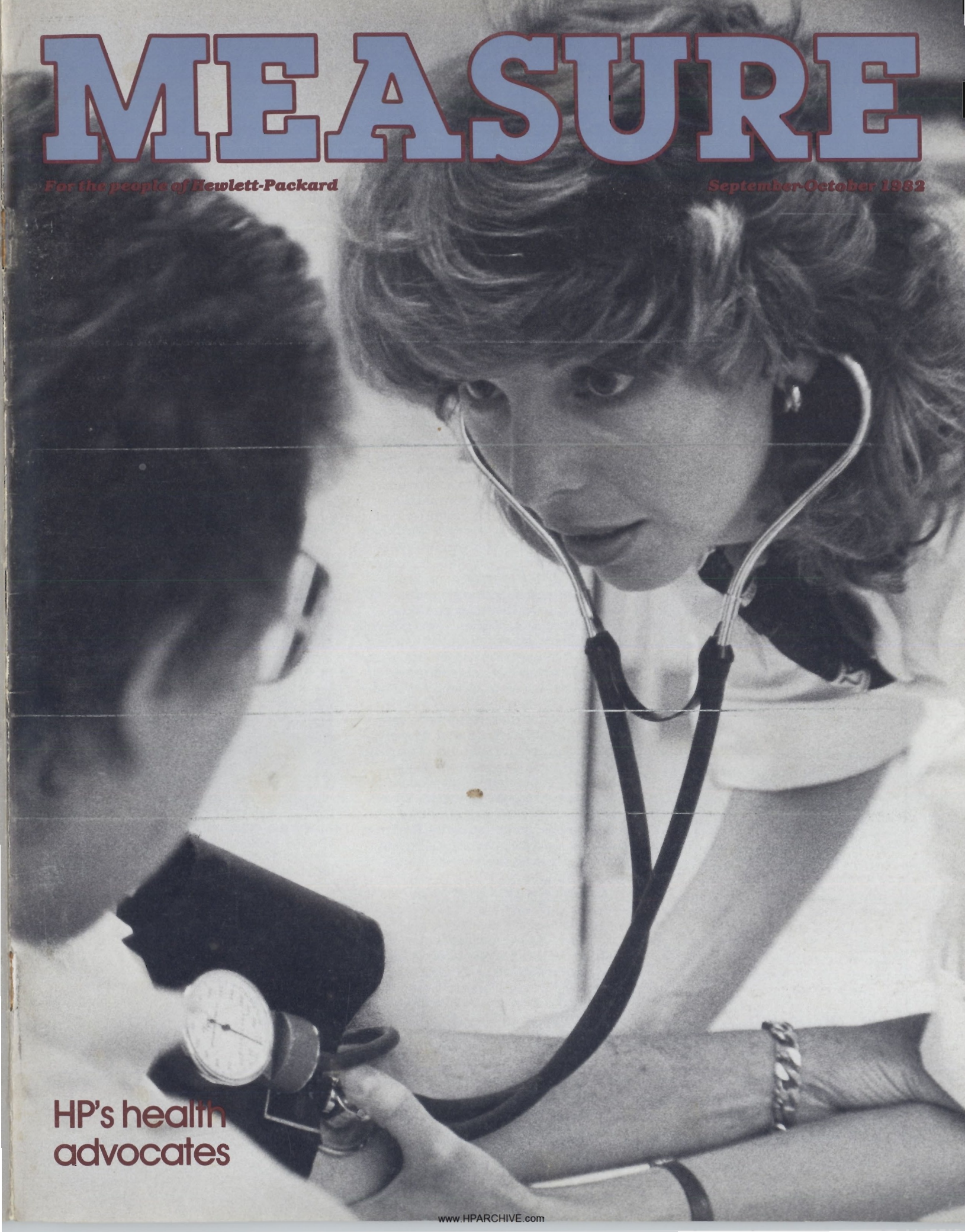
# MEASURE

*For the people of Hewlett-Packard*

*September-October 1982*



## HP's health advocates

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# MEASURE

"Man is the measure of all things."—*Protagoras (circa 481-411 B.C.)*

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Hewlett-Packard Company designs and manufactures computers, electronic test equipment, handheld calculators, electronic components, medical electronic equipment and instrumentation for chemical analysis. Manufacturing facilities are located in 22 U.S. cities in seven states and in 10 cities in nine countries in the rest of the world. HP sales and service offices can be found in more than 80 U.S. cities and (including distributorships) in approximately 200 cities in 70 countries around the world.

**ON THE COVER:**
*Roseville's Cindy Sullivan is one of about 60 nurses who take care of employee health needs at HP manufacturing facilities around the world. Cover photo and story by Joanne Engelhardt.*

# UPFRONT

## Quality improvement leads to dramatic drop in oscilloscope prices.

Customers of the Colorado Springs Division could not have been more pleased with the way the division commemorated its twentieth anniversary this spring. It cut the price of two of its most popular oscilloscopes by 16 percent.

In reality, the timing of the price reduction with the anniversary was just coincidence. The plan that resulted in the new price was initiated as far back as 1979. It was intended to strengthen HP's position in the hotly competitive oscilloscope market.

People at the division felt the manufacturing cost of finding and fixing defective scopes could be eliminated through a quality improvement program. Their thinking followed the precept that Ray Deméré, vice president for manufacturing services, and others had been touting: High quality costs less, not more.

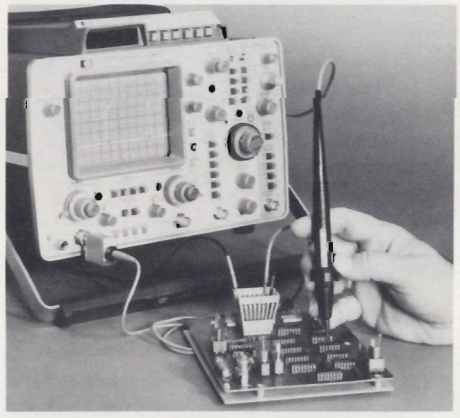
As usual, the improvement began when both managers and production workers raised their expectations about what kind of quality was possible and shared ideas with each other. Quality teams and manager-employee groups discussed ways to improve materials management, production and testing. The solutions they chose led them to install more automatic and semi-automatic equipment. The results? The overall reliability of printed circuit boards jumped from 85 percent to 99.1 percent. Total production-cycle time dropped 71 percent. What's more, virtually 100 percent of the oscilloscopes switched on the first time without troubleshooting prior to shipment—remarkable for instruments of this complexity.

By anyone's measure the plan has worked, and the division is now passing on its savings to customers.

The event was especially noteworthy to those in HP who know how difficult it is to gain ground in the general-purpose oscilloscope market. "Scopes" are used by the electrical engineer in designing and manufacturing everything from televisions to computers. The market is large—at least $700 million per year. But price cuts by any company are rare: the last HP cut came 10 years ago. It is even more rare for HP to drop prices so drastically, since the company traditionally leads product areas more through the fundamentals of high quality and reliability than through bargain-basement pricing.

In the case of these oscilloscopes, however, the quality improvements that permit pricing flexibility have come at just the right time. Although HP is the world's leading instrument maker, the oscilloscope market has been dominated by another U.S.-based manufacturer, Tektronix, Inc., and is now coming under pressure from other firms, including the Japanese manufacturers Kikusui and Hitachi.

The costs saved in the new production processes will give HP a needed edge in the area the company cares about most: the price-performance ratio. The price cut and what it says about teamwork and quality at HP are a fitting conclusion to Colorado Springs Division's first 20 years. **M**



HEWLETT-PACKARD COMPANY

**An unusual price cut on Colorado Springs' 1742A oscilloscope was the result of the division's quality improvement program.**

# HP NURSES: dispensing a healthy attitude

Gone is the day that HP's nurses are merely called on to offer two aspirins to cure a headache. While they do indeed have aspirin (and antacid tablets, antihistamine pills and cough drops), their role today calls for such skills as:

- Designing programs to reduce back injuries, lower hypertension or lose weight.
- Taking blood pressure readings, giving hearing tests and setting up lung examinations.
- Counseling employees about personal problems and offering suggestions as to where to turn for help.
- Offering "no-smoking" classes, aerobic exercise, first-aid training and nutrition tips.

In a company as widespread as HP, it's comforting to find a nurse (several at larger locations) at just about every HP manufacturing plant in the world.

Some, like Mary Nittmann at Colorado Springs Division, have been ministering to employees for many years. Others, like Roseville's Cindy Sullivan, have been on the job a year or less.

HP also has nurses like Joan Mulder at Loveland Instrument Division who is a member of one of the largest nursing families anywhere. Joan and all six of her siblings (three brothers and three sisters) are nurses. To add to the family's nursing population, all three of Joan's brothers married nurses! That's a total of 10—almost enough for a nursing convention.

In a speech to HP's nursing community last year, Lu Packard, wife of cofounder Dave Packard, recalled how she became, by default and inclination, the young company's first nurse.

"Our first employee was Harvey Zieber," she said. "We really didn't expect him to have any industrial accidents. If he did happen to need a Band-Aid because the screwdriver slipped while he was assembling our new oscillator, he probably would have come to the kitchen door, and he would have knocked—being a polite gentleman—and I would have doled out the bandages and iodine."

After HP moved into a small cottage behind the Packard home, Lu reported there was finally room for "a desk and a file case—and probably even a first-aid

## JUST THE RIGHT JOB

"When I was earning my bachelor's degree in nursing, I spent a year investigating occupational health nursing at more than a dozen companies. It gave me a chance to see a diversity of responsibilities. Then I designed the kind of nurse I wanted to be."

As the Roseville site's first nurse, Cindy Sullivan did design her own job. She now has launched "wellness" programs on nutrition, sports medicine, fad diets and hypertension. The employee population, she notes, has been "very receptive."

Cindy also went right to work setting up both a First Aiders Club and a Medical Emergency Response Team (MERT). Both groups meet monthly to hone their medical skills and often have unannounced drills to prepare them for a real emergency.

With Roseville's two buildings about four miles apart, she needs emergency medical backup. To date about 12 percent of the employee population has been trained in either first aid or cardiopulmonary resuscitation (CPR). Smiles Cindy, "It's a very good feeling."

case, if we had thought of it. But I'm sure we didn't have one."

According to company records, HP's first registered nurse (RN) was Terry Smith, who came on board in 1951.

"Terry had to be able to pass the test for production work before she was hired. Her nursing skills were secondary to her abilities as an assembly worker," recalled Lu.

Today's nurses do almost everything but production work, and their innovative efforts make the "bandage-a-cut" style of nursing seem a bit archaic.

Geri Perkins at Boise Division, for example, puts top priority on good health programs. Earlier this year she and Betsy Peterson, the other Boise site nurse, put on a complete health fair for employees and their families. More than 500 people took advantage of such free services as anemia screening and the testing of blood pressure, vision and hearing. For the past three years Geri has also conducted no-smoking programs on company time. She says, "I start with about 20 people and by the end of the course, two or three people actually quit smoking."

***"Today's nurses do almost everything but production work."***

"The role of nursing has changed—it's much less reacting to accidents, and much more involvement in health promotions, preventive medicine and occupational health issues," says Frank Williams, International personnel manager. He has had a strong interest in HP's nursing community for many years and now has responsibility for the employee aspects of safety and health at the corporate level.

There are 44 nurses in U.S. locations and about another 20 overseas. Frank says the rule of thumb is to have one nurse for every 500 to 1,000 people, but that figure sometimes gets stretched. At Data Terminals Division in Sunnyvale, nurse Carolyn Spears watched her employee population increase by 350 when that many General Systems Division people moved to the DTD site. She now caters to 1,500 people and is a prime candidate for either job burnout or a second site nurse.

There are no nurses in HP sales offices, not even at regional office headquarters—a situation which Frank expects will be changed someday. "Statistically it's almost as likely someone there will get a back injury or cut finger as at a manufacturing location."

Taken as a group, HP's nurses are all RNs. (Outside the U.S., nursing training requirements vary somewhat but are about equivalent.) Some also have a B.S. degree in nursing—a combination of nurse's training and the bachelor of science curriculum. Most had hospital experience before coming to HP, and chose industrial nursing for better pay and more predictable work hours.

After five years as an RN in a hospital's surgery and medical wards, Cindy Sullivan, the Roseville site nurse, decided to return to school to obtain her B.S. as well.

"Too often I saw people—even young people—who were having surgeries too late. They needed to listen to their bodies and acknowledge their symptoms earlier," she explains. "Industrial nursing provides the environment for me to help people practice preventive—rather than corrective—medicine."

HP's nursing community is an all-female group. "One division hired a male RN last year," says Frank, "but he left to supervise an emergency room in a small-town hospital."

When Lu Packard talked to the nurses, she called Terry Smith an industrial nurse "in the true sense of the word. She had to be industrious. It wasn't until 1951 that 25 HP people took a first-aid training course at a local school. We also put up first-aid kits around the plant. At first the kits were locked—I don't know what they were hiding. You had to ask your boss to open it up if you wanted an aspirin." Eventually the kits were left open so employees could help themselves, and Lu says the lone nurse was responsible for replenishing it—when she wasn't busy working on the assembly line.

Though nurses are still responsible for ordering first-aid supplies, they have a rainbow of other opportunities ranging from offering brown-bag lunches with guest lecturers on diet, stress, exercise, arthritis and the like, to setting up blood drives, alcoholism

**A REAL 'LIFE SAVER'**

Last year Avondale nurse Chris Linde staged:

- A "Great American Smokeout Day" where she distributed "Life Savers" candies with the warning, "The life you save may be your own."
- The division's third annual pressure party where more than half the employees turned out to have their blood pressure checked and sample salt-free potato chips, cheeses and the like.
- A "joyous juices" break with division managers working as bartenders. Chris developed some highly original (and non-alcoholic) beverages to serve at holiday parties. Employees tried the drinks and took the recipes home.

All of these are in addition to the screenings for arthritis, diabetes, anemia and the like, and the exercise and nutrition programs she also administers.

What's next? She's now planning a fall series on the early detection of such cancers as prostate, colon, breast and skin.

"It's very difficult to get people to change their life styles," she worries, "but I consider it my biggest challenge."

***"HP is the best place to practice preventive medicine."***

programs and cardiovascular pulmonary training (CPR) classes.

"To me, HP is the best place to practice preventive medicine," asserts Chris Linde, Avondale Division nurse. "The sky's the limit" is how Margaret Rankin at Corporate describes her role. "What I appreciate is the diversity we have and the independence to determine what is needed, and then to set it up."

Chris, Margaret and Waltham Division nurse Claire Fournier are the only three HP nurses to have been certified by the American Board for Occupational Health Nurses. This earns them the right to be called Certified Occupational Health Nurses, or COHNs.

It's quite an achievement. Of an estimated 20,000 OHNs in the U.S., only 2,200 have been certified.

To be eligible to take the six-hour exam, an OHN must have five years of experience and at least 60 hours of recent occupational health work.

Claire is so enthusiastic about the certification that last spring she proctored the exam in Boston. "I feel it's important to support efforts for greater professionalism," she says. She encourages other HP nurses to take the test because "it gives you more incentive for professional growth."

Other kinds of honors went recently to two HP nurses: Donna Frasier at Microwave Semiconductor Division in San Jose and Mary Nittmann at Colorado Springs.

Donna was selected as one of 71 women in Santa Clara County to receive a 1981 Woman of Achievement Award. She was cited for setting up an extensive physical exam program for MSD employees who work with hazardous materials, and for doing ergonomic studies on the relationship of workers to their work environments, so the division could design jobs to fit employees rather than the other way around.

Last year Mary was nominated by her peers for the prestigious Schering Occupational Health Nurse Award for her many years of involvement in both community and youth activities and the alcoholism programs she has developed. (See accompanying story.) "I didn't get the award, but I was proud my peers nominated me," says Mary.

Professional growth is exactly what Lu Packard recognized in today's HP nurses. In her 1981 speech she noted, "The HP nurse has progressed from the co-worker who showed concern for her fellow workers to the professional with special skills trained to fill many different kinds of needs.

Before coming to HP last year, Data Terminal Division's Carolyn Spears worked as a poison information specialist. In that position she spoke to community groups and gave advice on poison antidotes. She finds that background useful at HP where she does extensive tests in both the areas of hearing and pulmonary capacity. "We set up lung examinations at local clinics for all our employees working in the PC shop," she explains, "and we do periodic hearing tests on the people in the fab shop." Her efforts have proven beneficial to several employees whose hearing loss was discovered early and successfully treated.

Pat Peden in Santa Rosa, along with Personnel Manager Dave Curry, set up the pilot program for HP's Employee Assistance Program (EAP) in 1978. In the first 2½ years that the counseling service was offered at that location, 555 people had used it at least once. A majority had sought help for alcohol or drug problems, while the remainder wanted marital or family counseling. Pat feels many Santa Rosa employees and their families "owe their lives—and their marriages—to this program." The success of the EAP program in Santa Rosa led to its adoption at other U.S. HP locations last January. The program entitles employees and their families to three counseling sessions with an outside agency. The sessions are provided to employees at no charge.

Frank Williams points out that nurses seldom leave HP, "which tells me that it is seen as a good job to have. In

**ALCOHOLISM EXPERT**

Mary Nittmann, Colorado Springs Division nurse for the past 16 years, has aptly been described as a "one-woman employee assistance program."

About nine years ago a supervisor came to Mary with a sticky problem: One of his long-time employees had a drinking problem which was affecting her work.

Recalls Mary, "I knew nothing about alcoholism at the time, but I thought, 'Where would an alcoholic start?' So I started going to AA (Alcoholics Anonymous) meetings."

Then Mary set up a seven-step alcoholism program at her division. "We have had super management support," she reports. The results have been pretty super, too. Of the 135 to 150 alcoholics Mary has worked with over the years, the success rate runs about 85 percent.

Now Mary is considered the community's expert on alcoholism. She sets up similar programs for other companies through the National Council of Alcoholism, serves on the executive council of the Alcoholism Council of Colorado, gives workshops on industrial alcoholism and teaches university classes on the subject.

fact, any open requisition for a nurse brings an avalanche of qualified outside applicants."

For a few, nursing has been a springboard to another career. Lorna Jasienczyk is a former nurse who first found her niche at HP as a clinical specialist (CS) in the HP sales force (see story this page). Lorna helped create the clinical specialist position at HP six years ago. A CS acts as a liaison between the company's sales engineers and customers by assisting in medical product introductions, then training doctors and nurses to use the equipment.

Because the basic requirements for the CS position are an RN degree and critical-care experience, most of HP's OHNs are qualified. Frank says this "new wrinkle may interest some of our nurses, and I'm sure the medical sales group would prefer to hire someone with HP experience than go outside."

Phyllis Kendall's new career took her out of the nursing field entirely. An HP nurse for 20 years, she decided she had "gone as far as I could in nursing." Eighteen months ago she entered Data Terminal Division's air-conditioning apprenticeship program. "I wasn't bored or fed up with nursing—in fact I miss it sometimes, but I decided I needed more than one specialty to fall back on when I retire."

***"The nurses were so valuable as a resource when I was the 'new kid on the block.'"***

Phyllis still has 2½ years to go in the apprenticeship program which she says is definitely "not easy, but all this technical stuff really fascinates me."

Nursing at HP's Far East facilities involves a different mix of responsibilities. At the three manufacturing plants in Singapore, Malaysia and Japan, doctors come in on a regular basis to examine and treat employees.

As a result, nurses at those facilities almost always have a line of employees in front of their office door. It's the nurse's responsibility to screen patients, take care of those she can, and send the others in to see the doctor.

Corporate OHN Margaret Rankin visited some of the Far East facilities while on vacation last May. One of her sharpest memories is of YHP in Japan where the nurses were using special electronic blood pressure and pulse equipment—"some of the most modern I've ever seen," she says.

Jenny Yeoh, OHN for the last 7½ years at HP Malaysia in Penang, thinks that being an HP nurse is much better than working in a hospital. "As a hospital nurse I had to look after very sick people and follow the doctors' orders. Here, we have mostly healthy people. There's more responsibility and more opportunity to make my own decisions."

One of the special problems Jenny faces is dealing with the employees who observe Ramadan, a month-long period of religious fasting from dawn to dusk. "Sometimes this affects their work and lowers their resistance to sickness," she says. "They are so faithful they even refuse to take prescribed medicines during the fast."

As a relative newcomer to the HP nursing community, Roseville's Cindy Sullivan says she greatly appreciated the "network of support" she relied on during her early days with the company. "The nurses were so valuable as a resource when I was the 'new kid on the block.' Because of their support, I felt a part of the company very quickly."

Perhaps the best tribute to HP nurses came from Lu Packard at the 1981 nurses' conference. "You've come a long way, and I think HP has come a long way in recognizing your value. I'm proud to have plastered that first bandage in place, but I'm glad that there are people like you to carry on now.

"When you come right down to it, the HP nurse is still taking care of her fellow workers in a very special way." **M**

## SALES IS IN HER BLOOD

Lorna "Jase" Jasienczyk has never been an HP nurse. But after 12 years as a critical-care nurse at a Houston hospital she joined the company as an application (clinical) specialist. The first nurse hired in that job, she helped medical sales people demonstrate HP equipment and trained customers to operate it.

"It makes sense," Jase says, "to have nurses do this because they understand how the equipment is used." Today HP has several nurses-turned-clinical specialists.

Jase is now Houston district sales manager for medical products. "Sales is much, much harder than I ever thought it would be," she says. "Certainly being responsible for a patient's life is important, but in some ways sales can be more difficult, more demanding and more rewarding.

"I've always been fascinated by the business side of things," she adds. "Now I feel selling is in my blood. I'm really addicted to it."

# this board means business

With a majority of outside members, and with a strong committee structure to undertake its major tasks, HP's board of directors sets a high standard for corporate responsibility.

An issue called "corporate governance" presently is stirring up considerable discussion—you might even say controversy—in corporate board rooms and legal departments across the United States. At issue are these conflicting questions: Should publicly owned corporations and their directors be bound to a proposed set of legal standards governing their conduct and performance? Or should corporations undertake—as many have—to meet the goals of such standards on a voluntary basis?

Proponents of the legal position say it would help cure many of the problems that some companies have had, such as those that surfaced from the "illegal-payments" scandals of the early '70s. The opposition, which includes the Business Roundtable, is certain that the imposition of strong legal strictures would drastically reduce the ability of companies to operate flexibly and efficiently in the risk-taking environment of modern business.

Over the past decade, Hewlett-Packard has adopted various standards now recommended by the Roundtable as well as those required by such bodies as the New York Stock Exchange. As a result, and in contrast to those of earlier years, the present HP board of directors chaired by Dave Packard is organized as follows:

- A majority of the directors (10 out of 19) come from outside the company, providing a strong measure of objectivity as well as variety of experience and viewpoint.
- An audit committee reviews and recommends the selection of HP's independent auditors. It also monitors the controls adopted to help insure integrity in financial reporting.
- A nominating committee is responsible for proposing a

BRAD WHITWORTH

**The newest member of the HP board, Shirley Hufstedler, chats with a government official after the meeting in Grenoble, France.**

# board

slate of directors for election at each annual meeting and proposing candidates to fill any vacancies on the board.

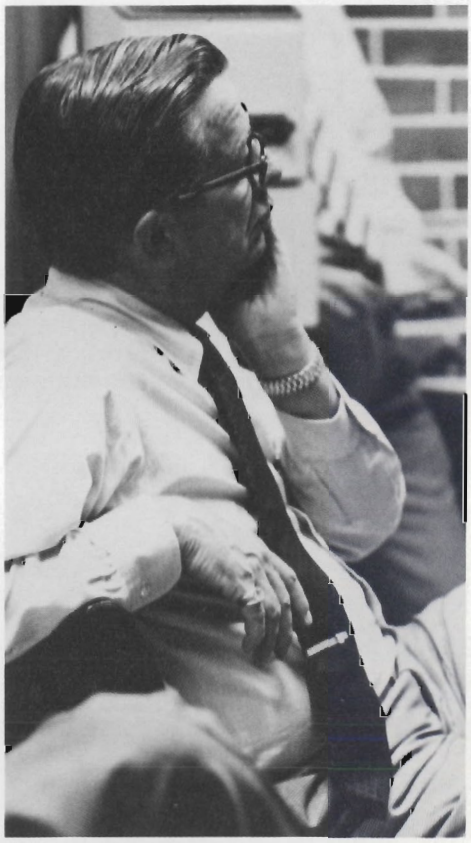
- A compensation committee reviews the salaries of top people in relation to performance and competition.
- An employee-benefits committee monitors this area for fairness, performance and competitiveness.
- An investment committee helps manage the investment of HP's retirement funds.
- The executive committee, made up of seven directors who also are senior officers of the company, is often thought of as the top corporate management team. Actually, it is an extension of the board and, as such, is vested with special authority. Meeting weekly and chaired by Bill Hewlett, this committee is empowered to make most decisions that the full board would otherwise make if in session—all except certain actions, such as amending the by-laws, appointing new directors and declaring dividends.

In effect, the activity of the various committees generates the "homework" needed by the full board at its regular meetings held six times a year. In acting on committee recommendations, the board makes decisions that corporate management has the responsibility for carrying out.

One responsibility Hewlett-Packard feels strongly about is keeping directors—especially outside members—informed and knowledgeable about the company. Various methods of providing information are used, the most important being visits to various parts of the company outside of Palo Alto. This year, for example, the board made an extensive tour of the HP organization in Europe and is scheduled to hold its September meeting at the Corvallis, Oregon, facility.

That European trip provides some measure of the board's role as a hard-working unit interested in obtaining first-hand knowledge of the company's operations and people. In the course of two weeks from May 21 to June 4, management members briefed security analysts and investment bankers in London, Frankfurt and Zurich. All board members met with the managements of almost every HP country, factory and regional organization, helped dedicate the new United Kingdom headquarters at Pinewood, and toured manufacturing facilities at Böblingen, West Germany, and Grenoble, France.

The city hall in Grenoble was the site for the formal board meeting and informal reception of city officials on May 28. (John Young's comments on the board visit are found on page 23). The visitors included the three newest outside directors: Shirley Hufstedler, John Fery and Harold Haynes. Their backgrounds, as well as those of the other outside directors, follow. **M**



BRAD WHITWORTH

**Bill Haynes listens to product development plans from R&D engineers at HP's Grenoble site.**

## Outside members elected to HP's board of directors

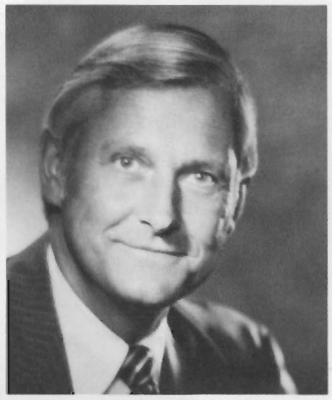
**Luis Alvarez:** Professor of physics, University of California 1945-78; winner of Nobel Prize in Physics for 1968; Collier Trophy for developing ground-controlled aircraft landing system; Einstein Medal for contributions to the physical sciences. Director since 1957.

**Robert Glaser, M.D.:** President and CEO of Henry J. Kaiser Family Foundation; field of concentration—medicine, medical education and health care; director of various medical organizations and business corporations; HP director since 1971.

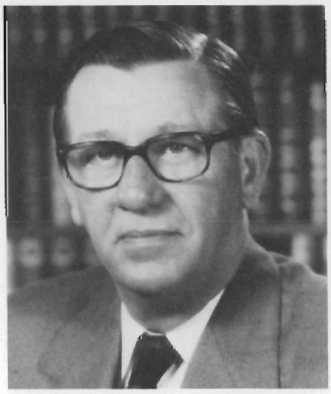
**Ernest Arbuckle:** Chairman of the executive committee of Saga Corp.; former board chairman of Saga, Wells Fargo & Co.; and dean of Stanford Graduate School of Business (1958-68). Active in many civic and corporate organizations. Director since 1959.

**George Bennett:** President and CEO of State Street Investment Corp.; field of concentration—economics; director of major corporations; trustee of various educational institutes; treasurer of Harvard University (1965-74); director since 1969.

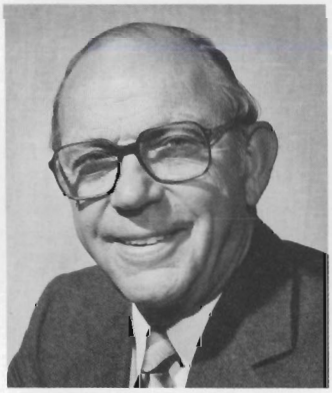
**Robert Minge Brown:** Director and chairman of the executive committee of California Water Service Co. and San Jose Water Works; partner in law firm of McCutchen, Doyle, Brown and Enersen (1946-80); Rhodes scholar; Hewlett-Packard director since 1962.



**John Fery:** Chairman and chief executive officer of Boise Cascade Corp.; director of Union Pacific Corp., Albertson's, Inc. and The Idaho First National Bank; immediate past president of the American Paper Institute; director since February 1982.



**Harold (Bill) Haynes:** 34 years with Standard Oil of California, serving as president from 1969 until 1974 when he was elected chairman and CEO (retired 1981); he is a director of a number of major corporations, and an HP director since 1981.



**James Hodgson:** consultant and lecturer in industrial relations; former U.S. ambassador to Japan; former U.S. Secretary of Labor; former senior executive of a major aircraft company; variety of public service activities; an HP director since 1977.

**Shirley Hufstedler:** extensive practice in private and public law; was first U.S. Secretary of Education (1979-81); trustee of various educational organizations; on governing board of the U.S. Military Academy at West Point; HP director since April 1982.

**Antonie Knoppers, M.D.:** pharmacologist and retired vice chairman of Merck & Co.; director of various corporations and associations; president of St. Luke's Roosevelt Institute for Health Sciences (1977-81); educational trustee; HP director since 1974.

**Hewlett-Packard officers elected to the board of directors:**

Bob Boniface
*Executive Vice President*

Bill Doolittle
*Senior Vice President*

Paul Ely
*Executive Vice President*

Bill Hewlett
*Chairman, Executive Committee*

Dean Morton
*Executive Vice President*

Dave Packard
*Chairman of the Board*

Bill Terry
*Executive Vice President*

Ed van Bronkhorst
*Senior Vice President*

John Young
*President and Chief Executive Officer*

# Color us clean cl

Let's pretend that a grownup Pigpen, the kid who lives in the eye of a dust storm in the Peanuts comic strip, seeks employment at HP's integrated circuit operation in Loveland, Colorado.

He stands in front of Wanda Nace's desk and answers questions as dirt and grime spiral out of orbit around him and crash onto Wanda's office furniture. "You'll never make it," says Wanda, section manager for IC fabrication in Loveland. She has been working around clean rooms during her entire 14-year career at Hewlett-Packard.

Pigpen as a clean-room employee is akin to Charlie Brown as a Marine drill sergeant. "Pigpen would affect—no, destroy—the process in a clean room," Wanda says. "He would not get a job here because he is just too sloppy. I would suggest that he try to get a personnel job," she adds with a grin.

MIKE BLUMENSAADT

**This clean room in Cupertino is one of about a dozen such facilities at Hewlett-Packard. The rule to live by for all: "Cleanliness is next to godliness."**

You all know about clean rooms. They can be found at HP manufacturing divisions around the world. Clean rooms are the strangely lit rooms where perfectly normal people don attire that makes them look like youngsters playing doctor in adult clothes. Where else will you see a guy who looks like a former Green Bay Packer offensive tackle sheepishly peer out from beneath a flattened paper bonnet? And where else can you watch a petite woman pad off to her desk in booties as attractive as what you wrap dead fish in?

There is a reason to this madness. As in a surgical room, cleanliness is crucial in the clean room.

At the Loveland operation, clean room personnel fabricate silicon wafers, sapphire wafers and ceramic substrates for integrated circuits. Diffusion, masking and deposition processes are used to produce the wafers. A speck of dust or lint too small to be seen can be poison in this operation.

For instance, Loveland fabricates some wafers with lines two microns wide. (A micron is one-thousandth of a millimeter ... a human hair is 50 microns across.) A particle one-half micron wide that is on that line at the time of exposure—when the image is transferred to the wafer through a photographic process—can cause the wafer to be rejected. If a particle that small causes problems, just imagine how deadly a chunk of dandruff can be.

"It all boils down to this," says Wanda. "An unclean environment causes decreased yields."

Therefore certain steps are taken to ensure as clean an environment as possible at all HP clean rooms. An employee must first enter a vestibule to put on the special white garb before going into the clean room.

Booties are worn so dirt from the bottom of shoes is not transferred into the clean room. These polyester booties lead a sheltered life. After shuffling along in a clean room they are sent to a special laundry that also has a clean-room environment.

Coats, made of polyester taffeta, are worn over regular clothing to prevent lint from botching up the works. But the coats also protect employees because the material is resistant to acids and solvents. Rubber gloves are also worn to prevent injury to employees who work with those chemicals inside the clean room.

Speaking of chemicals, several shower outlets are located in and around the clean room in case someone comes in contact with a harmful substance. If such an accident occurs, the operator strips down completely (booties, undies, the whole works) and stays under the shower for 15 minutes. Because the shower sprays only ice-cold water (to help close skin pores), a co-worker should stay in the area to make sure the person stays under the icy spray.

HP employees who work on the ceramic masking process wear finger cots, which cover tips to knuckles on each finger, to prevent skin oil or dirt from getting onto substrates or equipment controls.

Laminar-flow hoods pump clean air onto parts and equipment in certain

# ean clean clean

areas of the clean room. The transparent shield also blocks particles from the atmosphere from entering the semi-enclosed area where parts are located.

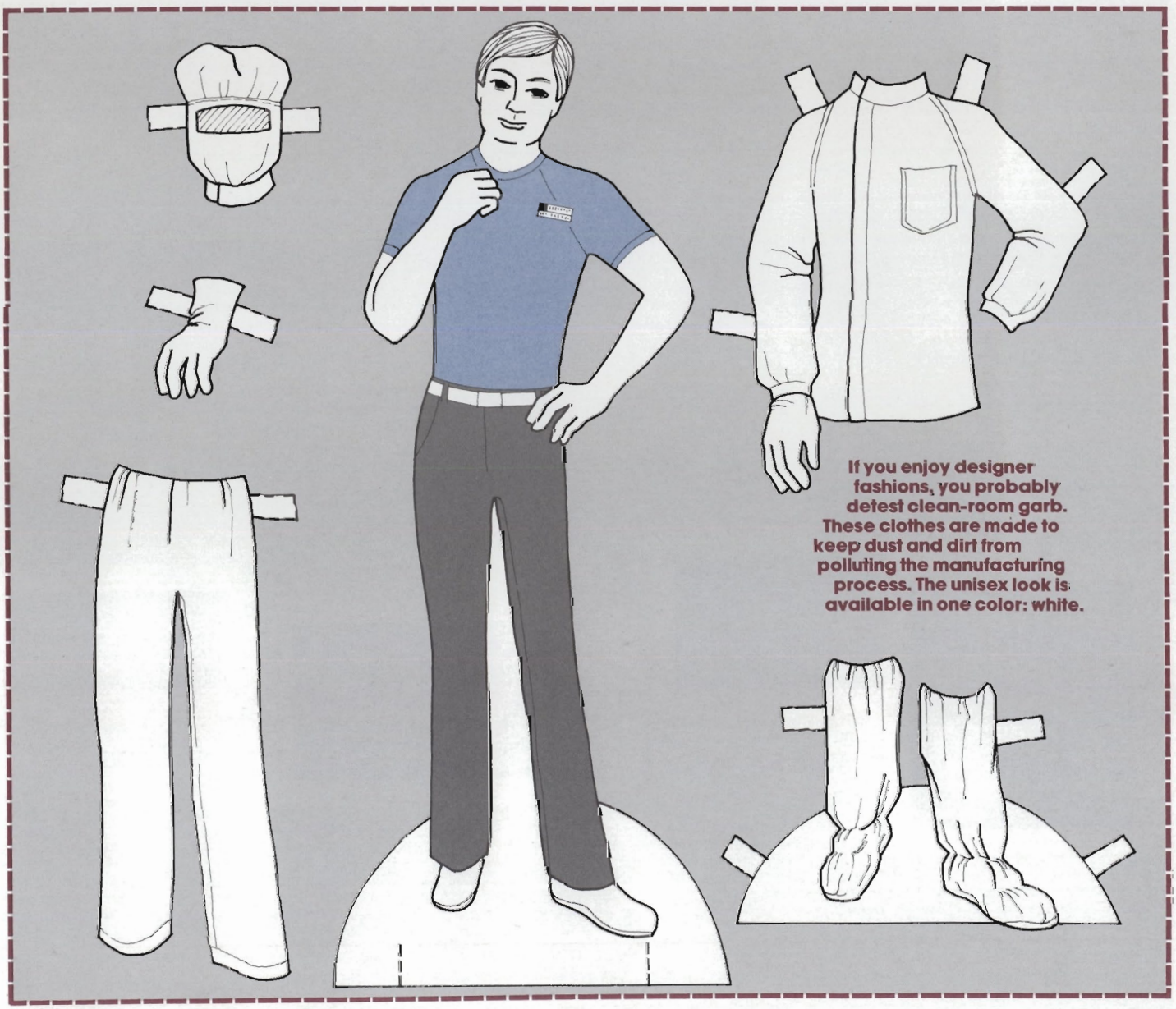
Clean-room notebooks contain pages made primarily of plastic. Pages are almost impossible to tear, which keeps paper fibers from polluting the area.

But Wanda believes the main concern about cleanliness is people in general. "Scratching your face, sneezing or just walking through the room can raise up dust," she says. Wanda explains that clean-room personnel become quite conscious of their environment—even at home. For example, Wanda says she picks up and dusts around her house much more now than before she started working at HP. "You become paranoid about dust after a while." Don't fret, you won't have to wear booties if you visit her home.

Clean-room operators vacuum HP floors daily and scrub them weekly. They also wipe window sills, tabletops and equipment at least once a week. "If you use equipment, you clean it before your shift ends," Wanda says. "And you never leave chemicals sitting out."

So you see, Pigpen would definitely be out of his comfort zone in the clean room, but with certain alterations in garb, Snoopy just might work out. **M**

*—Article by Gregg Piburn.*



**If you enjoy designer fashions, you probably detest clean-room garb. These clothes are made to keep dust and dirt from polluting the manufacturing process. The unisex look is available in one color: white.**

# Dealing in dollars

## Protecting HP from the uncertainties of the world currency market is a non-stop job for the company's treasury staffs.

Last year HP had net sales of 3.1 billion dollars... U.S. dollars. It's easy to overlook the fact that about half of those sales dollars started life as Japanese yen, German deutschemarks, French francs, British pounds sterling or some other currency.

It's only natural to expect customers in HP's European and Intercontinental sales regions to pay for HP products in local currencies. But since HP is a U.S.-based company that reports to its shareholders in U.S. dollars, translating those local currencies into dollars has a far-reaching effect on the way HP operates on a day-to-day basis.

During the last 18 months, for example, the dollar has increased in value 37 percent against a basket of European currencies. If HP hadn't closely monitored local pricing and taken protective measures against short-term fluctuations, the company's overall profits would have suffered.

Heinz Fischer's desk in Böblingen faces a large sign where the finance and administrative manager for HP-GmbH tracks daily changes in exchange rates. On May 19, the big blue numbers read "2.30," meaning 2.3 deutschemarks would buy one U.S. dollar. The prices HP charges its customers and the company's consolidated operating results are influenced by that big 2.30 and foreign exchange rates in the 33 countries where HP has sales entities.

It used to be a lot simpler. Following World War II, the major countries established a parity between currencies. Fixing the exchange rates helped bolster the economies of war-torn countries where inflation was taking its toll.

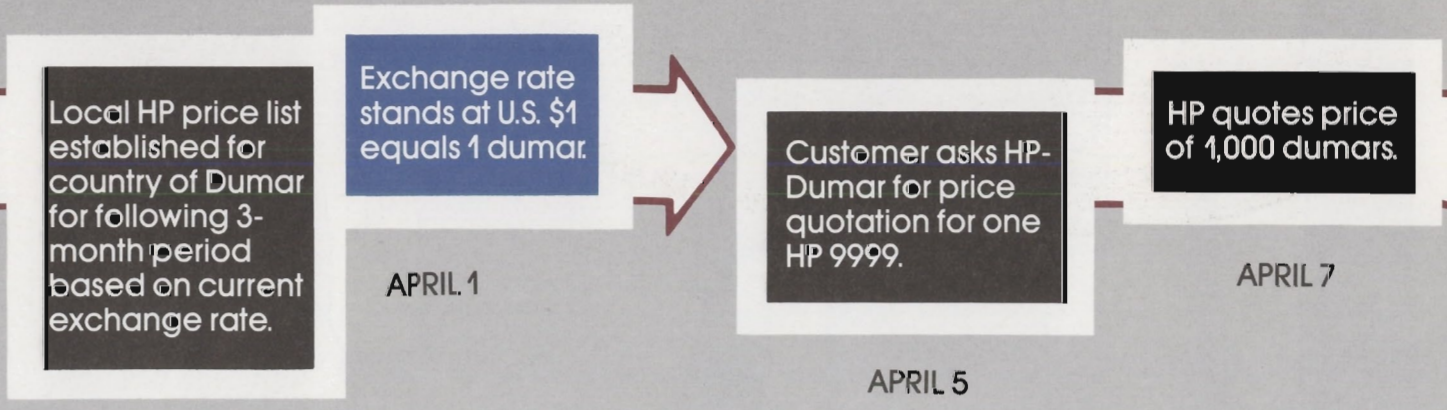
But in 1971, the U.S. abandoned the idea of fixed exchange rates and decided to let the dollar "float." Eight years later, the U.S. Federal Reserve Board changed its operating procedures that determined the interest rates charged between financial institutions for overnight borrowing.

The combination of those two moves created more volatility on the international money scene. Currency exchange rates reacted to fluctuating interest rates, political instability, inflationary economies and oil shortages around the world. Gone were the days you could count on buying a pound for $2.20 and receiving five French francs for a dollar.

"The U.S. dollar is still the dominant currency on the international money market," explains Tom Bjuhr, HP's European treasury manager in Geneva. "Eighty percent of all world trade is done in dollars. Imports of oil around the world are priced in U.S. dollars."

How does a change in the currency exchange rates affect Hewlett-Packard? If the exchange rates drop or climb between the time an order is placed with HP and the product is shipped to the customer, HP realizes a corresponding

**This hypothetical sale in the make-believe land of Dumar shows how HP uses forward contracts to counter the effects of currency fluctuations.**



loss or gain on the profit-and-loss statement in the U.S.

The time between placing the order and shipping it from the factory creates backlog. A typical backlog at HP is three or four months' worth of sales. It provides a healthy cushion in the factory to counter the effects of changing order rates. "If orders slow considerably, shipments can continue from the backlog, slowing at the same rate as incoming orders," explains Arnaud Bellamy-Brown, treasurer for HP-France.

But while that backlog helps HP avoid some of the ups and downs in order and shipment cycles, it also exposes the company to currency fluctuations. And during the three-month lifespan of an HP price list, the exchange rates can vary dramatically.

"Ever since the last oil crisis, the currency market has gone crazy," says Dave Warren, HP's U.K. cash manager in Pinewood. "Before that, daily fluctuations in exchange rates were very small. Today, we see changes of two or three percent each and every day."

Since those fluctuations can help or hurt HP, the company has adopted a policy to try to protect itself against such uncertainties. It calls for "a financial position such that the company incurs neither a gain nor a loss in U.S. dollars should exchange rates move."

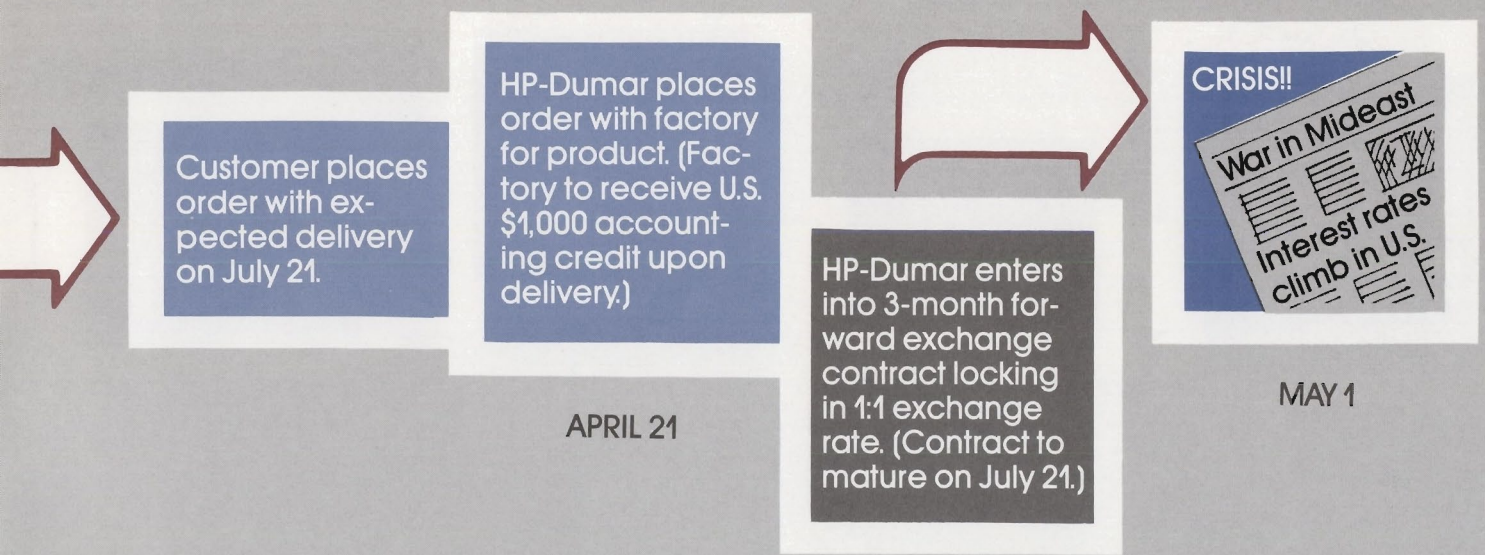
To try to neutralize the effects of currency fluctuations, HP enters into forward foreign exchange contracts. A forward contract is an agreement to "sell" local currency and "buy" U.S. dollars in the future at an exchange rate agreed upon today. Such contracts are purchased for periods of time ranging from a week to six months, and rates are almost always different from the current spot rate.

***"Ever since the last oil crisis, the currency market has gone crazy."***

In simplest terms, HP tries to enter into forward contracts in amounts equal to incoming orders to cover the time period it will take to manufacture and ship the products. When those forward contracts mature, the customer's local currency received by HP will be exchanged for U.S. dollars at the forward contract rate.

In certain countries, forward contracts are not available. In fact, only four of HP's 15 European countries have free foreign exchange markets. The others have restrictions ranging from no forward exchange markets at all (as in France) to very strict controls. Such restrictions have been put in place by governments primarily to eliminate speculation on the currency exchange market. In such cases HPSA treasury in Geneva may actually enter into the forward contract on behalf of the country. That makes Arnaud's job in Orsay a bit more difficult. "It's not as easy to manage coverage with people outside your own country, but we rely upon our constant contact with HPSA," explains Arnaud.

"In Geneva we play a coordinating role for our 15 European subsidiaries," says Tom. "Our treasury staff is in regular contact with treasury staffs in the countries to establish pricing and accounting rates. We work with economic planning and forecasting groups at European headquarters and outside the company with bankers and foreign



# dollars

exchange dealers to anticipate change."

HP isn't alone in the complex international money market. But many multinational companies don't use forward contracts, or use them as effectively as they could, according to Heinz Fischer.

"If you look at the international operating results of some major corporations, I think you'll find a lot of them who don't manage that part of their business well."

Dave Warren agrees. "Some companies try to milk the currency market for everything it's worth, and they may end up losing money. HP's basic philosophy is that computers and instruments are our business, and the currency market isn't," says Dave. "That's why we must rely heavily upon forecasting to establish pricing rates and the level of coverage required to fully hedge against the market's ups and downs.

"It's a matter of getting to know what factors are going to come into effect this month. Although the major factor is the forward exchange rate, we also look at our four-month rolling average sales forecast, our schedule of upcoming events, trends, politics and economic factors. This information, along with the forward exchange rate, helps us set our pricing rate," says Dave.

"We work at least three or four months ahead," says Heinz Reutter. "Bankers and traders will tell you what happened yesterday. We talk to investment managers about what's going to happen tomorrow with interest rates, political situations and inflation."

***"HP's basic philosophy is that computers and instruments are our business, and the currency market isn't."***

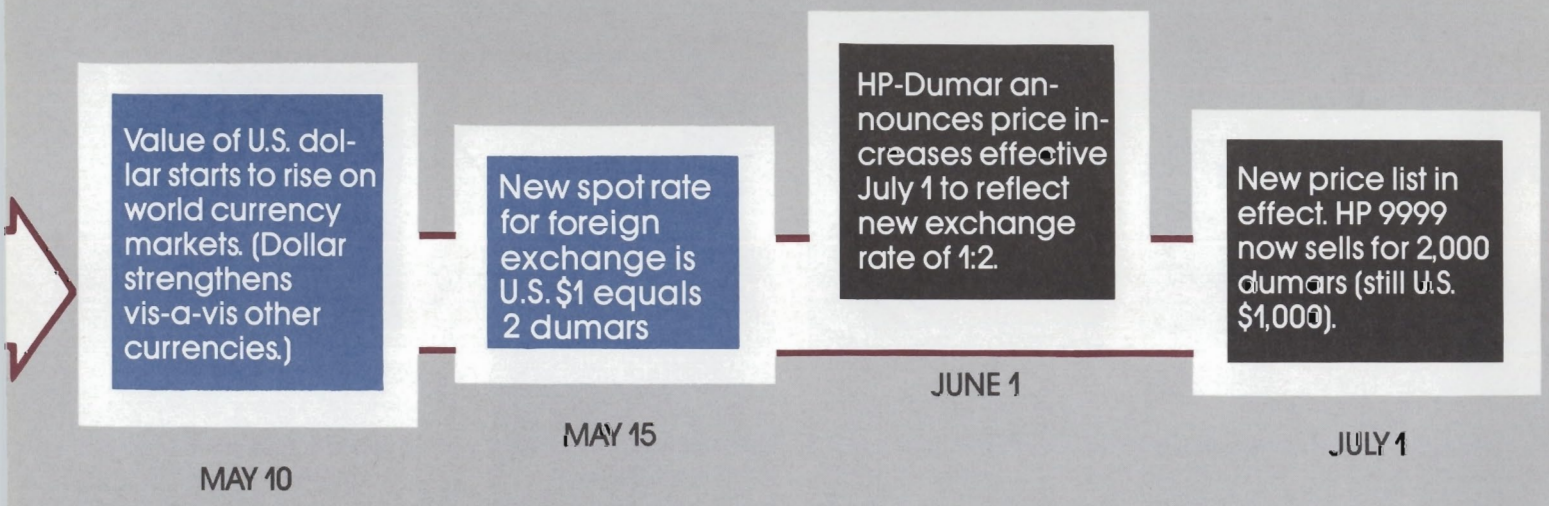
Trying to predict what will happen in the weeks and months ahead is important when HP sets its prices. Four times a year the company tries to set a price that can be protected and that will keep both HP and the customer happy.

"In some Latin American countries inflation creates some real problems. Currency adjustments have meant whopping price increases in Argentina," says Enrique Luna, Latin American analyst in Intercontinental's treasury department.

For example, in January 1981 it took 2,000 Argentine pesos to buy one U.S. dollar. One year later, you needed 11,000 pesos to buy that same dollar and, following the war in the Falklands, the rate had climbed to more than 20,000 pesos to the dollar. So an HP product which sold in the U.S. for $1,000 (and in Argentina for about 2 million pesos) 18 months ago would now carry a list price more than 10 times that amount.

Since the Argentine government controls the interest rates in the country (and the highest allowable rate is much less than the actual inflation rate), there's little money to borrow with which to buy products at those prices.

The Brazilian inflation rate of 100 percent annually seems tame by comparison. And the government has a standardized devaluation of the local currency, cruzeiros, set at about 6 percent per month. "In a situation like that, where the exchange rate is managed, HP can set its prices with some degree of certainty," says Enrique.



But for Moez Virani at HP's Canadian headquarters, that predictability doesn't exist. "During the month of June, the Canadian dollar hit a record low of 76.8 U.S. cents to the Canadian dollar. We made a decision to base our prices on that exchange rate. We notified our customers that prices would increase accordingly.

"But the Canadian dollar rebounded three weeks later to its previous level of about 79. We had to decide whether to go with the announced price increase, or change our minds and stay with the pricing rate that had been in effect.

"We stuck with the old level of 79 cents. You can imagine the difficulty that caused our salespeople in explaining why we canceled our announced increase," says Moez. "And it also created a tough job for our administrative people who had already cranked out new price lists and quotation programs based on the announced increase. They had to reissue the price list."

Moez and his counterparts in many other countries must try to predict which direction the exchange rate will go, how far it will go, and when it will happen. "A decision that looks super one day can look stupid just one week later," says Moez.

The prices charged for HP products sold around the world are based on how much it costs to manufacture the product. HP manufacturing facilities go through a standard costing exercise two times a year to determine the actual costs.

After the factory costing exercise, the primary determinate of the pricing rate is the forward foreign exchange rates.

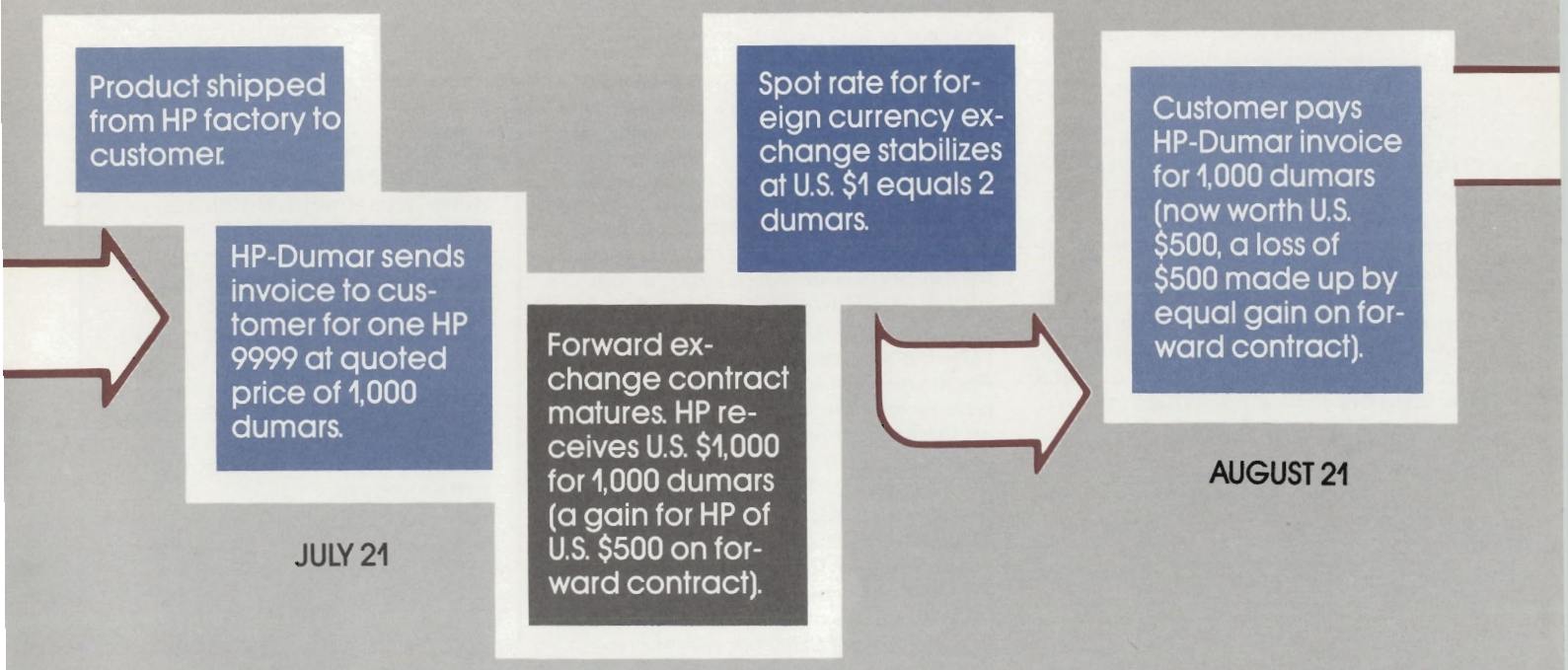
***"A decision that looks super one day can look stupid just one week later."***

At least four times a year the country sales organizations review and adjust the pricing rate (if necessary) to carry them through the next three-month period. In some cases, HP has had to pass along increases as often as monthly to compensate for drastic changes in the exchange rate.

The size of the sales organization and the complexity of the country's economic environment determine the amount of attention the treasury staffs must pay to the backlog exposure management problem every day. Although HP-Argentina is a relatively small organization, the inflationary economy dictates constant attention to exposure management. "On the other hand, HP's sales organization in Singapore is much larger and the economy is more stable," says Steve Brown, treasurer at Intercontinental headquarters in Palo Alto. "Exposure management is not as time-consuming and vital for the treasury staff there."

Regardless of the organization's size, the country's economy or the location on the globe, keeping track of exchange rates, HP prices and the company's competitive position is a never-ending task for the company's treasury staffs. "You've got to remember you can't beat the market," says Heinz Reuter. "The best way to do a good job is to have a good forecasting and pricing model—and to improve it every way you can."

Judging by HP's proven ability to minimize the impact of currency rate fluctuations, the treasury staffs are doing just that. **M**



# YOUR TURN

Invites you to question or comment on matters of importance to Measure readers.

## UP IN SMOKE

Does HP have a policy regarding smoking? Am I within my rights to ask a smoker to stay out of my office? To refrain from smoking at meetings which I must attend?

I'm sure I'm not the only HP employee with this problem. It seems every day more evidence is revealed about the harmful effects of smoke on nonsmokers.

I feel uneasy when I ask a smoker to "put it out" as I may actually be violating his rights, yet my productivity is hampered when I can't breathe.

I've grown weary of the smell following me home in my clothes and hair. Cleaning ashes off my desk is not in my goal statement. Eating lunch under a cloud of someone else's habitual vice has become a game, as I play musical chairs in the cafeteria and at meetings. Aspirin costs more these days.

Most of the problem has been trying to convince the smoker that a problem really exists. The seriousness of this matter is generally viewed as a joke when I confront an offender. Perhaps a companywide policy statement would help clear the air on the matter.

GARY BERGER
Neely Sales Region
Santa Clara

*There is no hard and fast companywide policy per se about smoking. In certain areas (clean rooms, chemical-handling areas, etc.) there are obvious reasons why smoking is prohibited. But because there are no U.S. or state laws or any safety regulations which prohibit smoking in office areas, HP hasn't adopted a companywide policy.*

*Consideration of others is probably the most important factor. Everyone we talked to feels you're well within your rights to ask someone near you to refrain from smoking. —Ed.*

## DUCK SOUP

I was very interested in Don Packwood's letter in the March-April issue concerning HP funding of voluntary outside activities. Lee Seligson's reply seemed to represent the best interests of the company and employees.

I understand the company owns land and facilities in the Bay Area for employees interested in shooting ducks. The HP Duck Club seems to fall into a category similar to the Corporate Cup relays: used by a small percentage of the employee base at a supposedly unfair disadvantage to those that do not participate.

Maintaining the land and facilities near Los Banos for the Duck Club may not cost as much as training a track team, but Lee points out that the company strives for an equitable distribution of funds and seems less concerned with the actual dollar amount.

Our Personnel Policies and Guidelines mention that "league programs provide a healthy atmosphere for competition." The Corporate Cup relays fit this description better than the Duck Club. If the company is unwilling to support the track team, I don't think it's fair that it continue to support the Duck Club. Having the company maintain this land and facilities for the use of a group of only about 100 employees seems inequitable and not in line with company philosophy.

BOB HASENICK
Stanford Park Division
Palo Alto

*Editor's note: What is now the HP Duck Club was begun as a private club in 1942. In the late 1950s, HP purchased the property and, since 1963, a committee of HP hunters has been organized to oversee the club's operations. (The committee reports to the Bay Area Personnel Services unit of Corporate personnel.) The company pays taxes on the Los Banos, California, property and provides money for utilities. These costs are billed out to Bay Area divisions. Hunters themselves pay an assessment fee of $10 per year, plus a $6-per-day fee for meals and hunting. These monies pay for hunting area improvements and repairs. Club members do most of the work themselves during special work days. The club is open to all Bay Area employees. Club safety regulations require a new hunter to be sponsored by a club member who has hunted a minimum of three times. The club operates only during hunting season.*

## OOPS!

On a lovely wooded site in northern Massachusetts, along the shores of the historic Merrimac River, is a thriving, dynamic HP division. It's called Andover Division. Those of us who work here at Andover are very proud of our new ultrasound product line.

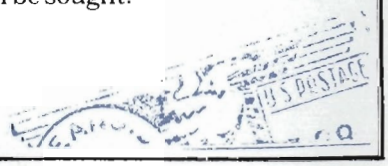
Ultrasound? Did she say ultrasound? At Andover? Oh, no...

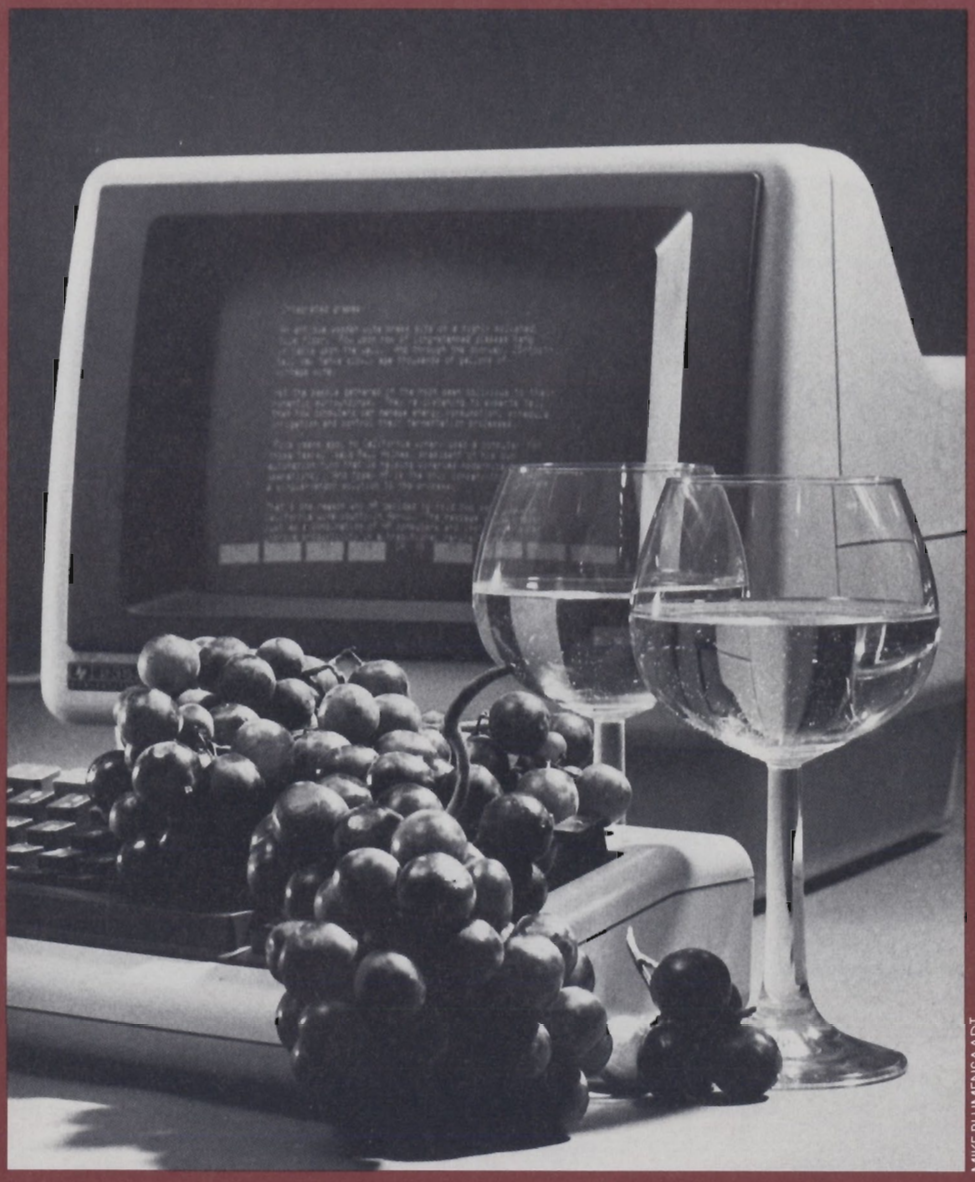
Oh, yes. That's right—you've done it again (*Measure*, July-August 1982). It was bad enough that you attributed our 8880A filter to Waltham Division last year, but to do the same to our superglorioskey 77020A/AC/AR ultrasound system is really too much.

VIRGINIA CARBONE
Publications Department
Andover

*With our Massachusetts road map and HP organization chart in front of us now, we shouldn't make the mistake again. Our apologies to all 720 Andover Division employees.—Ed.*

Address letters via company mail to Editor, *Measure*, Public Relations Department, Building 20BR, Palo Alto. Via regular postal service, the address is *Measure*, Hewlett-Packard Company 20BR, PO Box 10301, Palo Alto, CA 94303-0890. Try to limit your letter to 200 words. Please sign your letter and give your location. Names will be withheld on request. Where a response is indicated, the best company source will be sought.





MIKE BLUMENSAADT

# Integrated grapes

**An antique wooden wine press sits on a highly polished tile floor. Row upon row of long-stemmed glasses hang in racks upon the wall. And through the doorway, 25-foot-tall oak tanks slowly age thousands of gallons of vintage wine.**

**Yet the people gathered in the tasting room at Mirassou Vineyards seem oblivious to their romantic surroundings. They're listening to experts tell them how computers can prepare their daily sugar-level reports, manage energy consump-**

## grapes

tion, schedule irrigation and control their fermentation processes.

"Five years ago, no California winery used a computer for those tasks," said Paul Holmes, president of his own automation firm that is helping wineries modernize their operations. "And today HP is the only company that offers a single-vendor solution to the process."

That's one reason why HP decided to hold two seminars in California wine country in April. The message was simple: Just as a combination of HP computers and instruments can improve productivity in a traditional manufacturing firm, those same tools can also be put to work in all parts of a winery. The framework for such a plan is dubbed the "Winery Productivity Network," a spin-off of the Manufacturer's Productivity Network introduced in 1981 by Hewlett-Packard.

On the office side of the winery, HP computers can handle such traditional business chores as word processing, payroll and electronic mail.

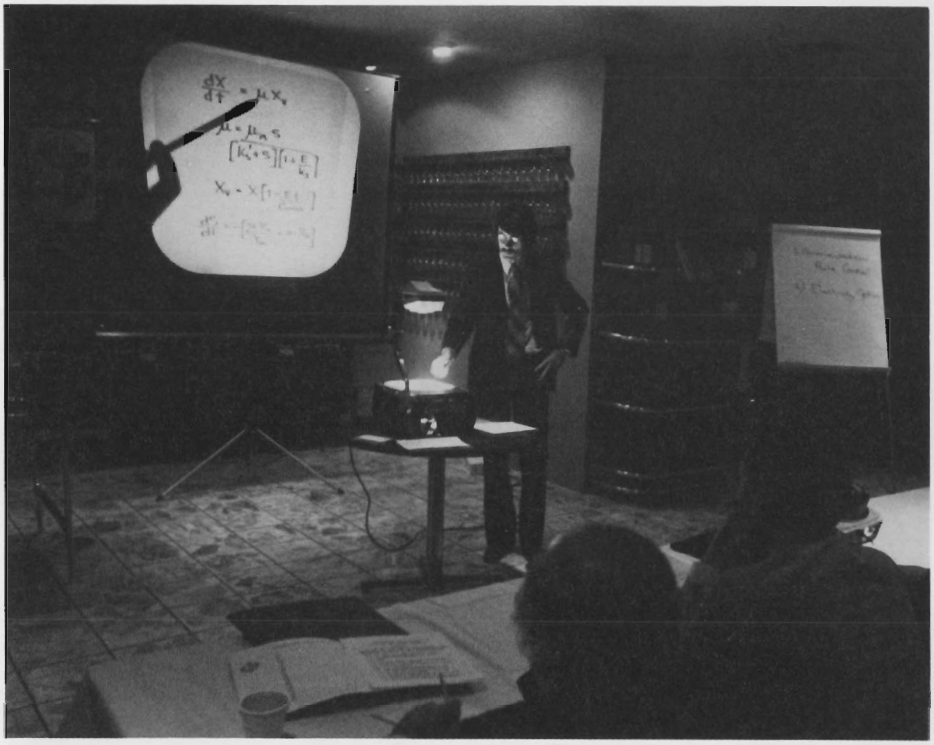
And those same computers can be used by the winery's financial staff for inventory control, accounts receivable, invoicing and budgeting.

In the winery's laboratories, HP analytical systems can tackle flavor, alcohol, wine color and pesticide analysis.

And in the wine-making process, HP computers can be used to control bottling lines and fermentation, to monitor weather stations and to manage energy consumption.

***By combining the technological advantages of the computer with the exacting art of the winemaster, Hewlett-Packard hopes to harvest rich rewards through the new Winery Productivity Network.***

"A lot of us in the wine industry grew up as computer illiterates," explained Steve Loupe, controller at Mirassou in San Jose. "There's still a lot of resistance to using computers, but that's changing."



BRAD WHITWORTH

**Roger Boulton explains a mathematical model he developed to control the fermentation process while cutting energy costs.**

Mirassou uses an HP 3000 business computer to track the financial side of its operation. The details of the season's grape crush, the number of bottles in tasting rooms and warehouses, and all shipping invoices are part of the sophisticated computer programs developed for the winery.

At Robert Mondavi's operation in Oakville, an HP 1000 computer monitors and controls the temperature in 150 stainless-steel fermentation tanks. Fermentation temperature is the most important factor in determining the basic character of a wine. For example, a light, fresh white wine must ferment slowly at a temperature near 50 degrees (Fahrenheit) while a full-bodied red wine should ferment more quickly at a temperature between the low 70s and the high 80s.

Temperatures in the Mondavi tanks are controlled by pumping a chilled glycol solution through a jacket surrounding the tank. The computer controls the glycol pumps, activating them whenever the temperature creeps out of the desired range.

Jim Vahl, an industry consultant who established the temperature control and information system when he was working at Mondavi, explained that control of fermentation temperatures is just the beginning. "The ability of computers in process control to talk to computers in other parts of the winery and throughout the rest of the world—networking—is going to become very important in our industry."

Roger Boulton, associate professor of enology (the science of wines and wine making), has developed statistical models which cut 15 percent from one winery's energy bill. Since the tank-chilling process consumes lots of electricity, Roger developed a program that bases cooling loads on optimal fermentation curves and total energy consumption.

Roger Boulton, Jim Vahl and Steve Loupe were three of the featured speak-

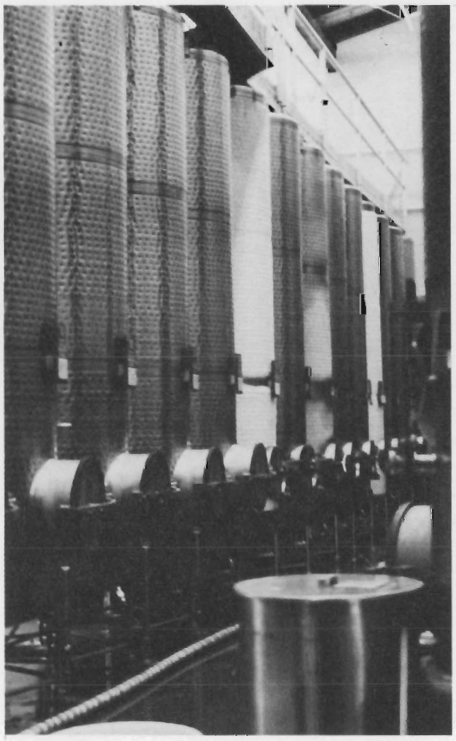
WINE INSTITUTE—RONALD PARTRIDGE

**Commercial vineyards came to California's Napa Valley in the 1860s. Winemakers from many of Napa's 39 wineries came to one of HP's April seminars to discover how a computer network can improve productivity.**

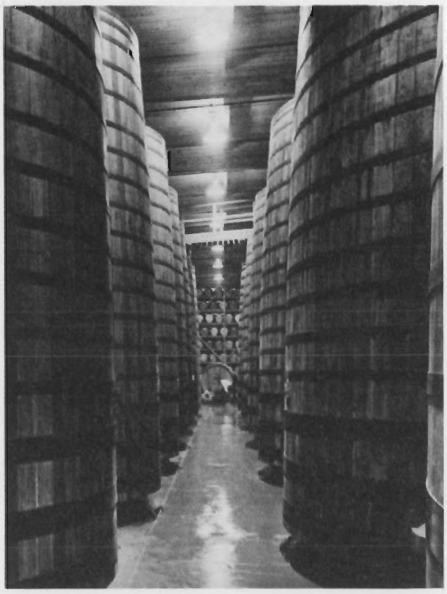
ers at the full-day seminars organized by HP computer sales reps Jim Melin and Carl Schulenberg.

For the organizers, the skillful blending of computer technology with the fine art of making wine is a ripe market for Hewlett-Packard. "We've just begun to scratch the surface of the market here in California," said Jim, "and there are tremendous opportunities for the Winery Productivity Network in the wine-growing areas of France, Germany, Italy and Spain."

Carl feels there's nothing wrong with computer systems playing a large role in an industry that's been around for centuries. "Remember, computers are just tools to help man make wine," he said. "They'll never be able to taste or enjoy the final product." **M**



POLLY GUSA

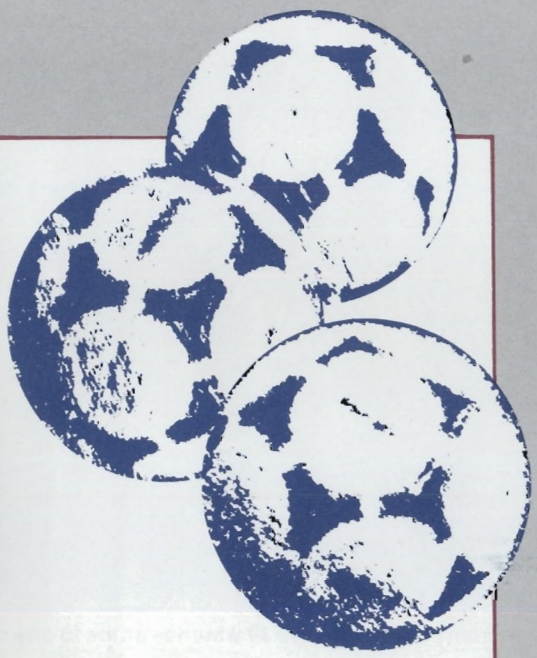


PAUL MASSON VINEYARDS

**Computers control the fermentation process at Robert Mondavi. The fifth stainless steel tank is being chilled by a glycol solution. Most wineries still use wooden tanks of oak or redwood to ferment wine.**

# CLOSEUP

Zooms in on the ever-changing world of HP people, products and places.



## HP AT THE WORLD CUP

While soccer enthusiasts from around the world descended upon Madrid in July for Mundial 1982, the World Cup championships, Hewlett-Packard was there, too, working behind the scenes.

HP analytical equipment—computerized gas and liquid chromatographs, gas chromatograph/mass spectrometers and ultraviolet-visible light spectrophotometers—was checking for illegal drug use by players. The equipment is part of a new lab at the University of Madrid.

And to test the new phone lines it installed for the games, the Spanish PTT ordered 20 HP4936A transmission impairment measuring sets. The instruments ran tests for voice, data and broadcast program transmission so the championships could be shared with the rest of the world.


NASA

## STRAIGHTENING THINGS OUT

Before the space shuttle Columbia leaves its Florida launch site, everything must be in order. To make sure various component parts are all aligned, an HP 3822A coordinate determination system is put to work. The Loveland-built instrument checks the position of the payload in the cargo bay and the alignment of door hinges and booster rockets.

Rockwell International, the shuttle's builder, figures the use of the instrument cuts two days from the time needed to prepare the Columbia for flight. Here HP's Roger Bernard answers questions from two Rockwell employees using the HP 3822A.

MICHAEL SLACK

## BEST IN THE WEST

Some of the best-selling chips in California aren't made of silicon—they're chocolate. Sales of freshly baked chocolate chip cookies in the San Francisco Bay Area alone are estimated at $10 million a year by the *San Francisco Business Journal.*

A San Francisco television station recently held a contest to pick the area's best homemade chocolate chip cookie. HP's Sheila Gregory, benefits coordinator at the Microwave Semiconductor Division in San Jose, was pronounced the winner for her caramel-like version filled with chocolate chips and nuts. Here's the winning recipe:

**Chocolate Chip Cookie Gregory**

1 cup packed brown sugar
1 cup granulated sugar
1 cup butter
3 eggs
3½ cups sifted, all-purpose flour
1 teaspoon salt
2 teaspoons baking soda
2 teaspoons cream of tartar
1 teaspoon vanilla
12 ounces chocolate chips
2 cups chopped walnuts

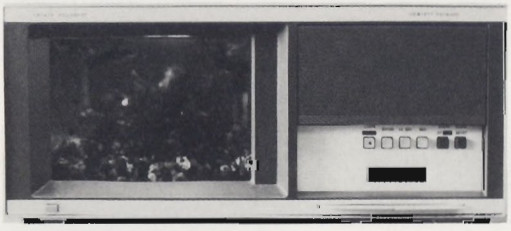
Mix together the brown sugar, granulated sugar and butter. Add eggs and beat until smooth. Stir together the flour, salt, baking soda and cream of tartar. Add to sugar-egg mixture, beating until smooth. Add vanilla, chocolate chips and walnuts. Drop rounded spoonfuls on a greased baking sheet. Bake in a 375-degree (Fahrenheit) oven for 10 to 13 minutes. Take cookies out of the oven just before they look done. Place on rack and let cool five minutes. Makes about four dozen.

PHOTOS BY AL JOHNSON

## BILL AND DAVE AND MAMA

A mother barn owl and her two white ball-of-fuzz youngsters (named after the company's founders) have a home on a ledge near the entrance to HP's San Diego Division. The nest is in a nook of two concrete building supports. It's an unusual roosting spot for barn owls since they prefer dark, sheltered places such as hollows in trees, caves, barns and belfries.

But HP has been the perfect temporary home for Mama and her fledglings. HP's tree-lined patios have been pleasant, employees have been quiet and polite, and there are plenty of mice, gophers and moles scurrying about the industrial park where the plant is located.



WIL LIVADITIS

## A PARTING SHOT

Böblingen Medical Divison's general manager had a request for his R&D department. "No more products using first generation 'shot' technology," pleaded Menno Harms. The division had introduced *Neoshot* (a neonatal monitor), *Rifleshot* (a patient monitor), *Central Shot* (a central monitoring station), *Capnoshot* (a hemodynamic and ventilation parameters monitor) and *Trendshot* (a hemodynamic trend monitor).

But the folks in the lab got in one last shot: *Aquashot.* The HP-engineered aquarium came complete with goldfish, plants, light, filter, alarm clock and a set of operating instructions. Menno received this "fishy" product just in time for his presentation to the HP board of directors in late May. (He also discussed actual products under development.)

Selling a solution:

# The theme was teamwork

You might call it a classic case history in the annals of HP salesmanship, especially in those chapters that deal with cooperative selling in which people from more than one product line are involved. But this case is more a study in current events than history because it's still unfolding at Freeport, 60 miles south of HP's office in Houston, Texas.

The customer is Intermedics, a $155-million-a-year manufacturer of pacemakers and other products in the hot new field of electro-medical technology. A true believer in the benefits of applied technology, Intermedics began looking into ways to control its manufacturing processes about five years ago. Its goal has been to measure and monitor production activity at Freeport.

Given the array of options available to the Intermedics' manufacturing engineering staff, together with the fact that the company would be sticking its neck out to the tune of a million or more dollars, this was not a commitment to be taken lightly or decided quickly. Initially, Intermedics chose to work with an HP competitor in computers, attempting to link their products with instruments supplied by other vendors. This produced a highly customized system involving a variety of non-standard items. Since there was no overall vendor responsibility, service, software development and repair became problems.

Meanwhile, an HP Instrument field engineer, Darryl Glassco, continued to call on Intermedics, offering a complete HP solution. Darryl found a strong ally in Don McKay, Computer sales representative, who was well acquainted with a new member of the Intermedics' engineering team. Joined by HP's Ken Oliver, a systems engineer, and Jack Durnin, an Instrument measurement systems engineer, the four began calling as a team and also separately to answer Intermedics' questions and determine its needs.

Early in 1981 the HP team began putting together a plan, an overall detailing of the elements of the system they believed would do the job. With a go-ahead from the customer, they had the system up and running in only four months. Basically it consisted of standard, off-the-shelf HP products including computers, terminals, instruments and multiprogrammers linked by the HP interface bus (HP-IB). The latter permitted fast and easy generation of software.

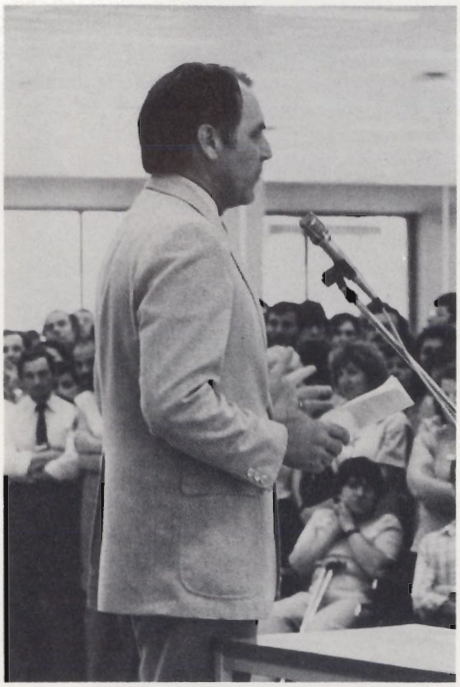
Another important aspect of HP's strength in providing a total solution to this customer's needs was HP's service capability. The PT11 and PT02 service groups worked together closely to provide a service contract for the total system that met Intermedics' after-the-sale service and support needs.

Because of continuing teamwork between the field people (sales, systems engineers and service), the office support staff and the factories, HP was able to provide the most comprehensive system the customer could purchase.

Now the Intermedics engineers at Freeport can devote more time to building pacemakers and developing other medical products such as electrical anaesthesia equipment. Meanwhile, other departments of Intermedics, which has plants in seven more countries, are studying the HP system with interest, seeking ways to measure and monitor production on a worldwide basis. With such possibilities it's anything but a closed case. **M**

# JOHN YOUNG

## HP's president recounts highlights of recent tour of HP's European facilities



**Grenoble Division's 850 employees listen to John Young describe company operating results during his European trip.**

About once every five years the HP board of directors schedules one of its bimonthly meetings in Europe. Since one-third of our total business volume comes from this part of the world, it's clear that maintaining a personal perspective on government policies, key customers and our HP program is particularly helpful. Late May was scheduled for our most recent visit, and I'd like to give you a report.

First of all, as I have been reporting to you, the business environment is not that robust. Much of Europe has been in a recession for almost two years. The dollar has strengthened considerably with respect to the European currencies, effectively raising our prices to European customers as much as 30 percent. So this visit, unlike those in the past, gave us a chance to see our organization in quite a different economic setting.

Our trip began in London with a review of our U.K. sales operations and the dedication of an important new facility: HP Pinewood. Despite tight government economic controls, our U.K. team has done a fine job. We find our products are well accepted and established in the marketplace and we've had substantial growth in business volume.

HP Pinewood has a special significance. It's a facility built close to our London sales headquarters to house software R&D activities. As more and more of our business involves computers (now about half), the associated software becomes very important. One group at Pinewood has a responsibility to originate new programs—such as HPMAIL that allows users to communicate with each other by terminal—and another adapts other application programs for use by U.K. customers. We expect to see this model repeated in other locations in the future.

Sir Patrick Jenkin, the British secretary of state for industry, helicoptered to the facility for the dedication tour and then ate lunch with the board and about 200 guests, including customers, officials and the press. This was a most enjoyable affair with full cooperation from the weather. Because of the size, it had to be held outdoors.

The next stop was Germany at our Böblingen manufacturing facility near Stuttgart. Our German business has felt the most impact from currency problems and slow business conditions. Nevertheless, we found the division people working hard on an impressive array of new products in the five operating divisions we have there. This powerful capability is built on a 20-year history and is a great aid to our sales program in Germany as well as providing support in many cases for all of Europe.

One of the high points of the trip was a dinner in stately Ludwigsburg Castle, now owned by the state of Baden-Württemberg where HP is located. The state's prime minister was present as were our German team, many leading government officials, key customers and members of the scientific community. The dinner was a very agreeable way to learn about our affairs and put the board in touch with a broad cross section of the people with whom we have important relationships.

Our final stop was Grenoble, France. Once again we had the opportunity to see and hear about our new product programs as well as the factory support for all Europe on computer repair boards and technical computers.

Learning about current trends in the French business environment was particularly interesting to the directors. With last year's change to a Socialist-controlled government, the sweeping program for nationalizing key industries could have a major impact on HP.

We learned that the new government will dramatically increase the country's emphasis on electronics and communications, and plans to increase total R&D expenditures from two to three percent of GNP. Further, the government believes in state-owned industries competing with private firms for the available market. This combination of attitudes is fortunate for us and should provide a healthy business climate in the years ahead.

Our directors' meeting was held in the Grenoble city hall. Mayor Hubert Dubeout, a leading Socialist member of parliament, hosted a lunch that again provided an excellent forum to meet industrial and government leaders.

The directors' schedule was an aggressive one, with functions from breakfast to personal dinners with HP people, often in their homes. The careful planning and hard work from all the European organizers made the entire visit go smoothly.

We came away from this experience with a fresh view of problems and programs. I feel we have an outstanding group of people pursuing HP's affairs in Europe. As usual, we're finding effective ways to cope with the daily problems and to build a changing and growing business on the foundation of European operations begun in the late '50s. We are now a highly visible and highly respected company with many opportunities to grow and develop in the future.

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# NEWSCLIPS

Recaps the newsworthy events, changes and achievements within HP.

## TOP HATS

Jim Barton has moved up from manufacturing manager to general manager of the New Jersey Division.... In a rotation of the top management position at the Computer Terminals Group's Puerto Rico Operation, Ray Cookingham replaces Larry Mitchell as operations manager and Mitchell becomes site manager for Data Terminals Division's activity in Roseville, California. ...Jack Trautman has been named manager of the Loveland integrated circuit activity, part of the Integrated Circuits Division formed in May.

## CHART CHANGES

A new Advanced Systems Laboratory under the direction of Bill Worley has been created within HP Labs' Computer Research Center. ASL will now do research on architecture, software, hardware, compilers and performance evaluation for next-generation systems as well as implementation projects related to both general-and special-purpose processors.... The Sunnyvale Printed Circuit Shop which formerly reported to Data Terminals Division manufacturing now reports directly to General Systems Division top management.

## HONORS

The Instrumentation and Measurement Society of the Institute of Electrical and Electronics Engineers (IEEE) has presented its highest honor, the 1981 Society Award, to four HP men: Don Loughry, Jerry Nelson, Daryl Knoblock and Dave Ricci. As a group they were responsible for the innovation and implementation of the HP Interface Bus (HP-IB), and its acceptance as a national standard (IEEE-488) which in turn became an international standard.... Hewlett-Packard Company was one of 50 firms receiving "Business in the Arts" awards in an international competition cosponsored by *Forbes* magazine and the Business Committee for the Arts. HP made cash and equipment grants to the arts totaling more than $560,000 in fiscal 1981, including the grant of an HP 3000 system to the San Francisco Symphony.... HP received the Tall Tree Tribute annually awarded by the Palo Alto Chamber of Commerce for community service.

## HEADLINES

A new Pinewood facility near Wokingham, Berkshire, England, was formally dedicated on May 24. (See pages 8, 23 this issue.)... HP 41C handheld computers, which have been aboard all U.S. space shuttle flights, were again carried on the *Columbia's* fourth flight which returned home on July 4. For the first time, four HP 41Cs were along (instead of two) to keep track of radio communications and to signal when routine chores should be performed.

## NEW PRODUCTS

The Corvallis Division on June 7 introduced two new slim-line programmable calculators: the HP 15C, which includes an unprecedented number of math, science and engineering functions, and the HP 16C designed for computer programmers and digital-design engineers.... In mid-July, the Personal Computer Division brought out the HP 86, the lowest-priced personal computer ($1,795 base price U.S.) ever offered by the company.

The newly introduced HP 1040A high-speed spectrophotometric detector system from the Waldbronn Division is a stand-alone detector which provides chromatographic analysis on up to eight independent wavelengths simultaneously. It is used with the HP 85 to provide fast data output. Base price (without computer) is $9,350 (U.S.).... Böblingen Medical Division's new HP 8040A fetal monitor sets new high standards for ultrasound accuracy. It has a wide-beam transducer that scans a wider sweep of the abdomen at one time.... A new HP 8955A RF test system from the Spokane Division simplifies testing of AM and FM transceivers in the frequency range from 150 kHz to 1000 MHz. A software package reduces or can eliminate software development time and problems.... Newest drafting plotter from the San Diego Division is the E/A0-size HP 7585A, the largest formal plotter which HP has yet offered. Priced at $22,750 U.S., it has a price-performance advantage over competitive units.... Boise Division's enhanced HP 2680 laser printer is used with the HP 3000 and new business-graphics software to design graphics, combine them with text and merge both into a completed document produced on the printer.

GREG SUTOR

**At the San Diego Division, John Hall watches the HP 7585A generate plots.**