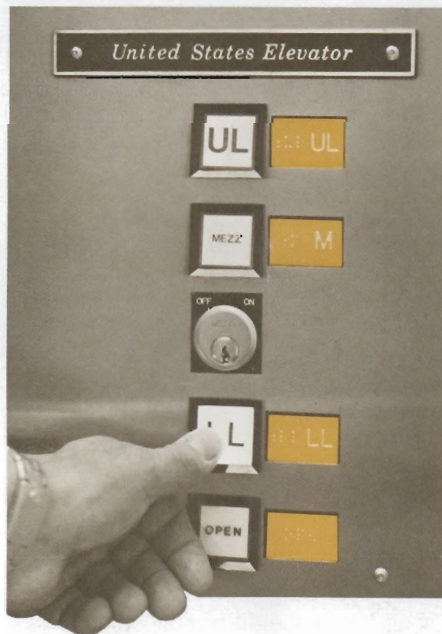


Measure

For the men and women of Hewlett-Packard/OCTOBER 1978



- Equal opportunity/
Affirmative action (pages 2-9)
- Big new market (pages 10-13)
- From the president's desk
(page 15)





They can do the job...

□ Hewlett-Packard's fifth corporate objective—titled "Our people"—makes the company's position on equal employment opportunity very clear: "Managers at all levels should be concerned with the proper development of their people and be committed to providing advancement opportunities to everyone regardless of race, color, creed, sex, age or national origin."

The HP approach to affirmative action also is clearly stated in the seventh "Citizenship" objective. "Each community has its particular set of social problems. Our company must help to solve these problems. As a major step in this direc-

tion, we must strive to provide worthwhile employment opportunities for people of widely different backgrounds. Among other things, this requires positive action to seek out and employ members of disadvantaged groups, and to encourage and guide their progress toward full participation at all position levels."

How are we doing in these closely related areas?

In the more or less traditional areas of concern—minorities and women—the figures for the past five years of HP experience in the U.S. show significant gains. For example, in the professional and management area women rose from 300 in 1973 to 1,600 in mid-1978; in the same area, minority participation grew to 1,000 from 350.

Over the same period a whole new range of programs has been added, aimed at reaching out to such groups as handicapped people, veterans, and minority youngsters. As an example, the company has undertaken a pledge to the National Alliance of Businessmen to hire some 300 veterans of Viet Nam or handicapped veterans.

There's also plenty of evidence of accelerating interest and activity among the HP international organizations. Last month, for example, European personnel managers and administrators met in Geneva for the first European personnel administration seminar which included a session on equal opportunity. All participants agreed that there is a definite trend throughout western Europe toward encouraging equal opportunities for all. Commenting on this, U.K. personnel manager George Mann said, "HP worldwide policy on equal opportunity is therefore an important and timely guideline and will help make sure we are among the leaders wherever we operate. We want to act before it becomes necessary to react."

In Malaysia, as another example, HP along with other firms is making special efforts to hire and develop the Bumiputra, the native Malays whose rural ways have tended to keep them out of the mainstream of economic development. In

Japan, YHP has recently stepped up its hiring of older people in order to meet government and company objectives. And in Madrid, a woman who began as HP Spain's first secretary in 1971 now is personnel manager of a fast-growing 200 person country sales organization.

HP's top managers have said that in reaching its goals, the company should always strive to meet the spirit of HP objectives as well as the letter of the law. The following examples tell how some of the goals are being reached:



Two counselors from the San Jose Indian Center, Donna Folven (left) and Niki Lewis (center), discuss HP's hiring needs and standards with Stephanie Johnson, personnel administrator at Data Terminals Division.

Reaching out...

Follow Stephanie Johnson through her rounds in Data Terminals Division's personnel department and you can see the interlinking of affirmative action and non-exempt employment functions in hiring. AA opens HP's door to the widest possible range of potential employees—and then employment sees that individual people and job openings are actually matched up.

Stephanie, with a combination of duties, has affirmative action responsibility at her division for veterans and handicapped persons specifically. In that role she maintains an active contact with a wide variety of government and private agencies which work directly with these groups and funnel job applications to Hewlett-Packard.

In the San Francisco Bay Area, for instance, Berkeley serves as the Northern California center for the handicapped. Four state room-and-board agencies are located in that city, along with such employment services as the Center for Independent Living, with which Stephanie maintains close contact.

She also relies on the California State Department of Rehabilitation, which is particularly supportive to applicants it sends. If a company is interviewing a deaf person, the department will provide an interpreter for both the interview and

the orientation period if desired.

Another useful source is the Bay Area outreach program of the Electronics Industries Foundation which was established in 1977 as a channel for bringing together handicapped applicants and electronics firms.

To make certain that veterans know about HP openings, Stephanie has requisitions listed individually with all the junior colleges in the area as well as with the Bay Area Cooperative Education Clearing House. (She serves on the executive board of the latter organization, an umbrella group for veterans' educational programs.) She also maintains contact with two Indian agencies in the area as well as a number of other agencies.

To help personnel of the various agencies understand the HP work environment, Stephanie arranges tours so that the company's lists of job openings are viewed realistically.

Combining the affirmative action side of her job with handling all non-exempt hiring for the division gives Stephanie a balanced picture of the needs, both present and projected, in various areas. She likes to talk to supervisors in pragmatic terms about fulfilling HP's commitment to affirmative action, stressing a particular applicant's strong points that dovetail with existing openings.

"Some physical conditions regarded as limitations can actually be an advan-

tage or at least no disadvantage on the job," says Stephanie. "Noise doesn't bother a person with hearing loss, and blind people often have developed remarkable sensitivity for identifying numbers on parts. A person in a wheelchair can handle a seated job easily, perhaps with a small accommodation made in the height of the table top.

"I feel that people's handicaps or other special considerations should not be a factor in whether they're hired. Once the company and the supervisor have given them a fair chance to compete for the opening, they should be hired on their capabilities. What really counts is whether or not you can do the job."

Identifying talent...

To affect the future by influencing the present is a key approach to affirmative action. It is proving particularly useful in identifying the career capabilities of young minority people at an earlier age, and of providing opportunities that foster their professional development.

At Avondale Division, for example, an informal program along such lines was started about four years ago by Matt Whittier, then personnel manager. The idea was to find high school students who had the ability to succeed in science

(continued)

The opportunity to work and learn in a technical environment at Avondale Division has strengthened student Pettus Hickman's interest in an engineering career.



they can do the job...

and engineering but who—for one reason or another—probably wouldn't make it or intend to try. Part time and vacation jobs were provided for about six students.

Last summer an even broader dimension was added when Debra Engle, the division's equal employment coordinator, learned about FAME, the Forum to Advance Minorities in Engineering. Relatively new, FAME seeks to reach as far down as the sixth grade in identifying technical talent. In addition, it has set up a Saturday math course to help able high school students compete for college admission.

Pettus Hickman, pictured here, is one of three FAME students to work at Avondale this past summer. Before departing for college he reported that his exposure to the real business world has greatly increased his interest in engineering.

Facing society...

On September 7, 1974, Bobbie Gallegos awoke in a Colorado hospital with no recollection of the motorcycle accident that had put her there. When told that her injuries would keep her from ever walking again, she couldn't believe it. Finally, as she arrived home from the hospital in her wheelchair the

truth of her situation hit her a psychological blow almost as paralyzing as the crash. "I didn't want to face people or become a burden. I withdrew from society."

Bobbie stayed that way for more than three years. Meanwhile, she became acquainted with another handicapped person in Fort Collins named Dorothy Lasley. In spite of being bound to a wheelchair as well as blind and arthritic, Dorothy is a catalyst on behalf of handicapped people. With Dorothy's encouragement as well as that of her own two daughters, Bobbie began to look around for work or other things to do.

In May she was accepted for employment by Fort Collins Division as an assembler. Bobbie had never worked before, and says, "I was scared to death for a while, but I'm doing real work, the people here are very helpful, and I'm beginning to take part in some of the social activities at HP."

Co-opportunity...

In Ernest Priestly, a young electronics engineer in the Cupertino LSI Operation, Hewlett-Packard can see real proof of the effectiveness of its cooperative work-study program.

Ernest was first recruited by HP's Ken Coleman for a co-op summer job in 1975 at the end of his first year at Howard University. Each summer he returned to a new project in product development at



General Systems Division, finally joining the company full time after graduation this year. According to Ernie, his summer assignments reinforced in highly practical ways the textbook experience of school, and were relevant to what he was trying to do in various high-technology areas. His career also bespeaks another aim of affirmative action, that of involving people in science and technology at an early age.

Ernie learned electronics from his father who was a video technician in Washington, D.C. By the time he reached high school he too was a qualified technician, and helped put himself through college by contracting his services to government departments. Meanwhile, he is planning to go on to a master's degree in engineering and then a doctorate.

Challenge in Spain...

As the first woman personnel manager in HP Europe, Juliana Garcia rates some notice. But the fact that this happened in Spain adds to the achievement. Juliana notes that many Spanish men are not very ready to accept women in management positions. Nevertheless, she now feels completely at home with the HP team in Spain.

Getting there was an interesting process. She joined HP in 1971 as the third employee—as secretary to Juan Soto, the country manager—even before HP Spain

In Madrid headquarters, country manager Juan Soto (left) reviews program with personnel manager Juliana Garcia and admin manager Julio Bonet.

HP engineers and technicians in Palo Alto have held special after-hours courses for high schoolers in Palo Alto for the past three years aimed at encouraging technical careers.

Bobbie Gallegos will probably never walk again, but she feels able to face the world, thanks to a job and friends at Fort Collins Division. Special accommodations, including ramps for handicapped, have been or will be incorporated in HP plants.



Aided by co-op summer jobs at HP since 1975, Ernest Priestly joined the company's LSI Operations on graduation this year from Howard University.

opened for business. The challenge of getting the operation going propelled everyone into broader and broader responsibilities, with Juliana taking on the role of personnel assistant. From there the job grew naturally to personnel administrator, accompanied by a diploma course in personnel management and industrial relations at the University of Madrid. Juliana also spent several months with the U.S. organization, variously as a member of the Corvallis Division and Corporate personnel departments. In November of last year she was named to her present position.

Commenting on the appointment, Juan Soto said it came purely as a result of qualifications and experience: "The fact that she was a woman was not considered a relevant point. In Spain, most people have never heard of equal opportunity until quite recently. Therefore, although women are very much respected here, they are not expected to have highly responsible jobs in a working environment. So, the major challenge that Juliana first had to face was to patiently overcome some skepticism of some people who could not easily foresee a woman performing successfully in what had been a man's world."

Hands-on help...

Minority and female high-school students who otherwise might not consider a technical career have received some special encouragement from HP technicians and engineers in Palo Alto for the past three years.

One afternoon a week for 10 weeks, a big bus provided by HP brings a group of 30 students to company headquarters for an introductory course in electronics. The young people, all in the ninth or tenth grade, are selected by a local school district. HP people do the rest, in a program that offers a sampler of plant tours, talks, and a hands-on project such as making a digital clock.

The friendly exposure to electronics is designed to capture the interest of some students at a point when they can still add more math and science to their high school schedules.

This fall HP engineers will also volunteer time to the MESA Program (the initials stand for Mathematics, Engineering, Science Achievement) which encourages minority students to make curriculum choices in the ninth grade that will assure future educational opportunities. MESA Centers are associated with engineering schools at ten California institutions, including Stanford University and San Jose State University in Santa Clara County near Hewlett-Packard locations.

Go for it...

For Kay Fisher the turning point in her career came about six months after joining the Boise Division in 1973. She had had five years of HP experience in California before heading for Idaho in 1970 with her husband, John, and their two boys. That experience had consisted of assembly and clerical assignments including lead work and some class leadership. But any thoughts of a management role—if they ever came up—were quickly set aside. After all, she had no college background, no management training, and a family to care for. But when HP came to Idaho the script had a different reading.

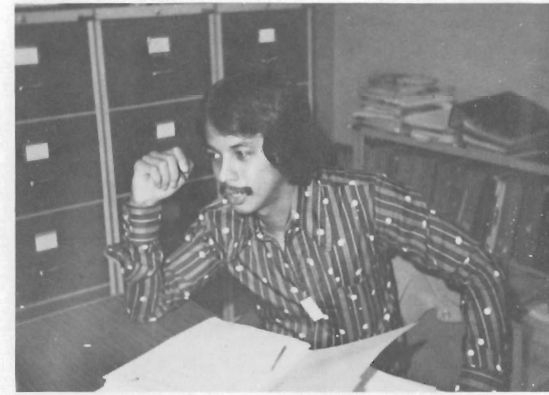
Their sons now grown and self-supporting, Kay and John joined the division as its 8th and 9th employees, and Kay was immediately put to the challenge of instructing and installing newly hired people in the printed-circuit assembly area. She became deeply involved in evaluating people for employment, setting up the cable and PC departments,

(continued)

they can do the job...



Kay Fisher, new senior personnel administrator at Boise Division, coaches Lon Curtis in his role as a trainer.



Two employees who joined HP Malaysia as a result of the company's Bumiputra Action Program are Rizuan Yahaya (left) of the facilities department and production supervisor Azudin Noordin. Both feel their career opportunities were strongly enhanced.

ordering tools, and doing all the other things needed to launch and maintain the operation.

"About six months out I decided to 'go for it,'" Kay recalls. "I was acting as a manager—and liking it. I wouldn't have worked so many long hours if I hadn't."

She found the division's managers very receptive to her goal. In time she served as line supervisor and production section manager. Along the way Kay also added most of the key HP management training courses offered by the division. Just recently she joined the Personnel department as senior personnel administrator as a means of broadening her base of experience—and moving on from there.

Sons of the soil...

HP Malaysia's Bumiputra Action program is similar to HP affirmative action programs—but with an interesting twist. The Bumiputra, translated as "sons of the soil", with 52 percent of the population are clearly not a minority in any literal sense. But in the economic sense a great many of them have been

left out of the mainstream of commercial and industrial development, staying in the 'kampongs' where they tend small and unrewarding rice paddy fields. Concerned about the potential political instability of this imbalance, the Malaysian government is determined to give the Bumiputra a bigger share of the action.

HP Malaysia is supporting this program in a number of ways. A Bumiputra Action Council, made up of five managers, reviews and monitors the various action programs. It also has considerable influence on other hiring, recruiting, promoting, scholarship and development activities within the organization.

Maria Malik, personnel manager for HPM, reports on a fairly typical situation involving Azudin Noordin, a 26-year old Bumiputra who joined HP as a line technician in 1977. Having worked as a technician in two other companies for more than seven years, Azudin was beginning to feel that he might be locked in for the rest of his career. But the HPM program identified him as having potential for growth, encouraged him to take appropriate training, and in June of this year he was promoted to production supervisor.

In another case, Rizuan Yahaya joined HP early this year under the Special Apprentice Training Program. After four months of training his performance was rated outstanding, and permanent employment was confirmed.

Choosing a career...

"My father was a mechanical engineer," says Gillian Teixeira, a mechanical engineer herself at the Waltham Division, "and it helped in making my own choice of a career to know what an engineer is. A lot of people don't have the vaguest idea what the job involves." While her division has other women professionals in electrical engineering and the computer sciences, Gillian is the only woman mechanical engineer at the present time. It's a branch of engineering which deals with the design of moving parts of metal or plastic in a piece of HP equipment.

Her father provided an up-beat role model for Gillian—she can recall his saying that he enjoyed work so much that he'd do it even if he weren't paid. Among her toys was an erector set, a gift from her father. When it came time to choose a college major, the course work and job possibilities for engineering looked more interesting than pure science or the humanities. Women engineers are still in the minority; at the Massachusetts Institute for Technology Gillian was one of five women in her class of 60 in mechanical engineering. HP offered her the chance to stay in the Massachusetts area



A group of supervisors in the Palo Alto area is instructed in sign language by HP's Debbie Waters. The four-month course will enable them to communicate readily with growing numbers of deaf and deafmute employees and job applicants.



Gillian Teixeira, mechanical engineer at Waltham Division, works on a packaging design for a monitoring device. An MIT graduate, she was strongly influenced by her father's positive attitude to engineering.

and she joined the company in Waltham immediately upon receiving her B.S.M.E. in June 1975.

Gillian has had two quite different projects in research and development. Right now she's working on packaging design for a monitor, after completing a 2½ year assignment with another engineer to design parts for the 78171 medical chart recorder introduced this June. "When you actually see your design for a machine about to be shipped out the door as a product, that's exciting," Gillian says.

A beacon of Hope . . .

You can be sure that Dennis Stiner will never take his full-time job at Santa Clara Division for granted. Where Dennis comes from—Hope Rehabilitation Services for developmentally disabled people—a permanent, full-time job "on the outside" is both a personal prize for himself and a beacon to many of the other more than 800 Hope people.

According to Bruce Corya, production line manager, Dennis got the job strictly on his own merit after demonstrating on a part-time basis that he could do a good job. Nevertheless, it did take the active interest and determination of various supervisors to give Dennis and other former Hope people their opportunity.

The division began placing contracts
(continued)

After Bakke:

Affirmative action still in place

In its decision earlier this past summer to ban the use of racial quotas in university admission standards, the U.S. Supreme Court seemed to some alarmed observers to have invoked Newton's Third Law of Motion: any action on a body—including affirmative action—must have an equal and opposite reaction.

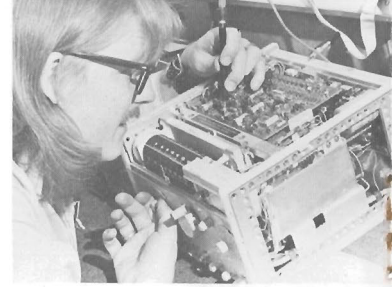
Did the Bakke decision really bring an end to affirmative action? Not at all, according to more recent observations. Part of the decision said that universities—and presumably other organizations—can regard membership in a minority group as a "plus" factor along with other factors in determining total qualifications.

What has been the impact of the Bakke decision in the area of industrial employment? Ken Capen, HP's Equal Opportunity manager, says "The net result would appear to leave the present typical affirmative action program intact. No doubt some questions concerning goals and timetables will continue to be argued in the courts.

"Within HP we will continue to work to employ and promote disadvantaged groups who have not participated fully in the employment scene in the past—particularly minorities, women, the handicapped and veterans. We will continue to use numbers to help gauge the effectiveness of our affirmative action efforts. However, we must be careful to avoid inflexible quotas which might exclude some groups of employees from competing for opportunities. While membership in a disadvantaged group may be considered a 'plus', all applicants or employees can compete for all opportunities based on their individual qualifications."



In spite of handicap, Dennis Stiner learns his tasks well at Santa Clara Division, according to Verna Gomez, wiring and assembly supervisor.



Stepping into the role of certified sheetmetalst came quite naturally for Norma Pierce at Colorado Springs Division.

they can do the job...

for assembly services with Hope some eight years ago. The next stage was to allot room for several summer hirings. This year five Hope graduates including Dennis spent the summer working for HP.

Finding new roles...

Since each Hewlett-Packard manufacturing plant keeps its own records on apprenticeship programs, it's difficult to say if Norma Pierce of the Colorado Springs Division was indeed the company's first woman to receive the Journeyman Sheetmetalst Certificate when she completed five years of training in November 1976.

She certainly was the first woman journeyman—journeywoman—sheetmetalst at her own division and, according to Norma, it all happened in a very natural fashion. Norma, who had 12 years of experience as a machine operator, joined HP in the Printed Circuits department of Colorado Springs Division in

February 1966. When the small machines she was using were moved into Sheetmetal in 1971 she agreed to go along—and thus automatically became enrolled in that department's in-house apprenticeship training program.

Norma found no obstacles along the way to earning her certificate. The men in her new department accepted her matter-of-factly and she found she could handle all the tasks required. Admittedly, it does take strength to position 4 x 8-foot sheets of steel or aluminum for the 8-foot shear, or to use the brake that makes sheetmetal folds. But Norma found her own way to lift materials, and demonstrated that she could set up and operate all the machines in the shop, including the 75-ton "Big Bliss" punch press. Her successful apprenticeship was a quiet example of equal opportunity in action: the chance to work and grow on the job.

Statistics on women apprentices are available for HP's divisions in the San Francisco Bay Area, where Corporate's Rich Lujan coordinates nine different types of apprenticeship programs. The number of women enrolled has more than doubled in the last three years, with women now making up 28 percent of those in all types of apprenticeship programs. The standout is HP's electronic

technician apprenticeship program, which has been in operation in the Bay Area since 1965. The first woman electronic tech graduated in 1972; today 15 out of 34 enrolled are women.

"As women apprentices are rotated through various areas during their training, more and more women see these role models and decide they can do it too," says Rich.

Enhanced vision...

In spite of total blindness in one eye and very limited vision in the other eye, Bob Norwood can test and repair faulty circuits in highly complex HP instruments. Bob does this for Stanford Park Division, using special lenses attached to his glasses, a closed-circuit video screen to enlarge numerical readings, and a pedal-powered soldering iron. He joined HP in 1976 as a result of the efforts of Sensory Aids Foundation of Palo Alto in cooperation with the California Department of Rehabilitation. In a joint program to place blind people in industry, they arranged an interview with HP for Bob, who had received special training at the Bay-Valley Technical Institute in Santa Clara. They also recommended the special equipment he would need to do the job.

According to Bob, the soldering is sometimes a source of frustration. But he perseveres, and finds his HP associates friendly and willing to help when needed.

Special vision-enhancement equipment enables Bob Norwood to perform as technician at Stanford Park Division, in spite of near blindness. Newer HP facilities have Braille or Braille-like signs at elevators and washrooms.



Students' days at Santa Clara and Cupertino divisions attract scores of minority high schoolers from the area for a hands-on experience with industry.



Inger Cordeiro, who handles non-exempt hiring in Data Systems Division's personnel department, stops for a friendly exchange of notes with production assembler Kenneth Rameriz, who is deaf.

Keep looking...

When Inger Cordeiro of Data Systems Division personnel talks to applicants for non-exempt employment at HP, she speaks with first-hand knowledge about jobs in the manufacturing area.

Inger, who took over her present position this spring, joined Hewlett-Packard at the former Microwave Division in Palo Alto in 1971 as a production assembler on the line and soon became a lead.

"I remember that when I first came to work I just wanted any job," Inger recalls. "But once your basic needs are met, you look around and want to grow as others are doing."

In Inger's own case, the opportunities for growth took many forms. One of her first projects was to help put together a book on workmanship standards and quality. Because she wanted to learn "whatever there was to know," she sought out extra coaching from Hal Hiner in R&D in order to work on prototypes for engineers. There were after-hours classes in microwave electronics to help coordinate, and then the chal-

lenge of training production workers for the new Santa Rosa Division when Microwave split into two divisions. Along the way she volunteered to help with OIC (West), which was training socio-economic disadvantaged workers in the basic skills needed in industry. "I scrounged up pliers and discarded equipment for the classes," Inger remembers, "and brought people through our plants to show them what the electronics industry was all about."

When she transferred to an exempt job as a scheduler in Stanford Park Division's production control department in 1974, Inger continued to serve for two years as a trainer for the Employee Development course given after work hours. Her new role in personnel is a natural extension of the interest she has always had in helping other people's careers.

Influencing decisions...

What actually is accomplished in bringing minority students into our plants for a day-long visit? Specifically, what happened this year when more than 300 high school students—Blacks, Asians, Latinos—from high schools in Santa Clara County spent a day variously at

General Systems, Data Systems, and Data Terminals Divisions?

Skip Norman surveyed 100 students attending the Students Day at General Systems. Before their visit only about 30 had specific career goals in mind, and of these only half indicated an interest in business and industry. Surveyed again after the event, more than half of the undecided students showed a strong interest in business and industry.

One counselor, Hattie Morris of the Milpitas High School District, has attended each of the five annual career days at HP, and said they have had a significant influence on career decisions of many students. Another counselor, Joyce Elmore of James Lick High School, reported that students had heard about the program from previous students "but they didn't really understand it until they came. Some of them will go into electronics now, I am sure." □

HP computer systems:

Wide open



New HP 300 computer system

for business...

Ed McCracken, general manager of General Systems Division, discusses HP's growing commitment to the business-computer business.

□ What is HP doing in the business-computer market? The answer is, pretty much the same thing HP has been doing for years in other areas—offering electronic tools, based on our own experience of their usefulness, that help other organizations get their jobs done faster, better, and at less cost. At first, we at HP built tools for electronic engineers, but over time we have expanded the range of people for whom we build tools. We've added doctors, nurses, chemists, chemical engineers and materials scientists. Now we are serving business decision makers as well.

Successful growth at HP has usually been in one of two ways. Either we offer new and improved products to markets where we already are well known, or we offer well-proved existing products to markets that are new to us. Rarely is it possible to move both ways at once, simultaneously

developing new products and building an organization to market them where we never had such an organization before. Our entry into the business-computer business was typical. When the HP 3000 was invented more than five years ago, it was far ahead of its time. Here was a computer with characteristics that were then typical only of million-dollar machines, yet its price was less than a quarter of that figure. We aimed it at the scientific computer market where we had a marketing activity already in place. We tended to sell mostly to forward-looking customers who had, themselves, great expertise in applying computers. It was some years later, with a well-proven HP 3000, that we entered the business-computer market in a substantial way. For some time, the HP 3000 was our sole entry in that market.

Our own best customer...

Fortunately, HP was itself one of those early, expert customers, and many 3000s were put to work to bring to divisions and departments of our company new, problem-solving computer resources of a kind that once were available only to top management. Today we have 66 systems in use throughout the company oriented toward business applications. We have based our approach to outside customers on the experience we have gained within HP.

The cost of information-managing machinery—for that is what computers really are—has been coming down about 30 percent every year for a long while now, and it appears that it will continue to come down at that rate, or better, for a long time to come. At the same time, the cost of almost anything else one can name, including that of the experts who run these machines, has been going up.

The consequences, for us and for the management of all organizations, large and small, are important and far-reaching. By distributing new, low-cost computer resources out among the locations where the work is done and the information originates, an organization now can give local management the ability to control its activities locally, and thus to assume a fuller measure of responsibility for them. Decisions can be made locally because management decision makers can now afford the business decision-making tools to analyze alternates. Work is accomplished more effectively, and is more meaningful to those who perform it.

(continued)



the business— computer business

Serving customers uniquely...

The business-computer field certainly was not vacant when HP began to move in. It has been served long and well, both by long-established giants and by innovative newcomers. We have, however, demonstrated ability to earn leadership by serving a class of customers in unique ways. Our aim has been the creating of on-line, interactive systems that are low in cost, friendly and extraordinarily easy to use. 'On-line' means simply systems that respond immediately to commands or inquiries, using up-to-the-second information. 'Interactive' means systems that go beyond quick response, and actually help the user get the desired results. The personality of such systems is entirely different from that of traditional systems; these typically required users to feed in data and instructions in very special ways, then to wait in line with others for remote processing and an eventual response, hours or days later.

Our special advantage, in reaching these aims, has steadily been our base in advanced engineering technology. By being among the first and fastest to apply new techniques, we have been able to maintain leadership in price as well as performance.

Now all the power of a million-dollar computer of a few years ago can be had for about \$50,000. And while that is, by itself, an impressive accomplishment, it has been accompanied by changes that make the machine far easier to use. Fewer and less-expert people are required to manage the machine. That trend must be extended, or with the rapid growth in computers, everyone would have to become a computer expert. Computers are made useful by people who write 'software,' the detailed instructions and programs that tell the machines what to do and how to do it. Fully half of research

and development for the business computer market is now in software.

Machines that are friendly...

This is essential to our continued growth because making these machines easier and easier to use is one key to the great change that they are sure to make in the science of management. As technology drives down the cost of the hardware, and information-managing tools of ever greater power become more and more easily available at every level of management, the manager who is truly in charge of his own destiny will be the one who knows how to employ them effectively.

That cannot be through an army of data-processing specialists; the machines must be made directly accessible by decision makers themselves. We are designing software tools to make the task of applying a computer to a problem much easier.

That effort is moving ahead fast. HP has already received one of the computer industry's most coveted honors, a DATAPRO award for the information-management scheme we call IMAGE, which made it easier than ever before for HP 3000 owners to command their machines to sort over vast quantities of stored information, find and relate facts so as to extract meaning. In the year we



New HP 3000 series 33 computer system

received it, HP was the only maker of small computers who was so honored.

For years, computer people have discussed ways to make computers of various kinds 'talk' effectively to one another. Indeed, there has been so much discussion of the subject that many people think it must long ago have been accomplished. It comes as a surprise to them that, only last year, HP was the first maker of small computer systems to deliver systems of three different kinds that could inter-communicate in depth. They not only can transfer long streams of information back and forth, they can actually command one another's full resources. A user at one HP 3000 can run programs or print out data on another, while a third HP 3000, or even an HP 1000, searches the files or uses programs in both. This ability, too, is based on clever software that extends the usefulness of HP computers and makes them easier to apply to the solution of problems.

We did not suddenly have a widely-salable business computer when we came up with the HP 3000, nor even when we found ways of using it in our own business, bringing big-business computer power down to small-system prices. To crack the business market, where we now have about a quarter-billion-dollar effort going, it has taken the best efforts of eight Hewlett-Packard divisions, in addition to General Systems.

Computer family tree...

What is now the Data Systems Division, in Cupertino, Calif., was the father of General Systems, the Data Terminals Division, Boise, and the Disc Memory Division. Under DSD's wing, too, the silicon-on-sapphire integrated circuit laboratory grew up, and on the strength of its accomplishments we are now beginning a whole new chapter in the history of computing machinery. Meanwhile, the Loveland Calculator Division, now the Desktop Computer Division, spawned the Fort Collins Division, creators of HP's first very-low-cost business computer systems, the 9896, and more recently a super accounting machine (SAM), the HP 250 that has taken off this year. And now, the HP Grenoble (France) Division is making its contribution, in a new family of data terminals. Formed last year was the Computer Service Division, to complete a vital link in our chain of offerings to customers.

Successful computer suppliers must offer consistency of performance, rare failures, and fast service. Buyers like to see that all parts of a computer system are made by the same company, so they may better be expected to work together well, and they want to be assured that the seller will remain in business and continue to accept responsibility for servicing the equipment.

Special advantages...

HP is among a very few computer makers, large and small, who actually manufacture virtually all of the equipment they sell, even including many integrated circuit components obtainable nowhere else, that give HP systems special advantages.

To the user, the thing that is a computer is the terminal that stands between user and system, the 'interface' between man and machine. With a keyboard to talk to the system, and a screen for the system to communicate through, there is at least one terminal on every system, and most have more; the biggest HP 3000 Series III can handle as many as 64. If we were to establish our own identity to users of HP computers, and if we were to do more than just distribute these vital system elements to our customers, it was necessary to make contributions to the data terminal art, in new terminals of HP design. And so we did, forming an entire new HP division around them. The Data Terminals Division's 2640 series now has six members, including a brilliant new design that handles pictures and graphs with built-in 'intelligence' of its own, and this month we will announce the start of a new and lower-cost series that will attract still more buyers.

Much of the output of a computer system is printing on paper. We now make three kinds of printers, one of typewriter quality from Fort Collins, Colorado, and two high-speed types from Boise, Idaho; one of these was introduced only a year ago, and one just now going to the market for the first time. The Boise Division also makes HP's magnetic tape drives, while a new sister there, the Disk Memory Division, makes some of the fastest, least costly and more reliable machines of their kind in this industry.

Levels of service...

We have recognized that, just as the computer to the user is a terminal, HP to the customer is most often an expert ser-

vice person, not a manager nor a sales representative. That is one reason why the Computer Systems Group created a Service Division to perform the essential function of maintaining customer-owned equipment, and repairing it if that is ever necessary. We offer several levels of service, from telephone consultation right up to engineers resident at our users' place of business. These people back up a fast-growing organization of sales and training experts who are entirely specialized on business systems. Thanks to them, we can offer local consulting on business data problems, training programs for customers, and fast response to new sales opportunities.

On this firm foundation, we now have installed more than 1800 HP 3000s, the new Fort Collins offerings are off to a flying start, and we are this month introducing two new systems that will deeply affect Hewlett-Packard's growth and opportunities in the business-computer field. These new products mark the start of a whole new generation in that sequence of greater performance and lower costs, because they are based on only the first results of applying new silicon-on-sapphire (SOS) integrated circuit technology.

Our new products...

The first of these is HP 300, a totally new general-purpose business computer that takes no more space than a free standing data terminal. It is designed to simplify the development and control of dedicated on-line business applications. The HP 300 is priced beginning at \$36,500 and it can support as many as 16 terminals for processing business transactions.

The second is the HP 3000 Series 33, the first LSI version of Hewlett-Packard's HP 3000 product line. It employs the same powerful operating software (MPE III) as the HP 3000 Series II and Series III, and gives users a wide range of compatible HP 3000 computers from which to choose, beginning with Series 33 at \$70,000.

Deliveries of both new computers will begin in 14 weeks.

The two new systems fill the middle range of Hewlett-Packard's business computer family. Together with the HP 250 and the HP 3000 Series III introduced in June, they give HP a range of business systems from \$24,500 for the HP 250 to approximately \$250,000 for a full scale HP 3000 Series III. □

HP NEWS



Good clean sports: To help promote this year's United Way giving at Waltham Division, general manager Lew Platt volunteered to wash the cars of four employees selected by a drawing of Fair Share givers. This so spurred the campaign that Lew felt compelled to double the number of cars and add personnel manager Walt Pienkos to his washup staff. This too went well until an 18-wheel truck pulled in on behalf of shipping supervisor Pete McDermott. With good managerial style as well as good sportsmanship, Lew and Walt agreed to polish the cab in return for a special donation. It all added up to more than a 30 percent increase in giving over the 1977 amount, causing United Way of Massachusetts Bay to cite HP for "Outstanding achievement as a pacesetter company."

New Washington site optioned

PALO ALTO—HP has obtained an option to purchase approximately 190 acres of land near Vancouver, Washington, as a site for a future plant. No division has been named to occupy the site, and no timetable for development has been set.

Cottrell heads new Marketing Operations

PALO ALTO—Carl Cottrell has been named to the new position of Marketing Operations manager. Al Oliverio, vice president of Marketing, said the new post includes overall marketing administration and controllership responsibilities for sales, service and customer service.

In addition to serving the U.S. sales regions in these combined

roles, Cottrell will continue as chairman of the worldwide Service Council, and retains worldwide responsibility for distribution of parts.

New Manhattan office

NEW YORK—HP has leased the top floor of One Penn Plaza, a new 55-story office tower in midtown Manhattan, as a sales office serving the metropolitan New York market for commercial data processing equipment.

Staffed by a dozen people transferred from two other local sales offices, the 16,000 square foot office will offer customers demonstrations of the full range of HP computer systems and desktop computer products, along with selected medical products.

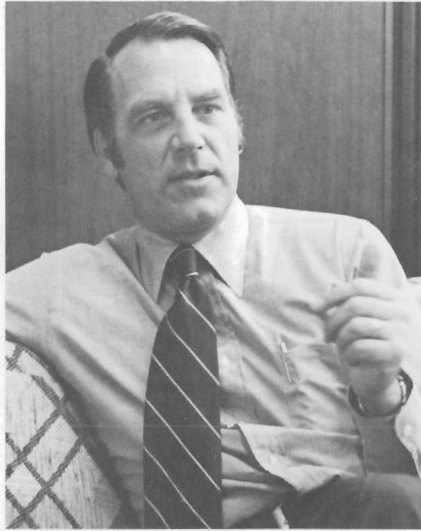
Sales finance, credit joined

PALO ALTO—The company's fast growing sales financing and credit activities have now been consolidated in the Treasurer's

department. Joe Barr, formerly U.S. marketing administration manager, heads the newly combined activity.

MSD starts San Jose move

PALO ALTO—The move of Microwave Semiconductor Division from Palo Alto to the new San Jose plant began last month. The site consists of some 90 acres (36 hectares) at 350 W. Trimble Road, near the San Jose Municipal Airport.



From the president's desk

In the July issue of *MEASURE*, I outlined the basic philosophies and practices that comprise the HP salary administration system.

I described the two elements of salary administration: a) establishing competitive and fair job classifications with industry-wide comparisons, and b) the merit component of pay wherein employees are recognized for their individual efforts. I'd like to expand on the merit aspect because it is part of the basic management practice at HP, Management by Objectives (MBO). How we get paid is important to all of us so it's helpful to understand the system thoroughly.

HP's corporate objective on "management" defines a system to "foster initiative and creativity by allowing the individual great freedom of action in attaining well defined objectives." This approach has grown up with our company and pre-dates the broader industry recognition of MBO starting in the mid-50's. It is founded on a fundamental belief in the worth of the individual and the recognition that those directly concerned with the problems at hand are in the best position to make decisions and take action. This concept takes nothing away from the competence or responsibility of the manager or technical expert up the management line—it's simply a case of first-hand knowledge and direct motivation achieving a better result.

The HP statement on management calls for "well defined objectives." This implies that some structure is essential to the overall process. The framework starts with the corporate objectives themselves—outlining the need for profits, the fields of interest we pursue, our obligation to customers, employees, and the community. The key management action is to translate these general directions into specific goals for each employee.

A main part of the process is occurring right now—setting targets for FY79. Every activity within the company will have an expense target. To go with the targets, each

group, division and region identifies specific goals that each wishes to accomplish next year. Examples might be a quality improvements program, a major account sales plan, or a new production technique. The process carries through to every work group; lab projects, district sales teams, and production lines. Properly done, each individual ends up with a specific set of job-related goals, but within the context of the overall program—a combination we've found that taps the creativity and participation of all employees.

The actual job performance of each employee is ultimately recognized in our merit pay system, through position on the curves and by promotion to greater responsibility. A very important part of HP personnel practice, and the bridge between objective setting we have been talking about and merit pay, is the performance review and development plan.

Periodically, each manager must meet individually with employees to discuss their progress and problems. Formal reviews are at varying intervals—3 and 6 months for new employees to insure rapid feedback, and up to two years for long-service people. These discussions include:

1. Agreement on the major responsibilities of the job.
2. Summary of progress toward meeting responsibilities, based on the prior agreed-on goals—the process I have outlined above.
3. Job related characteristics demonstrating greatest strength and those areas needing improvement.
4. Mutually agreed-on plan for further development of the employee.
5. Written summary of the discussions.

The performance appraisal process is an important supervisory responsibility. We have and will continue to emphasize training in this area. A new Performance Appraisal Workshop is being introduced this month as part of the "Managing at HP" series. We particularly want to insure that performance discussions are as open, frank, specific and helpful as possible.

It's clear the activities of specific goal setting, performance appraisal and merit pay are closely linked. As part of HP management philosophy, they have been fundamental in the company's development. The system places great responsibility on the individual, but it makes our work more interesting and provides the means for each person to make a difference and be recognized for it. As we grow and new employees and new locations are added, it's even more important that these HP fundamentals be well communicated and understood.



Double Eagle soared with HP-67

In spite of having lined up the most sophisticated communications system ever used for a balloon flight, Double Eagle put an HP-67 programmable pocket calculator and Navigation Pac to critical use last August in achieving the first successful Atlantic crossing by balloon. That use came shortly after leaving the coast of Newfoundland. A storm was approaching, and both the air crew and ground crew needed to know its relationship to the craft. The normal procedure of relying on satellite information from Goddard Space Flight Center as radioed by passing aircraft could take six to seven hours—much too late even for a wind-driven vehicle. Navigator Maxie Anderson took sextant readings of Venus and Polaris, calculated their position with the aid of his HP-67, and reported by radio to the ground crew, all in a few minutes. Thereafter the same procedure was followed each morning and evening. And even when most everything else had been tossed overboard in the interest of staying aloft, Anderson held onto his navigator's tools. They and other Double Eagle paraphernalia will eventually reside in the Smithsonian Institution's National Air and Space museum—an honor well deserved.

Measure

EDITOR
Gordon Brown

ASSOCIATE EDITORS
Dennis Cresswell
Betty Gerard

ART DIRECTOR
Tom Martin

GRAPHIC ASSISTANT
Teri McPheeters



1501 Page Mill Road, Palo Alto, California 94304

MEASURE Correspondents - ANDOVER, John Flaherty • AUSTRALASIA, Robin Schmidt • AVONDALE, Matt Whittier • BOISE, Arlie Stone • COMPONENTS, Kathy Belton • BRAZIL, Campinas, Jose Lucinda • COLORADO SPRINGS, Betty Lofton • CORVALLIS, Dick Anderson • CURRY, Ardis Boland • DELCON, CSC, Ed Ippen • EASTERN SALES, Vince Macrina • FORT COLLINS, Pete Peterson • GENERAL SYSTEMS, Ken Coleman • HPCANADA, Brian Wright • HPFRANCE, Jacques Mirouzeau • HP GMBH, Ernst von Glasow • HP ITALIANA, Alice Pantera • HP SINGAPORE, Dick Love • HPSA, Josette Boulmier • INTERCON, Sy Griesman • LOVELAND, Jim Colwell • MALAYSIA, Maria Malik • MANUFACTURING, Charlie Marshall • McMINNVILLE, Chuck Walker • MIDWEST SALES, Jessica Tolman • NEELY SALES, Roseanne Peters • NEW JERSEY, Bob Muggleston • SAN DIEGO, Bob Reade • SANTA CLARA, Robert Levy • SANTA ROSA, Dave Curry • SCIENTIFIC INSTRUMENTS, Keith Eberidge • SOUTH AFRICA, David Booker • SOUTHERN SALES, Atlanta, Edith Varrell • STANFORD PARK, Joanne Engelhardt • UNITED KINGDOM, David Reed • WALTHAM, Janet Dale • YHP, Misako Harada

HEWLETT-PACKARD COMPANY
1501 Page Mill Road
Palo Alto, California 94304

BULK RATE
U.S. POSTAGE
PAID
SAN JOSE, CALIF.
PERMIT 2798

47-14293

KENNETH L MACY
403 MEADOW DRIVE
BOULDER CREEK, CA. 95006