

DATA SYSTEMS NEWSLETTER

Vol. 3, No. 10
April 1, 1976

For HP Field Sales Personnel

9640 To Air Force
Calibrate Radar Installation

BOWATER Buys Factory
Data Collection System
3000 + 9600 + OEM = Success

Small OEM Hits The Big Time
Serves Eyeglass Manufacturing

Airport Management System To Italy
Automates Aircraft Loading

SYSTECH Having Banner Year With HP
Serves Telephone Industry

GE Valley Forge Buys Again
Software Development System for Japanese NASA

In This Issue...

DATA SYSTEMS DIVISION NEWS

SALES SUCCESSES

- Superiority Beats the CompetitionF. Jackson [2]
- Atlanta Team Effort Wins at Bowater, Inc.C. Avila [2]
- Airport Management SystemD. Hancock [2]
- GE/Valley ForgeB. Blake [3]

OEM CORNER

- Yet Another Small OEM Hits the Big Time! ..S. Kagan [4]
- Systech/TelesciencesB. Blake [4]

PRODUCT NEWS

- More on System Checkout ServiceJ. Schoendorf [4]
- 21XX Series Product CompatibilityJ. Eckford [5]
- RTE Sales for the First QuarterV. Diehl [5]
- 9600 Config. Guide Error on H08H. Amick [5]
- Racking 7905's - Questions AnsweredV. Kapoor [5]

ORDER PROCESSING NEWS

- Order Processing ImprovementsT. Doyle [6]
- Order Priority at DSD - ASAP is BestK. Kormanak [6]

SALES AIDS

- PR Customer StoriesC. Scheifele [7]
- Computer Caravan '76Linda Shefter [8]
- MOE Solid LeadsP. Palm [8]
- RTE Drive Writing SeminarJ. Mitchell [9]
- NY Telephone Company VisitB. Blake [9]
- Selling 9600's - 5 Key Tools for YouJ. Streeter [9]

TRAINING NEWS

- Bring in the BandJ. Seligson [10]

COMPETITIVE CORNER

- Data General Micro NovaD. Carver [10]

DATA TERMINALS DIVISION NEWS

- Six or More ClubD. Byhre [13]
- 2640A-2644A Available IfF. Codispoti [14]
- QUIZF. Codispoti [14]
- New Specials ManagerE. Hayes [14]
- Recovery From Data DisasterC. Flock [14]
- Terminal DayC. Flock [15]
- Answer to QuizF. Codispoti [15]

Company Private

OEM CORNER



YET ANOTHER SMALL OEM HITS THE BIG TIME!

By: *Stu Kagan*

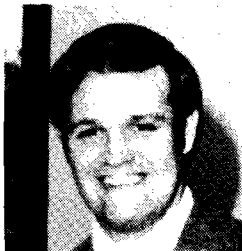
Rick Baker of the Tualatin office put it all together.

Computer Management Service Inc., an old OEM of ours, had previously bought one system on an earlier agreement. Their end user was an eyeglass manufacturing firm who wanted the ON-TOP order entry to invoicing kind of a thing. CMSI developed the system around DOS/TCS/IMAGE and threw in the ability to do the complex calculations involved in the grinding of the lenses.

Well, it took a bit of work, but they've finally completed the project and their customer loves it. The system works extremely well and has already justified itself on a cost basis in a very short period of time.

Since CMSI did such a fine job on this application, they began to attack the eyeglass business industry and found the results to be extremely rewarding. Their orders for similar systems have begun to roll in and, as a result, have signed a new agreement with *Rick* for 15 systems.

Good show *Mr. Baker!* Keep on selling OEMs!!!



Rick Baker

HEWLETT  PACKARD

SYSTECH/TELESCIENCES

By: *Bob Blake*

Ken Volet, FE Paramus, has done an outstanding job at this major OEM account this year. *Ken* has sold almost \$800K of Discomputers, Terminals and Tape Drives in the first 3 to 4 months of this year.

Ken's customer takes these components and markets a variety of systems to the telephone industry (including NY Telephone Co.). Applications include trunk traffic analysis equipment, recording and reporting toll traffic calls, etc.

Ken, we appreciate your contribution towards making us all successful and look forward to a record year.



Ken Volet

HEWLETT  PACKARD

Product News

MORE ON THE SYSTEM CHECKOUT SERVICE

By: *Joe Schoendorf*

In the last issue we introduced an important new capability for your customer, the system checkout service. In the next issue we will redefine our installation policy which is very compatible with the system checkout service. The two of these taken together will remove much of the confusion, uncertainty and doubt about just what services are being provided to your customers. To review, the system checkout service, 93723A, will provide three main features:

1. Component racking in engineering verified configurations.
2. System cabling.
3. Execution of diagnostic tests.

This new service will replace our rack-only policy which will not be available after May 1. With this new service your OEM, in particular, can be very confident in the system he purchases.

I believe you will find the new installation policy compliments this system checkout service to provide total capability for your customer. For example, taken together for the OEM whose value added is strictly software, it will be possible for him to specify drop shipment of an order directly to his customer. He will then be able to install his software fully confident that the hardware will run the first time.

There are now three ways that you can sell our products:

1. As components,
2. As components with the system checkout service,
3. Fully integrated systems, i.e., 96XX's.

Components are just that — individually packaged, non-racked, not a system. Installation will only be available on a time and materials basis.

The system checkout service is designed primarily for your OEM or end user who wants pre-defined pre-tested configurations. It will be particularly useful to the OEM who has the right to reproduce our software after purchasing a first copy.

Finally, the fully integrated system includes all of the features of the system checkout service plus full software system generation and full installation. As you will note, the prices for the system checkout service plus the software purchased separately compared to a fully integrated system are very close. I believe you will find the new system checkout service the answer to the question we have heard for several years - How do I OEM an RTE system? It is our intention that these prices, for the system checkout service plus software plus installation, remain very close to that of a fully integrated system.

Should there be any questions, contact your Sales Development Department here at DSD.

HEWLETT  PACKARD

21XX SERIES PRODUCT COMPATIBILITY

By: *Jim Eckford*

Be cautious, even though our computers all use the same I/O boards, you can be tricked. An example of this is the 7905 used with a 2116. DMA is a problem and the diagnostic wouldn't work.

If any uncommon combinations like this pop up, give your Sales Development person a ring just to be sure—before quoting.

HEWLETT  PACKARD

RTE SALES FOR THE FIRST QUARTER

By: *Van Diehl*

RTE sales are growing steadily. We just totaled the figures for the first quarter of this Fiscal year (worldwide). They are:

Software Sales

RTE-II	51
RTE-III	26
	<hr/>
	77

RTE-II and RTE-III Based Systems

RTE-II	42
RTE-III	25
	<hr/>
	67

This represents an average of 47.3/month.

Keep up the good work. Everyone should own an RTE.

HEWLETT  PACKARD

9600 CONFIGURATION GUIDE ERROR ON H08

By: *Hugh Amick*

Please note that the 96XX-H08 includes the 5327A, not the 5327B, as indicated in the racking diagrams on page 4 and page 10 of the 9600 price/configuration guide. All other documentation is correct. The 5327B counter subsystem with DVM is available as "standard" special option #421 at a budgetary price of \$8,100 and the add-on via 93503A at a budgetary price of \$8,400. Check with Sales Development for quote.

HEWLETT  PACKARD

RACKING 7905's - YOUR QUESTIONS ANSWERED

By: *Vijay Kapoor*

Q. *What is the current status of 7905 Racking?*

A. We are shipping 7905's in the modified HP 29402B cabinet as long as there is nothing mounted below the disc. *Dave Borton's* article in the last Newsletter issue gave the legal 7905 racking configurations. The configurations apply even if the factory checkout service is not invoked. Options K05 and K06 specify the necessary cabinet modifications.

Q. *What about multiple 7905's in a bay?*

A. It has been identified that bringing fresh air in below each drive through a coding unit would enable us to put up to three 7905's in a bay. As soon as this cooling unit is shippable, we would release ordering information on multiple-drive racking configuration.

Q. *What are the K Options?*

A. Option	Description	Price	Comments
K05	Disc modification for 29402B stand alone cabinet. Includes stabilizer, vented back door. Prerequisites: Opts. 002, 003 and 120 (or 111)	\$250	Available only with 29402B. Meant for a single bay 56" stand alone cabinet.
K06	Disc modification for 29402B add on cabinet. Includes stabilizer, vented back door, one side cover substituted by a barrier panel, tie-together kit. Prerequisites Opts. 002, 100 (or 101), 300 (or 310)	\$285	Available only with 29402B. 56" Add-on bay meant to extend an existing cabinet system that has power option 120. For adding to an existing cabinet with power Opt. 010, order 29402B with K05. This bay would have its own AC power source.
K07	Cooling unit required for 7970A tape drive when tape and 7905 disc are racked in the same bay.	\$215	Included in 93723A System Checkout Service Opt. 005. Installs below tape drive. Takes 1-3/4" rack space.

K-options should appear on the Price List July 1.

Like the factory checkout service options, the K-Options are to be considered "standard special" in the interim. This means there is no need to obtain a factory quote for each order.

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

Q. It sounds like the K-Options take care of all my 7905 racking requirements; then why do we need the Options 678 and 679?

A. As Dave Borton's article on Factory Racking and Checkout pointed out, our standard policy is to build multiple bay systems by putting single bay modules together. However, if your customers insist on *solid base* 2 or 3 bay cabinets, then the *special options* 678 and 679 may be used. The 6XX series options are strictly on the basis of quotations from *Ivan Henkle's* group.

Option	Description	Price
678	Special option available only for 29404B 2-Bay Cabinet. Includes disc modification to both bays. Prerequisites Opts. 002, 003, 120 (or 111).	\$640
679	Special options available only for 29406B 3-Bay cabinet. Includes disc modification to all 3 bays. Prerequisites Opts. 002, 003, 120 (or 111).	\$850

Q. Can I install a 7905 in a 2860 or a 70" 294XX cabinet?

A. 2860 (as also 294XX Opt. 1 - front porch instead of extendable legs) does not provide stability necessary for 7905A. Orders for these will not be accepted for 7905 racking. 70" Cabinets may be conditionally okay. Again, these are to be treated as specials. Contact Sales Development for a factory quote.

Q. I have heard of Options 669 and 675. What are these?

A. These are older options, now replaced by the K-options. They are not to be used now.

HEWLETT  PACKARD

Order Processing Corner

ORDER PROCESSING IMPROVEMENTS

By: Ted Doyle

Good news is here on DSD Order Processing. Back in the Fall of 75, I acknowledged to many of you personally that your pleas to straighten out our O.P. bugs had been heard, and that this would receive top priority in FY76. The following article by *Ken Kormanak*, the Manufacturing Department's Guru on the COSMIC System, spells out the details.

The key points for you, the Sales Engineer, are as follows:

1. The booking logic has been cleaned up, which means your orders will stop bouncing around.
2. You should only consider three delivery ratings, — U.S. Govt DX & DO, DNSB, or ASAP, as explained below:
 - a. US Govt Ratings—By law, these are always booked

first, and bump other orders. The percentage is small, and doesn't affect most orders.

b. DNSB—This stands for Do Not Ship Before a certain date. These orders are booked at the required date as long as this is at or beyond current availability. These orders never move up the cue and have no priority over other orders, and thus will slip with other orders should production problems occur.

c. ASAP—These orders are booked at current availability. If we exceed planned production, or receive cancellations, these orders will move up for earlier delivery.

3. There is a category called "Required Date" on the order form. If you enter a data here on a non-govt. rated order, it will be treated as a DNSB.

The message is—USE ASAP!

We still have lots to do to bring O.P. up to the standards you deserve, and we are working on fast acknowledgements, accurate info feedback when problems occur, etc.

I think one of the most promising developments is that our manufacturing people are now fully aware of the Field's needs, as you can tell from *Ken's* following article.

HEWLETT  PACKARD

ORDER PRIORITY AT DSD — ASAP IS BEST

By: *Ken Kormanak*

DSD has an automated system for processing customers' order requirements. This system is named COSMIC (Customer Order Servicing for Management Information and Control). The purpose of COSMIC is to match customers' order requirements for instruments to the factory's scheduled instrument production. This process is achieved using a HP 3000 which contains all orders for DSD and all instruments master scheduled for production.

Two basic criterion are used to fill a customer's order:

1. Scheduled Instruments for production are matched to orders whose stock dates are as close as possible to the required ship date on the order.
2. All orders in DSD's backlog on COSMIC are ranked in a priority sequence to fulfill legal and marketing requirements.

The *first* criterion allows DSD to maximize the shipping potential of its inventory. Allocating (or Booking) instruments whose scheduled stock dates are as close to the order's required date frees up scheduled production for orders with early required dates such as ASAP orders.

The *second* criterion ranks all orders according to their priority to insure a legal and "fair" allocation of scheduled production to customer's orders. This prioritization logic was implemented on COSMIC December 1, 1975 and differs from the old COPS systems logic used at DSD prior to COSMIC.

Essentially, this logic insures the "first pick" of available production to Government rated orders (DX and DO). All other non-rated orders are then ranked by date ordered. Both rated and non-rated orders alike always keep their place in line whenever new orders enter the system. Thus, new orders always fall behind older orders within their priority class.

The use of an ASAP required date is *strongly recommended* under this new booking logic. If the customer will accept delivery "as soon as possible," COSMIC will always try to allocate an instrument to an ASAP order to allow the earliest possible ship date.

The only possibility of an order slipping its delivery date with this new prioritization logic is a slip in scheduled production or the receipt of rated orders. Both conditions will only affect ship dates if required instruments are in a short stock position.

DSD is committed to on-time production by meeting each lines' completion schedule. This will produce stable ship

dates using the COSMIC system's booking logic. Rated orders generally comprise a small percentage of the backlog which could affect the ship date of an order.

In summary,

1. DSD has provided a method for stabilizing ship dates based on our ability to meet completion schedules.
2. DSD will immediately acknowledge any changes in the latest ship date of your order, should they occur.
3. We strongly recommend placing an ASAP required date on your order, whenever possible. ASAPs have equal priority with DNSB order dates and will always move forward if we have cancellations or additional production to ship on the earliest possible date.
4. DSD is committed to customer satisfaction as our prime objective for this year. Give us those orders, so we can make the system work for you!

HEWLETT  PACKARD

Sales Aids



PR CUSTOMER STORIES Borg Warner Cuts Programming Time by 16%

By: Carol Scheifele



The following summary of a Purdom Application Story has already appeared in Air Conditioning and Refrigeration Business. Full text available upon request from *Carol Scheifele*.

AIR CONDITIONING ENGINEERING A BREEZE WITH HP MINICOMPUTER

The York Division of the Borg-Warner Corporation, by controlling some of its numerous analog measuring devices with a minicomputer system, has slashed the time required to acquire and process certain kinds of test computer programming time and broadened its computerized testing applications.

The minicomputers, an HP 9600 Scientific measurement and Control system, used for data acquisition and conversion, an HP 3000 Mini DataCenter, used for component and system design, rating and mathematical/statistical analysis, have not only aided York engineers in product design but have also helped the company's marketing forces match York's products to the individual customer's requirements.

Since the installation of the compact, low cost HP system, programming manhours have been reduced 16%. Company spokesmen report that employees "can no longer conceive of doing engineering".

Test data from the electric heating section of a roof-top heating and air conditioning unit, called the Multizone, are observed by *Thomas Queitzsch*, principal engineer at York's Instrumentation Group. The test data are acquired online from the Multizone (its compressor shown in foreground) under the control of a Hewlett-Packard 9600 minicomputer.

COMPUTER CARAVAN

By: *Linda Schefter*



Computer Caravan '76 has launched its nine-city, 11-week showing from Boston to San Francisco, already receiving 'rave' reviews from the folks at the Lexington office. Check out what Lexington D.M. *Ted McCarthy* had to say:

"It was very positive—better than we've seen in past years. We're following up leads right now, with some 2640/44 inquiries turning into possible 3000 sales. The RTE demo was just tremendous; I sent a memo to George Taylor reemphasizing that. (ED. NOTE: thank you, Mike Manley!) All in all, the whole thing simply exceeded my expectations!"

TOTAL # OF INQUIRIES: 102 including 23 "CALL ME'S"



Data System's booth.



Data Terminal's booth.

Here's a glimpse at the overall Caravan schedule:

<i>Boston</i>	<i>March 2-4</i>
<i>New York</i>	<i>March 9-11</i>
<i>Washington, D.C.</i>	<i>March 16-18</i>
<i>Atlanta</i>	<i>March 23-25</i>
<i>Detroit</i>	<i>March 30-April 1</i>
<i>Chicago</i>	<i>April 13-15</i>
<i>Dallas</i>	<i>April 20-22</i>
<i>L. A.</i>	<i>May 4-6</i>
<i>San Francisco</i>	<i>May 11-13</i>

Don't miss it!

MOE SOLID LEADS

By: *Peter Palm*

Moe Cote (Lexington) claims the color TV and RTE-III demo on the Computer Caravan in Boston pulled in "more solid

leads in the first morning than in all three days last year". So get your prospects to the caravan!!

Flashing on the TV the status of RTE-III partitions in the MX-65 discomputer draws the attendees in. This computer caravan demo and six others are now available from 9600 Product Management on magnetic tape (or paper tape). Send your request and magtape to *Pete Palm* - DSD Cupertino.



"Peter Palm gets excited about all those leads!"

HEWLETT  PACKARD

HEWLETT  PACKARD

RTE DRIVER WRITING SEMINAR

By: Jean Mitchell

To satisfy an often-heard request from our customers, the Eastern Training Center recently offered a 3-day workshop/seminar on RTE Driver Writing. Gary McCarney geared his seminar to those customers who had taken the 8-day RTE II-III/ Batch Spool Monitor course and had working knowledge of assembly language. This seminar enabled the attendees to write standard RTE-II drivers without detailed knowledge of the operating system functions.

Customer reaction was quite favorable, and this seminar will be offered again on a sufficient-demand basis.

HEWLETT  PACKARD

SELLING 9600'S - 5 KEY TOOLS FOR YOU

By: John Streeter

Most successful 9600 sales situations have used several of or all five key selling tools available from DSD.

1. Customer visits to the factory
2. Factory personnel visiting potential customer
3. Special Engineering services
4. Demonstration of 9600 capabilities
5. Reference to existing installations

In formulating your sales strategy, try to incorporate as many of the above as possible.

Customer visits prove useful in showing HP's strength and manufacturing thoroughness. These visits, along with visits by factory personnel to the customers' site, demonstrate a desire to make the customer successful, and a willingness to share various resources with him.

Special Engineering is often used to "round-out" our standard product offering. Approximately 80% of all system orders take advantage of some special content to more adequately meet the customer's need. Your DSD Sales Development contact can often match your "Special" needs with options used in prior sales (at a reduction in price).

The final two tools become very meaningful in closing orders. A customer agrees that he'll sign if shown a particular capability or after talking to an HP customer with similar problems. The RTE, BSM, and EDITR are products that should/need to be shown to be fully appreciated. HP's customer base contains many successful, innovative, and satisfied people. In reference selling, its quality—not quantity—that counts.

Your Sales Development contact is eager to assist you in implementing any of the above mentioned tools.

Remember - we're here to help.

NY TELEPHONE COMPANY VISIT

By: Bob Blake

Pat Tucciarone, DM, and Ken Volet, FE, hosted a very successful factory visit to DSD, DTD, and GSD by VIP's from NY Telephone Company. Visitors included Al Feyler, Asst. Vice President and Charlie Many, General Operations Supervisor.

The visit started with a NY Telephone Co. audio visual presentation viewed by an audience of managers, scientists, engineers, and marketing people from many of our Bay Area divisions. This may be the most sophisticated audio visual presentation shown to an HP audience by a customer. It reviews the mechanization of telephone company operations starting from manual operations up to today's operations employing over 100 minicomputers and almost as many maxi computers (IBM 360/370), and projects the paperless telephone office of the 1980's using about 1000 mini's (and a slightly negative growth in maxi's). These figures agree with a recent Business Week advertisement which states that NY Telephone has installed over 104 (mini) computers and will be using over 600 mini computers in more complex networks planned for use by 1985.

These computers are used in a wide number of administrative and maintenance operations including network and switching problems, monitor traffic flow, analyze trunk call data, make equipment assignments, switch messages, report coin box problems, etc.

This was a most timely and constructive visit in technical areas, in reliability areas, in reinforcing customers acceptance of HP's commitment to the minicomputer market. Since

this customer is deeply interested in reliability and service, Dick Love's shake test of a 21MX and production line drop test of 21MX's made a lasting impression. Meeting with Stan McCarthy and Wil Houde on reliability engineering and service convinced this customer that we lead the industry. In technical areas, two of HP's strengths are outstanding solutions to current problems. Our Data Base Management and Distributed Systems Software are mature solutions to severe problems which do not seem capable of solution via their current sources of supply.

In summary, this visit took a mildly interested customer and really turned him on in terms of the company, the people, and the products. We feel good about this and are ready to help Pat and Ken in their follow-up strategy with this and other groups within AT&T.

HEWLETT  PACKARD

Training News

BRING IN THE BAND

By: Jane Seligson

Data Systems Division has put the apple back in customer training. Customers have been greeted with new colors and new decor in the classroom wing of building 41 and the response has been nothing short of applause. Back in the dark ages, when training was an evil nuisance, both the classrooms and instructor area alike were fondly referred to as "the Pits". Later, with the advent of air conditioning, it became "the Box." Now, it seems guys—its finally found the recognition it deserves. The Customer Engineering Department is about to move back to that wing again, but this time we have been assured it *is* habitable. There'll be no more sneaking in flash lights by which to read, and the instructor who was keeping his pet bat on the overhead ducting will just have to find another spot.

Well, maybe some of the old joys have been taken from us, but certainly the task of training and supporting our customers and field has been infinitely improved. Besides the new appearance, there are more efficient registration and enrollment procedures. Data Sheets are available that describe in detail each class offered (order from Dave Asplund 9H). They are:

5952-9913 RTE II/III	-9920 2100 Series Assembler
5952-9914 21MX Maintenance	-9921 Measurement & Control
5952-9915 DOS III	-9922 2100/Image Data Base
5952-9916 7900A Disc Drive	-9923 TCS-B
5952-9917 2100 Maintenance	-9924 Multi-Terminal Basic
5952-9918 21MX Microprog	-9925 7970E Mag Tape Unit Maint.
5952-9919 Distributed Systems	-9926 7970B Mag Tape Unit Maint.

The Computer Group 6-month training schedule beginning 15 March for DSD, GSD, Boise, AMD and Rockville (5952-9928) has just been distributed to the field. Other changes and provisions may not be apparent to the customer who walks through the door, but they will be recipients of a more efficient, better organized and purposefully directed department.

HEWLETT  PACKARD

Competition

DATA GENERAL MICRO NOVA

By: Dave Carver

Data General has entered the microcomputer competition with the introduction of the "micro NOVA." The micro Nova has the Nova 3 architecture (except for I/O) implemented in LSI, along with a floppy-based disc operating system and a minimal set of I/O interfaces.

ARCHITECTURE

The Nova 3 base set instructions, plus unsigned 16-bit multiply/divide and a real-time clock function, are contained in one 40-pin chip. The micro Nova I/O instructions appear to be the same as the Nova 3, but the I/O bus is electrically different; the micro Nova I/O signals are carried on a serial bus, and get translated into parallel data by other 40-pin chips called IOC's (I/O Controllers). One IOC is typically required for each peripheral. The effect of this difference is that standard Nova I/O interfaces will not work with the micro Nova, and that I/O is very slow compared to most minicomputers. The micro Nova "DMA" rate is only 148K words/second for input, and 173K words/second for output. Interfaces initially available are an asynchronous communications interface, and 16-bit parallel I/O interface, and a controller for DG's floppy disc.

MEMORY

Micro Nova memory is based on the 20-pin 4K RAM manufactured by DG. 4K words are packaged with the CPU on one board, and add-on memory is available in 4K and 8K increments up to 32K. Parity is *not* available. The micro Nova also supports PROM main memory. DG emphasizes that the 160 nanosecond *chip access* time for their 4K RAM is one of the fastest in the industry, but note that the micro Nova *system cycle* time is 960 nanoseconds, which makes the 160 ns spec rather meaningless.

SOFTWARE AND PERIPHERALS

The micro Nova is supported by a floppy-based DOS for program development in either assembly language or FORTRAN IV. Micro Nova DOS requires 16K words of memory, a floppy subsystem, hand-held programmer's console, and terminal subsystem. DG's memory-based real time operating system, RTOS, will run on the micro Nova, but program development must be done on a larger system.

The number of peripherals supported by the micro Nova is limited by its relatively slow DMA rate. Presently, only terminals and the floppy disc are available. Thus, the micro Nova doesn't approach the traditional minicomputer in its range of applications, but is better suited for dedicated applications.

PERFORMANCE

The micro Nova appears to execute instructions reasonably fast for a microcomputer, but is probably two to five times slower than a minicomputer such as the 21MX. Loads and

stores between CPU and memory, for example, are done in 2.9 microseconds, but a multiply instruction requires 41.3 microseconds. The DMA rate of 173K words/second is many times slower than a minicomputer, and removes high performance peripherals from consideration. These limitations are, of course, shared by any microcomputer.

PACKAGING & PRICING

The micro Nova may be bought as a chip set, as a CPU with 4K memory on a single board, or with a 9-slot or 18-slot chassis and power supply. List prices are as follows:

Product	List Price
CPU Chip	\$ 225
Single board microcomputer with 4K MOS memory	\$ 950
CPU with 4K, 9-slot chassis, and power supply	\$ 1,995
Micro Nova Development System, with CPU, 16K memory, 18-slot chassis, Dual Floppy subsystem, ASR 33 Teletype, 72 inch rack	\$11,820
Add-on memory, 4K	\$ 600
Add-on memory, 8K	\$ 950
General purpose I/O interface	\$ 250
Async. Comm. Interface	\$ 250

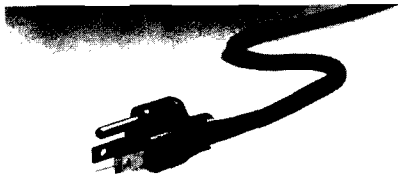
SUMMARY

The micro Nova appears to be an excellent competitor in the microcomputer marketplace. Data General is pushing the fact that they make the micro Nova chips as well as their 4K RAMs; the other side of the coin is that they haven't as yet proven their ability to manufacture reliable, inexpensive parts of this nature. The micro Nova won't be deliverable until this fall. Its main strengths are compatibility with Nova software and aggressive pricing. Its performance and expandability, like all micros available now, are much more limited than general-purpose minicomputers, so that the micro Nova covers a different class of applications than the 21MX.

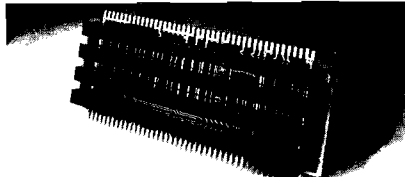
HEWLETT-PACKARD



THIS OEM ASKED US TO GIVE HIM THE WORKS.



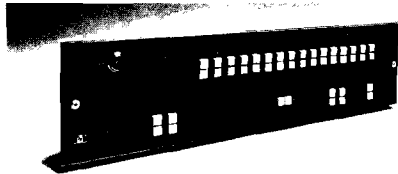
Brownout proof power supply
No extra cost.



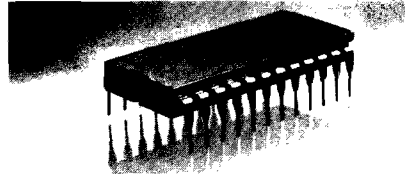
Extra memory and I/O capacity
No extra cost.



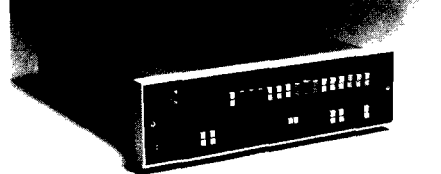
ROM bootstrap loader.
No extra cost.



Display panel
No extra cost.



Parity, EAU, floating point
No extra cost.



The Hewlett-Packard 21MX Minicomputer
One low cost.

“You say it's a bargain at the price. But what do we get for our money?” Canadian Marconi asked. They were planning systems that would use 20 to 250 of our minicomputers each.

“A lot more than you'd expect,” we replied. Even the smallest Hewlett-Packard 21MX

minicomputer uses solid state 4K RAM memories. Then we include floating point and extended arithmetic as standard items. From other suppliers these are extras that might add \$1,000 to \$4,000 to your bill.

Next there's parity. It's standard too — not the usual surcharge of up to \$1,000 per memory module.

Or consider the brownout proof power supply — one of the best in the industry. Standard again. As is a ROM bootstrap loader. As is power-fail interrupt capability. Extra memory

slots. A full front panel that lets you display or change contents of data registers.

“Standard” too is low power consumption and compact size, allowing more equipment to be put in each rack.

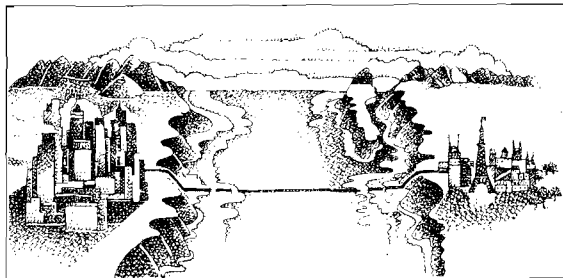
Even our options are surprisingly low in

cost. Want to add memory for example? It's just \$1,500 per 8K words. Want better throughput? You can microprogram custom routines using a Writeable Control Store (\$1,000)

In fact, if you add up what it costs to bring a “bargain” mini up to our standard capability,

don't be surprised if it adds up to a lot more than the \$4,059* you'll pay for the Hewlett-Packard 21MX.

So, if you need the works, call us. Canadian Marconi did.



Canadian Marconi Company uses a minimum of 20 Hewlett-Packard 21MX minicomputers in each modular Telex switching system they build. These systems gather and switch Telex traffic for international transmission.

*DOMESTIC SALES LIMITED BY A TRADE AGREEMENT

HP007

NOW WHAT CAN WE DO FOR YOU?

HEWLETT  PACKARD

DATA TERMINALS NEWSLETTER

SIX OR MORE CLUB

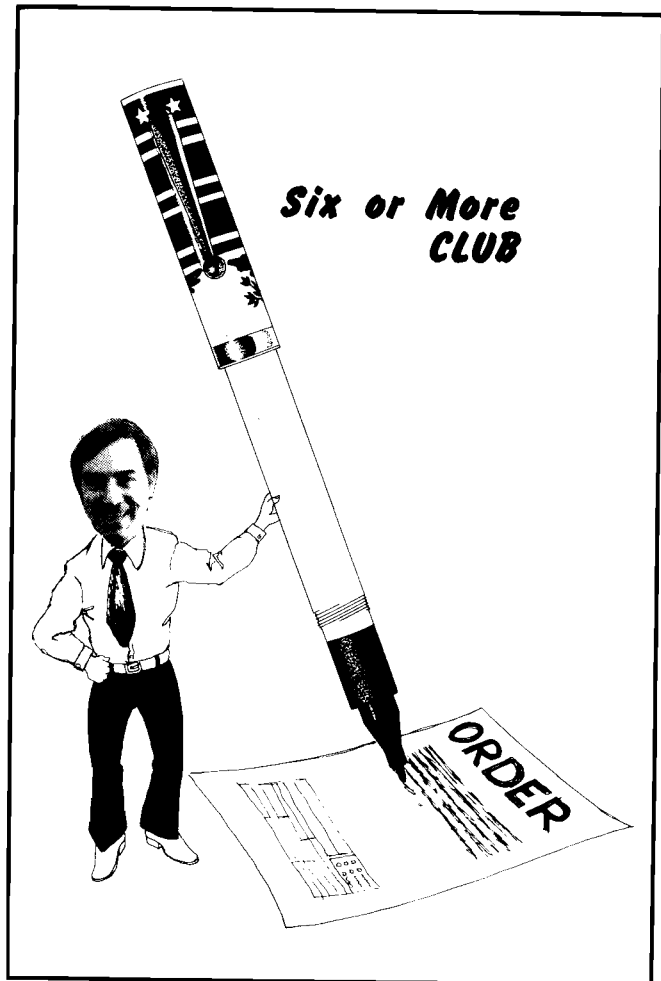
By: Dick Byhre



The Data Terminals "Six or More Club" is growing fast. The list now reads like the Who's Who in CSG Sales Force. These 19 recipients have received our fabulous bicentennial pen as a token of our appreciation.

Congratulations and thanks for selling terminals!

NAME	OFFICE	ACCOUNT
Rick Baker	Tualatin	Pacific Power and Light
Dick Burkhart	Santa Clara	Microtechnology Corp.
Jack Clark	Atlanta	Medical College of George
Ange Colucci	Paramus	Reserve Management Corp.
Bill Doan	Rochester	Schlegel Corp.
Klaus Dziubek	Frankfurt	KFA
Adrian Farell	Victoria	Royal Prince Alfred Hospital
Armando Foiadelli	Zurich	Swiss Institute of Technology
Lore Holtzhausen	Johannesburg	Atlas Aircraft Corp.
Ron Johnson	Denver	Rocky Mountain Bank Note
Werner Kanthak	Hannover	Anker
Mike Mansfield	Winnersh	Oceanic Institute
Stan Merrell	Bellevue	Boeing Commercial Airplane Co.
Dave Miller	Farmington	Upjohn Company
Mike Naughton	Indianapolis	Command, Inc.
Jack Oliphant	Richardson	E-Systems
Dick Olson	Santa Clara	Fairchild Systems Technology
Andrew Penney	Johannesburg	Wits University
Don Thomson	Vancouver	BC Institute of Technology



To join the group all you have to do is close an order for six or more.

2640A-2644A AVAILABLE IF. . .

By: Fran Codispoti

Have you been lying awake nights wondering why we keep asking "Where are the orders?" and availabilities remain way out there?

Sales were soft in Nov. and Dec. and, hence, manufacturing pulled back a little from an ambitious production forecast. By doing so, customer deliveries were pushed out to 12-13 weeks. Manufacturing now has every available resource assigned to pull up deliveries.

Keep sending those orders and we'll pull up availability.

SELL 'EM!



QUIZ QUIZ QUIZ QUIZ QUIZ

By: Fran Codispoti

The following is an order that could be received at the factory. You are an alert, intelligent order coordinator in the Data Terminals OP Group (very typical of our people!) How will you have the manufacturing group configure this order?

Prod. No.	Description	Qty.
1. 2644A	MINI DATA STATION	2
015	50 HZ OPERATION	2
020	EXT ASYN COMM CA	2
2. 2640A	CRT TERMINAL	3
015	50 HZ OPERATION	3
3. 13232C	CABLE CONNECTOR	3
4. 13231A	DISP ENHANCEMENT	4
201	MATH SYMBOL SET	4
202	LINE DRAWING SET	4
5. 13234A	TERMINAL MEMORY	3
6. 13240A	OPTION SLOT EXT	2
7. 13238A	TERMINAL REGISTER	2
001	ADDS CABLE	2

QUIZ QUIZ (Answer on the back page.)



NEW SPECIALS MANAGER

By: Ed Hayes

I'm happy to announce that Data Terminals now has a Specials Engineering Group under the management of *Chuck Rulofson*. *Chuck* recently joined us from AMD and under his management, Data Terminals is now in a position to begin expanding your Data Terminals opportunities through the use of specials.

Data Terminals is interested in doing specials at a competitive price where they will help us get substantial new business. The guidelines for specials are as follows:

1. Minimum order potential should be for 50 or more units per year.
2. Should be used to generate new business. (no up-grades).
3. Special requests should be reasonable in nature not requiring the re-invention of a new product.

GOOD SELLING—KEEP PUSHING TERMINALS!



RECOVERY FROM DATA DISASTER

By: Carl Flock

PROBLEM: Inadvertently, a 2644 user has written an END OF DATA at the beginning of a full cartridge of good data!

QUESTION: How can I recover the "lost" data that is still on the cartridge?

ANSWER: Follow these instructions and we'll save what's past the END OF DATA:

1. Reset terminal, put problem cartridge in left drive.
2. Push *READ* several times to get to END OF DATA.
3. Push *RETURN* to clear error message.
4. Push *GOLD* key
5. Remove left cartridge
6. Manually rotate the "puck" (external wheel) counterclockwise—as viewed from top of cartridge.
7. Rotate so that take-up reel rotates at least six half (three full) turns clockwise.
8. Insert cartridge

9. Push **GREEN** key, **F7** key, then **F5** key—(this backspaces one record and clears END OF DATA from buffer).
10. **COPY ALL** of the rest of the left cartridge to a new cartridge.

HEWLETT  PACKARD

TERMINAL DAY

By: Carl Flock

Have a "Terminal Day" every week. Rockville has theirs on Tuesday, St. Paul on Wednesday.

Here is what *Tom Rappath* says about "Terminal Day":

"Although the program has been in effect only three weeks, a snowball effect is already obvious. . . and has stirred up a good deal of business and interest in both the 2640A and the 2644A.

The program generally starts with your excellent video tape and then moves on to a live demo for any necessary clarifications or additional questions. The session wrap-up is an offer to dial-up their system and "try it". This is especially significant in light of the fact that the greater percentage of people who have come in to see the terminal are not presently Hewlett-Packard customers."

We think this approach is an excellent way to find new HP business, at a minimum of sales cost. Set aside the same day and time each week. Use direct mail as a way to attract attendees.

HEWLETT  PACKARD

YOUR WHEELS ARE HERE!

The first production batch of "wheels" is being made ready for shipment.

In case you have missed that story, please refer back to the Data Terminal Newsletter issue of February 1, 1976, Vol. No. 6, to find out what this is all about. As you can see, *Fran Codispoti* is ready for your orders. *Fran* advises that it's O.K. to process your IOS through heart with override. Remember that we are Division 42.



"Hey Eric! We're really going to clean up with this one!"

HEWLETT  PACKARD

ANSWER TO QUIZ

ONLY if you are clairvoyant can you decipher the desired configuration!

If you are a conscientious coordinator wanting to assist the salesperson with his/her order you would TWX the field as to what exact configuration is required. A delay in response will only push the order date out further.

Poor unsuspecting customer.

We can service both you (the field) and your customer more expeditiously if the order first arrives with instructions as to how to configure each terminal. Instructions may be:

1. Stated in special instructions or
2. Within the body of order after the listed main frame or
3. Even a TWX would do the trick!

We're anxious to assist you in your selling endeavor, but need just a little more help from you. Call, TWX, or write any time!

HEWLETT  PACKARD

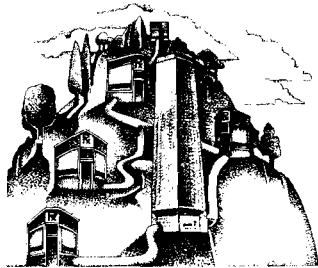
**DATA
TERMINALS
NEWSLETTER**

THIS OEM ASKED US FOR A HEAD START.

Management Systems Technology in Chicago was in the market for a minicomputer and a disc. We said, "There's a better way."

Then, we introduced them to the Hewlett-Packard DISComputer concept.

Some vendors offer systems in which a disc, controller and mini-computer have been *put* together. In contrast, the elements of the HP DISComputer were *designed* together.

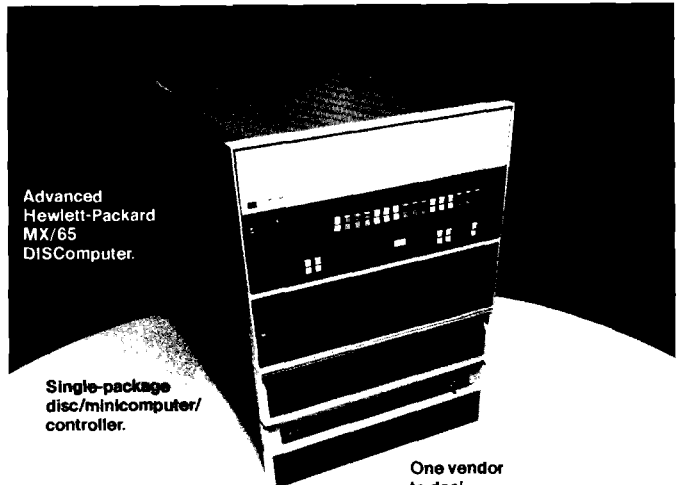


Management Systems Technology, Inc., builds a system that provides druggists real-time data on patient profiles and drug interactions, prints labels, handles billing and taxes. At its heart is a Hewlett-Packard DISComputer.

This means you don't get bogged down trying to optimize the performance of our hardware. Instead, you can jump ahead and put your efforts into developing your own systems.

You can also benefit from advanced HP software. RTE-III, the newest member of the RTE family, gives access to 64 partitions, up to 128K words of main memory, plus multiple languages and multi-programming.

At \$17,655*, the MX/65 DISComputer price/performance ratio is exceptional.



Advanced Hewlett-Packard MX/65 DISComputer.

Single-package disc/minicomputer/controller.

One vendor to deal with.

The further economies of dealing with a single vendor could help turn a head start into a winning performance any day of the week.

Just ask Management Systems Technology in Chicago.

THE HEWLETT-PACKARD MX/65 DISCOMPUTER AT A GLANCE

Minicomputer:	Controller:	Disc:
8K to 128K words Solid state 4K RAM memory Microprogrammable Parity, EAU, floating point standard Brownout-proof power supply Optional Dynamic Mapping System	Links to multiple CPU's Combined seek/data transfer Built-in error detection and correction Automatic track switching Data protect and recovery features	25 msec average seek time 15 Mbytes of storage, expandable to 120 Mbytes Exceptional 937 Kbyte transfer rate Operates over wide power and environment range

*DOMESTIC USA OEM PRICES QUANTITY 50 WITH 32K MEMORY 15 MBYTE DISC

NOW WHAT CAN WE DO FOR YOU?



Sales and service from 172 offices in 65 countries.

1100 Page Mill Road, Palo Alto, California 94304

**DATA
SYSTEMS
NEWSLETTER**

Address inquiries and comments to: **Joey McHugh** — Editor
Sales Development — Building 40
HEWLETT - PACKARD DATA SYSTEMS
11000 Wolfe Road, Cupertino, California 95014 U.S.A.
Garrett Prescott — Art Editor Joe Schoendorf — Technical Editor