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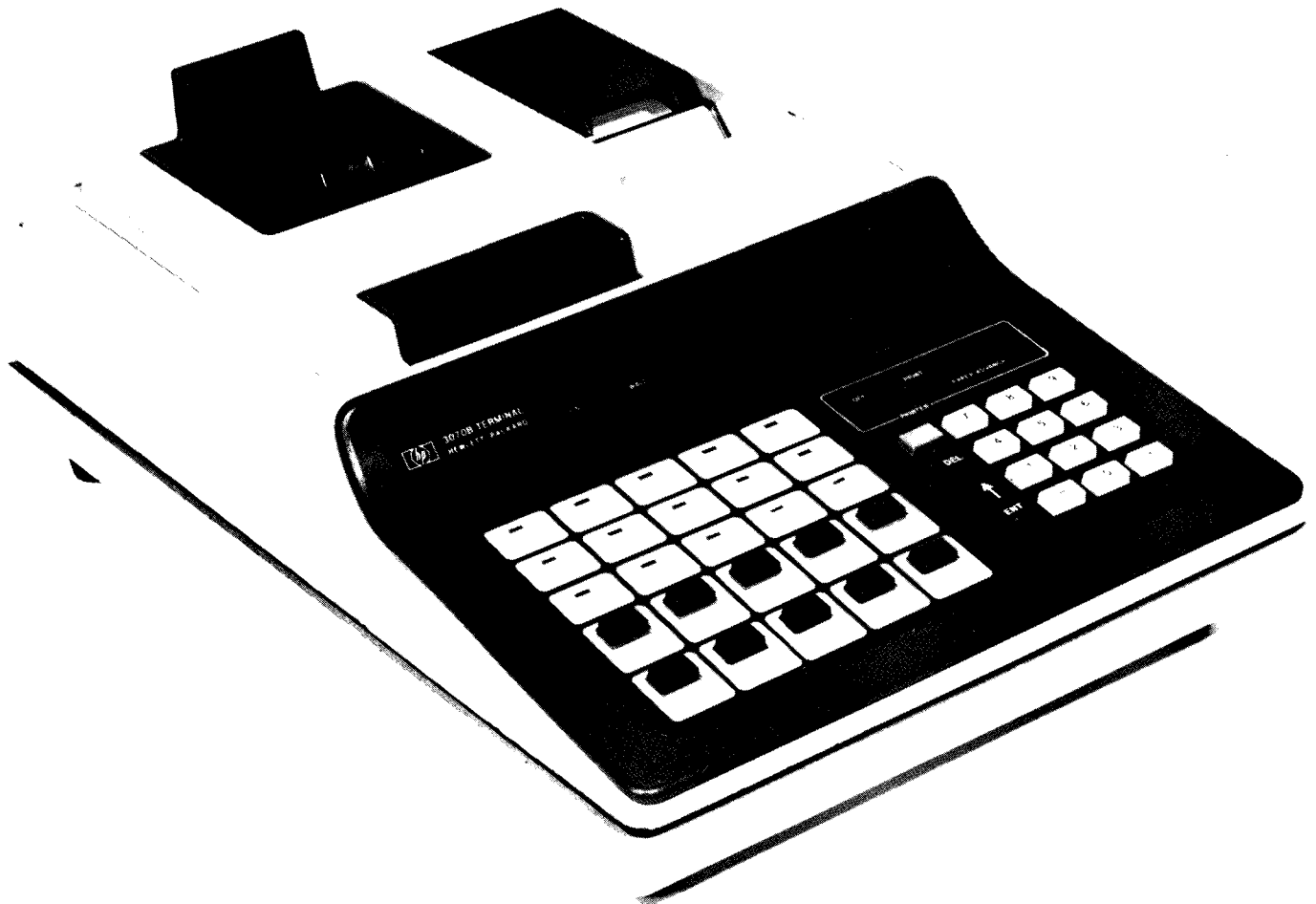
COMPUTER SYSTEMS NEWSLETTER

For HP Field Sales Personnel

HEWLETT  PACKARD

Vol. 3, No. 11
April 15, 1978

HP Grenoble Announces ... The HP 3070B Data Capture/Data Retrieval Terminal



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HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

BOISE DIVISION NEWS

Product News

Buy HP Terminals Less Expensively Than You Can Rent Competitive Terminals?!

By: Chuck Ulfers/Boise

Hewlett-Packard has a unique financing plan which allows certain U.S. customers to buy 2631A and 2635A terminals (or any other HP equipment) for a lower monthly payment than they can rent a competitor's terminals.

It's true, any state or local government agency or state or local government institution (any entity who can qualify to issue tax exempt bonds) who is willing and able to sign an HP Security Purchase Agreement or Master Lease Agreement can qualify for this unique financing plan. The only other requirement is that the customer must sign up for at least a \$200 per month payment. The plan even includes some of the flexibilities of a rental plan, in that it contains an escape clause that allows the contract to be cancelled in the event the purchaser loses his funding.

Let's look at an example: ABC State University needs 50 hardcopy terminals for its new HP 3000 Systems. This requirement qualifies the customer for a volume discount of 18%. This would mean a total price of \$2829 per unit or \$141,450 for 50 units. The school wishes to finance the terminals for the maximum term, which is 48 months. The finance charge (selling price \times 3.5% \times 4 years) is \$19,803 which brings the total dollar cost to \$161,253. Dividing by 48 months, the total monthly payment is \$3360, or \$67.19 per terminal per month. If the customer wishes, he can add \$31.00 a month for HP maintenance (which is optional), yielding a total monthly payment of \$98.19 including maintenance. Freight may also be financed in if the customer desires. This compares to a unit rental price of \$135/mo (including maintenance) for a quantity of 50 LS-120 DECWRITER III's, which is being quoted by a national distributor. This is a savings of \$1840 per month on the 50 terminals AND the customer OWNS these 2635A's at the end of 4 years.

These HP time purchase plans allow the qualified rental-oriented customer an excellent opportunity to upgrade to the powerful 2630-family terminals, in some cases actually reduce his monthly payments, and end up owning the terminals. For more information on this plan, please contact your Regional Sales Finance Manager or your Boise Division Sales Development contact.

A sales amplifier giving more information about this program will be available from Boise Division soon.

Boise Division 263X Product Training

By: Chuck Ulfers/Boise

Boise Division has scheduled two more sessions of our detailed 263X product training class. The class, which will be held June 19-21 and again July 31-Aug 2, is intended as a follow-up to the Data Terminals Specialist class. Our class has been scheduled for the week following the DTD class so as to minimize travel time and expense. We highly recommend taking our course in conjunction with DTD's since we build upon many of the concepts they introduce in their class.

The class consists of the following:

Day 1 2631A/2635A

- Advertising and Sales Promotion plans
- Product Overview
- How to Effectively Demo the Product
- Boise Facility Tour
- Product Operation
- Competition
- Hands-on Lab Session



Day 2 2631A/2635A

- Selling the 2631A/35A: Review of Past Successes, Role-Playing, etc.
- Interfacing to non-HP Computers
- Troubleshooting a Demo Unit
- Discounting and Financing plans
- Overview of Product Development Plans
- Exam

Day 3

- 7260A Optical Mark Reader
- 3071A Data Entry Terminal
- 7221A Plotter
- 7245A Printer Plotter

To register for the class, contact *Lillian Blankinship*, Ext. 2290 in Boise.

New Mag Tape Subsystem Strategy

By: *Mike Harrigan/Boise*

Magnetic tape subsystems for HP 1000 computers will undergo a change in numbering schemes starting May 1, 1978. The table below summarizes the changes:

<u>Old S/S Number</u>	<u>New S/S Number</u>	<u>Description</u>
12970A Std	7970B #236	9-track, 800 bpi, NRZI tape drive, 13181A #003 I/F, cables, tape accessories, documentation, installation.
12970A #010	7970B #230	Same as #236 except daisy chain cable replaces I/F kit.
12972A Std	7970E #236	9-track, 1600 bpi, PE tape drive, 13183A #003 I/F, cables, tape accessories, documentation, installation.
12972A #005	7970E #230	Same as #236 except daisy chain cable replaces I/F.
12972A #010	7970E #231	Same as #230 except slave drive replaces master drive.

This new numbering scheme should be easier to use, and eliminate many confusing and unnecessary options. It is completely consistent with HP 3000 type subsystem number schemes and other new product number schemes.

Significantly, the various speed options (25 ips, 37.5 ips) will not be offered in subsystems. Also, please note that 7-track subsystems have not been converted to the new scheme. This is because 7-track mag tape subsystems are being phased out and should be obsolete within the next 10-12 months. To order 7-track subsystems, use the old numbers (12971A).

Software (drivers) will now be available with the 7970B/E numbered subsystems. The prices for equivalent subsystems have not changed. All this information will appear in the May 1 Corporate price list (CPL). There will be notes on the CPL under 12970A and 12972A guiding the user to the appropriate (new) product and option numbers.

If you have any questions regarding this strategy, please contact *Mike Harrigan* at Boise Division. Watch this spot for a follow-up article on May 1.

What Should She Order . . . ?

By: Lillian Blankinship/Boise



This front panel comes with each serial-interface printer.



This front panel comes with each parallel-interface printer.

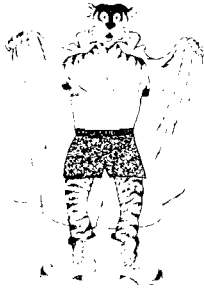
Remember, when your customer wants both a serial and parallel interface for her 2631A, she should order the *serial* interface with the 2631A (to get the correct front panel) and the 26095A field upgrade kit for the parallel interface.

DATA SYSTEMS NEWS

Let's Expose Ourselves!

Let's Expose Ourselves!

By: Harry Haayer DSD



"Hewlett-Packard Company Minicomputers in a manufacturing system environment"

This was the topic of a recent seminar held at Neely Santa Clara for potential customers in the Bay Area. The topics and objectives of the seminar were:

A. HP-IB

1. Introduce capabilities of HP-IB
2. Identify HP with the IEEE standard
3. Application areas

B. Measurement Control and Automatic Test Systems

1. Introduce the 2240
2. Introduce HP-ATS
3. Emphasize applications in the above areas

The presentation gave HP the opportunity to "expose" our products and capabilities to the engineering, manufacturing, and Q.A. managers of existing and potential customers.

The seminar was well received and provided an excellent opportunity to expand business with existing customers and provide the opportunity to open new accounts. The presentation was set-up by the field office and conducted by a joint effort between the DSD Sales Development team and the field sales office.

Give us the opportunity to help you set-up and conduct a seminar in your area. We can help:

1. Supply data sheets, application notes, manuals, etc.
2. Supply slides
3. Organize/locate demo hardware
4. Arrange personnel to put on the demo

"Let's expose ourselves and expand your accounts!" Contact the DSD Sales Development team for any help you may need.

New Applications

Factory and Field Combine to Close New OEM

By: Mike Cohn DSD

Southern States Region identified and carefully qualified a new potential OEM with a unique application in computer automated well logging services for the petroleum industry. Well logging environments demand good processing power, as well as rugged and reliable equipment. Unfamiliar with HP, our new prospect had many questions to have answered. Our field did a fine job in orienting the prospective OEM to the way Hewlett-Packard does business. Some areas, such as those relating to quality, reliability, and S.O.S. would be best addressed at Data Systems Division.

At the factory we provided a review of our computer commitment, and our overall product strategy. To round out the day, we had a manufacturing tour with the shake table demo and a visit to the S.O.S. facility. By the end of the day we had satisfied all their needs and we closed the deal for 60 computers a year.

Here is another example of a well coordinated effort of the field and Sales Development closing a well qualified customer. Together we have the resources to get those new accounts, let's use them!

DATA TERMINALS NEWS

Division News

How To Avoid Excedrin Headache #734

By: Steve Stark/DTD

You say you promised your customer a slot in the next 13294A Terminal Applications Course and they (DTD) told you it was full, as of two weeks ago?? You say your customer submitted a Training Registration Form to DTD three months ago and they (DTD) just told him that he was bumped from the next course?? You say you have this 10,000 terminal deal and . . .

Lately, we at DTD have been hearing an alarming number of these tales of woe from frantic field sales people who have suddenly discovered that their customers will be unable to attend the next training course as they had expected. With the nature of our courses limiting attendance to ten students and with the demand being high, we have very little latitude to deal with abnormal situations or unusual circumstances. For this reason, I would like to enlist your help in preventing the crisis which we have recently witnessed.

The best way to avoid a catastrophe is to have your customer submit a purchase order to HP for the training course as soon as possible after the decision is made to attend. You should insure that the order processing folks in your local office get the sales order transmitted to DTD promptly. The reason for this haste is that DTD REGISTERS STUDENTS FOR A COURSE IN THE ORDER IN WHICH WE RECEIVE A SALES ORDER!! More importantly, a Training Registration Form submitted without a corresponding sales order is meaningless. Once the sales order has been transmitted, a Training Registration Form should be sent to *Sylvia Raumaker*, DTD Training Registrar.

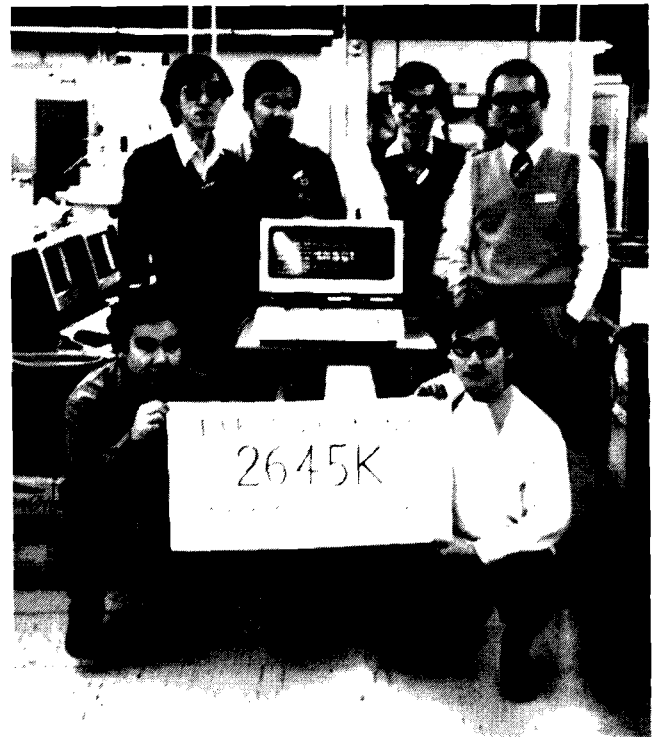
Please keep in mind that the training registration form is only required for CUSTOMER TRAINING COURSES such as the HP 13294A Terminal Applications Course. Registration for Sales Training should be handled by simply calling-*Soni Hogan*, DTD Sales Training Coordinator. This will save you a lot of time and effort.

If you will make your customers aware of these facts, you will be doing them and yourself a great service.

First 2645K Ships From YHP

By: Hideki Gushima/YHPT

We had the first shipment of 2645K terminals from YHP Hachioji factory last February 24th.



This picture shows our first 2645K which started the first lot of ten 2645K's, and our terminal production group (right to left) *Enji-san* — Terminal Production Supervisor; *Watanabe-san*, *Murase-san*, *Kawaji-san*, *Mutoh-san* and *Sunaga-san*.

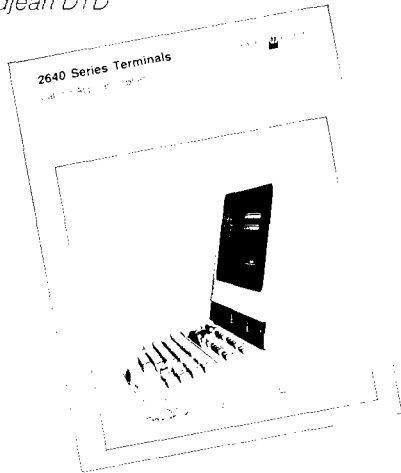
As you know, the 2645K was designed for the Japanese market by DTD and has not only bilingual characters and I/O capabilities, but has specially designed keyboard layout, code and Katakana handling capability, also conforming with JIS (Japanese Industrial Standard) for easy Japanese use.

We appreciate the participation of *Warren Leong*, *Mike Child* and *Dave Goodreau* in developing the 2645K for our own domestic product.

Product News

Errare Humanum Est

By: Eric Grandjean DTD



A small error was just discovered in DTD's great Cabling Application Brief, P/N 5952-9975. We thought it was perfect, but Alas! ... on page 25, the picture of the RS-232 plug has an error!

**PIN 2 is DATA OUT
PIN 3 is DATA IN.**

The good news is that the 13232N cable itself is correct. Remember not to use this cable with a GSD or DSD MUX. Use only 13232A.

GOOD SELLING!

Advanced Application Note #5 A Stroll Down Memory Lane, Part 1

By: Serge Daoust DTD

Have you ever wondered how memory is allocated in a 2645A? Wonder no more. Here is the answer!!!

The terminal's processor is capable of directly addressing up to 64 Kbytes of memory (ROM, RAM and/or PROM). The first 48 Kbytes of memory are used for code, the next 4 Kbytes is used for datacomm buffer space (if present) and the last 12 Kbytes is used to store user displayable data.

The 2645A terminal firmware (i.e., the personality of the terminal) is organized into 4 modules, namely:

1. Main code module	0K-10K
2. Device support code module	10K-18K
3. Keyboard code module	18K-20K
4. Data communications code module	20K-24K

Each module is responsible for controlling a major terminal function and is located in ROM on the control memory PCA board.

An optional fifth module, the alternate I/O module (24K-26K) is available for user-developed applications.

The major portion (except for FAST RAM and MEMORY MAPPED I/O RAM) of RAM between 24K and 48 Kbytes is available for use in special application terminals such as the HP 2641A, foreign language terminals or for user-developed applications firmware. To take advantage of this additional code space, a second control memory PCA or RAM memory boards can be used.

The RAM memory between 32K and 36K is reserved for MEMORY MAPPED I/O, an addressing scheme whereby the processor can access any of the I/O modules residing in the terminal, as well as specific components such as individual registers within a particular I/O module being addressed.

The firmware modules use a small amount of RAM storage for frequently used data, such as keyboard and datacomm variables and for vector and stack storage. This RAM is called "FAST RAM" because it is accessed "directly" through the top plane bus by the terminal's processor. This RAM storage consists of at least one block of 256 bytes starting at 36K and is located on the control memory PCA board. If a second control memory PCA is used, a second block of 256 bytes of FAST RAM starting at 36.5K is available for custom applications.

The display memory area begins at 64K and proceeds downward (i.e., towards 52K). This area is used to store display data, as well as variables and pointers used by the terminal firmware. The upper 512 bytes of display memory (FFFF-FE00 hex) is composed of a common variables area, a main code, keyboard, datacomm, I/O and alternate I/O variables area (corresponding to the 5 firmware modules) and an 80-byte message buffer area. In a standard 2645A, this buffer is used to display messages such as "data protected on left drive", "print fail", etc.

The next 512 bytes (FE00-FC00 hex) is made up by 2 I/O buffers, each 256 bytes in length. These buffers are used to pass data to and/or from I/O devices (i.e., from left tape to printer).

If memory is installed from 48K to 52K, it will be used as a datacomm buffer. The amount of memory allocated for datacomm is:

- for point-to-point communications, 96 bytes
- for multipoint communications, as per switches J16 and J17 of the multipoint communication PCA board.

Unused portions of this RAM board are not available to store displayable data (i.e., this cannot be used as an extension for the display area memory).

If no memory is installed at 48K, the firmware will automatically allocate datacomm buffer space from the display area beginning at 63K and moving downward. The amount of memory allocated is the same amount as mentioned above.

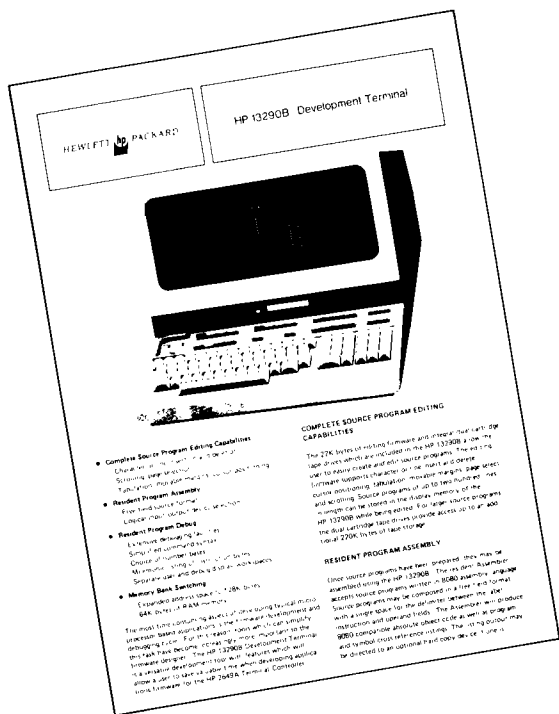
Following the datacomm buffer space allocated in display area, is an initial 256 bytes of display area memory used to store the softkey menu and the default values assigned to each softkey. Display memory will be allocated to extend the values associated with each softkeys as required.

The remaining memory between 52K and 63K is used to store displayable data. Refer to the Display Memory Allocation Map in the Advanced Application Note #3. It should be noted, as one of my astute readers pointed out to me, that the display storage section of that map can be at most 11K bytes and not 12K bytes as mentioned.



Hot Off The Press . . . The HP 13290B Development Terminal Spec Sheet

By: Serge Daoust/DTD



It's here folks! The brochure on our new and exciting development terminal is now available for distribution. Bulk quantity of this brochure, part no. 5953-2009(42), can be ordered through your literature distribution center.

No doubt that this spec sheet will be a contributing factor in closing those large 2649 OEM deals. Keep selling OEM. DTD aims to please!!!

New 2649A Text Editing Demo

By: Steve Stark/DTD

There is a unique problem associated with selling a product as dynamic as the HP 2649A. The problem is that it is difficult to show a prospective customer how really easy it is to apply the HP 2649A. Well, DTD has come to the rescue again and we have a solution to this problem. The solution is our new Text Editing Demonstration Package.

This package contains a text editing applications program (which executes on an HP 2645A), a softkey overlay and an in-depth instruction manual. The applications program adds text editing features such as line justification, centering and find string. The design approach used in developing this program is representative of typical 2649A applications firmware. So prospects may make their own evaluation of the ease of development.

This demo package is currently in use at the Computer Caravan. (See the following article by Serge Daoust on how to get it in your hands).

Good selling and keep those 2649A orders coming!

2649A Presentation Tape Now Available

By: Serge Daoust/DTD

DTD delivers again! For months, you've been asking for a 2649 presentation tape. The "2649A Presentation and Text Editing Demo Tape (Rev 4-8)" is now available to help you close those super 2649A deals. All you require to run the presentation tape is a 2645A with all three optional character sets.

The presentation tape will be distributed during the NPT Tour. If you didn't get a copy of it or if you got a copy of a presentation tape before April 1st (i.e., you didn't get the latest version) and would like to get a copy of the presentation tape, send me a blank tape and I will forward a copy of this new exciting demo to you.

Selected slides from the presentation tape appear below. Appropriate key points that should be stressed when the slide is presented appear beside the slide.

You will find the text editing demo at the end of the tape (see Steve Stark's article in this issue of the Newsletter). To load Steve's program in the terminal, insert the presentation tape in the left drive, find file 55 on the left drive and press the READ key. Make sure that all the necessary hardware is in the terminal. A copy of the text editing demonstration instruction manual will be sent with every presentation tape.

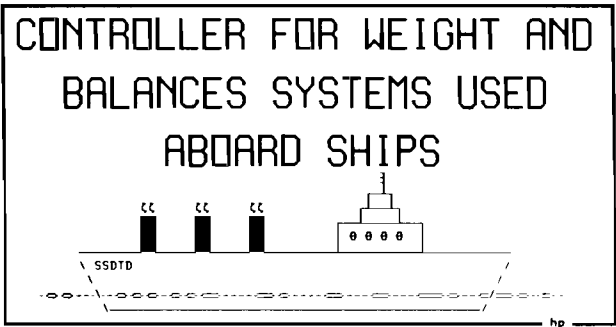
**HAPPY PRESENTATIONS AND
GOOD SELLING!!!**

FOR AN AUTOMATIC DEMO
PRESS THE F1 KEY

FOR A MANUAL DEMO
PRESS THE READ KEY

hp

Your choice of manual or automatic demo. The automatic version endlessly repeats the entire demo with appropriate pauses between each frame. When using the manual version, you must press the READ key after each frame.



Problem:

To insure that a super oil tanker was loaded in a manner to comply with the hull manufacturer's specifications for the shear and bending limits. Also, the ships were being underloaded because of uncertainty in determining whether these limits had been exceeded. The consequence of improperly loading an oil tanker is the loss of insurance benefits in the event of a mishap, not to mention the damage to the ecology.

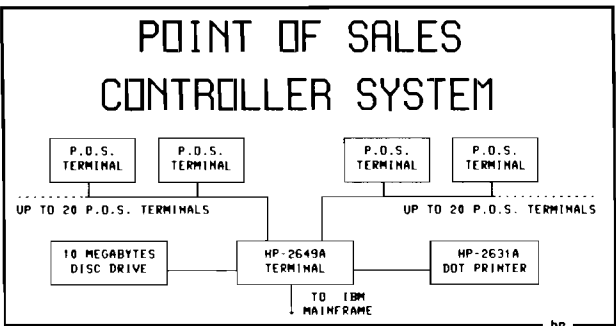
Solution:

Sensing probes in the hull of the oil tanker were interfaced to a 2649A to acquire load data, convert it to engineering units and present it in a semi-graphical form in terms of the percentage of the shear and bending limits. Thus, any overload conditions can easily be detected by the ship's captain or load master.

Benefits:

The results displayed by the 2649A are considered to be a certification of seaworthiness by the insurer so that benefits are protected.

Every oil tanker can now be more fully utilized; i.e., near 100%.



Problem:

A major chain of retail stores had several point of sales terminals in each store which were in constant communication with a large mainframe. Monthly communication costs for a large store is approximately \$20K.

Solution:

In each store, a 10 megabyte disc drive and several point of sales terminals were interfaced by an OEM to a 2649A terminal to collect and record sales data. At the end of the business day, the 2649A is polled by the mainframe and the 2649A transmits the data accumulated during the day.

Benefits:

Monthly communication costs for a large store were reduced to \$3K, a saving of \$17K/month/store.

AIRBORNE DATA ACQUISITION
SYSTEM INTERFACED TO
INERTIAL GUIDANCE
ALTIMETER AND MAGNETOMETER



Problem:

An in-flight data acquisition system was needed to record data gathered while airborne. The system needed to be rugged enough to withstand the vibration in the aircraft and it had to be compact for obvious reasons. The system had to have intelligence in order to qualify the data because it was discovered with earlier "dumb" systems that much of the data acquired was unusable.

Solution:

A 2649A has been interfaced to a number of the aircraft's navigational instruments. The data gathered by the data acquisition system is validated by the 2649A. If the data is unacceptable, the pilot is immediately informed so that another pass over the area may be made and valid data gathered.

Benefits:

More than 98% of the data collected is acceptable for further processing. The payback on the capital investment on the 2649A can be achieved by avoiding unnecessary flights and the associated costs.

P.S.: Check this slide carefully as the Red Baron strikes again!!!

EXTENDED MICROPROCESSOR
CAPABILITIES

FAST 8080 COMPATIBLE PROCESSOR (400 NANOSECOND)
INTEGRAL TIME BASE GENERATOR
VECTOR PRIORITY INTERRUPT SERVICE
CONCURRENT PROGRAM AND I/O OPERATION



An 8080 compatible microprocessor, integral time base generator and vectored priority interrupt structure combine to give faster and more efficient program execution with minimum overhead.

CHOICE OF MEMORY

RAM MEMORY IN 4K, 8K, 16K OR 32K BYTES MODULE
ROM MEMORY IN 2K BYTES CHIPS ON CONTROL MEMORY BOARDS
PROM MEMORY IN 4K BYTES CHIPS ON PROM BOARDS
FOR UP TO 128K BYTES THRU BANK SWITCHING

Benefits:

1. A broad range of program and data storage requirements can be met.
2. Greater flexibility. Programs can be executed in PROM initially and moved to ROM's when debugged.

Key point:

32K bytes of RAM memory on a single board providing

1. Faster access time,
2. Less expensive RAM cost
3. More I/O slots.

PROVEN & FLEXIBLE DESIGN

PARALLEL INTERFACE
 SERIAL INTERFACE
 HP-IB MODULE
 USER DEVELOPED INTERFACES

hp

A variety of external devices such as peripherals or computers can be connected to the terminal in a straightforward way using one or more of the I/O and datacomm interfaces offered.

Keypoint:

The HP-IB module allows several 2649A's to *share* one or more HP-IB compatible peripherals.

FLEXIBLE KEYBOARD

A special matrix key arrangement and translation table provides an universal user definable keyboard

hp

Developing a keyboard with unique keys or with a special arrangement of key is a relatively trivial task. A user can design a keyboard to meet his specific requirements, by merely engraving new keys and changing the firmware translation tables.

MODULAR ARCHITECTURE

SINGLE BUS ARCHITECTURE
 OPTIMIZES BOTH HARDWARE AND FIRMWARE CONFIGURATION FOR EACH APPLICATION
 COST SAVINGS TO YOU BY ELIMINATING UNNECESSARY HARDWARE AND FIRMWARE
 EASE IN DESIGNING NEW HARDWARE AND FIRMWARE MODULES
 GREATER FLEXIBILITY FOR EXPANSION AND MEETING CHANGING APPLICATIONS DEMAND
 IMPROVED SERVICIBILITY BY SUPPORTING MODULE LEVEL REPAIR STRATEGIES

hp

Benefits:

1. The customer can now order the specific hardware-firmware modules when he needs them.
2. More cost effective solutions.
3. Greater flexibility allows easy enhancement in keeping with application growth.
4. Useful life of product is extended.
5. Reduced mean-time-to-repair, down time.

EXTENSIVE COMMUNICATIONS CAPABILITY

POINT TO POINT AND MULTIPPOINT	HALF/FULL DUPLEX
ASYNCHRONOUS AND SYNCHRONOUS	COMPLETE MODEM CONTROL
50 TO 9600 BAUD	8 BIT DUPLEX INTERFACE
CUSTOM BAUD RATES	HP-IB HARDWARE INTERFACE
SPLIT TRANSMIT/RECEIVE BAUD RATES	20 MILLIAMPER CURRENT LOOP
EIA RS232C	PARITY SELECTION

hp

The 2649A offers access to a variety of communications facilities that should satisfy most customer requirements without the need to develop special interfaces.

STANDARD FIRMWARE

ACCESS UP TO 40K BYTES OF STANDARD FIRMWARE
 DIVIDED IN FOUR FUNCTIONAL MODULES

MAIN CODE
 KEYBOARD CODE
 DEVICE SUPPORT CODE
 DATA COMMUNICATION CODE

PERFORMING SUCH TASK AS

DISPLAYING DATA
 KEYBOARD SWITCH TRANSLATION
 DATA TRANSFERS TO AND FROM I/O DEVICES
 MAINTENANCE OF COMMUNICATION LINE PROTOCOL

hp

Feature:

Standard firmware for both the 2645A and the 2648A is available.

STANDARD FIRMWARE

MODULES MAY BE REPLACED WITH NO CHANGE TO THE OTHERS
 MINIMUM REPROGRAMMING EFFORT TO CUSTOMIZE THE TERMINAL
 SUBROUTINES ENTRY AND EXIT CONDITIONS ARE CLEARLY STATED
 PROVIDES HOOKS AND HANDLES TO ADD YOUR OWN ROUTINES WITH NO DIFFICULTY
 STANDARD SUBROUTINES ARE CALLABLE FROM ALL YOUR ROUTINES
 ACCESS TO AN ALTERNATE I/O MODULE THROUGH VECTOR PRIORITY INTERRUPT

hp

Benefits:


1. Reduces programming time.
2. Easier for the customer to tailor the terminal to fit their particular needs.

PRODUCT SAFETY

UL LISTED (UNDERWRITERS LABORATORY)
 CSA APPROVED (CANADIAN STANDARDS ASSOCIATION)

V
 D E

FTZ - SERIENPRFNR. C-106/76 RF1
 FTZ DEE 591 AND FTZ DEE 592

 HEWLETT-PACKARD

hp

Feature:

International product safety.

Benefits:

Customer can save up to \$3,000 and 6 months in getting product safety labels.

A COMPLETE SYSTEM

IN A SINGLE

ATTRACTIVE PACKAGE

CPU + MEMORY + I/O

hp

Advantages:

1. Customer does not have to spend resources on package development.
2. Redundant power supplies are eliminated.
3. Fewer interface elements required.
4. More compact.

Benefits:

1. Large investment in tooling avoided.
2. Lower cost.
3. Improved reliability.
4. Greater compatibility with equipment in other environments.
5. A more esthetically pleasing result.

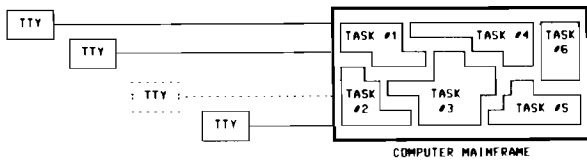
THE HP-2649A IN A DISTRIBUTED INTELLIGENCE ENVIRONMENT

PROVIDES ENHANCED MAINFRAME PERFORMANCE THRU TASK SHARING & DEMAND SMOOTHING
 REDUCES DEPENDENCE ON MAINFRAME
 ALLOWS INCREMENTAL CAPABILITIES AT INCREMENTAL COST

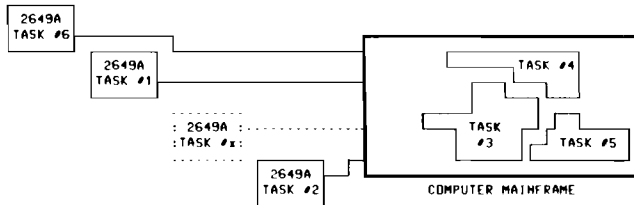
hp

Extend the concept of distributed processing to the user terminals for a complete distributed system solution.

BEFORE - SINGLE MAINFRAME INTELLIGENCE



NOW - DISTRIBUTED PROCESSING FULLY



TRAINING COURSE

PROVIDES AN UNDERSTANDING OF THE ARCHITECTURE AND OPERATION OF THE HP2645A DISPLAY STATION AND THE 2648A GRAPHICS TERMINAL

PROVIDES THE KNOWLEDGE REQUIRED TO EFFECTIVELY USE THE HP13290B DEVELOPMENT TERMINAL AND ITS ASSOCIATED SUPPORT PACKAGES AS APPLICATIONS DEVELOPMENT TOOLS

PROVIDES "HAND-ON" EXPERIENCE IN THE DEVELOPMENT AND IMPLEMENTATION OF TERMINAL APPLICATIONS

hp

Benefits:

1. Opportunity to develop part of the attendees' own application.
2. Accelerated learning curve.
3. Minimizes the possibility of a "false-start".
4. Helps determine the best approach to an application design.
5. Allows the attendee to make better use of the development tools.

TECHNICAL INFORMATION PACKAGE

OVERVIEW OF THE TERMINAL

OPERATING PARAMETERS

FUNCTIONAL DESCRIPTION

SCHEMATIC DIAGRAMS

TIMING DIAGRAMS

COMPONENT LOCATION DIAGRAMS

PARTS LISTING

FIRMWARE LISTINGS

VECTOR ENTRY POINT

ETC.....

hp

Benefits:

1. Greater leverage can be obtained from standard hardware and software because more of its capabilities will be discovered.
2. Risks associated with development of compatible hardware or software are minimized.
3. Development time and effort reduced.

HP-13290B
DEVELOPMENT TERMINAL

Minimizes the investment in development hardware, for a customer who wants to make minor additions/modifications (up to 8 Kbytes) to the existing firmware.

**COMPLETE SOURCE PROGRAM
EDITING CAPABILITIES**

CHARACTER INSERT AND DELETE	MOVABLE MARGINS
LINE INSERT AND DELETE	PAGE SELECTION
CURSOR POSITIONING	SCROLLING
PROGRAMMABLE SOFT KEYS	TABULATION

All the features of the HP 2645A Display Station are available on the HP 13290B development terminal.

RESIDENT PROGRAM ASSEMBLY

ACCEPTS 8080 SOURCE CODE IN A FREE FIELD FORMAT
 PRODUCES 8080 COMPATIBLE ABSOLUTE OBJECT CODE
 GENERATES PROGRAM AND SYMBOL CROSS-REFERENCE LISTINGS
 OUTPUT CAN BE DIRECTED TO AN OPTIONAL PRINTER



RESIDENT PROGRAM DEBUGGING

DISPLAYS AND CHANGES MEMORY LOCATIONS, REGISTERS AND FLAGS
 SETS AND CLEARS BREAKPOINTS
 TRACES PROGRAM EXECUTION WITH THE STEP AND CYCLE COMMANDS
 LOADS AND DUMPS PROGRAMS FROM AND TO CARTRIDGE TAPES
 OCTAL, DECIMAL AND HEXADECIMAL NUMBER REPRESENTATION
 MNEMONIC REPRESENTATION OF PROGRAM INSTRUCTIONS
 SEPARATE USER AND DEBUG DISPLAY WORKSPACES
 USING A SIMPLIFIED COMMAND SYNTAX

Benefits:

1. Code can be debugged on the same hardware on which it will execute.
2. Less time required to debug code.

STANDARD HARDWARE PROVIDED

PROCESSOR BOARD
 DISPLAY SUBSYSTEM
 BACKPLANE
 POWER SUPPLY

ALL NEATLY PACKAGE IN AN EYE PLEASING, 2 TONE DISPLAY MONITOR MAINFRAME

Additional hardware and firmware is provided to tailor the terminal to the customer's need.

Microprocessor Control Expands Terminal Uses

By: Eric Grandjean/DTD

The following article has been regenerated from an article in the March 27, 1978 issue of *Computerworld*, with permission from *Computerworld*.

MARCH 27, 1978
DATA COMMUNICATIONS TERMINALS

COMPUTERWORLD

PAGE 5/11

Replaces Minicomputer

Microprocessor Control Expands Terminal Uses

MONTEREY, Calif. — A persistent trend in terminal usage is getting simpler components to do more and bigger things. A system installed for KMart of Canada Ltd. is evidence of the trend.

For about half of the cost of low-end standard systems, the data gathering system for the Canadian retailer's point-of-sale (POS) equipment uses a microprocessor-controlled terminal instead of a minicomputer to handle cash register polling and data logging.

The back-office data gathering system, designated the System CD 100, was supplied by Cyberdata (CD) of Monterey, Calif. The System CD 100 consists of a modified Hewlett-Packard Co. HP 2649A terminal, a 10M-byte disk drive and a 60 char./sec printer.

The terminal functions on a level that would be equal to a minicomputer, or even a mainframe, in some other systems.

KMart uses Singer Business Machines terminals. The company's POS equipment originally used data concentrators that transmitted POS data over telephone lines to the mainframe. The communications line charges alone were expensive.

When Singer went out of the computer business, the retailer began looking around for a lower cost method of handling POS data collection. It selected the Cyberdata system.

To date the company has installed 36 of the CD 100 systems and as many as 70 are planned.

The center of the data collection system is the microprocessor-controlled HP 2649A. The combination ter-

terminal/controller has a modular design that allows Cyberdata to optimize hardware and firmware configuration to match specific applications.

"We chose the HP 2649A for several compelling reasons. We looked at building our own controller and decided against it. Building our own controller would have wasted limited resources, especially with so adaptable a piece of equipment as the HP 2649A available," according to Joe Greenwood, vice-president and general manager of Cyberdata.

"The flexibility of the 2649A CRT display would not have been available to us except in very expensive machines. The 2649A's communications system was another factor.

"We use binary synchronous communications to communicate with IBM and Singer equipment. Bisynchronous capability is a standard option on the HP terminal," Greenwood added.

Five Micros

The Cyberdata system contains a total of five microprocessors. One is the central processor for the terminal; the other four are on POS scanner boards in the terminal's additional card slots.

The scanner boards are programmable to interface with various types of POS units. Each scanner has on-board diagnostics for self-checking. The status of the scanner microprocessors is fed to the central processor and indicated by lights on the keyboard.

Cyberdata added five printed circuit cards to the 15-slot

backplane of the HP 2649A terminal. Additional slots provide space for increased I/O or enhanced displays, as user needs require them.

The terminal can be supplied with a number of memory, interface and keyboard options to customize individual systems to the user's specifications. The CD 100 has 20K bytes of random-access memory, expandable to 64K bytes, in which programs and data run. The operator system stores 9K bytes of program-able read-only memory.

CD developed its own operating system and disk assembler for POS data collection. The software and firmware have the attributes of a much larger system running six partitions in round-robin fashion.

In a multiprocessing mode, the CD 100 runs with three POS scanner partitions — one partition to handle bisynchronous communications similar to IBM 2780, one foreground data entry processing partition and a background partition for disk-to-printer operations.

Data communications is the system's switch selectable between 110 bit/sec and 9,600 bit/sec synchronous, asynchronous and bisynchronous.

In addition to the terminal, the CD 100 includes 10M bytes of disk storage, expandable to 40M bytes. The disk stores applications programs and logs data for up to 60 POS terminals per system.

On-disk programs provide the capability to prepare in-store reports for each location, as well as to format data for

transmission over Wats lines to the central system or mainframe at the home office.

Diagnostics provided by Cyberdata can isolate faults in either software or hardware and can determine whether the problem is user-correctable or requires vendor service.

Hierarchical Controllers

CD 100 system controllers are interconnectable in hierarchical fashion so a central system controls a network of satellite systems in distant stores over dial-up Wats lines.

The central unit locks out the keyboard of a satellite when programs are being updated, but does not interface with transaction logging by the satellite.

The central system monitors activity of a satellite performance on an hour-by-hour basis. The CD 100 systems also act as message switches for interstore communications; messages are stored on disk and picked up as data is transmitted to or from each system.

KMart of Canada uses a home office System CD 100 for program development. Once written, software is downloaded to satellite systems in other stores without mainframe involvement.

Under its older system, KMart used POS data concentrators at store locations and kept them connected continuously over private lines to the central mainframe.

With the CD 100s system, the company's IBM 360/40 mainframe will collect summarized and data entry data over a dial-up Wats line during store hours. The 360/40

polls the CD 100 in each of the stores and processes the collected data. The mainframe enters the processed data into the main corporate computer system and also returns appropriate reports to each store's CD 100 system before opening the next day.

Menu of Reports

Many reports can be prepared at each store without mainframe involvement. The store manager pushes one button to get a menu of reports available.

One listed command causes a whole report to be generated. A manager can, for example, get an immediate report on all sales by department, cash register, merchandise class code or even clerk.

The POS system provides the company with a distributed data base under central office control, but without the high communications line charges of the older method.

System prices vary depending on individual configurations. The Cyberdata System CD 100 selling price runs roughly one-half the cost of conventional POS data collection systems. The savings in line charges alone will repay KMart of Canada's system cost the first year, the user estimated.

The average transaction rate in each of the company's stores is about 5,000 per day. Each transaction includes price, tax, total charge and department class code. The systems will soon be programmed to handle transactions in sufficient detail for inventory to be controlled through POS terminal entries.

GENERAL SYSTEMS NEWS

Product News

Increased Memory Requirements for MPE II

By: Fred Gibbons/GSD

As you are all aware, we have been enhancing the MPE II Operating System with new capabilities scheduled for release by early summer. These enhancements have required additional lines of program code to be added to many modules of MPE. As a result of this, we are anticipating that the minimum memory requirement for running the new version of MPE will be 192 Kbytes. This is in contrast with today's minimum requirement of 128 Kbytes. Therefore, to prepare your new customers for the coming 192 Kbyte version of MPE, all systems ordered from now on must have at least 192 Kbytes.

For those current installations which have only 128 Kbytes, we will be announcing a plan for upgrading them to the minimum 192Kb configuration.

From looking at the recent orders, we have found that you are aggressively selling lots of memory. In fact, over 40% of our systems leave the factory with 512 Kbytes. Not surprising when you look at our leadership position in memory pricing; \$3700/64 Kbytes and \$125,000 for a 512 Kbyte Model 6. Keep selling big systems!!

2000F to 2000 Computer System — Up We Go!!

By: Scott Guthrie/GSD

Due to the boom in activity of the 2000F to 2000 computer system upgrades lately, we want to help make this process as painless as possible. The HP 2000 Computer Systems Price/Configuration Guide (Part No. 5952-5574 Print Date 9/76) contains a section on upgrading existing systems. This section begins on page 15 of that manual. Figure 1 on page 15 is helpful in determining the components that need to be ordered for the upgrade. Just make a list of the currently existing components in the 2000F system and check off the corresponding boxes in Figure 1. The remainder of the shaded unchecked boxes in Figure 1 indicate the components that must be ordered.

Please be aware that the board revisions (those little letters on the end of the numbers!) are important. For example, the "Processor Interconnect Kit" *must* be a "12875B", not a "12875A". Similarly, the 16-channel multiplexer must be a "12920B". It is essential that the board revisions be correct.

The following two pages of the configuration guide discuss the ordering information and FILE and Program Conversion requirements.

Other useful manuals for 2000F to 2000 Computer System upgrades are:

- HP 2000 Computer System Operator's Manual (P/N 22687-90005) Appendix F.
- HP 19665A 2000F to 2000 Computer System Upgrade Kit and Conversion Program (P/N 19665-90001).
- HP 2000F to 2000 Computer System Educational Applications Upgrade (P/N 19665-90002).

7906 Disc Drive Now Available on the HP 2026 System

By: Terry Eastham/GSD

Starting immediately, HP 2026 Data Entry/Data Communications systems will ship with the 7906 drive instead of the 7905. There will be no increase in the \$38,500 price for the base HP 2026 system. The base price now includes a 64 Kbyte 21MX-E CPU, a 2645 Console, the 7906 and all 2026 software.

Currently released 2026 software will, however, only support 15 Mbytes (3 subchannels) of the 20 Mbytes (4 subchannels) capacity of the 7906 disc drive. The next software release should remedy this situation and will support all 20 Mbytes. Of course, the HP 7920 disc drive (50 Mbytes, 5 subchannels) is fully supported on current software for situations where a lot of disc storage is required.

Although we anticipate being able to attach up to eight 7906's on one 2026 system, the 7920 route (up to six for 300 Mbytes) is more cost effective. It is not possible to mix 7920 disc drives with 7905 or 7906 disc drives on the same 2026 system. It also is not possible to mix 7905 drives with 7906 drives. Therefore, the possibility that a customer will outgrow the 7906 drive should be considered when the original order is placed.

Fast KSAM/3000

By: John Yu/GSD

Starting from MIT 1814 (KSAM version a.01.04) we will have a faster KSAM/3000 in loading multiple key KSAM files. Our in-house test shows the following result.

In-House Test		
	Old KSAM	Fast KSAM
1 key	6 minutes	6 minutes
2 keys	68 minutes	8 minutes
3 keys	135 minutes	12 minutes
4 keys	over 3 hours	15 minutes

The above test was run on a 512K word Series II by using FCOPY/3000. The KSAM file has 10,000 records and all the keys are 8 bytes long and no duplicated keys allowed. The keys are in ascending order.

According to a customer benchmark we have the following result:

	Old KSAM	Fast KSAM
3 keys	47 hours	7 hours

The speed of loading a KSAM file depends on:

1. The number of keys in the file.
A 2 key KSAM file loading is much faster than a 3 key KSAM file loading. The 3 key loading requires one more key structure updating.
2. The number of records in a KSAM file.
The first 1000 records requires less time than the last 1000 records in loading in a 100,000 record KSAM file. The last 1000 records require KSAM to go through more levels of key structure in the key file.
3. The order of the keys.
If keys in ascending order, the loading time will be faster.
4. The environment of the system.
For example, the memory size, the number of users on the system, the size of user's program and data segments and a lot of other factors will affect the performance of KSAM.

If you have a sales situation depending on the performance of KSAM, please contact your local SE or the factory. They will help you to run some benchmark programs.

FCOPY/3000 Enhancements

By: John Yu/GSD

The following enhancements will be available in MIT 1814, FCOPY/3000 version A.3.00.

1. HP files are always written with logical records aligned on word boundaries. but other systems do not always follow this convention. A new option, DEBLOCK, allows files with unaligned records to be converted to a standard format.

The new option syntax is:

DEBLOCK = logical-record-length

When this option is specified the input is assumed to consist of logical records of length logical-record-length. If logical-record-length is negative it is assumed to be bytes, if logical-record-length is positive it is assumed to be words. These records are written one at a time into the TO file, and are then properly aligned on word boundaries. If the specified logical-record-length is odd, an extra byte will be added to the end of the output record to facilitate word boundary alignment.

2. It is desirable to be able to do character code conversion on a subset of the characters of each record. This problem arises in converting files from one computer system to another which contains both character and binary data. To facilitate this, FCOPY was modified to allow the use of SUBSET selection with any of the code conversion keywords.

The syntax is

EBCDICIN EBCDICOUT BCDICIN BCDICOUT EBCDIKIN EBCDIKOUT	= (field[:field[: ...]]) [.EXCLUDE]
---	--------------------------------------

3. Presently a user who wishes to copy one KSAM file into another must first build a new KSAM file, since FCOPY does not do so. FCOPY was modified to support new KSAM "TO" files. In addition to the NEW option the TO option must be specified as shown below:
TO = (datafilename.keyfilename)
4. FCOPY was modified to copy multiple tape files. The syntax is:
FILES = "number-of-files" or "ALL"
End of file marks are copied. If the "ALL" option is used, all files from the current file on are copied; however, there is a possibility of running off the reel.
5. The record SUBSET option in FCOPY was extended so that multiple subsets may be copied by one command. The option for this is as follows:

SUBSET = (range[:range[:range...]])

where range is either

[starting-record-no] [.no-of-records]

[starting-record-no] [:last-record-no]

6. The old FCOPY selects subsets of magnetic tape records by physical record number. FCOPY was changed so that selection is by logical record number. If physical block subsets are needed they may be gotten by temporarily defining a logical record length equal to physical record length during the copy operation. The subsets will all be taken with respect to the beginning of the file.

7. The old FCOPY SKIPEOF function can only be used for skipping ahead. The new FCOPY was extended to allow skipping forward or backward by a specified count, or to position to an absolute file number. The new syntax is

```
SKIPEOF = [ [+/- ] from-eofs ] [ , [+/- ] to-eofs ]
           or
           [ from-file-number ] [ , to-file-number ]
```

where from-eofs is an integer specifying how many files are to be skipped in the FROM file; the + and - specify forward or reverse skipping; from-file-number is an integer specifying an absolute file number on the FROM-tape; to-file-number is an integer specifying an absolute file number on the TO-tape.

Absolute file numbers begin with one for the first file on a tape.

NOTE: THIS OPTION MAY NOT BE USED WITH LABELED TAPES.

8. The old FCOPY does not copy userlabels. The new FCOPY was modified so that userlabels may be copied. The default will be to copy labels. If no label copying is to be done the user should specify NOUSERLABELS as one of the command options.
- Disc file userlabels are 128 bytes long and tape file labels are 80 bytes long. If a user tries to copy labels from tape to disc a warning will be issued. The user may proceed and if he does so, the labels will be padded with junk bytes.
- Similarly in copying from disc to tape the user will be warned, and if labels are copied, they will be truncated to their first 80 bytes.
9. I/O error messages will no longer be given as just an error number. The English message will be printed along with the error on HP 3000 Series II. The user will then type either a return or some other character. If return is typed, no further error information will be printed, otherwise PRINTFILEINFO will be called to display all available information about the file in which the error occurred. Since FERRMSG is not available on Series I, there will be no change in error message handling on these machines.
10. Two new options: CCTL and NOCCTL have been added to FCOPY. They are mutually exclusive. Either or neither may be specified in a command line. Their effects are listed in the revised FCOPY manual.

The HP 2026 Remote Job Entry System

By: Dick Baumann/GSD

Don't overlook the possibility of selling the HP 2026 Data Entry/Data Communications System strictly for RJE to IBM systems. You can get the system installed and productive right away for this application and add others (data entry, inquiry, file maintenance, etc.) later.

Two RJE packages are available — a multi-leaving program (MLRJE) or an IBM 2780 emulation program. The programs run in the background partition where they do not interrupt any of the user's applications being run on the (up to 16)

data entry terminals. One synchronous line is supported on the HP 2026; if there's a need for more RJE lines running concurrently, please take a look at the HP 3000 and MRJE/3000 or RJE/3000.

HP 2026 MLRJE works with larger IBM 360/370 compatible systems which run under OS/MFT, OS/MVT, OS/VS1, OS/VS2 or MVS operating systems using HASP, ASP, JES1, JES2, or JES3. Input may be from punched cards, mag tape or disc files; output is to tape, line printer, or both. Of course, MLRJE allows the "multi-stream" capability, e.g., card reading and report printing can occur at the same time that inquiries to the IBM host are being entered on the HP 2026 consoles. MLRJE allows data entry operators to "queue up" batches of data for immediate (if the RJE link is active) or later submission. To make operations easy, permanent files of IBM job control language (JCL) may be stored on disc and queued along with the operator-entered data files. A good application for the HP 2026 could be to use its high performance data entry capability to enter batches of data for RJE submission in somewhat of a "standalone" environment. MLRJE is used extensively by HP 2026's in HP's manufacturing divisions communicating our central IBM system. So it's a proven performer!

For smaller IBM hosts with operating systems not supporting multi-leaving RJE, the 2780 RJE program may be used. It supports HP 2026 input from cards or mag tape (not disc files) and output to tape, line printer, or both. This provides a "single-stream" capability . . . e.g., if cards are being read, the system cannot print a report at the same time. (Please note that this program doesn't provide IBM 3780 emulation).

Other 2026 utility programs have features which further complement the IBM environment. A "SPOOL PRINT" program is furnished which reads files of records in print image format from tape or disc. The files may be in EBCDIC code and may have IBM standard labels. Another utility program allows the copying of files with EBCDIC to ASCII and ASCII to EBCDIC code conversion.

The HP 2026 has had a lot of experience peacefully co-existing with this particular "leading computer manufacturer." We have the tools available for a successful RJE operation. (Remember all the programs mentioned are part of the standard software . . . included in the base price.) Start to think of it as "the HP 2026 Data Entry/RJE/Data Communications System."

Sales Aids

Letter to DS/3000 Customer

By: Larry Hartge/GSD

We are planning to send a letter to each of your DS/3000 customers and will be enclosing a DS/3000 Applications Questionnaire, the new "Distributed Processing Solutions for Business and Industry" (replacement for old Large Company brochure), the *Anderson College* applications brief, and the latest *Computer Advances* on distributed processing.

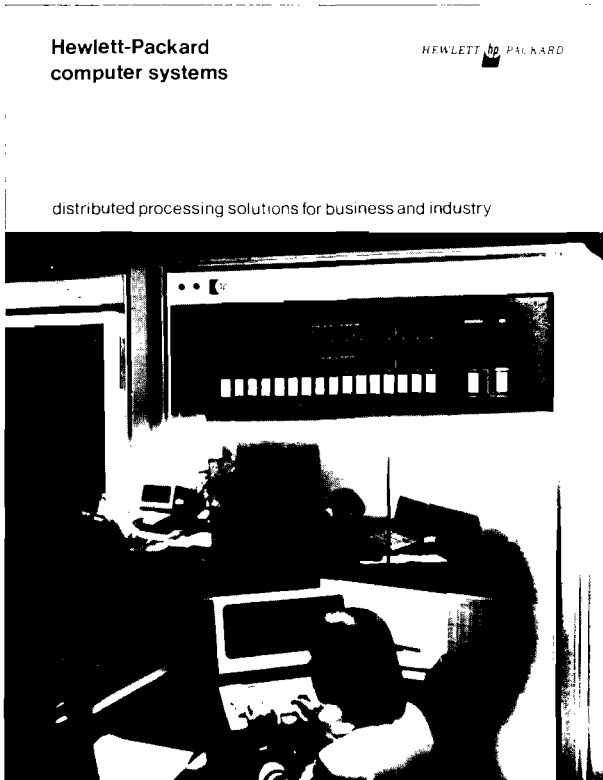
The objectives of this endeavor are:

1. To express our interest in this customer's success—let them know that the 'factory' cares.
2. Obtain applications information for:
 - a. publication in major trade journals
 - b. applications flyers
 - c. customer experiences for use in our Distributed Processing brochure (formerly Large Company brochure)
 - d. circulation of "success stories" to the field—showing how the product solved customer problems.
3. Obtain product feature performance feedback for future enhancements.
4. To get feedback on PR achieved through Project Prelude and to show that DS 3000 really is an innovative, highly acclaimed product.
5. To set the stage for a follow-up letter that will be sent immediately prior to the public announcement of our DS enhancements. This will:
 - a. demonstrate the value of HP's Software Subscription Service by letting the customer know that he is getting these enhancements automatically, and
 - b. include a copy of the Press Release touting the enhancements.

This endeavor will provide you with even more DS 3000 sales tools for reference selling, your own general successful applications knowledge and pleased DS customers.

A New and Striking Distributed Processing Brochure

By: Larry Hartge/GSD



The premier brochure of General Systems Division is the new "Distributed Processing Solutions for Business and Industry." It is the striking replacement for the old "large company brochure."

Our distributed processing philosophy is the central theme of this brochure and is presented in an appealing, credible and informative way. Reassuring, warm colors with striking and meaningful graphics further communicate the theme.

HP's pre-eminent position in distributed data processing is reaffirmed in this brochure by explaining:

- Our experience in helping large companies meet their data processing needs—with customer application stories
- HP's family of computer products which span the corporate data processing spectrum
- The need for and the benefits and flexibility of our Distributed Systems Networks is expounded with examples
- Our philosophy of complementing IBM mainframes is emphasized throughout and is depicted dramatically
- HP's leadership role in technology is reaffirmed with our work in SOS and the futuristic Project Prelude experiment using DS 3000.
- Our responsive support and long-term business relationships
- Who HP is by concluding with a brief description of HP and a statement by *Bill Hewlett* and *Dave Packard*.

This classic piece of distributed processing literature from GSD is available now! Become familiar with it and then take advantage of the impact of this sales tool. It's targeted for top management at major accounts, but don't forget the rapidly expanding horizontal account that may soon need networking capabilities for its sales offices or graduated incremental computer power at its headquarters. A far-reaching brochure from a division with far-reaching products!!

Computer Caravan is Here! First Two Stops — A Resounding Success!

By: Rudann Ramsey/GSD

Computer Caravan made its first stop at the *Disneyland Hotel* on Easter Week, in the pouring rain. In spite of starting with three strikes against us, we were able to overcome the elements and make an impressive showing. As you might have expected, HP's booth was one of the most attractive and popular displays at the show, and the GSD section created a lot of interest. The software supplier seminar was also responsible for generating several solid leads.

By the time the Caravan reached San Francisco, everything was running smoothly. Once again, the GSD portion of the booth had potential customers lined up to ask questions. The biggest hit, however, was our seminar. Over 40 OEM's and software house representatives attended and were obviously excited by what they heard. The slide presentation

generated many direct questions from the audience, and 10–15 individuals remained for an extended discussion with HP representatives after the seminar.

The San Francisco success story can be repeated when the Caravan comes to your city, too. Don't pass up this excellent opportunity to reach the software suppliers in your area and convince them of the advantages available to them in a working relationship with Hewlett-Packard.

The next issue of the *CS Newsletter* will feature a more detailed description and analysis of the seminar and our overall approach to the software supplier marketplace.

Two New Answers to Those Tricky Statistical Questions

By: Taylor Pohlman & Rudann Ramsey/GSD

Two versions of the Statistical Package for the Social Sciences (SPSS), one of the most popular tabulation and statistical packages in use today, have now been converted to run on the HP 3000 Series II. Commonly used for research and instruction in the social sciences, both "SPSS for the HP 3000" (a batch system) and SPSSHP (an interactive package) have proven useful to many other academic disciplines and professions as well.

Some of the numerous statistical procedures performed by each of these comprehensive, easy-to-use packages are frequency distribution, cross tabulation, multiple regression analysis, correlation, analysis of variance, factor analysis, non-parametric statistics and summary statistics. Also included are many data selection and manipulation options.

SPSS has been installed at 1500 sites in all 50 states and in over 60 foreign countries, with 150,000 copies of the manual sold in two years. While the user list includes most major colleges and universities, SPSS is also used by banks (for depositor profiles and credit risk studies), insurance companies (for agent evaluations), steel companies (for quality control), public utilities (for peak load forecasting) and a wide variety of manufacturing firms. It is clearly a general purpose statistical package.

"SPSS for the HP 3000" is the official FORTRAN version of SPSS 7.0 developed at *McMaster University*, Hamilton, Ontario, Canada. Basically a batch system with terminal access via the EDITOR, it is designed to handle 250 variables and 50 subfiles. The number of data cases which can be processed is unlimited, and files containing up to 5000 variables may be built and managed by the system using the file management commands.

You and your customers may be asking if such a large system is really efficient. Definitely! "SPSS for the HP 3000" runs easily within the single 32K word main data segment of the Series II with a maximum size of 8K for code segments. Test runs during conversion have also confirmed that it will perform efficiently on very large research data sets.

The cost to your customer for the batch "SPSS for the HP 3000" is \$2500 (\$1000 for tax-exempt organizations, \$800 for academic institutions) for the initial one year license. This fee includes one year's maintenance and subscription service, which entitles the licensee to receive all bug fixes, new documentation, newly developed statistical procedures and phone or letter consultation. These services are renewable at the user's option for successive years, at a cost of \$1500 per year (\$700 tax-exempt, \$500 academic).

SPSSHP, an interactive version of the Statistical Package for the Social Sciences, was developed at *DePaul University* for the HP 2000 and modified at the *University of Wisconsin—River Falls*, to run on the HP 3000. Written in BASIC, it is designed so that the experienced SPSS user will immediately recognize virtually all the commands. Even the user with very limited computer experience will rapidly learn to perform the statistical operations, which include all of the SPSS routines except multi-variate analysis, along with two additional procedures, T^2 test and the *Mann-Whitney* rank test. SPSSHP currently handles up to 108 variables and imposes no restriction on the number of occurrences which can be processed. With both *DePaul* and the *University of Wisconsin* committed to the continual improvement and enhancement of the package, work is progressing to expand the variable limitation.

SPSSHP also runs very efficiently on a standard HP 3000 Series II system configuration, requiring a maximum 6K words of memory for code segments. A typical program mix for a 512Kb system would include two to three SPSSHP users along with 20 to 25 general timesharing users.

The price of the interactive SPSSHP package on the HP 3000 is \$3500 (\$1000 for tax-exempt organizations, \$500 for academic institutions) for the first year license and maintenance. Subsequent yearly maintenance charges are \$1500 (\$450 tax-exempt, \$300 academic). Service bureaus must pay \$3500 for the first year and \$1500 plus 25% of their SPSSHP revenue thereafter.

To learn more about these two statistical packages, contact the following individuals:

For batch "SPSS for the HP 3000"

Gary Anderson
Dept. of Clinical Epidemiology and Biostatistics
McMaster University
1200 Main Street West
Hamilton, Ontario
Canada L8S 4J9
Phone: (416) 525-9140 x2436



For interactive SPSSHP

David Feinstein
Assoc. Director for Academic Computing
University of Wisconsin—River Falls
River Falls, Wisconsin 54022
Phone: (715) 425-3582

HP measurement and computer advances

SBS extends frontiers in interactive data communications via satellite—with the help of HP computers.

Using a satellite to transmit data, voice, full-motion and freeze-frame video, and facsimile documents—all interactively—Satellite Business Systems (SBS) has undertaken a pace-setting experiment in advanced communications for geographically dispersed organizations. HP 3000 Series II computers were chosen for the data processing and operations management portions of the experiment.

Project Prelude, an experiment in advanced communications, has been successfully concluded by Satellite Business Systems in cooperation with host companies that included Rockwell International Corp., Texaco Inc., and Montgomery Ward & Co., Inc. The experiment demonstrated the feasibility of high-speed, low-cost intracompany communications via satellite among widely dispersed facilities.

Providing the link was the Communications Technology Satellite (CTS), an experimental communications satellite used jointly by NASA and the Canadian Department of Communications.



"This is the first CTS experiment to include small earth stations on customer premises and integrated audio data/image communications in a digital format," says Tom Rush, SBS Project Coordinator. "This system was designed to explore large-scale economies and improved control in organizations with heavy information traffic among geographically dispersed facilities.

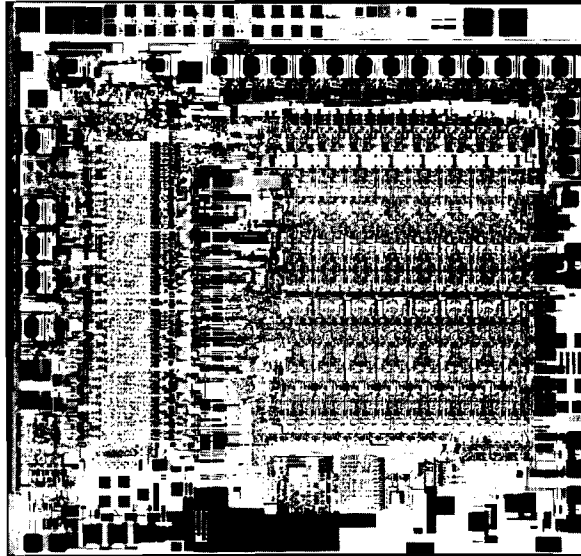
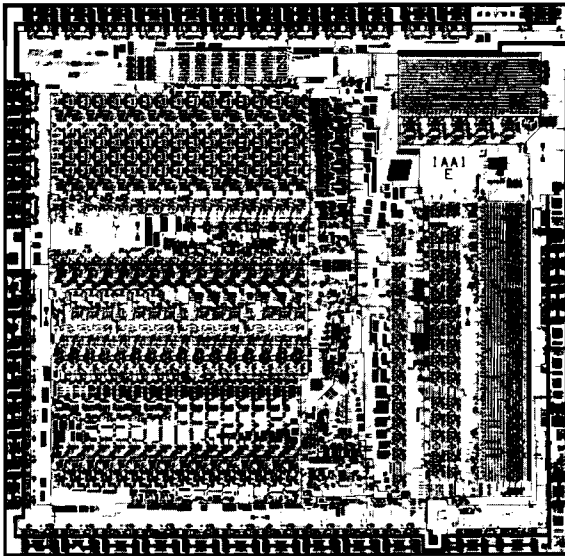
"We selected HP 3000 Series II computer systems because their standard software could handle the fast data rates, and they certainly had proven distributed data processing capability."

HP distributed processing could extend your possibilities.

HP's distributed processing capabilities stem from a generalized network architecture that can fit computer systems to your needs without reshaping your organizational structure. The availability of low-cost, high-performance computers and advanced systems network software can put easily accessible processing power wherever the work is being done.

Hewlett-Packard is committed to distributed processing as the sensible way to enable functional locations within an organization to process, communicate, and share information for a more effective response to changing conditions. We have just published an issue of the *Hewlett-Packard Journal* that deals with some of the technical niceties of distributed systems networks, including a fuller account of Project Prelude and satellite-linked computer networks. Mail the coupon for your copy.

This advertisement will first appear in SCIENTIFIC AMERICAN in April 1978.

extend your possibilities.**How to operate more confidently in an increasingly digital world.**

While analog circuits generally convey data by a continuum of voltages, the digital world of microprocessors and LSI circuits relies on two voltage levels, conveying information by switching between them. Because of this fundamental difference, digital circuits pose a special set of problems for both designers and troubleshooters. And HP has some excellent solutions.

As the solid state revolution increases their functional density at a decreasing cost, digital circuits are infiltrating areas that previously relied on analog technology, and are cropping up in an endless procession of products that include microwave ovens, automobiles, home computers, process control (analog from its inception), telecommunications, and a range of industrial controls.

In short, the technical, industrial, and consumer worlds are turning digital. While this greatly extends possibilities, it also introduces some

These photographic enlargements of two HP microprocessor chips—one with NMOS II large-scale integrated circuits at right and one with CMOS/SOS at left—illustrate a major reason for the rapid growth of digital circuits: increasing functional density at a decreasing cost. These chips contain as many as 10,000 transistors and are about this big

complications—most notably in the design, debugging, software development, and diagnosis of these functional leviathans in minnow-sized packages. While it may not be immediately obvious, this digital data domain requires special measurement tools. And here Hewlett-Packard is making significant strides, continually introducing new measurement approaches and instruments designed to make the digital revolution manageable, and thus enable technical people to operate more confidently.

If you are wrestling with any aspect of digital circuitry, you will be interested in reading the February issue of the *Hewlett-Packard Journal*, which explores HP's growing family of digital logic analysis test instruments at some length, and offers a few viewpoints of possible interest. Just mail the coupon, and we will be pleased to send you a copy.

HEWLETT *hp* PACKARD

1503 Page Mill Road, Palo Alto, California 94304

For assistance call: Washington (301) 948-6370, Chicago (312) 255-9800,
Atlanta (404) 955-1500, Los Angeles (213) 970-7500

Mail to: Hewlett-Packard, 1503 Page Mill Road, Palo Alto, CA 94304.
Please send me the Hewlett-Packard Journal dealing with:

- HP distributed processing
 HP digital logic analysis

Name

Company

Address

City State Zip

*Domestic U.S. prices only.

00844

Triple Threat — "Computer Advances" as a Sales Tool

By: Jerry Epps/GSD

Too often it's not possible to trace the influence of our advertising on a specific sales situation. But for the August 1976 issue of *Computer Advances* we have a classic case history of how our ads and literature can lead a sales prospect along.

Remember the "One Second in the Life of a Series II" article in *Computer Advances*? Well, *Larry Gray*, a neophyte Systems Engineer in the Neely Santa Clara office, does.

Larry first read the article when he was Data Processing Manager for *Granite Rock Company*, with responsibility for their System 3. *Larry* says, "Reading the article, I realized for the first time that a minicomputer could perform the tasks of a medium size system like the System 3... and do it better."

After considering the article and his firm's planned expansion, *Larry* decided to approach management about replacing their System 3 with an HP 3000. What did he use to help sell his idea? *Computer Advances*, of course. It worked. And the company purchased an HP 3000.

But *Larry* wasn't finished with his copy of *Computer Advances*. He had another problem: How to familiarize the programmers with the system before installation. Again, he turned to the "One Second" article for help. He felt it was an excellent way to introduce the programmers to the system and its capabilities before having them tackle the system manuals. Success, for the third time! The programmers were very enthusiastic about the new HP 3000.

Based on *Larry's* experience, we think *Computer Advances* can be extremely useful in many sales situations, and could be especially effective as direct mail pieces.

In your future prospect mailings why not plan to include copies of *Computer Advances*? They're colorful, informative, and will add a lot of "pizzaz" to your mailing. All of the more recent issues are available to you in quantity at no cost. However, supplies are limited, so make your plans now. Simply order by publication number from *Dave Asplund* at the Literature Distribution Center in Palo Alto.

General News

DS/3000 Lauded as One of the Most Important Highlights of 1977!

By: *Larry Hartge/GSD*

"Announcement of HP's DS/3000 network software packages" was one of the most important highlights of 1977, according to *Dataquest's* January 25, 1978 Research Newsletter. "In our opinion, this system represents the state-of-the-art in minicomputer network design."

And on March 23, 1978, *Dataquest's* entire Newsletter was devoted to Hewlett-Packard Distributed Systems. They stated that "HP has been a leader in the DDP (Distributed Data Processing) marketplace, and its DS hardware software systems are likely to play an important role in the future of DDP." Furthermore, the body of the Newsletter consisted of the entire March issue of the *HP Journal* on Distributed Processing! Each and every one of *Dataquest's* clients now knows of our preeminent position in DDP and is now familiar with our product offerings. Translation of these new leads to orders can be a highlight to your FY '78!

Increase Your Customer's Satisfaction

By: *Carolyn Morris GSD*

Occasionally, during conversations with the field, we discover situations where a system is scheduled to ship on a date somewhat later than when the customer would really like to take delivery. This happens because the system is scheduled to ship using the longest availability of any line item or peripheral to be shipped with the system.

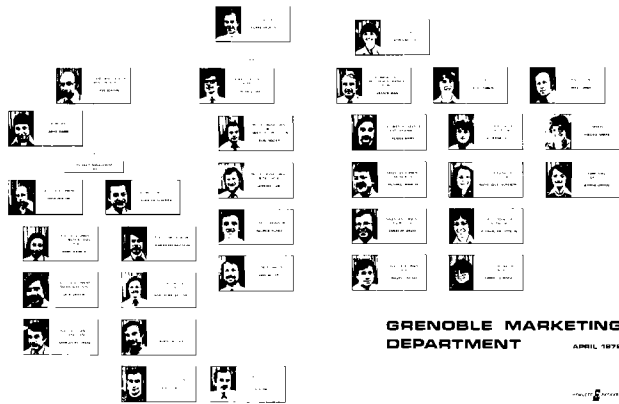
If you have such a situation where customer satisfaction would be increased with an early delivery, GSD Sales Development may be able to help. A call to your Sales Development Representative explaining your customer's needs could result in an earlier ship date than quoted availability and make your customer happy. Call us, we're here to help!

HP GRENOBLE NEWS

Division News

HPG Marketing Organization

By: Pierre Ardichvili/HPG



Our Grenoble Marketing team keeps expanding, to better serve you and your customers.

As you probably know, our Grenoble division has a dual charter.

First, we are responsible, on a worldwide basis, for the R&D, Marketing and Manufacturing of Data Capture Terminals.

Second, we are, for the European market, the licensees of several divisions of the Computer Systems Group, namely DSD, DTD, DMD and Boise. We make computers, discs, terminals, and integrate them into systems. These are the responsibilities of what we call the Manufacturing Division.

Besides this, we have a large training center and board repair center, which are part of the CSG's Service Division.

Let's take a look at the Organization Chart of the Manufacturing Division's Marketing Department on the next page. I know it won't stay up to date very long, it is a measure of our sales force's success!

Proprietary Products Marketing has recently welcomed *John Willett* as technical writer responsible for all literature, and *Maurice Richez*, responsible for the technical support of our proprietary product line. *Maurice* was already giving CE support to our product line, from the Service Division. His move into *Peter Stuart's* group shows the importance we give to a strong technical support of our products.

DSD Systems Sales Development and Support is taking good shape. We hope to be able to fill the Product Management position in the near future; this function will greatly enhance our liaison with the mother division (DSD) and with our own production lines. It will also give *Dave Borton* more time to conduct the sales development effort. This program is already quite active with *Jack Griffin* pushing the Major Account Program; *Henri Ajenstat* as a champion of Instrumentation on Computers with HP-IB, and the mission of developing the Automation OEM market; and *Georges Retornaz* who promotes HP computer systems with General OEMs.

Guenter Kloepper's Technical Marketing Group has the great challenge to back up Europe's RTE wizards (there are quite a few!), and to bring up new ones by adequate training, this naturally on top of daily support missions.


In the Terminal Sales Development Group, *Francis Marc* has divided the territory between his team members. They support all DTD terminals, plus the 2630 series and 2608 of Boise, and our 3070 family.

Their program is wide and active. It includes for instance, from now to June, six courses on various terminals, two NPT's, and visits to all European countries for the promotion of the 2649/13290B. The team has now expanded with *Jacques Biard* to provide C.E. support for CRT Terminals.


Our Order Processing group puts the accent on flexibility and is well trained to handle difficult cases.

Mike Tupper's Publication Group is instrumental not only in producing literature and manuals for our product line, but also sales aids for our transferred product lines.


We would like to further broaden the scope of our supporting capabilities, and we are not short of ideas. All we need is your orders!




MARKETING MANAGER
PIERRE ARDICHVILI




SYSTEMS SALES DEVELOPMENT AND SUPPORT
DAVE BORTON



PROPRIETARY PRODUCT MARKETING
PETER STUART




SECRETARY
ANNIE BARBE




PRODUCT MANAGEMENT 3071
COMMERCIAL APPLICATIONS
MARC NODIER


PRODUCT MANAGEMENT
T.B.H



PRODUCT MANAGEMENT 3070B - HP-1B
GEORGES OUIIN




SALES DEVELOPMENT
DAVE BORTON




TECHNICAL MARKETING
GUENTER KLOEPPER




TECHNICAL MARKETING
MAURICE RICHEZ




SALES DEVELOPMENT AUTOMATION OEM'S HP-1B
HENRI AJENSTAT



RTE, DS1000, DATACOM
JEAN-PIERRE BAUDOUIN




TECHNICAL WRITING
JOHN WILLETT




SALES DEVELOPMENT MAJOR ACCOUNTS
JACK GRIFFIN




RTE, FACTORY DATA COLLECTION, HP 1B
MARC-HENRI BRICQUET



SALES DEVELOPMENT GENERAL OEM'S
GEORGES RETORNAZ




RTE, IMAGE
ALAIN CAILLARD




RTE, MICROPROGRAMMING
JOEL DUBOIS




RTE OPERATING SYSTEM INTERNALS
DIETER SCHMOTKE




SECRETARY
CATHERINE CLAY




TERMINAL SALES
DEVELOPMENT MANAGER
F, MED.
FRANCIS MARC




ORDER PROCESSING
KATHY ROMANI




PUBLICATIONS
MIKE TUPPER




CUSTOMER ENGINEER. CE
(CRT TERMINALS)
JACQUES BIARD



O.P. COORDINATOR
I, S, N, SF, INTER-COMPANY
CATHERINE CELLI




COMPOSING
ROSARIA AMORE




SALES DEVELOPMENT
GB, NL, B, DK
RICHARD FRANKLIN




O.P. COORDINATOR
D, CH, E, A, GB
MARIE ODILE LAURENCIN




COMPOSING
LAYOUT
JEANINE GIRAUD




SALES DEVELOPMENT
I, S, N, SF, CH
CHRISTIAN GRAFF



OP COORDINATOR
IN TRAINING
M.-FRANÇOISE LEPRETRE



SALES DEVELOPMENT
D, E
MAURICE POIZAT



O.P. COORDINATOR
F, NL, B
GABRIELLE MINGAT

GRENOBLE MARKETING DEPARTMENT

APRIL 1978



HP Grenoble's Commitment To Data Capture

By: Wim Roelandts HPG

Although computer technology has progressed enormously in recent years, there is still one area in which a lot of progress must be made: the entering of data into a computer system.

We have very fast computers with large memory to handle data quickly; enormous discs with extremely quick access to store the data; and fast, high quality line printers to output the data. Data entry is still the bottleneck. Grenoble Division's commitment lies precisely in this area. Our lab strategy is:

"Design Products which provide distributed data capture capabilities for HP computer systems, aimed at use by non-professionals to facilitate operations management".

Some of these terms need explanation.

Data: can be of three different kinds: manual (keyboard), coded (cards, badges, cassettes, etc.) and electrical (HP-IB, BCD, RS-232C, etc.)

HP systems: our devices should be supported on all HP systems: an important contribution to increased sales.

Use by non-professionals: this means that the device should be simple to program and to use; should be simple to connect and disconnect and that it should work error-free in harsh environments.

The 3070B is our first product that goes most of the way towards meeting the above requirements as you will realize from the following articles.

Our design objectives for future products are:

- the products should be simple to use: simple keyboards (with optional alphanumeric capabilities and with prompting lights.)
- Multi-drop link for communications: high noise immunity, simple to install, low cost, easy to connect and disconnect.
- compatibility with all HP systems: our future products must be supported on all HP systems.

We have a very aggressive design program and a lot of new products will be announced in the next months. The whole Lab of Grenoble (now 20 engineers) is dedicated to the extension of this product line so that you will be able to offer a complete solution to your customer. This is important for the whole computer business, because data capture will be the key to more sales.

Here It Is: The HP 3070B

By: Georges Ouin HPG

What you have all been waiting for! The exciting new HP 3070B Data Capture Data Retrieval Terminal. This terminal features the same good things as the 3070A:

1. the numeric keypad and display.
2. the powerful special function keys.
3. the friendly prompting lights.

PLUS! What you wanted!

4. an alphanumeric multifunction reader able to read:
 - Industrial type 3 perforated plastic badges.
 - Standard punched cards (even dirty bent/torn ones).
 - Optical mark forms.

PLUS!

5. a unique alphanumeric strip printer.



The HP 3070B responds to the standard HP way of doing business: Customer Satisfaction in offering him a high quality product to help him solve his data capture problems easily and efficiently.

The 3070B Utilities

By: Marc Henri Bricquet HPG

An enhanced set of 3070 utilities is available for the 3070B to make the programming even easier. All previously available functions are retained and the new set is completely compatible with the 3070A. The following is a brief summary of the utilities including the additions/updates.

The utilities contain calls that allow exercising of all normal terminal functions such as turning prompting lights on and off, selecting normal or transparent mode. One update in this category is a modification to the SFK call to allow programming the extra SFK on the 3070B. One addition is the MRCNF call (Multifunction Reader Configuration) to allow configuring the 3070B multifunction reader for different input media (punched badges, punched mark sense cards).

The utilities also contain calls that allow easy control of HP-IB devices. The result is that an entire instrument cluster connected to a 3070A/B can be easily programmed with the 3070 utilities and simple READ/PRINT statements in BASIC or READ/WRITE statements in FORTRAN. Four new additions in this category are GET (Group Execute Trigger) LLO (Local Lock Out), SDC (Set Device Clear) and GTL (Go To Local).

Ease of programming is just one more good reason for you to sell the 3070B terminal and System HP 1000.

Support of the 3070B? . . . Easy!!!

By: Maurice Richez/HPG

Here are some answers to the questions your customers will certainly ask:

Q What is the MTBF?

A Mean Time Between Failure.

7000h.: Assuming 16 hours per day in 2 shifts, 5 days per week, this means one failure every 1.75 years.

Q What is the MTTR?

A Mean Time To Repair.

1.5 h. average for an experienced C.E.

Q What about BMMC?

A Basic Monthly Maintenance Cost.

\$6 for the standard 3070B.
\$10 for the 40280A interface.
\$6 for the standard 92900B Subsystem.

The HP 3070B has been carefully designed to be easy to use and also easy to maintain at minimum cost thanks to:

- The self-test which is more than useful to identify a faulty terminal. Running the self-test allows the operator to check that every section (except the communication section) of the terminal works properly without the need of a computer diagnostic.
- The maintenance/repair procedure which uses the HP 5004 Signature Analyser.

To repair, an engineer only has to compare the "IS" signature read on the HP 5004 with the "SHOULD BE" signature given in the Operating and Service Manual.

Any difference between these two signatures directly indicates the faulty component.

Repair Policy:

Due to the multi-terminal environment associated with this terminal, the support strategy assumes that the customer buys spare terminal(s) and he is able to identify the faulty unit by exchange and use of the self-test. The faulty unit is then sent to HP for repair. HP guarantees a two week repair turnaround time.

This method provides significant service cost savings and your customers will be delighted with the savings that we pass on to them in the form of the super low BMMC.

The 3070B: Simple to Build, Simple to Test

By: Gilbert Cotté/HPG

Construction of the 3070B is very simple. It contains only three printed circuit boards which are mounted in the two halves of the terminal cover. The top cover contains the Reader/Printer board complete with mechanical Read and Printer assemblies; the bottom cover contains the keyboard with keys and display.

The hardware is greatly simplified because the 3070B is nanoprocessor-controlled and most of the main control functions are executed by firmware.

Our procedure for testing, de-bugging and adjusting the 3070B is simple yet thorough. We first run the built-in self-test which checks 90% of the terminal functions.

We follow this with a production diagnostic program; an 8-hour heat run while the terminal continuously cycles its self-test, and finally a user diagnostic program. There are only six electrical adjustments in the whole terminal: three on the Motherboard and three on the Reader/Printer board.

All these features will contribute greatly to higher reliability, lower servicing costs and greater customer satisfaction with the 3070B.

What About The HP 3070A?

By: Georges Quin/HPG

The HP 3070A will still be offered, at its old price, to customers who do not need the HP 3070B multifunction reading and printing capabilities. If later on these customers want to update their system with 3070B's they will be able to do it easily since the new 3070 driver (DVA 47 Rev B) supports both 3070A's and 3070B's.

Great! But then why offer an HP 3070B-003 (3070B without printer or reader) as well?

The HP 3070B-003 will be bought by customers who want to mix both complete 3070B's and simpler versions in the same working area. They want to have terminals looking alike, with the same keyboard layout and same type of labeling to rationalize user training, application program writing, terminal usage and maintenance.

Sales Aids

How HPG Marketing Is an Asset for Your U.S. Based Customers

By: Pierre Ardichvili HPG

To you, a North American Field Engineer, what kind of bell does the name of Grenoble ring?

Optical Mark Reader. 3070A. or better 3070B? Or super skiing in the Alps? All that is right, but it is not all!

I am sure you have large customers with subsidiaries in Europe. We can help them a lot, and give them the same good factory support as they receive here in the USA.

If you have not already done so, please read the article on our new Marketing organization, or simply look at the Organization chart. Within a few weeks, we will send to each DM a set of slides which may be used to show your customer why buying Computer Systems from HP is not a bad idea, particularly when he has subsidiaries in Europe.

A Built-In Demo for Efficient Selling

By: Georges Ouin HPG

You do not need an RTE system or a desktop computer to demonstrate the unique features of the HP 3070B. This terminal is smart enough to automatically operate its own demo to help you in your selling effort.

A theoretical presentation of an overall Data Capture System solution can be nicely concluded by running this demo. In just a few minutes your prospect will see all the lock-out features of the terminal.

1. The concept of Special Function Keys is directly illustrated by the fact you will use these keys to select the test you want to run.
2. The prompting lights will indicate the selected test, demonstrating their guidance and/or tutorial functions.
3. The power of the Multifunction Reader to read:
 - punched badges used in applications such as personal identification, authorization, etc.
 - punched cards widely used as travel documents—you can show how this reader can handle bent dirty, torn cards.
 - Marked Forms: ideal media for source data updating applications (stock control).
 - push an SFK and Reader is immediately configured to read what you want!

- the alphanumeric printer which can give a user a transaction receipt. No other Data Capture Terminal is able to give the user hard copy output.

The 3070B Demonstration Guide tells you how to run this demo. Ask Boise or Grenoble for your own copy.

2240A and 3070B, the Right HP-IB Combination

By: Georges Ouin HPG

Multiple 2240A-based stations can be remotely controlled by one central HP 1000 through the 3070 SERIAL LINK. Connection has already been made and performance tested.*

A demo program has been written in BASIC to show the advantages of this 2240A/3070B Combination. The terminal's multifunction reader is used to enter:

- the user's badge for authorization of use.
- the tested item reference card. In this demo the item is an electrical motor.

The 3070B SKF's allow you to select the appropriate motor rotating speed. The 2240A then sends the command voltage to the motor and measures the resulting rotating speed. At the end of the test a test ticket is generated by the 3070B's strip printer for attachment to the motor reference card. This demo is available for you from Boise or Grenoble. Do not hesitate to ask for your own copy: we will be happy to duplicate it on your blank 2645 cartridge

*Refer to Norm Galassi's article in the CS Newsletter Volume 3, Issue 3, page 13.

3070B Literature Available

By: John Willet HPG

The following is a list of all the sales and service literature that is available to support the 3070B. Sales literature (5953-XXXX numbers) is available from Palo Alto; service literature from Grenoble (for Europe and ICON) or Boise (for USA).

3070B Brochure (order no. 5953-0119) designed for direct mail shots and to hand out at exhibitions, filled with good reasons why your customer simply has to buy the 3070B. The sales tool for your first-line contact. French and German versions to follow.

3070B Poster The ideal office wall advertisement.

3070B Data Sheet (order no. 5953-0118) -all the technical arguments you need to persuade the EDP manager of the 3070B's capabilities.

3070B Users' Manual (order no. 03070-90007)—this will convince your customer how very easy the 3070B is to connect up and operate. This manual has been designed as a sales tool; do not hesitate to use it as such.

3070B Operating and Service Manual (order no. 03070-90005)—provides all information necessary for installing, maintaining and servicing the 3070B.

3070B Field Training Manual—gives you all the arguments to put you in front.

92900B Operating and Service Manual (order no. 92900-90007)—provides all the information necessary for installing and commissioning a 92900B Subsystem. (40280A Serial Link Interface plus 3070B Terminal)

40280A Operating and Service Manual (order no. 40280-90001)—provides all the information necessary for installing and servicing the 40280A Serial Link Interface.

92900B Diagnostic Manual (order no. 92900-90003 Rev. A)—describes operation of the 92900B Diagnostic program which verifies proper operation of the 92900B Subsystem with HP 21MX or 2100A/S Computer systems.

RTE Driver DVA 47 (Rev. B) Manual (order no. 92900-90005 Rev. A)—contains all the information necessary to enable a user to write his own 3070B application programs in FORTRAN.

Condensed Description of the HEWLETT-PACKARD Interface Bus (order no. 59401-90030)—if your customer does not know the HP-IB, let him read this.

AN 201-5 The HP-IB LINK: Control of Distributed HP-IB Devices (order no. 5953-0114)—a simple explanation of the operation of distributed HP-IB clusters connected to the HP-IB serial link via 3070's.

AN 201-6 Computer Interconnections (order no. 5953-0893)—offers the HP-IB serial link plus 3070 as a means of connecting an HP 9825A Desktop Computer to an HP 1000 Computer System. Control of each 9825-based HP-IB cluster can be passed between the 9825 and the HP 1000.

Form Design and Turn-Around Documents for HP Optical Mark Readers (order no. 07260-90015)—enables your customer to design his own punched cards or marked forms.

If you have any problems, comments (good or bad) or suggestions concerning our literature, please do not hesitate to contact me. Your feedback is my most important tool for measuring the effectiveness of our literature.

Order Processing

3070B Price and Delivery

By: Kathy Romani/HPG

Grenoble will soon be accepting orders for our new Data Collection Terminal, the 3070B, starting April 3rd. You must override the HEART and COCHISE systems until May 1st when our new product will appear officially on the I.P.L. as follows:

	Base Price \$	USA Import \$	Total USA \$
3070B (STD)	3000	200	3200
Opt 002 (Delete Reader)	Less 600	—	2600
Opt 003 (Delete Reader/ Printer)	Less 1200	—	2000
92900B	4125	275	4400
Includes:			
— 40280A			
— 3070B			
— Test Cable			
— Manuals			
Opt 002 (Delete Reader)	Less 600	—	3800
Opt 003 (Delete Reader/ Printer)	Less 1200	—	3200

You will be informed in the near future concerning 3070B OEM discounts on the new CSG Purchase Agreement. The first customer shipments will begin around mid-June.

If you have any questions concerning price or delivery, please don't hesitate to contact me in Grenoble.

Competition

How and Where Should I Sell the 3070B?

By: Peter Stuart/HPG

Judging from the super positive reactions we have already received from some of you and your customers, it seems there is little need for this article. However, for those of you who have not yet tried selling the 3070B, we would like to pass on a few tips.

The 3070B has been designed as a "labor data reporting station". This is the general name given to factory data collection terminals which are used to collect information on how employees are spending their time throughout the day.

Labor data reporting stations are necessarily more complex than only "time and attendance" terminals which are used simply to record the time employees start and finish work. It follows that time and attendance terminals, equipped with only a simple badge reader and a very limited display, are lower priced than labor data reporting stations. If your prospect is interested only in time and attendance reporting, you will face stiff price competition. However, more and more companies, particularly those manufacturing multiple or complex products, are not satisfied with only simple time and attendance reporting but are looking for more complete information. We recommend that you concentrate sales effort on the manufacturing accounts which have a complex or multiple product line.

The second tip is fairly obvious and that is to make sure the prospect compares the total installed cost of the HP 3070B's he would need with the total cost of our competitors' products. For example, suppose the prospect wants ten labor data reporting stations and five time and attendance terminals. We would then propose $10 \times$ 3070B's at a USA list price of \$48,000 less end user quantity discount of 10% = \$43,200.

The IBM solution would be $5 \times$ 5234's at \$1,500 plus $10 \times$ 5235's at \$2,600 (+ interface controller*: \$19K) = a total of

*Note that each controller can only handle a maximum of 15 terminals!

\$52,500. Not only does your customer make a significant saving by buying HP (\$9,300) but he has also the flexibility that the function of any of the terminals can be changed from time and attendance to labor data reporting, and vice versa, as required. A further advantage is that all terminals are identical thus simplifying training and maintenance. The Field Training Manual lists more details of the key competitors for the 3070B to help you determine a sales strategy in competitive situations. Call us if you did not get your copy during the NPT Tour.

The third tip concerns ruggedness. The 3070B does not *look* as rugged as some of its competitors and we do not pretend it is "bullet-proof". However, try and have the customer compare specifications. Virtually none of the competitors actually *specify* the performance of their terminals in hostile environments. Then *demonstrate* the ability of the 3070B to read dirty, bent punched cards. The 3070B's multifunction reader outperforms all the competitive products we have looked at. It is absolutely "unique" and is visible proof of our terminal's ability to work in difficult operational environments. Also mention the electrical ruggedness of our system. The high noise rejection capability of our serial link enables the 3070B terminals to be used in electrically very noisy environments (arc welding shops, machine shops).

One last point: we would like to thank you all for the interest you expressed in our previous model, the 3070A. It is mainly your inputs that have enabled us to design and launch on the market today our new and exciting terminal, the 3070B.

CS GROUP NEWS

HPSA NEWS

New CSG Environmental Standard

By: Fritz Joern/HPSA

It's always a good habit to put punch cards into the atmospheric environment in which they will be read. Some computer centers require them to be stored in their computer room. (It avoids jamming in the equipment.)



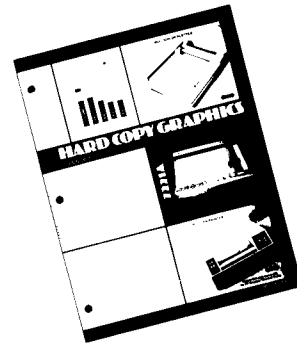
In the photo above you can observe *Rolf Röbcke*, 1000 SE group leader in Boeblingen, giving them this treatment. They are part of a benchmark for a key account in Duesseldorf.

SAN DIEGO DIVISION

Sales Aids

New Product Training Manual

By: Bill Clark/SDD



During the April New Product Training session we will be distributing a Training Manual titled, "HARD COPY GRAPHICS". This manual will cover the following important topics:

Product Features

- 9872A Multicolor Plotter HP-IB
- 7221A Multicolor Plotter RS232C/V.24
- 7245A Plotter/Printer/HP Graphics Terminal Dump HP-IB

Graphics Software

- HP-PLOT/21 for HP 3000 Series II
- GRAPHICS/1000 for HP 1000 Computer Family

Hard Copy Device Selection Guide

- HP Computers
- HP Graphics Terminals—2648A and 2647A

Hardware Configurations

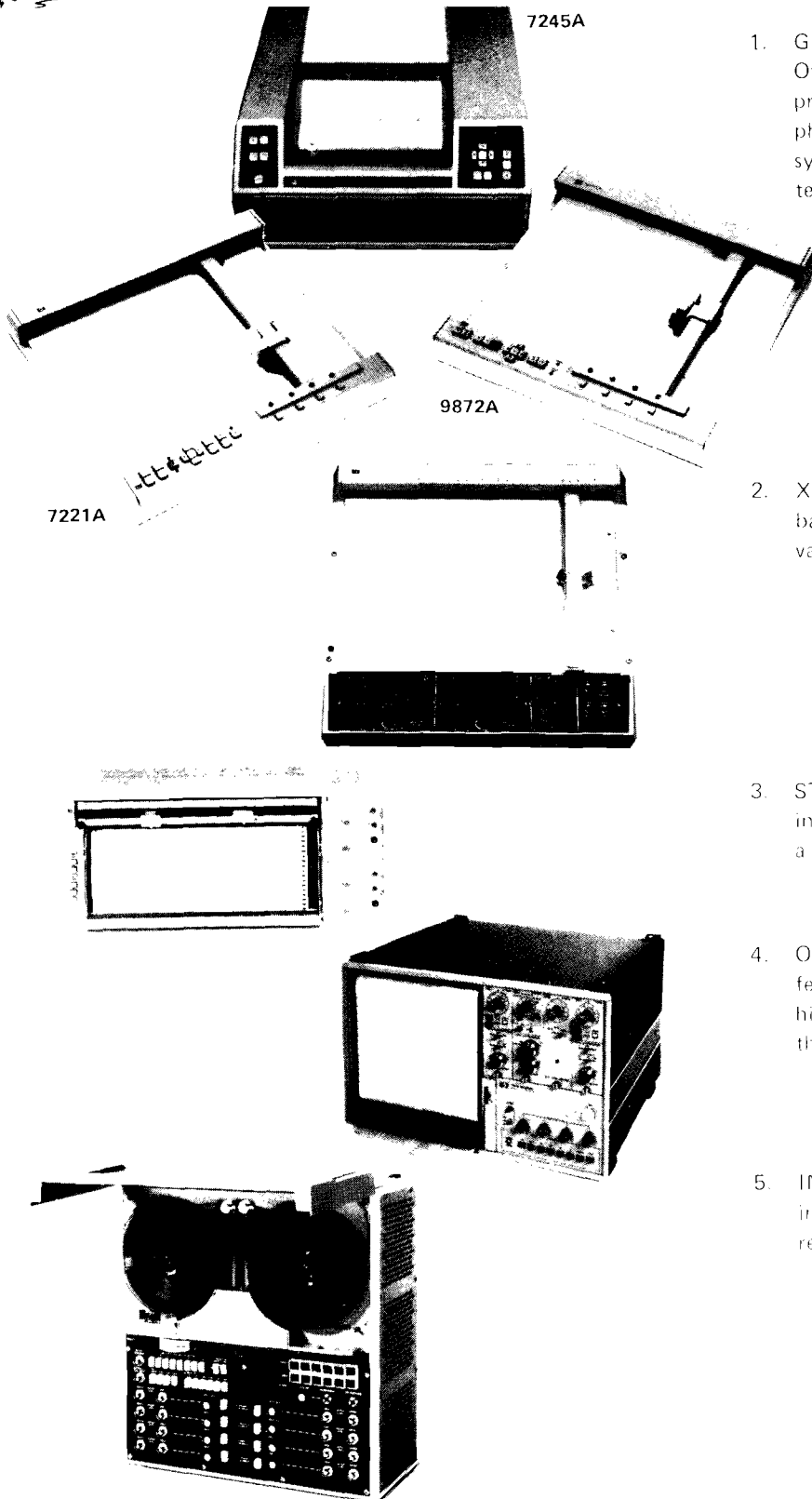
Competitive Information

Sales Support/Sales Aids/Demo Aids

If you missed out on the New Product Training session and did not receive this manual, call your friendly San Diego Regional Sales Engineer and ask for a copy.



SDD Product Areas: There are five basic product lines manufactured at San Diego Division. These products include:



1. GRAPHICS HARD COPY DEVICES – Offered in three basic models which produce high quality graphics as peripherals on computers and computer systems, desktop computers, and intelligent graphics terminals.

2. X-Y RECORDERS – Offered in 11 basic models, automatically plots one variable vs a second variable.

3. STRIP CHART RECORDERS – Offered in 12 basic models, automatically plots a variable vs time.

4. OSCILLOGRAPH RECORDERS – Offered in two basic models, offers much higher frequency response (to 100 Hz) than a strip chart recorder

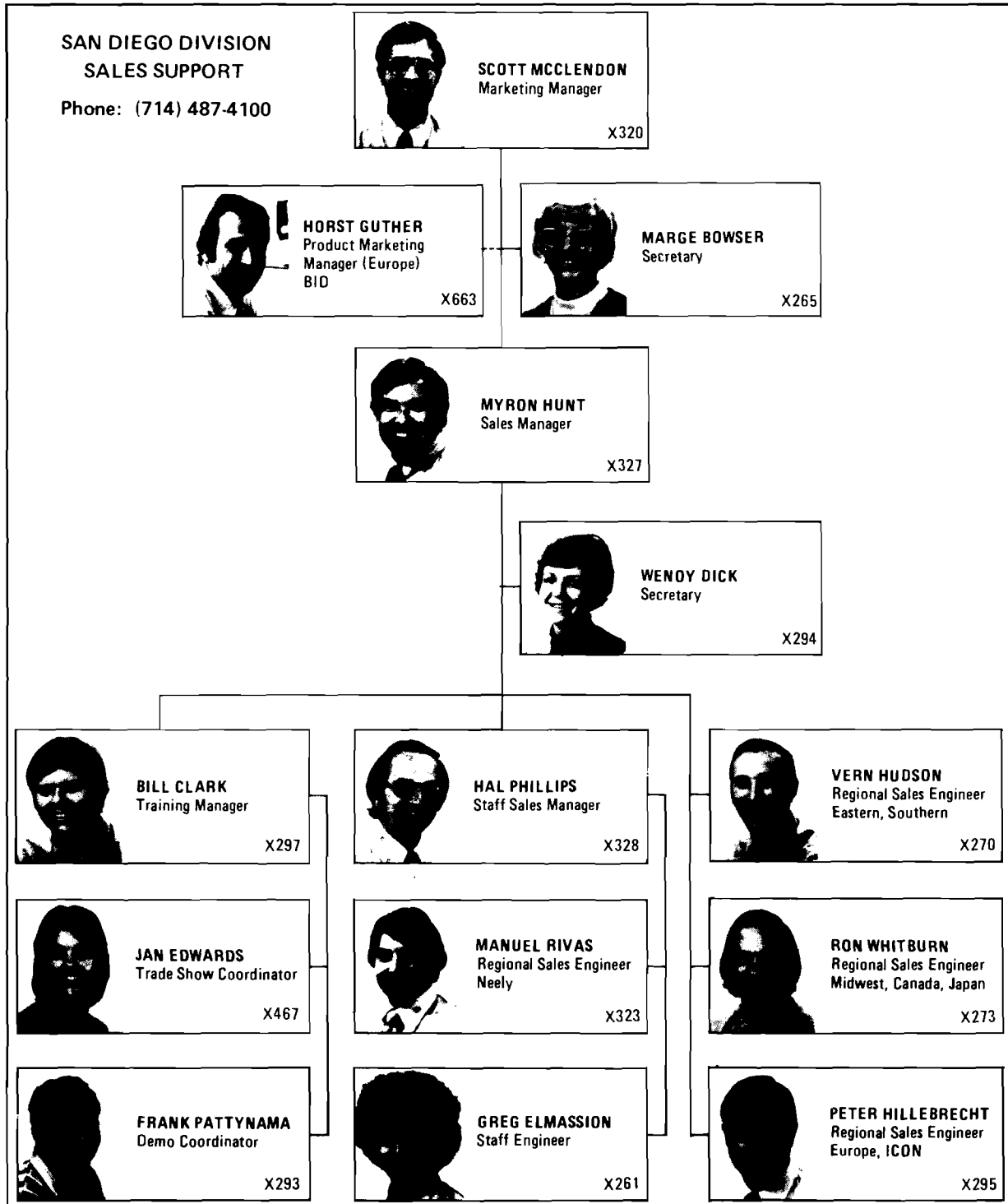
5. INSTRUMENTATION TAPE – Offered in two basic models, allows precise recording/reproducing of test data.

Sales Support for San Diego Division Plotters

By: Bill Clark/SDD

During the month of April the San Diego Division will be participating in a CSG New Product Training Tour. After attending the SDD Session you will be well qualified to present the 9872A HP-IB Plotter, the 7221A RS232C/V.24 plotter and the new 7245A HP-IB Plotter/Printer/HP Graphics Terminal Dump to prospects desiring to add high-quality hard-copy graphics output devices to HP Computers, Systems and HP Graphics Terminals.

Should you have any questions about our plotters, the San Diego Division Regional Sales Engineers will provide you the best possible sales support.





Are You Getting the Right Mail Lately?

By: Sherry Harvey CSG

If not, then maybe you have changed offices, product specialty, or job function and haven't updated the Computer Systems Group internal distribution database. This database, maintained centrally by CSG, is used instead of the Corporate "MAILS" system to distribute all literature within Computer Systems Group and to produce the CSG Sales and Service Directory. (You may be using Corporate "MAILS", in addition, to receive literature from other product groups). To insure that your CSG literature and important announcements reach you promptly, TWX us or use this form (bulk quantities are being sent to your office's "CSG Sales Librarian" and "Customer Engineering Support Librarian") to keep us on top of your whereabouts.

If you have any questions about the CSG internal distribution database, contact the database coordinator, *Lill Hill*, in Building 40 at Cupertino. (408) 257-7000 X2007

**CSG INTERNAL DISTRIBUTION AND
DIRECTORY DATABASE**

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