COMPUTER SYSTEMS NEWSLETTER

For HP Field Sales Personnel

HEWLETT hp PACKARD

Vol. 2, No. 7
Feb. 15, 1977

GRENOBLE PRODUCES...

2640 Family Produced at Grenoble ..... Page 17

RPG Enhanced for KSAM/3000 ..... Page 18

New CSG Ad Campaign ..... Page 21

In This Issue...

AMD DIVISION NEWS

Division News

Marketing Department Organization Changes

By: Bill Mohr/AMD

Effective February 1, *Larry Amsden* will be joining *Ben Holmes'* staff at CSG to take on responsibility for defining sales training for the CSG Sales force. *Larry* has done an excellent job as AMD's Sales Development Manager for the last 2 years and I am sure he will do equally well in his new assignment.

Replacing *Larry* as the Sales Development Manager will be *Tom Freed*. *Tom* has recently been our Regional Sales Engineer Manager and has eight years of experience at AMD. We are fortunate to have the benefit of *Tom's* background not only from his recent assignments with the "traditional" AMD products, but also in measurement and control from the old days.

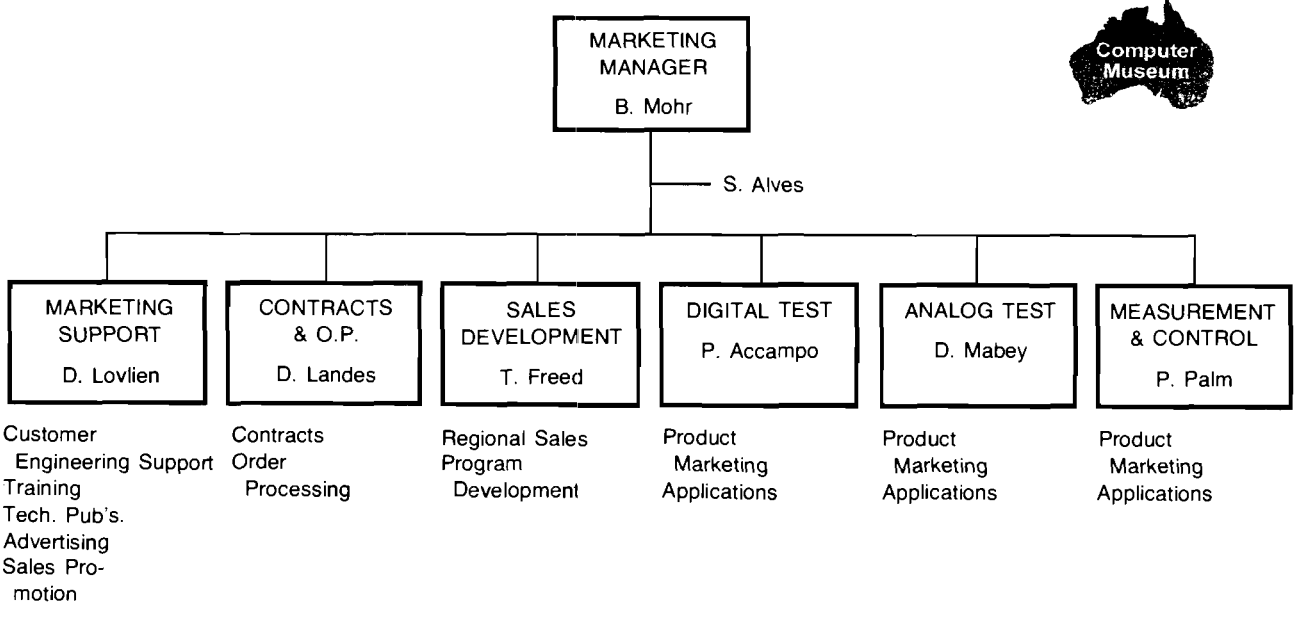
Also on the first of February, *Peter Palm* will be joining us from Data Systems Division to assume the responsibility for the product management of the Measurement & Control product line. *Peter's* background at DSD includes both product management and applications engineering assignments and he has a keen interest in, as well as experience with, the measurement and control products. For the short term he will work in parallel with *Jim McCabe*, who after 11 years with AMD feels it's time for a change. *Jim* will join *Roger Ueltzen's* staff at DSD in March.

We are very happy to welcome *Peter* and feel his talents will be a strong addition to AMD's product marketing effort in this critical area.

It is my goal to look at both product management and applications engineering as leveraged investment areas in the Marketing Department. Therefore, I am combining these functions under a single manager for each product line. For the Digital Test Product Line, *Paul Accampo* will be assuming that responsibility. We are, once again, fortunate to have someone with a background in both product management and applications to perform this key task.

Dawson Mabey will continue as Analog Test System Product Manager.

AMD MARKETING DEPARTMENT



Each of the three Product Managers will report directly to me.

Dick Lovlien and *Dick Landes* will continue in their current roles as Marketing Support Manager and Contracts and Order Processing Manager, respectively.

Last, but certainly by no means least, I would like to welcome *Sue Alves* to the Marketing Department. *Sue* has come to us from her previous position as the Materials Manager's Secretary. *Sue* will be helping me keep track of the six manager's reporting to me while assuming the position of my Secretary.

I'm sure you all join me in wishing *Sue, Jim, Tom, Peter* and *Paul* the best of luck in their new assignments.

Sales Aids

Sales Aid

By: Tom Freed/AMD

Recent sales of AMD products to the companies listed below could help you penetrate sister organizations in your Sales Region. For more information, contact your RSE.

9571

Hendrix (New Hampshire)
VADIC — 2 ea. (California)
Rockwell International
M.O.D. Israel
Actron (California)
Institut Fur Fernmeldetecknic (GMBH)
See Volume 1. No. 9 of CS Newsletter for prior sales

8542

ITT-Nutley
TV AACHEN (GMBH)

8580

Ford Aerospace
LMSC

9500

Bosch (GMBH)
Northern Telecom
McDonnell-Douglas (4 each)

9580

Lear Siegler
Boeing
SAAB (Sweden)
Collins Radio

BOISE DIVISION NEWS

Division News

Chuck Ulfers and Steve Davis Join Sales Team

By: John Whitesell/Boise

We are very pleased that *Chuck Ulfers* and *Steve Davis* are joining the Boise Division Sales Development team.

Chuck started with HP at the Mountain View Division, later joined the Data Systems Division, and then transferred to Boise about three years ago. After serving as our Marketing Services Manager, *Chuck* decided to acquire more product knowledge by becoming our Data Center Manager. He is about to complete his MBA at Boise State University. *Chuck* will be supporting the Eastern and Southern Sales Regions.

Steve has joined HP from Illinois State University, where he just received his MBA. Prior to that, *Steve* was an engineer at General Telephone Company in Illinois. He received his B.S.E.E. at the University of Missouri. *Steve* will be supporting the Canadian Sales Region.

Welcome aboard, *Chuck* and *Steve*!

Chuck Ulfers

Steve Davis

Product News

HP 2767 Encore!

By: John Freeman/Boise

The 2767A line printer is again live and well and available from Boise. We have been able to make a one-time purchase from Data Products Corp. of 75 units during 1977. A major portion of these units are committed this year, so if you have customers interested in the 2767 give Boise a call. When the 75 units are gone this time, so will be the 2767 forever. See the March Corporate Price List for new pricing ($16,500 for 2767, $17,150 for 12984A).

Discounts for 3000 Subsystems

By: Steve Richardson/Boise

The 7970 Mag Tape Drives and 2607A printers are discountable when purchased as subsystems.

Although the latest version of the HP Purchase Agreement (R10-76) does not show that these devices are discountable as 3000 subsystems, they are! They should be listed under equipment Type 4-B and are subject to OEM schedule C and VEU schedule A.

If you have any questions, please contact your Boise Sales Development Engineer!

2607A References

By: Steve Richardson/Boise

In an effort to aid you in your job of selling line printers, we have recently surveyed several sales regions for 2607A customer references. These efforts have uncovered several customers who would make excellent reference accounts.

If you need a customer reference for 2607A, or have a satisfied customer who would make a good reference account, please contact your Boise Sales Development Engineer.

Good Selling!

HP 3070 Profile

By: Bernard Guidon/Boise

Under this heading we are beginning a new series of articles dedicated to the 3070A. In each issue of the Newsletter, we will be addressing a particular topic to define the marketplace for the 3070A and whom you should call on to get those exciting orders. But, also, we will be reviewing the key features of the product, how they are related to the marketplace, and what benefits they offer to your customer to make the 3070A an attractive product.

Following is the list of questions that we will be answering.

- Where does the 3070 fit? What's the marketplace?
- Whom should I call on?
- What's the competition?
- Why on-line source data capture?
- What are the benefits offered by the multidrop capability?
- What are the benefits offered by error-free communications?
- Where does the HP-IB fit?
- Where does the 3071A fit?
- Benefits of the 3070 versus 7260 for source data capture.

As you already know, the 3070A is a UNIQUE product with capabilities available only from Hewlett-Packard. Associated with IMAGE/1000 and, generally, with the HP/1000, it places HP ahead of the competition.

DON'T WAIT — THE COMPETITION CATCHES UP — SELL 3070A's NOW!!

Where Does The 3070 Fit?

By: Bernard Guidon/Boise

The first article of this new series is dedicated to investigating where the 3070A fits into a manufacturing environment. Compatible with the HP/1000 approach to operations management, the 3070A is designed to help you sell systems to collect and analyze manufacturing information. Controlling production of goods within a manufacturing operation is one of the most powerful leverage tools available today to improve profits and tighten control of the manufacturing process. Inventory investments can be reduced, and greater production returns can result from knowing the status and flow of production. Computer systems, such as the HP/1000, are the appropriate tools today to achieve such monitoring.

However, such systems are only as valid as their data, and today one of the most important concerns of EDP managers is to get data *into* the computer *quickly* and *accurately*. Such needs have prompted the development of new data entry terminals such as the 3070A and 3071A.

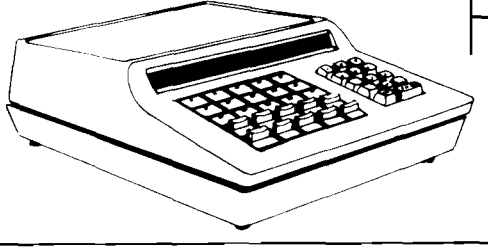
To fulfill these time and accuracy requirements, the best method is to capture the information *on-line* right at the point where it has been created. Such a method is called *ON-LINE SOURCE DATA CAPTURE*.

The HP 3070A is designed to best meet the criteria of such a data collection system, and this series of articles will describe how this is achieved. However, I would like to strengthen the importance of two factors:

- First, more than likely, the users have little, if any, computer knowledge, and therefore the device these individuals use should be simply operated.
- Secondly, as the users are frequently scattered, so should the data entry terminals be scattered at convenient locations. Therefore, in addition to the price of the terminal, we should consider the cost of connecting the terminal to the system, which often counts as much as the terminal itself.

The 3070A's and an HP/1000 . . . the best system for capturing source data!

See you in the next issue!

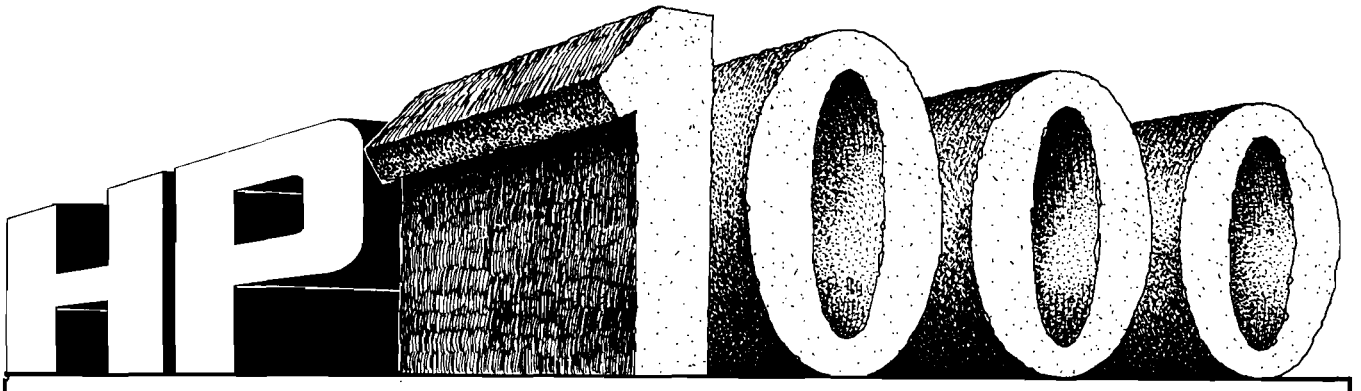


HP 3070
PROFILE

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

DATA SYSTEMS NEWS



PERSPECTIVE

Digital Instrumentation, HPIB, Specials, Systems' Solutions: What's Available

By: Dave Hannebrink & Dave Hendrix/DSD

We talked about our analog capabilities last time. We now want to cover the remainder of our measurement and control capabilities — these include digital I/O, HP-IB, standard interfaces and specials. The attached matrix is similar to the analog one developed in the last issue of the newsletter. This will provide you with a finger-tip reference to our digital I/O capabilities; and, along with the analog matrix, will reduce the amount of effort required to ascertain our optional solution.

Digital I/O: 91063A Digital I/O Subsystem and Stand Alone Interface Cards

The HP 91063A Digital I/O subsystem is, in fact, the HP 6940A that is built by our New Jersey Division. Along with the 91140A Digital I/O Extender (HP 6941B), there are provisions to support up to 240 I/O cards as described in the matrix. The 91XXX cards are the ones chosen by CSG to be incorporated as standard I/O cards to the 91063A/91140A Digital I/O Subsystem. There are many additional I/O cards available from New Jersey that may also be of use to your customer. And, since they all work in the subsystem, there is no reason why they can't be ordered. But remember — it remains the customers task to program each I/O card properly. Table 1 gives you some idea of the 91063A capabilities:

TABLE 1
CAPABILITIES
Alphabetical Index

	Plug-In Card Model Number
A/D Converter	69421A
Alarm Detector	69434A, 69436A
Amplifier Control	69325A — 69328A
Analog Input	69421A
Breadboard Cards	69380A, 69480A
Contact Monitoring	69430A, 31A, 34A
Contact Outputs	69330A, 69433A
Counter	69435A
Crystal Oscillator	69601B
Current Measurement	69421A
Current Output, 0-20mA	69370A
Current Output	69510A — 69513A
D/A Current Converter	69370A
D/A Voltage Converter	69321B
DC Power Supply Control	69500A — 69513A
Digital Inputs	69430A, 31A, 34A, 36A
Digital Outputs	69331A, 332A, 380A
Event Sensing	69434A, 69436A
Frequency Measurement	69435A & 69600B
Frequency Reference	69601B
Lamp Control	69330A, 31A, 32A
One-Shot	69600B
Open Collector Output	69332A
Pacer	69601A, 69600B
Power Supply Control	69500A — 69513A
Preset Counter	69435A
Process Interrupt	69434A, 69436A
Pulse Counter	69435A

Pulse Train	69335A
Relay Coil Control	69332A
Relay Contact Monitoring	69430A, 31A, 34A
Relay Output	69330A, 69433A
Resistance Output	69500A — 69513A
Scanner, Reed Relay	69330A, 69433A
Stall Alarm	69600B
Stepping Motor Controls	69335A
Time Interval Measurement	69435A & 69601B
Time Reference	69601B
Timer	69600B
Totalizer	69435A
TTL Output	69331A
Up/Down Counter	69435A
Voltage Measurement	69421A
Voltage Output	69321B
Voltage Output	69500A — 69513A
Watchdog Timer	69600B
Word Comparator	69434A

The other I/O cards contained in the matrix provide general interfacing capabilities for connecting special instrumentation and digital I/O to the HP 1000.

HP-IB Solutions

The ease in which HP-IB permits interfacing instumentation with the HP 1000 makes it a powerful solution to many automated test and data acquisition problems.

There are now over 60 HP devices (over 140 counting other vendors' products) that conform to the HP-IB (IEEE-488-1975) standard. These include stimulus (8660A Synthesized Signal Generator, etc.), measurement (3490A Multimeter, 3495A Scanner, 59303A DAC, etc.), display (59304A Numeric Display), and hard copy (9871A Printer) devices. The list grows every month and will continue to show more diversity (e.g., mass storage devices) as time goes on. Of course, only one card, the 59310B, is needed to interface the HP 1000 with any HP-IB device or cluster.

How does HP-IB enhance our instrumentation capabilities? HP-IB solutions should be considered when:

1. A flexible, modular system, (i.e., one that can be configured, disassembled, and reconfigured easily for new applications) is needed.

2. Multiple station, dedicated testing is required and/or convenient on-line test modification is needed.

3. System plans include the need to add M&C hardware capability easily without worry of incompatibility or interference with current HP-IB clusters and/or other system activity.

4. High resolution or special measurement requirements exclude our other M&C hardware. For example, the 3455A DVM has resolution of about one part in a million (20 bits!), far exceeding any 2313B or 91000A capability. (Ask an Instruments Group salesman for help here.)

5. Replacements for the now obsolete 2402A DVM subsystems (2320A, 2323A) are called for. The 3495A Scanner and 3455A DVM connected to the HP 1000 via HP-IB solves many of these problems.

In short, the HP-IB concept allows building a multitude of solutions with minimum configuration and integration hassles. It is a strong selling feature for the HP 1000.

Specials

No matter how many standard products we provide for a M&C solution, we'll never have a total solution for all requirements. When this occurs we look toward our specials engineering group for aid. Special engineering requests can occur when:

1. The customer has a requirement for customer furnished equipment (CFE) to be integrated to our systems.

2. Our product specifications are extended by the customer's requirements where the solution is provided by specials engineering recommendations.

3. Any request that deviates from the standard products that we offer such as different lengths of cables, special racking, etc.

4. Any special software is to be written such as drivers, utilities and/or diagnostics.

The rule-of-thumb special content to any system order is to keep the cost of that content to less than 30% of the total cost of the system. Ideally we would prefer no specials at all; and, that our standard product line provide the total M&C solution. Help in quoting a special is as near as your DSD Sales Development Engineer.

Putting Together a Front End System

After deciding what is needed in terms of analog and digital I/O capability, you'll want to offer a solution that is packaged to meet the customer's needs. Now it's sometimes reasonable to consider suggesting a 2313B and/or 91063A subsystem as a line item for field integration with an HP 1000. This assumes of course the necessary cabinets (with their proper options) are available and software planning for these subsystems has been made.

Most times though you'll want to consider a 9603R or a 9611R Measurement and Control Station. How do these differ? The 9603R/9611R comparison chart points out the essential differences.

As can be seen, the systems are functionally similar. The differences lie in the intended applications environment — industrial or laboratory. The RFQ should be quite clear in determining which system you should be quoting.

Typical racking configurations can be found in the 9603R/9611R Configuring Guide (5952-8507). Of course, any special content whether it be for racking and/or integration of CFE requires the Specials Group's involvement in the quotation. Again, contact Sales Development for help in quoting a special.

9603R/9611R Comparison

System	Whats Included	Type & Options[1]	Comments
HP 9603R Remote Scientific Measurement and Control Station	1. 2313B-001 Analog I/O Subsystem. 2. Remote Microcircuit Interface. 3. One-bay, 56-inch cabinet, 220V, 60 Hz, split-phase power. 4. Instruction manuals. 5. 91220A DAS Utility Library.[2]	1. 2313B Plug-in cards. 2. 91063A Digital I/O Subsystem and Cards. 3. I/O Extenders. 4. Add-on Cabinet bays. 5. Local Interface to HP 1000.[3]	The 9603R is intended for use in laboratory environments where signal conditioning, screw terminations, and locking cabinet doors are not required. As such these items are not available with the 9603R.
9611R Remote Industrial Measurement and Control Station.	1. 91063A-001 Digital I/O Subsystem. 2. Remote Microcircuit Interface. 3. One-bay, 56-inch cabinet, 220V, 60 Hz, split-phase power, top cable entry, and lockable front and rear doors. 4. Provision for 7 analog and 15 digital I/O options with screw-terminal field terminations. 5. 62005E 5V, 2A Power Supply for signal conditioning modules. 6. Instruction manuals. 7. DAS Utility Library.[2]	1. 91063A Plug-in cards with signal conditioning. 2. 2313B Analog I/O Subsystems and Cards. 3. I/O Extenders. 4. Add-on Cabinet bays. 5. Local interface to HP 1000.[3]	The 9611R is intended for use in an industrial environment where a rugged interface is needed to the process I/O, spurious signals may be present near the subsystem, and plant security requires the system to be inaccessible to unauthorized personnel. Hence signal conditioning, screw terminations, and locking cabinet doors are standard with the 9611R.

Notes:

1. Consult the M&C Technical Data Book (5952-8506) and the 9603R/9611R Configuring Guide (5952-8507) for details concerning proper ordering of options.
2. DAS utility library discussed next issue.
3. Both the 9603R and 9611R include a communications interface for serial communication to an HP 1000 up to 3 Km (10000 ft) via hardwired, twisted pair cables. Each has an option to replace the serial card with a local, parallel, microcircuit interface and 12 ft. cable for higher throughput of I/O located close to the computer.

Exhibit B: Digital Hardware Options (General Description Matrix)

DSD[3] Product #	Cross Ref to N.J. #	Description	Limits	Bits	Outputs/ Inputs	Signal Conditioning Available	Termination Strips	Typical Application
91132A	69351B	Voltage Regulator Card	+15V	N/A	4 outputs to back plane of multiprogrammer	No	No	Provides voltages to the 69370A 60321A D/A's and 69421A voltage monitor card.
91201A	69331A	Digital Output Card	"1"State = 0→.3V "0"State = 4.5→5V/+12V	12	N/A	No	Yes	Provides digital output to instruments, solenoid drive ckts and solid-state AC switches.
91201A-001	69331A-072	Digital Output Card	"1"State = 4.5→5V/+12V "0"State = 0→.3V	12	N/A	No	Yes	Provides digital output to instruments, solenoid drive ckts and solid-state AC switches.
91202A	69431A-069	Direct Digital Input	"1"State = 0→.8V "0"State = 2→5V	12	N/A	No	No	Used to read data from digital instr., switches, IC's, contacts and other digital data sources.
91202A-001	69431A-070	Direct Digital Input	"1"State = 0→1V "0"State = 6→14V	12	N/A	No	No	Used to read data from digital instr., switches, IC's, contacts and other digital data sources.
91202A-002	69431A-073	Direct Digital Input	"1"State = 2→5V "0"State = 0→.8V	12	N/A	No	No	Used to read data from digital instr., switches, IC's, contacts and other digital data sources.
91203A	69430A-069	Isolated Digital Input	"1"State = 0→.4V "0"State = 3.5→6V	12	N/A	No	Yes	Uses in tests or process requiring digital signal isolation.
91203A-001	69430A-073	Isolated Digital Input	"1"State = 3.5→6V "0"State = 0→.4V	12	N/A	No	No	Uses in tests or process requiring digital signal isolation.
91203A-002	69430A-086	Isolated Digital Input	"1"State = 0→.4V "0"State = 25→50V	12	N/A	No	No	Uses in tests or process requiring digital signal isolation.
91203A-003	69430A-089	Isolated Digital Input	"1"State = 25→50V "0"State = 0→.4V	12	N/A	No	Yes	Uses in tests or process requiring digital signal isolation.
91204A	69330A	Relay Output Card	"1"State = Closed Contacts "0"State = Open Contacts	12	N/A	No	Yes	Uses in tests or process requiring digital signal isolation.
91205A[2]	69434A	Event Sense Interrupt	"1"State = Contact Open "0"State = Contact Closed	12	N/A	AC & DC	Yes	Used to monitor relay contacts.
91206A[1]	69370A	D/A Current Converter	0→20.475 mA	—	1	No	Yes	Operates electro-mechanical actuators and stimulates semiconductors.
91207A[1]	69321B	D/A Voltage Converter	10.235V→−10.24V	—	1	No	Yes	Drives analog recorders, controls analog equipment.
91208A	69600A	Programmable Timer, Stall Alarm	1μSec→409.5 Sec	—	1	AC & DC	Yes	Watch dog timer.

Exhibit B: Digital Hardware Options (General Description Matrix) (Continued)

DSD[1] Product #	Cross Ref to N.J. #	Description	Limits	Bits	Outputs/ Inputs	Signal Conditioning Available	Termination Strips	Typical Application
91209A	69601A	Frequency Ref. Card	1, 10, 100Hz 1, 10, 100kHz	—	6	No	No	Used in conjunction with the 69435A pulse counter to measure time intervals, pacing element.
91220A	69335A	Stepping Motor	"1"State = 0→.5V "0"State = 4.75→5.25V or 12V	—	2	No	Yes	Drive stepping motors.
91221A	69435A	Pulse Counter	0→4095 counts	12	1	AC & DC	Yes	Measure frequencies or time intervals, count objects on production line.
91222A	69480A w/ signal conditioning	12 Bit AC/DC Status Input	AC "1"State = 95→130V "0"State = open circuit DC "1"State = 10→55V "0"State = open circuit	12	N/A	Yes	Yes	Used in systems that require signal conditioning for inputs from industrial type environment.
91223A	69331A w/ signal conditioning	12 Bit AC/DC Digital Output	AC "1"State = 20→240V "0"State = open circuit DC "1"State = 4→55V "0"State = open circuit	12	N/A	Yes	Yes	Used when signal conditioning req'd for output levels to industrial type environment.
12930A		Universal I/F	Input "1"State > +1V "0"State < −1V Output "1"State = 2.4V "0"State = .4V	16	IN/OUT w/12 control signals	—	—	General purpose I F to allow easy interfacing of instr.
12930A-001		Universal I/F	Input "1"State = 0→.5V "0"State = 2.4V→5V Output "1"State = .4V "0"State = 2.4V	16	IN/OUT w/12 control signals	—	—	General purpose I F to allow easy interfacing of instr.
12930A-002		Universal I/F	Input "1"State = 2.4V→5V "0"State = 0→.5V Output "1"State = 2.4V "0"State = .4V	16	IN/OUT w/12 control signals	—	—	General purpose I F to allow easy interfacing of instr.
12551B		Relay Output Register	100V across contacts	16	OUTPUT	—	—	Computer control of external ckts.
12554A		16 Bit Duplex Register	Input "1"State = .5V "0"State = +8V Output "1"State = .5V "0"State = 12V	16	IN/OUT	—	—	Computer communications to 16-bit devices.
12554A-001		16 Bit Duplex Register	Input "1"State = −8V "0"State = −.5V Output "1"State = −12V "0"State = −.5V	16	IN/OUT	—	—	Computer communications to 16-bit devices.
12555B		D/A Converter	0→10Vfs	—	2	—	—	Drives oscilloscopes, x-y recorders and other analog devices.
12556B		40 Bit Output Register	"1"State = 12V/4.5V "0"State = 0V	40	OUTPUT	—	—	For driving digital recorders, program lines of stimulus and measuring instr and control panel indicators.
12566B		Microcircuit I/F	"1"State = 0→.5V "0"State = 2.4→5V	16	IN/OUT	—	—	Used to drive std. TTL logic circuits.
12566B-002		Microcircuit I/F	"1"State = 2.4V→5V "0"State = 0→.5V	16	IN/OUT	—	—	Used to drive std. TTL logic circuits.
12604B		DSI Input I/F	"1"State = 5V→100V more positive than "0" State range = −100V→100V	32	INPUT	—	—	Provides 32 bits (8 BCD digits) inputs for interfacing the digital outputs from DVM's, counters, etc.

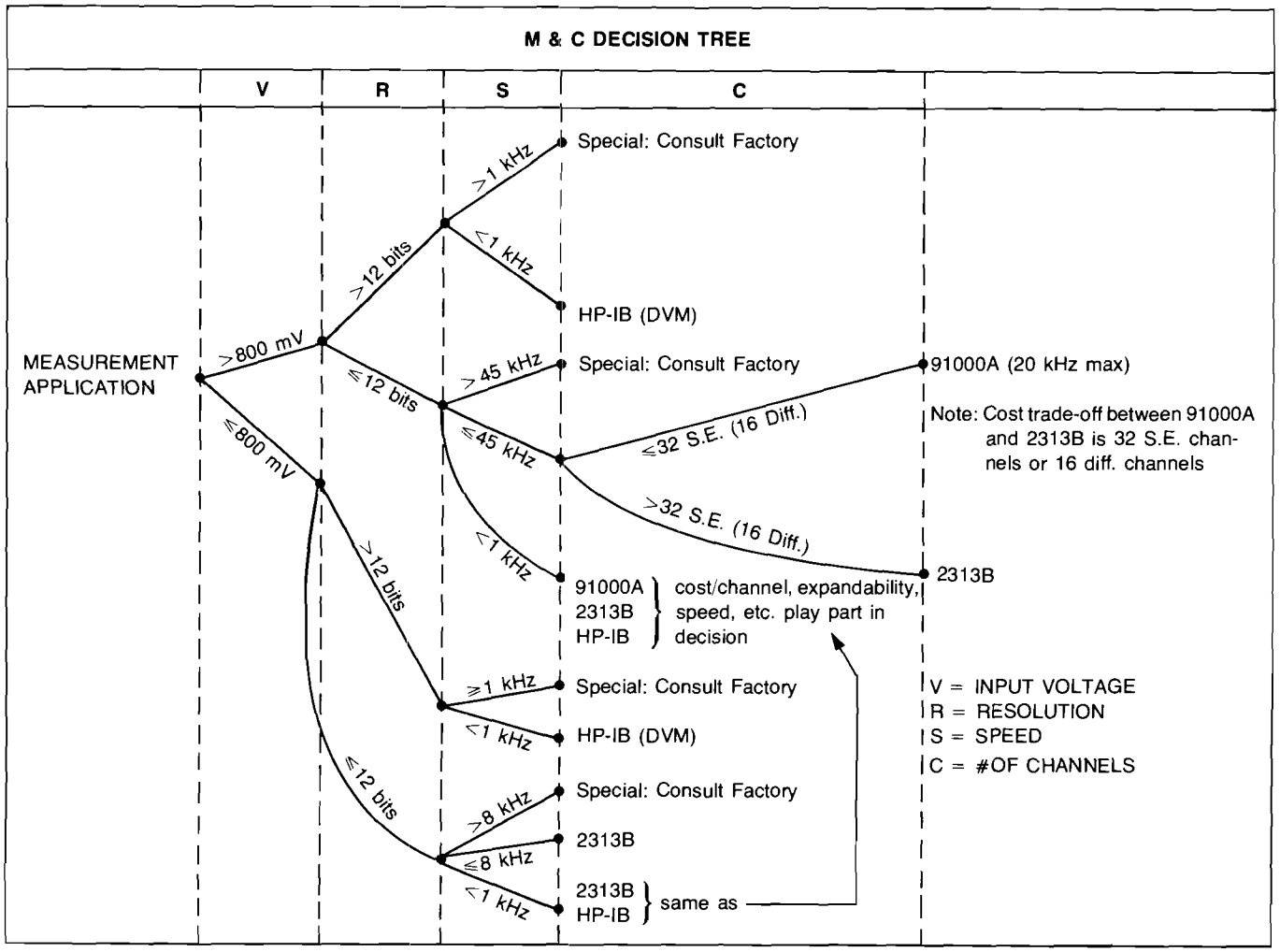
NOTES:

1. Prerequisite — 1 each 91132A/91063A or 91140A that contains a 91206A or 91207A.
2. Can only be used in 91063A mainframe.
3. 91XXX number scheme represents the DSD product # for the New Jersey I/O. This numbering scheme was instigated to allow field add-on ease of ordering. Plus it provides the advantage of easily ordering signal conditioning where required.

Analog M&C Article Clarifications

By: Dave Hannebrink & Dave Hendrix/DSD

We have reprinted the M&C decision tree for clarity purposes. Please replace the original decision tree in the February 1 Newsletter with this one.



Reference page 7 of February 1 Newsletter, just a couple of changes:

1. For the 91225A under I/O range should read:

   "2.5mA to 100mA"

2. Footnote 1 should read:

   "Note that some cards have two product numbers; the 91XXX numbers are used when ordering add-on analog cards to the 2313B subsystem in the 9611R environment. This provides an avenue to order termination strips to the individual cards associated with the 2313B subsystem."

Product News

2123A Removed from Corporate Price List

By: David Carver/DSD

The 2100A has reached the point in its life cycle where it is no longer desirable to offer a price break on the 2100/7900 DISComputer (2123A).

We have, therefore, removed the 2123A from the Corporate Price List. Customers who still need this product should order it "by the pieces", as follows:

2100A	Computer with
2100A-016	16K Memory
12895A	DMA
12960A	7900 Subsystem

Ordering HP/1000 Software

By: Frank Jackson/DSD

There appears to be some confusion regarding the ordering of software on paper tape or mini-cartridges. Hopefully the following will clarify the issue (or confuse you more!).

HP/1000 Orders 2170, 2172, 2172

System software RTE-II or RTE-III is always shipped on a Grandfather disc. Hardware diagnostic software is provided on mini-cartridges.

This standard for HP/1000 orders only. *DO NOT* specify Opt 020 (mini-cartridges) this confuses the booking system and will need a change to the order.

Additional Software Line Items

This applies to all line-item software available with the HP/1000, e.g. Multi-User BASIC (92101A), DS1/B (91700A), and IMAGE 1000 (92063A), even on the same order as an HP/1000. If your customer wants this line item software integrated with an HP/1000 on the same order then the order *must* specify Option 020 (mini-cartridges) to that item only. If no option is specified then the software item will not be integrated with the HP/1000, and the software will be shipped on paper tape.

Ordering Loader ROM's for E-Series Computers

By: David Carver/DSD

All E-Series computers have a combination 7900/7905 loader ROM as a *standard* item. This means that customers do *not* need to order 12992A (7900 loader ROM) nor 12992B (7905 loader ROM) with any E-Series computer.

We have received several orders which have included an (apparently) useless 12992A or 12992B. Please check this detail on your E-Series orders. The E-Series Field Training Manual has complete configuration information.

Sales Aids

Program of the Month

By: Jim Bridges/DSD

Starting with this issue, we will highlight one program from the Contributed Library per month (not per issue of the Newsletter). At times, one or more contributed programs have been a factor in influencing a sale. The purpose of the "Program of the Month" is to publicize those programs which have already helped make a sale or to announce those new programs which the factory feels could be valuable sales tools.

We will need your help in identifying the "super" programs. Start sending in your nomination for "Program of the Month" today! The benefit for you is that you may be able to make use of the gems that others have found. But it won't work unless you are willing to share your experience. There's no form to fill out: just tell us why you think the program deserves attention and how it was helpful to you.

The next issue of the Contributed Library catalog will be available sometime in March. From now on, it will be reissued in some form (perhaps supplements) at least once a year. Also, the latest entries are announced in each issue of the HP Communicator. This renewed factory interest in the Contributed Library is a direct response to comments that have come in from the field offices. Your voice has been heard!

Program of the Month #1:

NAME: DFINE & SWPIT (two programs work together)

PART #: 22682-18958 (paper tape) $ 50.00
22682-13358 (mini-cartridge) $105.00

PURPOSE: Allows user to redefine partitions in RTE-III while on-line. Changes may be memory only, disc only or memory and disc. The system may be active while partitions are being redefined. There are minimal cautions (input errors which can not be detected): these are explained in the documentation. Pages with parity errors may be omitted from the redefined partitions.

Partition definition follows the same procedure as the generator itself (except the generator does not exclude pages with parity errors). It starts by printing the page requirements of real-time and background programs and any partition assignments. Memory size is requested: the response may be a memory size less than or greater than specified at generation.

The ease of redefining partitions permits the user to experiment to find the optimum for his application and to make changes to accommodate occasional unusual needs. For example, a partition equal to the maximum addressable (say 14 pages) may be needed for a program that is run perhaps once a month. The rest of the time, a 14 page partition would be wasteful of memory. Some of the questions a user might have are:

1. How many partitions do I need?
2. How many should be real-time and how many should be background?
3. Should some of my partitions be reserved for special programs? Which partitions and which programs?

DFINE makes it easy to experiment with these parameters and change the partitions without regeneration. This places less of a burden upon the user to thoroughly analyze his needs prior to doing the generation.

Error on Fiche — 9640A

By: Mark Fowle/DSD

Please note that the CPL is in error in its discription of the 9640A. The 3rd line of the description reads "12960A-015, RTE-II (92001B)" — *should read*:

"Dual Channel Port Controller and Time Base Generator"

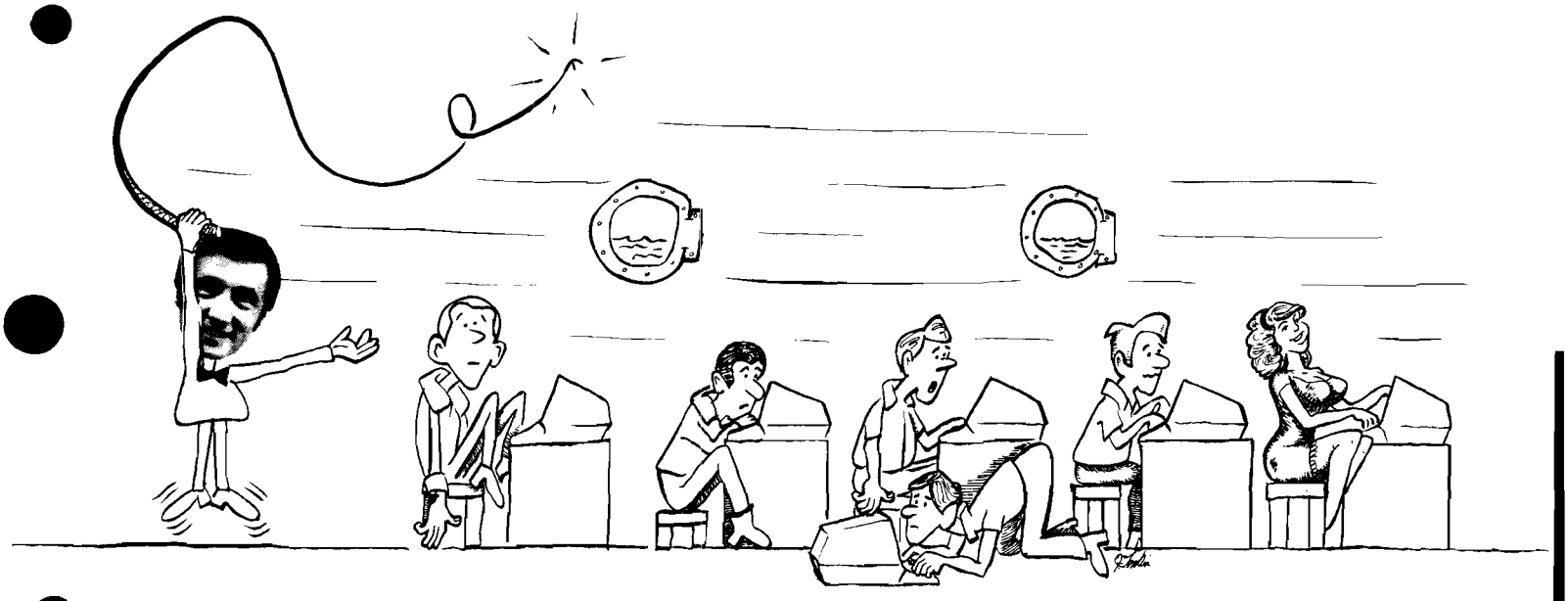
The 12960A and RTE-II are not included in the price for the 9640A Base System.

DATA TERMINALS NEWS

Division News

DTD Cracks the Whip!

By: Rich Ferguson/DTD



The week of January 24th, DTD put its sales force through a grinding ordeal. No mercy was shown through a tortuous five-day training class. The theme of the class was to answer the question, "Will your terminal work with my computer?"

Dazzled by the display of intelligence each salesman exhibited, the factory personnel cheerfully conducted numerous laboratory sessions aimed at giving the participants thorough hands-on experience where terminal operation in front of a customer is the key to his success.

Salesmen with ten thumbs were transformed magically into superstars with nimble and glib fingertips, gliding across the keyboard, being able to demonstrate tall features with a single bound.

A salesman, like any good soldier, should be able to field strip his piece (terminal in this case). Hence, the class' first assignment was to completely disassemble his or her terminal and reassemble it. The hard part was to make it work!

After this grueling session, laboratory experiments involved with data entry, data communications, soft keys and extended features were conducted throughout the week. Any sign of stumbling or faltering was dealt with immediately by the pack of specially trained factory people. The gnashing of teeth was a familiar sound as our great specialists enjoyed every moment.

Product News

Product Safety at DTD

By: Eric Grandjean/DTD

LISTED-TEACHING/EDP/BUSINESS EQUIPMENT 954K

HEWLETT•PACKARD

HS7

HEWLETT•PACKARD

The following is a summary of an interview with Benny Herbst, Product Safety, EMI and Communications Manager here at DTD.

Q. "*Benny*, how would you describe your job, and what are your main objectives?"

A. "*Eric*, my job is divided into three parts:

"1. Cause the design of the product to meet applicable safety, EMI and communications standards;

"2. Where applicable, submit the product to regulatory body agencies and test houses and secure approvals.

"3. Insure that the product continues to be manufactured in compliance with the standards it was approved under.

"My main goal, therefore, is to get agencies' approvals for DTD products where required."

Q. "How does this activity affect our sales?"

A. "Aside from liability-loss prevention, having these approvals can be used as a tool to add to the sales pitch. (Safe to use, possible reduction in insurance premiums.) I also want to point out that in many areas, categories and environments, our product cannot be sold without an approval: here it's obvious; no approval — no sales. This is the case in the USA for instance. Other countries have similar requirements and are just as strict about it. Germany is another example."

Q. "That's really an important point. Now, *Benny*, what is the general status of the 2640 family regarding safety approvals? Could you give me a rundown, country by country?"

A. "Yes, the following table illustrates the safety approval status to date."

COUNTRY AGENCY MODEL	USA U.L.	CANADA CSA	GERMANY VDE	SWISS SEV	DENMARK DEMKO	U.K. BSI	FINLAND EI	AUSTRIA OVE	CB CERTIFICATE
2640A,C,K,N,S	Approved	Approved	—	—	—	—	—	—	—
2640B	Approved	Approved	* Approved	* Approved	Submitted	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Submitted
2641A	Approved	Approved	* Approved	* Approved	Submitted	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Submitted
2644A	Approved	Approved	—	—	—	—	—	—	—
2645A	Approved	Approved	* Approved	* Approved	Submitted	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Submitted
2645S	Approved	Approved	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Submitted
2645N	Approved	Approved	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77
2645R	Approved	Approved	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77
2645K	Approved	Approved	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77
2649A	Approved	Approved	* Approved	* Approved	Submitted	Plan Submittal in 6'77	Plan Submittal in 6'77	Plan Submittal in 6'77	Submitted
13290A	Approved	Approved	—	—	—	—	—	—	—

*Must have Option 015 (2640B/45A Type Power Supply) Must have Option 017 (EMI construction)

"As you can see, we are moving along, but things do not happen overnight, either here or with Government agencies. Thanks to our good rapport with the agencies and enthusiastic help from the field abroad, we will attain our goals in record time."

Q. "*Benny,* I have more questions to ask you about EMI and communications approvals. They are other important topics to discuss. If you don't object, we will meet again for the next edition of DTD News. Thank you and see you in two weeks."

264X CRT on RSTS Systems

By: Miles Kehoe/Atlanta

I have found that all features requiring "escape" sequence can be used on 264X series running as remotes on any DEC RSTS system.

The trick is to use ASCII character 155 instead of normal Escape; this tricks RSTS, yet is received as ESC by 264X. Typical program sequence in RSTS might be:

```
10  A$=CHRS(155)+"&DB"
25  PRINT A$;"THIS WILL COME/OUT BLINKING"
20  END
```

No patch to RSTS is necessary. Also, the DEC supplied utility VT50DP for displaying system status on DEC's VT50 works with no changes!

Ask Your Terminal

By: Eric Grandjean/DTD

You are somewhere in the field and forgot your reference card or manual. You need to build a form or demo an alternate character set. What to do?

Press Self Test!

Here you are, in front of your eyes you have a one-to-one corresponding chart of alternate characters, with the basic Roman character set. You can leave the part you need on display for your convenience or if you need it again, place cursor below your working area and press test to get another pattern.

By default or after a hard reset, the alternate character set selection is always "A". After selection of another set; (i.e., "C") it remains your alternate set until another selection is made or until you hard reset the terminal.

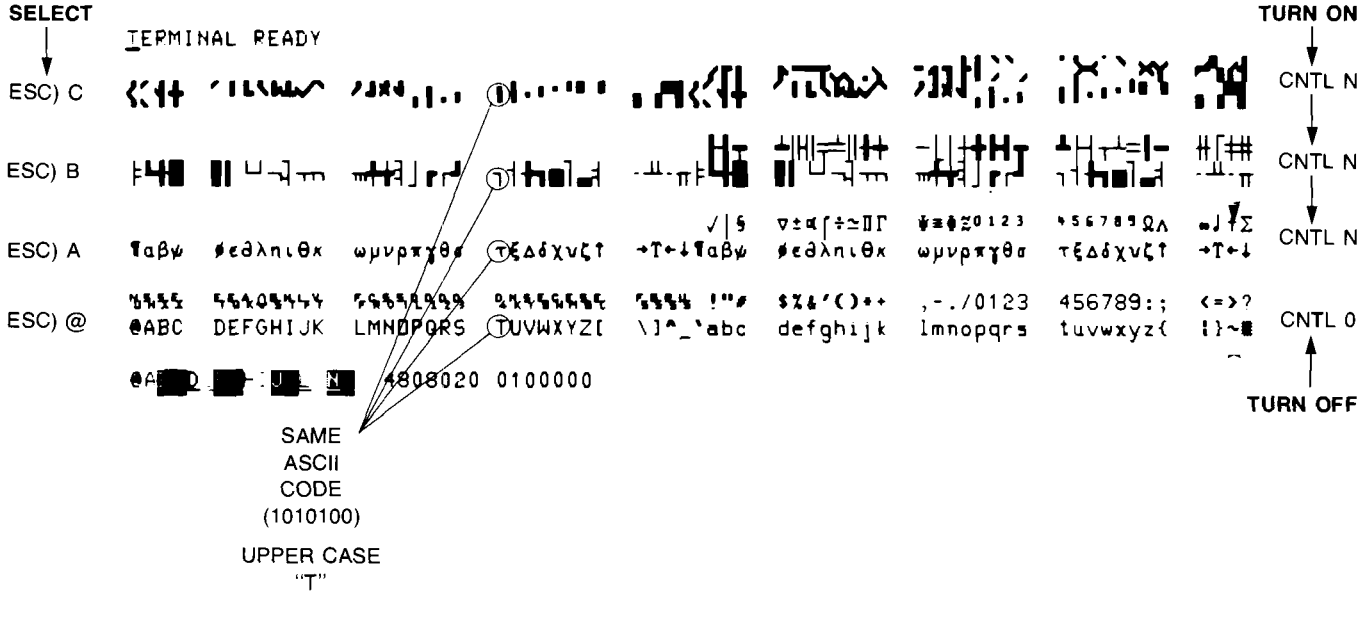
To turn on the alternate set, just press "CONTROL/N." To go back to Roman set, press "Control/0" or CR/LF. As a reminder, the alternate set selection is only good for one line at a time.

Application Note:

If you receive a request for blind data entry (for security or other reasons) the solution is easy — leave alternate character set "A" socket(s) blank on display enhancement board, ("A" ROM(s) not installed.) Before typing, just press "Control/N"!

Reset, CR/LF, or "Control/0" will resume normal display.

Another outstanding feature of the 2640 family of terminals!



Sales Aids

They Are Here!

By: Eric Grandjean/DTD

We have the great pleasure of announcing that we now have in stock the following new manuals:

Manual	Part No.
2645A Reference Manual	02645-90005
2640B/N/S Reference Manual	02640-90110
2645A User's Manual	02645-90001
2645S User's Manual	02645-90024
2640B User's Manual	02640-90109
2640S User's Manual	02640-90113
2640N User's Manual	02640-90111

COMING UP NEXT MONTH:

2641A User's Manual
2641A/2645A/S Reference Manual Supplement

WE ALSO HAVE THE FOLLOWING SERVICE MANUALS:

2641A/45A/45S Service Manual	02645-90003
2640B/N/S Service Manual	02640-90115

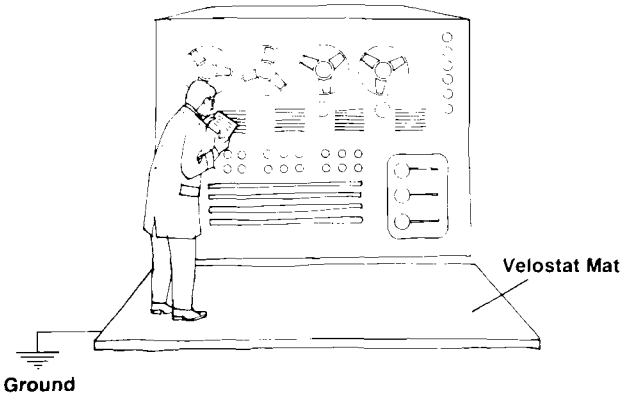
Place your order from nearest parts center.

Service News

Static Discharge Prevention

By: Ed Churka/DTD

VELOSTAT MATS IN COMPUTER ROOMS



The Nuclear Products Division of 3M Company has confronted the pesty irritant to computer systems and peripherals known as static discharge.

3M developed a black floor mat that will discharge system users before they touch the computer, terminal keyboard or peripheral device. The mat surrounds the work area and is connectable to earth ground through a cable connected on the mat.

3M calls it VELOSTAT Sheets, Series Number 1800. They also have adhesive tape to connect the large 4x8 foot sheets together.

Contact William A. Newton, Static Eliminator Sales, 320 Shaw Road, South San Francisco, CA. 94080, Telephone (415) 761-1155. Order department is (612) 733-9420.

Note the list price sheet below. 3M recommends the 1805 Type listed. The ground cord needs to be ordered separately.

PRICE LIST

EFFECTIVE FEB. 20, 1976

VELOSTAT FILM — PRESSURE SENSITIVE — ADHESIVE ON ONE SIDE

TYPE 1758

MIL	WIDTH	QUANTITY	PRICE PER YARD
8 mil	36"	5 yds. 10 yds. 25 yds.	$10.00 $ 6.00 $ 3.40

SERIES NO. 1800

VELOSTAT SHEETS (PRICE/SHEET)

SPECIAL ORDER — RIGID SHEETS

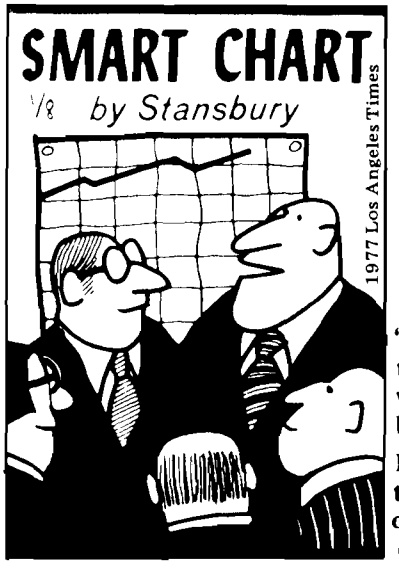
TYPE
1805
1806

SIZE	UNIT PRICE
4' x 8' x 1/8"	$ 73.70 Per Sheet
4' x 8' x 3/16"	$110.00 Per Sheet

TYPE
1864 With Ground Cord and Snap Fasteners.
Specify 5', 10', or 15' Ground Cord with order

THICKNESS	SIZE	PRICE/SHEET
1/8"	24" x 32"	$18.70
1/8"	4' x 8'	$77.70

Ground cords are available with ½ megohm resistors at $2.00 additional charge.



"Their only bank is the bank of China, with 30,000 branches . . .

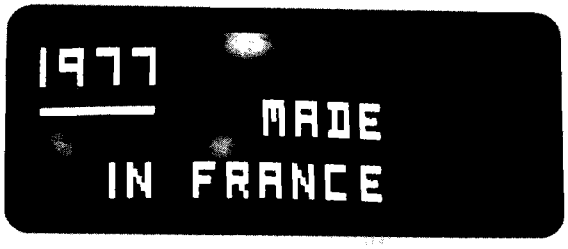
Now if we could sell them just one little computer terminal for each branch . . .

HP GRENOBLE NEWS

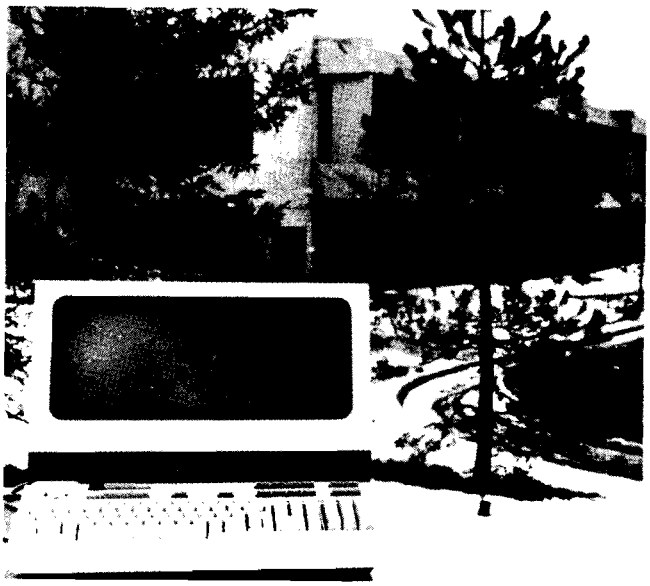
Product News

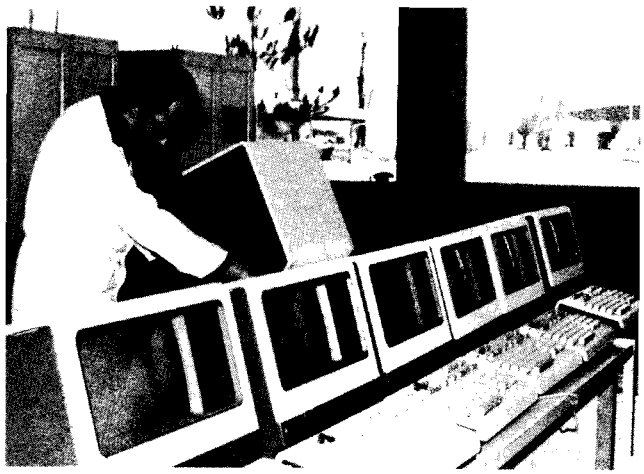
2640 Family Produced at Grenoble!

By: Francis Marc/HPG

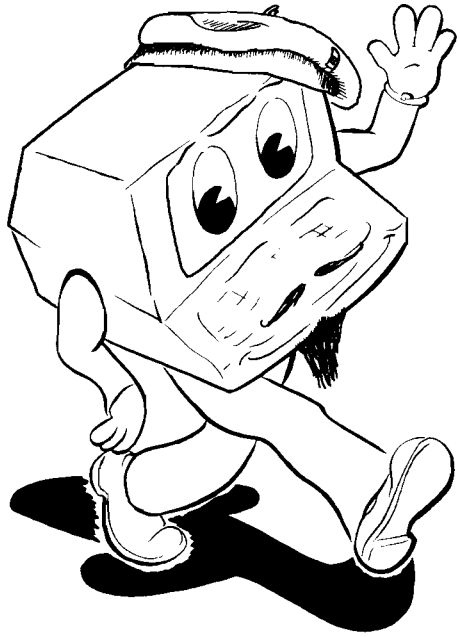


Our first production run of *2640B, 2640N* and *2640S* is completed and available. Starting February 1st, Grenoble receives orders and supplies Europe with these models.





The 2645A will be built also in a few months. The availability schedule lists all the complementary options and accessories we can provide. Even now call me for all information you may need.



GENERAL SYSTEMS NEWS

Product News

KSAM Introduced January 24, 1977

By: Rich Edwards GSD

What's easy to use, completes the spectrum of data management facility choices on the Series II, and will help you break quota on 3000's? Why, KSAM/3000, of course! KSAM was introduced on January 24th by the following announcement appearing in *Computerworld* (1/31) and *Electronic News* (1/24).

Now, Keyed Sequential Access to HP 3000 Files

File access by a new keyed sequential access method, KSAM, is now an option for Hewlett-Packard 3000 Series II computer user. KSAM/3000 completes the spectrum of data management facility choices on Series II, fitting between the multiprogramming executive file system that is standard equipment, and the optional IMAGE/3000 data base management system, with QUERY inquiry facility, at higher cost. With KSAM, HP states, 3000 Series II computers now have the most complete range of data management options in their class.

Using KSAM, records are retrieved through reference to key, or index, fields designated by the programmer at the time of entry. Record length may be variable or fixed. Each record has one primary key, and may be assigned as many as 15 others. Access may be by exact, generic, or approximate key value, by logical record number, or logical number within a sequence, or simply in chronological order. Duplicate key values are permitted.

3000 Series II computers use RPG, COBOL, BASIC, FORTRAN, and SPL, any of which can be used to create KSAM records that can later be accessed in the same or any other of the languages. Files may be simultaneously accessed and updated by multiple users from separate programs.

Manipulation of KSAM files is made easy by a pair of utility programs and a set of commands. With these, files can be created, renamed, cleared, purged, verified as to contents and access history, and copied in whole or part from disc to tape or vice versa.

Converting existing files into KSAM files is a simple procedure. Once they are stored on disc or tape, as few as two commands will do the whole job.

Price and Delivery

List price of KSAM/3000 in the U.S. is $2500. KSAM complements IMAGE/3000 with QUERY, HP's data-base management option for the computer series, which continues at $11,000. KSAM/3000 may be ordered as original equipment with new 3000 Series II Computers, and may be site-retrofitted to any already installed. First customer deliveries are expected in February.

RPG Enhanced for KSAM/3000

By: Rich Edwards GSD

Converting an RPG System 3 user to the 3000 is now as easy as 1, 2, 3. Read on, and you'll see!

1. The program and data files must be loaded onto the 3000. This media conversion (cards, floppies or IBM discs to 3000 mag tape) can be easily performed by a local service bureau.
2. System 3 indexed access (ISAM) files can be built with KSAM on the 3000 through FCOPY. See your recent KSAM field training manual for details and examples. Note that KSAM has a real performance edge over the indexed files on the Sys 3 — not just one, but up to 16 keys may be specified for each file. Thus, sorts and redundant programs processing a particular file can be eliminated by using multiple keys. This saves both processing time and the hassle of maintaining all those sorts and extra programs.

3. With almost no changes the System/3 RPG programs will compile and run on the 3000. Obvious changes are the peripheral names (MFCU1 becomes CARD, etc.,) and the 3000 double quote convention (vs. single quote on the Sys/3). The following RPG enhancements have been made to make KSAM files as easy to use as regular MPE files:

   a. The DSNAME feature has been extended to include KSAM files.

      This feature allows a way for a KSAM, RSAM or IMAGE file to be specified more than once, each with a different file name, and each referencing the file named in the DSNAME record, using the same file number. (e.g., only one set of currency pointers are kept).

   b. File system files (including KSAM) can now be locked and unlocked through RPG.

   c. RSAM files should be indicated as such by coding an "S" in column 32 of the File specification.

Full details on using KSAM files with RPG are contained in the second edition of RPG Reference Manual (Part Number 32104-90001), available March 1977.

Source Code for HP 3000 Systems

By: Rich Edwards and Dave Sanders/GSD

As you are probably aware, source code is not included in any of our standard software products. There are several legitimate reasons why 3000 customers may want source code to the MPE operating system or a subsystem:

1. The customer may want to interface new devices to the HP 3000 that are not available from HP.

2. The customer may want to study system or compiler design (especially at universities).

3. In some cases, the law requires government agencies to archive software in order to be independent of (possibly failing) vendors.

Source code is a particular concern to the management team at GSD because:

1. With it, the customer can modify his system, making it very difficult or impossible for our service and support people to keep his system operating satisfactorily.

2. We currently have no way of providing the customer with professional training, up-to-date documentation, or any other kind of assistance he may require to use the source code successfully.

3. If source code were generally and inexpensively available, some customers could use this vehicle as an inexpensive way to acquire our unbundled software, such as IMAGE.

We recognize, however, that there are some customer situations where source code is necessary in order for the customer to use his computer for the purpose for which it was acquired. In order to deal with these special situations, we have set up a "specials" procedure which hopefully will meet this need.

In the case of all HP 3000 software, except MPE-C for Pre-Series II systems — discussed below, a new SOURCE CODE LICENSE AGREEMENT with the customer will be required. This agreement is designed to protect the customer by informing him of the limitations under which GSD is providing source code to him. The main points of the agreement are:

1. HP will not provide any of the following in connection with the source code covered by the Agreement: a) Maintenance, b) Support, c) Updates or information concerning updates, and d) Documentation.

2. The customer may modify the materials furnished under the license agreement and may sell or license the object code derived from the modified source code to that user's customers IN CONJUCTION WITH THE SALE OF HP HARDWARE BY THAT USER.

3. The user shall not copy or otherwise reproduce the source code except copies for safeguarding or archival purposes. [Of course the user may compile the source code and may also modify it and compile it for his own use.]

It is important to note that this agreement allows OEM's to put one copy of their modified source code (in object code form) on each HP 3000 they sell, in keeping with the present policy of allowing OEM's to purchase a software subsystem once and copy it once for each subsequent system they buy from GSD. It cannot be overemphasized that the licensee must be fully appraised of HP's support limitations pertaining to modified software run on the 3000. HP will not provide any support for customer modified source code or the related object code. If HP discovers, in the process of trouble shooting a software problem, that the problem was caused by the customer's modifications, HP may levy an additional charge over and above the customer's maintenance agreement.

A source code special will only be quoted to an HP 3000 customer who has already purchased (ordered) the related object code (subsystems) or in the case of MPE, an HP 3000 system.

If you have a customer interested in purchasing source code, the following procedure has been set up to expedite your request. First submit a request for a "special" to your GSD Sales Development contact. He will send you a firm "special" quotation with a part number for each subsystem or MPE-II, the price ($300 per subsystem or MPE-II), and the SOURCE CODE LICENSE AGREEMENT. The Agreement must be signed and returned to GSD Sales Development prior to the transmission of the order. *No source code products will be shipped until a signed copy of the license agreement is on file at GSD.*

For the special case of MPE-C, GSD will make both the source code and the internal documentation available on an "as is" basis for a combined price of $500. Although no source code license agreement will be required for MPE-C, *Dave Sanders* will write a personal letter to North American customers ordering MPE-C source code explaining exactly what they are getting and clearly defining the lack of HP support for MPE-C source code. Outside North America, *Dave* will contact the country sales manager and ask him to pass the information to customers requesting this "special."

Note that in the case of modifications made to the operating system (MPE-C or MPE-II), the customer may no longer be able to take advantage of new versions of MPE as they are released. Because HP may subsequently modify some of the same modules that the customer may have changed, he may not be able to take advantage of changes and improvements HP may make in MPE.

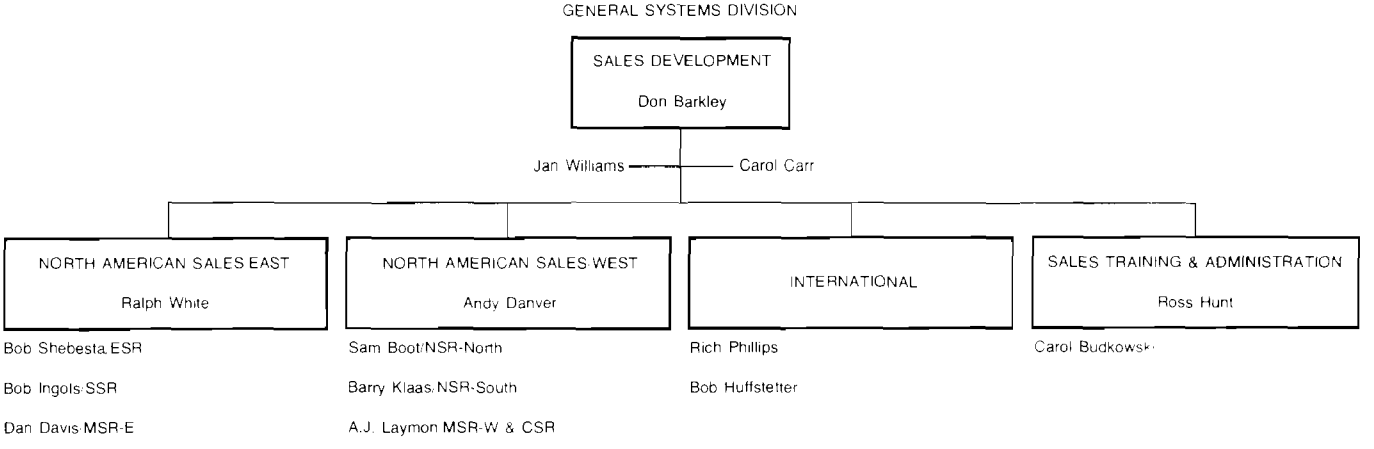
As you can see, providing source code and documentation is outside of the mainstream of our business. As a result, we are not organized to provide professional and on-going support for these items, but will make them available to those customers who understand what they will receive.

Division News

Growth, Change and Opportunity

By: Don Barkley/GSD

Here is what is happening in Sales Development . . . . .



The recent promotion of *Ralph Manies* to his new position of Customer Relations Manager brought about some changes in our North American Sales/East team. *Ralph White* has been asked to manage this team which supports ESR, SSR, and MSR-E (He formerly worked in the International area.) *Bob Shebesta* will be handling ESR. Previously, he was Production Engineering Manager here at GSD and had been supporting MSR-E since joining Sales Development.

A new name has been added to support MSR-E and that is *Dan Davis*, who came to us from the Product Support group where he managed the Data Center and maintained the training equipment.

The North American Sales/West team is managed by *Andy Danver* (formerly the Manufacturing Market Manager). this team supports NSR, CSR, and MSR-W.

Rich Phillips and *Bob Huffstetter* (who formerly supported ESR) will provide our International support.

Ross Hunt, who joined us from APD, handles our field sales training. Prior to joining HP, *Ross* was a SYS/3 salesman for IBM.

With these changes, we will try and keep up with your sales support needs. Thanks for all those orders - keep them coming!!

Sales Aids

HP 3000 Runs Promis and Justice

By: Bob Huffstetter/GSD

If you've tried calling on law enforcement agencies or justice departments and haven't found the software to get through the door, we may have found a solution for you. There is an institution in Washington which has developed two application packages called PROMIS and JUSTICE.

PROMIS provides statistical and management information as well as helping the prosecutor manage his caseload. As a management tool, PROMIS helps schedule police appearances in court and monitor time spent in this function. It has been discovered that the reports and data provided by PROMIS is the exact same information needed by the courts. By modifying PROMIS's code and thereby changing some report heading and formats, a "new" system is created. This system is called JUSTICE. Both systems can be run on the HP 3000 AS WELL AS OTHER SYSTEMS, INCLUDING DEC's.

If you run up against this situation in the future, contact *Harvey Flatt* in the Rockville sales office for further details.

CS GROUP NEWS

New CSG Ad Campaign

By: Tom Casalegno/CSG

The New, FY1977 Computer Systems Group Advertising Campaign began with an insertion in the January 26 issue of the *The Wall Street Journal*, and the January 31 issue of *Computerworld*. The campaign will continue in the *Business Week* issue of February 21, and the March issue of *Fortune*.

You will also see ads this year in *Datamation, Computer Design, Electronic Design,* and *Electronic News*.

Business Week will carry CSG ads 10 times this year (Corporate ads will appear separately in *Business Week*). *The Wall Street Journal* will carry 12 ads during the year, and *Computerworld* (are you ready?) will carry 27 ad insertions in 1977. *Electronic News* will have 18 CSG insertions, and *Datamation* will have 13 insertions.

This campaign is directed at top management and middle management via the business publications and at the computer pro via the Computer/Electronic trade magazines and press.

The ads are designed to provide readership with an intelligent and informative discussion of Customer/Prospect problems (real or perceived) and HP's ability to solve these problems with products, expertise and HP people.

In other words, the ads talk to the marketplace in terms of marketplace needs rather than in terms of product features, (you see, we do listen to what the field says).

This program should get us a better recognition in the market as a major computer system manufacturer and as a force in distributed processing.

In each ad, we are asking readers to look in the white pages and call their HP sales office for immediate action. This should result in direct sales leads that you can qualify "on the spot".

We are also asking prospects to write to our factory marketing managers to pull high-quality letter-head leads.

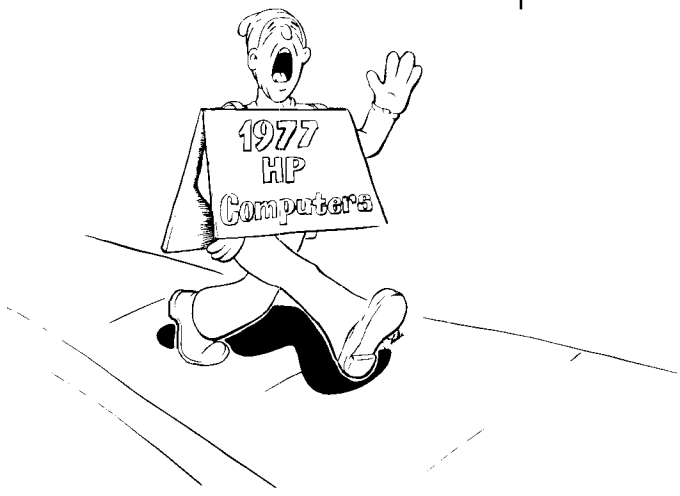
There will also be bingo cards from the Computer Electronic trades for your use.

In this issue we have reproduced the first ad for *Business Week* of 2/21. Please note that this ad is written for the computer amateur and neophyte.

Contrast this ad ("Catch-22") with "The Missing Link" version in *Computerworld* 1/31 issue to see how we have adapted the same message for the Computer Pro.

The next ad in the series is directed at the EDP manager, his boss, and the inhouse EDP users. It's headline is "Computer Paralysis" and its message is that "If your big computer gets overloaded, HP can relieve the pressure — without sacrificing centralized control". The ad then offers HP alternatives: 1000, 2000, 3000 Systems plus RJE and source data entry equipment.

There is still more in the mill, but we will tell you about that in another issue.



The Computer Catch-22

What do you do when you get too big for your small computer but you're still too small for a big one?

It's a tricky situation.

You want a large system that will supply up-to-the-minute information about all phases of your company's operation. At the same time, you need a real workhorse to handle payroll, general ledger and other accounting chores.

It sounds like a job for the traditional big computer until you figure the cost. That forces you to look at other options. Up to now, they weren't very good. But today, giant strides in technology give you the best of both worlds: big computer capabilities at a small system price. In short, the Hewlett-Packard 3000 Series II.

A dozen different jobs at once.

The new HP 3000 is a glutton for work. It has a versatile operating system that keeps all kinds of data processing functions running simultaneously.

While the computer is printing reports, it will run your payroll, update sales figures, accept inventory data from your warehouse, interact with a programmer, help you with projections, maintain personnel records—all this and more without keeping anyone waiting.

This "manager" of your data is fast and efficient. And it gives you a number of other "big computer" advantages in the bargain. You can run large programs, develop software quickly and inexpensively, and use as many as six languages.

Perhaps most important for a well-managed company, our computer will give you immediate answers to important questions.

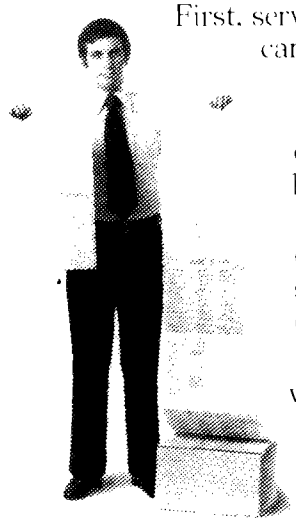
Turning raw numbers into usable information.

"Data Base Management" is an essential ingredient in an effective business information system. This ability to consolidate related information into easily accessible files is usually found only in larger computers.

But you'll find it in the HP 3000. At any time, your key people can call up the facts they need in the form they need them. (Yet the information is protected against unauthorized users by a multi-level security system.)

Our computer will generate forms, titles, page and column headings, data sorted by categories, subtotals, totals and averages. So you can follow trends, do projections and modeling, make informed product and marketing decisions for the future.

While you're looking ahead, you may wonder how well your HP 3000 will serve you over the years. Reliability, service and obsolescence are legitimate concerns in this fast-moving technology.



THIS. NOT THIS.

First, service. We can take care of you quickly here and overseas, because we have 700 computer system Customer Engineers working out of offices in 65 countries.

What about reliability? One customer reported that he was experiencing "alarmingly little downtime" with his HP 3000 Series II. An explanation for this lies in our "fault control memory."

This corrects memory errors while the computer is running and remembers where they occurred. During regular service, our engineer asks the computer how it's feeling and fixes any problems. But as far as you're concerned, the memory has been functioning perfectly all along.

The real key to avoiding obsolescence is our operating system. It's so advanced that it will be the heart of our computers for years to come. That means you can upgrade as you grow without having to throw away your old programs.

This ability to expand your business without outgrowing your computer means you can continue to avoid the "Computer Catch-22." If you'll contact the Hewlett-Packard office in your White Pages, we'll show you exactly how to do it. Or write to Bill Krause, Hewlett-Packard, 11000 Wolfe Road, Cupertino CA 95014.

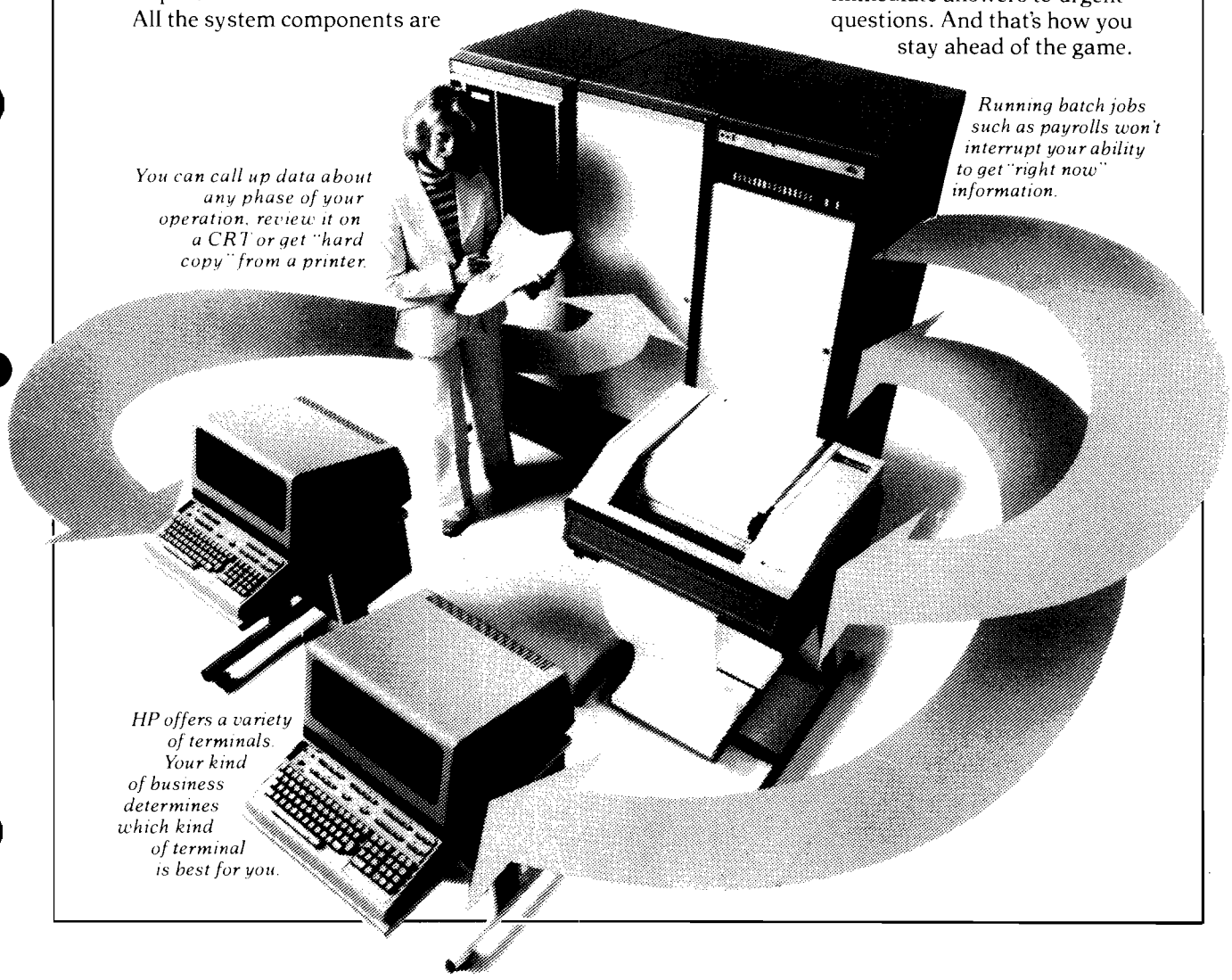
HEWLETT hp PACKARD

IT'S POSSIBLE FOR ONE SMALL COMPUTER TO ACT LIKE A BIG CENTRAL COMPUTER.

The Hewlett-Packard 3000 Series II certainly does. It can handle up to 63 inputs from terminals, data entry stations, optical card readers, even other computers.

All the system components are supplied by Hewlett-Packard, so there's no problem with compatibility, and you receive complete service, instruction and training from a single company.

More than 15,000 HP computers are at work in this country and around the world. They're helping people in all kinds of businesses get immediate answers to urgent questions. And that's how you stay ahead of the game.



You can call up data about any phase of your operation, review it on a CRT or get "hard copy" from a printer.

Running batch jobs such as payrolls won't interrupt your ability to get "right now" information.

HP offers a variety of terminals. Your kind of business determines which kind of terminal is best for you.

The Latest on Software Contracts

By: Fred Sommer/CSD

Since November 1st, when CSD took over responsibility for managing the software subscription and software maintenance programs, a lot of changes have taken place. The most significant changes are:

Communicator

Issue Number 11 (Nov-Dec) was the last one being distributed by CPC. Effective now, CSD is responsible for distribution of the *Communicator*. A complete set of policies and procedures is being developed and should be ready in a matter of weeks. In the interim:

1. A separate *Communicator* Order Form will no longer be necessary for Software Contracts unless additional subscriptions are requested.

2. Order Forms should be used for employee orders and direct mail order subscriptions. They should be sent to:

   HEWLETT-PACKARD CO.
   Computer Systems Communicator
   P. O. Box 61809
   Sunnyvale, Ca. 94088
   USA

Factory Shipments

We are now entering U.S. factory shipments directly into the Software support data base. Customer Engineers no longer need to send a Software Product Maintenance Request (SPMR) to initiate support for customers under warranty. The new procedure is as follows:

1. Using the End-of-Month QA Shipment History Mag Tape from Data Systems and General Systems Divisions, we strip off all products with software support.

2. We enter these products into the software support data base and produce edit sheets which are sent to CE Management for verification and addition of customer name and CE contact information.

3. Upon return of the marked-up edit sheets we update the support data base.

4. If we do not have a customer contact name, update shipments, the *Communicator*, and any materials the customer is entitled to will be sent to the local HP office, attention CE Manager, for forwarding to the customer.

5. Each month we add new shipments and we drop customers at the end of their normal or extended (GSA) warranty period unless they convert to a software contract.

The first set of edit sheets under this U.S. factory shipment program is in the mail right now. We are contacting Grenoble and hope to incorporate their shipments shortly.

HOPEFULLY, THESE ARE THE FIRST OF MANY IMPROVEMENTS IN THE OPERATION OF SOFTWARE SUPPORT PROGRAMS. WE APOLOGIZE FOR THE FACT THAT THEY WERE SO LONG IN STARTING.

COMPUTER SYSTEMS NEWSLETTER

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