COMPUTER SYSTEMS NEWSLETTER

For HP Field Sales Personnel

HEWLETT hp PACKARD

Vol. 3, No. 14
June 1, 1978

DMD Announces

the 7925 Disc Drive

DMD Announces the 7925 Disc Drive ..... Page 4

In This Issue...

BOISE DIVISION NEWS

Division News

Marketing Growth

By: Bill Murphy/Boise

Ongoing growth within the Boise Marketing organization has necessitated changes which have resulted in opportunities for different and expanded responsibilities for individuals within our group.

Effective immediately, *John Whitesell* will assume the role of Marketing Communications Manager, having full responsibility for all advertising and sales promotion activities. In addition, I've asked *John* to take on the added role of Sales Training Coordinator. Our Division's activities in both of these areas have expanded greatly in the recent past. It is fortunate that we have an individual with *John's* experience and background to assign to this key role.

Taking *John's* place as Sales Development Manager will be *Chuck Ulfers*. Currently Regional Sales Development Manager for the East and South, *Chuck* has had previous Boise experience as Data Center Manager, giving him an extremely strong user-oriented background. I think those of you who have worked with *Chuck* before will testify to his positive "can do" attitude and his solid understanding of our products and how they are applied.

Please join me in wishing both *John* and *Chuck* success in their new roles.

In an effort to keep you informed as to our overall organization, an updated Boise Field Communication Guide will be sent to each of you shortly.

Neelyland Sales Development

By: Gary Sherwood/Boise

Steve Richardson who has supported Neely for the last two years has decided to broaden his HP experience. He is therefore leaving Sales Development and taking a position in Product Marketing. He should be a valuable asset to that group having received your inputs for the last two years.

To take *Steve's* place in our group, we have hired a person who recently worked in our Dallas Sales Office. I am pleased to announce that *Thad Webster* is our new Regional Sales Engineer.

Thad will be taking over support of Southern Neely including Englewood and Salt Lake City as they move under the jurisdiction of *Dennis McGinn*. I will be providing support once again for Northern Neely. We both look forward to helping you to be successful with your commitment to sell Boise products.

DISC MEMORY NEWS

Product News

DMD's Remedy For Your Big DISComfort

By: Steve Germain DMD

Feeling DISCouraged because you can only quote up to 400 Megabytes?

Have you got the ol' third party 'DISContent' because when you walk out smiling, you see "them" slink in behind you?

Or, are you just plain DISComposed because of the DISCord created DISCussing storage with a DISCerning customer who has DISCovered HP's big DISC solution?

Well then, don't be DISCourteous, don't DISCount the rumor, DISContinue your DISComfort and DISClose to your DISCriminating customer that the BIG DISC long awaited is HERE NOW!

Hewlett-Packard blasted through the capacity barrier June 1, as Disc Memory Division announced the newest member of its controller-compatible family of disc drives, the 7925! Boasting over 120 Megabytes per spindle, up to 0.96 Gigabytes of HP-formatted storage capacity can now be supported by a single 13037 disc controller. That's nearly 2½ times the capacity of its forerunner, the 7920!

7925 shipments are well under way. The HP 3000 will be the first major user of the big disc with system shipments expected to start later in the month. The 7925 will be completely compatible with MPE and only slight modifications will be necessary to support the drive on systems shipped prior to June 1, 1978.

DMD, with the 7925, continues its commitment to keep our systems super competitive. As with the 7920 introduction, we have pushed the price/MB to an all-time low. With the outstanding reliabiltiy of the 7925 we can offer a BMMC that has our competitors feeling extremely "DISComforted". We can show that not only does a 7925 cost less to buy, but it costs less to own. And the joys of owning an HP disc can only increase as our system owners enjoy the benefits of improved system uptime, performance, reliability, and greater support.

No Scrimping On Performance

When it comes to performance, the 7925 outshines the best of them. 5 mS track-to-track and 25 mS average random access times make the 7925 one of the highest-performing random-access mass storage devices in the industry.

In order to keep the 7925 compatible with the new family controller, the spindle speed was reduced to 2700 RPM, resulting in an average latency of 11.1 mS. Early indications are that even with the media rotating at a slower rate, the high recording density of 166.8K bits per track and the increased capacity/cylinder allows for significant improvement in system throughput.

Better Than The Best?

Time will tell, but it looks as if the reliability of the 7925 will be as good as that of the highly successful 7920 (maybe even better). Many electrical and mechanical changes were incorporated in addition to the increases in capacity. Redesign of the carriage subsystem along with enhancements in the read/write path, servo, and drive control subsystems have allowed considerable improvement in error rate performance.

Some Disc Controllers Will Need To Be Upgraded

Customers desiring to expand their existing disc storage capabilities with the 7925 will need to upgrade their 13037B/30229A disc controllers. Compatibility with the family controller was retained by increasing the capabilities of critical Formatter/Separater circuitry contained on the Device Controller PCA. HP 3000's shipped after June 1 will support the 7925 without modification. Existing systems will need the upgrade which may be purchased with the first add-on drive as on Option 250 (see ordering information). More details can be found in the accompanying article.

How To Get One (Or Several!)

The 7925 is available in two basic flavors: The 7925M is the Master disc which includes the 13037 family controller. The 7925S is the add-on drive that includes all you need except the controller. Both disc products are aggressively priced at $21,000 and $17,000 respectively, with an availability of 14 weeks.

We are anticipating a flurry of orders for the 7925, so for a short period of time we will have to limit coordinated shipment requests to a maximum of *one* 7925 add-on per system. If you need more than one 7925 system disc and one 7925 add-on, we'll be glad to take your order for the extras, but we will have to book them at the 7925 availability. Add-on requirements for existing systems can be ordered directly from us at the 14 week availability (don't forget about the controller upgrade!).

If you need a 7925 in a hurry, we have a plan for you too! A limited quantity of 7925's will be available for delivery within the initial 14 week availability period. These have been allocated to each sales region, so see your DM for details on how to get one.

If you've got any questions, or if we can help you in any way, don't hesitate to give us a call.

7925 Ordering Matrix

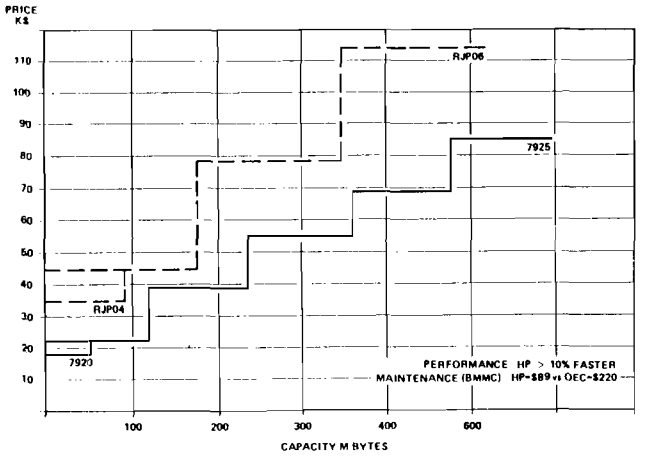
Master	7925M	7924M-015	7925M-100[1]
Disc Drive	7925	7925-015	7925
Controller	13037B	13037-015	13037-100
Multi-Unit Cable	13013A-001 (5')	13013A-001 (5')	13013A-001 (5')
Data Cable	13213A (10')	13213A (10')	13213A (10')
Data Pack	13356A	13356A	13356A
List Price	$21,000	N.C.	$800

Add-On	7925S	7925S-001[2]	7925S-015	7925S-250[3]
Disc Drive	7925	7925	7925-015	7925
Controller	—	—	—	—
Multi-Unit Cable	13013A-003 (8')	13013A-002 (18')	13013A-003 (8')	13013A-003 (8')
Data Cable	13213A-002 (50')	13213A-001 (25')	13213A-002 (50')	13213A-002 (50')
Data Pack	13356A	13356A	13356A	13356A
Controller PCA	—	—	—	13037A-60028
List Price	$17,000	N.C.	N.C.	$500

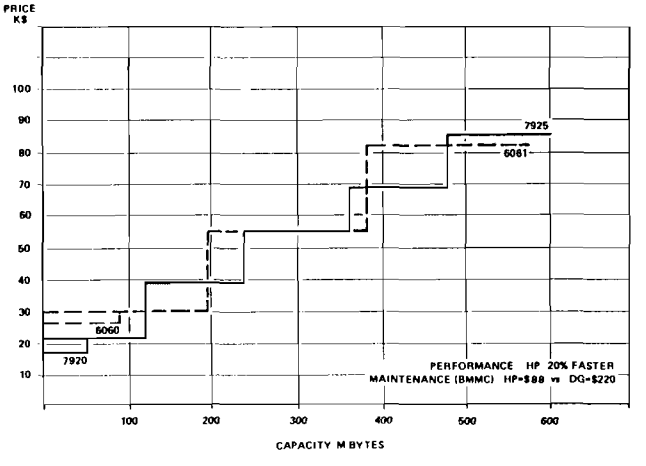
NOTES:

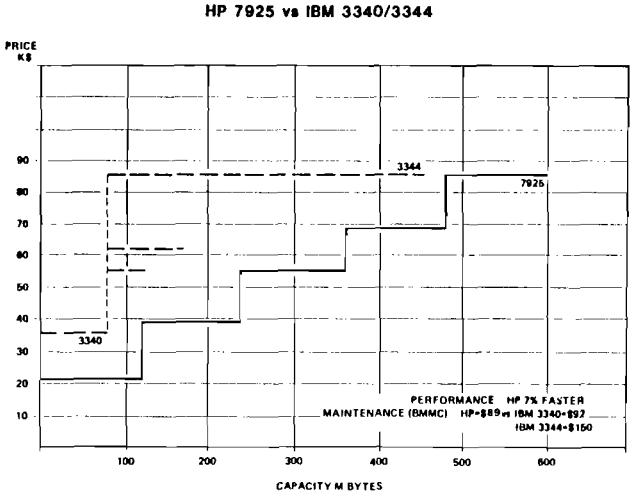
1. Option 100 is for factory integration of the 12745A HP-IB Adapter Kit.
2. Option 001 substitutes longer data and Multi-Unit cables to facilitate field installation of the first disc drive on a System 3000 HP Series II which previously had no disc drives installed.
3. Option 250 is required to upgrade the 13037B Disc Controller to support the first 7925 added to an existing disc subsystem. This option is only required for upgrading controllers shipped prior to June 1, 1978 containing a Date Code of 1815 or earlier.

HP 7925 vs DEC RP 04/05/06



HP 7925 vs DG 6061





Inside the 7925

By: Steve Germain/DMD

To the casual observer, the 7925 looks identical to its other family member, the 7920. The new 120 Mbyte high-performance disc drive is packaged in the same distinctive enclosure that's at home in both the data center or the office. Unless your eyes are sharp and you notice the logo, it isn't until you open the top cover that you see the differences.

Where The Additional Capacity Comes From

Increasing the storage capacity nearly 2½ times was accomplished by increasing the recording density and adding two additional data surfaces. The 7925 disc pack is comprised of seven discs. The top and bottom discs provide physical protection for the five center data discs. The five center discs provide nine data and one servo surface.

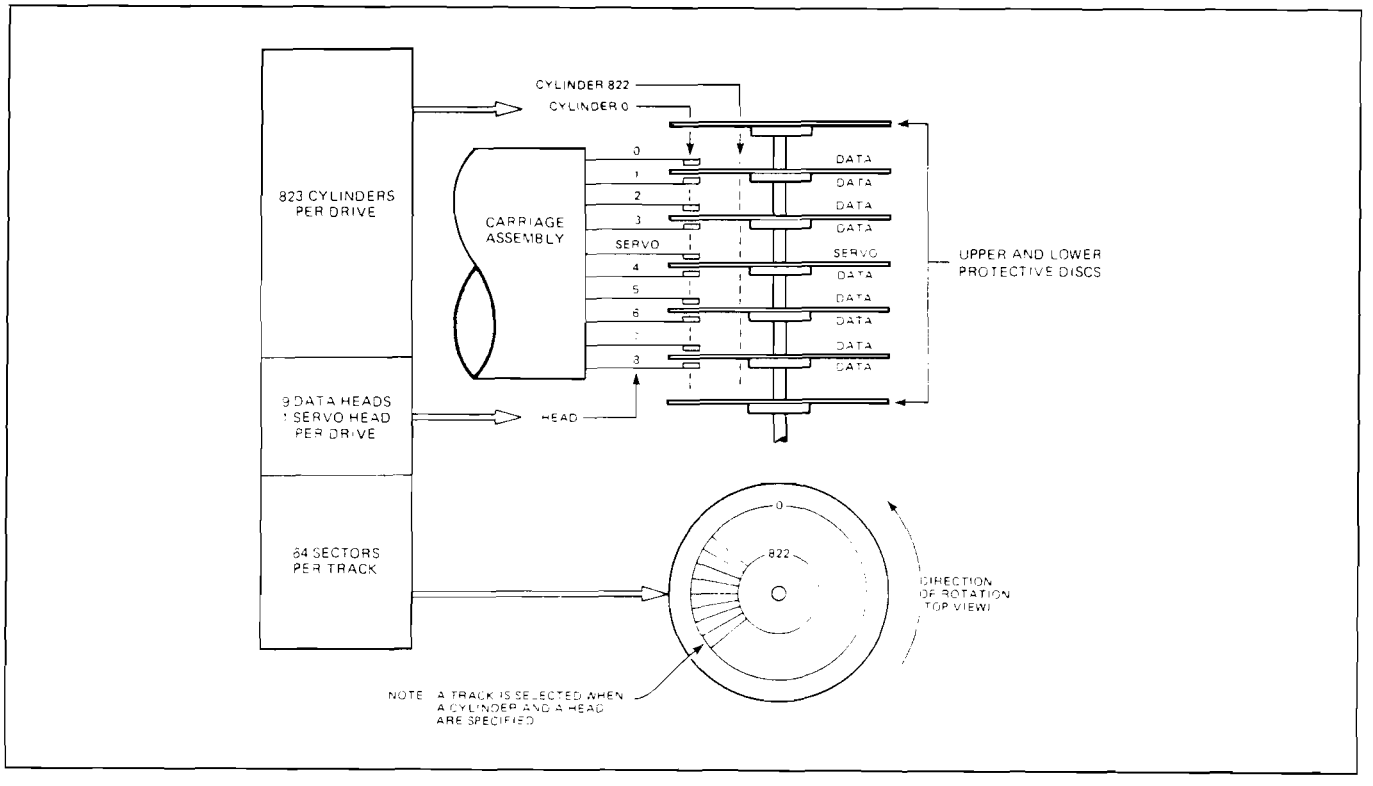
As shown in Figure 1, the disc drive accesses data with nine precision read/write or data heads. Precise head positioning and sector clocking information is obtained via the servo surface through a special read-only head or simply, the servo head.

There are 822 cylinder positions that are accessible by the disc drive. A total of 815 of these are used for data storage with the balance used as spares. Each data cylinder consists of nine data tracks which are further subdivided into 64 physical data sectors.

When you combine all the above, and the nominal recording density of 6250 bits per inch, the net result is a data pack that holds 13,352,960 data bytes per surface, not even considering the eight spare tracks.

A Word About Performance

From the accompanying chart, you can see how the 7925 performance compares to the other members of the HP controller-compatible family. Don't let the slower spindle speed of 2700 RPM's fool you, the 7925 can still spit out data at the lightning rate of 7.5 megabits per second. As for the additional latency, early indications are that system performance will be even better with the big disc. With more sectors per track than the 7920, more data passes under a given head before an additional seek is required. Thus, greater system throughput is achieved, despite the slower speed!



7925 HEAD/MEDIA DIAGRAM

The 7925—Performance In Perspective

	7906	7920	7925
Data Bytes Per Sector	256	256	256
Sectors per Track	48	48	64
Tracks per Surface	400/*800	814	815
Surfaces per Drive	3	5	9
Formatted Capacity MBytes	19	50	121
Transfer Rate—Megabits/Sec	7.5	7.5	7.5
Spindle Speed—RPM	3600	3600	2700
Average Seek Time—milliseconds	25	25	27
Average Latency Time—mS	8.33	8.33	11.1
Rotational Positioning Sensing	Yes	Yes	Yes
Track Density—Tracks per inch	192/384*	384	384.6
Bit Density—Bits per inch	4682	4682	6250
Cylinder Address Bits	10	10	10
Sector Address Bits	6	6	6
Head Address Bits	2	3	4
Drives per Controller (Daisy chained)	8	8	8
Height—inches	15 3/4	32.5	32.5
Width—inches	19	19.65	19.65
Depth—inches	27 7/8	32	32
Weight—Pounds	162	350	355

*Fixed Disc Surface

Little Known Facts About That Controller Upgrade. . .

By: Steve Germain/DMD

It's really very simple. If your customer orders an HP 3000 and it ships from GSD after June 1, 1978, you've got no problem—the controller is already upgraded. On the other hand, if you order a 7925S for a system that was shipped before June 1, you'll need to order the Option 250 for $500.

If you have any doubts, check the board configuration in the 13037/30229A disc controller. The correct complement should consist of:

Description	Part Number	Minimum Acceptable Date Code
ECC/ROM	13037-60024	B-1650
Device Controller	13037-60028	—
Microprocessor	13037-60001	C-1640

DMD Slashes Prices!

By: Jon Bolt/DMD

GET SET!! The good book preaches moderation in all things, but DMD just can't hold back!

With the announcement of the 7925 comes price decreases on the 7906 and 7920 as well as the 7920 disc pack (13394A). That's a lot of horsepower to handle!

These price reductions represent decreases between 5% and 8% for add-on discs, and savings in excess of 14% on 7920 media. Let's take a look at these cuts:

	Old Price	June 1 Price
7920M	$17,500	$17,000
7920S	14,000	13,000
7906S	10,500	10,000
7906SR	9,500	9,000
13394A	700	600

Note that the 7920S is now $13,000 and both OEM and End-User discountable!! This drop eliminates the need for the Multi-Spindle Package (13395A), which has been taken off the Corporate Price List. No more traumas when explaining to customers that the 13395A is not OEM discountable.

The 7925 announcement drops a new bomb on the recent HP/DEC/DG disc pricing battle! Combined with these new price decreases, you've got fresh ammunition *and* the latest weapon. You're in fine shape!

Corporate Pricing policy allows all orders in-house prior to the price cut to be honored at the lower prices. Contact your Sales Office Order Processing to insure that change orders are submitted!

13013A Special Length Cables

By: Marc Nilson/DMD

In general, all specials must be quoted individually by the factory prior to order. However, special lengths of the 13013A cables have proven to be a fairly common special, so the following special lengths have been set up and can be quoted and ordered without contacting the factory:

13013A-H01	40 ft
13013A-H02	50 ft
13013A-H03	25 ft
13013A-H04	30 ft
13013A-H06	9 ft

Note: The 13013A-H05 has been obsoleted

The price for any of the 13013A special cables is $284.00 over and above the list price of the 13013A. It is in HP's best interest to try to satisfy a customer's needs with standard options, or existing specials. If a customer must have a length that isn't covered by standard options or existing specials, it is permissible to quote the above price, but the factory must be contacted so a specials number can be assigned to that unique length.

Division News

Hoke Finds Another Hero!

By: Steve Germain:DMD

Please join me in welcoming *Terril Hurst* to our "on-line" Marketing support staff. *Terril* is a recent graduate from Brigham Young University where he obtained both his B.S. and M.S. in Mechanical Engineering. A native of Burley, Idaho, *Terril* should really feel at home here in beautiful downtown Boise!

Terril is a welcome addition to our "lean and mean" Product Management staff. His educational background and previous work experience with high technology firms will definitely strengthen our ability to bring you top notch support in our electro-mechanical product line. *Terril* eagerly awaits his baptism under fire, so please give him a call at extension 2641.

DATA SYSTEMS NEWS

Product News

RTE-IV Hardware Upgrades

By: Eric Isacson/DSD

92852E and 92852M are the products we offer customers who wish to run RTE-IV on computers which do not meet the serial number prefix requirements specified in the RTE-IV data sheet. They contain all the components anyone might need to update their computer to run RTE-IV. In addition they include installation by an HP CE at the customer's facility. Most importantly, the products are guaranteed to make the computer compatible with RTE-IV. Thus, for a fixed price the customer gets a simple, straightforward, minimum-risk way to be sure that RTE-IV will run on his computers. The update kit should be considered as an economical insurance policy for RTE-IV compatibility.

It is true that a computer may be updated on a component-by-component basis. For computers of very recent manufacture or for very large OEM's this *may* be more economical. However, it has a number of drawbacks which you should consider before selling it to your customer. First, determining the new components needed requires disassembling the computer to the point where the CPU board may be removed. This requires removing the computer from the rack, removing top and bottom covers, all I/O and memory boards, FAB or FFP, base instructions, etc. Once the CPU and other boards have been inspected, they must be reinstalled. This process requires one to two hours for an experienced 21MX technician. If you or your cusomer try it, it may take longer. And if you make errors in reassembly you'll have to add the repair time. Next you'll have to order the components and make sure you get the latest revision versions. Most should be readily available. However, our efforts to ensure availability are concentrated on the kits (92852E and 92852M) rather than on individual components. Of course, if you're only short a few components you can probably expedite them with a few phone calls or perhaps borrow them from another computer somewhere! Next the components must be installed. This is a repeat of the one to two hour disassembly and reassembly process reviewed above. This time, however, you have to plug-in the ROM's in the correct locations and orientations, and you have to set the jumpers on the new accessory boards. This information is available someplace in the instruction manuals, of course. Once you get it all put back together and re-installed in the cabinet, you cross your fingers and hope it works.

It's late Friday afternoon, 85 miles from your office, and your customer is going to use the computer to run a test over the weekend on which his next promotion depends. Good luck! If it doesn't work you can, of course, call out the CE, as soon as he's available. He'll only charge the customer his normal rates. Hopefully, he'll have any parts needed along with him.

In spite of the drawbacks, the piecemeal approach may be more attractive in certain situations. Each must be handled individually, however, on a strictly *time and materials* basis. It will be extremely difficult to quote a fixed price before ordering since each computer will have to be handled on an individual basis. We will normally recommend that the determination of what new components are required be done by an HP CE since only he is fully qualified to do the disassembly and reassembly required. The CE organization is being advised as to the component requirements for RTE-IV. If you want to sell the piecemeal approach to RTE-IV updating we *strongly recommend that you consult your CE*. He will have to estimate the time required, determine the new components required and their availability, and perform the installation.

To summarize, there are indeed two ways to update a computer to run RTE-IV. The first bears a fixed price and is guaranteed. The second *may* be more economical but entails greater risk for both you and your customer. Remember, as simple as we try to make our computers, they are still complex, and there are many, many ways for things to go wrong. Our objective is *customer satisfaction*. The upgrade kits are designed and priced to ensure it.

Pre-Requisites for RTE-IV Hardware Upgrade Kits

By: Eric Isacson/DSD

92852E and 92852M are products designed to *update* computers. They should not be used to acquire components or accessories not already present in the computer. Thus, you should not depend on them to configure (as opposed to update) your computer for RTE-IV.

If your customer plans to receive exchange credit and thereby pay only $2000 net for 92852E or M, he *must return a complete set of kit contents to HP*. We will withhold exchange credit if the kit returned to DSD does not contain a complete set of components.

The computer configuration required to run RTE-IV is specified on the RTE-IV data sheet. These components should be installed in the computer before the upgrade kit.

We strongly recommend that the upgrade kit be installed as a *complete set of components*. This is because it is tested at DSD as a set running under RTE-IV. Furthermore, jumpers on memory and accessory boards have been set as required by RTE-IV. Therefore the chances of something going wrong are minimized by installing the upgrades as a *set of components*. This is not to say that replacing an individual component or board may cause RTE-IV not to function. Indeed such replacements must take place to maintain the computer. Our testing the upgrade kit as a set of components running under RTE-IV, and our recommendation that it be installed as a set, are done simply to maximize the probability that the upgrade and RTE-IV installation will be *smooth and trouble-free*. The upgrade involves tampering with the very heart of the computer. We don't want to take any more chances than necessary that something might go wrong.

RTE-IV Hardware Upgrades—Questions and Answers

By: Eric Isacson/DSD

Q. Do I/O Extenders need to be updated?
A. No.

Q. Do DCPC boards in I/O extenders need to be updated?
A. No.

Q. What if my customer wants to keep some of the components removed from his computer during the upgrade?
A. He is certainly free to do so. However he will be invoiced for the full list price of the kit: $5715 for 92852E or $5860 for 92852M (domestic U.S.)

Q. What if the replaced boards cannot be returned to DSD in Cupertino due to export regulations or otherwise?

A. There may be some situations where the replaced boards cannot be returned to DSD. In these cases, the exchange credit is not available. The customer is always free to purchase the upgrade kit at list price. However, he may find it more attractive to simply purchase a new computer.

New Instruments for HP-ATS

By: Dawson Mabey/DSD

Five new instruments are now available with HP-ATS Integration Services. They are included on the Integration Services Worksheet Addendum A on the next page, and include:

- HP 3325A Synthesizer
- HP 8016A Word Generator
- HP 8160A Pulse Generator
- HP 59303A D-A Converter
- HP 59308A Timing Generator

Make extra copies of Addendum A and use these in conjunction with the HP-ATS Integration Services Configuration Guide. The addendum is treated like any other worksheet in the guide. On the reverse side of the addendum is a new Worksheet Summary table which includes a new line for Addendum A. This summary replaces the one on Page 27 of the configuring guide.

Also note the list of corrections for the current configuring guide. Although minor in nature, we hope the errors haven't caused you any problems.

Look for more instruments to be added to the HP-ATS in the near future. Contact your RSE if your customer needs an HP-IB instrument not listed.

HP-ATS INTEGRATION SERVICES

ADDENDUM A

The Addendum A Worksheet lists new products that are now available as part of HP-ATS Automatic Test System. This worksheet may be used with the HP-ATS Integration Services Configuration Guide. The summary below may be used instead of that shown in the Configuration Guide (Pg 27) when the addendum is used.

CONFIGURATION GUIDE CORRECTIONS

Please note the following corrections to the HP-ATS *Integration Services Configuring* Guide 5952-8532D 1/78:

Pg 13 — The HP 9415A DTU includes one I/O card. A separate I/O card need not be ordered.

Pg 15 — Both 2645A and 2648A CRT Terminals require 13260B Ext. Commun. Card (instead of 13260A version).

Pg 22 — Table 2, (5) Other I/O Requirements for non-HP-IB Instruments. Should read: "See Table 3."

Pg 23 — Table 3. 9415A-001, 002, 003, 008, 009, 010, 011 use *no I/O slots*. I/O card is in 9415A mainframe.

— Note 6. 6227B/6228B require only 3 each 6940B slots (instead of 8 each).

Pg 26 — European Orders. If the HP 1000 system is ordered *from Data Systems Division* as part of 93284A Configuration/ System Test Service, it is subject to the 10% consolidation charge (option 006 is not required). If the HP 1000 system is ordered *from Grenoble,* 93284A option 006 is required (not subject to 10% consolidation).

INTEGRATION SERVICES WORKSHEET SUMMARY

No.	A	B	C	D
1 2 3 4 5 6 7 8 9 Addendum A				
Instr. Totals ➡				
10				
Σ Totals ➡				

CONSOLIDATION UNITS CALCULATION

If 93284A Option 006, Separate HP 1000 shipment is ordered, enter Instr. Total A as the base price for the Consolidation Units calculation below

If separate HP 1000 shipment (Option 006) is *not* ordered, use Σ Total A as the base price below

(1) Base Price _____

(2) 10% of Base Price _____ 500 - _____ Consolidation Units

(3) Round down Consolidation Units to the nearest whole number and enter result on 93282A QTY column (line 1) below

Addendum A 4-25-78

INTEGRATION SERVICES WORKSHEET ADDENDUM A

CONSOLIDATION — Complete this section only

PACKING AND CABLING — Complete these two sections

CONFIGURATION/SYSTEM TEST — Complete all three sections

	HP 93282A Service				HP 93283A Service				HP 93284A Service	
					Opt. 003 Matl.		HP 93285A Engr. Units		HP 93285B Engr. Units	
	Instrument and Required Options	Qty Req'd	Unit Price	Total Price	Req'd/ Instr.	Total	Req'd/ Instr.	Total	Req'd/ Instr.	Total
	HP 3325A Synthesizer				1		2		4	
	HP 8016 Word Generator -001 HP-IB				2		2		6	
	HP 8160A Pulse Generator				1		2		6	
	HP 12674B Slide Out Shelf				0		1		0	
	HP 12675B Fixed Shelf, 1 Bay				0		1		0	
	HP 12676B Fixed Shelf, 2 Bay				0		1		0	
	HP 59303A D-A Converter				1		2		2	
	HP 59308A Timing Generator				1		3		4	
				TOTAL A		TOTAL B		TOTAL C		TOTAL D

NOTE: 120 VAC 60 Hz versions listed above,
240 VAC 50 Hz options must be specified.

TRANSFER ALL TOTALS TO INTEGRATION SERVICES SUMMARY PAGE

RTE-IV On HP-ATS

By: Dawson Mabey/DSD

HP-ATS Automatic Test Systems are now available with RTE-IV software. When ordering HP 93284A Configuration/System Test Service, the minimum HP 1000 Computer System is:

HP 2176A/B Computer System (128 Kbyes)
HP 92101A-020 BASIC/1000D (on minicartridge)
Line Printer (see below)

The following options are also available:

Opt. 002—Additional Cabinet for magnetic tape
Opt. 008—HP 2648A Graphics Terminal instead of 2645A

The HP 2177A/B may also be substituted for the HP 2176A/B.

Optional peripherals are listed below. Only those items specifically shown are supported by HP 93284A Configuration/System Test Service. Selection should be in accordance with HP 1000 Configuration Guide procedures.

1. Additional CRT Terminals:
   a. 2640B CRT Terminal
      -020 Ext. Async Commun
      12966A -001 Interface
   b. 2645A CRT Terminal
      -030 Delete Std. Comm. Card
      13260B Ext. Comm. Card
      12966A-001 Interface
   c. 2648A Graphics Terminal
      13260B-003 Ext. Comm. Card
      12966A-001 Interface
2. 12979B I/O Extender
3. Additional Memory (see HP 1000 Config. Guide)
4. Line Printers
   a. 2613A Line Printer (w/Opt. 100)
   b. 2617A Line Printer (w/Opt. 100)
   c. 2618A Line Printer (w/Opt. 100)
   d. 12987A Line Printer (2607A)
   e. 12996A Page Printer (9866A)
5. Additonal Disc Drives (requires 2176A/77A with Opt. 002) 7906SR-020 Additional Disc Drive.
6. Magnetic Tape (requires 2176A/77A with Opt. 002) 7970B Mag Tape (with Opt. 236)

HP 9415A/TESTAID/FASTRACE

At present, the 9415A Digital Test Unit and TESTAID/

FASTRACE software are not available on RTE-IV. If your customer needs this capability in his HP-ATS system, you must order the HP 1000 system with RTE-III as follows:

Minimum configuration:
2171A/2172A Computer System
-003 RTE-III Software
-014 Delete memory from base system
12786A Memory Module (128 Kbytes)
92101A-020 BASIC/1000D
Line Printer

We are working towards offering these with RTE-IV in the near future and will let you know as soon as possible.

HP-ATS and GSA

By: Dick Landes/DSD

So you want to sell an HP-ATS to the Government. Have you tried the GSA approach? One of the features of HP-ATS is that it allows a Government customer to order an HP 1000 and most instruments under the appropriate GSA contracts. This gives the customer the GSA discount and warranty on those products and makes it easier for the Government customer to place the order. Consolidation, racking and cabling, configuration and system test, and switching are not yet on a GSA schedule so they'll have to be purchased separately. However, this "off—schedule" portion will probably be less than $100,000, which should greatly simplify getting that part of the order through Purchasing. There are a few special procedures that will have to be followed to make it work. These are outlined below:

a. The GSA items should be transmitted to DSD just as non-GSA HP-ATS instrument orders are currently transmitted to DSD. (We hope to change this next year.)

b. Since the entire system will be delivered from DSD and the delivery schedule will be determined by the overall system schedule, the normal GSA delivery requirements won't apply. Therefore, the GSA orders should state, "Delivery to be at the same time as specified in P.O. (*The non-GSA order*)."

c. Freight to destination will be free for the HP 1000, as provided in Schedule K. However, freight to destination for GSA items not manufactured at DSD will be an added cost which will be added to the non-GSA quote.

d. HP-ATS systems are normally shipped "padded van" without the external packaging specified in GSA contracts. Therefore, the GSA orders should state, "These items may be packaged and packed in the same manner as P.O. (*The non-GSA order*)." The latter should specify packaging and packing suitable for padded van shipment.

e. Customer buy-off at the factory is an additional charge option on HP/ATS. (HP-93284A Option 008). If the customer wants it, we'll be glad to do it and provide a DD250. This will require a statement on the GSA orders that Final Inspection and Acceptance will take place at DSD in conjunction with P.O. (*The non-GSA order*).

If the customer is happy with normal sell-off at time of installation at his facility, the normal GSA provisions will apply. For the non-GSA part, the Purchase Order should specify that successful completion of the SFT on site is the determinant.

If GSA is the way your customer wants to go, please indicate it on the Configuring Guide you send in. When the Guide is okayed and returned to you, we'll include any additional terms and conditions that may be needed for your particular requirement.

GSA's a neat way to lock up a lot of money in an HP-ATS order for the Government. Take advantage of it! We'll look forward to helping you any way we can.

HP 1000 Analog Input Capabilities

By: Roselie Tobes/DSD

There have been several requests to show where the 2240's new low-level analog input card, HP 22915A, fits into our current offerings. The following table should help in clearing up any questions. A technical note with further 22915A application details is in the mail to you.

HP 1000 Analog Input Capabilities

	Low Cost	2240A Midrange		2313B High-Speed/Low Level			3455 High Accuracy
Multiplexer	91000A	22900A	22915A	12751A	12761A	12760A	3495
Signal Range	± 10.24V	± 10V	± 20mV to ± 10V	± 10.24V	± 10mV to ± 800mV	± 10mV to ± 200mV	± 100mV to ± 1000V
Common-Mode Rejection	80 dB	80 dB	80 dB	80 dB	100 dB	115 dB	140 dB
Common-Mode Voltage	10V	10V	10.5V	10V	10V	200V	200V
Resolution LSB	12 bits 5mV	12 bits 5mV	12 bits 10μV	12 bits 5mV	12 bits 5μV	12 bits 5μV	17–18 bits 1μV
Accuracy %fs ± ½LSB	.1% 10V	.05% 10V	.5% to .06% 20mV to 10V	.09% 10V	.33% to .14% 10mV to 800mV	.33% to .14% 10mV to 800mV	.004% 100mV
Scan Rate	20 KHz	20 KHz	20 KHz	45 KHz	8 KHz	150 Hz	25 Hz
Sample Rate	20 KHz	20 KHz	20 KHz	45 KHz	50 Hz	20 Hz	25 Hz
Signal Conditioning	None	30V diode protection	20V diode protection Resistor & filter pads	None	Noise Filter −6 dB at 5Hz	Noise Filter −6 dB at .75Hz	Thermocouple Isothermal Reference Junction
Multiplexer Price 16 Diff. Channels	$1600	$1600	$1250	$800	$1150	$1000	$700 per channel (20 channels)

TODS-III Disc Upgrade for 8542B and 8580B

By: Ralph Kenton/DSD

We are now offering a field upgrade package designed to eliminate the need for the DICOM cassette drive in the 8542 and 8580 systems. BMMC will be reduced, reliability vastly improved, and best of all—the full benefits of TODS-III can now be shared by all users.

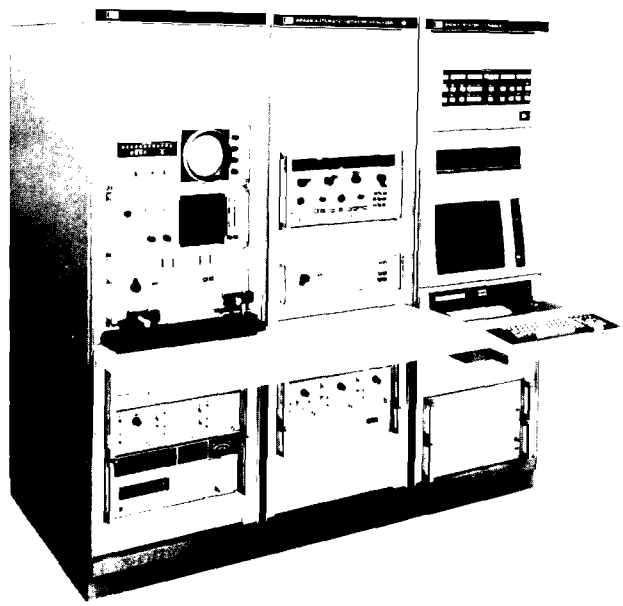
See the following pages for details.

HEWLETT hp PACKARD

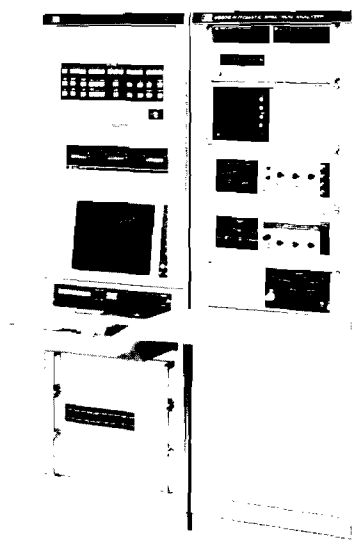
TODS-III Test Oriented Disc System for HP 8542B and HP 8580B Systems

models
91012B
91013B

Ordering Information 3/78



HP 8542B Automatic Network Analyzer
100 MHz to 18 GHz



HP 8580B Automatic Spectrum Analyzer
10 kHz to 18 GHz

Features

- Greater throughput capability with high economic return
- Faster and easier program generation
- Faster summarization of data via data base manipulation

General Description

HP 8542B Automatic Network Analyzers and HP 8580B Automatic Spectrum Analyzers presently using the cassette operating system can be converted to the TODS-III Test Oriented Disc System. With the power and convenience of the TODS-III disc operating system you can enhance the capabilities of your HP 8542B or HP 8580B system. Direct benefits are:

- High-density, random-access storage on fixed and removable disc platters
- Shorter access times for programs or data
- Semi-automatic batch compilation of FORTRAN programs
- Higher up-time, reduced maintenance costs

The TODS-III field upgrade kits also include software to assist the user in transferring his cassette based application programs onto disc cartridge. Thus when your system is updated to the TODS-III disc operating system, dependence upon the cassette operating system is completely eliminated. Option K01 provides a price credit for trade-in of the cassette drive unit when purchasing the TODS-III upgrade kit. In addition to the initial savings, the user will also realize considerable savings in maintenance costs for his system. Installation of the TODS-III operating system can be completed in one day.

Prerequisites: To be updated to TODS-III, HP 8542B and HP 8580B systems must have 32K words core memory, interactive graphics capability and advanced programming option. Those systems without these required prerequisites can be updated with special add-ons. Contact your local HP field sales office for further information.

Items Supplied: The TODS-III field upgrade kit provides the following items and services:

- Advanced programming option materials for disc operation
- Test-oriented disc system software (TODS-III)
- Cartridge disc memory with power supply (2.47 million words capacity)
- Paper tape reader
- Cassette-to-disc transfer software tools
- 56-inch cabinet with separate power cable and on/off control
- Documentation
- Field installation
- One-day training on site

Software Configuration: The TODS-III disc software is configured at the factory to reflect the standard factory input/output configuration for both the base system and most standard options. Orders must specify the standard options to be configured as shown in the Ordering Information. Note the TODS-III configuration does not include the cassette unit

Ordering Information

The ordering information for TODS-III field upgrade kits for HP 8542B and 8580B systems are specified in the following paragraphs.

TODS-III for HP 8542B Automatic Network Analyzer

Order:

HP 91012B	TODS-III Upgrade Kit	Price: $19,000
Option K01	Credit for cassette unit trade-in	Price: ($2000)
Option 710	230 VAC, 50 Hz Operation	No Charge

The following options are used to specify your current HP 8452B configuration. When specified at time of order, these options will be configured in the disc software at no additional cost.

-001 18 GHz Operation
-051 Power Meter, 10 MHz-18 GHz
-069 HP 6130C Digital Voltage Source
-071 Additional Digital Voltage Source
-090 HP 3450B Voltmeter
-301 Transistor Bias Supply

Any additional options not shown above will require a factory quote.

TODS-III for HP 8580B Automatic Spectrum Analyzer

Order:

HP 91013B	TODS-III Upgrade Kit	Price: $19,000
Option K01	Credit for cassette unit trade-in	Price: ($2000)
Option 710	230 VAC, 50 Hz Operation	No Charge

The following options are used to specify your current HP 8580B configuration. When specified at time of order, these options will be configured in the disc software at no additional charge.

-001 Four additional inputs
-002 Four signal conditioning paths
-007 Four additional inputs and four signal conditioning paths
-011 Multimode Detection Section
-012 Auxiliary IF Section (3 MHz BW)
-050 HP 432C Power Meter
-055 Preselection-Preamplification capability
-060 0.5-2 GHz preselection, preamplification
-070 2-8 GHz preselection, preamplification
-080 8-18 GHz preselection, preamplification
-100 Source control capability
-101 Source control unit
-102 Source Control Unit with four signal conditioning paths
-150 Synthesized signal source capability
-151 0.01-110 MHz Synthesized Signal Source
-152 1-1300 MHz Synthesized Signal Source
-153 1-2600 MHz Synthesized Signal Source
-170 HP 6130C Digital Voltage Source
-171 Additional Digital Voltage Source
-260 HP 7970B Magnetic Tape Unit
-400 ARS-400 Automatic Receiver System

Any additional options not shown above will require a factory quote.

HEWLETT hp PACKARD

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

(Domestic U.S.A. Prices)

Printed in U.S.A. 3/78 5952-1499

Racking Service Removed from CPL

By: Jim McCabe/DSD

Please take note that the 93723A racking service will be removed from the June 1st Corporate Price List. The standard 93723A service applied only to paper tape systems and orders have fallen to only a few orders per month.

We will maintain the special racking service options for customers such as WECO. If you have a "big deal" customer who needs the racking service, ask us for a special quote.

Division News

DSD Sales Development

By: Joe Schoendorf/DSD

DSD Sales Development
***JOE SCHOENDORF*—SALES DEVELOPMENT MANAGER Ext. 2165**
Sherry Fryhling—Secretary Ext. 2873

OEM

	Ext.
Carlos Avila—Manager (Acting)	2816
Mark Beswetherick—Neely South	3355
Mike Cohn—Southern	2810
Dennis Haar—Midwest & Mideast	3134
Frank Jackson—East/Europe	2643
Roselie Tobes—Neely North	2964
Jeff Williams—Canada	2554
Cris Foster—Secretary	2904

End-User

	Ext.
Don Rowe—Manager	2552
Bob Blake—Eastern	2512
Dave Bunch—ICON/Canada	2072
Jim Gruneisen—Southern	2151
Dave Hannebrink—Eastern	3122
Rich Held—Neely	2316
Bill Kaiser—Midwest & Mideast	2514
Mark Fogerty	2516
Sandy Bettencourt—Secretary	2585

Automatic Test Systems (ATS)

	Ext.
Greg Gillen—Manager	2026
Dick Crepeau—East/South	2032
Harry Haayer—Neely	2418
Ralph Kenton—Microwave	3117
Dave Kline—Airforce	2160
Andy Mills—Army/Navy	2177
Larry Sanford—Midwest/ICON	2241
Cindy Martinez—Secretary	2108

OEM DEVELOPMENT

	Ext.
Carlos Avila—Manager	2816
Jim Anderson	2308
Sherry Fryhling—Secretary	2873

Sales Administration

	Ext.
Doug Hanson—Manager	3138
George Fernandez	2110
Cris Foster—Secretary	2904

Training

	Ext.
John Trudeau—Manager	2056
Melanie Fox	2645
Ginny Pyle—Secretary	3181

Contracts

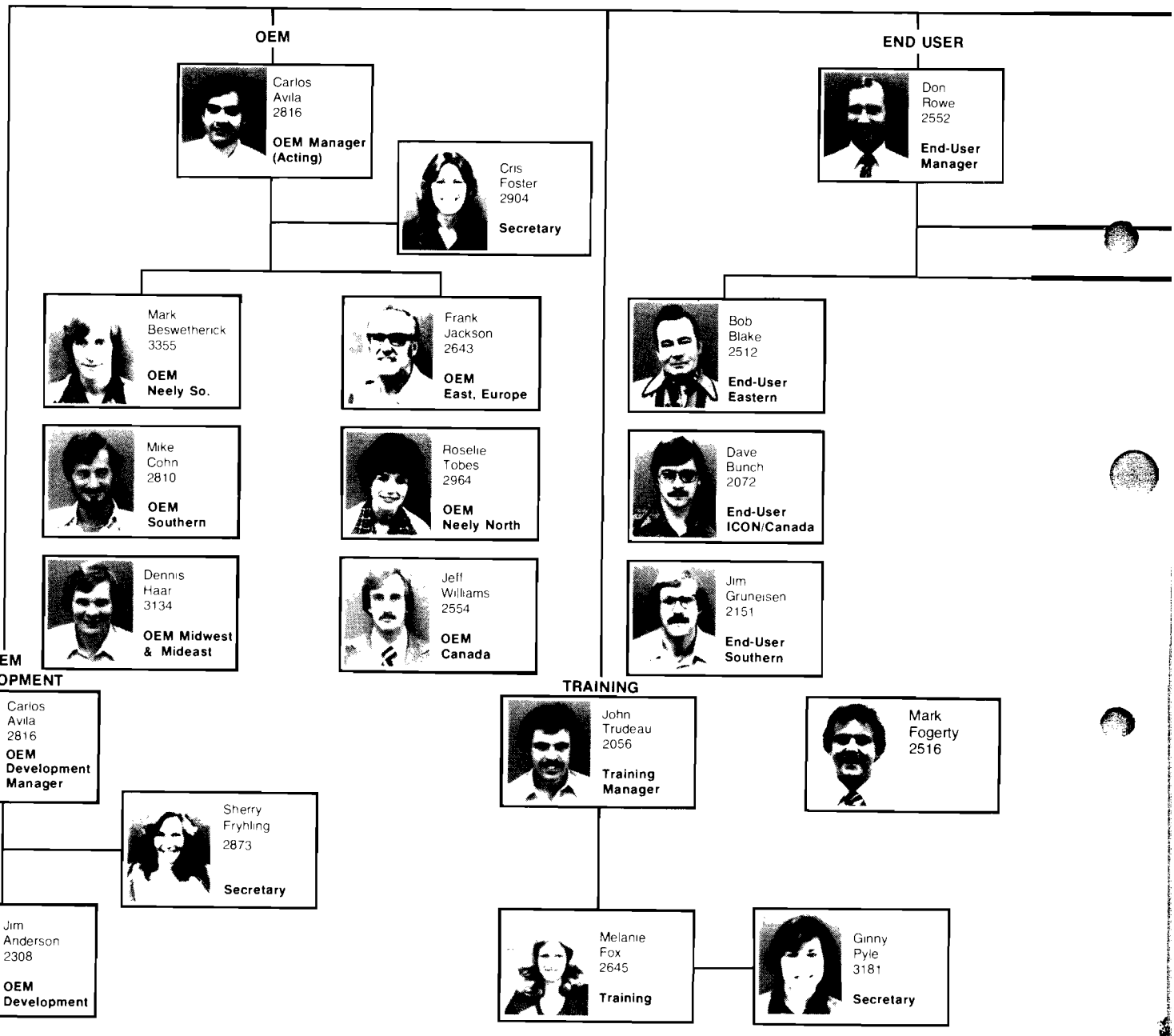
	Ext.
Dick Landes—Manager	2282
Bill Fallon	2382
Steve Sandlin	2346
Cindy Martinez—Secretary	2108

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

Sales Development

May, 1978



Joe Schoendorf
2165
Sales Development Manager

Sherry Fryhling
2873
Secretary

ATS

Greg Gillen
2026
ATS Manager

Sandy Bettencourt
2585
Secretary

Cindy Martinez
2108
Secretary

Dave Hannebrink
3122
End-User Eastern

Dick Crepeau
2032
ATS East/South

Dave Kline
2160
ATS Airforce

Rick Held
2316
End-User Neely

Harry Haayer
2418
ATS Neely

Andy Mills
2177
ATS Army/Navy

Bill Kaiser
2514
End-User Midwest & Mideast

Ralph Kenton
3117
ATS Microwave

Larry Sanford
2241
ATS Midwest/ICON

CONTRACTS

Dick Landes
2282
Contracts Manager

Cindy Martinez
2108
Secretary

SALES ADMINISTRATION

Doug Hanson
3138
Sales Admin. Manager

Cris Foster
2904
Secretary

Bill Fallon
2382
Contracts

George Fernandez
2110
Sales Admin.

Steve Sandlin
2346
Contracts

Sales Aids

Lower Prices for HP 1000 Computers and Computer Systems

By: Bill Elmore/DSD

The following adjustments have been made to HP 1000 Computers and Computer Systems, which are in effect price reductions. The adjustments are necessary to preserve proper price relationships among the various products, and will be reflected on the June 1 Corporate Price List.

Product/Opt. Number	List Price Current	List Price New—June 1
2108M	$ 7,950	$ 7,425
2108M-014	−2,850	−3,300
2112M-014	−4,700	−5,250
2109E-014	−2,850	−3,300
2113E-014	−4,700	−5,250
2111F-014	−3,250	−4,250
2117F-014	−5,500	−6,500
2107A-014	−3,100	−3,800
2171A-014	−3,100	−3,800
2172A-014	−3,100	−3,800
2174A-014	−3,100	−3,800
2174B-014	−3,100	−3,800
2175A-014	−3,500	−4,750
2175B-014	−3,500	−4,750
2176A-014	−4,700	−5,250
2176B-014	−4,700	−5,250
2177A-014	−5,500	−6,500
2177B-014	−5,500	−6,500

DSD Sales Promotion

By: Tom Freed/DSD

To give you an idea of the advertising plan for the second half of FY'78, DSD will have thirty-two ad insertions placed on the HP 1000 product line and eighteen ad insertions in a combination HP 1000/3000 advertisement.

These ads will focus on:

1. Memory Price Reduction,
2. HP 1000/45,
3. DisComputers,
4. DS/1000,
5. HP 1000/3000 in the Manufacturing Company.

All are in four-color except the Memory Price Reduction Ad.

Also DSD product information will be in both *Computer Advances* and *Measurement and Computation News*.

In the PR area we are continuing to get application stories written and published by the Paul Purdom agency. These articles describe how a particular company is using HP 1000 products to solve their problems. In addition, we are in the process of working with certain magazine editors to write exclusive articles on various DSD products, such as the 2240 and HP-ATS.

These articles are above and beyond the DSD-sponsored Technical Article Program which is alive and functioning.

DATA SYSTEMS DIVISION CURRENT SALES AIDS — 5/1/78

By: Ted Proske /DSD

Sales Literature — Order from Corporate Literature Depot

Literature Stock No.	Pub. Date	Title and Description
NEW AND REVISED HP 1000 COMPUTERS LITERATURE		
5953-3006	4/78	**HP 1000 Computers Now more ways than ever to match HP computing power to your applications,** 6 pp full color announcement flyer for new F-Series Computers and RTE-IV; intended as low-cost mailer. NEW
5953-0894	3/78	**HP 1000 Computers Hardware Data,** 92 pp B&W data book that replaces 21MX Computers Hardware Data, except that data communications and instrumentation interfaces have been put into separate data books; provides coverage on new F-Series computers and new memory packages. REVISION OF PREVIOUS DATA BOOK.
5953-0896	3/78	**HP 1000 Computers Selection and Configuration Guide, effective May 1, 1978,** 38 pp B&W selection, configuration, and pricing guide that replaces 21MX Computers Selection and Configuration Guide; provides coverage on new F-Series computers and new memory packages, in addition to new HP 1000- compatible peripherals, interfaces, RTE-IV software, and new software support services. REVISION OF PREVIOUS GUIDE.
NEW AND REVISED HP 1000 COMPUTER SYSTEMS LITERATURE		
5953-3007	3/78	**Announcing new computing power, and new applications power, for the HP 1000 Computer Systems family,** 6 pp full color announcement flyer for new HP 1000 Computer Systems with F-Series computer, RTE-IV, Graphics/1000, and multipoint terminal interfacing; intended as low-cost mailer. NEW
5953-3001	3/78	**HP 1000 Computer Systems Computational capability for science, engineering, and industry,** 16 pp full color brochure that relates HP 1000 Computer Systems, especially the Model 45 System, to use in computational applications; discusses eight applications. NEW
5953-3002	3/78	**HP 1000 Computer Systems For factory data acquisition, measurement, and control,** 16 pp full color brochure that relates HP 1000 Computer Systems, to industrial measurement and control applications; discusses six applications, measurement and control capabilities, and DS/1000. NEW
5953-0869	2/78	**Distributed Systems/1000 An advanced, "next-generation" network communications package for HP 1000 Computer Systems,** 16 pp 2-color brochure. REVISED FROM PREVIOUS BROCHURE TO INCORPORATE RTE-IV.
5953-0897	3/78	**HP 1000 Computer Systems Technical Data,** 52 pp B&W data book that replaces previous HP 1000 Systems data book; provides coverage of new systems; peripheral accessories, distributed systems, and software data sheets are in separate data books. REVISION OF PREVIOUS DATA BOOK
5953-0898	5/78	**HP 1000 Computer Systems Configuration and Site Preparation Guide,** 38 pp B&W configuration, pricing, and site preparation guide; provides coverage of new systems, peripherals, interfaces, software, and software support products. REVISION OF PREVIOUS GUIDE
NEW AND REVISED HP 1000 COMPUTERS AND SYSTEMS LITERATURE		
5953-3005	3/78	**The HP 1000 family. Advanced computing power for manufacturing and engineering,** 40 pp full color brochure covering the entire HP 1000 Computers and Computer Systems family, including the new F-Series computers, the new HP 1000 Model 25, 40, and 45 Computer Systems, RTE-IV, and other related new products; intended as an attractive, comprehensive overview of the HP 1000 product line. NEW
5953-3009	3/78	**HP 1000 Computers and Systems Peripherals Data,** 52 pp B&W data book that covers peripherals usable with HP 1000 Computers and Systems, including measurement and control interfaces, processor, and subsystems, and TV interface. SPLIT-OUT FROM PREVIOUS DATA BOOKS
5953-0816	3/78	**HP 1000 Computers and Systems Distributed Systems and Communications Data,** 52 pp B&W data book that covers DS/1000 software-firmware and interfaces, RJE/1000, CRT and printing terminals, multipoint software and interface, and other data communications interfaces. SPLIT-OUT FROM PREVIOUS DATA BOOKS
5953-0801	2/78	**HP 1000 Computers and Systems Mature software data,** 44 pp data book covering BCS, RTE-B, RTE-C, and RTE-II and other software that is available, but out of the mainstream of ongoing development efforts, and thus is not recommended for new applications. SPLIT-OUT FROM PREVIOUS SOFTWARE DATA BOOK
5953-0861	3/78	**HP 1000 Computers and Systems Active software data,** 64 pp B&W data book that covers RTE-IV, GRAPHICS/1000, and other software, except software pertaining to distributed systems and data communications, that is in the mainstream of ongoing development, and thus is recommended for new applications. SPLIT-OUT FROM PREVIOUS SOFTWARE DATA BOOK
SOFTWARE LITERATURE		
5952-9939	5/76	**IMAGE/1000 Data base management software for HP 1000 Computer Systems,** 8 pp full color brochure.
5952-9950	9/76	**IMAGE/1000 Performance brief,** 8 pp, 2-color discussion of IMAGE/1000 performance testing for throughput and response
5953-0813	7/77	**HP 1000 Computer Systems Building an Inventory Control Data Base Application Note 212-1,** 16 pp, 2 color
5953-0814	4/77	**HP 1000 Computer Systems Building an Order Processing Data Base Application Note 212-2,** 18 pp, B&W
5952-5531	1/77	**The Mini's Impact on Data Base Management Systems,** 8 pp reprint of November 1976 mini-micro systems magazine articles on HP 1000 Computer Systems and IMAGE/1000.
5952-1615	3/76	**Process Control Software Review,** 8 pp reprint of Instrumentation Technology article by Van Diehl.

Literature Stock No.	Pub. Date	**Title** and Description

DISTRIBUTED SYSTEMS LITERATURE

5953-0883	10/77	**Hewlett-Packard Distributed Systems Networks,** 12 pp full-color fold-open brochure covering Hewlett-Packard's Distributed Systems Networks philosophy and its application to interconnection of HP 1000, HP 3000, and HP 2026 Systems.
5952-9949	9/76	**Network techniques for Multiple Minicomputers,** 4 pp reprint of article by Dave Borton

COMPUTERS, ACCESSORIES, INTERFACES, AND SUBSYSTEMS LITERATURE

5952-9929	4/76	**HP Journal Articles on: 21MX Processors — Microprogramming — Software,** 64 pp of HP Journal article reprints
5953-0835	9/76	**21MX E-Series microprogrammable processor port application note,** 16 pp one color
5953-0836	9/76	**21MX E-Series microprogram conversion application note,** 8 pp one color
5953-0890	12/76	**Unravelling the mystery of user microprogramming,** 16 pp reprint of three-part article by Bob Frankenberg in June, July, and September 1976 issues of mini micro systems magazine

HP-IB MINICOMPUTER LITERATURE

5952-1584	5/76	**The Real-Time HP-IB Minicomputer A powerful controller for HP's instrument family,** 8 pp full color brochure
5952-1688	3/77	**HP 1000 Computer Systems The Hewlett-Packard Interface Bus: A versatile interconnect system for instruments and controller General Information,** 12 pp one color, adapted and updated from 1977 HP Catalog
5952-1578	5/76	**AN201-1 Automatic Q-A Evaluation of Precision Resistors,** 4 pp one color HP-IB Minicomputer application note
5952-9932	5/76	**AN201-2 Measuring Differential Non-Linearity of VCO,** 4 pp one-color HP-IB Minicomputer application note
5952-1686	10/76	**AN201-3 Multiple Station Electronic Test System, 4** pp one-color HP-IB Minicomputer application note
5953-0864	7/77	**AN201-4 Performance Evaluation of HP-IB using RTE Operating Systems,** 16 pp B&W HP-IB application note
5953-0863	11/77	**AN201-6 Computer Interconnections A choice of ways to link** HP 1000 Computer Systems to HP 9825A Desktop Computers, 22 pp B&W HP-IB Application note
5953-3004	3/78	**AN201-7 HP 1000/HP-IB High performance software for the HP 3455A/3495A subsystem,** 4 pp two-color HP-IB application note. NEW

MEASUREMENT AND CONTROL PRODUCTS LITERATURE

5952-5530	6/77	**HP 1000 Computer Systems Affordable power to help increase productivity in the real-time world of mesurement and control. Measurement and Control Specifier,** 6 pp two-color brochure
5952-8506	4/77	**Measurement and Control Peripherals Technical Data,** 56 pp B&W data book covering 9603R, 9611R, 2313B, 91000A, 91063A, and other measurement and control interfaces and related software.
5952-8541	6/77	**HP 2240A Measurement and Control Processor An intelligent analog/digital subsystem to simplify product test and equipment control,** 6 pp full-color brochure
5952-8542	4/78	**HP 2240A Measurement and Control Processor Technical Data,** 48 pp B&W data book REVISION OF PREVIOUS DATA BOOK
5952-8543	4/78	**HP 2240A Measurement and Control Processor Configuration Guide,** 18 pp B&W REVISION OF PREVIOUS GUIDE
5952-8544	4/78	**HP 2240A Measurement and Control Processor Measurement and Control Examples Applicataion Note 224-1,** 24 pp B&W. REVISION OF PREVIOUS AN224-1.
5952-8546	4/78	**HP 2240A Measurement and Control Processor Signal Conditioning: HP 22914A Breadboard Card Application Note 224-2,** 8 pp B&W

AUTOMATIC TEST SYSTEMS LITERATURE

5952-8545	1/78	**HP-ATS Automatic Test Systems Systems, services and products for automatic testing,** 12 pp two-color brochure
5952-8532	1/78	**HP-ATS Automatic Test Systems Integration Services Configuration Guide,** 30 pp B&W
5952-8531	1/78	**93282A through 93285A and 92426A Integration Services for** Automatic Test Systems, 6 pp B&W data sheet
5952-8525	8/77	**9411A Switch Controller,** 2 pp B&W data sheet
5952-8526	8/77	**9412A Modular Switch,** 8 pp B&W data sheet
5952-8527	8/77	**9413A VHF Switch,** 4 pp B&W data sheet
5952-8528	8/77	**9414A Matrix Switch,** 8 pp B&W data sheet
5952-8524	1/78	**9415A Digital Test Unit,** 8 pp B&W data sheet
5952-8530	8/77	**HP Switch Products and Digital Test Products Configuration Guide,** 20 pp B&W

Literature Stock No.	Pub. Date	**Title** and Description
MICROWAVE ANALYZER SYSTEMS LITERATURE		
5952-1460	6/74	**HP 8542B Automatic Network Analyzer,** 14 pp two color brochure
5952-1463	9/74	**HP 8542B Performance Verification Data,** 4 pp one color
5952-8538	10/77	**HP 8542C Automatic Network Analyzer Ordering Information,** 2 pp B&W
5952-1488	11/75	**HP 8580B Automatic Spectrum Analyzer for Component and Subsystem Test,** 16 pp two color brochure
5952-1498	6/76	**HP 8580B Automatic Spectrum Analyzer Performance Verification Data,** 6 pp one color
5952-8539	10/77	**HP 8580C Automatic Spectrum Analyzer Ordering Information,** 2 pp B&W
5952-1499	3/78	**91012B & 91013B TODS-III Test Oriented Disc System for 8542B and 8580B Systems,** 2 pp B&W data sheet
5952-8510	9/76	**92821A 8500 Series Systems (8542B/8580B/8500A) Software Subscription Service,** 1 p B&W data sheet
5952-8509	9/76	**91016A/17A/18A Field Support Kits for 8542A/8580B/8500A Systems,** 4 pp B&W data sheet
OTHER LITERATURE		
5953-0881	9/77	29402B System Cabinet data sheet, 4 pp

Video Tapes (order from: Division 0700/Bldg 18/Palo Alto/Atten: Chris Bonetti with an IOS at $30 per tape)

NOTE: These videotapes are for HP use only; although they can be **shown** to customers, **they must not be sold or given away.**

Tape No.	**Issue Date**	**Title/Description**
90030-822	12/73	9700 Distributed Systems
90289	7/74	HP's new 21MX Computer Series
90309	10/74	HP 9600 Real-Time BASIC Measurement and Control Systems
90360	4/75	HP 9700 Application: U.S. Department of Interior
90557	8/76	The 21MX as HP-IB Controller
90650	10/77	DS/1000

NOTE: The following additional video tapes comprise an in-depth series on the topic of manufacturing control, and, as such may be useful in supporting sales of HP Computer Systems and IMAGE into manufacturing control applications. Customers must obtain these tapes by contacting:

Mather & Plossl, Inc.
P.O. Box 32490
Decatur, Georgia 30032

90701	9/77	An overview (of manufacturing control) for the manager.
90702	9/77	The system (of manufacturing control)
90703	9/77	Ordering techniques
90704	9/77	Material requirements planning mechanics, part I
90705	9/77	Material requirements planning mechanics, part II
90706	9/77	Material requirements planning applications
90707	9/77	Material requirements planning enhancements
90708	9/77	Material requirements planning problems
90709	9/77	Material requirements planning financial applications
90710	9/77	The master production schedule — Development
90711	9/77	Master production schedule uses
90711	9/77	Forecasting techniques
90713	9/77	Managing the forecast

91714	9/77	Lot sizing (determining when more of an item should be ordered, and how much)
91715	9/77	Developing bills of material
91716	9/77	Structuring bills of material
91717	9/77	The lead time syndrome
91718	9/77	Capacity planning
91719	9/77	Capacity control
91720	9/77	Safety stock, time, and capacity
91721	9/77	Selecting, scheduling and loading work
90722	9/77	Shop floor control
90723	9/77	Designing and implementing systems
90724	9/77	Return on the system investment
90725	9/77	Making manufacturing control effective
90726	9/77	Record accuracy
90727	9/77	Essentials of inventory management
90728	9/77	Practical considerations in inventory management
90729	9/77	Establishing the business plan
90730	9/77	Making enough with less in process
90731	9/77	Making the right things
90732	9/77	The real handles on manufacturing
90733	9/77	Organizing for results
90734	9/77	Traps to avoid
90735	9/77	Techniques of record accuracy
90736	9/77	Coping with the real problems
90737	9/77	Manufacturing control in the small plant
90738	9/77	Manufacturing control, the last frontier for profits

Slide Kits (order from: Division 22/Bldg 42U/Cupertino/Atten: Sylvia Cohen with a Heart order only, at the cost per slide kit noted below)

Kit No.	Issue/Rev Date	Media	Transfer Cost	Title/Description
BS-10	11/77	Overheads	$ 40.00	DS/1000 Pitch
BS-12	4/78	35 mm	$100.00	HP 1000 Seminar (220 slides)

DSD Pocket Guide

NOTE: The DSD Pocket Guide is provided free of charge for use by FEs, SEs, RSMs, DMs, System analysts, and Staff Engineers who need a compact in-the-field price reference aid. It is not available to other HP or non-HP people, and must be used with caution because it contains little or no information on prerequisites. The information in the Pocket Guide, augmented by more data on prerequisites and configuration considerations, is provided in the following sales literature pieces (literature numbers are listed in the literature section):

- HP 1000 Computer Systems Configuration and Site Preparation Guide
- HP 1000 Computers Selection and Configuration Guide
- Measurement and Control Peripherals (9603R/9611R) Configuration Guide
- 2240A Measurement and Control Processor Configuration Guide

DATA TERMINALS NEWS

Division News

Organizational Changes—DTD Marketing

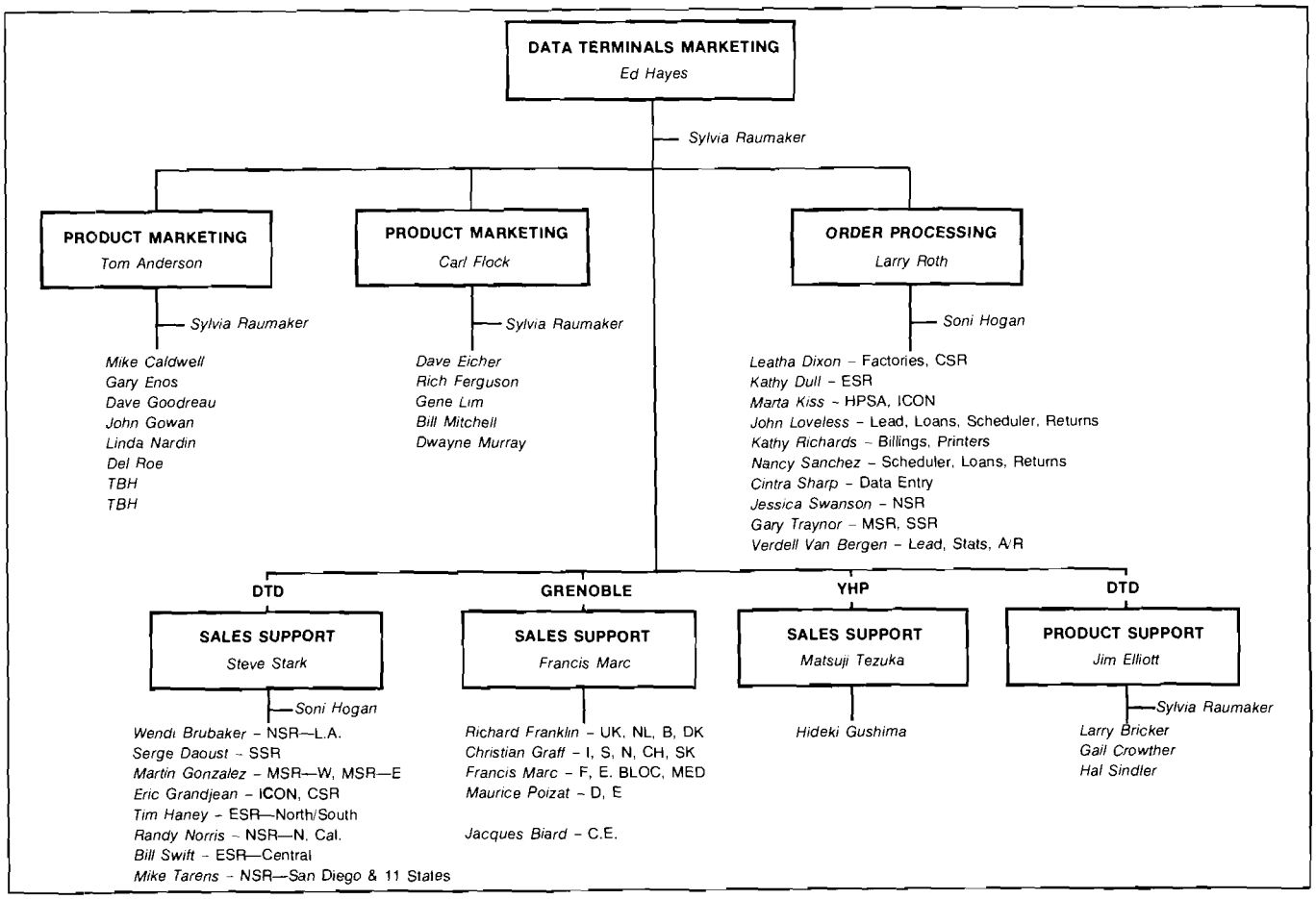
By: Ed Hayes/DTD

One of the keys behind the success of the DTD product line has been strong product teams made up of Engineering, Marketing, and Manufacturing personnel. As our product line continues to expand and have a greater impact on CSG, it is timely to place more emphasis in Marketing to meet its product planning responsibility.

To accomplish this, we have organized Product Marketing to allow *Tom Anderson* to focus on our very successful alphanumeric product lines and data entry products; and *Carl Flock* will move from Sales Development to focus on our growing graphics line.

Steve Stark has accepted the position of Sales Development Manager and will use his talent to continue DTD's commitment to the best field sales support of any CSG division.

These three seasoned DTD Marketing people will give our product line the expanded marketing attention the future calls for and help insure DTD will provide CSG a continued flow of quality products to support Hewlett-Packard computer business objectives.



Product News

Summagraphics Tablet Support on the 2647A

By: Rich Ferguson DTD

In addition to all the great and fantastic features of the 2647A that we discussed during the NPT Tours last month, we also mentioned that a driver will be available for the Summagraphics Digitizing Tablet. As a reminder, this driver is implemented as a BASIC language program. This means that you must load the BASIC Interpreter in the 2647A and execute the driver program. The model numbers that we support from Summagraphics are listed below. It is the ID-2 series that provides BCD output to the 2647A. Please see the following table for the different sizes of tablets and the associated model numbers.

One note: You must purchase the IF-IEEE General Purpose Interface and cable from Summagraphics to hook up the ID-2 series tablets.

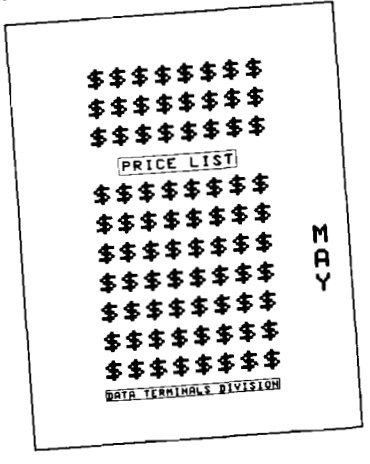
ID-2 BCD OUTPUT CONTROLLER, STYLUS

—11 With Tablet 11" × 11"	$2,400
—14 With Tablet 14" × 14"	2,800
—17 With Tablet 11" × 17"	2,800
—20 With Tablet 20" × 20"	2,900
—24 With Tablet 24" × 24"	3,700
—30 With Tablet 28" × 30"	3,800
—36 With Tablet 24" × 36"	3,800
—40 With Tablet 30" × 40"	4,300
—48 With Tablet 36" × 48"	4,600
—60 With Tablet 42" × 60"	6,000
—11/48 With Dual Tablets: 36" × 48" & 11" × 11"	5,200
—11/60 With Dual Tablets: 42" × 60" & 11" × 11"	6,600

Sales Aids

May 1 Yellow Price Guide

By: Eric Grandjean/DTD



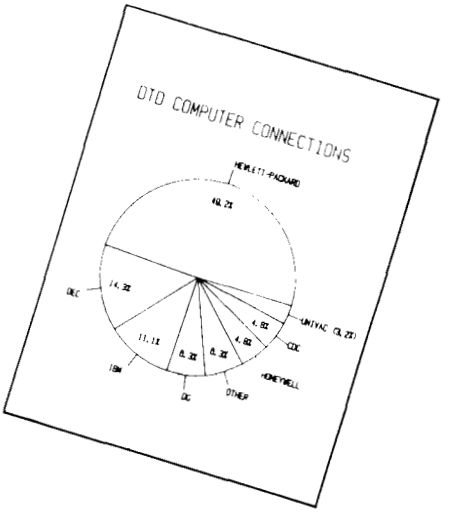
A new yellow-colored DTD Price Guide has been mailed to you, and hopefully you have received it by now.

The highlight of the May NPT Tours was, of course, the new 2647A Intelligent Graphic Terminal. The discount policy section was also modified to reflect the new CSG Discount Policy; however, we are happy to announce that our quantity five (5) terminal discount of 8% will remain available. The only restriction is that it will apply only to single orders of 264X-only terminals. (No leverage, no mix with 263X is allowed to get that 8% discount.) The crosspoint is quantity 14. If you have a mix of 264X and 263X and you are using quantity leverage, then you should apply the normal discount schedule as published, starting at 4% for quantities 5–7. Again, DTD gives you and your customer a very attractive low quantity discount for 274X-only terminal orders.

We hope everyone will take advantage of this. Thank you for your orders.

DTD Computer Connections

By: Bill Swift DTD



The long-awaited brief on computer connections is now ready for mailing. In addition to documenting hookups to 40 computers, it also includes an introductory section with general information on connecting to foreign CPU's. It would be impossible to show all the variations in hardware and software that you may encounter, but these applications cover the most general cases. We want to thank all the field personnel who contributed time and information in helping us prepare this brief.

As we gather further information, we'll be updating the brief to make it more complete. The last five pages of the brief contain sample forms to use in documenting your connections. As you find new configurations for the terminals, please send us the information and we'll include it in our next edition. We'll be mailing you your copy of "DTD COMPUTER CONNECTIONS" this week.

HP 2640 Compared to the HP 2645

By: Wendi Brubaker/DTD

Both the 2640 and the 2645 have been out in the field for a long time, but this might be a good time to review the differences between them. Sales situations come up all of the time where dollars are a major decision criteria. Just be sure you tell your customer what capabilities will be missing with the 2640B.

	HP 2640	HP 2645
1. MAX BAUD RATE	2400 (at 1200 baud or above, handshaking may be needed)	9600 (at 4800 baud or above, handshaking may be needed)
2. DISPLAY MEMORY SIZE MULTIPOINT BUFFER	1K Standard expandable to 8K	4K Standard expandable to 12K can use up to 16K
3. COMMUNICATIONS	Point-to-point RS232 Current-loop	Point-to-point RS232 Current-loop Multipoint Asynchronous Synchronous
4. FORMS CAPABILITY	Yes	Yes Alpha checks Numeric checks Alphanumeric checks Transmit-Only fields
5. EDITING	Yes	Yes Adjustable margins Character wraparound
6. BLOCK MODE	Yes DC1/DC2 handshaking	Yes DC1/DC2 handshaking DC1/DC3 handshaking available as a special
7. TAPE CARTRIDGES	No	Optional
8. USER-PROGRAMMABLE SOFT KEYS	NO	Yes
9. OPTION SLOTS	2 Slots can be expended by 5 slots (13240A)	7 Slots
10. PRINTER SUPPORT (Read Device Control Sections in Reference Manuals)	Serial/Parallel —Can only dump display memory —Limited support of printers	Serial/parallel —Supports generalized escape sequences —Can send data directly to printer allowing >80 character lines —Data logging capability and more
11. DATA SHEET	Literature #5952-9965	Literature #5952-9963
12. REFERENCE MANUAL	Part #02640-90110	Part #02645-90005

GENERAL SYSTEMS NEWS

Product News

Distributed Processing Enhanced on the HP 3000 Series II

By: Richard Scott & Sam Boot/GSD

Another stride ahead of the competition! DS/3000 has been enhanced with remote database access, improved program-to-program facilities and data compression.

Remote database access (RDBA) provides access to databases located on remote systems from a terminal or a program running on a local system.

Running a program in the remote system is not required. Databases are created, accessed, and maintained using the IMAGE/3000 database management system. Using IMAGE/3000 in conjunction with the new DS/3000 package, local programmers may write application code in a high-level language which accesses remote databases. These programs are written exactly as if the database were local, regardless of the database location. This means that any IMAGE program now running will work on a remote database without changing any of the code. Application users may subsequently run the program without knowing specifically where the database resides. Users and programmers alike are not required to deal with network configurations or communications protocol.

In addition to RDBA, data compression and process-to-process communication for BASIC and COBOL programs are now a standard part of DS/3000. Data compression can be invoked between any two HP 3000 processors equipped with DS/3000. Intersystems communications connections may be accomplished via modems at up to 9600 bits per second or through coaxial cable at up to 2.5 million bits per second.

The compression algorithm reduces any three or more repeating characters and, on certain types of ASCII character files, can result in up to an 80% reduction in transmitted size! Typical ASCII files are reduced about 40%. Compression can be invoked for any type of file (binary, EBCDIC, or ASCII) although the greatest efficiencies are realized with ASCII records and modem link transfers.

COBOL and BASIC program-to-program communications is a new extension to the existing capability provided for FORTRAN and SPL. This enables COBOL and BASIC application routines running simultaneously in separate computers to communicate directly with each other. The programs may be written in different languages. For example, a COBOL accounting routine resident on an HP 3000 can communicate with a BASIC program on a remote HP 3000, or a machine controller routine written in FORTRAN on an HP 1000.

The good news to your customers is that there is no additional charge for any of these new enhancements. Customers who already have DS 3000 will receive the software updates with the next MIT release. New customers will receive the enhancements as part of IMAGE and DS/3000 when they buy.

These enhancements continue to emphasize HP's commitment to the distributed processing marketplace.

Sales Aids

New DS/3000 Customer Presentation Package

By: Larry Hartge GSD

Been waiting for an extensive in-depth presentation of materials on DS 3000? They're now available! *Richard Scott has just completed a new and quite comprehensive* DS 3000 overhead slide presentation targeted for a more technical audience. And this presentation package comes complete with a comprehensive "Instructor's Guide," to help you give a superb presentation!!

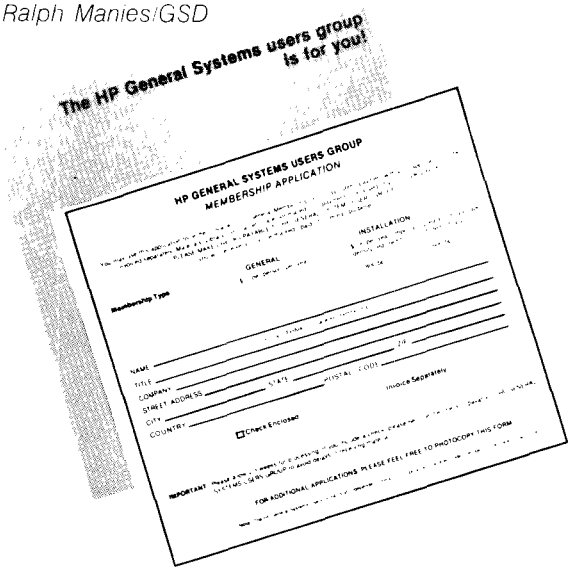
There are eighty-five overheads, and a complete presentation would take over two hours. The package has been segmented so that you can tailor a shorter presentation to a customer's individual interest. The topics covered include remote command processing, remote file access, remote database access, program-to-program communication, the interfacing of HP 2026 and HP 1000 systems, general network features and customer examples.

This presentation package includes two Instructor's Guides and is available now! Simply send your IOS or HEART order to *Bob Hall*, GSD, for Part No. 30000-90128 "DS/3000 Customer Presentation" at a price of $125.

Watch the next issue of the *CS Newsletter* for news on a complete Distributed Data Processing Seminar.

Users' Group Update

By: Ralph Manies/GSD



If you haven't already, you will soon see a new Users' Group brochure and application. The HP General Systems Users' Group?!?! . . . what's happened to the HP 3000 Users' Group?

On January 1st, the "HP 3000 Users' Group" incorporated as an independent non-profit corporation in the State of California. The name HP General Systems Users' Group was chosen to provide for possible "expansion" of the Users' Group to other related GSD product lines. The incorporation of the Group is the first step in the Users' Group Executive Board plans, to bring users better services.

With the rapid growth of the HP 3000 user base, it became evident that some framework for dedicated administrative services was necessary. Membership processing/invoicing and contributed library processing tasks have grown to the point where volunteer efforts cannot be expected to provide timely and professional services.

The incorporation by-laws provide for an office of Executive Secretary. This office will provide the day-to-day administrative support necessary to provide timely services, and provide a focal point to effectively coordinate member volunteer efforts. Current plans call for implementation of the Executive Secretary office this summer.

Plans are also underway to increase the content and coverage of the Journal, consolidate and update the Contributed Library, and to have a quality International Meeting (Denver, Colorado — October 30th to November 3rd).

To introduce new customers to the Users' Group, HP will send a brochure and application form to the software contact on the S1 order, and have the brochure and application form available at HP 3000 introductory training courses. Additional copies will also be distributed to SE's. (Note: The brochure is not HP literature, i.e., it is produced and paid for by the Users' Group.) If you have a customer who would like a copy of the new brochure/application, send me a Comgram and I'll have the Users' Group send a copy.

On behalf of the Executive Board of the Users' Group, I'd like to pass on a "thank you" for your support of the Users' Group. The Board is dedicated to making the HP General Systems Users' Group the standard in the industry, and making your customers more successful in their use of HP 3000 Systems!

Using COBOL: A Guide for New Users of HP 3000 Computer Systems

By: Sandy Martensen/GSD

A new two-color, spiral bound manual similar to the *Using Files* guide has just been printed. It leads COBOL programmers step-by-step through the process of developing a COBOL program on the HP 3000. The guide begins by describing how to create and modify source code, providing examples such as the following:

- creating and editing a source file
- creating and using an Editor USE file to format a 264x terminal screen with COBOL column headings
- creating a copy library (in an MPE or KSAM file) and creating the source programs that use it.

A section on compiling includes examples of compiling to check syntax and compiling while using a copy library and a maintenance file.

USL's, RL's, SL's, and other Segmenter mysteries are described with examples showing you how to examine and manipulate their contents. The guide illustrates methods of preparing and running programs using these libraries. Other examples show you how to:

- request and interpret a load map
- adjust the size of data areas
- perform file operations such as using variable length records, passing a file number to an SPL program, and using special forms on the line printer.

Examples in the last section illustrate debugging. They show you how to examine and modify locations in the data stack using PMAP's, LMAP's, and either the :SETDUMP command or interactive DEBUG commands. MPE operating system, file system, and COBOL terms are defined in a glossary.

The manual part number is 32213-90003 and the price is $6.50.

General News

Selling to Newspapers . . . What Successful Salesmen Say

By: Barry Klaas/GSD

Three HP salesmen who have profited from calling on newspapers tell you some of the important things they feel you should know about selling to newspapers:

Q. What's the main reason HP won?

A. "Our software. They recognized MPE as a very powerful operating system, which in conjunction with IMAGE/QUERY, could provide a capability at the time not available from other vendors."

"Our ability to demonstrate a proven mature product, primarily IMAGE QUERY. Of significance was the number of HP 3000's within newspaper properties performing the same application. The enthusiasm of these reference accounts was very impressive along with our S.E. organization's ability to demonstrate to publisher and staff management personnel, the database demonstration of an on-line circulation/subscriber system."

"Unlike DEC and DG, we approached the customer with the attitude that we didn't know for sure that we could do the job; but we welcomed the opportunity to work with their staff to find out. They saw this as a very professional approach. We then used IDEA to prove our capabilities. Also, they thoroughly and objectively compared the competitors, thus appreciated our software advantages."

Q. What were the major concerns of the customer?

A. "Flexibility, ease of design and implementation, future directions, support committment."

"Ease of use of the system, continued committment to develop the HP 3000 product line further, financial stability of the company."

"Total price for multiple systems over 18 months was a major concern. Without selling futures, a visit to GSD and the Computer Systems Group helped them feel comfortable about the trend towards lower prices and the expected long-term improvements in price-performance."

Q. What capability was the newspaper looking for?

A. "Hardware, operating system, compilers available, and database management system."

"A general purpose commercial system strong in terminal orientation, database management, but also with traditional D.P. capability."

"They wanted to offload their on-line circulation and classified systems to small computers (presently on 360/65), and add these capabilities at two other newspapers. Were looking for database, COBOL, terminal capabilities."

Q. Who (title-wise) did you have to sell?

A. "The publisher was definitely the individual that had the final decision, plus he requested the V.E.U. agreement."

"The major decision-maker at Corporate was the MIS director. One paper was singled out to do the evaluation, and a task force formed."

"The Corporate DP Manager. With his help and a visit to GSD, DTD and Computer Systems Group, his boss, Executive VP over all newspaper operations, was sold with relative ease. The President rubber-stamped the VP's decision."

Q. What was the toughest part of the sale?

A. "Getting an audience with the publisher. I sent a letter to the publisher to get an audience. After seven days, I called and asked for an appointment. After about a 1-1/2 hour meeting, it was all downhill because he immediately wanted a demo."

"The toughest part of the sale from the customer standpoint was the sheer amount of time involved to do evaluation. What impressed them about HP was the availability of a machine to do a demo on. Apparently, the other vendors did not have one readily available."

"Convincing the customer that the extra value received by doing business with HP and using the HP 3000 was indeed worth the extra initial costs involved."

Q. Who were the competition?

A. "DEC, Data General and IBM."

"DEC-11 70, DG-Eclipse, IBM-System 3."

"DEC, Data General."

Q. What are the prime applications?

A. "On-line circulation/subscriber, on-line customer update and billing, advertising promotions for market surveys, and financial management systems."

"Convert from their present systems, the general accounting functions presently running . . . and, implement an on-line circulation system at all the properties. This is presently a key application at most newspapers."

"On-line circulation and on-line classified."

Q. What one thing would you like to tell the rest of the HP salesforce about selling to newspapers?

A. "Reference-sell very aggressively. We have a proven cost-effective solution.

Demonstrate IMAGE/QUERY to all levels of management, particularly the publisher.

If you haven't sold to newspapers before, contact GSD Sales Development or a marketing representative who has, and get some insight into the general management philosophy of newspaper publishers."

"We need to aggressively market our product at the Corporate level and the various properties owned by chains.

Most papers are heavy RPG users (stress our ease of conversion). A System 3 Model 15 was fully converted in one week.

There also appears to be many papers still running 1130/FORTRAN. Look for them as we have an excellent means of conversion.

It is important to note that we have replaced a variety of equipment at newspapers with the HP 3000; i.e., System 3 - Model 15, Spectra 70/135, CHI 2130's, IBM 1130's (2), Honeywell 115, GA 1830, Univac 9400. This gives us an excellent selling point (replacement flexibility), not just at newspaper chains, but at any large multi-dimensional corporation with EDP equipment from many vendors. We can cite the HP 3000 as the best machine available to allow them to convert a standard system."

"Use *references* in their industry. Also, don't say 'sure, we can do it'. Instead, offer our resources in conjunction with theirs to determine suitability. This sincere interest in their success will impress them and will probably be unique among the vendors. Urge them to do a thorough, objective evaluation."

De computer die er niet was

De HP-3000 vult het gat tussen de kleine bedrijfscomputer en de grote centrale computer.

Tot voor kort was het een probleem het gat tussen de kleine bedrijfscomputer en de klassieke grote computer te vullen.

Voor kleine- tot middelgrote bedrijven was de investering voor een grotere computer vaak te hoog. De behoeften groeiden echter wel. Up-to-date informatie, à la minute informatie en dagelijkse verwerking van programma's zijn daar een goed voorbeeld van.

Hewlett-Packard komt aan deze behoeften tegemoet. Met de HP-3000, een krachtig, universeel systeem dat een groot aantal programma's simultaan kan verwerken.

De capaciteit van een groot systeem voor de prijs van een mini-computer.

De oplossing is een veelzijdig bedrijfssysteem.

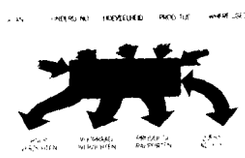
Het unieke bedrijfssysteem van de HP-3000 maakt het mogelijk, dat verschillende gebruikers, met verschillende programma's op een gemakkelijke wijze de computerfunkties kunnen benutten.

Terwijl de computer een groot aantal taken verricht, kunnen verschillende gebruikers met de computer werken op time-share basis via terminals (direkt ofwel op afstand via de telefoon).

Het systeem heeft een virtueel geheugen, waardoor uitgebreide programma's verwerkt worden in een relatief klein, feitelijk geheugen gebied. U kunt programma's ontwikkelen op een terminal - gebruik makend van de interaktieve EDITOR - en vervolgens die programma's onveranderd aan het werk zetten in de batchmode of direkt aan de terminal. De HP-3000 biedt COBOL, RPGII, FORTRAN, BASIC, APL en SPL (de op ALGOL gelijkende Systems Programming Language).

Data Base Management: een extra "grote-computer" voordeel.

De DBM software voor dit systeem, IMAGE/3000, geeft u de mogelijkheden een data base te ontwikkelen en te managen. En de eenvoudige, op Engels lijkende, informatie-taal QUERY, maakt de data base makkelijk toegankelijk, ook voor niet specialisten.



QUERY helpt de gebruiker op de weg van niets-zeggende cijfers naar bruikbare informatie.
Alle benodigdheden voor data base management zoals u die bij de IMAGE 3000 software. Evenals de op Engels gelijkende, informatietaal QUERY.

Deze data-base gebruikerstaal, werkt on-line en laat het opvragen van informatie eenvoudig regelen. Maar laat ook spontaan bijvoorbeeld een gesorteerd rapport verschijnen na aanvraag vanaf de terminal.

Nieuwe hardware funkties voegen snelheid en betrouwbaarheid toe.

De C.V.I. van de HP-3000 blijft op volle snelheid doorwerken. Zelfs als er iets mis mocht gaan in een geheugen circuit. Het zelfcorrigerende geheugen corrigeert automatisch en legt vast waar de fout optrad, de C.V.I. merkt er niets van.

En wanneer de service-technicus een routine onderhoud verricht, bekijkt hij tevens het geheugen rapport en vervangt zonodig het defecte circuit.

De gebruiker behoeft er niets van te merken.

Het zeer snelle halfgeleider geheugen maakt de C.V.I. makkelijk uitbreidbaar. U kunt van 128K bytes geheugen tot 512K bytes groeien. De disc-capaciteit reikt van 50 tot 400 megabytes.

De snelste manier om meer te weten over deze belangrijke stap vooruit in computer technologie biedt de coupon. Vul 'm in en stuur 'm naar: Hewlett-Packard Benelux N.V., van Heuven Goedhartlaan 121 Amstelveen. Tel. (020-47 20 21).

Naam:

Funktie:

Bedrijf/Instelling:

Adres:

Telefoon:

C 7/10

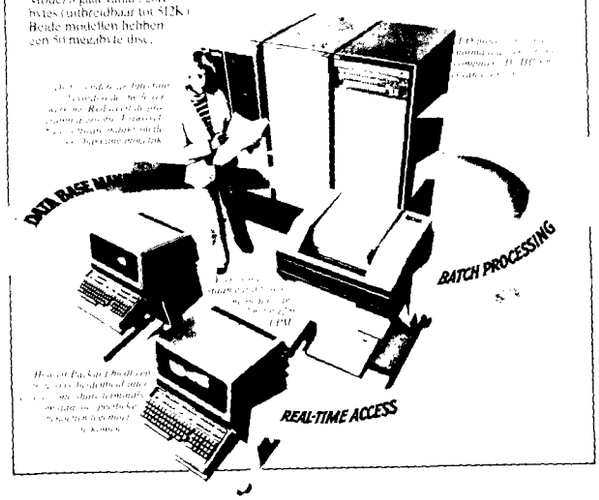
HEWLETT hp PACKARD

Bedrijfsproblemen van formaat ondergebracht in een mini-computer.

De HP-3000 serie is ontwikkeld om gelijktijdig batchwerkzaamheden en multi-terminal on-line werk te verrichten.

Het kleinere model 6 heeft 128K bytes geheugen (uitbreidbaar tot 256K bytes). Model 8 gaat vanaf 320K bytes (uitbreidbaar tot 512K). Beide modellen hebben een 50 megabyte disc, een 1600 bpi magneetband eenheid en een CRT scherm. Extra software vermogen: 8 bouwwaardige programmeertalen en een complete reeks data management faciliteiten.

Alle voor het systeem benodigde onderdelen worden door Hewlett-Packard geleverd. Elke gewenste aanpassing kan geschieden door toevoeging van regeldrukkers, kaartlezers, punches, terminals, disc's, tapes en meer geheugen.



HP GRENOBLE NEWS

Product News

Multidrop or Multipoint?

By: Peter Stuart/HPG

Within HP we now have two methods of simply connecting multiple terminals to an HP 1000 System.

The first, which we have been calling "Multidrop", is based on the Grenoble "Serial Link" and uses a protocol based on the HP-IB. This "Multidrop" supports both the 3070A and 3070B.

"Multipoint" is the second method now introduced. Similar to the industry standard Bisynchronous protocol, "Multipoint" supports 2645 and 2648 terminals. In both cases, the method of connection provides a convenient low-cost way of linking terminals to the system. Multidrop and Multipoint both provide significant savings to customers in cabling costs, use of I/O slots and more efficient use of central processor time.

What then are the differences?

To answer this question we need to separate the physical (hardware) characteristics from the "metaphysical" (software) characteristics.

Physically, the Grenoble "Serial Link" consists of a shielded two-wire (twisted-pair) cable. Terminals and the computer are connected onto it via passive (no electronics) junction boxes.

The Multipoint system consists of an 8-wire shielded cable and requires the signals to be amplified by each terminal before transmission to the next. The following table summarizes the physical differences.

Multidrop	Multipoint
Two-wire	Eight-wire
6000 ft. total length	16,000 ft. total length
Can have terminals located anywhere	Maximum distance between terminals: 2000 ft.
Up to 56 terminals	Up to 32 terminals
May not be used with modems	May be used with modems
Up to 25,000 bits/sec	Up to 9600 bits/sec

Comparing the protocols of Multidrop on the 3070A/B and the 2645 multipoint is much more difficult since they are each optimized for different tasks.

The Grenoble Multidrop protocol is based on a serialized version of the HP-IB. Each character is "handshaken" before the next is transmitted. The protocol provides a fixed and known data communications overhead to all terminals regardless of the amount of data being transmitted to or from any one terminal. Using the now well-known formula of

$$\left(\frac{25000}{61 + N \times 28}\right) = \text{Data rate at each terminal}$$

where N = number of terminals installed, we can calculate that for 56 terminals installed, the transfer rate at each terminal is fixed at 15 HP-IB characters/sec, with a maximum delay of about 100 mS between "being available" to "start of transmission". This would be true even if only one terminal actually had data to transmit or receive. (Note: if all terminals were active, the throughput would be 56 × 15 = 840 ch/sec.)

The 2645 Multipoint protocol is optimized for transmission of message blocks. The data communications line is dedicated to a specific active terminal for up to one second at a time. This could of course mean that if 30 terminals were active in a worst-case situation, data from the thirtieth terminal might wait 30 seconds before being transmitted to the system.

(Note: at 9600 baud, the throughput is about 900 ch/sec, similar to the Grenoble Multidrop protocol.) Note that this is the worst case and tests show that in typical applications delays of only one or two seconds are encountered.

The table below summarizes these protocol-based differences:

Multidrop	Multipoint
Known throughput/Response at each terminal.	Depends upon total traffic from all terminals
Efficient for large number of active terminals with short data blocks.	Most efficient for terminals with long data blocks.
No provision for Group polling.	Priority line permits groups of terminals to be polled together and reply one after the other.
Not an industry standard—Very specialized interface required.	Similar to industry standards.
Polling terminals which are not active causes no interrupts.	Polling terminals which are not active uses up to 10% of CPU time.
Processing data from an active terminal involves at least one interrupt per character.	One interrupt to CPU per message block.

As can be seen, each type of connection and protocol has its own advantages and disadvantages.

Clearly today the choice of connection method and protocol is dictated by your customer's choice of terminals. However, you may be sure that we at Grenoble are actively working to provide you with a choice so that within the next year you will be able to have the best of both worlds.

How Do I Punch A Badge?

By: Peter Stuart/HPG

The photo above shows *Catherine Clay*, our group's Secretary before she started to punch 100 badges for the NPT Tour! The hat is our rare and famous "Taste success with PL 69" trophy awarded to all salesmen who sell more than 1 million terminals.

During the recent NPT Tour, a lot of you asked how to punch badges. (We know at least one sales office which now faces a large repair bill after trying to pass our sample badges through an IBM 029 card punch.)

The photo illustrates a simple hand-operated plastic badge punch which both Boise and Grenoble now possess. Each time we receive an order for the 40200 Opt. G89 (the demo carrying case—see May 1st issue of the *CS Newsletter*), we will supply you with about 10 badges punched with "HP 3070B". Since it is hand-operated and our fingers are already starting to fray at the ends, please do not ask for punched badges for everyone in your sales office. Instead you could consider buying yourselves a model 2620 Hand Punch from Wright Line, Worcester, Massachussetts. The price is about $600.

Contact *Alic* in Boise or myself in Grenoble if you are considering this. If the demand is big enough, we will try to fix up a special discount.

The 40205A Does Not Exist!

By: Peter Stuart/HPG

Unfortunately when preparing the Data Sheet and Field Sales Training Manual for the 3070B, we gave a product reference number to the pack of 10 keyboard definition labels. However, to make them easier to order as a consumable item, we decided after we had gone to print that the pack of 10 labels should have a 10-digit part number and be orderable from CSD. Please note therefore that the 40205A *does not exist and instead you should order a* 03070-60011 (Price $2). The user manual will refer to the correct number.

If anyone needs spare labels quickly for demonstration purposes, send a telex to Grenoble and we will mail you a handful.

Another Video Monitor for the 264X's (At A Price Your Customer Can Afford!)

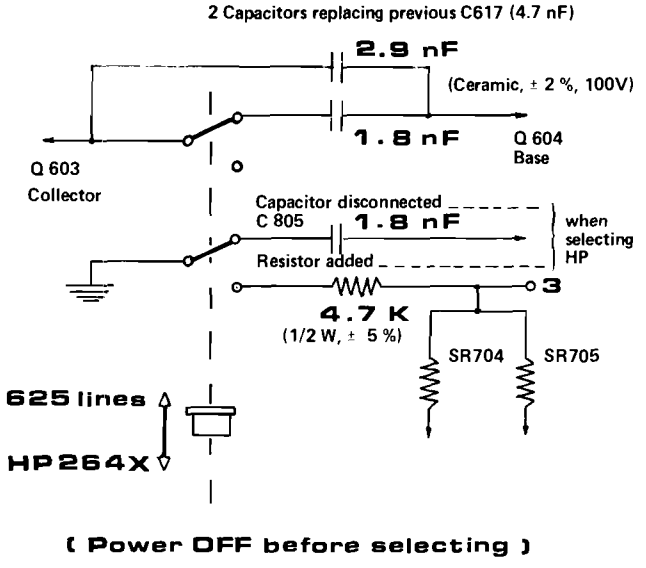
By: Francis Marc/HPG

Many thanks to *Claude Rocourt* and *Xavier Durand* from HP Orsay for the good job done finding and promoting this solution: Europe can buy a SONY PVM 200 CE with a special HP 264X-compatible option for about $700 from a French supplier, the Video Department of TITANIA (address 24, Rue de Chateaudun—75009 PARIS—phone: (01) 878-58-51).

That particular 51 cm monitor has two switch-selectable standards (625 and 750 lines). You can also use it with a magnetoscope.

The obtained display is neat (resolution, contrast, stability, etc. . .) and the modification should not affect the reliability.

Now, if your customer is a handy man, we hereby give you the trick to modify a standard SONY PVM 200 locally and have a nice video monitor for $500-600. You just need one resistor, two capacitors and a double-pole double-throw switch.



Don't forget to order also the 13254A (video output interface, $150) and the 13232L (video cable, 25 ft, $75), or have the customer make the cable himself to the needed length.

What about getting one for your office to improve your demos, shows, open houses and courses?

Sales Aids

Can I Sell 3070B's Without Datacap?

By: Peter Stuart/HPG

The answer is of course, "yes". Furthermore, the 3070B driver DVA 47 is compatible with RTE-M/RTE III as well as RTE IV.

While Datacap can certainly make your customers' life much easier, there is no reason to prevent you selling 3070B's without Datacap. Indeed for some applications, particularly those using HP-IB devices, Datacap is not the best solution for the customer. DSD's Applications Group can advise you on the suitability of Datacap for your applications, but in the meantime sell those terminals.

Purchase Agreements and the 3070B

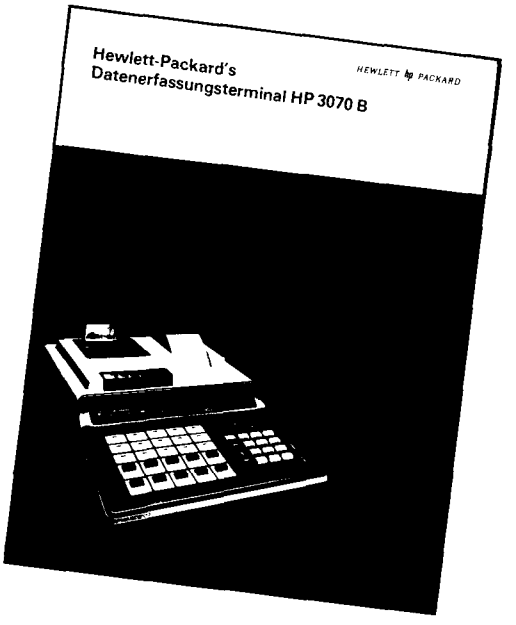
By: Peter Stuart/HPG

When you start to discuss that volume sale of 3070B's with your customer and turn to your new CSG Purchase Agreement to find out what discounts apply, do not be too dismayed to find that the 3070B does not appear on the R4-78 edition. Simply apply the same rules as for the 3070A, which is shown and you will have no problems. The 3070X (for both versions) will appear on the R7-78 edition in the U.S. and shortly thereafter in Europe.

The 3070 is listed with an asterisk, since we feel OEM's should be encouraged to develop applications based on the HP 1000 and multiple 3070 terminals. Note that the asterisk also indicates that no installation is included and the warranty is 30 days return to HP.

A First For Grenoble

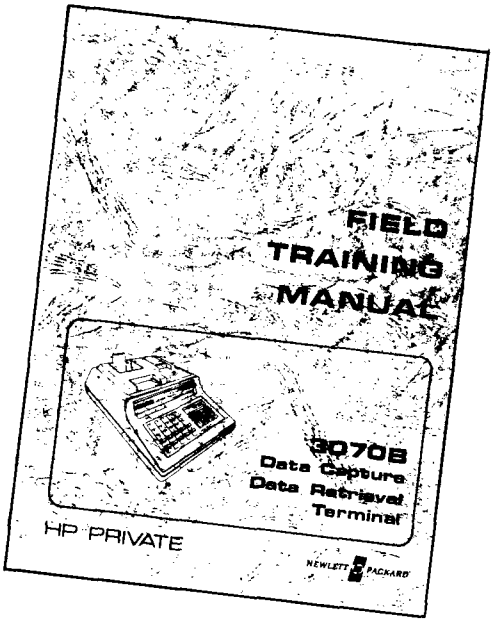
By: John Willett/HPG



Here in Grenoble, we are modestly claiming a first in CSG. At the introduction of our new 3070B Data Capture/Data Retrieval Terminal, we already had a German version of the brochure available. You can obtain copies of this brochure (order No. 5953-0119 German) from Amstelveen. We hope to have a French version available soon. If you have any PL 69 literature problems, we are here to help you.

3070B Field Training Manual

By: John Willett/HPG



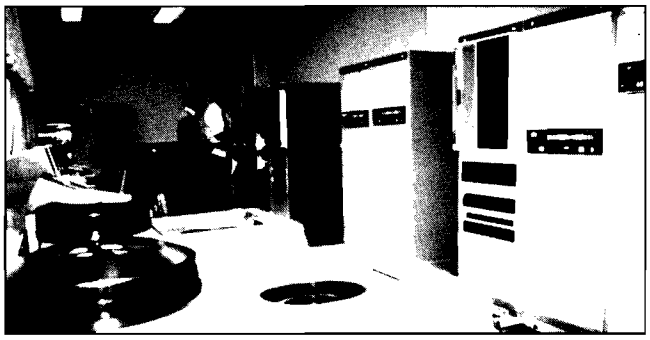
Did you get your own copy of the Field Training Manual for the 3070B Data Capture/Data Retrieval Terminal during our recent NPT Tour? If not, then please contact me at Grenoble and I shall be pleased to send you a copy. The 3070B data sheet and brochure are available from your office.

CS GROUP NEWS

CSG News

Factory Visit to Taipei Telephone

By: Bon Chan/HPT



March 1978 was an exciting month for *Bob Chipman* of DSD. The picture shows *Bob's* visit to the Taipei Telephone Directory Assistance System of the Taiwan Telecommunications and Telephone Administration. (The system services more than two million telephone subscribers in Taipei City.)

The purpose of his visit was to install the special communications driver for the customer's dedicated distributed network and the microcoded subroutine for the symbolic character display.

Bob had never been in this part of the world before. Besides adjusting himself to this new environment, he was very enthusiastic and helpful to the customer. He surely achieved the objective — "customer satisfaction."

COMPUTER SYSTEMS NEWSLETTER

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