90637
Context Building Supply Co. Coral Gables, FL 33146	Intrastate Radio Burbank, CA 91506
Michigan State University East Lansing, MI 48824	ITT Federal Electric Vandenberg AFB, CA 93437

Transaction Processing That Pays for Itself
By: Rich Edwards/GSD

Application: Order Entry/Inventory Control
Industry: Distribution/Manufacturing

With an on-line sales order processing, invoicing, and inventory updating completed in a single entry, it is now possible for a Western U.S. office products company to fill sales orders, paperwork included, within only two hours. Thus, the invoice accompanies the shipment for realtime billing.

The company's president estimates that the system will save enough in eliminated postal charges for separate billing to pay for itself in five years. With sales and mail rates on the

rise, he anticipates a total savings of $125,000 by 1981. And this does not include the extra savings on envelopes and clerical help.

In addition, the company's 6,000 customers pay their bills sooner. Accounts receivables have dropped from an average of 48 days to 38 days. At the same time, inventory turnover of 14,000 items climbed from about five to 8.5 turns per year.

What has happened is that sales volume rose by about 35 percent while inventory and staff requirements remained the same. "Under a batch system we would have had to hire a minimum of four extra people because everything was done after the fact. We'd have people double checking invoices against shipping slips and then sending the corrected information back into the computer," the president recalls.

Now, with a system that is virtually cost-free, the company has beefed up its customer services, streamlined its fiscal and management tasks and developed a software package that has been successfully marketed to other small and midsized enterprises on a timeshare basis.

Using the HP 3000 Series II Model 8 and a network of 18 HP 2645 display stations, the company's staff can give definitive answers within 5-10 seconds to customers who inquire about the status of their orders. Using the IMAGE/QUERY database management system, an employee simply instructs the system to display the order on the terminal screen. The system then lists the specific items, the quantity ordered, warehouse code numbers, prices, date ordered, and date of shipment. Since the computer stores the original transaction in its memory, the information is available instantly without any paperwork.

Employees like the system, the president points out, because it provides easy access to any data they require. They can readily obtain a complete history of the customer's orders and full inventory without going to other departments and staff. "Our people tell us what they want, and we come up with the capability. Once they get accustomed to using the terminal, you can't take it away from them — they'd fight for it," he says.

Managerial staff get what the president calls " 'now' information now." Since all transactions are entered directly into the system, management can ask for up-to-date reports on an ad hoc basis geared to the particular need at hand. The president says nonprogrammers like himself can use the system directly because QUERY is close enough to English to permit access by all management personnel.

In the past, the company relied on a staff of programmers to process its data. Keypunchers entered all transactions into the mainframe and then relayed the printed data back to the appropriate departments.

In contrast, the firm's sales manager now can ask the system for an immediate breakdown of current sales volume by such factors as product category, individual product, customer, location of customers, sales-person, vendor, etc. The same type of report can be generated to analyze profits as well, and the entire spectrum of data can be used as a forecasting tool!

The system, with 512 Kbytes of main memory, operates 24 hours a day. The hours between 6:00 A.M. and 6:00 P.M. are reserved for on-line transactions and continuous entry inventory changes. All other processing is handled automatically at night by a sleeper program that directs the machine to turn itself on and perform the assigned tasks, drawing on data stored in the disc unit.

Still in the research and development stage is the company's innovative arrangement with a major local big-city bank. A CRT terminal located in the bank links it directly to the company's central HP 3000 computer system. Bank personnel merely press a key to obtain a list of supplies in stock. They key the order directly into the terminal, and an invoice is printed out seconds later at the company's warehouse. Deliveries are made daily so that the bank requires no stockroom.

Four terminals are located at a local agency that uses the system on a timeshare basis along with the company's own software package written for distributors. In addition, two terminals have been sold to a hardware distributor in a nearby city. The president expects the company's software system and timesharing to spread rapidly to other distributors and manufacturers.

For more information on this application, contact *Regina Fanelli*, Ext. 2748, or *Rich Edwards* at GSD.

General News

HP 300 SE Program Library
By: Ann McCown/GSD

An HP 300 SE Program Library, separate from the HP 300 User Contributed Software Library, is being set up as a mechanism for distributing programs of interest to Systems Engineers. SE On-line Support will not "support" these programs — we will act only as a clearing house to make them available to others.

The intent of the SE Library is to provide an internal mechanism for sharing demos, utilities, conversion programs, and programs that might be of a sensitive nature such that they should not be generally available outside. To start with, the library will include demo programs, utilities, and games. Other categories will be added later as appropriate.

Contributions will be gratefully accepted. Very little "filtering" will be done on contributed programs — almost anything will be included provided it is reasonably well documented.

This library will be orderable as the HP 300 SE Program Library Subscriptions Service, part number 5955-3220. The package will consist of one or more flexible discs that will contain both program files and sequential files containing the documentation for the programs. It can be ordered from *Ralph Sierra* at the Software Distribution Center in Cupertino. Order by TWX at 5006.

HP 300 "World's Best"

By: Bob Bowden/GSD

HP 300 has scored another first through its innovative packaging design. As part of the world's largest packaging design show, Pack Expo '78, held in Chicago, HP 300 took top honors as the "Best in Show." It also won first place in the general packaging category and will be featured in six national packaging and material handling trade magazines in the near future.

Here is an excerpt from January's HP Measure that announced the awards:

All the best packaging designs were there at Chicago for Pack Expo '78, the biggest gathering of the worldwide packaging and material handling industry. From among the hundred of examples entered in the annual design contest, an HP design was chosen both as best in the general packaging category and "best in show." In other words it won title to being the world's best packaging design concept in 1978!

It is indeed a very neat package. First, it provides a mobile platform on which to move HP 300 computers from station to station during assembly. With caster wheels removed, ramp up, and pastic dust cover secured, it becomes a shipping container complete with its own shock-absorbent pallet. On delivery at a user destination, the HP 300 can be rolled down the hinged ramp and plugged in for operation within five minutes of arrival. Moreover, the cost of fabricating the HP 300 transport module is still comfortably within the $100 limit originally set by the designers.

On wheels into a heat test...　　　...almost ready for shipping...　　　...and fast unloading by customer.

Congratulations go to *Pat Wright* (GSD) and *Bill Kropf* (CSG) for their origination of the HP 300 "Transport Module" concept, and to *Jack Kordich* (DSD), *Bob Schaeffer* (GSD) and *Tony Napolitan* (GSD) who helped in the design.

ANOTHER FIRST FOR HP 300!

HP 300 SE Training
By: Brenda Stone/GSD

Our first class of SE Training, Phase II commenced in February. By the time the SE's have completed Phase II, they will have gained experience using the advanced support package and will be able to:

- Analyze and predict the performance of user applications.
- Recommend program and file structures and memory configurations.
- Isolate, verify, and report subsystem problems.
- Write moderately complex SPL-II/300 programs and library routines.

Before System Engineers take Phase II, they must have completed Phase I. Upon completion of Phase I, the SE has a solid HP 300 technical foundation which includes the ability to:

- Position the HP 300 in relation to other HP products.
- Demonstrate the HP 300 effectively.
- Prepare and run benchmarks.
- Assist the Sales Representative in recommending configurations, program structure, file organizations, and training implementation plans for customers.
- Assist the customer with conversion, system installation, documentation, bug reporting, and on-site training.

The first of several Phase I training classes began in July, 1978. Phase I graduates are now stationed all around the world.

Phase I training is two weeks long; Phase II takes four weeks. Both courses consist of in-depth lectures complemented by extensive hands-on lab sessions. More specific information about these HP 300 SE Training Courses can be found in the HP 300 Product Support Plan.

Both Phase I and Phase II training are offered several times this year. Check the CSG Sales Training Calendar for exact dates.

CSB News

Introducing CSB-Commercial Systems Boeblingen
By: Alan Nonnenberg/CSB

In 1979, the Commercial Systems Divisions (FCD, GSD) are making a major investment to establish a larger presence in Europe for HP's Commercial Systems. Using the Boeblingen Manufacturing facility and commercial marketing group as a base, the product programs, sales support, technical support and merchandising activities are being expanded to include the entire commercial product line. Our objective is to create a favorable selling environment in Europe and help the European field beat their 1979 sales goals.

The role of CSB is to act as the marketing representatives for GSD and FCD in Europe and be the liaison for all training, support, and product assistance. We will manage localization efforts for hardware, software and documentation. CSB will begin manufacturing the HP 3000/33 in Boeblingen in May and the HP 300 in July in addition to our on-going work to support your success with the HP 250. We will also be localizing financial software for the HP 250 into German, French and British English and converting the new manufacturing software from GSD into German, French and British English as well.

What Support Can You Expect?

In 1979 you will begin receiving all factory support you would expect from a systems division marketing department. We will be providing the following:

For Sales Reps:

● Product sales training in all Commercial System products scheduled regularly.

● On-line phone-in support to Sales Development to assist in solving problems and getting orders.

● Cooperative sales calls to your major account customers and large system OEM's to help you describe HP's commitment to the Commercial Systems business in Europe.

● Factory visits for your important prospects and customers.

For System Engineers:

● Training courses taught by qualified instructors to allow you to receive the same training as your counterparts in the U.S. "Catch-up" training courses will be offered in February and March, followed by regular offerings of the

standard U.S. courses. Initially, we will be using US instructors and later CSB instructors as our group grows.

● On-line phone-in support for technical problems and hot-site assistance.

● Coordination of SMR's, SSB, bug reports for all European installations. Complete support for all CSB-developed software.

For Customer Engineers

● Enhance our existing CE support for the HP 250 to include factory technical help for the HP 300/HP 3000 as we move into manufacturing of these products. This includes scheduling of product specialist training, on-line technical support to product specialists, start-up coordination for new products.

All European District Sales Managers and Country Sales Managers should have received a copy of our marketing plan by 15 February 1979. We encourage you to review this plan and learn more about how we can help you be successful. As of 31 December, the European Region has processed about 50% of worldwide HP 300 orders, two thirds of all HP 250 orders and are 150% of quota for the HP 3000. We are pleased to be a part of the HP European Commercial Systems team and look forward to supporting your continued success.

Product News

HP's CMOS on Sapphire Rates Attention
By: Chris Sauer/GSD
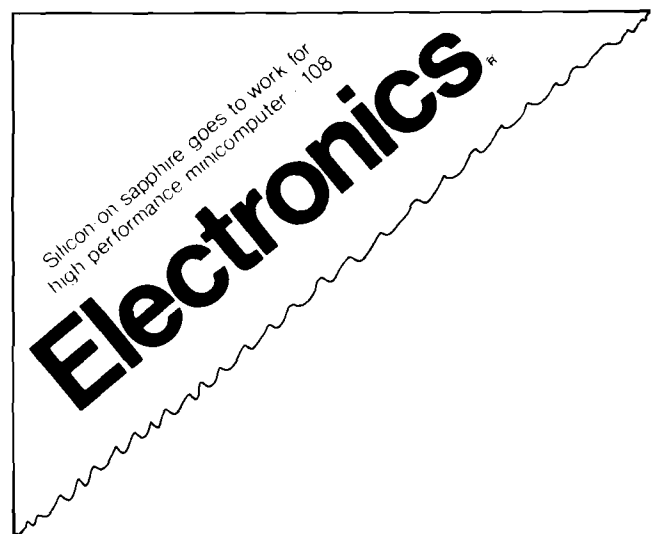
Electronics Magazine (February 1, 1979) featured an article on HP's use of CMOS on Sapphire technology in the recently introduced HP 300 computer system. Technically inclined customers may be interested in this non-promotional factual presentation of the impact of CMOS on Sapphire on HP 300 design, architecture and performance. Copies may be obtained from HP 300 Sales Development.

Do It with Dots on a Series III

By: Rich Edwards/GSD
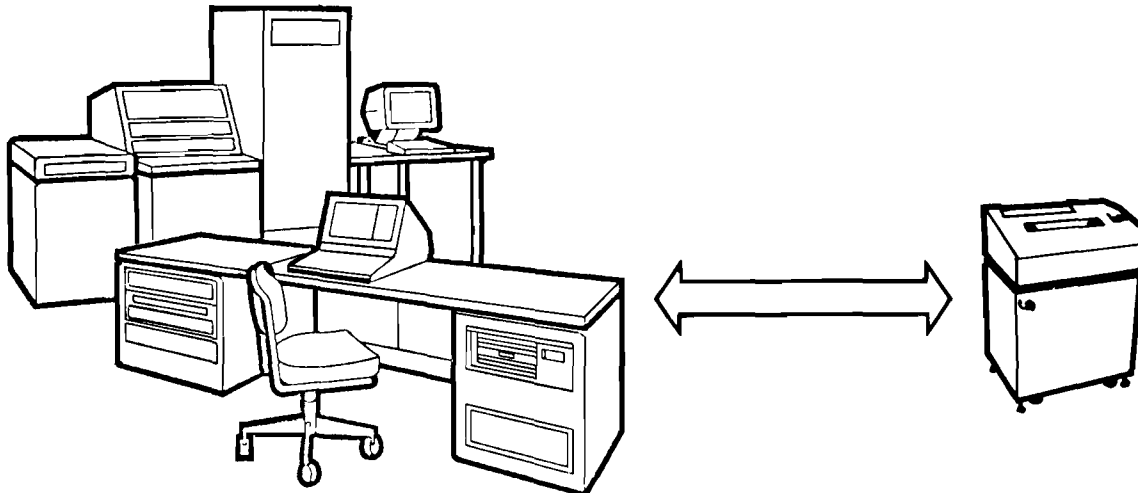
You've seen it on the Series 33; now you can see dots on Series II and Series III systems. Dots from Boise's HP 2608A line printer, that is. This month the 2608A driver for Series II and III systems is on its way to the field on Installation Tape (IT) 1906.

Boise is hard at work cranking up production to fill the orders in-house. The HP 2608A offers your customers:

400 line per minute printing — upper case ASCII
340 line per minute printing — lower case ASCII
16 channel electronic VFC (Vertical Forms Control)
Up to 6 part forms
6 or 8 lines per inch
High resolution 5 × 9 dot matrix true lower case letters and descenders (commas, etc.)
Long life ribbon
Multi-level service contract

Note that MPE III (on Series 33, II and III) does not support the graphics capabilities of the 2608A. The user doesn't have access to these capabilities, either, under MPE. The 2608A is supported as a "print and space" device, only, for interchangeability with other printers on the HP 3000.

When ordering, be sure to specify the correct HP 3000 option. The base 2608A printer is U.S. Factory base priced at $9,250. For a Series 33, order Option 333 for $565 (U.S. FBP). On the Series II and III order Option 300 for $650 (U.S. FBP) and don't forget the Series II/III line printer controller, HP 30209A, priced separately at $1,275 (U.S. FBP).

The New APL/3000

By: Carolyn Morris and Jim Kennedy/GSD

APL/3000 has been enhanced with seven major new features available with the 1906 MIT. APL/3000's current functional and performance capabilities can provide qualified customers with a product that will cost-effectively meet their APL application processing needs. These enhancements provide advantages as indicated in the table below:

New APL/3000 Feature	APL Customer Advantage
1. APL Component File	• Simplified file creation and manipulation for APL data
	• Ease of conversion from large APL timesharing systems
2. Error Handling	• Secure applications environment (e.g., User-defined functions handle execution errors).
3. Commercial Formatter	• Easy design of a variety of reports.
	• Ease of conversion from large APL timesharing systems.
4. Programmatic Access to System Commands	• Expanded use of 3000 system capabilities.
	• Ease of conversion from large APL timesharing systems.
5. External Procedure Calls	• Efficient use of HP 3000 subsystem resources.
	• Ease of conversion from large APL timesharing systems.
6. Distributed Systems Extensions	• Expand APL capabilities to distributed networks.
7. Double Word Integers	• Large Vector/Matrix Dimensions.
	• Ease of conversion for APL applications with large array processing requirements.

Your commitment to implementing the APL/3000 enhancements installation and support plan will insure that HP achieves the following objectives:

- Attain an increased level of satisfaction with the current APL customer base.

- Provide a quality product, to be used in pursuit of your normal field selling strategy, for those manufacturing accounts which need APL/3000 capabilities.

- Clearly characterize APL/3000 application performance capabilities in order to assure the success of future installations.

To assist you in accomplishing these objectives an APL/3000 SE training course has been developed and is available at your PICS Center library. Successful completion of this course or the equivalent and the approval of an SE Manager will qualify SE's to screen potential APL/3000 customers using the "Customer Qualifications Guidelines." These guidelines specify that an APL/3000 customer must:

1. Be willing to use APL performance data, configuration and optimization (see SE Note #142).

2. Have an established APL application set, or have a contract with an experienced APL software consultant (e.g., OEM) to design and install their major APL applications, which will execute efficiently on their HP 3000 configuration.

3. Have at least one experienced APL staff programmer.

4. Have at least one APL staff programmer take
   a. "HP 3000 — A Comprehensive Introduction" and
   b. "HP 3000 — Systems Management and Operations" (or the equivalent).

5. Be willing to use
   a. The APL 3000 Reference Manual (especially the problem tracing and debugging sections in Chapter 10 of the APL/3000 Reference Manual).
   b. Competitive conversion considerations (see SE Note #144).

Your assistance in implementing the APL/3000 installation and support plan will be the key to meeting HP's customer satisfaction objectives and to the success of APL/3000 customer installations.

HP 300 Software Contributions
By: John Whitesell/GSD

While the advanced, office-oriented HP 300 hardware is more visible than the software, and therefore probably easier to discuss with customers, we think that over the long term, it will generally be the AMIGO/300 operating system that will cause customers to choose the HP 300. In fact we believe the HP 300 is the best system on the market for developing and implementing many interactive dedicated or turnkey systems for departmental (i.e., non-EDP personnel) use. Let's look at some of the reasons why:

- The advanced, friendly features of the AMIGO/300 IDS (dynamically labelled softkeys, windowing, horizontal scrolling, Attention key, etc.) make the HP 300 not only easier to program but also easier to use in sophisticated single-terminal or supervisor-console/multi-terminal applications.

- On-line program editing and on-line symbolic debugging greatly shorten the program development cycle. Therefore putting applications on the HP 300 will generally cost less and be up and running faster.

- A friendly, consistent file system provides six different file structures, including Memory files which offer a fast and easy way to dynamically transmit data between programs in a multi-programming environment. Thus, improved program performance and improved programmer productivity. These file system capabilities are directly attributable to the AMIGO/300 operating system

- Data segmentation, also a feature of AMIGO/300 and the HP 300 hardware, permits program data spaces considerably beyond what is supported on the HP 3000. Data segmentation is particularly useful in applications such as forecasting, econometric modelling, and in general manipulating large arrays of data.

- Multi-tasking, still another key ingredient of AMIGO/300, makes it much easier to write a highly efficient program (with file sharing, common data sharing, etc.) for an application where several terminals are performing the same function.

And all of the above capabilities are directly available from a high-level programming language, which means programmers can concentrate more on the application and less on manipulating bits.

There are of course several other key features of the HP 300 operating system but we've found from customer feedback to date that the features mentioned above are generally considered the "top five."

Certainly the HP 300 hardware is outstanding, but when that isn't enough to get a prospect signed up, try softening them up with a pitch on the software.

GOOD SELLING!

HP 300 Serviceability Features — Part 1
By: Curt Gowan/GSD

There are serviceability features intertwined throughout the HP 300 hardware and software. Many of them are unique to this product. Taken together, they give you a real competitive edge in presenting the HP 300 to a nuts-and-bolts/bits-and-bytes prospect. The purpose of this four-part series is to give you the knowledge to discuss and demonstrate these features.

(The articles are from the Diagnosis Tutorial, Section 710 of the HP 300 Service Handbook; additional comments are included on how to demonstrate the features. By the way, your HP 300-trained CE or System Specialist knows this material well and is a valuable resource in this area.)

First, we'll talk about the serviceability features which stem from the HP 300's innovative mechanical design; then the features in the hardware and software will be covered in the following articles.

Mechanical Design for Serviceability

Much attention was paid to serviceability in the HP 300's mechanical design.

1. Integrated System Unit
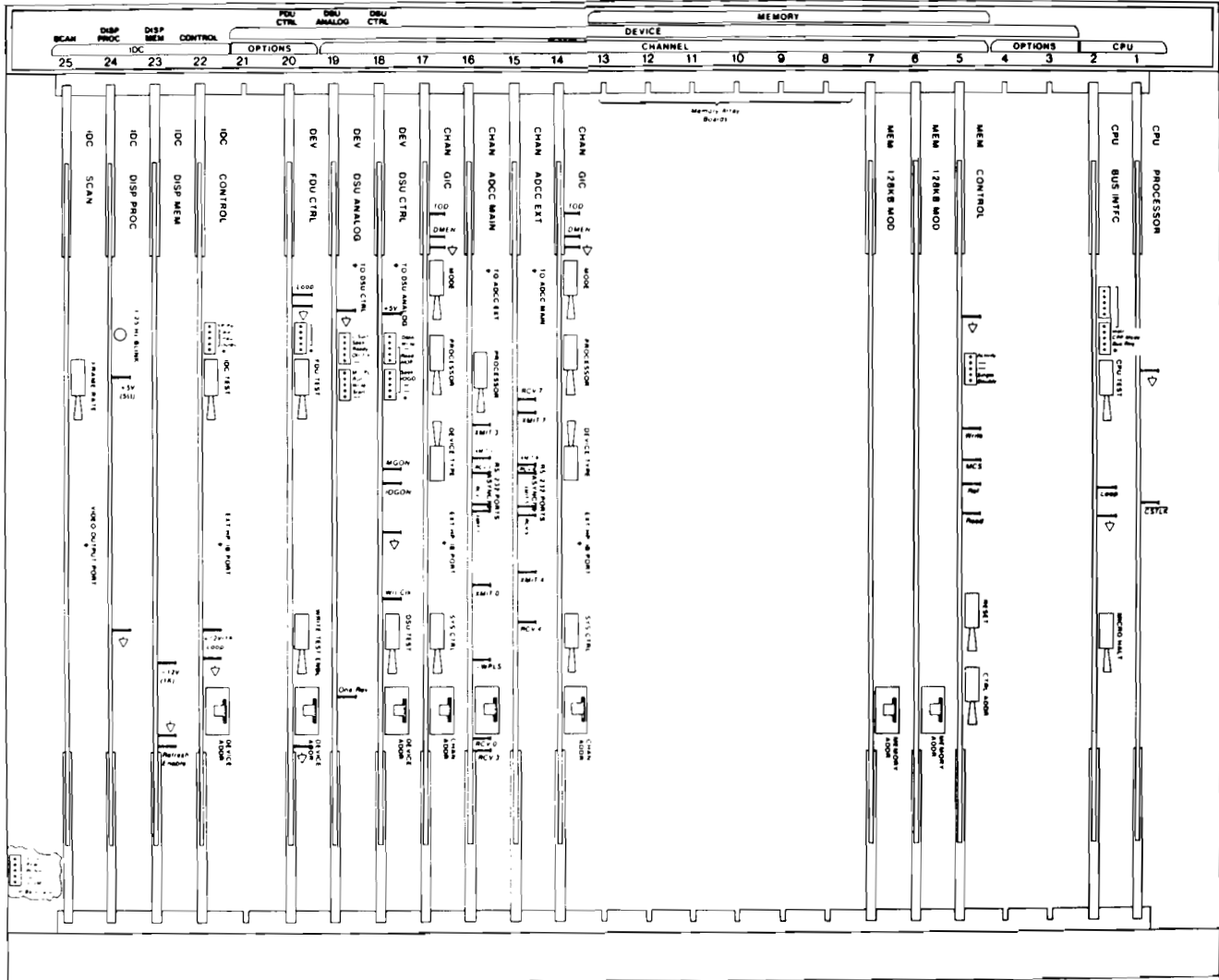
HP 300 System Unit Card Cage

The 25-slot card cage in the System Unit contains not only the CPU, Memory, and I/O boards but also circuit boards for the console (IDS), flexible disc, and 12 Mbyte integrated system disc.

Except for the circuitry which must be near either the display tube, the disc mechanisms, or the power supply, every mainframe PC board is in the System Unit card cage — with all configuration switches accessible on the board edges. This simplifies diagnosis by making it very easy to check the mainframe's hardware configuration for human error. (Demo: open the rear door; show the board labels, the white configuration switches, the red test switches, and the LED's.)

2. Simplicity of Design
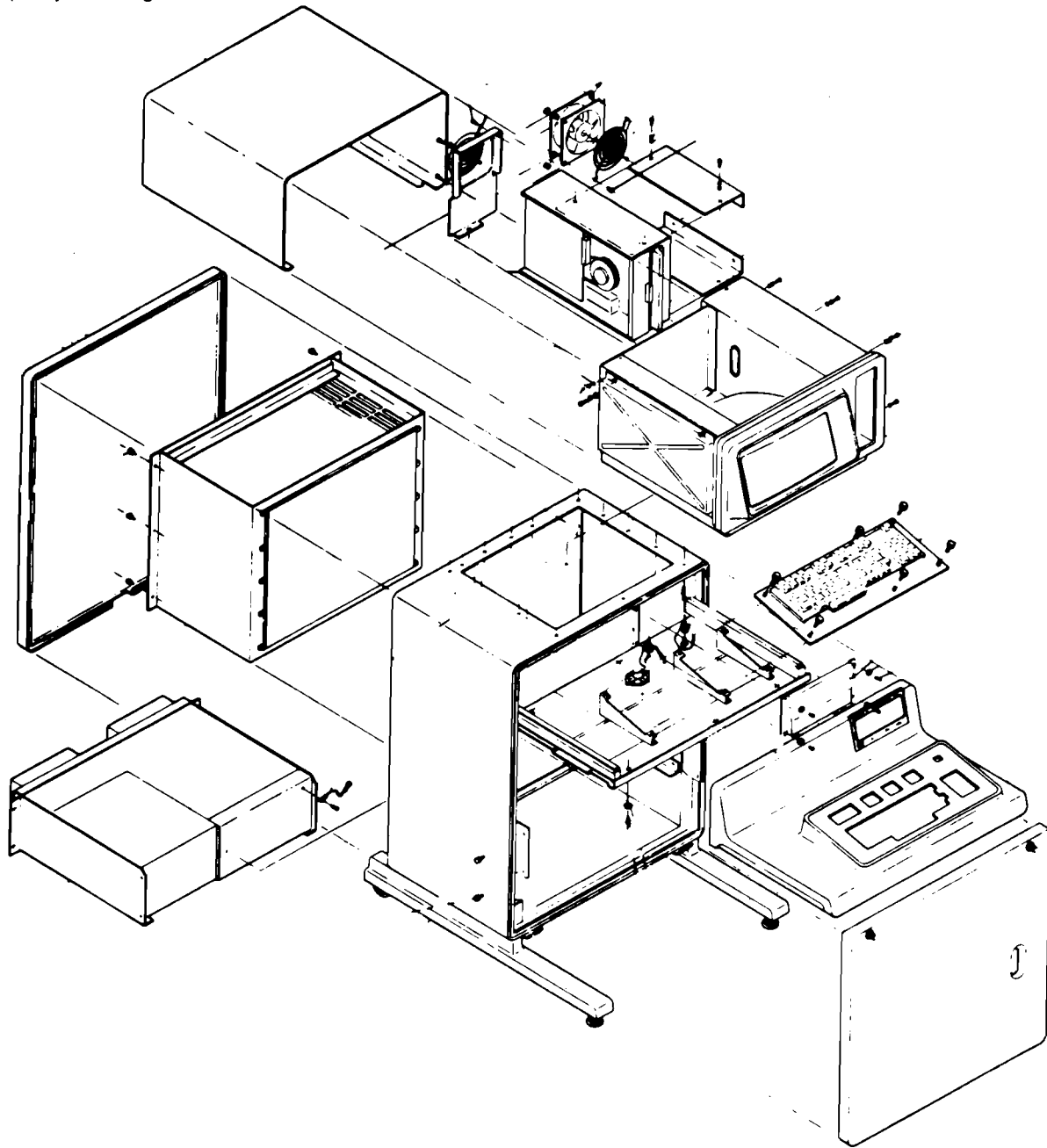
Exploded View of the HP 300

- Fan filters require no tools to change. (Good demo: grab a filter and pull it off.)

- Excellent accessability. (Pop the doors off — the simplicity is impressive.)

- Clean modularity. (Your CE can show you how to demonstrate this — in CE training the system is completely disassembled to the module level.)

Summary

Here's a handy checklist summarizing what we've covered so far:

Mechanical Design:

Integrated System Unit
Simplicity of Design
- Fan Filters
- Accessibility
- Modularity

The next article, we'll get into the serviceability features built into the HP 300 hardware and software — starting with those for fault containment.

SELL HP 300 SERVICEABILITY!

Updated Demo Programs for the HP 300!!
By: Steve Wilk/GSD

You will notice when you receive your new release of the AMIGO/300 Operating System that we provided an updated and expanded version of our demo programs. Included in the package are corrections of program "bugs" to TRUCKS and BISDEMO, and an entirely new demo program called REPORT. REPORT allows you to compose your own special report by making extensive use of the softkeys on the IDS. This same program is also incorporated into the BISDEMO program to demonstrate the same application in a total turnkey, non-technical manner.

For RPG users, we included the demo program RPGINPUT. This program shows off the special features of our extension utility for doing multi-tasking, terminal data entry with the simple change of one program statement in the RPG II program. This utility allows a user to painlessly replace his IBM 3741 data entry work stations with HP terminals.

One last demo, called HPLOT, is included. The program continuously downloads data to a 2647 or 2648, which then displays various graphics patterns using AUTOPLOT. Using HPLOT, you can demonstrate not only how data can be processed on the HP 300 and displayed in graphics form at an HP CRT, but also how continued processing can take place at one or more application terminals while some other function is performed at the IDS.

We want to thank *Dave Fullerton*, of the Neely Santa Clara Sales office for contributing the HPLOT program and encourage other field people to send us demos they may write.

HP 300 IDS Guide Now Available
By: Steve Smale/GSD

The HP 300 Display System Application Guide is now available in Preview form. You can order this document by specifying part number 31000-90008.

The HP 300 Integrated Display System (IDS) comprises the CRT display screen (which can be divided into 32 separate "windows"), the eight softkeys to the right of the screen, and

the keyboard. The HP 300 operator uses the IDS to communicate with the AMIGO operating system: commands are entered through the keyboard, options are selected by pressing the appropriate softkey, and output is viewed on the screen. The most exciting aspect of the IDS is that all its capabilities are accessible from the HP 300 Business BASIC programming language.

The purpose of the IDS guide is to demonstrate how the unique features of the IDS can be incorporated into application programs to provide an uncompromising man-machine interface. Section two describes fundamental window concepts: creating different window types, labeling softkeys, and performing window I/O. Section three takes a detailed look at a text editor program which uses most of the IDS features. Section four investigates a stand-alone forms package, designated to run either on the IDS or a 264X terminal. Section five examines another application program which utilizes the more advanced IDS capabilities, such as no-wait input and closed window output.

The following scenario is based on material developed for an HP 300 SE training course, and provides an excellent example of how several IDS features can be used to enhance an application program. Imagine an OEM company involved with developing keystroke programs for hand-held programmable calculators. Instead of testing and debugging the programs on the actual calculator, the company has implemented simulators for each calculator on an HP 300 computer. The simulator for the HP-25 programmable calculator might look something like what you see on the following page.

The simulator display is divided into six windows, separated by several horizontal borders and one vertical border. Four windows are located on the left side of the vertical border: a one line identifier window at the top of the screen, another window which displays the stack and register contents, another window which displays the program memory contents, and a one line input window at the bottom of the screen. The larger window on the right side of the vertical border contains softkey labels. When the softkey labeled "f Yellow" is pressed, the keyboard display is altered so that labels corresponding to the function key on the calculator are displayed.

The programming involved in setting up and maintaining a display such as the one in our calculator example is very straightforward and well documented in the HP 300 Display System Application Guide.

HP-25 SIMULATOR   VERSION 1.0   SUN, FEB 18, 1979, 5:38 PM

OFF

PRGM

f YELLOW

g BLUE

ENTER

RUN STOP

EXIT

PROGRAM POINTER

KEYBOARD

```
X sst   Y bst   Z gto   f
A x\y   B rol   C sto   D rcl   E sm+
H enter   I chs   J eex   K clx
  -      7    8    9    g
  +      4    5    6    6
  *      1    2    3    3
  /      0    .         L r/s
```

STACK
```
T       0.00
Z       0.00
Y       0.00
X       0.00
LASTX   0.00
```

REGISTERS
```
R0   0.00   0.00
R1   0.00   0.00
R2   0.00   0.00
R3   0.00   0.00
R4   0.00   0.00
R5   0.00   0.00
R6   0.00   0.00
R7   0.00   0.00
```

PROGRAM MEMORY
```
01 1300    15 1300    22 1300    29 1300    36 1300    43 1300
02 1300    16 1300    23 1300    30 1300    37 1300    44 1300
03 1300    17 1300    24 1300    31 1300    38 1300    45 1300
04 1300    18 1300    25 1300    32 1300    39 1300    46 1300
05 1300    19 1300    26 1300    33 1300    40 1300    47 1300
06 1300    20 1300    27 1300    34 1300    41 1300    48 1300
07 1300    21 1300    28 1300    35 1300    42 1300    49 1300
08 1300
09 1300
10 1300
11 1300
12 1300
13 1300
14 1300
```

INPUT > _

Computer Museum

HP GRENOBLE NEWS

Product News

Type III Badge or Type V?

By: Marc Nodier/HPG

Our new 3075A/3076A/3077A series of Data Capture Terminals can be equipped as you know with a multifunction reader and/or a Type V badge reader (one of the two only for the 3077A). Besides standard 80-column density punched cards and 40-column density marked cards the MFR can also read Type III punched badges. What is so different between the two?

Type III Badge:

A punched Type III badge simply corresponds to the first 22 columns of a standard 80-column punched card as can be seen on the following drawing:

It can be coded on 12 rows and can thus contain numeric and/or alphanumeric data.

Its main advantage with our terminals is that one reader can read punched cards and this type of badge. One drawback, when used as an ID badge is that the format does not leave space to attach a clip. The Type V badge does not have this disadvantage.

Type V Badge:

A Type V badge also represents a portion of a standard 80-column punched card but unlike the Type III badge punched holes start from the equivalent 13th up to the 22nd column of a punched card. At the bottom of the badge you will see a square hole called a "guiding hole." The presence of such a hole is for a standard Type V reader to check if the badge has been entered the correct way up (with ours, the badge can be entered any way up).

Historically, it is IBM which first designed this type of badge and the guiding hole was used in their first readers to mechanically retain the badge into the reader until the reading was executed. Their readers used a matrix of pins to mechanically read the badge and it was necessary to have the badge retained in position long enough to ensure correct reading. The position of the hole in relation to the sides of the badge was empirically fixed by IBM such as 10 columns of data could be punched on the right part of the badge.

Data can be coded only on ten rows because of the presence of an oblong hole used to attach a clip (to fix the badge on a shirt for instance).

The fact that coding can only be on ten rows would normally mean that this type of badge can only contain numeric data. However, our powerful reader can also read the binary image of each column, and by a special decoding procedure allows punching of two upper case alpha characters per column. In this mode only capital alpha characters can be punched on the badge, not a mix of alpha and numeric data like for the Type III badge (consult reference manual for punching alpha data on your Type V badge).

Because of the clip, the Type V badges are inserted with the narrow side first and therefore the reader has different physical dimensions and decoding circuitry to the Type III badge reader. Its main advantage is simplicity of the reading mechanism and the fact that badge clips may be used.

Sales Aids

3075A/6A/7A Applications Data Sheets In French and German
By: John Willett/HPG

Well here they are, as promised, French and German language versions of the 3075A, 3076A, 3077A Data Capture Terminals Applications Data Sheet. Copies have already been distributed in France, Germany, Switzerland and Canada. Further supplies of the French version (5953-0123 FR) are available from Orsay. Further supplies of the German version (5953-0123 German) are available from Frankfurt. If you have any literature problems, don't hesitate to contact me.

HAPPY SELLING!!!

Division News

Grenoble Factory Visits
By: Francis Marc/HPG

Every day we are glad to host many visitors and trainees in Grenoble: local community representatives, schools, applicants, HP field engineers, CE's, SE's, customers, etc.

Having local facilities is a real asset for your sales effort and such factory visits are a proven means to conclude some of your big deals. So come and use it more!

Please give us notice of your next visit about two weeks in advance in order to arrange hotel, conference rooms and people. It's often crowded around here, believe me.

Here is a sample of some of the visitors we received in just one day in January!

Benôit Gibert assisted by Daniel Roman (Orsay) demonstrating the 2608A for the CAMIF (large French HP 3000-terminals customer).

Dave Borton chatting with the CE Managers from Germany: Gerd Greger, Berni Emme, Bodo Wagner and Helmut Finckh.

Anne Jacquenod getting some training on 2647A and plotter to make Heiner's slides.

CS GROUP NEWS

CSG News

Are Your Key Prospects Receiving Computer Advances?
By: Carol Scheifele/CSG

A gentle reminder of HP — both regularly appearing and professional looking. That's what *Computer Advances* can be for your prospects. When your weeks are too busy to give each prospect the personal call or visit you wish you could, let *Computer Advances* fill in for you.

Bringing news of the latest products, this publication positions HP as the innovator of the computer industry — the kind of company to associate with in an industry of rapid technological change.

Don't assume your potential customers are seeing *Computer Advances* appearing as an ad. Send them their own copy — either to their business or home. Make sure they get current, readable information.

Give me a call (408) 257-7000, Ext. 3366 or twix me. I have *Computer Advances* sign-up-cards waiting for you . . . and your prospects.

Corporate Training & Management Development

NEW VIDEOTAPE
I N F O R M A T I O N

New Videotapes from Corporate Training
By: Chuck Ernst/Corp.

Title: How to Demonstrate the HP 300 (Monochrome)

Audience: CSG Sales Representatives and Systems Engineers

Purpose: Training

Content: In this informal training memo, James Groff shows how to demonstrate the HP 300's hardware features, HELP on-line reference manual, operating system commands, and features of the Integrated Display System (IDS) including "windowing" and the use of softkeys under application program control. BISDEMO and TRUCKS DEMO programs are used to demonstrate the system. Explanations of multiprogramming and multitasking features are also included.

Time: 60 minutes

Part Number: 90827Z

Date Released: February 1979

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