FRANKFURT

REINHARDT HELMUT

COMPUTER SYSTEMS NEWSLETTER

For HP Field Sales Personnel

HEWLETT hp PACKARD

Vol. 1, No. 1
June 15, 1976

- **3000 CX TO SERIES II UPGRADES**
- **CAI NETWORK CON 2640'S POR LOS MEXICANOS**
- **ANNOUNCING IMAGE/1000**
- **VIDAR BUYS FIRST 48 VOLT 7970B'S**
- **BETTER OMR AVAILABILITY FROM GRENOBLE**
- **HP-IB SALES AIDS FROM DSD**

In This Issue...

BOISE DIVISION NEWS

Division News

NEW FACES IN MARKETING SERVICES

by: Bill Murphy/Boise

Recently, we have made a number of changes in our Marketing Services Department.

Chuck Ulfers, who had been Marketing Services Manager, has accepted the position of Boise Data Center Manager and is already deeply involved in the management of our existing hardware (2000F and 3000), as well as in preparing for the arrival of our second 3000. *Glenn Johnson*, who was Boise Accounting Manager, is now Marketing Services Manager, responsible for all Order Processing, Contracts, Statistics, and Shipping.

These changes represent a career opportunity for both individuals, and is indicative of the depth of the HP organization and the flexibility this depth provides.

Other changes made in this area were necessitated by Mother Nature's maternal call. As difficult as it may be to believe, *Karen Nichols* and her Order Coordinator crew of *Benida Playstead* and *Wendy Werner* are all expecting new arrivals, and will be leaving us within a 2-month period this summer. Fortunately, we have been able to call on capable people throughout our organization to come in and fill the void. *Sallie Hobart*, formerly Marketing Secretary, has assumed the role of Order Processing Supervisor. Working with *Sallie* will be *Steve Bailey*, who has moved over from Shipping, and *Alma Hall*, a recent recruit from Production. *Sallie* and her team are rapidly coming on stream with the able help of the mothers-to-be.

I'm confident that the new people in Marketing Services will continue to provide a high level of professional support. I'm equally confident that you'll find them genuinely nice people who are capable and pleasant to work with.

OLD PRODUCT ANNOUNCEMENT SALE

by: Nick Voigt/Boise

By the time you read this, you should have your flyer announcing Boise Division's used and obsolete equipment sale. If you haven't received your announcement yet, please call Boise sales development to get details.

It's a great way to save your customer some money on some good equipment and make you eligible for some great prizes. Give us a call if you have any questions on the sale.

OLD PRODUCT UPDATE . . . .

by: Nick Voigt/Boise

Already we have some news to report on our old product sale. There are no longer any 2610A's available for sale.

Keep up the good work!

NEW SECRETARY FOR SALES DEVELOPMENT

by: John Whitesell/Boise

I am pleased to announce that *Artie Stone* is joining the Boise Sales Development team as secretary.

Previously, *Artie* worked with a stock brokerage firm and the Idaho Dairy Products Commission.

Artie has lived in the Northwest most of her life. Outside of work, she enjoys bicycling, camping and pottery making.

Welcome to HP, *Artie*!

THE PROOF IS IN THE PRINT OUT

by: Ronnie Covington/Boise

Boise Division will soon be sending a sales brochure to the current user base of 2640/44 CRT's, describing in detail the features, advantages and benefits of terminal printer subsystems.

The intent is to inform the customers of our offering of hard copy printer subsystems on 2640 series CRT's. We will en-

close a self-addressed reply card so as to make it easy for them to respond.

The brochure will be mailed by the third week of June, which should mean that we will be forwarding you some quality leads the latter part of July.

INSTALLATION POLICIES — BOISE DIVISION

by: Nick Voigt/Boise

In the past weeks we have had several inquiries about which products have installation included in their selling price and which do not. Basically, only subsystems have installation included in their selling price. The only exception to this rule is the terminal printer subsystems (13246A, 13246B), which *do not* include installation. This means that on terminals (2752A, 2762A & B, etc.), stand alone printers (2607, 2613, 2617, etc.) and stand alone tapes (7970B, 7970E, etc.), installation is *not* included in the selling price. Subsystems (e.g., 12970A tape subsystem and 12987A printer subsystem) have installation included in the list price.

Contact Boise sales development if you have any questions on our installation policy.

POLICY ON SERVICE DOCUMENTATION

by: Larry Andrews/Boise

Consistent with Computer Systems Group policy, service documentation is generally not supplied with Boise instruments or subsystems. It can be ordered separately by part number, or as option 715 to the product.

There are some exceptions to this policy, but in general, option 715 must be ordered to obtain service documentation.

ale $ucce$$e$

ED WILSON TRACKS DOWN PRINTER OEM

by: Nick Voigt/Boise

That's right, printer! Do you know that we can sell the 12987A connected to HP computers as an item under a Type I discount schedule? This means that it is discountable based on the number of functional units signed for.

Ed's customer, TRAK MICROWAVE, has ordered 21 line printer subsystems connected to 5 21MX CPU's. It was a tough sell, but reliability and one-vendor support won out.

Ed Wilson

Good job, *ED*!

DICK OLSON LANDS 1ST 48V ORDER

by: Ronnie Covington/Boise

Vidar Corporation, a division of TRW, located in Mountain View, California, has placed an order for eight of the newly announced 7970B's option 048 which are the 48 volt DC power-supply magnetic tape units.

Their system, the IMA II, is sold to independent telephone companies and handles all of their message unit accounting. The system monitors time and routing of calls, logs the data on the HP mag tape unit, and sends it to the main computer which produces the final billing.

The 48V power supply replaced an expensive and bulky inverter.

The IMA II system originally was designed to use dual tape drives, one on-line and the other for back-up, but the 7970 mag tape units proved to be so reliable that they use only one mag tape and back-up with a small 3M tape cartridge. This inherent reliability has made the HP 7970 a leader in the telecommunications industry.

Dick Olson

Good Selling, *Dick*!

Good Selling!!

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

DATA SYSTEMS NEWS

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EARTHQUAKE PROOF

by: Frank Jackson/DSD

If you have seen the 21MX running on the shake table at 1.8g on the box (if you haven't, you should) you will understand why *Russ Lukes,* F.E. Lexington, was able to sell a 9640A to the U.S. Geological Survey for use in a seismic recording system.

Congratulations *Russ* on this order from *Tom Aldrich,* an HP customer of long standing. *Tom* bought serial number 001 2116A CPU when he was associated with Woods Hole Oceanographic Institute. That 2116A will celebrate its 10th birthday this year, by the way.

Russ Lukes

EASTERN AIRLINES ORDERS 9603A

by: Carlos Avila/DSD

Ed Wilson in Orlando has received an order from Eastern Airlines in Miami for a 9603A. The 32K RTE II system will be used to automate two test cells which are used for checkout of the JT8 jet engine following scheduled maintenance. The JT8 engine is used in both the Douglas DC9 and the Boeing 727.

During operation, the 9603A will acquire data from various sensors to determine engine performance. Critical temperature and pressure limits will be constantly monitored and, in the event that a limit is exceeded, the 9603A will warn the operator to initiate engine shutdown.

By automating these test cells and eliminating some tests that have been done manually, Eastern estimates that it will save 357,000 gallons of jet fuel per year. And at the present price of 31¢/gallon, that savings amounts to over $100K! — full purchase price returned in less than one year on this savings alone.

Product News

CABINET PRICE & OPTION CHANGES

by: Jerry Kleinberg/DSD

On the 29402B 56" single-bay cabinet, we currently have options 002, and 003 which are the pull-out extender legs and removable side panels respectively. As of August 1, 1976, shipments of options 002 and 003 on the 29402B cabinet will be included as STANDARD. Orders received after July 1, 1976 will not require options 002 and 003. Therefore, any orders transmitted on July 1 or after will include options 002, 003 automatically, and at NO ADDITIONAL CHARGE! The base price of the 29402B cabinet will remain at $1,290. Options 002 and 003 will be removed from the CPL on August 1. This results in a $90 price decrease on the 29402B.

At this time, the 29400B Series Cabinetry has two optional base configurations. Option 001 consists of the older style extended base, and Option 002 consists of the new pull-out legs. The Option 001 extended base will be *obsoleted* effective August 1, 1976 on the 29401B thru 29407B cabinets. After August 1st, the extended base will be available by special handling quote only.

BEWARE THE 92806A

by: John Trudeau/DSD

There's a "gotcha" in the Corporate Price List! The 92806A is described as "92001A (RTE-II) sources on paper tape." The 92001A contains (as per data sheet) not only RTE but the compilers, the editor and loader, and libraries. Included in 92806A, however, are the sources of RTE only! If there are any questions on the contents of 92806A, consult the material list on that product and *not* the data sheet on 92001A. The CPL description is being modified to eliminate this source of confusion.

NOTE: A similar problem exists with 92801A in reference to 2300C (RTE-C) sources.

SELL OEM

CORPORATE PRICE LIST CHANGES

by: Bob Stephenson/DSD

Effective June 1, 1976, CPL.

NEW PRODUCTS

13047A — User Control Store Board
40017A — Cabinet Stabilizer
92822A — RTE-III Source Tapes

NEW OPTIONS

59310B — 422 RTE-II-III Driver
91063A — S30 BCS Driver
91063A — S50 RTE-C, II, III Driver
91063A — S60 RTE-B Driver
9602A — P12 Additional 16K Memory
9603A — P12 Additional 16K Memory
9604A — P12 Additional 16K Memory
9611A — P12 Additional 16K Memory
9640A — P12 Additional 16K Memory
9700A — P12 Additional 16K Memory

PRICE REDUCTIONS	OLD PRICE	NEW PRICE
9640A	16,800	15,800
9700A	37,300	34,800

DELETIONS

12563A — Disc Cartridge for 2870A
12615A — 8K Memory for 2116C
12697B — Front Door for 2940B
12899A — Display Panel for 2100A-001

NEW KODAK MTRS PROCEDURE

by: Dave Hancock/DSD

Effective June 1, 1976, Kodak is recommending a modified configuration utilizing the new 16K memory boards and there is a new MTRS ordering procedure that results in a net decrease for the MTRS system of $1255 to a total of $33,770 for the standard configuration.

Kodak has elected to utilize the new 16K memory board and recommends ordering all new systems with 32K rather than the previous 24K — still at a savings of $300.

Secondly, the MTRS special (93727A) is hereby withdrawn and no longer orderable. Instead, you should order the "MTRS" configuration as line items from the appropriate divisions as listed below and provide final integration at the customer site. This procedure of direct shipment from the divisions involved results in further savings to the Kodak customer of an additional $955 in integration costs. Be sure to specify the new racking special 93723A-025 for racking of Data Systems components and inclusion of the Mag Tape Loader ROM. The MTRS system diagnostics will be supplied by Boise with the 12973A tape subsystem.

If a customer wants an additional slave mag tape, order 12973A-010 and replace the 2860B cabinet with a two bay 2860D. Racking for both configurations will be provided by 93723A-025.

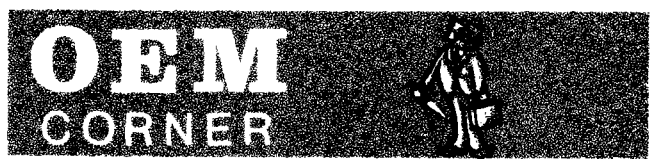
Recommended KODAK MTRS Configuration as of June 1, 1976:**

(DSD)	2108A	CPU	$ 5,300*
	2102A	Controller	600
2 ea.	2102A-016	32K Memory	4,200
	12897A	DCPC	750
	12903B	Racking Slides	140
	2860B	Cabinet	1,875
	2860B-001	60 Hz Power	1,050
	13185A	KOM Interface	1,200
	12531D	Console Interface	350
	12531D-004	2640 Cable	55
	93723A-025	Special to provide racking, test and MT Loader ROM	600
(DTD)	2644A	Mini Data Station	5,000
	13231A	Display Enhancements	250
	13231A-202	Line Drawing Set	150
(BOISE)	12973A	Multi-Format Mag Tape	12,250
		Total	$33,770

Be sure to specify coordinated shipment.

*All prices are IBP and subject to change. Check with current CPL before ordering.

**For 50 Hz applications, specify 50 Hz options.



DICK OLSON LANDS ANOTHER BIG OEM

by: Bill Burger/DSD

Daconics, a Xerox Company, has signed a Combo Agreement with HP for several hundred computers a year. *Dick Olson* of Neely/Santa Clara, has received the first release for 2108A's.

Daconics will be using the HP computers in large multiple-terminal disc-based word processing systems that sell in the $100,000 to $200,000 price range. These systems will control up to 10 work stations with each station consisting of a text editing display CRT and a hard copy printer.

Daconics is using disc drives and peripherals that are manufactured by other Xerox subsidiaries including Diablo and Versatec. We won the commitment of Daconics to use the 21MX over a computer being designed inhouse.

This account is now looking at the 2108K. Projected use here is in the thousands . . . really. Word processing is that big.

Dick, another great job in signing another OEM.

SELL OEM!

TARKOWSKI STRIKES AGAIN

by: Bill Burger/DSD

Ron Tarkowski/MSR Skokie signed his second new OEM this month. This one is the Dukane Corp of St. Charles, Ill., a leading manufacturer of commercial audio distribution systems. They have also been supplying computerized Doctor Registration Systems to hospitals using Varian machines. Dukane is planning on expanding this market to include Nurse Call Systems using HP Discomputers and convert the Doctor Registrations Systems to HP also. They chose to convert to HP because of our better price/performance, reliability and support capability.

The basic Nurse Call System they will be marketing was developed by Nira of Holland and will continue to be enhanced jointly by Dukane/Nira. Dukane has already released an order for their development system with 2-4 additional systems expected this year.

Congrats on signing another OEM, *Ron.* IT PAYS TO SELL OEM!

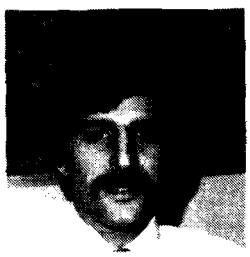
NY TELEPHONE CO.

by: Bob Blake/DSD

Ken Volet, Paramus, continued his top ten PL65 performance by converting a 2123A rental to a sale at N.Y. Telephone. This conversion was fattened to a total of approximately $70K by added equipment.

This RTE II based Discomputer system will be used in a multi-terminal data entry application to review and analyze telephone trunk switching and network load balance data. Use of input/output spooling to disc is expected to significantly increase throughput. Concurrent file management and program development, as well as downstream utility processing, round out system responsibilities. Eventual data communications with an IBM 370 is contemplated.

Keep that telephone business rolling in!!!



Ken Volet

HP OEM CATALOG COMING SOON

by: Chuck Wain/DSD

One of our first tasks in the OEM Sales Development group is the job of generating a catalog of all present HP OEM customers. The data collection phase is presently taking place, with Sales Development people calling the OEM account's Field Engineer to obtain detailed information. Response from the field so far has been excellent and we hope it will continue.

This OEM referral catalog will list HP OEMs by product category, including address, responsible F.E., and end-product description. The catalog will be useful to field people by providing data on customer references for potential new business. Additionally, when a situation is encountered where HP doesn't make the desired product, the catalog may be used to refer a prospect to an HP OEM who can. The catalog will be published in the near future and should prove to be a useful tool. What better way to convince a potential OEM of the "real benefit of signing with HP." — GOOD SELLING!

Sales Aids

GE FORMATION OF HP USERS GROUP

by: Joe Schoendorf/DSD

In the March 15th issue of the Data Systems Newsletter (Vol. 3 No. 9), we announced the formation of an HP Computer Systems Users Group by General Electric. This users group is for General Electric customers only and is run and totally managed by the G.E. Corporation. I am sorry that we may have caused you some confusion by leading you to believe that other customers are welcome to participate in this. At this time there are no plans to create an HP-sponsored users group for all 21XX users.

MICROPROGRAMMING APPLICATION

by: John Trudeau/DSD

If you think that microprogramming on a 21MX is only good for speeding up calculation, READ ON! It also offers (among many other things) the ability to "customize" the operator interface to the MX for very specialized applications — a strong PLUS from an OEM's standpoint!

As an example, *Jack Howard* (Training group, DSD) has written a demo microprogram which transfers 21MX front panel functions to a CRT terminal. This "ASCII front-panel" displays registers and memory, on the CRT, and performs such functions as "IBL," "PRESET," "RUN," etc. while the front-panel itself remains inoperative. Consider the advantages of similar applications to an OEM who needs specialized access to the computer or special boot-up or initiation procedures! Remember, micro-code can CONTROL THE COMPUTER as well as do zippy calculations!

With the micro-programming power of the 21MX, you've got great capability to offer to an OEM who needs special system control. Don't forget the other advantages of microcode:

- speed, speed, speed — 2 to 20 times faster
- specialized, fast I/O drivers for advanced op-systems (DOS, RTE)
- highly proprietary — another PLUS for OEM's
- non-volatile (when burned on chips)
- dynamic, using WCS

P.S. If you were at NCC, you may have seen *Jack* and his ASCII front-panel in action.

HOT NEWS ABOUT MINIS

by: Fred Gibbons/DSD

Did you ever wish for a handy source of information on applications that you could give to a customer to gain credibility, or for your own reference? Wish no more, now you've got it. We've just published and sent to you a handy booklet of 12 recent news articles on HP 2100 and 21MX Computer and 9600 system applications. Bulk quantities are on their way to your office. To get more, just order 5952-9935 from the HP Literature Depot in Palo Alto. Good selling with this new tool.

GSA DATA ACQUISITION SYSTEMS

by: Bob Blake/DSD

George Fernandex (DSD Contracts Administrator) has figures which indicate that the recently concluded Section K, Class 66 Schedule was a smashing success with final totals well over $3 million.

This has proven to be a very valuable sales tool for the entire domestic sales force. Some of the highlights under this schedule were:

- *Russ Lukes* sold Woods Hole a 9640A @ $130K
- *Will Workman* sold the Washington Navy Yard a 9603A @ $108K
- *Norm Matlock* sold Kirkland AFB a 9611A @ $106K
- *Will Workman* sold the Naval Research Lab a 9640A @ $98K
- *Terry Pelfrey* sold the Redstone Arsenal a 9603A @ $98K
- *Rick Zagorski* sold the Tobyhanna Army Depot a 9640A @ $80K
- *Bill Hitchcock* sold the Naval Weapons Station a 9603A @ $80K

The May 15 issue announced that HP received a new Class 66 award.

With the 9603A and HP-IB we have a winner . . . SELL GSA.

CE CORNER

DATA SYSTEMS COMPONENT PRODUCTS INSTALLATION POLICY CHANGE STAVES OFF PRICE INCREASE!!!

by: Tom Winker/DSD

In order to maintain current prices, Data Systems is eliminating the service of powering up and running diagnostics upon delivery of Data Systems component products. In general, this means that no service call is required when a computer, interface, or accessory is delivered. Systems and subsystems continue to get installation. An installation matrix has been prepared which indicates which services are provided with our products.

In the past it was felt that installation was a selling tool, but recent inputs have indicated that this high cost service gives us little advantage with the component buyer who is capable of buying and using component products.

This results from computer products today being much simpler to install, configure and run than they were 3 years ago. The customers are also more familiar with mini's than they used to be. Our earlier policy was costly while giving us no competitive advantage. HP remains competitive with the new policies. Examine the table below to see where we stand.

Vendor	Installation Bundled	Time & Material Installation	Minimum
HP	NO	1% of list price	$200
DEC	NO	2%	$250
DG	NO	$35-$50 per hour	$105 + per diem
INTERDATA	NO	$30-$40 per hour + travel	
TI	NO	2%	$300

Some customers will continue to use our installation as well as the integration service discussed in the March 15, 1976 Data Systems Newsletter.

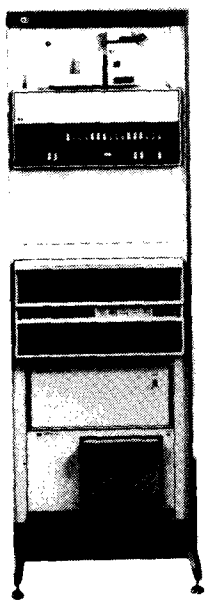
Rush copies of the new policy and an installation matrix have been sent to all field Sales Managers and CE Managers. Each of you will receive copies in a few days.

93723A PRICE/CONFIGURATION GUIDE

by: J. Kleinberg/DSD

The 93723A FACTORY RACKING and CHECKOUT SERVICE P/CG below is for use until final Data Sheets are available in early July.

Please note that the P/CG does not indicate option 002 and 003 as requirements on the 29402B cabinets. Beginning July 1 these options need not be ordered as they will become standard on the 29402B single-bay 56" cabinet beginning with August 1 shipments. Please see "Cabinet Option Changes" article in this newsletter.



HP 93723A FACTORY RACKING & CHECK-OUT SERVICE

The 93723A FACTORY RACKING & CHECK-OUT SERVICE enables you to order the components and system cabinetry required for your configuration along with the applicable 93723A options and receive the system with the components rack mounted and tested. All options have been tested for cooling and stability. Options 101 thru 107 correspond to options 001 thru 007 with decorative front doors added to provide a clean professional appearance.

FEATURES

- Provides racking, cabling of components and subsystems into HP cabinets, I/O card insertion into CPU, and testing of the configuration using diagnostics.
- Configurations in each option are tested for stability and proper cooling.
- Provides checked-out systems for OEM's.
- Provides flexibility for END users.
- Blank panels and supplementary cooling fans provided where required.
- Saves time and expense of unpacking, assembly, troubleshooting and testing.
- Configurations are safe and reliable.
- Faster final customer acceptance. Loading of OEM's operational software can be done upon receipt of system. Drop shipped systems can be up and running faster.
- Systems can be configured according to special needs where standard packaged systems do not apply.
- Avoids ordering complications.

93723A — No Charge — MUST ORDER ONE OR MORE OPTIONS

WITHOUT FRONT DOORS	Option	001	002	003	004	005	006	007
	Price	$500	$200	$200	$500	$400	$500	$900
FRONT DOORS INCLUDED	Option	101	102	103	104	105	106	107
	Price	$725	$425	$425	$725	$625	$725	$1125

OPTIONS	001/101	002/102	003/103	004/104	005/105	006/106	007/107
EQUIPMENT COMBINATIONS	Space for 12925A Tape Reader 2108/2112 CPU 12960A 5 M-byte Disc Subsys. 12926A Punch	Space for 12970A 12971A 12972A Mag Tape 12960A 5 M-byte Disc Subsystem	12962A or 13180A 15 M-byte Disc	Space for 12925A Tape Reader 2108/2112 CPU 12962A 15 M-byte Disc Subsystem	Space for 12970A 12971A 12972A Mag Tape Fan Included 12962A or 13180A 15 M-byte Disc	Space for 12925A Tape Reader 2108/2112 CPU 12990A Memory Extender 12979A I/O Extender 12926A Punch	13180A 15 M-byte Disc Fan Included 13180A 15 M-byte Disc Fan Included 12962A or 13180A 15 M-byte Disc Fan Included
*CABINETS REQUIRED: For use as stand-alone master bay (bay containing power control system Option 120(111)) or for stand-alone expansion of existing system racked in cabinetry *other than* 29400B Series with Option 120(111)	29402B -120(111)	29402B -120(111)	29402B -120(111) -K05 (1)	29402B -120(111) -K05 (1)	29402B -120(111) -K05 (1)	29402B -120(111) -K05 (1)	Contact factory
For bolt-on bay expansion of: 29402B-120(111) 29404B or 29406B-120(111) 29402B-120(111) K05 29402B-100(101) 300(310) K06		Contact factory (2)	29402B -100(101) -300(310) -K06 (1) (2)		29402B -100(101) -300(310) -K06 (1) (2)		29402B -100(101) -300(310) -K06 (1) (2)
LIMITATIONS						If 2112A CPU is used, one other instrument must be deleted, due to power & heat considerations	Multiple 7905A disc configuration requires bolt-on attachment to an existing stable cabinet for stability reasons

*230V/50 Hz options shown in parenthesis

NOTES:

(1) Special cabinet Options K05, K06 consist of the following:
K05: Adds cabinet stabilizer & modified rear door for use when 7905 disc unit is mounted in bay. K05 must be ordered with Option 120(111) power option.
K06: Adds cabinet stabilizer, modified rear door, barrier panel, and cabinet bolt-together hardware. For use as add-on bay to 29402B, 29404B, or 29406B cabinets with Option 120(111) power. May also be added on to 29402B-120(111), K05 or 29402B-100(101), 300(310), K06 cabinets. K06 must be ordered with Options 100(101) & 300(310) for use where 7905 disc unit is to be mounted.

(2) Bolt-on bay additions to existing cabinet bays require the removal of one side panel.

EXCLUSIONS

- Operating System Integration (i.e. Systems Generation) is not included with this service. It is available with the order of the operating system software itself if the proper operating system prerequisites are ordered.
- A system component can be deleted from any of the configuration options, however no substitutions will be allowed. Racking configurations not included in the above configurations will be quoted as a special.
- System installation is not included with this service. It is included with the order of an Operating System or with the proper contract options.
- This service includes only products shipped from HP Data Systems Division. Other divisions products will be checked and tested at the customer's site.
- Diagnostics and/or operating system generation will only be run when a CPU with its appropriate racking plan options (001, 101, 004, 104, 006, 106) are ordered at the same time.
- This service is not subject to discounts.

ANNOUNCING... IMAGE/1000

A low-cost Data Base Management System for 21MX Minicomputers

A ONE-PAGE REFERENCE SHEET ON IMAGE/1000

by: Fred Gibbons/DSD

IMAGE/1000 FEATURES & BENEFITS

1. **Simplicity of use.** QUERY, an English-like inquiry language, allows users to retrieve and update information in the data base with simple commands. No programming skills are required.
2. **Multi-terminal access.** Multiple terminals can be distributed throughout your organization for concurrent, interactive access to the data base.
3. **Multi-program, multi-language access.** In addition to the QUERY language, data can be accessed and manipulated with FORTRAN IV, or HP Assembler application programs for opening, closing, reading, writing, updating, and deleting information.
4. **Completeness of access.** Data can be accessed sequentially, directly, or randomly by keyword value. The latter means you don't have to know where or how the data is stored. If you know a key value — such as a name, customer account number or part description — you have fast and complete access to it and all related information in your data base.
5. **Ease of establishment and maintenance.** IMAGE/1000 includes all the "computer tools" necessary to convert your present file system to a data base management system tailored to your requirements. Four easy-to-use subsystems enable you to define, build, use and restructure your data base.
6. **Data Independence.** Because information in your data base is independent — that is, not limited to an individual file or program — it can be shared in common by multiple users and programs. An update by one user is shared by all users, with built-in safeguards against unwanted or unauthorized manipulation of data.
7. **Privacy of data.** IMAGE/1000 provides exceptional security at all levels of the data base. A "user password" approach allows users to perform only the operations for which they are authorized. You thus can give a user access to your entire data base, or only a predetermined portion of it. With IMAGE/1000, this means security down to the data item level — the most basic record category in the data base.
8. **Ease of expansion and restructuring.** Utilities are included to expand, redefine or restructure your data base to meet your changing requirements. A modular hardware concept allows expansion of the data base size merely by adding more disc memory. The data base can be transferred to magnetic tape at any time for back-up security or to modify its structure. Restructuring can range from adding new data items to redefining the data base.
9. **System reliability.** Because IMAGE/1000 was designed by Hewlett-Packard to run on Hewlett-Packard hardware, the result is a well-balanced combination of HP minicomputer power and software capability. Hewlett-Packard's unusually rugged package of minicomputer, disc and controller has proven it can stand up to the disc access punishment and speed required by a data base management system.
10. **Total customer support.** IMAGE/1000 and its hardware are fully supported. Everything you need to establish, maintain and service your data base management system — on-site planning and implementation assistance, customer training, documentation, software support, customer service agreements and parts support — is available from Hewlett-Packard.

LITERATURE INFORMATION

IMAGE/1000 Field Training Manual	#5952-9943
IMAGE/1000 Brochure	#5952-9939
IMAGE/1000 Data Sheet	#5952-9940
IMAGE/1000 Reference Manual	#92063-9001

ORDERING INFORMATION

92063A IMAGE/1000 Software	$6,000
OPT 001 IMAGE/DOS Upgrade Kit	$-3,000
92825A IMAGE/1000 Source Tapes	$6,000

DELIVERY 4 WEEKS ARO

IMAGE/1000 TECHNICAL INFORMATION

Maximum Data Base capacity	120 Mbytes
Number of terminals supported under QUERY	Multiple (4 active)
Languages supported	FORTRAN ALGOL ASSEMBLER
Data Sets per Data Base	50
Number of entries per data set	32,000
Maximum entry size	512 bytes
Maximum number of data items per Data Base	255

Maximum number of data items per entry	127
Keys per detail data set	5
Characters per data set name	6
Characters per item name	6
Access methods	Serial Direct Calculated Chained
Data types	Integer Real ASCII

IMAGE/1000 TERMINOLOGY

Data Base	- Centralized collection of data
Data Set	- Collection of data within a data base (file equivalent = file)
Data Entry	- Ordered collection of data items (file equivalent = record)
Data Item	- Smallest accessible data element (file equivalent = field)
Key	- Pointer to a list of related information within a data set.

SPECIAL EDITION

RTE/HP-IB RELEASE
HEAR! HEAR! THE BUS IS HERE!

by: Charles Dixon/DSD

April 30th. It was a day like any other day, except that at 5:35 P.M., *Dick Anderson,* General Manager, signed the manufacturing release for DVR-37, the RTE II/III/HP-IB Driver. It is rumored that the signing and subsequent announcement of DVR-37 at IEEE 1976 in Boston, caused several product managers at DEC and DG much discomfort and at the same time caused electronic test engineers throughout the world to praise the announcement as "A good thing whose time had come".

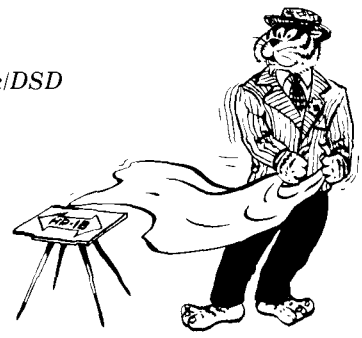
Calling DVR-37 just a driver is a misnomer because of the wide flexibility that it gives HP-IB based systems developers. DVR-37 simultaneously drives multiple 59310B HP-IB Computer Interface Cards, which can connect up to 14 HP-IB compatible devices each. The system designer now has untold flexibility in interfacing electronic bench instrumentation as well as the ability to add high speed data manipulation, sizable (120 MB) mass storage, data base management, and high speed peripherals.

The RTE Driver has two modes of operation: auto-addressing and direct I/O. Both use high level FORTRAN or BASIC calls. In the auto-addressing mode, with one FORTRAN/BASIC call, all HP-IB protocol is accomplished by the driver on a one-on-one basis (e.g., one talker, one listener). In the direct I/O mode, the user must handle this protocol himself but has the ability to address multiple listeners and set-up continuous HP-IB data transactions which the computer is not required to monitor.

Operating the HP-IB in an RTE environment allows not only concurrent programming of multiple HP-IB test clusters, but also the ability to select FORTRAN, BASIC or ASSEMBLY as the Applications Program language. Coupled with concurrent program development and alarm program scheduling, the RTE/HP-IB combination is a tough act to follow.

HP-IB NPT

by: Hugh Amick/DSD



Thanks for your enthusiasm and interest shown during the recent HP-IB NPT. We feel it was well received and were glad to see the great turnout of instrument DM's. Hopefully, the HP-IB NPT provided that first step toward the necessary INSTRUMENT/COMPUTER field cooperation.

We would like to see this cooperation extended by pooling the demo stock to present a solid HP front to the customer. Jump on the bus, hook up some demo instruments to your RTE II/III. Even simple demos such as our NPT demo can be very effective.

Now that we're back we're accepting new jokes for *J. Schoendorf's* next whirlwind tour. Based on the one's you submitted for this last NPT you had better do better next time!

HP-IB ORDERING INFORMATION

by: Charles Dixon/DSD

	PRICE
The 59301B card interfaces 2100A/S or 21MX series Computers to instruments and devices interconnected to it via the HP Interface Bus (HP-IB). The HP Interface Bus is Hewlett-Packard's implementation of IEEE Standard 488-1975; the 59310B card meets the specifications for controller subset C22 of that standard.	**$1,000**
Must specify option 422 or 423 when ordering	
RTE SOFTWARE SUPPORT PACKAGE (OPTION 422)	
The 59310B card with option 422 RTE software package meets the specifications of controller subset C26 of IEEE Standard 488-1975. The RTE software package provides driver and utility library software and a manual that support operation in HP's disc-based RTE-II and RTE-III Real-Time Executive systems,	**N/C**
BCS SOFTWARE SUPPORT PACKAGE (OPTION 423)	
The 59310B card with option 423 BCS software package meets the specifications of controller subset C22 of IEEE Standard 488-1975. The BCS software package provides driver and utility library software and a manual that support operation in HP's memory-based Basic Control System (BCS). BCS is a single-program system intended for very simple applications. It provides interrupt processing for efficient input/output, but no time scheduling capability.	**N/C**

NOTE

The 59310B is electrically equivalent to the 59310A Rev. C — Rev. F.

HP-IB PRIMER

by: Charles Dixon/DSD

This short, concise review will give you a capsule view of the HP-IB concept and the computer interface card, the 59310B. You will find it an invaluable aid in understanding the underlying technical complexity and user simplicity of the HP-IB.

When the competition says "Oh, it's just a parallel interface and our standard 16-bit I/O card will work", you'll know how to counter. Read on!

On a conceptual basis, flexibility cost, capability, and component integration should be the objective of any bench instrument interface system. The interface must be capable of communication with a wide variety of instruments (e.g., Measurement & Stimulus Equipment, Displays, Storage Units and Controllers, and handle a wide range of data codes, data rates and communications paths.

In the practical world these conceptual ideas yield the following rules of thumb for interface protocol, data rate, interface dimension at the bench instrumentation level:

(1) There are usually 10-20 devices in any system — instrument controller and associated devices.

(2) Instruments are normally located quite close to one another. Total interface transmission length of 20 meters is normally adequate.

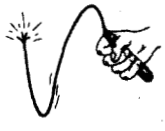
(3) Bench instruments are neither *programmed* nor output data in excess of a hundred kilobytes per second.

(4) Precise interface protocol and time relationships must be defined.

The HP-IB is the result of many man years of thought and experimentation on the above objectives. The general implementation of this universal interface is described below.

HP-IB INTERFACE BUS

- Means of developing stimulus and response test systems, using programmable bench instrumentation.
- Detail of interface standard is covered in IEEE Std, 488-1975, "IEEE standard digital interface for programmable instrumentation".
- Passive standard piggyback connectors are used for interconnection of devices.
- All active TTL circuitry to drive the BUS is contained within the instruments on the BUS. The BUS can support up to 15 devices, one of which may be the computer.
- 15 devices can be supported on the BUS including the computer.
- BUS instruments will fall into at least one of the following categories:



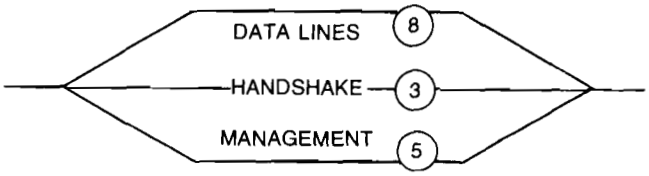
Controller Instrument that has the ability to control other instruments on the BUS.

Talker Instrument with the ability to communicate with other instruments on the BUS.

Listener Instrument with the ability to receive messages transmitted by a BUS talker.

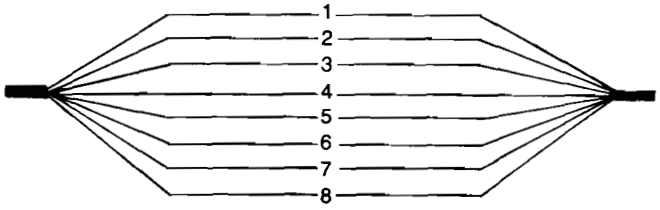
HP-IB COMMUNICATIONS STRUCTURE

- 16 lines are contained in the HP-IB cabling.



- 8 data lines
- 3 lines used to effect the transfer of data over the data lines — called the handshake process.
- 5 lines are used to manage an orderly flow of information across the BUS.

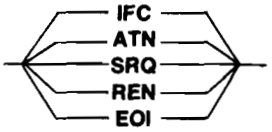
DI01-8 DATA INPUT/OUTPUT LINES



- Used to transfer all data
- Used to transfer all addressing information & multiline commands
- Transfer occurs in a bit parallel, byte serial fashion

GENERAL INTERFACE MANAGEMENT LINES

- Lines used by controller or interact with the controller to manage communication over the HP-IB BUS.
- Only one BUS device at a time can be active controller.
- Logic States — hi = 2.4V; low = 0.4V



IFC - interface clear
ATN - attention
SRQ - service request
REN - remote enable
EOI - end or identify

ATN — data word transfer; address & commands

IFC — (disabled); all talkers & listeners are unaddressed

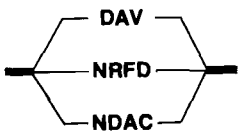
REN — places devices in local control; places devices in remote control

SRQ
- no request for service
- indicates to controller that a device requires service

EOI
- (disabled)
- used to indicate end of multiple byte transfer

DATA TRANSFER HANDSHAKE

- Used for the handshaking process by which a talker or controller can synchronize its readiness to transmit data with the listeners readiness to receive data.



DAV - data valid

NRFD - not ready for data

NDAC - data not accepted

- Talker sets DAV high before data or command is placed on data line.
- Listeners set NRFD high when all listeners are ready to accept data or commands.
- Talker sets DAV low when data may be accepted.
- Listeners set NDAC high when all listeners have accepted data or command.

The purpose of the 59310B is to interface the 2100/21MX series computer to the HP Interface Bus (HP-IB). This requires translation of the computer back-plane CTL logic levels to TTL logic levels used by the HP-IB. The HP-IB Interface Bus uses 8-bit words which require conversion of the computer 16-bit word to two 8-bit words. The interface card performs four major functions; computer control word processing, bus data output, computer data input, and status information to the computer. The four functions are controlled by the control signals applied from the computer through to the control logic. (Figure 1).

CONTROL WORD PROCESSING

The computer control word (16-bit word), which is applied to the control logic of the 59310B, determines the operating mode of the 59310B. When control word processing is initiated by the Control Logic, the Bus Data Converter Logic and the Computer Data Converter Logic are inhibited. The Control Logic, in conjunction with the computer control word output, determines if the bus input/output card is either a listener or talker; the state of the ASCII Logic; and the logic state of the flag outputs to the computer.

DATA BUS OUTPUT

The 59310B applies data to the bus lines when the computer Data Converter Logic is enabled by the control logic. The Computer Data Converter Logic stores the 16-bit word and, after the handshake sequence is completed, transfers eight bits to the (HP-IB) data lines. The output of the Computer Data Converter Logic is continuously monitored by the ASCII logic. If the ASCII logic is enabled by the Control Logic and the data output is a special ASCII character, the appropriate ASCII command output is activated.

STATUS INFORMATION INPUT

The last major function of the Bus Input Card is the outputting of card status information to the computer. The Bus DATA Converter Logic applies status information to the computer when the Control Logic inhibits the data output and enables the status word output. The status word output is used by the computer to monitor card operation to determine which flag caused an interrupt to determine the state of the input/output handshake cycle; and to determine the state of the ASCII commands.

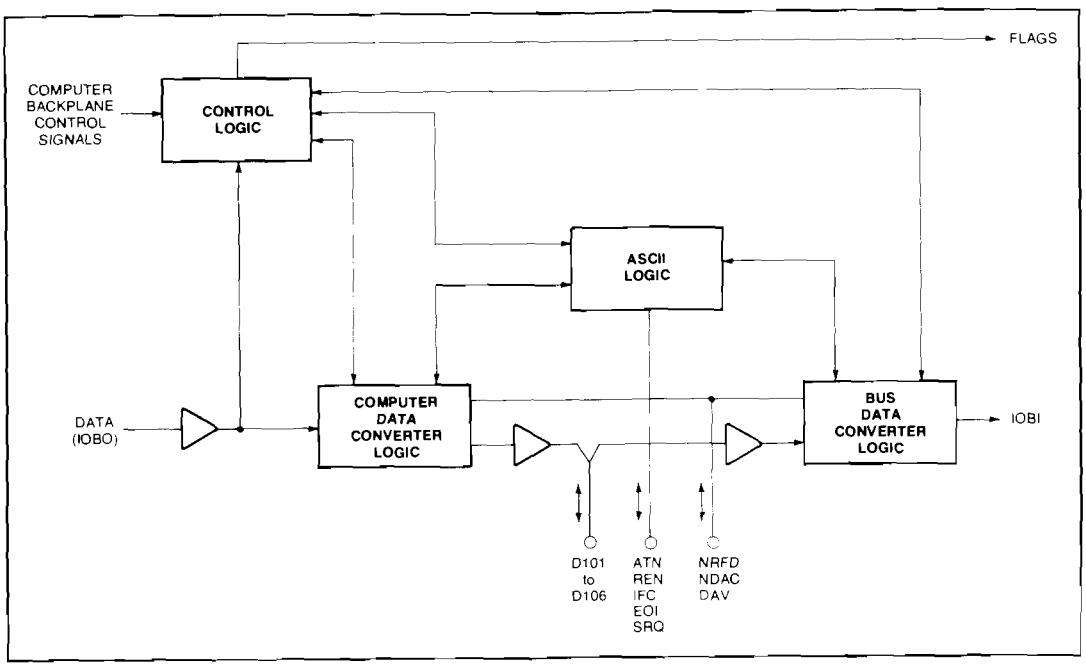


Fig. 1 Simplified Block Diagram

HP-IB SALES AIDS

by: C. Dixon/DSD

WHAT YOU SEE IS WHAT YOU GET!
(More Will Be Coming)

TITLE	PART #	CONTENT	# of PAGES	COLOR	BLACK & WHITE	COMMENTS
1. The Real Time HP-IB MINI-COMPUTER	5952-1584	General Overview Brochure of Computer Based HP-IB Measurement Systems	8	X		
2. Product Summary HP-IB	5952-1678	List of HP-IB compatible devices that can be purchased from HP	8		X	
3. 59310B Data Sheet	5952-1585	Technical Specifications for the 59310B and the associated BCS & RTE Software	6		X	
4. Real Time BASIC	5952-1687	Overview of The Real Time BASIC Software Systems	16	X		Now including HP-IB support
5. Real-Time HP-IB/21MX MINICOMPUTER Field Training Manual		Qualification competition	32		X	Must request manual from factory
6. 59310A/B (HP-IB) User's Guide	59310-90064	Gives General User Information on How to Operate the HP-IB in the BCS or RTE Environment	60		X	
7. Hewlett-Packard Journal	Jan. 1975	Entire Issue devoted to the HP-IB	24	X		
8. Condensed Description of the HP-IB	59401-90030	Excellent Technical Description of the HP-IB	18		X	Can be ordered from Loveland Instrument Group
9. HP-IB/21MX ordering information	5952-9931	Real-Time HP-IB/21MX Minicomputer hardware and software requirements on DISComputer or HP 9640A Systems base	3		X	
10. Application Notes 1. automatic Q-A evaluation of precision resistors (AN 201-1)	5952-1578	This application note describes an HP-IB based instrumentation system that is capable of measuring, printing, and plotting the statistical distribution of the values of 25 precision resistors, all in less than three minutes.	4	X		
2. Measuring differential non-linearity of a voltage-controlled oscillator (AN 201-2)	5952-9932	This application note describes an HP-IB based instrumentation system for measuring and plotting the differential non-linearity of the modulation sensitivity ($\Delta f/\Delta V$) of a Voltage Controller Oscillator (VCO).	4	X		

PRODUCT SUMMARY
Hewlett-Packard Interface Bus

HEWLETT PACKARD

NEW PRODUCT INFORMATION

PUBLIC RELATIONS DEPARTMENT - 1501 Page Mill Road Palo Alto, California 94304 Phone 415-493-1501

May 11, 1976

FOR IMMEDIATE RELEASE

POWERFUL MINICOMPUTER CONTROL FOR PROGRAMMABLE INSTRUMENTS

Now the full power of a real time multiprogramming system is available for customer designed and assembled automatic test and measurement systems. New hardware and software to interface Hewlett-Packard Models 21MX and 2100 minicomputers to instruments interconnected via the HP Interface Bus* adds the following important features:

1) Multiple instrument clusters now may be independently controlled by one computer.

2) Programming may be concurrent with bus operation so the user can prepare new programs while the RTE system is executing other programs.

3) Users may process ...

HP-IB

HEWLETT PACKARD
HP-IB
MINICOMPUTER SOLUTIONS

AN201-1
Automatic Q-A Evaluation of Precision Resistors

INTRODUCTION

MEASUREMENT SETUP

HEWLETT PACKARD

Hewlett-Packard Interface Bus I/O Kit

model 59310B

The HP 59310B is a duplex I/O card for connecting up to fourteen Hewlett-Packard Interface Bus* (HP-IB) measurement and stimulus instruments and other digital devices to the HP 2100A/S or 21MX series computer. It includes the customer's choice of real time RTE II/III or BCS software

Features

- Simple implementation of computer based instrumentation systems
- Standard instrumentation interface (HP-IB)
- Simple ribbon cable interconnecting system
- Concurrent operation of multiple buses and multiple instrument clusters by one minicomputer with RTE II/III
- Bus transfers programmable in HP Real Time BASIC FOR/TRAN or HP Assembly language
- On-line addition of instruments without reconfiguring operating system

Technical Data 4.76

Now with HP-IB Support

Real-Time BASIC
Memory Based and Disc Based Systems for . . .

Automating Lab Experiments and Calculations

Plant-Wide Monitoring and

REAL-TIME HP-IB/21MX MINICOMPUTER FIELD TRAINING MANUAL

HEWLETT PACKARD PRIVATE

21MX

Time HP-IB Minicomputer

HEWLETT PACKARD
HP-IB
MINICOMPUTER APPLICATIONS

AN201-2
Measuring Differential Non-Linearity of a Voltage-Controlled Oscillator

INTRODUCTION

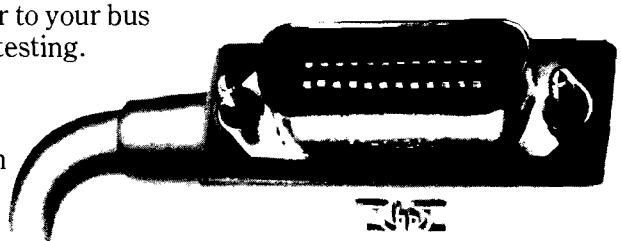
MEASUREMENT SETUP

INTERFACING

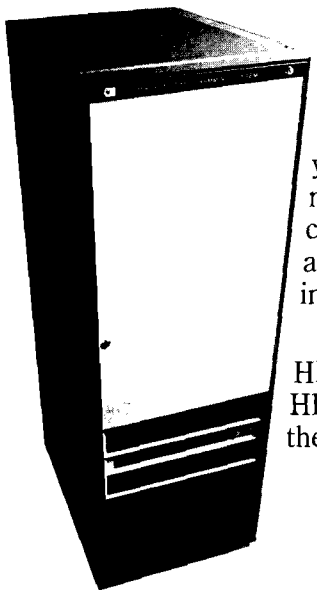
Figure 1. Differential Non-Linearity Plot

Announcing Hewlett-Packard's Real-Time HP-IB Minicomputer. Your powerful connection to easier automated testing.

The Real-Time HP-IB Minicomputer is the best thing to happen to automated testing since the Hewlett-Packard Interface Bus (HP-IB*), which brought order and simplicity to the world of programmable instruments. Now you can apply the power of an HP 21MX minicomputer to your bus for do-it-yourself automated testing.



With an HP-IB/21MX Minicomputer your multi-programming system can run multiple instrument clusters concurrently. And your system also can be generating new programs in Real-Time BASIC, FORTRAN IV or HP Assembler; organizing and analyzing data; and producing timely management reports. All at the same time.



21MX minicomputers can even be easily linked together to form plant-wide networks. And upwards to a central HP 3000 or IBM 360/370.

Real-Time HP-IB Minicomputers. They give you the simplicity of HP-IB interfacing, and the minicomputer power to gain real management control of your automated testing. Prices, with disc and bus interface included, start at about $33,000 in the U.S.

For more on what Hewlett-Packard's Real-Time HP-IB Minicomputers can do for you, call your nearest HP field sales office. There are 172 of them around the world.

*Hewlett-Packard's implementation of IEEE Standard 488-1975, "Digital Interface for Programmable Instrumentation."

HEWLETT hp PACKARD

Sales and Service from 172 offices in 65 countries.
1501 Page Mill Road, Palo Alto, California 94304

PRINTED IN U.S.A. 22609

This Advertisement will first appear in EDN, June 5, 1976.

"ELECTRO 76" SHOW AT BOSTON (MAY 10TH THRU 13TH)

by: John Drakeford/DSD

This was Data Systems 1st public showing of the new MINICOMPUTER—HP-IB. The demonstration system occupied one quarter of the HP booth together with other HP divisions including calculators. Figure 1 shows a block diagram of the demonstration system.

The demonstration system was arranged to highlight the 4 "M's" of the MINICOMPUTER-BUS together with Data Management Capability in a typical multi test stand measurement/test application.

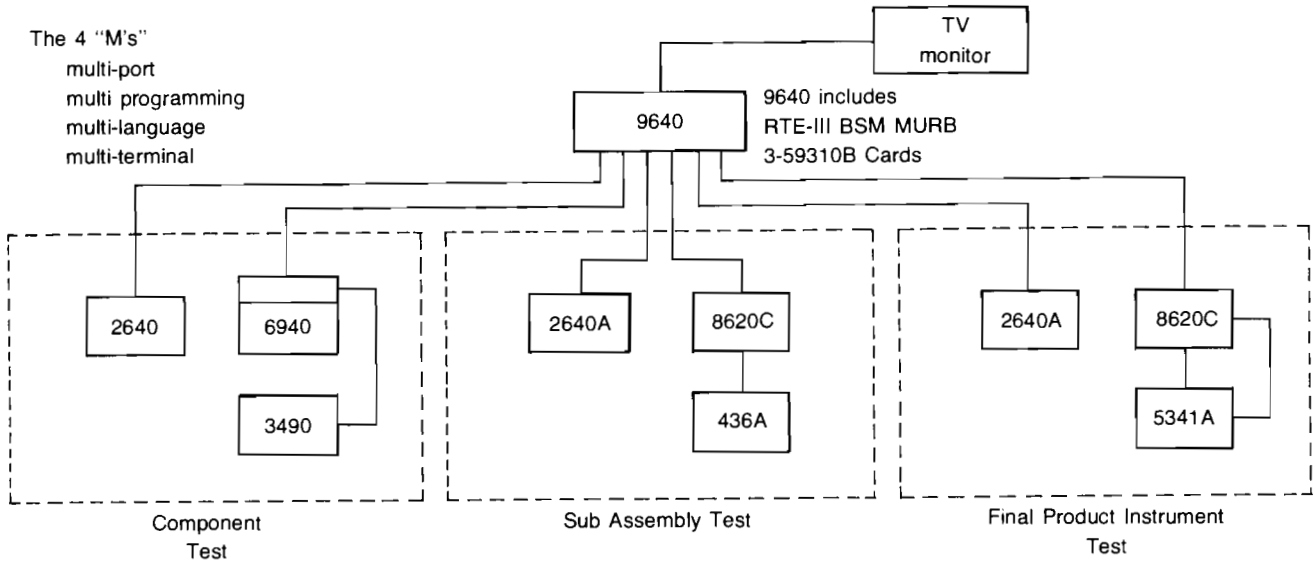
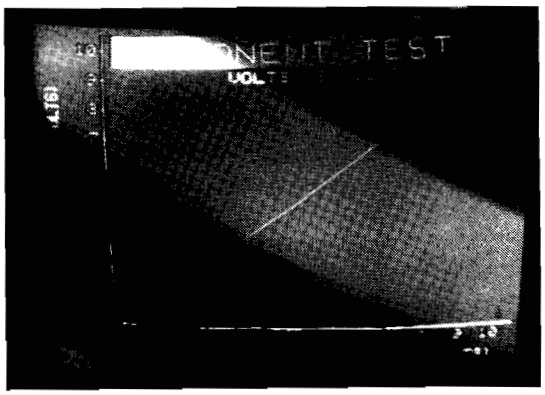


Figure 1

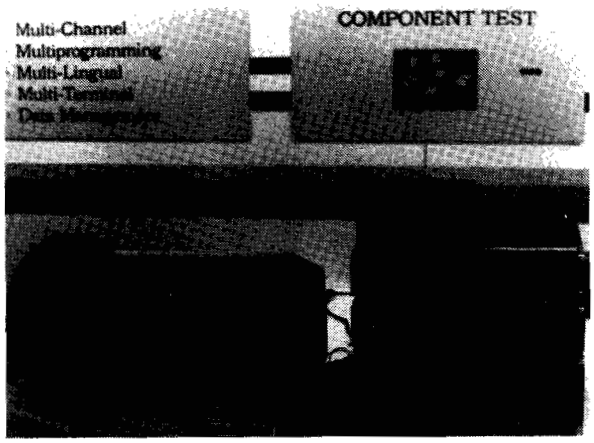
Component Test

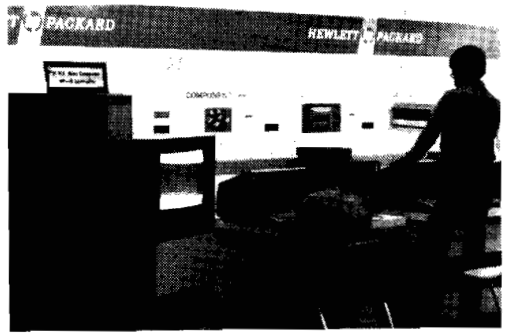
This test consisted of checking the differential linearity of a 12 bit MONOLITHIC D/A Converter which could be used in the finished product. The test used the 6940 MULTIPROGRAMMER and the 3490A DVM. The tabulated result was displayed on the adjacent 2640A and graphically displayed in LIVING COLOR on a VIDEO MONITOR via 3-91200B TV interface cards.

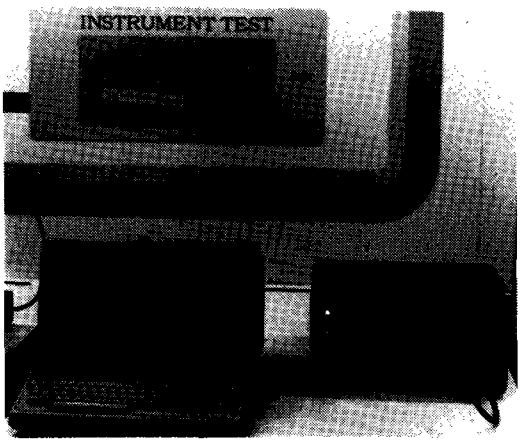


Sub Assembly Test

This test consisted of checking the power/frequency bandwidth of a microwave amplifier used in the 8620C final product under test. This test used the 8620C sweeper and 436A power meter with the results displayed in tabular form on the adjacent 2640A and graphically on the VIDEO Monitor.

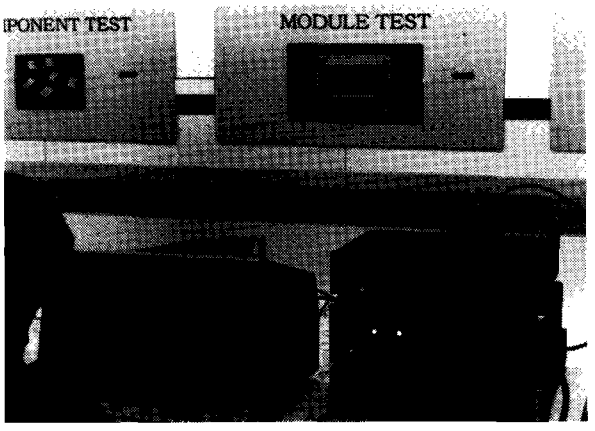






Final Product Test

A standard 8620C sweeper was tested for linearity from 2-18GHz. The results were again displayed in tabular form on the adjacent 2640A and graphically on the video monitor. All HP-IB demonstration programs were written in BASIC and the VIDEO MONITOR in FORTRAN.



For all you System Engineers who cannot wait to do your own demo systems for HP-IB ask *Moe Cote* (Lexington) how easy it is! When I left Electro 76 on Thursday 12th May, *Moe* was up to MOE-III demo program all done on the fly while demonstrating to potential customers.

PUTTING IT ALL TOGETHER

by: Joe Schoendorf/DSD

During the recent HP-IB introduction, I felt we enjoyed an unparalleled spirit of camaraderie and cooperation with our instruments "brethren." As you know, there was a lot of concern expressed about the lack of a plan to pay instrument F.E.'s commission on computerized HP-IB. At every opportunity instrument management has assured DSD that, in fact, this will not present any difficulties. In fact, they have challenged us. They claim that they will provide you will more leads than you will be able to respond to. I believe they are wrong! They will provide us with lots of leads and we will respond to every one!!

At the same time, I believe, we will look for opportunities to feed back leads for instrument sales. A perfect way to do this is with power supply leads now that we have the 2108K introduced. Many times a potential customer for a 2108K will have all but one of the power levels needed designed into this system. An HP power supply could be just the answer.

Again, working together, instruments, calculators and computers, we CAN'T BE BEAT!!!

AVAILABILITY DOWN ON 59310B

by: Hugh Amick/DSD

Since it's inclusion in the April 24 Availability Schedule, the 59310B has come down from 7 weeks to 4 weeks in the June 4 Schedule. We have successfully shipped almost all of our backlog in anticipation of the HP-IB/RTE announcement. We are now into volume production. (We've shipped most of the consignment orders and we're waiting for more. No demo system is complete without it's link to instruments!)

HP-IB/RTE TIMELINESS IS IMPORTANT

by: Hugh Amick/DSD

KEEP THE BUS ROLLING! You're a member of the only sales force in the world that can assist your customer in his need for a computer based HP-IB system. However, this is a precious time-eroding opportunity. The tremendous capabilities opened up by combining a "real time" system with the HP-IB will certainly bring our competition into the market. We have information on a few situations where the HP-IB capability has been quoted, but nothing on actual products or release dates. The widespread acceptance by the major technical committees such as IEEE and ANSI is multiplying the pressure on other computer manufacturers (not just mini-makers) to offer compatible hardware and software. YOU HAVE A SOLID PRODUCT THAT'S SHIPPING, SALES AIDS AND ADVERTISEMENTS, AND ABOVE ALL . . . A PRODUCT THAT OFFERS YOUR CUSTOMER *UNIQUE* CAPABILITIES! DO HIM A FAVOR, INTRODUCE HIM TO HP-IB/RTE **NOW.**

LEGAL REQUIREMENT FOR HYPHEN IN "HP-IB"

by: Joe Schoendorf/DSD

In order to protect the HP trademark, our legal people want us to always insert a hyphen between the HP and IB which, in legal terms, means "Hewlett-Packard's *brand* of the Interface Bus."

AVAILABLE HP-IB DEMOS

by: Charles Dixon/DSD

The following list of HP-IB/RTE Demo's have been developed to assist you in selling RTE/HP-IB combinations. All the demo's have been checked by the Cupertino SE Group and your SE should be able to set-up and customize one to your customer's specific interest.

Call *Hal Frazier* (DSD HP-IB SE specialist) for detailed Demo information.

DEMO	PROGRAM LANGUAGE	OBJECTIVE OF DEMO	PROCEDURE	HP-IB EQUIPMENT	COMMENTS
1	BASIC	To show transparency and ease of use of RTE REAL-TIME BASIC	Type ten numbers in program and the numbers will be displayed on 59304A Numeric display	59304A-Numeric Display	Simple Demo
2	BASIC	To show ease of system development under RTE	Input voltage to 3490 and run program MEAS3. Input voltage will be printed on Thermal Printer	3490A Multimeter 5150A Thermal Printer	
3	FORTRAN	To demonstrate QA Application	Connect 25 resistors to scanner inputs and start program *PLTO*. Approximately 3 minutes later, operator obtains a scattergram and distribution plot	3490A Multimeter 3495A Scanner 5150A Printer 12935A Plotter (opt.)	Application Note 5952-1578 (22)
4	FORTRAN	To demonstrate Industrial Test Application of HP-IB Computer based instrumentation	Set-up stimulus and response system containing the specified HP-IB Instrumentation. Then run FORTRAN program *PMS VCO* Test	3490A Multimeter 5435A Frequency Counter 3310A Voltage Control Amplifier 59303A Digital to Analog Converter	Application Note 5952-9932 (22)
5	BASIC	To show instrument service request handling (SRQ)	Use BASIC program JANE I and a (SRQ) will be generated by the 59308 every second. Computer will detect SRQ and print "SRQ SEEN"	59308A-Timer	Synchronous Status Check
6	BASIC	To demonstrate instrument service request handling (SRQ) and interrupt response handling —scheduling of alarm programs	Use BASIC program JANE 2. Program will respond to an SRQ by setting up an SRQ response program which starts the 59308A Timer's pacing operation	59308A-Timer	All (SRQ) response programs must be written in FORTRAN Asynchronous Status Clock
7	BASIC	To demonstrate an HP-IB component test cluster	**The Component Test Cluster** In the component test, an Analog Devices model AD-562 Monolithic DAC will be mounted on a printed circuit card test jig, zeroed and set for full scale by the operator as instructed by programmed messages on the CRT terminal. When zeroing and full scale set are satisfactory, the DAC will be programmed by a succession of approximately ten digital inputs via the 59500A interface and the 6940B Multiprogrammer. The 3490A-030 Digital Multimeter will measure each DAC analog output step and the results will be used to compute and list differential non-linearity on the CRT terminal. Periodically, the input/output response of the DAC will also be displayed on the color TV monitor.		
8	BASIC	To demonstrate an HP-IB module test cluster	**The Module Test Cluster** In the module test, an HP 0960-2036 C-band Microwave Amplifier will be tested for bandpass, using the input from an 8620C Sweep Oscillator with 86290A RT Plug-In and a 436A Digital Power Meter with 8481A Power Sensor. The passband of the Microwave Amplifier will be displayed periodically on the color TV monitor.		ELECTRO '76 DEMO
9	BASIC	To demonstrate an HP-IB Instrument Test Cluster	**The Instrument Test Cluster** In the instrument test, the frequency accuracy of an 8620C Sweep Oscillator will be checked by a 5340A Automatic Counter at a series of programmed frequencies, with the programmed frequency input plotted against the frequency output on a periodic color TV monitor display.		

Standard interface added to mini

Hardware and software package meets IEEE 488 instrument standard, simplifies user assembly and expansion of multipoint test systems

by Andy Santoni, Instrumentation Editor

A wide variety of automatic test equipment is on the market today, but many manufacturers still prefer to build their own instead of buying a general-purpose tester or even one tailored to a particular class of needs. They use commercially available computers and instruments so they can maintain control over all the details of the system and buy only as much capability as they may require.

A hardware and software package from Hewlett-Packard Co. can simplify the design, assembly, and expansion of in-house automatic test systems by making it easier to interface programable instruments to minicomputers. Called the HP 59310B, the interface package includes a card that plugs into powered slots of the firm's 21MX and 2100-series minicomputers so that the computer can control a group of instruments via the IEEE 488-1975 standard instrumentation-interface bus.

"This should make automatic testing an awful lot easier," says Bob Brannon, product marketing manager at HP's Data Systems division, Cupertino, Calif. A system can be integrated by plugging instruments into a computer. No software beyond the computer's standard operating system is needed. And adding another instrument to the system takes about 15 minutes, Brannon says, since no major changes have to be made to the system's software.

The $1,000 hardware and software package adds four other features to minicomputer-controlled test systems: several instrument clusters can be controlled by a single mini; the user can prepare programs on one terminal while the computer is executing test programs from another terminal; more than one programing language is available, and the minicomputer can be tied into multicomputer networks.

Each independent instrument cluster is connected to the computer through its own 59310B card and can be configured to perform independent tests. For example, one user can test components while a second checks out printed-circuit cards and a third tests completed products. Another port can be added for preparing test programs, even while the computer is controlling on-line instrument clusters.

The programs can be prepared in any of three languages: Fortran IV, which is convenient for scientific computation; Basic, which is comparatively easy to learn, or assembly language, which uses the minimum amount of storage space and therefore is less expensive—at least as far as hardware is concerned.

While controlling multiple systems, the minicomputer can also be connected to other 21MX computers or to IBM 360/370 systems via standard data-communications links. This network can be used in a management-information system, for example.

While each of these four capabilities is available in one or another commercial test system, they have never been combined with standard-interface-bus compatibility in a package designed to appeal to engineers who prefer not to buy a turnkey system.

HP has no intention of building turnkey test systems using the 59310B card, Brannon says. The firm can supply equipment and applications assistance, but responsibility for the performance of the system remains with the user, he adds.

Yet Brannon sees a market for 500 to 1,000 customer-built systems over the next two years. With prices starting at $30,000 or so for the minicomputer and its operating system alone, that's a substantial market. "The standard interface bus means there's an awful lot of money to be made by minicomputer iron vendors," he says.

Inquiries Manager, Hewlett-Packard Company, 1501 Page Mill Rd., Palo Alto, Calif. 94304 [339]

Electronics/May 27, 1976

Hewlett-Packard Mates 21MX To HP-IB

CUPERTINO, CA — If all goes the way Hewlett-Packard plans on the automatic test equipment industry is in for a mini-revolution. And "mini" is the right term. HP has just introduced what it calls the "HPIB-mini." The addition of a PC board, model 59310B, which plugs into an HP21MX minicomputer, converts the computer into the HPIB-mini.

The new system combines the power of the 21MX and the easily-implemented, instrument-oriented, Hewlett-Packard Interface Bus (HP-IB) and should prove a versatile testing system, according to Robert Brannon, HP's product marketing manager, data systems division.

"The story really began about two years ago," says Brannon, "when we introduced the HP-IB, our implementation of the present IEEE standard 488-1975 and instrumentation interface, which has also become the ANSI standard." Simply stated, the HP-IB, a calculator/controller-oriented interface allows the connection of an electrical device to any other within 50 feet. It is used by HP and other instrumentation houses to connect controllers, like desktop programmable calculators, to various testing equipment. Up to 15 HP-IB compatible interconnected devices, through the use of only 16 signal lines, can be handled by the interface. Participating devices can act as CONTROLLERs, TALKERs, or just LISTENERs, with the controller managing the operation of the bus system primarily by designating which devices are to send and receive data.

(Continued on Page 2)

HP Mates 21 MX Mini To HP-IB

(Continued from Page 1)

Brannon remarks that this concept was a "sleeper" that has really taken off. "We expect it to be a worldwide standard for instrumentation interfacing," says Brannon. The present HP line comprises about 50 instruments conforming to this interface, and Brannon points out that about 12 instrument manufacturers have already adopted the I/O capability within their products, although they might refer to it as an ASCII bus.

HP-IB Background

"We designed the HP-IB to work with a calculator because it was good and dedicated, but," Brannon recalls, "we knew that the scope of a controller is limited." HP did not consider using a CPU with the HP-IB initially because its effects on the interface introduction and on customers were not known. We cautiously held off using the mini. "About eight months ago, we felt that the timing was right," Brannon says. "It was time to mate the 21MX with the HP-IB." Hence the "HP-IB-mini."

The major contribution of this new system lies in the sophisticated software. It allows the user to have multiple clusters of instruments around the MX, each one testing independently with its own terminal, making it a multi-port system. Previously, the user had a minicomputer with instruments all doing one test.

The system is capable of concurrent program preparation whereby, through the use of a real-time executive, it allows more than one person to come up and generate tests without shutting the system down. The user also has his choice of language. Extended real-time BASIC, FORTRAN IV and assembly language can be used at the same time, giving the system extreme flexibility and versatility. It can be hooked to an HP7906 moving head disc for mass storage.

The ability for data processing is also built in so that the "HP-IB-mini" can be attached to another minicomputer or to an HP9700 central processor or IBM370 for network processing.

— *John Tsantes*

EDP-Based Unit Added by H-P

CUPERTINO, Calif. — Hewlett-Packard has unveiled a computer-based instruments system designed to operate several clusters of instruments simultaneously through the IEEE Interface bus.

Each cluster can include 15 instruments and the number of clusters is limited by the physical space with a 60-foot circle. The system is designed as a replacement for small-computer-based systems dedicated to a single application.

The system, including 21MX small computer, disk drive and Real Time Executive software, is priced at $31,000 and will be part of H-P's line of calculator-based instruments systems which start at $14,000.

Robert Brannon, product marketing manager in the Data Systems division, here, said the new system allows the preparation of new programs through software at the same time it is executing test programs.

Also featured are specially rewritten Fortran IV, basic, and assembly languages with new commands to communicate with the interface, he said.

In addition, through RTE II and RTE III software, the system can be used for data management and multi-computer networking with either an IBM network or an H-P computer network, Mr. Brannon said.

He added the major obstacle in marketing the new system would be users who look to the setup to solve all their problems.

"We're concerned people will overstep the capability. Basically this is a do-it-yourself kit, but in the end we're trusting to their professionalism," he said.

Addenda Hewlett-Packard's Data Systems division **has received a $3 million order** from Iraq for 21 HP3000 minicomputer systems plus other peripheral equipment. To be used in accounting, payroll, and production control, the first system will be installed in the ministry's headquarters in Baghdad in late summer. . . . The first hardware and software package **to permit use of the IEEE's standard interface bus with minicomputers** has been developed by Hewlett-Packard's Data Systems division. It interfaces instruments and HP's 21MX and 2100 series minis. . . . A new trade group has been formed for makers of consumer electronics products. **Its name: Association for Contemporary Electronics.** The president is Don C. Hoefler, publisher of Microelectronics News, a Silicon Valley newsletter. Among the directors are AMI chairman Howard Bobb, Atari chairman Nolan Bushnell, and Intersil chairman and venture capitalist Fred Adler. The group has scheduled a show next March in Long Beach, Calif.

Electronics/May 13, 1976

DATA TERMINALS NEWS

Division News

ONESY-TWOSY COMPETITION HEATS UP

by: Carl Flock/DTD

Initial results show that the struggle will be intense in the ONESY-TWOSY contest. Reaction to the first annual-summer ONESY-TWOSY Salesperson of the Year contest has been varied and heated. Terminal Tigers all over the world are slashing and fighting to win the prize of prizes.

The Data Terminals Contest Judges have asked that the rules be clarified to reflect the difficulty of the sale. Thus, we have prepared a new contest entry form which:

1. Gives an extra point for onesy-twosy sales on non-HP systems, and

2. Gives a point if you use the standard delivery and don't ask for the special onesy-twosy delivery.

Thus, if you sell onesy-twosy on an Interdata computer with standard delivery you will get 3 points toward being King of the Onesy-Twosy Aces.

Aggressive salespersonship is key, but prompt entry also counts because in case of a tie, the entries with the earliest postmarks will be first. The decision of the judges, while arbitrary, will be final. All entries must be postmarked by September 2, 1976.

GOOD LUCK! All you Onesy-Twosy Terminal Tigers!

SALESPERSON: _____

Customer	Sales Order No.	Date Trans.	Qty. (1 or 2)	1 Pt. Non-HP Sys.	1 Pt. Std. Del.	Total
					GRAND TOTAL	

"THE FERG'S TWOSY HINT NO. 37"

by: Rich Ferguson/DTD

For the salesman with enough zeal
your prize will have great appeal -
It is useful and handy,
for work it's quite dandy -
Around the office you'll be a Big Wheel!

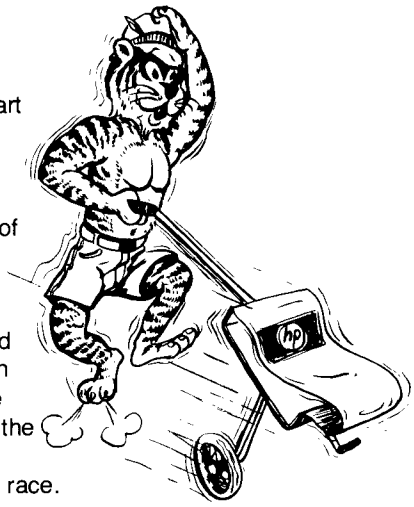
NEOPHYTE CLASS #4 AND 5 SAY!

by: Carl Flock/DTD

The Terminal Team is a winner -
When they have a neophyte dinner,
They are always prepared,
No expenses are spared,
And the salesmen always leave thinner!

MEMORIAL DAY CLASSIC - 500 LAPS AROUND THE PARKING LOT

by: Carl Flock/DTD



The Data Terminals Cart Division held their first annual Memorial Day Classic at lunchtime, Friday, May 28, in front of Building 40, on the parking lot.

It was a breezy day and everyone was carting in the wind. Several false starts occurred due to the enthusiasm of the competitors prior to the race. Preliminary qualifications were conducted during the week prior to the race, with empty terminal carts.

The final race was run with full-blown 2640's and 44's, all with standard accessories. No lab modifications were permitted. (One sad note: *Chuck Rulofson* was disqualified for trying to run a cart with multiple specials, under the guise of standard options. He was trying to play "Ben Hur" with spikes on his wheels.)

Finishing second was *Fran Codispoti* of O.P., who was given a slight advantage by running a shorter course, due to her diminutive size. Unfortunately, a cleat in the bottom of one of *Fran's* track shoes became embedded in the asphalt, which gave her a slow start.

Ed Hayes emerged victorious, pushing a modified DTCD Yellow Streaker Model with wire wheels and aluminum chassis. This qualifies him to compete in DTD's Onesy-Twosy Salesperson of the Year Contest.

ale $ucce$$e$

FELIX BALMAZ'S ($100K) MONTHLY SUCCESS STORY

by: Carl Flock/DTD

Felix Balmaz is becoming a regular feature in Sales Successes. If you'll remember, he sold 19 terminals to one account in March. In April, he sold 24 terminals to Ft. Meade.

"Don't look a 'terminal sink' in the mouth!" Right! We no longer think *Felix* has a 'terminal sink' but rather a 'terminal bathtub!' A couple of dozen terminals a month goes a long way toward personal prosperity and financial independence. Good job, *Felix*!

Remember, "Sell a terminal a day and keep the doctor away." We don't expect everyone to sell a terminal for every working day, on a non-HP system, but we do think every salesperson should sell one or two terminals per working month on the "strange" systems of the world!

KEITH HOWEY SCORES IN THE MOUNTAINS

by: Rich Ferguson/DTD

Keith Howey from high up in Englewood, Colorado has landed a big sale at Martin-Marietta Denver. Martin has purchased 27 2640's to be used on a classified project for the government.

To help land this sale, Data Terminal Division has quoted two specials to modify the 2640's which include swapping some keys and supplying an alternate character set.

Keith's blazing success was the result of a combination of not only *Keith's* outstanding sales performance, but also DTD's responsive specials department and a little help from his friends in the East.

Congratulations to *Keith* on his "Rocky Mountain High."

"2640'S GO TO SCHOOL!"

by: Dick Byhre/DTD

Gabino Perez of our Monterrey, Mexico sales office recently closed an order with the Inst. of Technologico Reginal of Mexico for **$32,000** worth of 2640's.

The 2640's will be used in an educational CAI network, stretching from Mexicali to Monterrey. The terminal controllers are HP's ever-popular 3000's.

Gabino says, "This is only the beginning." This terminal network is planned to grow from this initial six to ninety-six for a whopping **$368,000** during the next year.

Congratulations, *Gabino,* for a job well done!

6 HOURS, 18K

by: Carl Flock/DTD

Mike Naughton has led an HP sales team to victory over the combined competitive force of BeeHive and Magnavox. *Mike Naughton,* with an assist from *Joe Euse* and *Bob Karasek,* has sold six 2640's to Eli Lilly & Co. in Indianapolis.

The 2640 will be used in a process control environment to obtain information on manufacturing operations. This 2640-based system will utilize an inplace HP real-time minicomputer as the terminal controller. Eli Lilly bought the 2640 be-

cause of its extended memory and programming (ESC CODE) ease.

This sale commenced with a general presentation of the 2644 given to management at Eli Lilly. This was followed by a technical discussion in the HP office. Total time involved was 6 hours—total sale was 18K. Not bad! Not bad? THIS IS FANTASTIC! *Mike, Joe and Bob,* you've done a super job—Keep up the good work!

Order Processing Corner

FAR-OUT ORDERS

by: Dianne Nikkel/DTD

Data Terminals Division will accept orders with required delivery dates up to six months from transmittal date.

Orders placed with delivery time greater than six months usually are subject to price and product changes. Change orders then must follow to correct those orders already on file. The changes involved are very costly in both time and profit-sharing dollars.

We, therefore, request that you not attempt to transmit orders with a required delivery date of six or more months from transmittal of order.

WHEELS QUESTIONED?

by: Fran Codispoti/DTD

Twenty wheels have been shipped. The question is, will we receive more orders or not? With the next production run of 10, this could be our last! You are the ones that can supply the answer.

How can you beat the bargan price of $100! Our production manager has assured us of 100% reliability. (Not one flat tire yet!)

Send your orders now for this colorful, portable product, while we can deliver! Remember, these are the same famous carts used in DTCD Memorial Day Classic-500 race.

"AVAILABILITY MEANS AVAILABILITY!"

by: Ralph G. Pritchett/DTD

We would like to stress the importance of:

- Quoting to customers the correct current availability as listed in the schedule; and
- Only transmitting orders with required dates of current availability or greater.

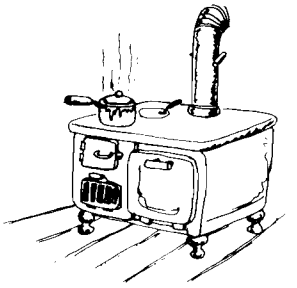
Onesy-twosy orders must be specified in special instructions. We have 3 week availability for these orders.

Contact us if you have any questions.

Product News

STORE SEVERAL FORMS IN MEMORY!

by: Trygve Roos/Helsinki



It is sometimes desirable to have several forms in memory when you have to swap between a few forms frequently in a data entry application. The following technique is useful if you have that need, and especially if your forms contain a lot of protected fields and a small portion of unprotected fields.

How is it done?

1. Write all the forms (eg. A, B, C) on the screen including protected and unprotected fields, as if you had only one form ("file A-C").
2. Complete "file A-C" with a set of control codes, which delete all "start unprotected field" control codes from forms A, B, and C.
3. Write a second file (2644) or a program (2640) which contains control codes for re-inserting "start unprotected field" control codes for all unprotected fields in form A and deletes all "start unprotected field" codes of B and C.
4. Write a third file (2644) or a program (2640) which re-inserts "start unprotected field" codes for fields in form B, and deletes all "start unprotected field" codes in fields of A and C.
5. Write a 4th file (2644) or a program (2640) which restores C-fields and purges A and B fields.
6. Then by first reading the file (executing program number 1), you will write all forms into memory, write all unprotected field start and stop codes and delete all start codes (without a "start" code a "stop" code will be passive). Now you can choose whichever form you want by pushing function keys; i.e., (A=f2, B=f3 and C=f4) in any sequence, and the response time is just the search time (or the 2640 computer program response) plus reading a few control characters instead of reading all protected fields, etc. as well. (In the 2640, the function key can trigger a program which sends the control codes).

NOTES

1. Always start your control codes file by turning format mode off and finish it by turning format mode on.
2. Always minimize line feeds by filling every line (but leave 2 spaces for automatic cr-lf insertion).

3. The only practical way to delete start unprotected fields is:

   a. Directly address the start of an unprotected field, insert blank, move cursor 2 positions to the left, delete 2 characters, insert blank and smile—you did it!

   b. Any other method may accidentally modify your form.

4. When you re-insert start unprotected field codes:

   a. Turn format mode off, then turn insert character mode on

   b. Directly address the start of the field

   c. Insert the start unprotected field code

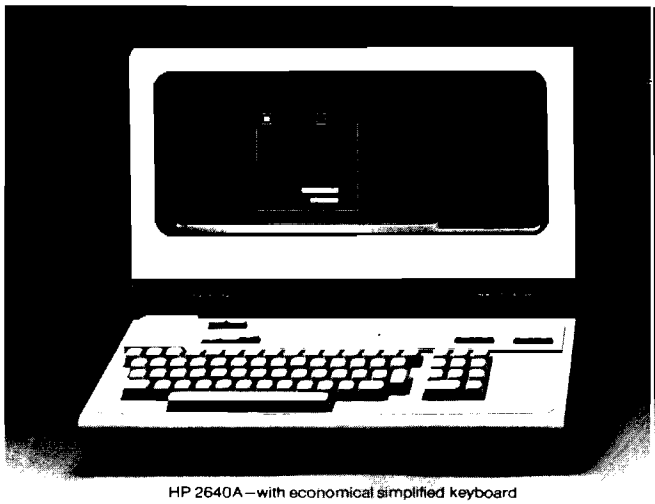
   d. If you had any other control codes in the beginning of the field before you deleted the start unprotected field code, you would have to re-insert them; remember to re-insert them BEFORE the start unprotected field code; e.g., if you had a control "o" (turn alternate character set off) code in the address as the start unprotected field, you would have to re-insert it; otherwise, your entered data in the second round would look like ancient artwork.

   e. In the end, turn insert character off and format mode on and you made it again!!

Can you get a demo tape? Sure! Send an empty 2644 cartridge to:

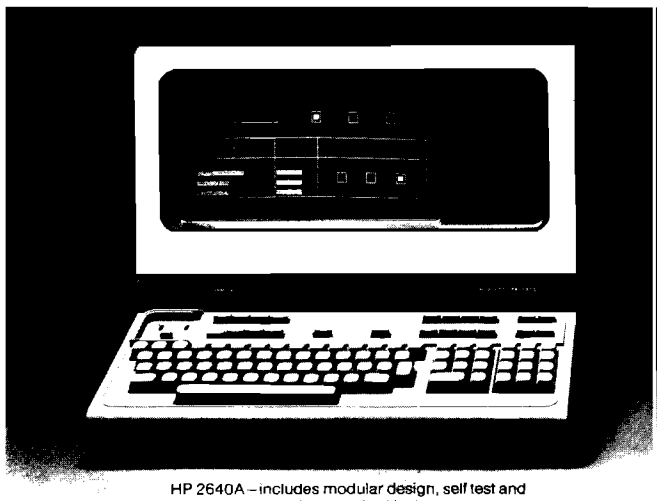
Hewlett-Packard Oy
Trygve Roos
PL 6
SF-00211 HELSINKI 21
Finland

and you'll get a copy by return mail.

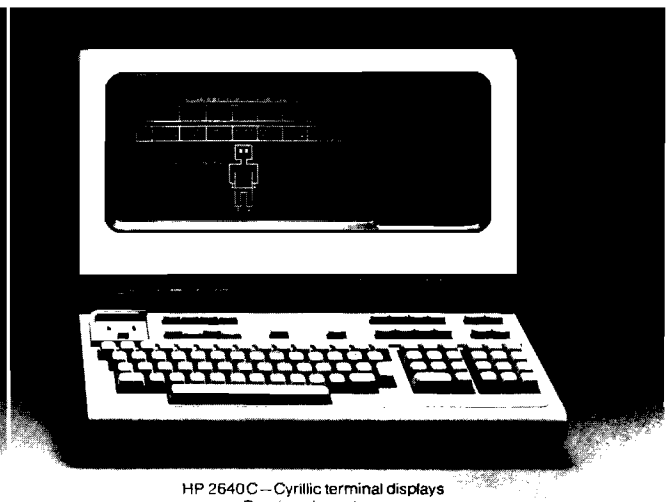


HP 2640A—with economical simplified keyboard

HP 2644A—incorporates twin cartridge integrated mass storage



HP 2640A—includes modular design, self test and many other standard features.



HP 2640C—Cyrillic terminal displays Russian characters.

FORM FITTING.

For our Field Engineers, Systems Engineers, Staff Engineers, RSM'S, DM'S, SECRETARIES, AND LIBRARIANS - HERE IT IS AGAIN. What a bargain!!

by: Eric Grandjean/DTD

MANUALS AND SALES AIDS FOR THE 2640 SERIES TERMINALS

MANUAL	LIST PRICE	PART NO.	MICROFICHE
2640A Owner's Manual	$3.00	02640-90011	
2640A Service Manual	5.00	02640-90012	-90014
2644A Owner's Manual	5.00	02644-90001	
2644A Service Manual	6.50	02644-90002	-90003
2640A Application Note, Character Generation	7.50	13245-90001	
2640C Operating & Maintenance Supplement, Cyrillic		02640-90037	-90048
2640A Flier		5952-4656 (22)	
2640 Spec Sheet		5952-4666 (42)*	
13248A 2640A Terminal Service Kit Spec Sheet		5952-5545 (22)*	
2644A Brochure		5952-5557 (22)	
2644A Spec Sheet		5952-5560 (42)*	
2640A/2644A Printer Application Brief		5952-9959	
2644A Reference Card		5952-9950	
2640C Cyrillic Terminal		5952-9952 (42)*	
13250A Asynchronous Data Comm/Serial Printer Interface Spec Sheet		5952-9953 (42)*	
13231A Display Enhancements Spec Sheet		5952-9954 (42)*	
13254A Video Output Interface		5952-9962 (42)*	
13245A Character Set Generation Kit Spec Sheet		5952-9955 (42)*	
2640A Customer Videotape (B&W)		90358	*F = W/O Prices D = With Prices
2644A Customer Videotape (Color)		90541	
2644A Demo Tape (Distributed with each Demo Unit)			
2644A Auto Salesman (order from Sales Development)			
2644A "USER INSTRUCTION TAPE"		02640-90008	
2644A Poster "GATEWAY TO NEW HORIZONS" (Order from DTD Sales Dev.)			
HP Journal (June, 1975) (2640A)			
HP Journal (May, 1976) (2644A)			
Purchase Agreement for HP Data Terminals			R4-76

JUNE 15, 1976

GENERAL SYSTEMS NEWS

Division News

SERVICE LITERATURE

by: Ilene Birkwood/GSD

The attached list identifies the technical notes and publications which are used by GSD when sending out information to the field. To assist the C.E., S.E. and product specialist in finding required information, it is important that everyone is consistent in using the same document for a particular type of information. The list identifies the document that you should use and gives a list of the people who receive the document.

Note the change in the use of the *S.A. Note.* Bug fixes and general application information which used to go out on S.A. Notes are now published in the *Communicator.* The *S.A. Note* should only be used when this type of information is company private. The *Communicator* goes to the customer—the *S.A. Note* does not.

S.E. Notes no longer exist. Pre-sales information for the S.E. should be included in the GSD News. Application information for S.E.'s should go in the *Communicator,* or in an *S.A. Note* if it is company private.

Service Notes should not be used. All hardware fix-it information and handy tips for the C.E. and product specialist should be sent out on an *IOSM. Technical Notes* and *Production Memos* should not be used.

IOSM (Inter Office Service Memo) notes are now formatted so that they can be included in the *Gold Book.* The *Gold Book* (the Customer Support Handbook, part number 5951-5647, to give it its formal title) is a collection of useful information for the C.E. For example, it contains the CPU instruction set and PCA card configuration.

Submit clean typed drafts of the information that you want to send out to the following people.

Communicator	**- 2000 Access information to *Anna Holland* - 3000 information to *Pat Wilcox***
S.A. Notes	**- *Bea Cornejo***
IOSM	**- *Arden Lawson***
GSD News	**- *Carol Budkowski***
F.C.O	**- *Bea Cornejo***

PUBLICATION	INFORMATION	DISTRIBUTION	
		3000	2000
IOSM	Hardware fix it information Troubleshooting hints Product Support Plans	Librarians C.E. Managers 3000 C.E.'s	Librarians C.E. Managers 2000 C.E.'s
Company Private	General operating/ adjustment info	Other 3000 Product Specialist	Other 2000
S.A. Notes	Company private software information	Librarians C.E. Managers S.E.'s Other 3000	
Company Private		Product Specialist	
Communicator	Bug fixes (MIT) Software fix it info Application notes Training schedules Handy hints Manuals available	Librarians C.E. Product Specialist C.E. S.E.	
GSD News	Sales information S.E. pre-sales info S.E. handy tips	Librarians S.E. C.E. Manager 3000 C.E.'s Other 3000	
F.C.O.	Hardware changes that *MUST* be made	Account Responsible C.E. Product Specialist	

3000 Product News

SERIES II PRESS CONFERENCE HIGHLIGHTS

by: John Kane/HP Corp

The new 3000 Series II was officially launched at a crowded news conference in New York City on May 25. More than 35 key members of the financial and trade press turned out to cover the story of HP's second generation 3000 computer system.

Reporters and editors from both fast breaking news agencies and deeply technical trade journals seemed to be impressed by the significance of Series II and its technical contributions.

Paul Ely, group general manager, launched the 40 minute presentation by stressing the importance of the 3000 Series II to HP's computer operations. General Systems Division General Manager *Ed McCracken* then described the various models within the Series II family and the principal markets for each; *Len Shar,* project manager for operating systems, detailed the technical improvements in the system; and *Bill Krause,* marketing manager, outlined markets for the Series

II while emphasizing the importance of the HP support services available to customers.

Following the formal presentation, newsmen were invited to take part in demonstrations on the Series II and to question HP spokesmen on all aspects of the company's computer operations. This information exchange continued through lunch and into the afternoon.

Scene for the introduction was the 64th Floor of the RCA Building in New York's Rockefeller Center. As one newsman observed, HP certainly set an altitude record for computer introductions.

The news conference went off without a hitch largely through the efforts of a team of engineers from the Paramus region who worked into the early hours of Tuesday morning to get the new system up and running. Systems engineers *Sharad Heda* and *Steve Feo* and customer engineers *George Senna* and *Jim Rogers* were responsible for putting Series II "on air" in time.

Regional Sales Manager *John Sundry* and District Manager *Ralph Mele* also played key roles in making certain that everything went well.

Back in Santa Clara; *Dave Sanders, Marc Matoza* and *Rich Edwards* contributed heavily to the success of the conference and provided *long distance* support to those on the scene.

The entire event was orchestrated by *Ross Snyder* of Corporate Public Relations who was responsible for the fine turnout of press people, made all arangements for the facility and luncheon and made certain that the conference flowed smoothly from beginning to end.

In addition to the New York news conference, similar events have been held or are being planned in Paris, London, Duesseldorf and Stockholm.

News organizations which sent representatives to the New York conference: *Auerbach Publishing, Barron's Financial Weekly, Business Week, Cahners Publishing, Computer Decisions, Computer Design, Computerworld, Data Communications, Data Communications User, Datamation, Datapro, Design News, EDN, EDP Industry Report, EE Times, Electronic Business, Electronic Products, Electronic News, Electronics, Electronics Letter, Government Data Systems, Infosystems, Purchasing, Reuters.*

CX TO SERIES II UPGRADES

by: Bob Lewin/GSD

Your current HP 3000CX customers will be able to take advantage of the increased capabilities of the HP 3000 Series II. This is made possible by product number *30409A* - CX to Series II Upgrade. By ordering this product your current CX customers will be able to convert their existing configuration to a 256KB Series II with Model 9 expansion capabilities.

The price of this upgrade will be $75,000. A credit of $10,000 will be given to those customers who elect to return their replaced CX devices to Hewlett-Packard if they have a 128KB machine. Those upgrading and returning a 96KB configuration will be given an $8,000 credit.

This $75,000 represents an excellent value to current customers since it allows them to *more than double* (see your performance data) their present throughput. Plus it provides them a substantial growth path that insures continues support for their future data processing needs.

By comparison, a System/3 model 10 customer with 48KB of memory going to a System/3 Model 15 with 256KB would be faced with the following cost:

Model 10 A17 Option (48KB)		**Model 15 C24 Option (265KB)**	
Purchase Price	Monthly Rental	Purchase Price	Monthly Rental
$55,760	$1,650	$155,480	$3,854

Upgrading a System/3 Model 10 to a Model 15 requires an all new processor and all new memory. If the customer owns System/3 (IBM is now encouraging customers to purchase their systems) the upgrade cost would be *$155,480*—more than double what we charge.

And IBM offers no formal means of helping the customer dispose of used equipment, as we do with our trade-in credit.

Upgrade vs Second Computer

If a customer has the additional funds to purchase a second Series II and keeps his current CX — fine! One of our key marketing strategies is selling distributed computing. In these situations where two machines are appropriate this approach would be to the customer's advantage.

Many customers, however, will need the power derived from a 256KB Series II computer. They will need the throughput and response this computer can provide. For these customers, this upgrade product offers you an opportunity to provide them an economical means of obtaining a computer with the potential to increase their throughput fourfold!

Points to Remember

The Series II Field Training Manual and the 30409A data sheet provide the basic information necessary to answer questions dealing with a CX to Series II upgrade. However to be sure all your questions are answered *READ THE FOLLOWING POINTS:*

1. The upgraded customer will have a 256KB Series II with I/O and memory expansion capabilities of a model 9.
2. The customer is shipped two bays that will replace his CX CPU and I/O bays.
3. Those customers currently with a selector channel on their CX *must* also order option 132.
4. Those customers identified with the sub-optional ATC *must* order option 152.

5. Those pre-CX customers desiring the new cabinets must order the appropriate number of option 150.

6. All customers upgrading should be strongly urged to take the one day on-site course — CX to Series II Upgrade (#22818A).

7. The installation of the upgrade is estimated at 30 man-hours (2 men for 2 days). This includes installation and testing. The cost of the installation is included in the price of the upgrade. The upgrade labor cost is based on *normal* HP working hours. Extra hour or weekend installation should be an extra charge to the customer.

8. Those customers with the 2MB swapping disc (30103A-001) need to order a 30129A subsystem plus a 30030B selector channel or special order a fixed disc upgrade (30103A-E01).

9 The following peripherals are *not* supported on the Series II:

   a. IBM 2741 terminal
   b. HP 30107A card reader
   c. HP 30112A card punch
   d. HP 30126A Cal Comp Interface

10. Customers upgrading from a 128KB CX should be offered a $10,000 credit for returning their replaced CX devices to Hewlett-Packard; 96KB CX customers upgrading should be offered a $8,000 credit.

11. The CX equipment returned to Hewlett-Packard is the replaced CPU and I/O bays, card cages, power supplies, maintenance panels and desk (if installed), and all appropriate CX manuals.

12. The packaging and freight (via surface when possible) cost for the returned CX is charged to the factory. This work is accomplished by HP's CE's.

SERIES II CUSTOMER SLIDES READY FOR PURCHASE

by: Jean Toth Kelley/GSD

The Series II Customer Slide Presentation can now be ordered with an I.O.S. from *Bob Hall,* GSD-Santa Clara. Use the part number 47-760430 for this set of approximately 100, 35mm slides. The cost: $100.00 (U.S. Prices Only).

An instructor's guide completes the set.

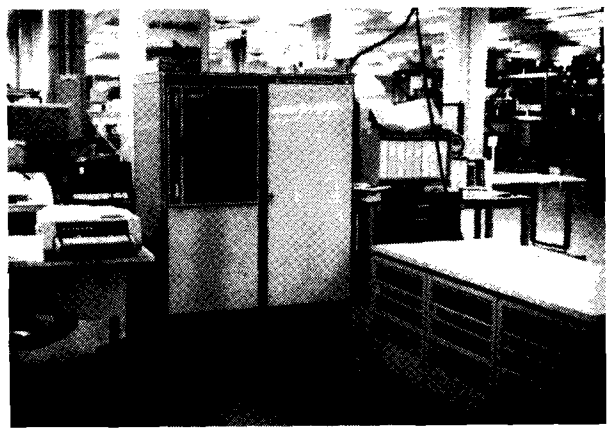
Happy Selling!!!

2000 Product News

7905 LOW-BOY CABINETS INCORPORATED INTO ACCESS

by: Dan Jorgenson/GSD

Beginning July 1, 1976, *each* 7905 disc shipped with an HP 2000 Access System (19700A) will be racked in the new "low-boy" single disc cabinet as shown below.



2000 Access System with three 7905 discs.

This production change affects orders for options 005, 40, 223 and 224 of the 19700A. The description of these options now are:

-005 Replace 5 Mbyte system disc with $4,000
15 Mbyte cartridge disc subsystem
in stand-alone cabinet (12962B).

-040 MODEL 40 option: add $8,200
32 kbytes memory to communication
processor; replace 12960A with 12962B
15 Mbyte disc in stand-alone cabinet;
add $10,950
16 channel multiplexer (12920B).

-223 add 13180B 15 Mbyte disc in stand-alone cabinet.
Note: option 005 or 040 must be ordered.

Option 224 has been deleted. Use option 223 to add more disc storage in 15 Mbyte increments. The prices of these options have not changed from that listed on the May 1 CPL.

For example, if options 40 (Model 40), and 224 (2 additional 7905's) were previously ordered, the system would ship with *1* two-bay system cabinet (29404B), and *3* low-boy cabinets each containing one 7905 disc drive. The 7905 controller will remain in the 2-bay system cabinet.

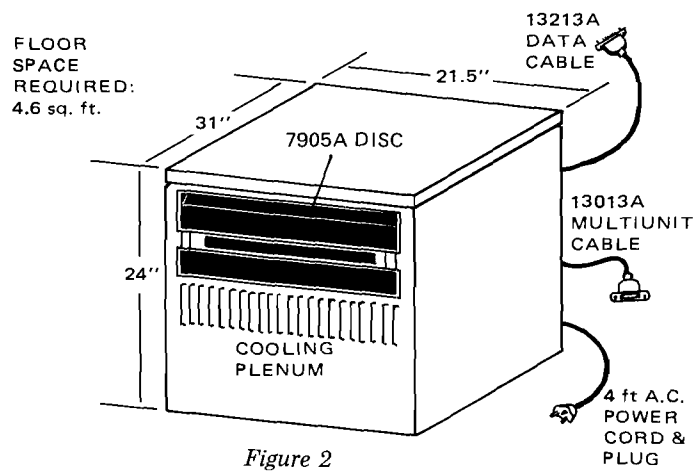


Figure 2

In addition to containing a 7905 disc drive with disc pack (12940A), each low-boy cabinet (29425A) contains a cooling plenum (48018A) and power distribution unit. Dimensions of the cabinet are shown in figure 2. The first disc on the system is connected to the controller via a 18 ft. multiunit cable (13013A-002) and a 25 ft. data cable (13013A-001). Each successive disc is connected via a 8 ft. multiunit cable (13013A-003) and 50 ft. data cable (13213A-002).

Sales representatives and customer engineers involved with backlogged systems to be shipped after July 1, 1976 have already been contacted and informed of any new site preparation requirements.

*Wood grain tops available.

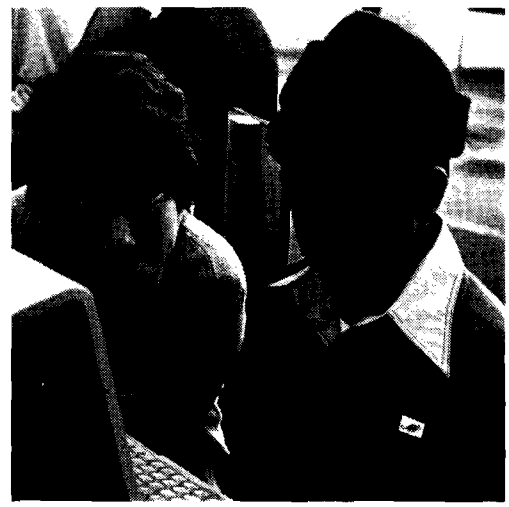
EDUCATIONAL Product News

EDUCATION DEMO DISPLAY AT BICENTENNIAL EXHIBIT

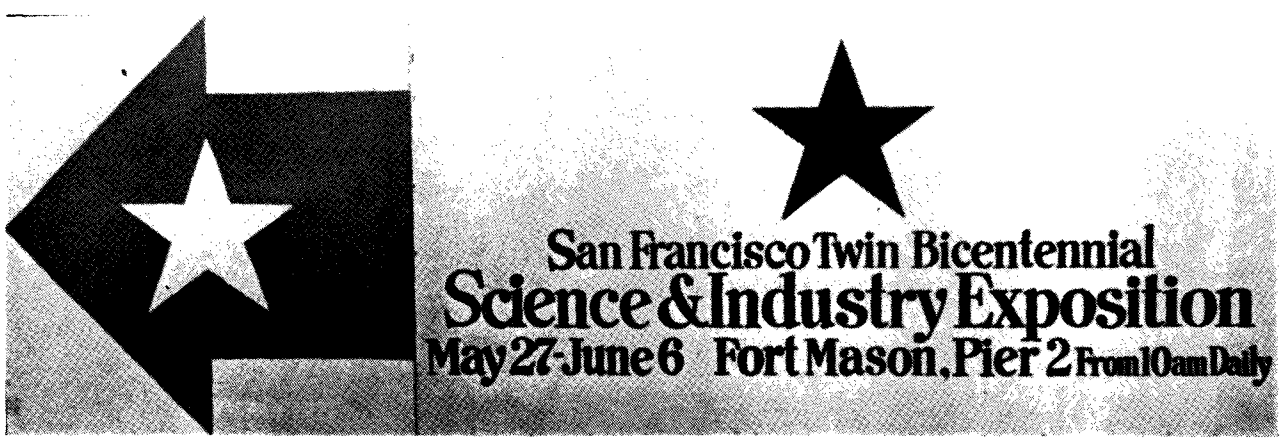
by: Carol Budkowski/GSD

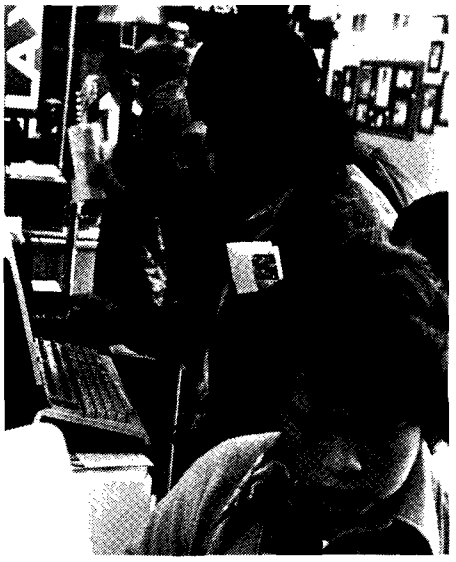
Where else could an education demo on HP 2000 Access system compete directly with free fir seedlings, a lunar rock, or a treatment for the Plague? Only at the San Francisco Twin Bicentennial Science & Industry Exposition held from May 27 to June 6, 1976 on Pier 2, San Francisco Bay.

The Hewlett-Packard Company, along with approximately 57 other technological leaders in science and industry, participated in this unique celebration of being Americans living in a free enterprise society. The theme of the exhibition was bicentennial; yet, it was definitely a celebration of contributions made not only in creating new industries but also in revitalizing and upgrading existing industries.



Represented by a variety of hand-held and desk-top calculators, an on-going video tape about our company's products, people, and philosophy, and three 2644's displaying a series of education demos via telephone connection to the 2000 Access system, Hewlett-Packard's booth was by far one of the best drawing booths at the show.





The educational demos really excited the audience primarily composed of very young *prospective* HP product users. The games and quizzes offered a very palatable demonstration of the 2000 Access system's capabilities as a powerful teaching aid. In fact, the biggest hit of the HP booth besides the plotter which colorfully graphed birth dates, was the quiz on the development of science and industry in the Bay Area. And not to forget, the Civil War battle simulation was quite a *smash*.

Other contributors to the exhibition were: Standard Oil Company, Raychem Corporation, Varian Associates, Crown Zellerbach, NASA, and Hills Brothers.

DIRECT MAIL CAMPAIGNS AID SALES EFFORTS

by: Pat McGrath/GSD

The Educational Product Marketing Group at GSD is striving to

- build HP's image as a leading supplier of small computers to educational institutions,
- create awareness of HP's educational application software, and
- generate qualified leads for you.

In this pursuit, several direct mail campaigns have been completed. Here is a list of these direct mails and what was included in each:

1. Deans of Medical and Dental Schools-Health Sciences Brochure
2. Deans of Engineering Colleges-Application Note
3. Deans of Arts and Sciences-College and University Brochure
4. Vice Presidents of Administration-Application Note
5. College and University Presidents-Education Flyer
6. Deans of Education Colleges-Newletter
7. Deans of Business Administration-HP 3000 Series II Announcement
8. College and University Computer Center Directors-HP 3000 Series II Announcement.

Here's to your good selling!!!

$ales $ucce$$e$

WALTERS STATE: A SUCCESS STORY

by: Jack Clarke/SSR

Walters State Community College has successfully converted from a Burroughs 1716 to the HP 3000CX Model 200. After a year of study and 50 page specification, bids were received from HP, DEC (11/45), DG (Eclipse 300), IBM (Sys 3 Mod 15 and 370/115), Burroughs (1728), NCR (Century 151), and Honeywell (6260). Only one vendor, HP, completed the COBOL, Fortran, Basic, and RPG benchmark.

The evaluation was based on 1,000 points (with categories like Corporate Stability, Language Implementations, Satisfied Customers, etc.), with HP first and DEC second about 100 points lower. The 3000 was shipped surface on February 19th and arrived February 24th. Twenty four hours after our service people arrived, the system was running and has been running since.

The WSCC people advise that COBOL conversion (most of their programs) averaged about 10 minutes apiece using the EDITOR. The system is primarily administrative with an IMAGE data base capital goods inventory system running already and on-line registration soon. Also, they are teaching Fortran and RPG now, with about 50 student jobs per hour running simultaneously with administrative jobs.

They are an excellent reference account. Contact *Jack Clarke,* FE/Atlanta for further details.

3000 CX OUTPERFORMS A 370/125

by: Bob Ingols/GSD

We've received an order for a 3000 System from Furman University, Greenville, South Carolina. It will be a key educational reference account for that area.

Doug McArthur, F.E., High Point, orchestrated the winning sales strategy. Our key to success was better benchmark performance than any competitor.

Steve Jamison, S.E., converted many IBM 1130 programs to the 3000 CX, including administrative and student jobs. The benchmark was run in March, and it included batch programs running concurrently with 16 interactive terminal sessions. Grading was by work completed with different job mixes over certain time periods.

Among the competitors, only HP and an IBM 370/125 were able to complete the benchmark. The 3000 CX was a clear winner according to Furman's DP Manager.

For more details about this successful benchmark, please call *Doug* or *Steve* in High Point, North Carolina.

HP GRENOBLE NEWS

Division News

HPG MARKETING

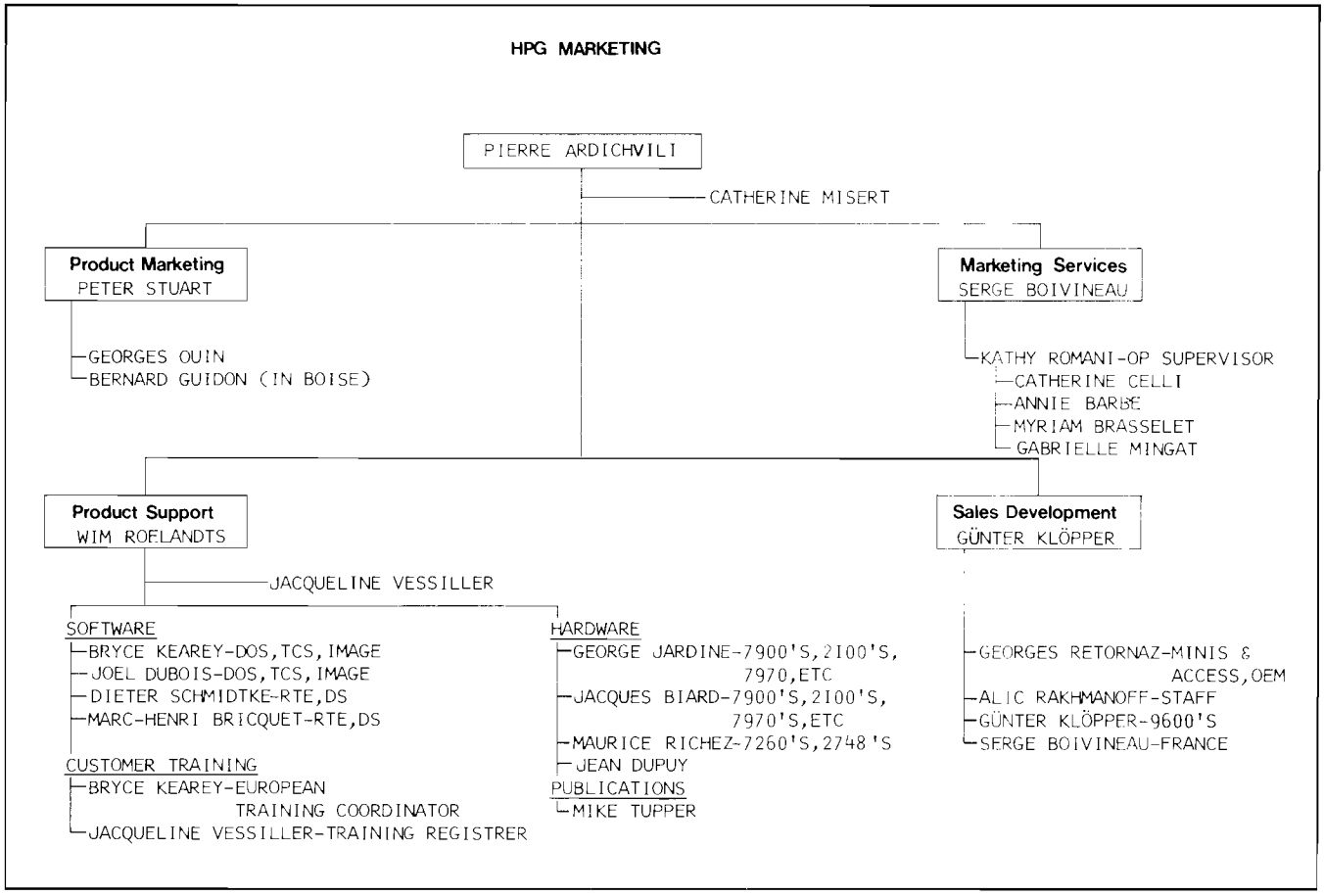
by: Guenter Kloepper/HPG

Since this is the first issue of "Grenoble Division News" to be circulated worldwide, it is appropriate for us to remind you of what we do and who are the players.

HP Grenoble was started in 1971 and moved into a fine new building in the Spring of 1975. We now number approximately 300 people and supply DSD products in Europe together with paper tape readers and OMR's for our worldwide market. (Boise represents us in the North American and ICON markets).

Our General Manager is now *Cyril Yansouni* replacing *Karl Schwarz* who is returning to the USA to become General Manager of the Analytical Division. *Pierre Ardichvili*, previously Country Manager of HP France has replaced *Cyril* as Marketing Manager. Other recent changes include the move of *Bob Foco*, ex Colorado Springs, to replace *Gerd Haupler* as Finance Manager. *Gerd* is returning to his native country, Germany, to be Admin. Manager of the Boeblingen Instruments Division.

With all these changes just about completed, Grenoble Division is poised to support and help the field make sales. Remember Grenoble is here to make the difference!

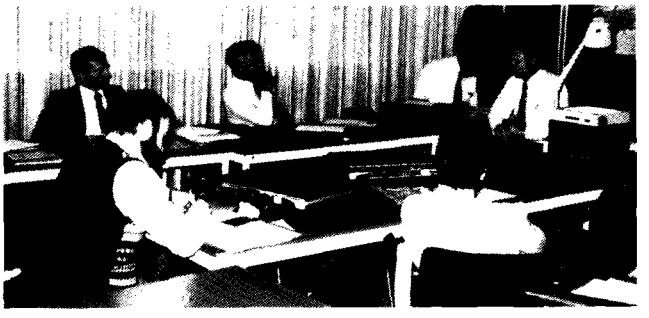


GRENOBLE HOSTS COMBINED RSM/CE MANAGERS MEETING

by: Guenter Kloepper/HPG

April 7 through 9 saw the entire European Sales and Customer Engineering Management in Grenoble for a series of meetings and discussions of problem areas, strategies and policies.

We were extremely fortunate in having both *Ted Doyle* and *Dick Anderson* here (both of whom, incidentally, made the trip specifically to participate in this meeting), for some concentrated discussions on DSD-related topics.



Two-way discussions were the order of the day. From left to right: Tom Cochran, Derek Smorthit, Pierre Forgeas, Hans Bilgram (representing Peter Schoeltzel), Ted making notes on what Dick was promising, and Dick Anderson.

Everyone toasting Jan Schapers to his additional assignment as RSM of the Scandinavia area. From left to right: Cyril Yansouni, Detlef Niemeyer, Derek Smorthit, and Hans Bilgram.

Even the excellent French cuisine couldn't distract our guests from intensive discussions. From left to right: Pierre Forgeas, Jan Schapers, Jean Melto (HPG Manufacturing Mgr.), Pierre Ardichvili (HPG Marketing Mgr.), Angelo Terzi, Kleber Beauvillain (HP France Director), Heiner Blaesser, and Dick Anderson.

Product News

OMR SELLING MADE EASIER

by: Georges Ouin/HPG

We find there is still some confusion in the field over the need for options for the 7260 HP Optical Mark Reader.

To make your life easier, we eliminated many of the options and included them as standard AND with a LOWER overall price.

Remember all new 7260's ordered from Grenoble or Boise include the old options 016, 017, 018 and 019 as standard. In other words, the 7260 ALWAYS HAS these following features:

- Terminal Mute: avoids unwanted data on terminal.
- Mnemonic Control: eliminates use of some control codes to control OMR.
- Invalid Code: transmits a selectable character in place of any column marked in non-valid Hollerith code.
- Image Mode: permits all possible mark combinations to be transmitted to a computer including non-Hollerith codes.

The only options you need to consider with your prospect are:

- 002 Select Hopper (to select mismarked cards)
- 003 Encoder (for applications using cards without clock marks)
- 004 Bell
- 005 220/240 Volts
- 006 50 Hz.

MORE SOURCE DATA ENTRY CAPABILITY ON 2000 ACCESS

by: Peter Stuart/HPG

A standard HP 7260 OMR can be used for S.D.E. No options or modifications are necessary. Your customer may prepare data offline using nothing more costly than a lead pencil and then, when required, load it into the computer system using distributed OMRs.

Source data capture of optical forms is a unique capability for HP Systems and ideal for applications in manufacturing operations (material movement tracking, inventory control, etc.).

Sell 7260's with the 2000 Access. A Data Sheet describing the recommended jumper settings and a programming example will be distributed soon, but DON'T WAIT — **SELL OMR'S NOW.**

THE 2500TH OPTICAL MARK READER

by: Bernard Guidon/Boise

The 2500th Optical Mark Reader is on its way!

Jacques Ferdane, HP-Grenoble Production Manager, is performing the final inspection on the units rolling off Grenoble's assembly line.

The 2500th Optical Mark Reader is one of the 7260A serial models of the successful mark reader product lines. This unit has been delivered to Minnesota Educational Computing Consortium. MECC, one of *Dave Polley's* OEM accounts in Saint Paul, is using the 7260A's in educational institutions throughout the state of Minnesota to communicate with a central main frame time-share computer in Saint Paul.

Bill Murphy, Boise Division Marketing Manager, presented MECC an engraved plaque to commemorate the event. The ceremony was held in Saint Paul last month.

The 2500th OMR is not going to be the last; so keep selling OMR's and we'll keep manufacturing them!

7260A PRESS COVERAGE

by: Bernard Guidon/Boise

One of the latest issues of COMPUTERWORLD dedicated large coverage to the 7260A's. The article explains the use of the 7260A's on a data collection distributed system which is fully described in Application Note #202-01 (5952-9409), entitled "Optical Mark Readers Substantially Increase Productivity."

This Application Note has been inserted in the March issue of the BOISE BEAT, and has been distributed to your sales office.

Press releases, Application Notes, Brochures. . . . We are here to help your selling. Vive L' OMR!

40202A: CUSTOMER SERVICE KIT FOR PAPER TAPE READERS

by Bernard Guidon/Boise

Due to the many requirements from the field concerning a customer service kit for Paper Tape Readers, HPG has released the 40202A. This customer service kit is available (from Boise for U.S. and Canada and from Grenoble for ICON/HPSA) for all your customers who want to reduce the service contract costs by doing their own maintenance and repair. The following options are available:

40202A	US	IBLP
Customer Service Kit for 115V/60 Hz version of the Paper Tape Reader HP 2748B	$1050.00	$950.00
-015 220V/50 Hz version of the HP 2748B	N/C	N/C
-016 115V/50 Hz version of the HP 2748B	N/C	N/C

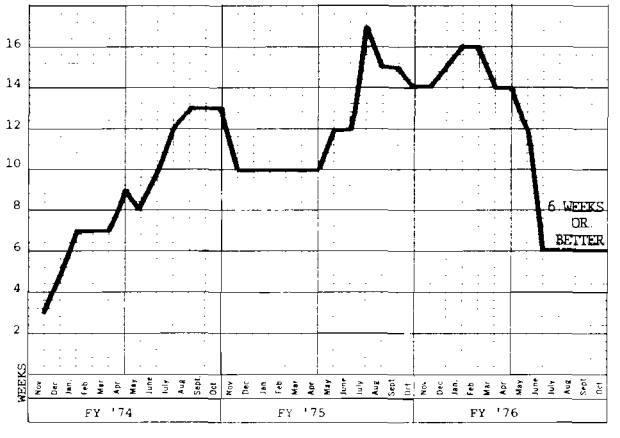
A BETTER AVAILABILITY ON OPTICAL MARK READERS!!!

by: Bernard Guidon/Boise

We believe that a competitive availability for Optical Mark Readers should be around 45 days (6 to 7 weeks) or better. Unfortunately, we must recognize that we failed in the past to reach this objective, and our standard delivery last fiscal year was between 12 and 14 weeks.

To solve this problem and help you sell the OMR's, HPG invested in people and in automatic test equipment to boost our manufacturing capacity. However, in spite of our aggressive actions, our parts suppliers could not respond to our larger orders and, due to the high rate of orders, our delivery stepped up to 17 weeks ARO!!

Our suppliers have now caught up on our parts requirements and we are improving the OMR delivery every week. We are very happy to announce that we have reached our goal: 45 days!



OPTICAL MARK READER AVAILABILITY

Do not hesitate to sell OMR's; we are able to deliver them much more quickly.

NEW LITERATURE AVAILABLE FOR OPTICAL MARK READERS

by: Bernard Guidon/Boise

By now you should have received your own copy of the 7260A Programming Guide. This manual has been published to answer your most pressing needs: How should the 7260A be installed? How do you connect the associated terminal? How do you use the DOS driver? the 2000F timeshare? What about a verification procedure?

Answers to these questions, and a lot more, can be found in the manual. Use it as a selling tool!

Additional copies can be obtained from your sales development contact in Boise or Grenoble.

The "Blue Folder" brochure (P/N 5952-2777) is available again and has been distributed by bulk to your sales office. It is a terrific promotional and selling tool for Optical Mark Readers. It includes a wide selection of sample cards for educational, consumer surveys, quality assurance, time cards, medical meter data, manufacturing, reports and billings, etc.

In a few days you will be receiving a sample card to help you tap the educational market for student registration and exams.

The following is literature now available on OMR's:

5952-5550	7260A/7261A Optical Mark Reader Data Sheet
5952-2773	Card layout form
5952-5546	OMR card form specifications
5952-2775	12986A OMR subsystem data sheet
5952-9409	OMR application note
5952-2777	"Blue Folder" brochure for OMR
07260-90010	7260A programming guide

Help yourself to the OMR literature!

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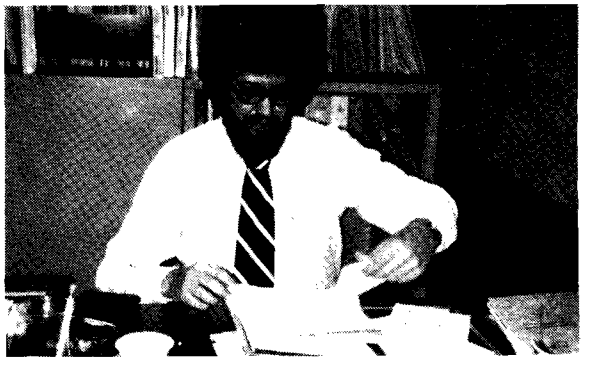
ale $ucce$$e$

TERRY TROGSTAD SIGNS UP T AND T TECHNOLOGY

by: Bernard Guidon/Boise

T & T Technology, one of *Terry Trogstad's* Optical Mark Reader OEM accounts in Milwaukee, has just signed up a contract agreement of 30 7261A's. The 7261A Optical Mark Readers are used to enter data collected on optical forms for the hospital lab analysis system and patient files. It is also very valuable for the automatic accounting and billing system and the general administration of the hospital.



The 7261A, the parallel version of the Optical Reader Series, is interfaced to a DATA GENERAL NOVA 2-10 Computer. Said *Bill Uhalt* of T & T: "We spent a long time investigating the OMR's available on the market, and after poor reliability and poor service on the first ones we bought, we came to the HP 7261A. Its reliability is excellent, the price competitive, and it has the performance we were expecting. The design of the interface board for the DATA GENERAL was simple because the 7261A is a straightforward device."

What else can I say? *Bill Uhalt* said it all: "The 7261A is great!" Congratulations, *Terry,* for such a fine job.

HP SWEDEN SELLING OEM

by: Guenter Kloepper/HPG

F.E. *Peter Almgren* and S.E. *Andreas Rodhe* of Stockholm sold $112K worth of equipment which will be configured as a 9603A with a remote 2313B and 6940 (via our racking/integration service). LM Ericson will be adding some software to the system, which will end up on the production floor of RIFA, testing and sorting capacitors.

In another OEM deal, *Peter* and *Andreas* sold $78K worth of gear to AB Teleplan, a software house that will hook the system up to a set of scales used in biological experiments. There's a possibility of another three systems in follow-on orders.

Keep selling those RTE systems!

KEY ACCOUNT SELLING IN SWITZERLAND

by: Guenter Kloepper/HPG

Bernd Palmer has just landed a 9611A worth $67K from Sandoz AG, a Swiss chemical/pharmaceutical giant. The system will be used in a classical process-control application in a pilot-plant project.

Follow-on business is almost certain!

GARY COLE STRIKES AGAIN

by: Bernard Guidon/Boise

Gary Cole, one of the 7260A lovers in Salt Lake City, has signed up Radix Corporation on a new purchase agreement to buy 25 HP 7260A's; and Radix has just given *Gary* an order for 5 HP 7260A's under this agreement.

Radix Corporation is an educational OEM which markets remote stations for the IBM 370. Each station consists of the HP 7260A Optical Mark Reader, a Tally printer, and a smart Data Point 2200 CRT. The remote stations will be connected to the IBM 370 of the Utah State Board of Education school administration.

Daily collection of data from students and from the State

Board of Education staff is collected on easy-to-fill optical forms and are entered through the 7260A. After overnight processing, the system prints out reports to the individual school.

The 7260A has been chosen by Radix Corporation because they find it RELIABLE, INEXPENSIVE, and IT DOES THE JOB!

Congratulations, *Gary,* for this successful sale!

Gary Cole

MULTINATIONAL CUSTOMERS

by: Guenter Kloepper/HPG

Gilles Bastien and *Claude Rocourt* sold a 9603 worth $80K to Massey-Fergusson/France in April. The system will be used to test for transmission of wheel vibrations through the steering mechanism on tractors.

Gilles feels that this is an excellent example of the importance of multinational customers to HP, and of HP's advantage in being able to deal with and support such customers on an international basis.

If you have a U.S. customer who has European subsidiaries, drop a line to *Guenter Kloepper* at HP Grenoble so your European colleagues can follow up at this end. Same thing of course goes for you guys in Europe. Let's make sure we capitalize fully on European companies that do business in the U.S.

Sales Aids

OMR USED EQUIPMENT

by: Bernard Guidon/Boise

Three demo parallel Optical Mark Readers have been reconditioned and are available from Boise immediately! With a fantastic discount on each of them, we have a terrific deal for you!

These three readers can be offered as 7261A stand alones, as well as 12986A subsystems. If the equipment we have does not match the requested options, contact the BOISE Division. In most cases, retrofit kits are available to upgrade the units.

Model 7261A or 12096A

Option	Recommended Discount	Serial Number
002	22%	1316A-00319
STD	20%	1316A-00448
002-003	17%	1316A-00540

All quotes should be made subject to prior sale.

Order Processing

OP GUIDE DISTRIBUTED

by: Serge Boivineau/HPG

Beginning of May, we distributed our new Order Processing Guide to all European Field Engineers and Sales Office OP personnel. If for some reason you did not receive your copy, please drop me a line.

K — CAGE GOOF

by: Orrin Mahoney/DSD

The price for the 12728A 8 Slot Card Cage was incorrect in the special K-SERIES Supplement to the Data Systems Newsletter. The correct price is **$475,** not $425 as stated. The price is given correctly in the new Computer Products Price Information.

COMPUTER SYSTEMS NEWSLETTER

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