

Computer Advances

May/June 1985

The HP Portable: Chevron Corp.'s
"Think Again" choice

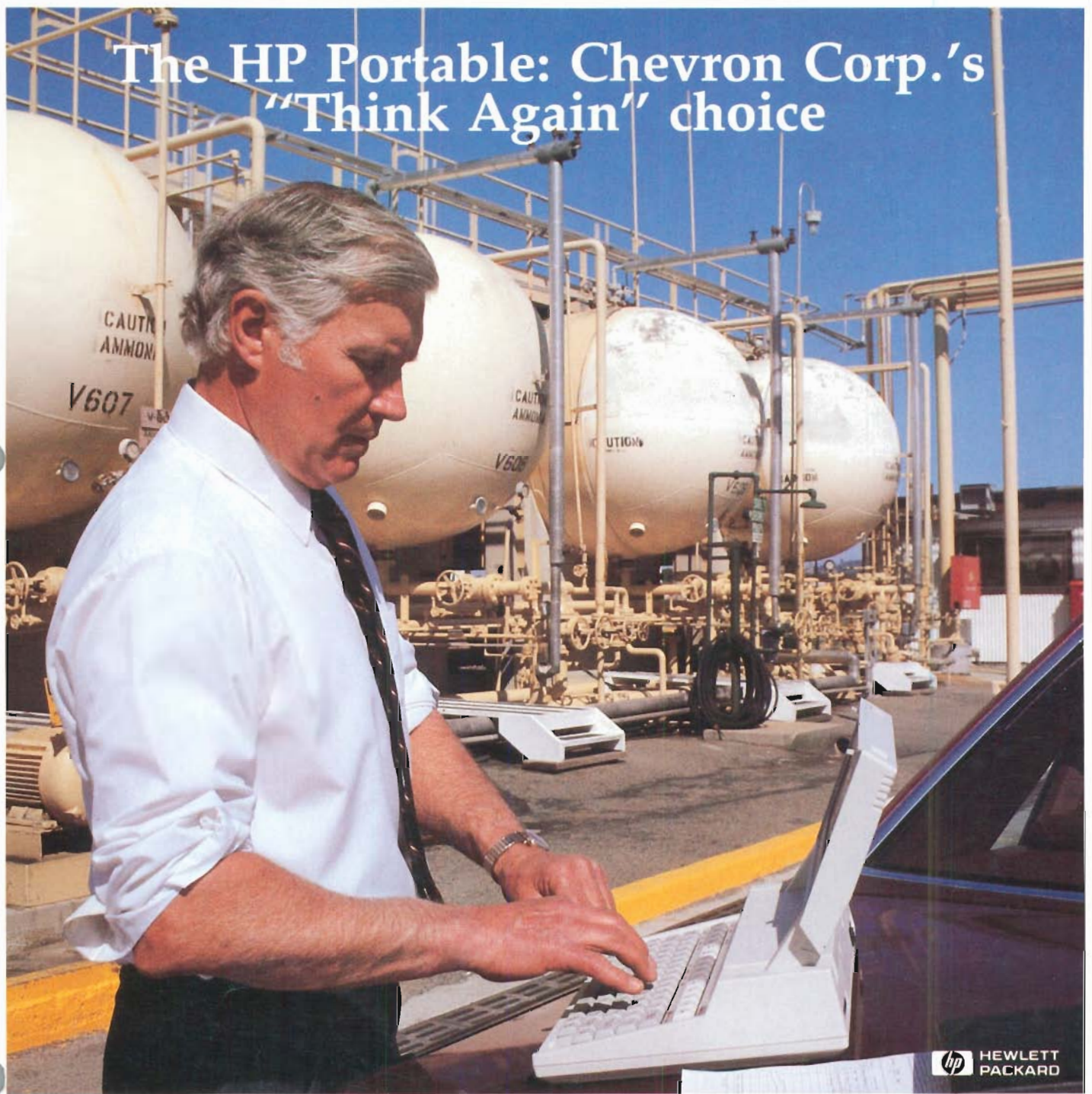



Photo: Neil; Model: Gordon Brown, freelance writer.

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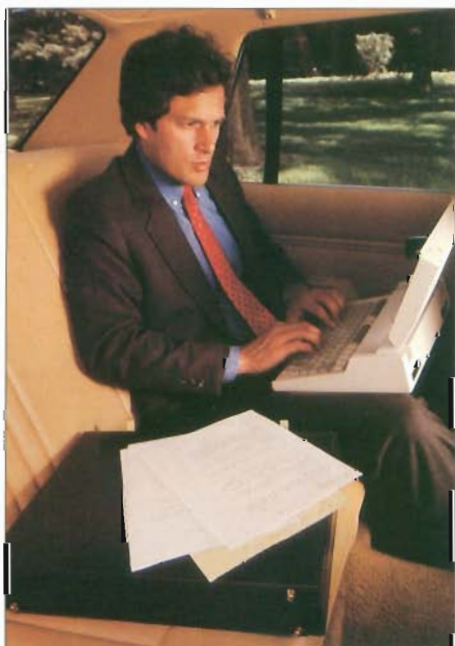
HP's take-it-anywhere personal computer helps Chevron people do real-time business around the world.

(continued on page 2)

Several years ago, Chevron Corp. began an innovative problem-solving program called "Think Again." The goal has been to encourage Chevron people to question set ways of doing things. Among the things this search for excellence has led to is a large and growing use of The Portable, HP's highly compact but full-fledged personal computer. The corporation's Chevron Chemical subsidiary, in particular, has become a real champion of The Portable as well as other HP personal-computer products.

"What distinguishes The Portable in my view," says Don Matto, Chevron Chemical's MIS manager, "is the combination of real portability and high performance. You can see many of our people taking them out of the building — bringing them home or on trips. As they gain experience — and we help them do so in a variety of ways — they become enthusiasts. The Portable allows people to do more work and with higher quality."

One constant user is Steve Quan, who has responsibility for analyzing the markets for oil and gasoline additives in the Oronite division's marketing department. "The nature of my job — often on the move — is that I want



While it's still "hot" sales-call information is quickly recorded on The Portable.



Minutes of the meeting or on-the-spot spreadsheet analysis are applications attracting many business people to the HP Portable.

access to computing power wherever I go. And I want it with spreadsheet (1-2-3™ from Lotus™), word processing (MemoMaker) and communications capabilities built in, ready to go any time any place." One key application for Steve has been a monthly re-evaluation of market forecasts involving more than a hundred customer accounts: "The Lotus program is very good at this, and I can quickly upload it to our IBM® system. While The Portable can't do everything, such as breaking down the forecast by individual accounts, it can do significant pieces of the job."

Another useful application, according to Steve, has been organizing market data for yearly strategy meetings, and recording action items. "For these and other meetings on the road, I can use The Portable in a terminal mode to communicate anywhere in Oronite via our internal electronic-mail system."

Under development by the chemicals company is a system or systems that will equip technical salespeople

around the world to develop on-the-spot analyses of client needs. On a call to a major farm customer, for example, an Ortho Division fertilizer specialist will be able to enter the client data on The Portable and obtain any additional information needed by hooking up with the Ortho data base in San Ramon, California.

Formerly with Chevron's research organization in Richmond, California, Don Matto says such capabilities have already benefitted product development activities. "The old way of getting product performance information into the hands of the Chevron researchers could take up to a year," Don remembers. Now, using a data base system on the HP 150 Touchscreen Personal Computer in the home office and The Portable in the field, "Our agricultural and chemical scientists get much more current information, and can make timely decisions that benefit us in the marketplace."

Under Chevron's "Think Again" approach, each and every personal



computer requisition is justified by analysis up front — and backed up by user analysis later. Cliff Hodges, supervisor of the corporation's personal computer services center in San Ramon, says that approximately 140 HP portables are in active service now, along with HP ThinkJet printers and other peripherals.

With the chemical company serving as point and champion for The Portable, Don Matto has emphasized lots of hands-on training, loaning and support over the past year. Lisa Francone, who has day-to-day responsibility for all PC activities, reports a high level of acceptance for The HP Portable, even from the many computer novices. Lisa's "loaners" are in continuing demand, particularly for weekend use. "It's ok if they use them for some personal work," says Lisa, "That's the best kind of learning."

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The HP Portable In View

The Portable is a high-power personal computer in a truly portable package. It weighs less than nine pounds, is about the size of a three-ring notebook, and fits into a standard briefcase. As simple to use as it is to carry around, The Portable is a powerful tool for professionals on the move.

Built-in computing power

The Portable features built-in business software such as 1-2-3™ from Lotus™ for spreadsheet analysis, information management, and graphics; MemoMaker for word processing; communication software (for use with the built-in modem) for data exchange with other computers and information services; the industry-standard MS™-DOS; and Personal Applications Manager (P.A.M.), which makes computer operation as simple as selecting commands from a menu. Also built into The Portable is 272K bytes of random-access memory.

Take it with you

For the travelling computer user, The Portable provides the amenities of the personal computer at home. The modem allows data communication with other computers via the phone lines. A liquid-crystal-display (LCD)

screen shows 16 lines of 80-column text or data. An internal electronic disc that acts like a floppy-disc drive provides portable information storage. The Portable will run up to 16 hours on rechargeable batteries, and it plugs into an AC outlet.

For additional storage and the ability to print out information while on the road, two battery-operated peripherals are available: the HP 9114A floppy-disc driver and the HP ThinkJet printer.

Compatible with most personal computers

The Portable can share data or peripherals with the HP Touchscreen Personal Computer, the IBM PC, or IBM-compatible personal computers. And The Portable can run a large variety of the most popular professional software applications.

1-2-3™ and Lotus™ are U.S. trademarks of Lotus Development Corporation.



HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

HP computers help RCA expand satellite system with no increase in staff

RCA American Communications, Inc. (RCA Americom), the nation's largest domestic provider of satellite communications, can control an eight-satellite communications system with the same high reliability, instant response time, and the same lean staff that formerly handled a three-satellite system. Critical to this success is a highly flexible distributed system of HP 1000 computers.

The success of any satellite operation requires prompt, accurate and reliable ground controls. "To maintain the correct orbit within a narrow imaginary 'box' in space, we must be able to determine the satellite's position accurately and send commands to reposition it periodically," explained Jack Lewin, manager of mission operations/space systems at RCA Americom.

Continuous watch over various electronic devices on board the satellite also must be maintained. "For example," Lewin explained, "we often need to know the temperature of a particular location on the satellite." To accomplish this, RCA Americom requires real-time computing capabilities to monitor each of the satellites 24 hours a day, all year round.

When RCA Americom expanded its three-satellite system to an eight-satellite system in 1979, the company installed an upgraded application package on HP 1000 computers. The system consists of three HP 1000 E-Series computers at each site — a data/telemetry computer, a control/ranging computer which acts as a station controller for all other computers, and a display drive computer that drives the CRTs, printers and plotters.



Lower costs makes satellite operation more competitive

"The Hewlett-Packard computers have allowed us to maintain cost-effective control," said Lewin. "By keeping expenses down, we've been able to charge more competitive rates to our customers and thereby be more viable in the marketplace.

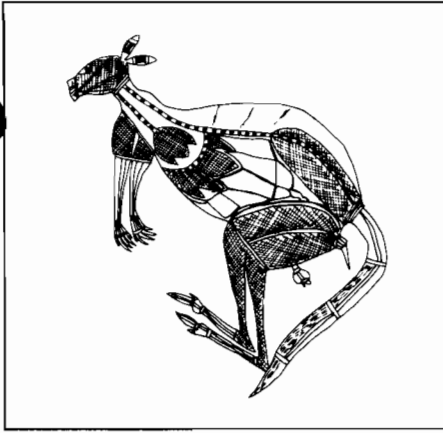
"In our activities time is of the essence. We've relied on the support of HP's sales personnel for quick turnaround and delivery of hardware. This effort has aided our ability to maintain schedules, and I'm personally appreciative of this," said Lewin.

Lean staff monitors satellites around the clock

Covering normal shifts and all holidays, a team of five operational controllers works around the clock at each site. "We are able to do this in part because of the framework and capabilities of our HP 1000 computer systems and the HP Distributed System (DS/1000) network," said Lewin. "Our software applications package does much of the work by pre-processing large amounts of information from a large number of satellites. Thus, our controllers are monitoring by exception.

"Otherwise, system operations would be inefficient and costly. We have been able to grow from a three-satellite system to an eight-satellite system without a reduction in system reliability and utilizing the same experienced core team as before," said Lewin.

Top to bottom: artist's rendition of Satcom II-R satellite in orbit; HP computers in the Tracking, Telemetry and Command Center at RCA's Vernon Valley Earth Station; launch of RCA's Satcom II-R spacecraft, September 1983 — approximately five days following a launch, RCA Americom assumes control of the satellite.



AUSTRALIAN AREA NEWS



Presenting the Australian-made HP 92205 Acoustic Coupler

The telephone is your link to a world of computer stored information. However, your computer or HP controller are not compatible with a telephone without a suitable adaptor and that is the function of HP 92205 Acoustic Coupler.

The HP 92205 Acoustic Coupler with the intelligent HP-IL microprocessor is approved by most telephone authorities worldwide. The modern crystal-controlled circuit design and mechanical flexibility ranks it among the most adaptable acoustic couplers available today.

The HP-IL features provide improved functionality and dependable performance while simplifying the

physical interface to the wide range of HP-IL products now available. The inbuilt rechargeable NICAD batteries give true portability, allowing operation anywhere for periods of up to seven hours between recharges.

The dependable performance, versatile functionality and error detection of the HP 92205 Acoustic Coupler will add more value and portability to any product using the Hewlett-Packard Interface Loop, such as the HP 41 family of Programmable Calculators, the HP 71 and HP 75 families of handheld Computers, and the HP Portable Personal Computer.

Come and see HP at these trade shows

Automach '85 Melbourne	July 3-5
PC '85 Melbourne	July 17-20
AIEE '85 Melbourne	July 29-August 3
Ausgraph Brisbane	August 12-16
Comtec Adelaide	August 19-21
ACS Pan Pacific Melbourne	September 10-12
IREECON Melbourne	September 30- October 4
PACEX Sydney	November 5-7

Further details on our participation in these trade shows can be obtained from your local HP office.

The Portable – Confidence in the battery power

The Portable, the nine-pound personal computer from Hewlett-Packard, is powered by three, permanently mounted "D" cell lead acid batteries. These batteries are considered "dry cells" for all safety purposes and are treated just like alkaline cells for transportation, so there is no need to worry about carrying them in a car or on a plane. Lead acid cells are able to maintain their capacity over a very long service life and charging cycles do not affect their performance. So users can leave the batteries plugged in all the time or deep cycle them without concern. Extensive effort has been taken with The Portable to translate these engineering benefits into tangible owner benefits. Two independent

monitoring systems keep constant tabs on the battery cells. Having two separate systems ensures that battery damage and/or data loss are virtually impossible.

The first monitoring system is a "fuel gauge" algorithm that keeps users aware of the percentage of battery life remaining whenever the Personal Applications Manager main menu is displayed. This algorithm measures the time the system is being used versus the time the recharger is plugged in.

The other monitoring system actually measures the voltage in the battery cells. This safeguard will display a "low battery" warning when the voltage in the cells drops below 5.8

volts, or 20% of battery life remaining. If the voltage drops to 5.6 volts, about 5% of battery life, The Portable will automatically enter the sleep state. Electronic disc contents are protected for one week to one month after the system is automatically shut down.

The two systems can always be synchronized by fully recharging the system (12 hours if the system is not in use). So every once in a while, leave the system recharging overnight.

The important thing to remember, however, is that there are always two systems constantly monitoring the batteries that will never allow the batteries to be drained to a point where data might be lost.

Bureau Service for Engineers

One of the first Hewlett-Packard top-of-the-range drafting plotters installed in Australia, is now operational at CEANET's computer bureau in Melbourne.

The Queens Road office is the first in CEANET's Australia-wide network to install the new HP 7586B plotters, and therefore bring HP's advanced technology within the reach of all structural and civil engineering companies.

Mr Tony Darby, CEANET's Assistant Manager, said there were numerous reasons for choosing Hewlett-Packard equipment over six other makes they looked at.

"As well as plotting from A4 to A0 sizes, the HP 7586B takes either pre-cut or continuous roll media and has automatic roll to roll feed,"

Mr Darby said.

"This is important when plots over 120 centimetres in length are produced, or whenever long axis plotting is required.

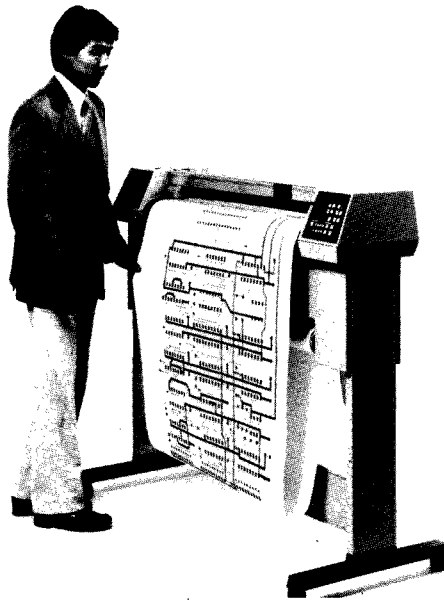
"The bureau service not only covers use of the HP plotter, but provides a complete computer-aided design and drafting service embracing hardware, software, qualified personnel and communications networking.

"A key factor in the justification of companies using a bureau is the rising costs and rapid obsolescence of sophisticated software packages. As software becomes more and more specialised, especially technical software, it becomes increasingly expensive and difficult to acquire.

"By using CEANET's bureau, new and otherwise costly software is both available and affordable, and avoids the large capital outlay and running costs involved in purchasing high quality equipment.

"Our customers pay only for the time spent on our various types of equipment, and this includes our plotter. So even companies with their own in-house computers and software are using our services to plot their final output. The information can be transferred over a Telecom line, or using magnetic tape."

The HP 7586B has a very high addressable resolution of 0.025 mm (0.000984 in.) and a finer



The HP 7586B E-size, roll-feed plotter with PC plot.

mechanical resolution of 0.003 mm (0.00012 in.) makes pen movements even more precise.

One of the features of the HP plotter is the self-capping carousel, which keeps the ink fresh and moist. Each carousel holds eight pens, and a variety of pen widths and colours can be mixed on one carousel.

Other features include its mobility and robustness, and the provision of an "eavesdropping" mode. This mode allows a terminal to use the same communication line as the plotter, which can result in a considerable saving.

Since December when the plotter was installed, CEANET has been averaging 30 plots a day, which can be increased to the desired maximum of 100 per day.

"Some of our recent work includes the Commonwealth Bicentennial upgrading of the Princes Highway near Traralgon for the Scott and Furphy Consulting Group, redesign of the South Gippsland Highway plus seven bridges near Kooweerup for Hardcastle and Richards Pty Ltd, and modifications to the Broken Hill airfield for Airport Planning Pty Ltd.

"A majority of our clients still perform a certain amount of hand drafting, and have commented that our HP plotter produces drawings that match those done by hand.

HP's HI-TECH DONATION WILL "SELL" MELBOURNE

As part of the 150th Celebrations for Victoria Hewlett-Packard Australia has donated a "Touchscreen" Personal Computer and a "ThinkJet" portable printer (total value \$10,000) to the Melbourne Tourism Authority.

The ease-of-use advantages of both the computer and printer will enable the M.T.A. to have full use of the computer's resources on location . . . whether this be in the middle of the bustling Melbourne City Square or in the heart of the Pioneer Settlement in Swan Hill.



Sue Calwell, Executive Director of the Melbourne Tourism Authority, with Bruce Marsh, HP's Southern Area General Manager, test just how easy it is to operate the Touchscreen computer whilst on location in the Melbourne City Square.

"Of course the big advantage here is, the HP plotter can do them in a fraction of the time, and changes can be made much more easily.

"The acceptance of CAD by the engineering profession has been a gradual process, but since plotters were first introduced in the 1960s, they have developed into remarkable pieces of high technology equipment, and the industry now accepts them as an integral part of their business," said Mr Darby.

HP NEWSMAKERS

Mr Geoff Stewart has been appointed marketing communications manager for Hewlett-Packard Australia. He has been with the company for six years and was previously responsible for the third party program.

Prior to joining Hewlett-Packard, Geoff was Principal of Infrasystems, one of HP's OEMs. He also spent four years as a management consultant.

Geoff, his wife Lucille, and their three young children, spend a lot of time at Blairgowrie where Geoff sails a Mirror dinghy.

In 1972, Geoff's love of the sea took him to England and a Drascombe long boat (a 22 ft sailing dinghy). In this he crossed the English channel, navigated the canals of France and sailed around the Mediterranean coast. Setting out from the Canary Islands, it was a 59-day voyage across the Atlantic to the West Indies using "Columbus style navigation with a plastic sextant, no clock and no radio." "I wrote poetry, played the bagpipes, and lived off a staple diet of rolled oats," he recalls.

Geoff graduated from Melbourne University with a Commerce degree, and currently is studying for his MBA.

Geoff is a Fellow of the Institute of Directors, Member of the Australian Computer Society, Associate of the Australian Institute of Management, Associate of the Institute of Arbitrators, and a Member of the Association of Systems Management.



Geoff Stewart
Marketing Communications Manager

The purpose of this survey is to discover how you use Computer Advances and what information in it is most important to you. We would like to make this publication most responsive to your interests, so please help by answering the eight questions below.

Mark your responses on this reply card and drop it in the mail today. Postage will be paid by HP.

Thank you.

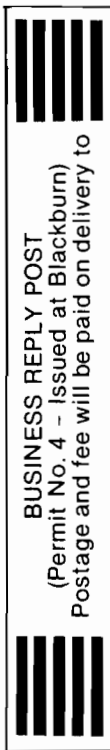
Gwen Welsh

Australian Area News Editor

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 - All
 - Area news
 - Half
 - Skim
 - 1 or 2 articles
2. Please rate *Computer Advances* as a source of timely HP product information.
 - Excellent
 - Good
 - Fair
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 - Excellent
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4. Please rate the value of local news.
 - Excellent
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5. Please estimate how many other people read your copy of *Computer Advances*.
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 - 1 or 2
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6. Have you ever called an HP Sales Office because of something you read in *Computer Advances*?
 - Yes
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 - Technical specs
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9. What information in *Computer Advances* is most valuable to you?
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New HP Touchscreen II Personal Computer boosts office productivity

HP continues to expand its line of easy-to-use office productivity solutions with a new HP 150 Touchscreen II personal office workstation and software that integrates personal computing, business graphics, word processing, and communications.

The new Touchscreen II Personal Computer provides effective solutions for the executive, manager, professional, secretary, or clerk. You can choose from more than 600 software packages, including key HP applications that help professionals analyze data in a spreadsheet, display it in a chart or graph, and move the exhibit to a report — all without using complicated commands or re-typing information. The report can be easily edited using powerful word processing packages such as HP Word or WordStar® before sending it out.

The new 12-inch full-size screen provides sharp clear text and graphics. Special features let you command your Touchscreen PC with a single keystroke or by just touching the screen. For special applications, you now can use an HP Mouse or graphics tablet.

Productivity through Office Teamwork

Since sharing information and communicating is often crucial to productivity in many offices, the Touchscreen II is designed to make office teamwork a simple matter. It is completely compatible with all HP 150 Touchscreen software, accessories, and peripherals. In addition, it can easily share information with IBM® personal computers either through direct connections or through a local area network linking all your (US ASCII) personal computers.

If you need information from your company's larger system for electronic mail, data-base information or for more powerful applications, the Touchscreen II can link to a variety of larger systems — including computers from Hewlett-Packard, Digital Equipment Corporation, or IBM. The Touchscreen II workstation is an integral part of a larger solution, the Personal Productivity Center. The easy-to-use Personal Productivity Center uses integrated software to give office workers the benefits of the friendly Touchscreen II and the flexibility and power of the HP 3000 departmental computer.

Economy Through Shared Resources

In addition to sharing information, you can share resources such as disc storage and printers. The Touchscreen MAX II features storage options in two sizes (10M byte or 20M byte) that can be used by a single user to store applications and information or shared with other users on a local area network. You can use the Touchscreen II on the network without purchasing a disc drive by sharing the disc storage of the Touchscreen MAX II network server. Printers also can be shared by several people either on a network or through a separate shared connection.

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High-powered HP 3000 data base management system replaces IMAGE/3000

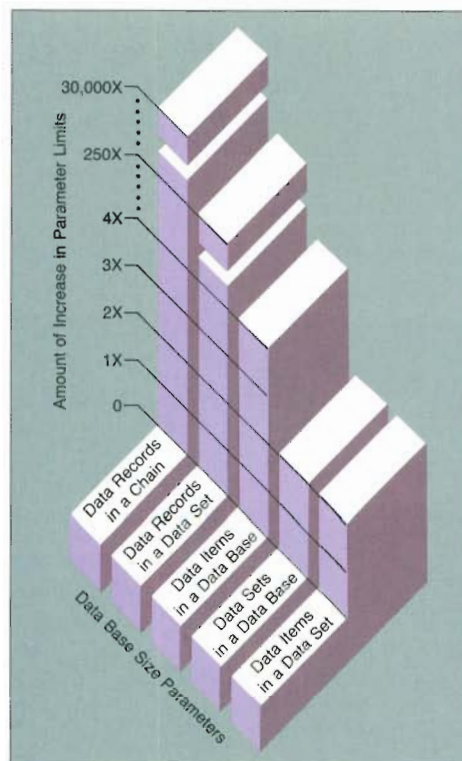
Designed to meet the needs of both large and fast-growing smaller businesses, HP's new TurboIMAGE/3000, a powerful new version of the existing HP IMAGE/3000, has *twice the storage capacity, three times the data recovery speed, and up to 30 percent increase in performance of the previous system.*

■ Doubled Storage Capacity

HP TurboIMAGE holds twice as much information as an HP IMAGE/3000 data base. The chart on this page shows the most significant data-base expansions available to HP 3000 users with TurboIMAGE.

■ Faster Recovery Method

HP TurboIMAGE includes a new, faster recovery method called roll-back recovery, in addition to the existing intrinsic level recovery and roll-forward recovery methods. *With the new method, a recovery process that used to take hours now can be reduced to minutes.* With as much as



Each of the parameters that define the maximum data base size has been increased by at least 100 percent in HP TurboIMAGE.

three times the data recovery speed, data-base users will be back in business right away, ensuring maximum processing time.

- **30% Increase in Performance**
Applications running on TurboIMAGE will perform up to 30 percent faster than they will on IMAGE/3000 — especially those applications that have many users reading from the same data base at the same time, such as part and order inquiry.

HP TurboIMAGE will be distributed to all current HP 3000 computer users free of charge, and all new HP 3000 computers will include the new product as part of the fundamental operating system. IMAGE/3000 application programs are 100 percent compatible with TurboIMAGE, so software code changes are unnecessary — all the benefits are immediately available while protecting your investment in hardware and software.

New high-performance communications products for the HP 3000

Three new communications products for the HP 3000 give you solid productivity gains through high-speed local area networking and build a complete foundation for multi-vendor communications.

- **HP LAN/3000 Link** gives you high-performance HP 3000 connectivity to an industry-standard local area network (LAN). Up to 100 HP 3000s can communicate over a single LAN. Because each system needs only one LAN/3000 Link, rather than several network links, LAN/3000 gives you the connectivity you need at lower cost.

HP's LAN can move information among connected computers at a line speed of 10 million bits of information per second. In most cases, this means a *two-to-six-times im-*

provement in data-transmission speed as compared to previous point-to-point networks.

- **HP NS/3000** enables users to distribute applications among dozens of HP 3000s on the LAN. Interactive users, as well as application programs, can directly access information, peripherals and programs on any system in the network. In addition, NS/3000's use of a standard network architecture assures forward compatibility and longevity for the network. And any existing DS/3000 application can run on NS/3000 without any changes.
- **HP SNA Interactive Mainframe Facility** adds to existing HP capabilities for connecting HP 3000s to IBM mainframe computers using IBM's Systems Network Architecture

(SNA). HP also offers products that connect HP 3000s to IBM PCs, mini-computers from Digital Equipment Corporation, and products from Wang Laboratories.



Now HP ties test and measurement to personal computer productivity

HP's new personal-computer-based test and measurement system expands the versatility of PCs as workstations for technical professionals. This modular system called PC Instruments forms a unique combination of hardware and software that enables the technical professional to monitor and control up to eight different test instruments simultaneously from the screen of an HP 150 Touchscreen Personal Computer, or an IBM PC, PC/XT, or PC/AT.

The PC Instruments system is ideal for a range of applications including temperature measurement, process monitoring, electronic component evaluation, prototype testing, incoming inspection, biological research, analytical chemistry, environmental testing, and process monitoring and control.

New, powerful software gives you a faster time to solution

PC Instruments System Software makes it easy to use the system in both a manual and a programmed mode. In the system's manual mode, the software generates a "soft front panel" on the computer's screen that simulates the control panel of conventional instruments. This graphics in-

terface allows you to operate the PC instruments through the HP Touchscreen, a mouse for the IBM PC, or the keyboard cursor controls. In the system's programmed mode, you can create your own applications programs for automating instruments. High level "Plain English" commands make it easy to program without referring to a program guide.

Linkage to third-party software

PC Instruments System software includes utilities which connects several useful programs, such as 1-2-3™ by Lotus™, VisiCalc®, Picture Perfect™, and WordStar®. These utilities give you easy access to such time-saving features as graphics, data bases, spreadsheets, and word processing to help you work more efficiently — all at one conveniently integrated workstation.

Lotus™ and 1-2-3™ are U.S. trademarks of Lotus Development Corp.

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WordStar® is a U.S. trademark of MicroPro International Corporation.



PC Instruments System Software converts a computer screen to a "soft front panel" that duplicates the front panel of a conventional instrument. To operate an instrument, you merely touch the screen.

In Brief

- HP will grant to selected US universities at least \$50 million worth of advanced engineering workstations and computer software for the development and application of artificial-intelligence (AI) technology. The first recipient under the new grants program is the Massachusetts Institute of Technology, with 9 to 11 more schools to be added during 1985. In announcing the major grants program, HP vice president Joel Birnbaum pointed out that the computer power needed to advance the AI field is too expensive for most universities to afford. "We hope these grants will lead to improved productivity for engineers and scientists, both in and outside of universities, and will lead to improved techniques for training future generations of engineers and scientists," Birnbaum said.

- HP recently awarded Harvard Medical School a five-year, \$5 million grant of cash and equipment to support a comprehensive plan, known as the New Pathway Program, that will restructure general medical education at the Cambridge, Massachusetts, school. Derek C. Bok, president of Harvard University, said in his most recent annual report that the New Pathway program "may well turn out to be Harvard's most impressive innovation of the 1980s. Not only will it seek to alter what students learn, it plans sweeping innovations in the methods by which they are taught." HP computers are being used to improve the teaching of medicine; to assist in developing skills in problem solving and clinical decision making; and to record, store, and retrieve medical information.

HP personal computer talks to blind workers

A new group of users has been introduced to Hewlett-Packard through Maryland Computer Services' (MCS) Total Talk PC, a specially designed talking computer for people who are blind.

MCS, a leading manufacturer of computer aids for the visually impaired, took the already powerful HP 150 Touchscreen Personal Computer and added a speech synthesizer, firmware and specially designed software. The result is a computer that speaks any information appearing on the screen.

Using the reconfigured numeric keypad, the Total Talk PC user can review on-screen information a character, word, line or full screen at a time and control the pitch, volume and speed of the speech (from 45 to 720 wpm).



HP employee Kyle Parrish, programmer for financial systems in the Intercontinental Regional Support Group, listens to his electronic mail on a Total Talk PC. The new system "has opened up a lot of doors for me," said Parrish. "I can now, for example, access full screen applications, such as HP Slate/3000 word processing—this was impossible before."

According to Deane Blatzie, MCS president, HP equipment was chosen as the basis for the Total Talk PC because HP's "consistent high-quality performance and standard features make it the best in the PC field."

MCS expects the new talking computer to further increase the employment opportunities for blind and visually impaired people. Earlier models, also based on HP hardware, are currently being used by a wide variety of blind professionals, including stock brokers, lawyers, college professors and rehabilitation counselors.

For more information about Total Talk PC and other enabling MCS products, contact the corporate office at 2010 Rock Spring Road, Forest Hill, MD 21050, 301-879-3366.

All prices quoted herein are \$US list and are subject to change without notice.

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