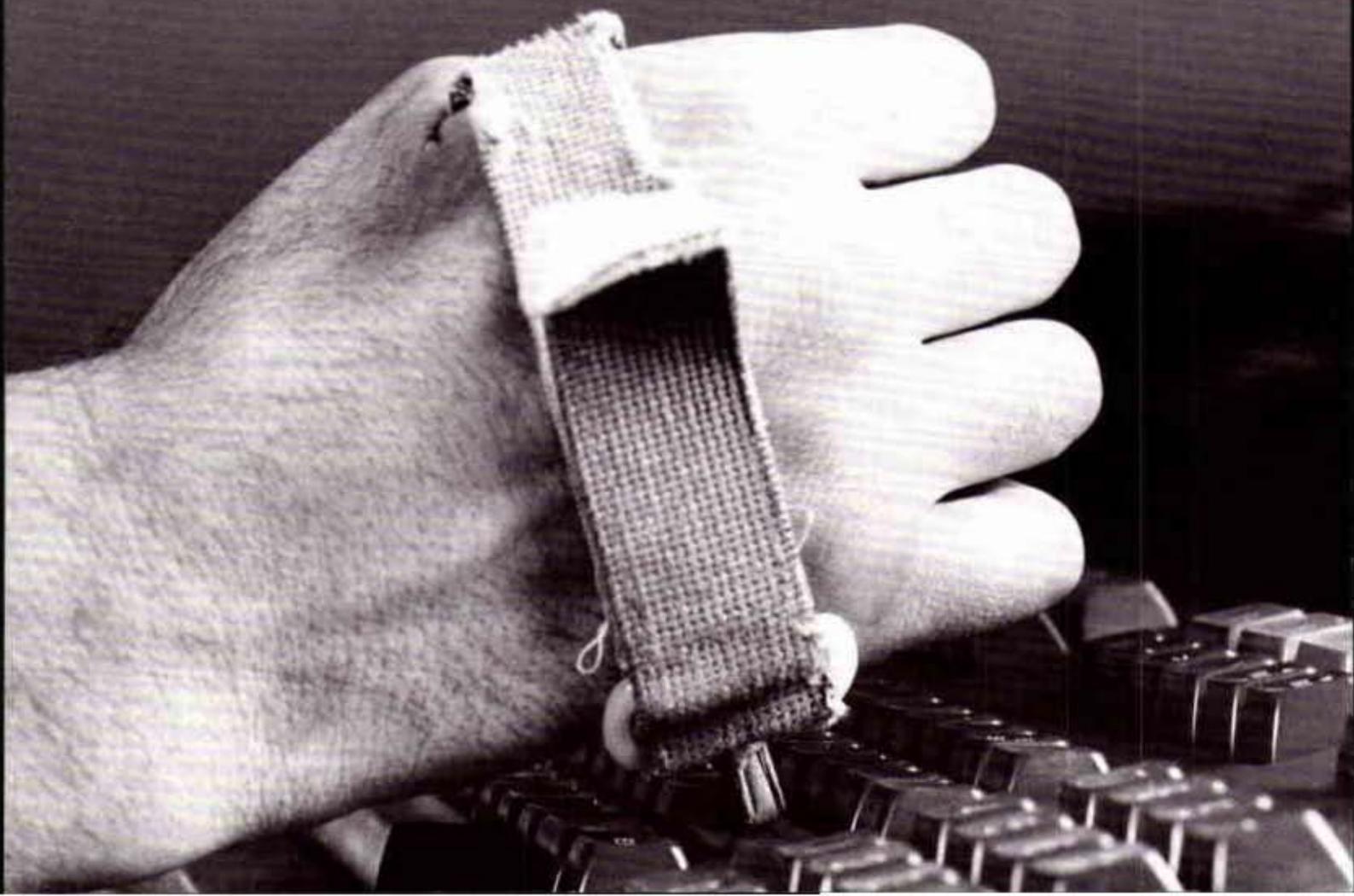


MEASURE

For the people of Hewlett-Packard

July-August 1983

Programmed
for independence



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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 23 U.S. cities in eight 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

HP's Dean Gregersen uses this tool to enter data in his terminal. Dean is a graduate of a Berkeley, California, training program that prepares disabled people for programming jobs. Staffer Joanne Engelhardt describes the school and its many HP connections starting on page 8. Cover photo by Mark Tuschman.

UPFRONT

HP traffic specialist blows whistle on computer scam.

When Rolf van Buren (not a real name), self-proclaimed HP sales representative, walked into HP's Paramus, New Jersey, sales office on April 14, he was surprised by four FBI agents. They arrested him on charges of fraud and transporting stolen property (specifically, an HP 125) across state lines. He subsequently pleaded guilty to the charges.

If it hadn't been for Donna Fredericks, a traffic specialist in the Paramus office, van Buren (really a Dutch wine importer) would have walked off with more than \$20,000 worth of HP personal computer products in a scam involving several unsuspecting HP employees.

Two weeks earlier, when van Buren called the Personal Office Computer Division in Sunnyvale, California, he was frantic. He said he was an HP sales rep from Holland on his way to a product demonstration in the West Indies. While on the trans-Atlantic flight, the airline lost his demo equipment and he needed to "borrow" an HP 125.

Despite a six-month order backlog on the 125, the Sunnyvale marketing employee was able to piece together the necessary products to help out "a fellow employee." Within a few days, the personal computer, disc drive, printer and software were on their way to the Eastern Distribution Center, a European sales support group located in Paramus.

Van Buren had been rather pushy and demanding, which troubled the POD marketing rep. But the Dutchman seemed to be intimately familiar with HP and where specific products are manufactured, so the marketing rep soon dismissed his uneasiness.

The computer arrived in Paramus on Wednesday, April 6. Although van Buren had called the sales office many times to "check on it," he didn't appear to pick it up until Friday at 4:45 p.m.—just about quitting time.

Donna had the equipment ready, but was about to leave when van Buren walked in.

"I asked to see his employee I.D. When he didn't have one, I said a business card would do. I figured if he was a sales rep, he would at least have a busi-

ness card. But he didn't. Besides that, he just didn't seem 'HP.'"

Donna was suspicious enough that she said she'd have to verify his employment. Ignoring his pleas, she insisted he'd have to come back Monday to pick up the equipment.

When she could find no record of his employment either in Holland or in corporate personnel, she called corporate security to report her suspicions.

While Donna stalled a few more days, corporate security manager Jim Hacker contacted the FBI, which hurriedly obtained a warrant for van Buren's arrest.

Donna's insistence on proper identification saved HP more than \$20,000. She attributes at least part of her curiosity to her husband, who is in the security business. "He's made me a lot more sensitive to situations like this," she says.

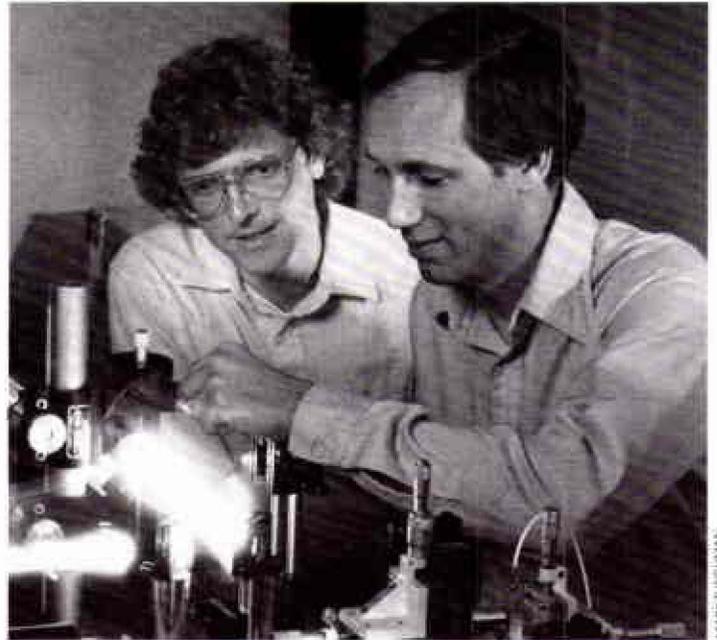
This incident is a real-life reminder that in extending yourself to be helpful, don't "give away the store." **M**



Donna Fredericks is responsible for uncovering a \$20,000 computer scam.

CARL GIARDINA

DOING R&D ON R&D



At HP Labs, project manager Dave Bloom and George Clifford use laser beams in advanced high-speed optics research.

There's an old country adage that says, "If it ain't broke, don't fix it!"

Why, then, are Hewlett-Packard's highly regarded research and development engineers looking so intently at ways to improve R&D productivity throughout the company?

The answer is simply that the pressures for bringing new ideas to the marketplace have never been greater. HP is larger, more spread out, more difficult to coordinate. The strong trend toward systems—in all HP's product groups—has brought a burst of growth in software activities. There are more complex technologies and tools to integrate into programs, new regulations, stepped-up competition from both heavyweight major companies and aggressive new ventures.

All of this puts a premium on making sure that project teams and individual engineers can get the R&D job done smoothly and efficiently. The well-being of the company is riding on their efforts:

- Half of the company's orders in 1982 came from products introduced during the preceding three years.
- In 1982 HP spent \$425 million on R&D, or 10 percent of total revenues.
- HP has the third largest electronics R&D program in the U.S.—right behind Bell Laboratories and IBM—and the fifth largest electronics R&D program in the world. The rate of spending on R&D continues to rise each year (see graph on page 6).



MARK TUSCHMAN

Art Schleifer makes a point during the Scientific Instrument Division's R&D project management seminar led by Jlm Serum (right), R&D manager.

As John Doyle, vice president—R&D, points out, "Hewlett-Packard would be less than a \$300 million dollar company today instead of a \$4.3 billion company if we hadn't introduced any new products in the past decade."

To keep the R&D machine in the best possible running order, an engineering productivity task force was formed in 1981 under Rit Keiter, general manager of the Signal Analysis Division. Its charge was to take a steely-eyed look at the practice of engineering in the corporation.

According to Executive Vice President Dean Morton, who took the lead in establishing the task force, "There was an uneasy feeling that HP was slipping somewhat in R&D: the very area we feel is most instrumental to our continued success."

The task force issued a report in January 1982 that pinpointed the need for better tools for engineers, the importance of strategic planning and checkpoints on projects, attention to the human factors of motivation and morale of engineers, the lack of R&D management training and the need for a corporate office of engineering as a focus for addressing many of these concerns.

Task force member Chuck House, then an operations manager in Colorado, was tapped to pioneer the new position of director of Corporate Engineering.

To understand his new territory, Chuck took a look at the size and scope of the engineering community in the company. He found that slightly more than half of HP's 7,800 engineers and computer scientists are in R&D (with

the rest in such areas as marketing and manufacturing).

Almost half have degrees beyond the bachelor's degree. Most—75 percent—have electrical-engineering degrees, with 7 percent in the emerging field of computer science. That mix is changing: in the past three years, those with computer science degrees have made up one-fourth of the engineering hires.

HP's engineers work in R&D labs in 66 entities, with the largest concentration in HP Laboratories, the central research facility in Palo Alto.

On his swing to visit most of those labs, Chuck found that in some divisions more than half of the project managers were on their first management assignment. He was aware of "pockets of knowledge" that needed to be transferred to other groups. It was clearly a good time for a model training course that would spread the best practices uniformly across the company.

The result was introduction of the "R&D Project Management Seminar," developed by Ray Price of Corporate Training and previewed for 700 project managers over a satellite teleconference last November.

By the end of this year some 1,100 HP engineers will have been through the 12-part course at their own division with their own management teams as the faculty. Depending upon their experience, project managers will find it a good overview or a refresher course. It covers their own role, the life cycle of projects, planning and control, product strategy and managing people. Since much of the work on a project occurs outside the lab, managers from other

functions come in to explain their needs in relation to R&D.

No one set of materials is exactly right for all locations, of course, so a good deal of custom-tailoring is done.

HP Labs, which doesn't have the usual division organization, assigned a task force to each module to adapt materials to the unique role of the central labs. Training was done in an intensive week, with guest speakers such as author William Ouchi brought in.

The module on the life cycle of a typical product—from investigation through lab experimentation to the various stages of production—needed some modification at the Cupertino Integrated Circuits Operation. "But we found there is a correlation between the classic checkpoints for developing a box and what you should do to design an IC chip or develop a new process," says Bob Waites, R&D manager.

One of the most popular topics with newer project managers is the explanation of how their current work fits into the division's overall strategy. "It gives the project manager an unusual chance to sit down with the general manager for half an hour," explains Bob Frankenberg, hardware R&D manager for the Computer Systems Division.

Dick Hackborn, vice president of the Information Products Group, did the videotape on new-product strategy planning. He sees strategy as "a tool to initiate items to get results, not an exercise in mental fantasy or postponement of a current decision until a 'safe' time in the future."

He's a strong believer in the need for more precision in "being there with the right product at the right time." A combination of short-term "leveraged" products (drawing on existing technologies) and longer-term pioneering programs helps ensure a steady flow of new products.

To make sure that project managers understand the high stakes for which they are playing, Chuck House points out the future money committed by the investigation stage of research. If the initial program is wrong, he says, "You won't know until you're past the stage when the later cycles have to be started." Adding in production, marketing and other costs, \$2,500 rides on

every early dollar in the "I" stage.

Gaining new favor are some familiar techniques for planning and control of projects, such as PERT charts and Brunner-grams, which have become computerized. Changes to update schedules can now be done automatically instead of by hand.

Good practices were gathered from all parts of the HP. Mitsutoshi Mori, Hachioji facility director for Yokogawa-

Hewlett-Packard, explains how YHP reduced the cycle of developing a new product to 20 months and improved productivity at the same time. Böblingen Medical Division's Hans-Guenter Hohmann has suggestions for getting agreement on a schedule for a project from all the departments involved.

Now that the course is in place, R&D Manager Ray Shannon of Stanford Park Division predicts that training in

areas such as strategy will be repeated annually. "This isn't a one-shot deal," says Ray. "It's going to be like painting the Golden Gate Bridge."

In addition to R&D training, a push will be made to spend more money on tools to help engineers do their job easier and faster—another strong recommendation of the task force.

Individual R&D labs have not always had the resources to invest in equip-



MARK TUSCHMAN

Data Systems Division's Sara Dickinson and Nancy Schoendorf discuss project planning.

OFF TO THE RACES

Sara Dickinson and Nancy Schoendorf of Data Systems Division each headed up a project completed in less than a year.

Sara, now the section manager for on-going HP 1000 computer development, was project manager for hardware for the A600 processor introduced in early 1982. Nancy was project manager for RTE-A.1 operating system software for A-series computers, including the A600. (The popularity of the A600 was evident from the time that it came on the market and it is now one of the top sellers in the HP 1000 product line.)

"We were proud that we had customer shipments within a year of starting the project—and they were clean, high-

quality HP products with no wires, lifted pins or jumpers," says Sara.

The software team did even better, shipping copies in quantity in just seven months from the start of the project. "We were fully staffed and off to the races in a week," Nancy recalls.

Both products were shipped to customers in volume quantities a month after manufacturing release.

In their videotaped presentation for project managers, Sara and Nancy agree on the elements which go into successful short-term projects for either hardware or software:

- Most important is the team of people. Staff fully or not at all. It helps to have at least one technical "guru" on the project. Put people in spots that use

their particular strengths. One advantage of short-term projects is that people are kept interested when they see visible results.

- Have project objectives that are well-defined and unchanging. Address a clear market need that fits in with overall division strategy.

- Take advantage of existing technologies for design leverage. Such projects step along HP's product offering but don't stumble by trying to do too much at once.

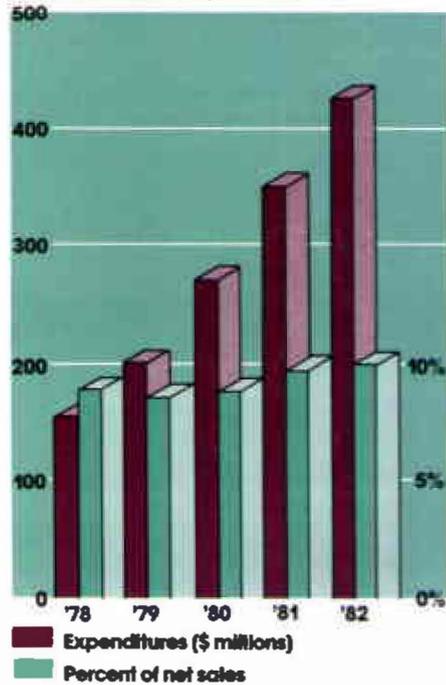
- Be willing to take risks. Set an aggressive schedule at the beginning, including those activities which involve other functional areas in the division. On a short-term project it is often possible to "hit the technology horizon" by designing in state-of-the-art components that will be delivered in quantity just in time for full-scale production.

As Sara and Nancy see it, about half the time of a project manager is spent working with people outside the R&D lab on the business team—in technical writing, production engineering, purchasing, product marketing, scheduling and the integrated circuit or printed circuit shops.

"You must take charge of public relations for your project," says Sara. That includes keeping an ear to the ground to make sure the project has ongoing support from upper management.

The concept of successful short projects as part of the R&D effort is definitely endorsed by computer groups management, which this March gave Sara, Nancy and 15 other people awards on behalf of their teams' one-year-project efforts.

Research and development



ment for computer-aided design (CAD) to automate drafting of IC and printed-circuit design, or in computer-aided engineering (CAE) to automate equipment design. An estimated 1,000 HP people worldwide already use IC design tools developed by HP Design Aids. The new Engineering Productivity Division is expected to produce a stream of products that will be useful inside HP as well as in the marketplace.

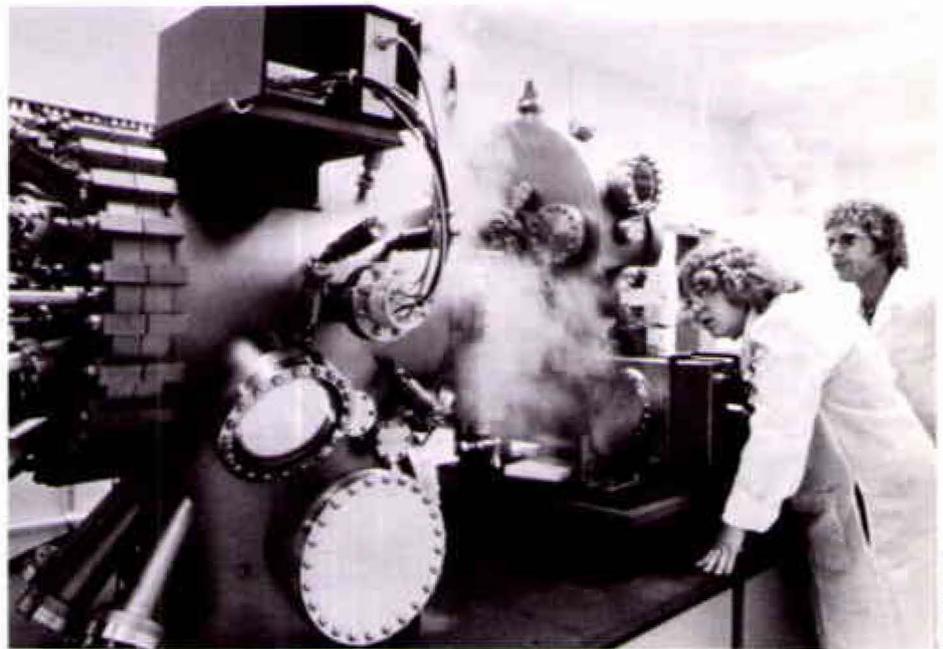
Some divisions are already making a major investment in tools. The Spokane Division, for example, has been spending 6 to 7 percent of its annual budget each year on capital equipment—about twice the investment of other instrument divisions in its group. "In order to spend more on tools, that money has to come from someplace," says R&D Manager Steve Holdaway. "We use fewer engineers so we can outfit each one at a more appropriate level."

Corporate Engineering will work with a newly formed Internal Tools Council and serve as a corporate focal point for software development tools.

Another main area of emphasis will be communication—using videotaped memos, teleconferences, and a newsletter to link the R&D community around the world.

Supporting the efforts of the department is a newly formed Corporate Engineering Council which met for the first time in April.

The Corporate Library is about to complete a major move toward improved R&D communication. By August, card catalogues throughout the library network will be replaced by a



A molecular beam epitaxy system in HP Labs' Materials Research Laboratory in Palo Alto is used by Letha Franklin and George Patterson from the Santa Rosa Tech Center.

DOUG COLINS

software system developed by the Virginia Polytechnic Institute's library. Engineers with terminals hooked to HP 3000s will be able to sit at their desks and call up information on the books and reports in HP's library holdings, using "key words" and Boolean algebra expressions.

While Hewlett-Packard is examining its own R&D practices with the thoroughness of a company centered on engineering, several company officers are involved in a larger look at productivity issues in the United States.

John Young is one of more than 50 chief executive officers who are using a network of personal computers to exchange thoughts on ways to improve U.S. productivity. The interchange is cosponsored by Western Behavioral Science and the U.S. Department of Commerce.

HP is sponsoring a similar interchange on the topic of technology and productivity, with John Doyle communicating with R&D executives of 23 other firms. Using HP 120 computer systems provided by the company, they are conducting a stimulating exchange of ideas without leaving the offices.

Their "computer teleconference" is one of eight similar discussions on national productivity issues that will help structure the agenda for a White House Conference on Productivity to be held this fall. Nancy Pattison of HP's Corporate Training is serving as project manager.

The U.S. government is a big spender in the R&D field. This past year HP's board chairman Dave Packard co-chaired a task force which examined

a dozen federal agencies which fund research. Their activity was part of the President's Private Sector Survey on Cost Control, which will soon issue a summary report edited by Clyde Coombs of HP Labs.

Looking ahead to tomorrow's R&D employees, HP has substantially stepped up its level of support to universities for research and teaching (see story on opposite page). The company is convinced that the expanding electronics industry faces a critical shortage of engineers and computer scientists in the years ahead.

For Hewlett-Packard, doing R&D on R&D goes well beyond the boundaries of the company's own engineering community. **M**

A HELPING HAND FOR CAMPUS RESEARCH

Ever since HP's first product evolved from graduate work done at Stanford University by co-founder Bill Hewlett, the company has had a special relationship with teaching and research underway at educational institutions.

That friendly partnership has taken the form of HP grants of equipment, cash and loaned faculty members to a number of colleges, as well as contracts to support research projects related to HP's technological interests.

This May 19 Bill Hewlett was back at his alma mater as the main speaker at groundbreaking ceremonies for Stanford's new \$14.5 million Center for Integrated Systems. It is America's largest joint effort by industry, universities and government to conduct integrated research in semiconductor and systems technology. HP is one of 19 firms which have each contributed \$750,000 toward construction.

During this current fiscal year, HP will make grants totaling more than \$30 million, four-fifths of which is in equipment (figured at list price) mainly to universities. That's actually a conservative figure, since it includes only the current year's portion of grants which extend over two or three years.

Some major-grant recipients:

- Massachusetts Institute of Technology, equipment that will eventually total \$3 million. Seventy-five HP 9836 workstations will be used by 600 students in two introductory electrical engineering and computer science courses. MIT has initiated a close collaboration with HP Labs on developing programs for a prototype of an advanced workstation environment.
- Carnegie-Mellon University, equipment to total \$2 million. Fifty HP 9836 workstations will be used to incorporate interactive graphics into all engineering departments as part of the curriculum. CMU has started programs to develop software to use these machines in personal computer laboratories for the support of engineering education and computer-aided design.



Stanford students talk with Bill Hewlett at groundbreaking ceremony on the campus.

CHUCK PAINTER

- University of California at Berkeley, the grant of \$500,000 in cash to the CAD/CAM program and \$3 million in equipment over several years. It will provide the College of Engineering with computer workstations from HP's 9000 family for research related to distributed computing and computer-aided design.
- Stanford University Medical Center's division of cardiology, an annual HP contribution of \$250,000 for three years in the general areas of engineering, bio-engineering and computer science. In addition, HP will increase its ongoing research contracts with the cardiology division.
- Research Partnerships providing a total of \$1.5 million in HP 9836 workstations have been established with 18 top university computer science departments in the U.S. and Canada. Department heads were invited to visit HP last year and to propose programs for using a cluster of workstations for teaching and research.
- The University Associates Program initiated in 1978 to introduce logic system products to the campus has been providing HP 64000 logic development systems (list price: \$100,000) to selected universities for the past three years. By the end of FY83 more than 60 schools will have received systems

along with special training for their professors at the Logic Systems Division in Colorado.

- During the 1982-83 academic year HP 5880A gas chromatographs with a market value of \$1.3 million were given to 75 U.S. schools for research or research training purposes.

The Executive Committee has supported carefully chosen philanthropic programs to add to the teaching and research capabilities of U.S. universities. Federal legislation in 1981 covering philanthropic grants of equipment to qualified activities at universities has generated some increased tax deductions which HP has chosen to use for increased philanthropy. The total of such grants by the company has doubled in each of the past two years.

Depending on the nature of the relationship, HP supports grants either from philanthropic funds or from operating funds. When explicit returns to HP are involved in a grant, it comes from operating funds. Two examples:

- HP is one of 17 U.S. manufacturers who have each contributed \$250,000 to a new Semiconductor Research Corporation set up to fund research programs cooperatively. The company is also lending Richard Lucic of the Loveland Technology Center to SRC headquarters in North Carolina to help select and evaluate programs. This year SRC is funding 46 one-year research projects from among 166 proposals submitted by universities, along with general support of four outstanding university programs.

- The HP Design Aids group entered into its first research contract with Stanford for computer-aided IC design in 1975. This year the Engineering Productivity Division, of which HPDA is now part, will fund more than \$750,000 in basic research at 11 universities. **M**



PROGRAMMED FOR INDEPENDENCE

At first glance the school looks sparsely decorated: a couple of small rooms, four computer terminals, chairs, several tables and a printer.

The student body is scant, too: a dozen people and one teacher.

All of the students have serious physical disabilities such as blindness, spinal injuries and muscular dystrophy. All are equally serious about learning the one subject taught at the school: computer programming.

This Spartan setting has now provided HP with 10 entry-level, trained programmers who are working at a number of Bay Area divisions.

But HP's involvement with the Computer Training Program (CTP) in Berkeley, California, doesn't stop with the hiring process. People like Corporate Data Center user support manager Tess Pender have found a lot of personal satisfaction working with the program.

"A couple of years ago my supervisor, Bob Horenstein, information systems manager at Computer Systems Division, suggested I offer a CTP student a six-week work experience," she recalls. "Bob was one of the first people at HP to recognize the value of CTP's program, and he pushed us to get involved. I know I did. After I went to my intern's graduation ceremony I visited the school, and my involvement just grew from there. There's a saying around CTP that once you go there, you're hooked."

Hooked, indeed. Last May Tess received a special award from the school

Since he graduated from the Computer Training Program in Berkeley, California, HP's Jeff Breilh has been one of the program's biggest supporters.



MARK TUSCHMAN

Jane Sillman, a CTP graduate now at the Personal Office Computer Division, makes a lot of daily trips to pick up printout in the data processing bins.



JOANNE ENGELHARDT

Before a CTP student graduates, business people like Bank of America's Guy Bryon (left) and HP's Jerry Holloway (right) carefully examine a student's programming portfolio.

for the countless hours she has chalked up arranging internships for CTP students, getting job interviews at HP for new graduates and telling other companies about the program.

Bob Horenstein received that same award from CTP a few years ago. He, in turn, credits Royal Linden, project manager at the Manufacturing Productivity Division, with being "the first within HP to participate in CTP's program." Royal taught classes there and made a goal of spreading the word about the program throughout HP's Bay Area divisions.

CTP also gave Hewlett-Packard Company an award at the school's spring graduation. In the six years since HP hired its first CTP grad (Jerry Holloway, now a programmer/analyst in Corporate accounting systems), the company's involvement has mushroomed:

- 27 employees are active members of the school's Business Advisory Committees (BACs).
- 26 students served their six-week

internships at HP.

- 10 graduates of the program have been hired by HP.
- The HP Company Foundation contributed three 125 personal computer systems to the school.
- The outstanding student of each CTP graduating class receives an HP 41C programmable handheld computer.

Corporate involvement by the likes of HP, Crocker Bank, Del Monte Corporation, Bank of America and others is why the program works. Says HP's Michael Ronstadt, who arranged for two CTP student internships at the Santa Rosa site, "The key to CTP's success is that industry is so involved—providing programming instruction, handling the mechanics of it and, of course, offering student internships."

One of the most involved employees at HP is Jeff Breilh, programmer/analyst in Corporate construction. Small wonder. Jeff became a paraplegic (which means he is paralyzed from the

waist down) 10 years ago after a motorcycle crash. A member of CTP's second graduating class, he first went to work at Lockheed Missiles and Space Company for two years. Because he valued his CTP training, he also taught courses at the school while working full-time.

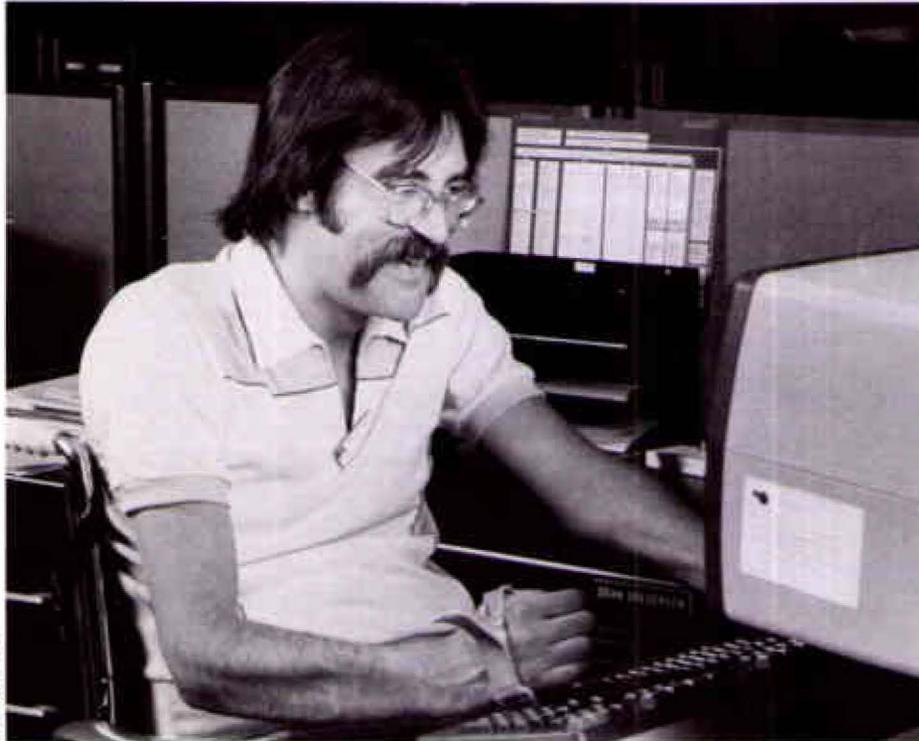
Later, when CTP offered him a job as director, he accepted and handled the administrative aspects of the school for two years.

"It was just as taxing to work there as it was to go to school there," recalls Jeff. "When I realized I was getting burned out, I started looking around for a good place to work. So many students had talked about HP that I decided to apply and was hired in April 1981."

But Jeff still puts a lot of his energy into supporting the school. Besides serving on the advisory committee, he returns to the school for technical reviews of prospective graduates.

Recently Jeff, Jerry, Leslie Winn (a programmer at Optoelectronics Divi-

INDEPENDENCE



MARK TUECHMAN

Dean Gregersen, a programmer in HP's Corporate headquarters, uses the tool shown on the cover of this issue to work on his terminal.

sion and a CTP grad) and Randy Roten (production support supervisor in the Corporate Data Center) joined programming people from other corporations to review the technical competence of the school's current crop of students.

It's difficult to judge whether a person is ready for the business world, but Jeff feels strongly that to maintain the school's reputation, students who need more training should not graduate. "If people are not quite ready, then it's better to give them other programming assignments or make them repeat a class before sending them out to get a job," says Jeff.

Even with the school's reputation, new graduates are finding it tougher now to find a job. "At one time 100 percent of each class was employed within a few months," says Tess. "Now the school has about a 40 percent placement rate."

She attributes the dramatic drop to the overall economic downturn. But Tess believes that if more companies

knew about the training the school offers, that percentage would rise.

"The most valuable thing I learned at CTP was a structured approach to designing and writing COBOL pro-

"The program's focus is on application programming and that's what I'm doing at HP."

grams," says Dean Gregersen, a 1979 CTP graduate who served his internship in Corporate manufacturing information systems—and was hired to work there immediately after graduation.

"I think HP hired me because of the special computer background that the school provided," Dean adds. "The practical experience I got at the school was a valuable aid to me."

A former machinist, Dean's spinal-cord injury was the result of a car accident. Although he had a mild interest in accounting, he thought data processing would be boring. "Jerry Holloway is a friend of mine; he seemed to like programming, so I decided to try it," Jeff Breilh was Dean's instructor at the school.

Other CTP grads at HP have similar stories to tell. Jane Sillman completed

"When a person suddenly finds herself propelled into a totally different lifestyle, it's nice to know there is something like CTP to fall back on."

her internship at HP, graduated in September 1980 and joined HP's corporate staff to provide applications support. She's now working at the Personal Office Computer Division in order processing information systems.

A car accident also altered Jane's career. Before she was injured, she ran an offset printing press, but afterwards she realized she needed a less "mobile" occupation. Today she can walk with short leg braces and a cane.

Laura Lockhart, a 1980 CTP grad, has found her blindness a nuisance rather than an impediment in her application programming job at Optoelectronics Division. About eight years ago Laura's eyesight began to deteriorate due to diabetes. Extensive laser treatments failed to restore her sight. Although she had credentials to teach mentally retarded children, Laura decided she needed to find a career in which her disability would be minimized.

"I had always enjoyed math and science in school and found I got the same enjoyment from pulling a program together," she says.

As with many other CTP graduates, Laura feels she owes a debt of gratitude to the tiny school that provided her with a new livelihood. She often tries to find housing for CTP interns who are working on the San Francisco Penin-

sula and she counsels students as well. "I find that students look to us in the working world as role models," she points out. "We give them hope that they, too, can make it if they only persevere." Laura is helping start a South Bay alumni group of CTP graduates.

Several more CTP graduates work at HP: Joe Pattin, who works with Jane in Sunnyvale; Ainsley Neis at Corporate; and Mary Fowler, a recent HP hire now working in the Corporate Data Center.

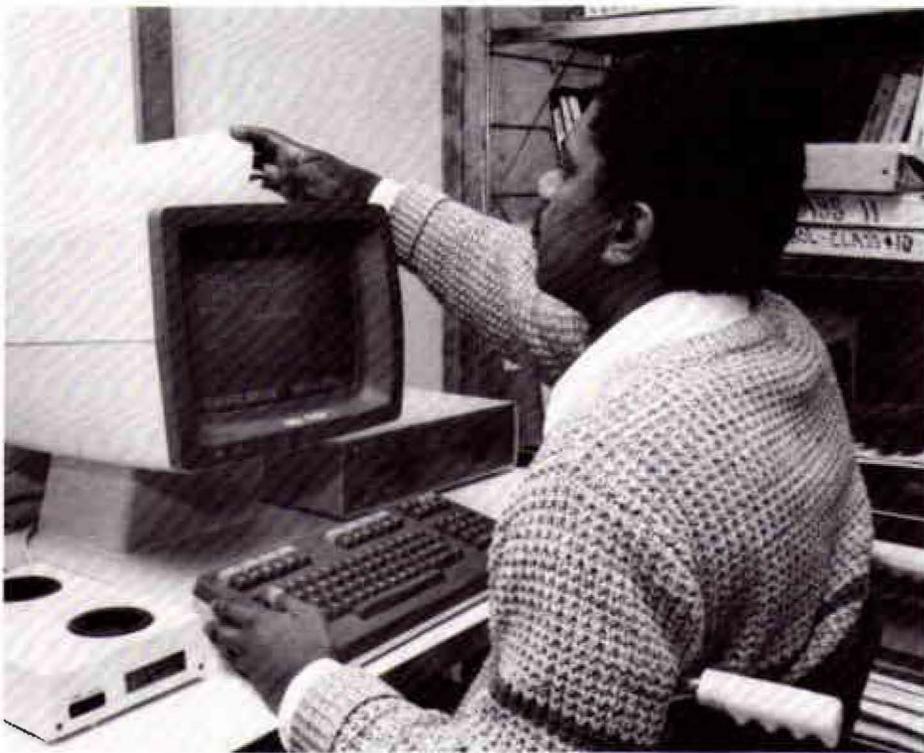
Though the program is worthwhile, HP doesn't support it solely out of a sense of altruism. "It's clearly a good affirmative action program to support," says Sylvia Gerst, manager of HP's affirmative action program. "But it's also smart business for the company to hire physically disabled people because they have a turnover rate less than half the national average for programmers and analysts."

There's another reason to support a program like CTP. John Velton of the California Department of Rehabilitation points out the financial advantages to the state and to taxpayers: "The program is meant for severely physically disabled people, most of whom receive money from the state. But after taking the computer training and getting a job, these same people become taxpayers rather than receivers."

This year the state of California contributed \$249,000 to CTP, and another \$30,000 came from private contributions.

The school uses the limited funds to pay staff salaries, purchase equipment, pay the rent and utilities, and buy supplies. It's little wonder that the school is sparsely decorated.

The school may not be much to look at, but, as one student says, "When you come here, you're glad you did." **M**



Tony Adams, a paraplegic now enrolled in the Computer Training Program, is learning to program with the aid of an HP 125 at the school.

PROGRAMMER PROGRAMS

A number of U.S. cities have programs much like the Berkeley, California, Computer Training Program. Most are funded by state rehabilitation departments and agencies like Goodwill Industries.

The Association of Rehabilitation Programs in Data Processing (ARPDP), a non-profit organization that promotes the hiring of disabled programmers, sanctions those programs which meet their standards for student selection and training.

In Atlanta, Georgia, for instance, the Southern Sales Region last year hired Ray Ganssle as a programmer. Ray, a paraplegic with limited use of his hands, had just graduated from a 10-month programming course at the Georgia Institute of Technology.

"Ray's worked out just super," says Joli Hearn, from SSR's personnel department. "He's doing a good job for us."

Similar programs for disabled people can be found in New York City; Cincinnati and Columbus, Ohio; Philadelphia, Pennsylvania; and Birmingham, Alabama. For more information, contact ARPDP at the Physically Handicapped Training Center, University of Pennsylvania, 4025 Chestnut Street, 3rd Floor/T7, Philadelphia, PA 19104.

Acting not unlike people, corporations tend to look inwardly during periods of economic change, to take stock of themselves and to make adjustments that prepare them for better times. HP has done its share of those lately.

As reflected in the chart, the most striking change is the consolidation of the former Personal Computation Group into the computer organization together with an almost complete transformation of that organization. Executive Vice President Paul Ely talks about the broad whys of the change on page 14.

Less obvious but quite important are changes in the responsibilities and composition of the company's two top executive bodies. The Executive Committee, which now is made up of the president and the four executive vice presidents, has broadened the policy and decision-making responsibilities of the Management Council (formerly Operations Council) in a number of areas. This will permit the committee to concentrate its own attention on longer-term issues and strategies.

The council, in turn, formed three committees charged with specific responsibilities for personnel, operations and field activities. Council membership was expanded to include the vice president—Research and Development, vice president—Manufacturing and the director of Personnel. In effect, top management has made a significant move to broaden the decision-making process in the face of an expanding universe of organizational issues and challenges. **M**

ADMINISTRATION Bob Boniface, Executive Vice President	
CORPORATE STAFF	
Corporate Controller Jerry Carlson Controller	EUROPE Franco Mariotti Vice President
Corporate Services Bruce Wholey Vice President	Field Sales Regions France Germany Northern Europe South/Eastern Europe United Kingdom
General Counsel and Secretary Jack Brigham Vice President	Manufacturing France Germany United Kingdom
International Dick Alberding Senior Vice President	INTERCONTINENTAL Alan Bickell Managing Director
Government Affairs Bob Kirkwood Director	Field Sales Regions Australasia Far East Japan Latin America South Africa
Public Relations Dave Kirby Director	Manufacturing Brazil Canada Japan Malaysia Mexico Puerto Rico Singapore
Patents and Licenses Jean Chognard Vice President	
Personnel Bill Craven Director	
Marketing Al Oliverio Senior Vice President	U.S./CANADA SALES Field Sales Regions Eastern Midwest Neely (Western) Southern Canada
Treasurer Ed van Bronkhorst Senior Vice President	Corporate Marketing Operations ○ Parts Center

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CHIEF EXECUTIVE OFFICER John Young, President*

OPERATIONS

Bill Terry, Executive Vice President

Paul Ely, Executive Vice President

Dean Morton, Executive Vice President**

INSTRUMENTS

ELECTRONIC MEASUREMENTS GROUP

Bill Parzybok, General Manager

- Böblingen Instrument
- San Diego
- Colorado Springs
- Logic Systems
- Santa Clara
- YHP Instrument
- Loveland Instrument
- Lake Stevens Instrument
- New Jersey
- Integrated Circuits
 - Santa Clara
 - Loveland
 - Colorado Springs

MICROWAVE AND COMMUNICATIONS INSTRUMENT GROUP

Dick Anderson, General Manager

- Colorado Telecom
- Queensterry Telecom
- Stanford Park
- Spokane
- Signal Analysis
- Network Measurements
 - Santa Rosa Technology Center

INSTRUMENT MARKETING GROUP

Bob Brunner, General Manager

- Sales: N. America/Europe/Intercon.
- Instrument Support

COMPUTERS

COMPUTER PRODUCTS GROUP

Doug Chance, Vice President

- Data Systems
- Computer Systems
 - CSY/Roseville
- Ft. Collins Systems
- Engineering Productivity
- YHP Computer
- Computer I.C.
 - Cupertino I.C.
 - Systems Technology
 - Corvallis Components
- Böblingen Computer Products

PERSONAL COMPUTER GROUP

Cyril Yansouni, General Manager

- Roseville Terminals
- Portable Computer
- Grenoble Personal Computer
- Personal Office Computer
- Vancouver
- Personal Software
- Puerto Rico
- Singapore
- Brazil

INFORMATION PRODUCTS GROUP

Dick Hackborn, Vice President

- Boise
- Disc Memory
- Gresley
- Computer Peripherals Bristol
- Roseville Networks
- Information Networks
- Colorado Networks
- Grenoble Networks

BUSINESS DEVELOPMENT GROUP

Ed McCracken, General Manager

- Systems Marketing Center
- Business Development Center
- Business Development Europe
- Information Resources
- Systems Re-Marketing
- Guadalajara Computer
- Manufacturing Productivity
- Application Marketing
- Office Productivity

COMPUTER MARKETING GROUP

Jim Arthur, Vice President

- Sales: N. America/Europe/Intercon.
- Computer Support
- Application Marketing
- Computer Supplies

MEDICAL

MEDICAL GROUP

Ben Holmes, General Manager

- Andover
- Böblingen Medical
- McMinrville
- Waltham
 - Bedside Terminals
 - Medical Systems
 - Medical Supplies

ANALYTICAL

ANALYTICAL GROUP

Lew Platt, Vice President

- Avondale
- Scientific Instruments
- Waldbronn

COMPONENTS

COMPONENTS GROUP

John Blokker, General Manager

- Microwave Semiconductor
- Optoelectronics
 - Visible Products
 - Interface Products
- Singapore
- Malaysia

CORPORATE MANUFACTURING

Hal Edmondson
Vice President

HP LABORATORIES

John Doyle
Vice President
Research and
Development

Research Centers

Computer Research

Physical Research

Technology Research

CORPORATE DEVELOPMENT

Dave Sanders
Director

INTERNAL AUDIT

George Abbott
Manager

**HEWLETT-PACKARD
CORPORATE ORGANIZATION
JUNE, 1983**

Corporate & Support Functions

Business Segments

Division

Operation

* Chairman, Executive Committee

** Chairman, Management Council

New lineup for HP's computer team



CHUCK FOX

Paul Ely describes the reasons for recent changes in HP's computer organization.

If you couldn't quite keep up with all of the changes taking place in the HP computer organization during the first half of this year, you had lots of company. Actually, the new lineup began to take shape almost a year ago when the Computer Marketing Group took over responsibility for personal computer marketing. But this year saw the company's new strategy priorities for computers unfold across the board.

The unfolding has followed a pattern, a characteristic HP pattern based on principles of management by objective. First, feedback from the field—surveys of customers, consultant reports and even analyses in various media—confirmed the need to restructure the organization to accommodate growth and fast-changing markets.

Redefining the missions of the computer product groups was a first step (see box). Then they received new names to reflect those missions. Next began the realignment of divisions and operations within and among groups to match those missions. Many of these were renamed. The result is a virtually

brand-new computer organization (see chart on pages 12 and 13).

The catalyst in all of this was the marketplace. Paul Ely, executive vice president responsible for HP computer operations, puts this in perspective: "Our previous organization consisted basically of two computer systems groups—technical and business systems—and two peripherals groups. The business group had been formed to give focus to that market at a time when 90 percent of our business was in technical products. What happened is that the business market took off. Today the HP 3000 series is the company's leading revenue-producing product, contributes half of our computer revenues and is a major competitor in the market for medium-sized, general-purpose business computers.

"Even more dramatic has been the change in the personal computer business. Just a few years ago this was a hobby business. Now look at it! In another three years it will be much larger and will set the pace for the computer industry as a whole. So there was another area we needed to address.

"Other important changes were taking place in all of the computer markets. While hardware costs were dropping steeply, software costs headed skyward. Customers who used to develop their own application and operating software began to look for packaged solutions that share the cost of development among many users. The software tail was beginning to wag the hardware dog. At the same time, networking began to grow in importance as a means of linking systems and workstations to manage and share information.

"So, underlying the challenges created by these changes in the marketplace was the fact that a different set of priorities was needed. [We're not alone in this—competition has been undergoing similar rapid changes.] These priorities all focus on the fact that we need to get greater leverage from the investments that we make.

"Finally, we needed to coordinate our many marketing communications activities and services to customers by bringing them under one business-development umbrella.

"Making changes like this has not

been easy on many of the people involved. There is always a degree of uncertainty in change, particularly when we want those most affected to make many of the decisions. That's management by objective, and it takes time to run its course. In the long run, however, the personal and professional stability of the people in our organization will be enhanced by our ability to change and to move forward more rapidly." **M**

NEW FOCUS FOR COMPUTER GROUPS

COMPUTER PRODUCTS

Develop HP computers and operating software toward a unified architecture while retaining compatibility for today's customers. Manage the very large scale integrated circuit program.

INFORMATION PRODUCTS

Develop and manufacture networks of hardware and software to combine with systems and workstations in forming information networks.

PERSONAL COMPUTER

Develop and manufacture personal computers, portable computers, terminals and workstations.

BUSINESS DEVELOPMENT

Provide unified market development and merchandising for HP's total computer offering. Develop and market applications software, addressing each of HP's markets with a set of solution systems.

COMPUTER MARKETING

Direct all computer sales, field marketing, maintenance services and application support.

Making the **BEST** even better

If you have a reputation for building the best products on the market, what incentive is there for you to improve?

That's just the position Hewlett-Packard has enjoyed since the beginning of the company. But increasing worldwide competition and a desire to make maximum use of all of the company's assets are changing the ways HP people think about quality, productivity and the manufacturing process.

On these three pages are a number of success stories that show how HP employees are making the best even better. In facilities around the world, they're using automation, vendor programs, statistical quality control, subcontracting and tooling enhancements to improve results.

The results take many forms: smaller inventories, higher yields, faster turnaround, space savings. Most of the advances aren't spectacular, but their combined effects certainly are.

Rejection rates for incoming semiconductors improved by 33 percent in 1982. Companywide warranty costs dropped 7 percent, field failure rates fell 15 percent and inventory as a percentage of sales dropped 14 percent. **M**

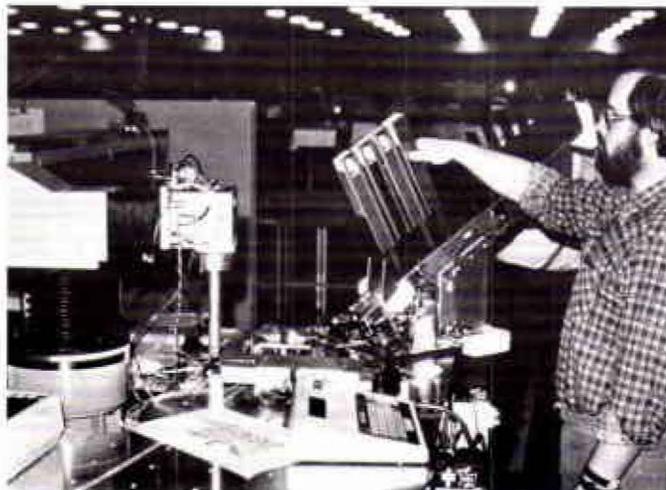


It used to take 160 hours to manually search 400 chemical-safety data sheets to find 176 chemicals used at HP that contain glycol ether. The search, required by California law, is now done in 15 minutes in Palo Alto with an automated chemical safety data base developed by Corporate Materials Management.



PHOTOS BY HEWLETT-PACKARD

These vertical carousels at the Avondale Division not only save floor space, but improve handling of electronic components and reduce static electricity damage. The division's productivity (measured in revenue per labor hour) has grown at a compound rate of 25 percent for the past three years.



A robot helps employees in Corvallis by loading integrated circuits onto printed circuit boards. The division realized major quality improvements by eliminating misalignment and damage from static electricity.

BEST



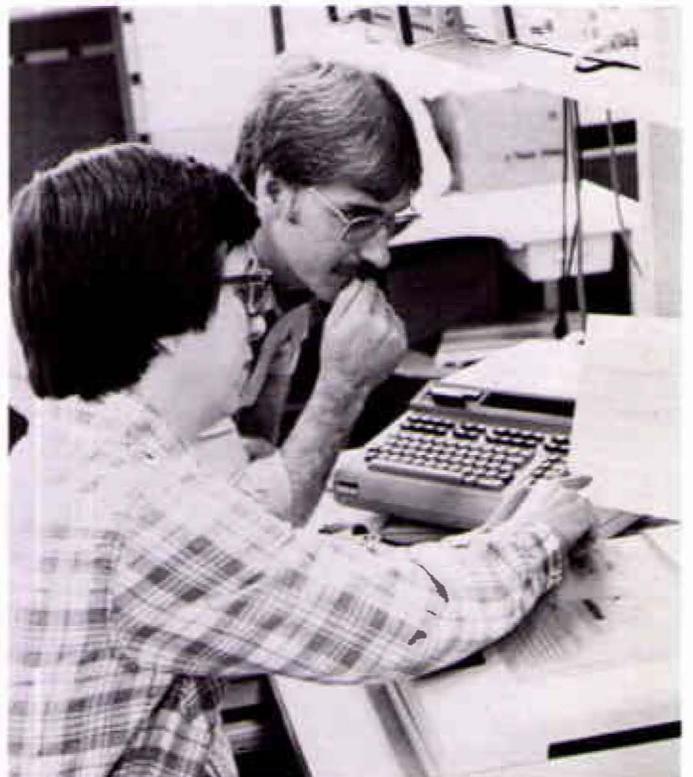
A Stanford Park Division machine nicknamed "Agnes" helps produce a pushbutton switch. A four-month program of statistical quality control produced changes which are now saving HP \$970,000 per year: \$283,000 in fabrication costs, \$300,000 in assembly and warranty costs, and \$387,000 in inspection and quality assurance costs.



By changing the work flow in this printed-circuit-board loading area, the Singapore calculator operation has reduced defects from more than 6 percent to less than 0.2 percent. Now each operator inspects prior work and loads a portion of the board.



More than 200 Greeley Division employees have submitted action items since the start of the division's corrective action program. Cathy Best, standing, has submitted a record 32. These action items helped lead to a 40 percent increase in shipments per employee during the past year.



The team working on Andover Division's Pagewriter electrocardiograph put a lot of emphasis on "doing it right the first time." After intensifying training and working with vendors to improve the quality of purchased parts, assembly and test times were cut in half and the turn-on percentage rose from 15 to 92 percent.

CHARTING A QUALITY COURSE

When Ray Deméré came to HP in 1946, his goal was to work for a small company so he could get to know most of the people, understand the overall operation and see that the results of individual effort could make a difference.

Almost 37 years later, as Ray prepared to retire in May, his contributions were indeed obvious despite the growth of the company.

"I hadn't really planned to go into electronics," recalls Ray, "but after studying radar in the Navy and working at the Naval Research Lab in Washington, D.C., I was hooked. At the lab I used a 200A oscillator, a 400A voltmeter and a special HP 1000-megahertz signal generator. Their high quality convinced me HP was the company I'd like to work for."

Bruce Wholey, Ray's first boss and now vice president of corporate services, recalls that Ray moved to California, "walked in off the street and was hired by Dave Packard. Dave brought him to me and said, 'Bruce, here's someone to help you with that test equipment report for the Navy.'"

A production engineer (his degree from Yale University is in industrial administration), Ray was one of the first at HP to recognize that "putting an emphasis on process quality was a major way to improve productivity and product quality."

Some of Ray's co-workers, in fact, swear that quality is Ray's middle name. He says he's fortunate to have been around to see quality evolve into the cornerstone of the company's manufacturing efforts. Quality teams, quality control, quality conferences—all are now an integral part of HP.

What has this done for productivity?



JOANNE ENGEL-HARDT

Ray Deméré has his retirement plans charted: he'll study shipbuilding.

In a speech before a U.S. House of Representatives subcommittee in 1981, Ray reported that HP had benefited from many improvements (such as a 30 percent reduction in assembly time and in defects) by implementing quality practices—many learned from Japanese companies.

Ray, in fact, was part of an 11-person HP team that visited Japan in 1979 and returned with "a lot of ideas. After our trip we were committed to total quality control which was already being practiced at YHP."

"Our biggest hurdle in the U.S. was

'SOW'—the 'same old way' of doing things. It took a cultural change to get a real commitment to quality."

By this time Ray had spent three years as the first general manager of HP in Böblingen, West Germany, five years as general manager of Loveland Division and several more as operations manager of manufacturing divisions in the Electronic Products Group. He became a vice president in 1971.

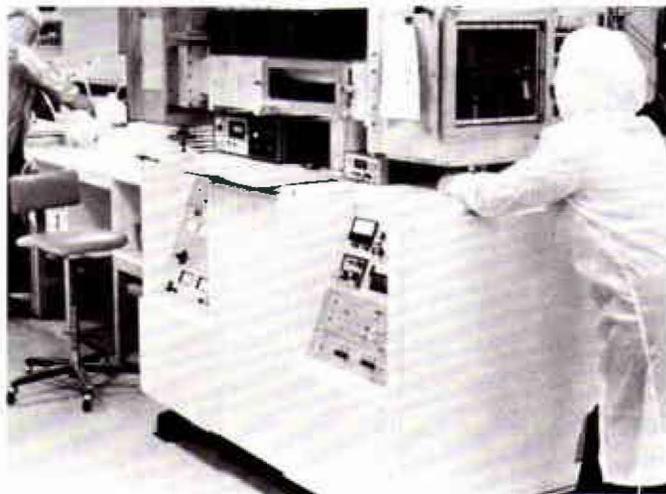
"It's been very rewarding to see so many productivity improvements as a result of emphasis on quality," says Ray. "Concentrating on process quality has led to improvements in productivity and product quality and to greater job satisfaction."

"Our greatest opportunity for the future is continuing to have each functional area in the company—manufacturing, engineering, administration, sales—concentrate on total quality control."

Ray's future quality control efforts will likely be in a very different arena. An avid sailor, Ray recently began studying yacht design. "After I take some courses I may try to design a few boats," he says.

Ray and his wife, Addie, have plans to take some trips on their own yacht. Their favorite destination is a small island off the west coast of Canada where the Deméres are finishing a cabin.

Ray chose to retire at age 61 while he is in good health and eager to tackle something new. His many years of tireless effort—for HP and for Junior Achievement where he has been involved for 18 years—should stand him in good stead. Taming islands and designing yachts will seem like mere child's play. **M**



A combination of training classes, new work centers and statistical quality control tools increased yields from 55 to 85 percent on print heads from Fort Collins' Systems Technology Operation. The failure rate for one part, the 9845B head (at one time the worst in the company), dropped to zero.

CLOSEUP

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



JOHN SCANNELL

PLOWING AHEAD

"I used to drive one of these," said John Doyle. And with that, HP's vice president of research and development jumped behind the controls of one of the earthmovers parked at HP Labs' Deer Creek Road facility in Palo Alto, California.

The bulldozer had been used earlier to prepare the hilly site for a second building. To celebrate the official groundbreaking, Labs employees held a beer bust on May 13. Fortunately for everyone, John didn't have a set of keys to the tractor.



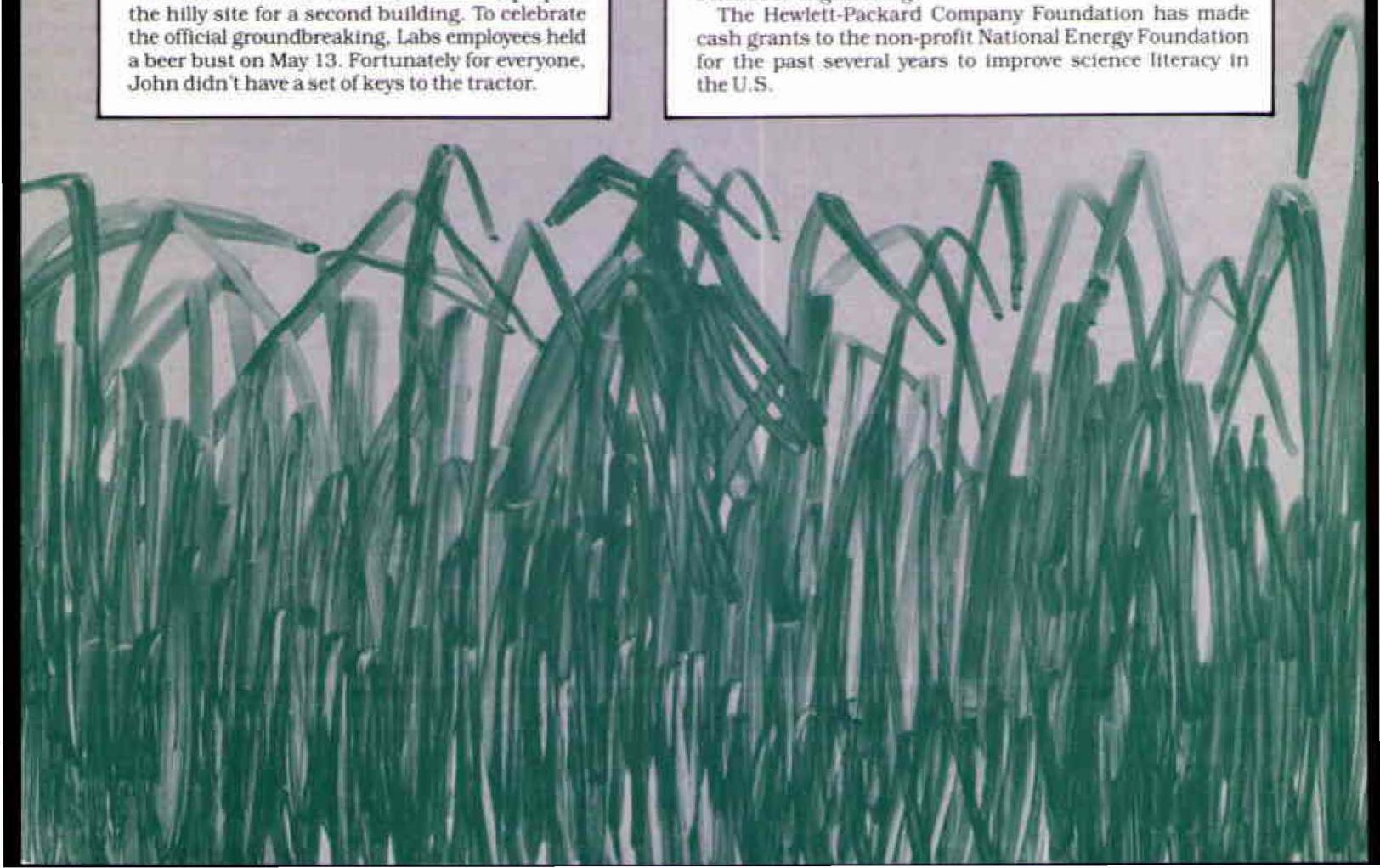
MAVIN JACOBU

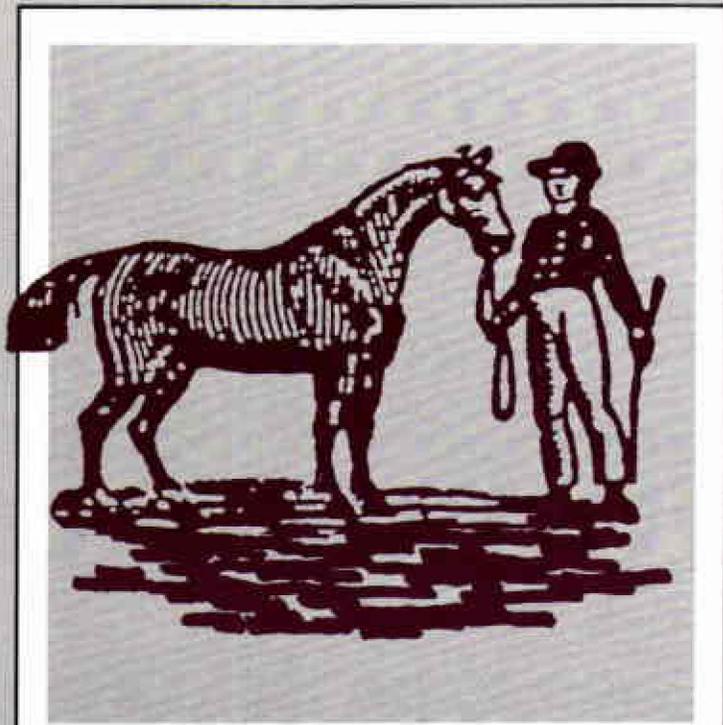
TALKING TRASH

HP's Roger Milovina and ninth-grader Khoa Ton have the same thing on their minds: garbage. Roger was one of the judges for an energy science fair in San Francisco and evaluated Khoa's computer program that determines the energy produced by recycling various amounts of urban waste. The Vietnam native's project won second prize in his grade.

The computer program was one of 150 projects tackled by junior and senior high school students at the third annual Student Exposition on Energy Resources. The winning high school senior goes on to compete in a national energy fair with a top prize of a \$40,000 college scholarship through the National Energy Foundation to study math, science or engineering.

The Hewlett-Packard Company Foundation has made cash grants to the non-profit National Energy Foundation for the past several years to improve science literacy in the U.S.





HORSING AROUND WITH ULTRASOUND

Andover Division's ultrasound imaging system is used by doctors throughout the medical world to look at the human heart in action. But HP-Canada's Sue Charette, a clinical application specialist, received an unusual request for a product demonstration while she was training in Europe.

A veterinary college in Toulouse, France, had a prize thoroughbred race horse with a suspected heart problem. If incurable heart disease was the diagnosis, the prize mare would not be used for breeding.

Unfortunately (for owner and mare alike) the ultrasound tests revealed the problem was Tetralogy of Fallot, a combination of four congenital heart diseases. Today, the ultrasound equipment is doing fine, but the horse...



POCKETS, BOOMER AND FRAN

Fran Lieser and her two Australian shepherds, Pockets and Boomer, have earned quite a reputation in Fort Collins, Colorado.

Fran, a second-shift supervisor at HP's Fort Collins Systems Division, was recently named Larimer County Volunteer of the Year for her work with the county's search and rescue team.

Pockets and Boomer are the only two qualified search dogs in the state. They help find lost hikers, children and hunters in the mountainous county.

Fran joined the search and rescue team three years ago and has gained a statewide reputation in dog training. Last year the 19-year HP veteran spent more than 1,000 hours training dogs and 19 days on actual search missions.

RAISING CANE

To bolster declining productivity in Venezuela's sugar-cane crop, a government agency put HP products to work in 1982.

In the last 12 years, the country's cane production has been cut in two despite a sixfold increase in the number of sugar cane mills. Venezuela still imports nearly \$1.5 billion worth of refined sugar.

To decrease the country's reliance on imports, the Venezuelan Institute of Scientific Research began measuring carbon dioxide and oxygen concentrations in cane samples from different parts of the country using an HP 3054A data acquisition system. Those results, fed into an HP 85 personal computer, gave institute scientists the cane's photosynthesis rate: the higher the rate, the better the sugar cane.

Combining information about soil, chemicals and climate from other research methods, the center fed some recommendations back to cane growers. Estimates for the first "controlled" harvest this year indicate there'll be a production increase of 50 percent.

The center's researchers hope to extend their process to other crops, and have already begun talks with rice and soy farmers.

20 YEARS OF MEASURE

The year was 1963. U.S. President John F. Kennedy was assassinated in Dallas, Texas. Gordon Cooper became the first U.S. astronaut to spend a day in space. The Los Angeles Dodgers beat the New York Yankees to win the World Series.

That was 20 years ago. Hewlett-Packard was 6,000 people strong, with annual sales of \$115 million. In July of that year *Measure* magazine got its start.

With this issue, *Measure* marks its twentieth anniversary. In many ways we've changed: more stories, brighter graphics, increased circulation. But in many ways we're still very much the same.

Dave Packard told readers in that first issue that the magazine would try to "keep everyone in the corporate family informed of company plans and policies, and to keep abreast of important developments in each of our far-flung operating groups." That's still our goal today. **M**



In the first issue of *Measure* (July 1963) readers learned that Evelyn Olander had retired from HP's Waltham, Massachusetts, operation (then called the Sanborn Company) after 28 years of service. She started her career as a typist at 35 cents an hour and retired as manager of systems and office services.



Cyril Yansouni, Santa Rosa Division R&D manager in 1975, conferred with section managers Doug Rytting (in foreground) and Jack Dupre. Cyril, now head of the Personal Computer Group, described the organization of an R&D project team for a *Measure* article about the "Geometry of an HP division."



Colorado Governor John Love cut the ribbon to officially open HP's new Colorado Springs oscilloscope plant in October 1964. Helping were LA. Fulgham (then the division's personnel manager), Dave Packard, the Rev. Arthur Pierpoint and Bill Hewlett.



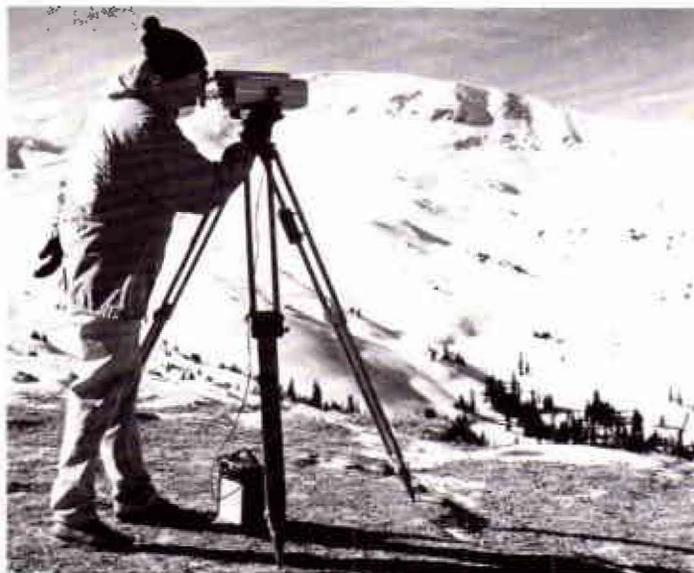
Dean Morton led a workshop at the 1976 European management meeting in the Montreux Palace hotel in Switzerland. The conference brought together 73 HP managers to discuss the strengths, problems and diversity of the European organization.



In March 1964, *Measure* examined "How we get to work." Application engineer Leon Hughes stopped to feed the swans on his daily walk to the Bedford, England, plant. The division transferred to South Queensferry, Scotland, in 1966.



HP board member Luis Alvarez won the Nobel Prize in physics in October 1968 for his "contributions to elementary particle physics, particularly his discovery of a large number of resonance states, made possible through his development of the technique of using hydrogen bubble chamber and data analysis." The emeritus professor of physics at the University of California at Berkeley has been a member of the HP board of directors since 1957.



PHOTOS FROM HP ARCHIVES

In June 1970, *Measure* looked at the development of two new products: Loveland Division's Model 3800 distance-measuring instrument and Santa Clara's 5525A laser Interferometer. In 1973 the HP 3800 spawned the start-up of its own division: Civil Engineering. But a softening market for electronic surveying equipment caused the division to rejoin the parent Loveland Instrument Division early in 1982.



When HP's logo changed from "rampant" to "passant" (new logo on back cover) in 1979, Fernand Ducheyne, HP-Belgium's instrument sales manager, ate the old one. The logo was part of the decoration on a birthday cake prepared for HP's celebration of the Millennium in Brussels, the city's 1,000-year anniversary.



It took pilot Bryan Allen two hours and 49 minutes to pedal the Gossamer Albatross across the English Channel in June 1979. An HP 9820 desktop computer, linked to an HP 9862A plotter, was used to design the airfoil used in the wings and propellers of the 75-pound, 96-foot wide aircraft.



In April 1981 HP's television studio broadcast its first live video teleconference to more than 1,200 employees in 38 cities throughout the United States. The four-hour product training session was bounced off "the bird," a communications satellite 22,000 miles in space.



Before the space shuttle Columbia's 1982 flights, engineers used an HP 3822A coordinate determination system to align component parts. The Loveland-built instrument checked the position of the payload in the cargo bay and the alignment of door hinges and booster rockets.

YOUR TURN

Invites Measure readers to comment on matters of importance to HP employees.

HP IN SOUTH AFRICA

I recently completed a seven-week visit to South Africa and would like to comment on Katie Nutter's reply in the March-April issue to the letter urging that HP stop doing business in South Africa.

The system of apartheid imposed by the South African minority white government on its black "citizens" is without question a moral outrage, depriving millions of people of the basic human rights U.S. citizens take for granted. Apartheid, detention without trial and other social, political and economic injustices are unfortunately very real in South Africa.

However, just as real is the presence of HP and many other U.S. companies doing business in South Africa—companies that are dedicated to improving the economic opportunities, educational levels and living conditions for that country's non-white majority. These business activities are certainly viewed by some as supportive of that government's repressive policies. To me and others, however, the active presence of U.S. companies in South Africa is a decidedly positive force that directly affects the lives of many non-white employees and may, in fact, influence the feelings and attitudes of many others.

I was very disappointed to learn that programs by other U.S. companies to assist blacks in South Africa are virtually unknown in the U.S., apparently because these corporations fear an adverse public reaction to increased publicity about their presence there. Companies like Ford and GM have "quietly" resisted government regulations requiring separation of races in their work environments for many years, and their in-plant programs and housing development activities have improved the quality of life for many black employees.

It was very encouraging to observe that U.S. companies are not the only proponents of equal and fair treatment of all races. Many South African companies have taken leadership roles in programs designed to improve the conditions of their black, colored and Indian employees.

Positive changes are underway in South Africa and will continue as long

as private enterprise is able to influence events within the country. The "candles are lit," as Katie Nutter indicated, and although there are still many very dark shadows that need illumination, anyone visiting that country cannot fail to recognize the positive impact and important influence of U.S. businesses on economic and educational policies there. An active, involved presence by HP and other companies is and will continue to be a positive influence during the inevitable change that lies ahead for South Africa.

JIM KISTLER
Avondale

APPROPRIATE QUOTE?

When I received my last issue of *Measure*, I noticed the quote by Protagoras on page two. This statement is as incorrect today as it was when first written more than 2,000 years ago.

Man is not the measure of all things.
God is.

KENT BROWN
Santa Rosa

With all due respect to Protagoras and the social consciousness of the period circa 481-411 B.C., I think that a more appropriate quote is needed to accompany the title of your magazine. Don't you think we've come a little further than to state, issue after issue, that "man is the measure of all things"? What about the other half of the human race: women?

Of course, for many years masculine terminology has been used in the so-called "generic" sense to mean both men and women. I hope the inaccuracy and injustice of this practice is now being recognized.

Since the HP philosophy includes a strong commitment to the concept of equal opportunity, it is important to speak and write in terms that truly reflect this equality (or strides made in that direction).

If you must use a quote to accompany your title, I challenge you to find one that pays tribute to all of us (people, humanity and humankind) and one that recognizes the status of women in the HP business world.

MARTHA MARIS
Palo Alto

WHEN THE SMOKE CLEARS

I'd like to comment on George Schroll's letter about smoking. Every time we hear a non-smoker talk about smoking, we hear of the rights of non-smokers.

I don't smoke, but I believe smokers have rights, too, and I'm willing to support them. Non-smokers always talk of the high costs of smoking. Let's discuss some of the savings.

Smokers often live shorter lives than non-smokers. That means we save money by not paying for smokers' retirement funds, extended health care, old-age security, etc.

It's been my experience that smokers and non-smokers alike drive cars to work, eat the same char-broiled hamburgers and consume the same goods which high-pollution companies manufacture.

If people in the U.S. were really concerned about pollution, they would elect governments that would clean up those sources of air pollution in major cities.

But if most HP people feel as George does about smoking in the work place, I'm sure the company will attempt to work out a solution. Let's see you get the same concern from some of the industries polluting your air.

GERRY BULLOCK
Ottawa, Ontario

A smoking policy was established in May 1983 and distributed throughout the HP personnel community. The new document doesn't call for a complete ban on smoking, but instead asks employees and managers to find mutually acceptable solutions that meet the needs of both smokers and non-smokers. See your personnel department for more details.—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.

JOHN YOUNG

HP's president evaluates operating results for first half of FY83.



BETTY GERARD

John Young meets with Lloyd Cooke, president of the National Action Council for Minorities in Engineering. John joined the NACME board of directors in June.

The first half of our 1983 fiscal year, now behind us, showed some encouraging signs. The most important signal for HP has been growth in U.S. orders. In the second quarter, U.S. orders increased by 25 percent over 1982 levels and that increase was spread across most of our product lines. Since we've had slowing orders for about three years due to weak economic conditions, we're all ready for a change.

The international parts of HP's business are still in the doldrums and international orders grew only 2 percent in the second quarter. Some countries were below last year's levels—a situation that doesn't happen often and indicates the severity of the worldwide recession.

Part of the international problem has been the climbing value of the U.S. dollar as compared to most of the world's currencies. It makes our products more expensive to buy in those countries—up to 50 percent more than last year in some cases. This trend, unfortunately, shows no signs of a let-up.

U.S. business recoveries historically have provided the stimulus to other nations to get their own recoveries going. The recent Western economic summit meeting in Williamsburg, Virginia, had this as a common objective for the heads of state of Britain, France, West Germany, Italy, Japan, Canada and the U.S. I hope we'll see a more balanced recovery unfold in developed nations in the months ahead.

Our business results follow orders closely. For the first half, orders were up 11 percent and shipments 13 percent. We even managed to add \$153 million to the order backlog. Our manufacturing capacity and orders are reasonably balanced around our divisions with only a few exceptions.

Our expenses grew faster than shipments in the first six months, usually a warning signal to management. But in this case, most of the growth was intentional. We need to strengthen our selling and marketing activities for a whole series of products: the HP 9000 technical computer, the new automatic board tester and a complete set of software solutions for a range of business problems. We must be in a position to sell

and support these, but that requires building the capability beforehand. I think we've reached the end of that preliminary build-up and should see a direct return on those investments in the future.

Operating profit was up only 8 percent compared to a year ago. Our overall tax rate continued to decline as it has over recent years, primarily due to the tax credit for R&D enacted in the 1981 U.S. tax law. This helped increase after-tax earnings by 16 percent to a new high of \$194 million.

Our cash profit-sharing program is based on pre-tax profits and the payroll of eligible employees worldwide. Said another way, profit sharing is paid on the amount of pre-tax profit generated for each eligible payroll dollar. There are a number of variables at work here, but some fundamentals apply.

One fundamental I've described in the past is that we must show an annual growth in sales at least 10 percentage points higher than our growth in people just to maintain our competitive balance. In the first half of 1983, we shipped 13 percent more, but we also added 2 percent more people to the payroll. Most of those people are specialists, college recruits and others who will contribute for a long time.

The point is we have not been pushed to improve our productivity because business has been slow for three years. However, as orders rebound and we have an opportunity to fully challenge our organization, we should resist hiring and first make sure we are using each person in the company as effectively as we can.

If we do this well, we can grow shipments and operating profit much more rapidly than people and raise the profit-sharing rate from the 6.71 percent we earned in the first half. Let's make the full use of our work force a major priority in the second half of the fiscal year.

NEWSCLIPS

Recaps the newsworthy events, changes and achievements within HP.

FIRST-HALF RESULTS

Sales increased 13 percent and net earnings were up 16 percent for both the second quarter of FY 1983 that ended April 30 and the first half of FY83.

Here is a summary of FY83 results, with comparable FY82 figures in parentheses:

Sales for the second quarter were \$1.2 billion (\$1.0 billion), with net earnings at \$109 million (\$94 million) equal to 86 cents per share (76 cents per share). First-half sales totaled \$2.2 billion (\$2.0 billion), with net earnings totaling \$194 million (\$167 million), equal to \$1.53 (\$1.35) per share.

Orders for the second quarter were \$1.2 billion (\$1.1 billion), a gain of 14 percent, with domestic orders up 25 percent to \$715 million and international orders up 2 percent to \$524 million over the same period a year ago. For the first half, orders were \$2.4 billion (\$2.1 billion), up 11 percent. Domestic orders for the first half gained 18 percent to \$1.3 billion while international orders were up 2 percent to \$1.0 billion.

COMPUTER GROUPS

A series of new entities and reporting relationships are the result of the major restructuring of the Computer Groups in February:

In the Computer Products Group, a new Böblingen Computer Products Division incorporates the former Böblingen Desktop Computer Division and Böblingen General Systems Division. GM is Karl Grund. A new Böblingen Engineering Productivity Operation under Tilman Schad will be part of the Engineering Productivity Division.

Newly added to the Personal Computer Group is a Personal Software Division under GM Tom Anderson. A new Personal Printer Operation under Ernst Erni is located in Corvallis and reports

to the Vancouver Division.

Office Systems Pinewood (formerly part of the Information Networks Division) has been transferred from the Information Products Group (IPG) to the Business Development Group (BDG) and raised to full division status under GM Bob Kadarau. Among new BDG marketing teams with cross-divisional responsibilities are the Systems Marketing Center under GM Ed Hayes, Business Development Center headed by Joe Schoendorf and Business Development Europe under Klaus-Dieter Laidig.

Reporting directly to VP Dick Hackborn in IPG are the Roseville Networks Division (recently renamed) and networks operations in Grenoble and Greeley.

MILESTONES

HP has acquired the Canadian firm of Panacom Automation Inc. of Scarborough, Ontario, which designs and manufactures industrial data-acquisition and control systems. It becomes the Panacom Operation in the Business Development Group. . . . HP's Bristol Computer Peripherals Operation broke ground April 28 for construction of its first permanent facility near Bristol, England, and celebrated delivery of its first product. . . . HP moved up 29 places to rank 81st in *Fortune* magazine's annual directory of the 500 largest U.S. industrials, based on 1982 sales.

NEW HATS

Hal Edmondson was elected vice president of manufacturing upon the retirement of Ray Deméré, formerly VP of manufacturing services (see page 17). Succeeding Edmondson as GM of the Microwave and Communications Instrument Group is Dick Anderson, whose replacement as GM of the

Computer Systems Division is Doug Spreng. . . . Mac Juneau has been named GM of the Integrated Circuits Division. Art Darbie becomes full-time Electronic Measurements Group engineering manager. . . . Tom Vos is GM of the Colorado Springs Division. . . . Named to newly created positions with regional public affairs responsibilities are John Rigger in Colorado and Gary Fazzino in the Northwest (Washington, Oregon, Idaho). . . . Jim Burns is operations manager for the Cupertino Integrated Circuit Operation as Paul Greene rejoins HP Labs. . . . Koh Boon Hwee is operations manager of the Personal Computer Operation in Singapore. . . .

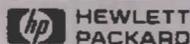
In a broadening of management participation in policy making, the Operations Council has been renamed the Management Council and will have responsibility for shorter-term policy decisions. (See page 12 of this issue.)

David Packard, HP board chairman, has been named by President Ronald Reagan to serve as chairman of the U.S. side of a newly formed United States-Japan Advisory Commission announced jointly in Washington D.C. and Tokyo.

NEW PRODUCTS

Three new versions of the HP 3000 business computer (Series 68, 48 and 42) were announced May 24 by the Computer Systems Division. The Series 68 is the most powerful model ever offered, accommodating as many as 200 users at the same time. . . . A new board-test family from the Loveland Instrument Division, the HP 3065, provides high-yield testing (greater than 30 integrated circuits per second) of complex digital and hybrid PC boards. It provides built-in safeguards to minimize the potential for damage to products under test. **M**

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