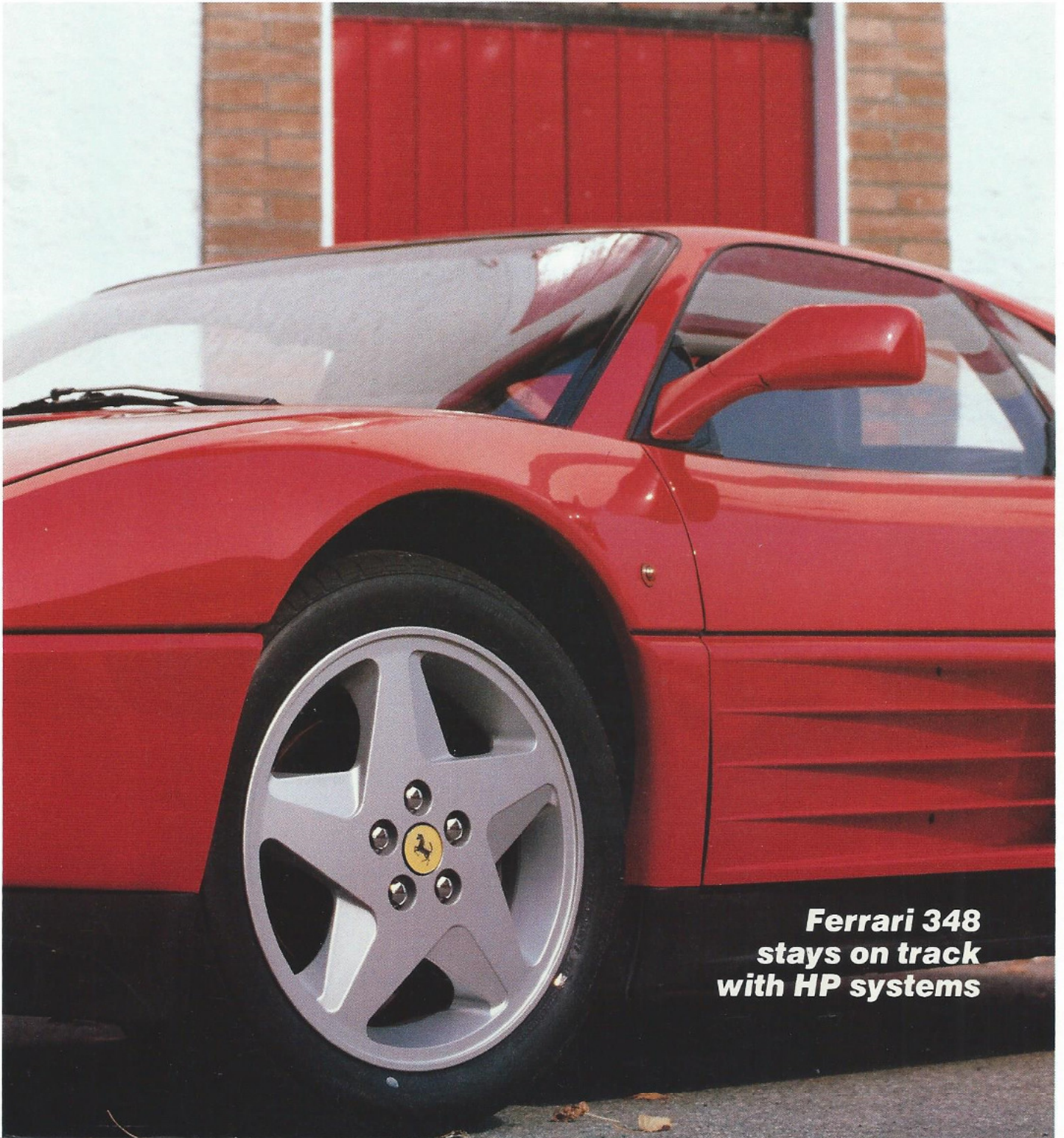




HEWLETT  
PACKARD

# Computer Advances

Spring 1990



**Ferrari 348  
stays on track  
with HP systems**

# HP prepares for Europe's dynamic Unified Market of 1992

by Franco Mariotti

**F**ive years ago, Jacques Delors, President of the European Commission, launched the idea of achieving a unified European market of 325 million people by the end of 1992.

Today, the European market is over half-way complete and HP is helping to build it by actively participating in Europe's transition. Our company has become a significant contributor to Europe's technology and, subsequently, to the development and growth of its economy.

**Strong European commitment.** HP believed in a unified Common Market in the 1950s, expanding its operations here in 1959 as part of its *commitment* to European growth and economic unification. At that time, Bill Hewlett *envisioned* and anticipated the need for a balanced presence that would include research and development, manufacturing, local procurement, sales, marketing, and support.

As a result, HP's roots in Europe run deep, both in people and resources. Our European work force numbers more than 20,000 employees at 13 manufacturing sites, R&D laboratories, and 140 sales and support offices in 20 European countries. About one-third of HP's worldwide business currently comes from European operations.



Franco Mariotti  
Senior Vice President and Chairman  
Hewlett-Packard Company, Europe

**Supporting a technological Europe.** HP actively supports many of Europe's basic and applied research initiatives. For example, HP participates in the European Strategic Program for Research in Information Technology, known as ESPRIT. Projects include architecture for computer integrated manufacturing (CIM), distributed systems, high-speed networks, and computer-aided design (CAD).

We cooperate in a consortium of European partners for Research in Advanced Communications in Europe (RACE) to build a European-wide common system of integrated broadband communications.

**Stimulating a competitive advantage.** Open standards are a top priority for future European competitiveness in the information technology market. After 1992, common industry standards will be just as important to Europe's success as establishing a common European monetary union.

With the evolution of open standards, businesses will be able to operate more successfully in a multivendor environment and gain greater benefits from their information technology investments.

Due to the wide diversity of standards and regulatory requirements

throughout Europe, our HP team in Europe has been successful in obtaining over 300 data com-

munication licenses and hundreds of product safety and electromagnetic compatibility certificates for products and systems.

In Europe especially, HP has been a strong contributor to the development of truly open international standards through participation in standards committees dealing with information technology, instruments, analytical, and medical products. HP has been a world leader in implementing X-Open specifications. Our European presence in the X-Open program is quite prominent.

We are also active within the European Computer Manufacturers Association (ECMA), and in many local associations in the various countries in order to harmonize one set of commonly accepted requirements and promote free and fair trade.

These are a few examples of how HP is acting behind the scenes to help ease the process of standardization. Europe's post-1992 market potential depends on these types of initiatives.

**Strategic issues.** The HP Executive Committee in Europe and functional teams in Europe have established task forces to define and develop key strategic issues that could significantly affect HP's business in the near future and in the post-1992 European marketing environment. These key issues include European R&D, open standards, local procurement, local content, labor trends, and international marketing.

Those of us living in Europe are experiencing this period of dynamic change that will impact the continent for years to come. The changes brought about by the globalization of the world's markets and completion of Europe's single market are leaving a profound impact on the business and industrial landscape here.

As new European market opportunities open—especially in Eastern Europe, which offers exciting new opportunities for business—and common terms and conditions are set across Europe, HP is ready to serve our customers' needs now and in the highly competitive environment predicted for post-1992 Europe.

# HP links 35 Warner Bros. offices in worldwide computer network

Millions saved in FAX, telex and telephone costs, transaction time cut 70%

**W**arner Bros., a subsidiary of Time Warner Inc., the world's largest media-entertainment firm and one of the biggest overseas motion picture distributors, is now linking its international distribution network using HP 3000 computers and HP DeskManager software in 35 offices.

One of the most successful American entertainment companies, Warner's 1989 multimillion dollar film releases include "Batman," "Lethal Weapon 2," and "National Lampoon's Christmas Vacation."

However, just two years ago, Warner Bros. International Theatrical Division was facing complex communications issues. "They increased exponentially as we grew," says Bill Cotter, Director of International Data Processing.

**Overseas communication problems.** "Our major goal was to increase our overseas transactions or bookings and place many more films into theaters around the world. Communications was often our first stumbling block," recalls Cotter.

"We experienced time delays when sending messages from one country to another. We didn't know if a telex or telefax arrived, and we didn't always have up-to-date sales and competitive information from the field."

That's when Cotter came to Hewlett-Packard Company for a demonstration of HP DeskManager, and also requested a FAX interface.

**'We tripled our business.'** "The turning point in initially selecting HP over five major competitors came in 1982 while evaluating a distribution system for Warner Bros.," says Cotter. "The HP hardware allowed us to triple our film booking business without increasing our staff."

HP DeskManager was first installed in November 1988 in Warner offices in Burbank and New York, followed by London, Munich, and Rome. Nine more cities were added last year—Vienna, Paris,



HP computers play a large role in the success of Warner Bros. international distribution business. A Warner's employee sends an HP DeskManager message through an HP 3000 computer system to sales representatives in 35 overseas offices.

Madrid, Oslo, Amsterdam, Brussels, Burbank, Tokyo, and Auckland.

**Worldwide computer network set up.** HP also helped Warner Bros. implement its own worldwide computer network using HP 3000 computers, HP DeskManager, and the X.25 protocol. Warner Bros. uses the system for electronic mail, to sell motion pictures, and handle all of its international business.

Recently, HP installed an HP 3000 Series 70 in Tokyo, and an HP MICRO/3000XE system in New Zealand. Twenty-two other HP 3000 systems are scheduled for worldwide installation in 1990.

The payback period for HP 3000 systems bought by Warner Bros. was 11 months, "an extremely acceptable time period," notes Cotter.

**Warner Bros. saves millions.** Warner Bros. expects to record millions in communication cost savings with its own worldwide FAX, telex, and telephone network, says Cotter.

To send a telex or telefax message through HP DeskManager to overseas offices, a Warner employee writes it in HP DeskManager or a PC word processor, then selects MAIL. HP DeskManager dials prerecorded FAX and telex numbers and the message is



instantly sent.

"HP DeskManager helped us cut international telephone tag

and trim travel way down," Cotter says. The network performs many tasks on-line, "much more accurately, reliably, and faster than manual methods. It cuts transaction time by 70 percent. HP systems are now a totally integrated part of our business. We couldn't operate as efficiently without them."

**Network handles all film bookings.** At Warner's, each day's international sales activities are funneled through the firm's London HP 3000 computer to its Burbank HP 3000 system. The company uses HP DeskManager for nearly all international mail, and 200 employees use it for daily communications. That number will rise to 750 before the end of 1990.

"Our HP 3000 systems play a large role in the success of our international distribution business," Cotter notes. Warner Bros. applications include worldwide communications, maintaining credit records, ordering film prints, printing packing labels, tracking box-office ticket sales and Warner's competitors, booking films into theaters, billing and collection, advertising budget control, and payroll and purchase orders.

"HP delivers the results we want," says Cotter. "Our worldwide computer system works reliably, fast and efficiently. We're happy with HP."

# Ferrari introduces its hottest new sports coupe, the 348

*HP electrical test system essential to success of Ferrari's new automobile*

In the past 50 years, Ferrari automobiles have captured eight world championships at LeMans, Sebring, Targa, and other tracks, and won nine Formula 1 world championships. Ferrari personifies the art and science of traditional European craftsmanship with some of the world's highest-quality, high-performance luxury sports cars.

Artist and engineer Enzo Ferrari founded Ferrari S.p.A. nearly half a century ago in the northern Italian town of Modena, and after World War II, in Maranello.

Today, Ferrari faces strong qualitative challenges in producing the highest-caliber production cars it has ever sold. It also faces competition from other Italian, German, and English luxury sports coupes, and strict environmental and safety standards set by government agencies around the world.

**Computerized electrical test system needed.** To meet these challenges, Ferrari engineers took a long look at quality while designing its newest luxury coupe, the 348. They concluded that a computerized electrical test system was needed to check the electronic components of every new Ferrari 348 on the assembly line.

A test system was essential because the 348 is one of the most electrically complex Ferraris ever produced. It contains nine kilometers of electrical wire and 204 electronic components and connections.

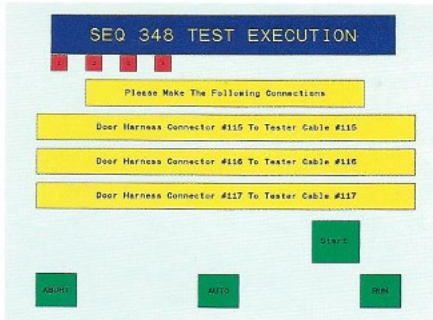
**Ferrari chooses HP test system.** A tour of Pininfarina, an Italian design studio and car manufacturer that has designed Ferrari sports coupes, convinced Ferrari engineers to use an electrical test system from the Hewlett-Packard Company.

"Several years ago, people in the manufacturing department of Ferrari paid a visit to the Pininfarina assembly plant in Torino," says Emilio Ghilardi, sales marketing manager for the HP European

Advanced Systems Operation. "They saw the HP electrical test system that was designed and built for General Motors. Using this system, Pininfarina and General Motors began manufacturing the Cadillac Allante in 1984." GM also uses an HP electrical test system to assemble its Buick Reatta sports coupe in Lansing, Michigan (see *HP Computer Advances*, Fall 1988).

"Ferrari became interested in HP's test system because they were replacing the Ferrari 328, which Pininfarina helped design 10 years ago, with the new 348," said Ghilardi. "Pininfarina contacted HP Italy immediately to make an appointment with Ferrari because they knew that HP could deliver what Ferrari needed."

In January 1988, Ferrari accepted HP's proposal to equip the Ferrari 348 production line with an HP test system. The system was installed within 12 months,



*A menu-driven HP test program enables craftsmen to test every electronic system of each Ferrari 348.*

far exceeding Ferrari's expectations. Limited production of the coupe began last August.

Luciano Noli manages this first computer system installed on a Ferrari assembly line. His work and that of others at the plant's department of new technology improved the art of manufacturing a high-performance sports car through the use of a new methodology.

The 348 production line now requires highly skilled laborers to operate sophisticated general-purpose equipment, plus sophisticated HP computers and test equipment. With age-old and new tools, Ferrari craftsmen produce world-class automobiles for a small, but ever-changing international market.

**HP system saves liras, delivers unexpected results.** The test system

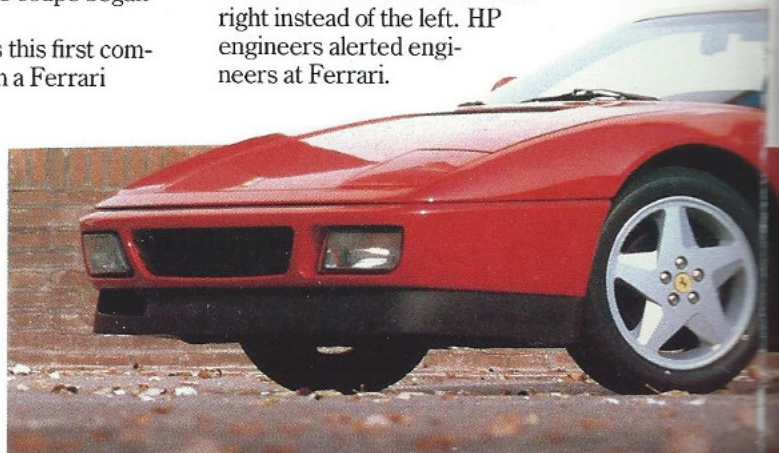


*Highly trained drivers wind up the gears in each Ferrari 348 in exacting test runs before the car is delivered.*

delivered results even before production of the 348 began. In one case, preproduction tests using HP test equipment prompted Ferrari to return one electrical part in 12 to its suppliers.

"In another case, engineers at Ferrari drew up the correct specifications for an electronic side-view mirror," says Noli. "We ordered a prototype of the assembly and craftsmen tested it manually. They saw the mirror working, but did not pay attention to the direction of its movement."

The HP test system revealed that a motor moved the mirror to the right instead of the left. HP engineers alerted engineers at Ferrari.



**"It is not possible for us to have good quality electrical equipment and assembly without HP's electrical test system."**

Before production of the mirror assembly began, the supplier rebuilt it to meet specifications in the original design. Ferrari also used the HP test system to design less-expensive, more efficient wiring harnesses for the 348.

**HP computers help test and verify electronics.** The test system was designed, built, and supported by HP in Sunnyvale, California, and HP Italy. At Ferrari, the test system is located at four of 20 work sites along the Maranello production line. The system includes five HP 1000 A400+ computers, an HP 1000 A900 Series computer, HP 35751 color terminals, and HP bar code readers to communicate with the plant's mainframe computer.



A Ferrari craftsman uses HP test equipment, located at four of 20 Ferrari work sites, to test the electrical system of the newest Ferrari sports coupe.

The HP system tells craftsmen which regulatory or safety features to add. It tests and verifies the assembly and operation of each electrical part, and records and returns test results to an HP 1000 A900 computer.

"Technicians use the HP test system to test the instrument cluster (speedometer, temperature and oil gauges, tachometer) before it's sent to the production line," said Noli.

HP equipment also tests wiring harnesses, dashboard electronics, air conditioners, tail and headlamps, steering electronics, electrical windows, and mirrors. At the end of the production line, craftsmen test the complete electrical system of each 348.

**Electrical components tuned by HP equipment.** "The test system also allows us to tune the electrical system of the 348," Noli said. "We set the current for each component, based on the list of standard and optional features contained in the car."

For example, the system determines whether headlamps are drawing 11-to-13 amps as required by English law, or 12-to-14 amps required by U.S. law. The system is accurate to 1/100 of an amp.

When safety equipment is installed, the HP test system determines if an alarm will sound if an American driver hasn't fastened her seat belt, or a Saudi Arabian driver travels at a speed over 120 kilometers per hour.

It also maintains a computerized

history of electrical systems of all 348s produced, saving data on each car's production line performance. With this data, designers can tighten specifications of electrical parts installed in the factory, and service technicians can more easily diagnose electrical problems at dealerships.

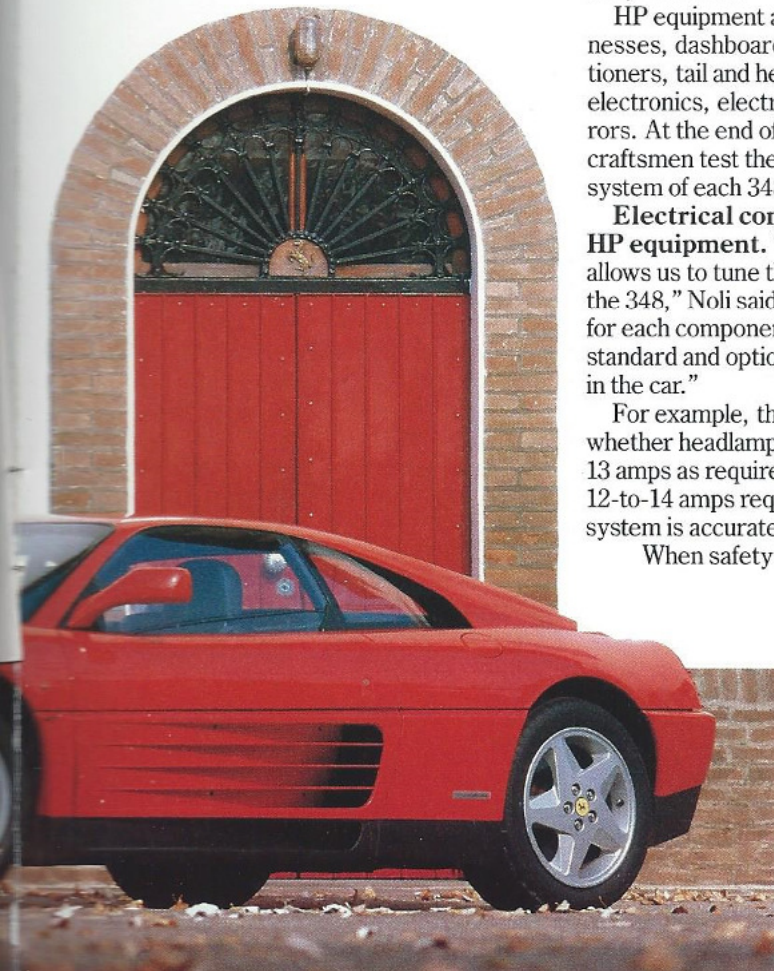
"We're now researching statistical patterns," says Noli, "that allow us to accurately determine how much electrical current each component needs."

**Follow-up electrical tests increase quality.** Craftsmen use a fifth electrical test unit in a workshop outside the factory. They test and repair electrical problems they do not have time to fix on the assembly line, and test-track drivers diagnose electrical problems they discover in 90-minute road tests.

According to Dan Meitus, HP program manager for Ferrari in Sunnyvale, "Our success was based on Ferrari's total acceptance of the electrical test system—from high level managers to craftsmen on the assembly line. Outstanding teamwork and cooperation between the entire Ferrari team in Maranello and the HP teams in Italy and Sunnyvale contributed to this success."

Custom built to individual requirements and to the safety and environmental requirements of destination countries, the Ferrari 348 is already sold out for the next three years.

"The 348 is very important to the future of Ferrari," says Antonio Olivieri, manager of new technology at Ferrari. "We prepare five Testarossas, four Mondials 8s and, in the future, 10-to-12 Ferrari 348s a day. It is not possible for us to have good quality electrical equipment and assembly without HP's electrical test system."



# HP SupportLine solves software problems and answers your questions

**C**an you resolve software problems and questions in three minutes? You might, if you use HP SupportLine—a free, on-line service if you have an HP support contract.

Support services at Hewlett-Packard Company have advanced and expanded for over 50 years. Support starts when we help you select systems that meet your needs and continues through installation of hardware and software and the training of your people.

And HP support doesn't stop there. To ensure maximum uptime and productivity, Hewlett-Packard provides a complete range of support services designed to meet individual needs. HP's support services offer proactive planning, personalized assistance, and telephone support

through worldwide HP Response Centers. Over 70 percent of HP computer users enjoy the benefits of HP support programs. One support service started last year is HP SupportLine.

**HP SupportLine** is a powerful on-line tool that provides you with direct access to the most current support information, software problem fixes, technical tips, and product news from divisions throughout Hewlett-Packard.

HP SupportLine's powerful keyword search and menu-driven browse tools speed you and your people through problem-solving information so that you can resolve software problems and questions quickly and easily.

The service is free of charge as part of all computer software support contracts for HP TeamLine, HP ResponseLine,

and HP BasicLine (detailed in *HP Computer Advances*, Fall 1989).

**Users praise HP SupportLine.** "I've been waiting for you to come up with a system like this!" writes Michael Higgins, Exxon Chemical Company. "I think it's great and yet another reason why HP is known for superior service."

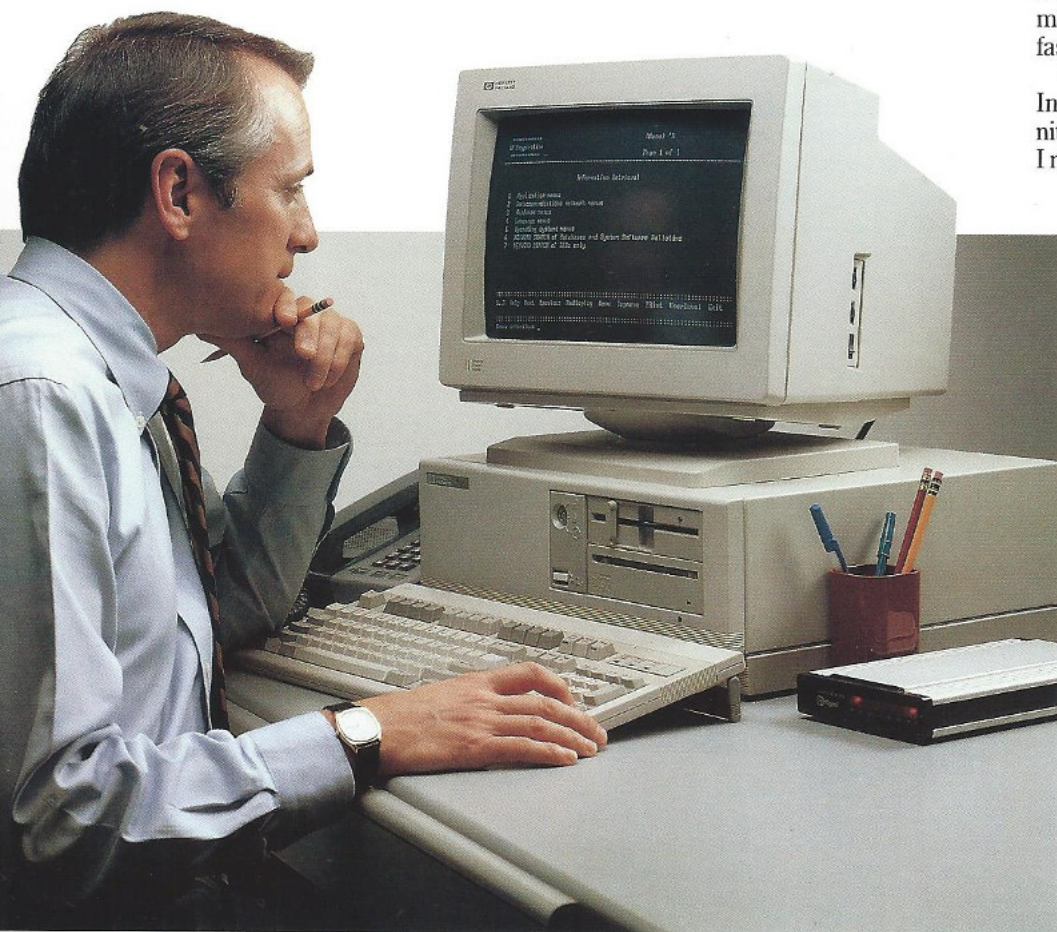
"I want to congratulate HP on an excellent improvement in support for customers," writes Steve Fowler of Westinghouse Electric Corporation.

"I really like this service! I think it's a great idea and should have been implemented long ago," writes Steve Creasman, Northern Telecom, Incorporated.

"Most of my software problems are of low priority and can be handled in a 24-hour time frame," says Don Defreese, McDonnell Douglas Company. "By reducing the load on phone-in support, major system problems will be handled faster."

Michael Campbell, Impact Systems, Inc., writes, "This is the first opportunity I have had to use SupportLine, and I must say I am very impressed! I finally have a way to retrieve certain information from the SSBs without looking through them by hand. The information I was looking for didn't warrant a call to the service center. I was able to get my answer within three minutes of logging on to SupportLine. I am going to make SupportLine my first resource to retrieve facts about HP."

Please contact your local HP sales office if you have an HP software support contract but can't locate information to access HP SupportLine, or if you don't have a software support contract and would like one.



Obtain direct access to valuable problem-solving information by using HP SupportLine.

## New HP 3000 high-end systems offer mainframe performance

Eight new HP 3000 computers include one model that triples the performance of HP's high-end commercial systems. It supports hundreds of users with very large databases for on-line transaction processing (OLTP) and batch applications.

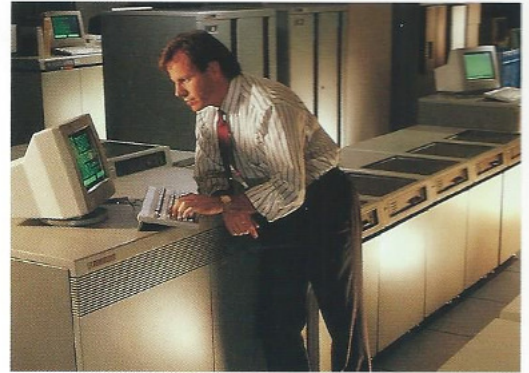
Based on the industry's fastest single-chip CMOS uniprocessor, the Series 980/100 is expected to operate at 60 to 70 transactions per second. It's the industry's first RISC-based (reduced-instruction-set computing) commercial computer with mainframe-class performance.

The Series 980/200 offers fully symmetric two-way multiprocessing and is expected to deliver more than 100 transactions per second—triple HP's previous high-end system, the Series 960.

Both systems provide performance equal to an IBM 3090 mainframe, but at a much lower list price and cost of ownership. They equal the performance of a DEC VAX 9000, but HP's list price and cost of ownership is lower.

The new systems are the first to use HP's advanced complementary metal-oxide semiconductor (CMOS) technology. These densely packed chips produce higher processing speeds and performance. This CMOS implementation is air cooled, requiring a fraction of the floor space and electrical power needed for competitors' systems with the same performance.

Besides expanding high-end systems capabilities, HP extended HP Precision Architecture to the HP 3000 low end and cut entry prices in half for its RISC-based systems.



With the HP 3000 Series 980/100 and 980/200 systems, you have mainframe performance for your large-scale on-line transaction processing (OLTP) and batch applications.

HP offers fast, cost-cutting field upgrades to the Series 980 for Series 950, 955, and 960 computers, with systems designed to meet your needs today and protect your current and future investment in hardware and software.

For more information, please check **A** on the HP Reply Card.

## New HP 9000 computers increase productivity, improve efficiency, and lower ownership costs

HP has introduced six new UNIX-system based HP 9000 Series 800 systems, ranging from entry level to mainframe-class machines. Each offers higher processing speeds than previous HP 9000 systems, increasing productivity while lowering your cost of ownership. HP now has the broadest compatible UNIX-system based family in the industry.

Faster processing speeds result from HP's Precision Architecture (HP-PA) RISC-based (reduced instruction-set computing) technology, and HP's breakthrough in complementary metal-oxide semiconductor (CMOS) chip technology.

The new high-end Model 870S/200 includes two HP-PA CMOS processors with two-way symmetrical multiprocessing, enabling the HP-UX operating system to allocate tasks across both processors. This provides greater system throughput and improved efficiency for on-line transaction

processing (OLTP) applications, such as banking and airline reservations.

The Model 870S/200, HP's most powerful UNIX-system based computer, provides up to 95 MIPS (million instructions per second) performance, over four times faster than the HP 9000 Model 855S. The new system's performance tops the DEC VAX 6000 line and equals the entry-level DEC VAX 9000 main-

frame, at a fraction of the price.

New HP 9000 systems are air cooled, requiring a minimum of floor space and less electrical power than competitive products with comparable performance.

Many of HP's new products offer convenient, economical field upgrades, enabling you to choose the system that meets your needs today while protecting your long-term investment in hardware and software.

For more information, please check **B** on the HP Reply Card.

UNIX is a registered trademark of AT&T in the U.S.A. and other countries.



The HP 9000 Model 870S/200 gives you a UNIX-system based computer with two-way symmetrical multiprocessing for faster processing, greater throughput, and higher productivity for OLTP banking and airline reservation applications.

## In Brief

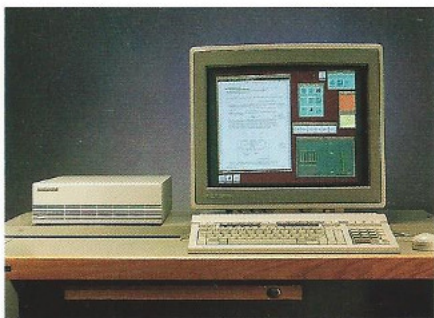
■ **Most Admired Corporation.** In *Fortune* magazine's eighth annual listing of America's Most Admired Corporations, Hewlett-Packard Company repeats as No. 1 in the computer and office equipment category. IBM scored second and Apple Computer third (reversing their previous year standings), with Digital Equipment and NEC repeating as fourth and fifth, respectively.

■ **Exec of the Year.** *Research & Development* magazine has named Hewlett-Packard President and CEO John Young as its first "Executive of the Year." Young received the award "not only for shaping HP into a model technology-based corporation and a leader in research and development, but also for his role as chairman of the President's Commission on Industrial Competitiveness and the private Council on Competitiveness, which he founded."

■ **Hewlett Honor.** The University of Bologna in Italy, celebrating its 900th anniversary this year, presented HP cofounder Bill Hewlett with a *Laurea ad Honorem* (Honorary Doctorate) in Electronic Science. The citation reads: "Without his fine and original thinking, which has resulted in basic innovations, and without his constant effort to press ahead... it could clearly not have been possible to bring such prestige to an industry... which operates in a field of major importance where new ground is constantly being broken."

## Boost processing speed and performance with HP's powerful 50-MHz workstations

Two new HP 9000 workstations with next-generation microprocessors offer higher speed and performance than previous HP 9000 systems, to increase productivity. The new HP 9000 Models 345 and 375, based on the powerful new 50-MHz Motorola MC68030 microprocessor, provide 12 MIPS of power.



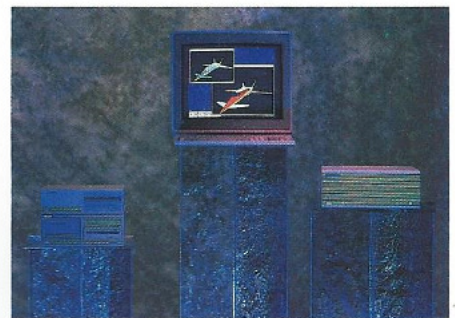
HP 9000 Model 345 workstations give you the strongest price/performance value and help increase productivity with 12 MIPS of power.

Over 1,800 applications are available, ranging from ME/EE CAD to software development, and electronic publishing on the two workstations. The Model 345 offers the strongest price/performance value in the Series 300 family. It supports 4 to 16 Mbytes of main memory, with an optional 200-Mbyte internal disk drive.

The Model 375 can be upgraded to the Motorola 25-MHz MC68040 microprocessor, scheduled for introduction later this year. Motorola predicts that its newest microprocessor will be up to 10 times more powerful in floating-point performance than the Motorola MC68030 microprocessor. Other HP 9000 Series 300 and Apollo Series 3500 and 4500 workstations can be board upgraded to the MC68040 microprocessor, protecting your workstation investments.

The Models 345 and 375 can be used in HP Team Computing environments to provide you with advanced networking products that link project-team members across networks of computers from different vendors.

For more information, please check C on the HP Reply Card.



HP 9000 Model 375 workstations can be upgraded from the MC68030 microprocessor to the new MC68040 microprocessor for even greater power.

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Note: Not all HP computer products are sold and supported in all countries.



**Hewlett-Packard Company**  
3200 Hillview  
Palo Alto, CA 94304-1298

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