



Affirmative Action challenge — pages 2-7

The life savers — pages 8-9

Back from the U.S.S.R. — pages 10-12

The math of Santa Claus — page 13

From the president's desk — page 15

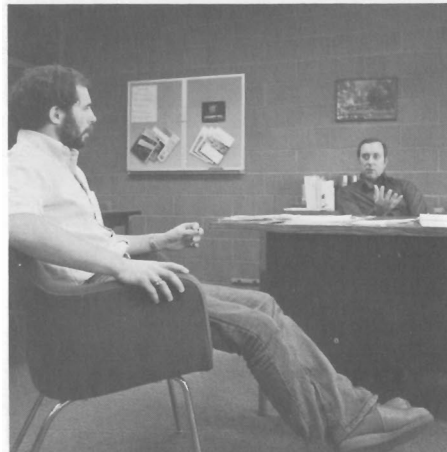
Measure

For the men and women of Hewlett-Packard / DECEMBER 1976

Build a broader base...

□ As Computer Systems Group general manager Paul Ely talks in his office with the young engineer who had just returned from spending a year under HP sponsorship teaching at a predominantly black university, he poses a question that probes deeply into the company's approach to affirmative action:

"I find myself asking, 'How can HP make a contribution?' By merely scrambling with other companies for minority and women graduates of engineering schools? Or by doing more ourselves to add to the total available pool?"



HP's participation in faculty loan programs with minority universities is discussed by Data Systems engineer Jack Elward at left and vice president Paul Ely, general manager of Computer Systems Group.

personal experiences, and initially came up with different views.

Paul Ely, who was recently elected as an HP vice president, has been a strong proponent of encouraging more women and minorities to enter technical fields. At Hewlett-Packard, a number of affirmative action programs related to education have originated in the divisions. Paul can recall that the Faculty Loan Program in which Jack took part last year was first proposed and pushed by a marketing engineer in Paul's former Microwave Division. That engineer, Aaron Kennedy, now concentrates on affirmative action programs in education as part of his assignments in Corporate Personnel. The idea of lending a top-flight HP engineer to help instruct minority college students eventually caught fire simultaneously at several divisions; the first year AMD and Data Systems each sponsored a loaned instructor while Stanford Park and Santa Rosa shared expenses for a third. This year the Data Systems Division in Paul's Computer Systems Group has loaned another engineer to replace Jack at Howard University, with funding for the trial program shifted to Corporate.

But Paul is concerned about achieving the maximum benefit for young minorities and women from HP's available resources.

He looks at his own background, remembering a turning point during his freshman year in high school when he was taken by his father to visit the labs of a great university in a frank effort to get Paul moving academically. It worked — dramatically — for him, and now he wonders if HP shouldn't concentrate its time and money on motivating kids in the pre-college years.

Paul and his visitor, Jack Elward of the Data Systems Division, agree that it is not enough to wait poised by the doors of the nation's engineering schools to compete for the graduates now emerging. HP has actually set aggressive goals for getting a larger-than-average share of those graduates, and made a good run last year at achieving those goals. (In 1975, 6.1 percent of graduating engineers in the United States were minority, 2.3 percent were women; HP hired 400 engineers that year, of whom 11 percent were minority, 4 percent women.)

But even Hewlett-Packard, which includes good citizenship as one of its stated corporate objectives, has finite resources for social action. If you want to broaden the stream of young people flowing into the sciences, so that eventually more minorities and women will be represented at the management level of your company, where do you begin?

Paul and Jack drew upon their own

Cover: The "fastest hand in the west" is congratulated in bottom photo by HP test technician Mike Stewart of Santa Clara Division. The winner was one of some two-dozen high school youngsters who participated in an after-hours electronics study program. He triumphed by reacting faster than rivals to flashing lights that simulated a drag-strip "Christmas tree" stop-start system seen in top photo. Hooked to HP counters, the system helped heighten the interest of the young people in electronics and go on to more serious projects. Originated and operated by a dozen Santa Clara technicians almost two years ago, the program is an example of the kind of bottom-up affirmative action that more and more HP divisions are reaching for.



HP engineer Harry Portwood (standing at left) is in his second year as a loaned instructor at Southern University in Baton Rouge, Louisiana, under Hewlett-Packard sponsorship. HP-donated equipment plays an important role here as in many other colleges and universities.

"It's a step in the right direction to provide the black engineering schools with equipment and HP instructors who really understand what engineering is all about.

"But I feel the best use of our resources would be to pay more attention to recruiting at the high school level. We should try harder to bring in those minority youngsters and girls who have promise but are not planning to go on to college. We should get them into summer jobs at HP so they have a feel for what it might be like to work in industry. Then those who show technical ability should be given an opportunity to develop it. We should take the existing co-op program we're in already at the college level and expand it. This would put more minorities and women into the college stream."

Jack, on the other hand, has first-hand experience on a black campus to back up his conviction that continuing the two-year-old Faculty Loan Program is of primary importance to HP.

"If you want to talk in practical terms about recruiting, we've made an investment in the future at Howard," Jack says. "The freshmen coming up now will benefit from the changes that visiting professors from HP and other companies have introduced to make the college program pertinent to today's technology in industry.

"I think the students got a good feel for Hewlett-Packard and the way things are done in this company by the way I presented material. Classwork was a lot more than just textbooks; I tried to bring into my classes a lot of real engineering, to give students an idea of what really goes on following graduation.

"People relate better to an actual representative of Hewlett-Packard than to a

donated piece of HP equipment sitting in a lab or a professor's office. Howard could get along without the Faculty Loan Program, but we have a real contribution to make through this program."

Paul agrees. "We know that the students who learn about HP from the college co-op program pass along that information when they go back to the campus. Having our own HP faculty there probably multiplies the effect by about ten.

"We'll just have to keep looking for

the best possible mix of programs to get more young people from under-represented groups thinking as early as possible during their school years about technical careers — and then back them actively all the way."

Meanwhile, the testing and strengthening of the various existing HP programs of work/study cooperatives, loaned instructors, high school involvement, and instrument donations continues, as described in the following sections:

Go to the campus...

When you talk about faculty loan programs, HP is neither the first company to lend its professionals to predominantly black colleges nor the most heavily committed in terms of numbers.

Nevertheless, Hewlett-Packard can find satisfaction in the visible contribution the company has made in the two years of involvement in a faculty-loan program.

Jack Elward and Nick Kuhn are back from Howard University and Prairie View A&M campuses respectively, where they broke ground for the HP program in 1975-76; the third loaned instructor from that first year, Harry Portwood, elected to remain for a second academic year at Southern University. Doug Hoffman is now building on the beginning that Jack made at

Howard, while Dave Granteer is the first HP loaned instructor at Tuskegee Institute.

Each of these five Hewlett-Packard engineers is positive that supplementing the engineering faculties at black universities with instructors drawn from industry is the way to go in helping develop young minority engineers.

They talk about the personal relationships which they feel validate the program rather than the formal commendations which they have received from the institutions where they taught.

The letter from the administration of Prairie View A&M to Hewlett-Packard praised Nick Kuhn for having had a "meaningful impact" as Industry-Professor-in-Residence at that university.

(continued)

At Howard University in Washington, D.C., Tim Norris (left) is one of the students in a digital systems class taught by Doug Hoffman, Data Systems engineer who is spending a year on campus as a loaned instructor. An HP computer system, mostly provided by the company and complete with disc and tape recorder, is used for the course.



Nick himself, thinking over a year at Prairie View's campus outside Houston, Texas, is more modest. But he still maintains regular contact with four or five former students who have now been graduated and are working in industry.

"We developed close ties," Nick says. "They spent a lot of time visiting in my office, studying together, thinking about their future after graduation. Sometimes I was frustrated by the bureaucratic red tape of teaching, but I found the whole experience personally rewarding. I'd do it again, but not right away for my family's sake."

Prairie View had asked for a visiting professor with microwave experience, and Nick, a lab engineer at AMD at the time, fitted their needs. That division sponsored Nick during his year away; since returning to HP he has become an applications engineer in marketing at Stanford Park Division. Aside from his professional qualifications for teaching at the black university, Nick earlier had demonstrated his social concern by working for many years with farm workers.

Prairie View draws from nearby rural schools, and Nick found most of the students were poorly prepared in math and physics. Top students of the high schools had been siphoned off by scholarship offers from universities such as Stanford and Yale. Tutorial programs were thus offered at Prairie View throughout the year to help future engineers catch up on the fundamentals of their profession.

"They've never seen a computer"

As Dave Granteer left the Colorado Springs Division to spend this year on the engineering faculty of Tuskegee Institute in Tuskegee, Alabama, his wife Margaret and teen-age daughter remained behind in Colorado. Margaret works as a photo lab technician at the Springs plant, and she and Dave are doing a good deal of weekend commuting to see each other. But Dave hasn't let the inconvenience in his life dampen his enthusiasm for his new assignment.

"These are such super nice kids, some of the nicest kids I've ever run across," Dave says. Tuskegee has about 100 students in the electrical engineering department, most of whom came from surrounding rural schools.

"I was told that I'd get a lot of students coming to see me for help. They do come into my office all the time with questions about work, both for my classes and those of other professors. I get a big kick out of it and I'm very glad I came here."

Dave, a cathode-ray tube designer, uses an HP 2000 system in teaching a sophomore class in computer programming. ("We have a clean slate — none of the kids has ever seen a computer.") He also teaches electromagnetic theory to

juniors and a course in problem solving on the computer to seniors.

"I even have one permanent faculty member who attends all my senior-level classes, does the homework, and takes the tests so he can carry on with the class next year."

Presenting a professional picture . . .

When Jack Elward returned to the Data Systems Division after his year as a visiting instructor at Howard University in Washington, D.C., he had some decided ideas about the person he hoped to recruit to replace him.

"It would be good to find someone with teaching experience — but that's not the main thing," Jack believes. "It's important to look for a good representative of Hewlett-Packard, someone who presents a good picture of a professional engineer. You must be able to organize your time and set your own pace."

And, since HP has contributed a computer system to the engineering department, the visiting instructor would be involved in familiarizing the faculty as well as the students with that equipment.

Doug Hoffman, a systems quality engi-

neer at Data Systems, agreed to spend the current academic year at Howard. Since Doug is single, he didn't have to consult a family in making the move.

How is it going? Doug, who had headed a youth program for his local chapter of the Association for Computing Machinery, has discovered that he loves teaching.

"Next week we'll get into microprogramming in my course on the systems design of digital systems," Doug says. "Five years ago microprocessing was a term that no one in industry or the engineering school had heard." He's finding that Howard's faculty members are also intrigued by having a digital computer available to monitor their experimental work with analog computers.

Building relationships . . .

Harry Portwood is the only repeater that HP has yet had in the short history of the faculty loan program.

Although he was heaped with praise for his first year on the electrical engineering faculty at Southern University in Baton Rouge, Louisiana, Harry himself wasn't satisfied. He still had some projects on his agenda.

"I felt I was just beginning to find out how the university works and could do more for the school in the second year," Harry says. This year he has organized a committee to pull together a report to the chairman of the department on worthwhile approaches to improving the lab situation at Southern. He also held a weekly tutorial in trigonometry for a month.

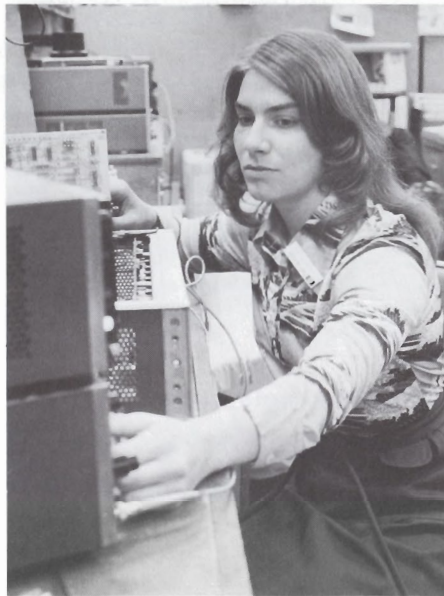
Looking back at his first year, Harry remembers that he went to Southern with the mistaken idea that engineering students are generally self-motivated. "I thought that all I had to do as an instructor was to present the proper information and everything would fall into place. How wrong I was! When I tried this approach everything started falling apart."

Harry drew on his HP experience by starting to set objectives and establish goals with his students. He began evening problem sessions to get to know the kids in his classes, worked with the IEEE and Eta Kappa Nu student organizations, and became active in faculty committees.

Through his ties with HP, Harry has been instrumental in re-establishing a co-

op program between Southern University and the company. A Southern University faculty member, Isaac Porche, worked for HP on an exchange basis for a year. Southern is also one of the minority colleges to which HP has been donating basic instrument equipment (the other recipients include all the institutions involved in the faculty loan program, along with Tougaloo College, Haskell Indian Junior College, Atlanta University Center, North Carolina A&M, South Carolina State, and Tennessee State). A video tape unit with a supply of basic HP instructional tapes has also been given to a number of these minority schools. In addition, HP makes continuing corporate contributions to several scholarship funds which assist minority students, including the National Fund for Minority Engineering Students, the United Negro College Fund, and the Consortium for Graduate Study in Management Education. □

Bring the campus to the factory



At HP's Waltham Division on a co-op basis, M.I.T. junior (EE) Diana Healy says she has found herself fully accepted as a candidate for a career in professional engineering.

If you wanted to give a young person the chance to learn about industry, to obtain an education, to advance professionally, to understand and like the Hewlett-Packard organization, and all the while doing this on a self-supporting basis, then you would have to invent something very similar to the cooperative work-study program.

Co-op programs have been supported by industry for years. HP's Waltham Division is a good example; the former Sanborn Company had work-study agreements with various universities as far back as 1946, and Waltham continues the tradition. Their objectives are to afford better preparation by promising students for permanent work with HP after graduation, to give each party plenty of time for evaluation before making a hiring decision, to give the company more visibility on campus, and to provide an economical means of aiding education.

(continued)

In 1972 a number of HP divisions undertook co-op programs, and it soon became clear that the work/study combination was a natural vehicle for affirmative action. People such as Allan Richardson of Professional Employment and Aaron Kennedy, as well as the Waltham Division, had something to do with that realization.

As a result, more than half of the 54 co-op students currently attached to HP divisions in the U.S. are on an affirmative action basis. Specifically, 23 of the co-op people (including two women) are from racial minorities and 11 others are women. The co-op total is more than double that of a year ago, and those who fit affirmative action criteria have been multiplied almost five times in that period. In short, it's a going program, and one that seems destined to continue its growth.

Some of the reasons for that vigor are revealed in comments by various participants, including employee-students and their sponsoring supervisors.



Tony Martinez from the University of New Mexico and Cathy Mitchell from Louisiana's Southern University discuss their co-op work experience at Santa Rosa Division. Both are EE students and put high value on the opportunity to gain real industrial experience.

Born deaf, New Jersey Division's George Kononenko acquired his degree in industrial design engineering at Rochester Institute of Technology with the aid of HP's co-op program.



An effort in communications

"George is very good at what he does," said New Jersey's Don Pauser of George Kononenko. George was born deaf and speaks with great difficulty. He came to HP through a co-op program with the Rochester Institute of Technology in 1974. He graduated as a mechanical design engineer last year when he joined HP on a full time basis. In the course of working with George through his co-op program, Don has become proficient in sign language as have several others in the division. However, it's not quite that simple; someone has to make the phone calls for George and order the materials and supplies for his printed-circuit design work. "We do have to put in a bit more effort in communications. But George is very anxious to improve his performance, and to take on his own projects. He's a professional and deserves that chance."

Overcoming uncertainties

"I think it's very refreshing and useful that we are bringing co-op students in earlier in their academic careers than formerly." Sam Scott, sweep oscillator sec-

tion manager at the Santa Rosa Division, was commenting on the co-op program of Tony Martinez who came to HP this past summer from his freshman year in electrical engineering at the University of New Mexico. "When Tony first came here he was very shy — probably quite uncertain of himself. He's really come a long way in a short time. I think that's what's so good about bringing them in younger. I feel it will make Tony a much more rounded engineer. He'll have had the opportunity to work at the very start of the assembly process, and work on up into R&D or Marketing as he returns to HP in between school terms."

To do real engineering

"HP has been a very useful experience for me," reported Diana Healy, a junior in electrical engineering at Massachusetts Institute of Technology. "It has helped me sort out what I want to do, to experience an engineering environment, and to apply some of my laboratory work to real engineering. I've learned here that at HP you can start with an idea and pursue it through to marketing if you wish. As a

woman I've not felt any problems of acceptance on the professional level."

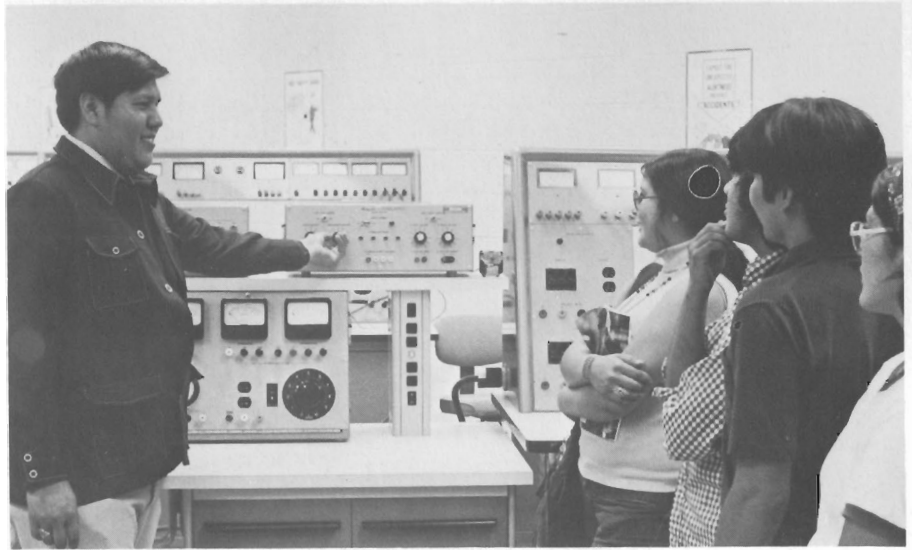
Commenting on Diana's program, Paul Goldman, section manager in the Waltham Division's patient monitoring R&D group, noted that in her first co-op term she will have done such tasks as circuit design, run environmental tests, and worked with manufacturing people to determine production feasibility. "She'll go back to school with a much better idea of how theory can be applied in practical ways."

Putting theory to practice

As a direct result of the support and presence on campus of an HP engineer named Harry Portwood, on loan to Louisiana's Southern University, four young black electrical engineering students have been enlisted in new co-op programs with Santa Rosa and Santa Clara divisions. Cathy Mitchell is one of the three at the Santa Rosa plant where she is employed as a test technician. "When I first came here," Cathy recalled, "people sort of sat back and watched to see if I was serious. I think they learned

that I was. It has been very nice and friendly since then." Cathy's present goal is to apply her interest in math and physics to engineering design. She feels that both Harry Portwood and the co-op experience have been important influences. "In engineering you need both the theory and the hands-on experience. I've been getting that experience through HP." □

Instructor George Owen and technician students at the Electro-Mechanical Technician Department of Haskell Indian Junior College at Lawrence, Kansas, view donated instruction equipment. HP provided video library.



Give young people a close look at our industry

HP divisions within a few miles of one another in the San Francisco Bay Area have independently developed a wide variety of programs for minority students at the high school level.

Santa Clara Division, for example, started its own technician student program in 1974 that brings in juniors and seniors from the surrounding high schools one afternoon a week for 15 sessions. According to personnel administrator Rich Martinez, the program is aimed at youngsters who might not otherwise think of working in industry. It is planned and taught voluntarily during after-school hours by HP technicians from the production area after their work ends at 3:30 p.m.

"We don't give school credit or pay to the kids in the program," Rich said. "We decided against the carrot-and-stick approach. These kids are here because they want to be here — just like the HP techs who teach them. There's no testing and no feedback to the schools."

The Santa Clara program had 22 young people the first year, including five girls; 10 technicians took part, so the ratio of students to instructors was almost 2:1. A larger group of nearly 40 students participated in 1975 with the same number of instructors. Rich and John Schmitz, the technician who ran the program, think that ratio a bit high, but still rated it a success.

John explained that technicians took turns in pairs planning the sessions and

came up with some attention-getting projects. During two weeks of basic instruction on oscilloscopes, students learned what happens to sound on an AM car radio or musical instrument when the frequency is changed. The techs who planned the experiments, Tony Kooij and Jim Carlson, got a lot of laughs when they tried futilely to imitate a TV commercial by breaking a glass with a high note.

Each class works on a project that will provide a feel for hands-on experience in an assembly environment, learning how to use a soldering iron and other elements of going from a schematic to a finished item. The first year's project, for instance, was an electronic dice game with an on/off switch and random display of lights.

"The kids loosened up after the first few weeks and really enjoyed themselves," John says. "They won't think of Hewlett-Packard as a monstrous building that they'd be afraid to enter.

"But the proof of the pudding will be when I see them actually knocking on our door — or the door of some other company — to apply for a job in electronics."

They liked what they saw

Stanford Park and HP Labs liked what they saw happening at Santa Clara Division and last year developed their own joint "Awareness Program" for ninth- and tenth-graders. It is being repeated this winter with additional field trips to other companies. Engineers as well as technicians will serve as instructors this time. As a

final project, each student will assemble a video game kit.

General Systems Division, which will be cooperating with Santa Clara Division in the technician student program this year, is also going to try an idea of its own. Personnel manager Ken Coleman hopes to establish a computer club aimed at high school minority students.

"We'll bring in highly motivated juniors and seniors who can realistically expect to have a career in the computer field and get engineers from marketing and product training to teach them what a computer can do and how to operate one." Ken is talking to school district officials now and plans to be underway in January.

Ten Bay Area divisions had a hand this past summer in providing employment for 17 outstanding minority students who were headed for college or already enrolled. Under the federally sponsored Business Manager Fellowship Program, companies agree to provide a job for the student each summer throughout his or her college years, beginning the summer after graduation from high school. This is HP's third summer in the program, which started with six hires in 1974. The company employs students who are interested in a career in engineering or related fields and assigns them to jobs of increasing complexity each summer as they progress in college. The program, which is under the auspices of the U.S. Department of Commerce's Office of Minority Business Enterprises, is aimed at helping disadvantaged young people of high potential. □

Dial 222 for lifesavers...



□ The wailing of sirens, the sounding of alarms, and the calling of emergency codes over public address systems are not all that commonplace around Hewlett-Packard facilities. In fact, one safety and health coordinator noted ironically that the low number of alerts gave his emergency first-aid teams too little real practice. He rejected any suggestion that a few banana peels or oil slicks would solve that problem.

Still, some HP people do incur injuries on the job, or suffer heart attacks, and small fires break out, chemical containers are spilled and electrical equipment will short out in bursts of sparks and smoke.

Do you know what to do in any of those circumstances?

There's no one answer to that, of course. As they say — "it all depends." It depends on the gravity of the situation, the immediacy of the threat to life and property, and the availability of help trained in emergency procedures.

But there are some steps that should be taken in any situation that calls for trained help: As soon as possible (that is, after you have rendered any necessary first aid and assistance within your abilities and resources), dial the local emergency

number (222 or 2222 in many U.S. locations), and clearly and calmly identify yourself and your location, and describe the situation as best you can.

That's the big point that plant safety supervisors would like to get across to HP people. Given a prompt warning and clear instructions, they say, help is already on the way.

That help takes several forms. Trained first aiders and nurses are widely available. More serious situations, though, call for more sophisticated assistance. In some cases, as at the Boeblingen, West Germany facility, reliance in medical emergencies is placed primarily on outside services. In Palo Alto, The Fire Department offers paramedical service that can be almost anywhere in the Palo Alto area in under four minutes of an alert. Nevertheless, quite a few Stanford Park and other local HP people are trained in first aid and cardiopulmonary resuscitation (CPR).

As one might expect, it's at the Waltham and Andover medical products divisions in Massachusetts that are found the most thoroughgoing medical emergency programs. As resources they've got people with lots of medical knowhow, equipment often of their own making, plenty of interest in the subject, and a manual that has attracted much attention around the company. Equipped in this manner, they've taken a team approach, each team covering a certain floor area or shift. Because of this pattern, no one in the plant is more than 10 to 15 seconds away from help following a page. Teams range from one to eight people. All are trained both in first aid and CPR. Each

team goes through retraining every six months, and recertification in CPR annually. The program is supervised by emergency service coordinator John Black with the support of a six-person council plus a medical services team consisting of physicians and nurses.

Because they've had so few actual emergencies of a serious nature, John Black recently sprang a surprise simulated alert on the teams, complete with a dummy patient supposedly felled by a heart attack. To find out whether the victim survived or not let's follow the drama as it unfolded before the lens of photographer Ernie Whiteneck:



Within 10 to 15 seconds of their paging, a Waltham Division emergency medical team has initiated resuscitation procedures. Fortunately, in this case, the victim happens to be heartless Resusci-Anne, a dummy equipped to provide recorded heart data. Charge nurse Claire Fournier carefully observes treatment.



Stricken in the cafeteria, Resusci-Anne's condition calls for mouth-to-mouth breathing to restore failing respiration.



Cardio-pulmonary-resuscitation is hard work. A second team arrives to provide relief. With her condition now holding steady, Resusci-Anne is transferred to stretcher with hardly any interruption in CPR procedures. Meanwhile, an ambulance has arrived, hospital has been advised and family called. For Resusci-Anne, that last item may be something of a challenge.





Red Square, Moscow.

Back from the U.S.S.R.

□ By recent count, the company maintains some 150 HP-staffed sales offices in more than 40 countries. Setting up a new HP sales office, therefore, has by now become a well-established procedure, almost a text-book exercise in most parts of the world. But when the company was authorized to start a new branch in Moscow, capital of the Union of Soviet Socialist Republics, HP had to rewrite the book.

The person doing most of the re-writing was Bob Creager who recently returned to Palo Alto as a member of the Intercon legal staff, specializing in international law. Bob became HP's first permanent representative in the U.S.S.R. in 1974, and from that perspective he recalled for MEASURE some of the special circumstances and challenges that accompanied his mission:

How had Bob come to be chosen for a sales position in Moscow?

"Well, I was willing to go and my international experience had a lot to do with it. I was in the HPSA Geneva office serving as European legal counsel, had worked on some of our dealings with the Russians, and made a couple of negotiating trips to Moscow. Doing business with the Soviets is complex because the governments — ours as well as theirs — are so deeply involved in many aspects. The previous on-site experience was valuable, and I did understand how both systems worked."

What about other qualifications?

"After receiving the assignment, I went back to California for a six-week course of intensive Russian language study at the Monterey Institute of Foreign Studies. That was very helpful, and made

it possible for me to get by when taking taxis, ordering in restaurants, and so on. Later I learned to carry on a modest conversation, and to understand most of what was being said. In negotiations, of course, I still employed an interpreter.

"I'm not an engineer, but I did learn much of what's in the catalog and could discuss the contractual arrangements with Soviet customers. Usually by the time I got involved they already knew exactly what they wanted either from our catalog or discussions with our sales people."

What was your first order of business in Moscow?

"Getting the office and permanent HP apartments physically established was first — and became a real challenge. For our new office — after we had used temporary offices in an old hotel for more than a year — the Soviets finally assigned us



HP's Moscow branch office is housed in an extensively refurbished apartment building devoted to a number of Western business firms. A fish-eye lens view shows the HP conference room.



six rooms in an old pre-revolutionary building in the center of Moscow. The condition of the building was unbelievable. What's more, it was not possible to get the remodeling done locally in an acceptable time frame so our work was done by a German contractor who arrived with truckloads of men and materials. I think the job came out looking very much HP in style — open, clean, bright and comfortable — something you wouldn't expect by just looking at the exterior."

What were the other important tasks?

"The most important was getting the right kind of organization together. By the time I left there were seven non-Russians on the staff which included an operations manager, a service manager, and field sales managers for calculators, computer systems, analytical products and instruments plus a systems engineer—all of them living in Moscow except the analytical man. We have a staff of Soviet nationals on the payroll as secretaries and clerical help. Then, on a temporary unofficial basis, we had several technicians from the Academy of Science who were training as service technicians.

"This service organization is especially important. Eventually, they will return to their institute — the Institute of High Temperatures — and become the center for HP service for the scores of scientific institutes coming under the umbrella of the Academy. This will solve a real prob-

lem for HP and our customers. In the past we were not always able to do the job we like to do in providing quick service, due to the distance from the area headquarters in Vienna and the difficulties of travel in Russia."

What other important differences has an "HP presence" in Russia made?

"One major improvement has been in our ability to process orders and make deliveries. That used to take many months, and while the Soviet scientists and engineers had come to admire HP technology, the difficulty of doing business with us was a major obstacle. Most of that's been resolved now thanks to the staff at the Vienna headquarters which furnishes HP Moscow with strong administrative support.

"Our accreditation to do business in the USSR is viewed by the Soviets as a very exclusive favor. The normal threshold for a Western firm being accredited there is now up around \$40- to \$50-million in trade with the USSR a year, and almost invariably it must entail reciprocal trade of some kind. But in HP's case we are nowhere near that level of business. I think they want us to have an office in Moscow because of our reputation for innovative leadership in measurement technology. For example, the fact that we were first in advanced pocket calculators with the HP-35 made a tremendous and lasting impression on Soviet scientists and engineers."

How do we stand competitively?

"The Moscow office is certainly a major advantage. But there's plenty of competition. The Germans, British and Japanese have all been selling in the USSR much longer than American companies like HP, and they're very skilled at it. In some product lines, such as analytical and systems, everyone seems to be getting into the act.

"U.S. firms are greatly restricted in what they can sell to the Soviets — very high performance equipment with possible uses in sensitive military applications are embargoed. These restrictions are set by the NATO nations and administered in our case by the Commerce and Defense Departments. One of the side effects is to create even more complexity in our dealings with Eastern Europe. Another effect — one that arises because we are constantly improving the performance of our instruments — is to narrow the 'window' of products we are permitted to sell to Eastern Europe and the USSR. However, I'm optimistic about the long term outlook because of their continuing need for western technology and our continuing need for raw materials which they have in abundance."

What about the business "style" in Russia? And how does the "HP way" fare there?

"The Soviets and HP are both on somewhat similar annual planning and fiscal
(continued)

back from U.S.S.R.

cycles. Soviet organizations are required to target and justify foreign currency expenditures in advance, and approved targets are difficult to change. The result is a substantial lag between the 'buy' decision and the actual order. This is one reason for the typical slow starts for new products in that area.

"The Russians are quite formal in everything they do, including business dress, procedures, meetings and protocol. But they're very cordial. In fact, I've noticed quite a warming in the business atmosphere since I first started going to Moscow three years ago. But there's little off-the-job social contact on a strictly personal basis between Russians and foreigners.

"As far as the 'HP way' goes in our office, that's been a big adjustment for our Soviet staff to make. First names and being relaxed just don't go with the Soviet concept of status, but they did 'take' after awhile. I think our Soviet employees enjoy the atmosphere in the office and they did begin to speak out — but never about politics or family.

"My successor, Peter Gladkin, should do very well in Moscow. He's from a Russian emigrant family background, speaks Russian fluently, was a top HP analytical field engineer in the Skokie office, got his MBA last March, and is very interested in the assignment. He and his wife live in one of the new permanent HP apartments and have my former boat to sail weekends on the Volga, weather permitting."

How do you feel now about your Russian assignment — and about being back in Palo Alto?

"Moscow was a great learning experience — not always comfortable, and sometimes frustrating in terms of trying to get things done. But it is a fascinating place in which to work — to be right at a meeting place of two very different cultures and systems.

"Social life there is very active among the foreign community. There are constant gatherings, generally in homes. One reason is because most of the restaurants have live music that's always played full blast.

Conversation is impossible. And there are other things to do — ballet, music, sports and even a sort of rock-'n-roll at one or two Western-style places. But I'm a native Californian and it's good to be home again." □



Two principal ways of providing Soviet customers with product and company information are in evidence here. In the one, HP's Bob Creager, then the Moscow branch manager, addresses a seminar of some 1,000 Soviet customers and officials. Trade exhibits are another major information medium (trade magazine advertising and publicity are virtually non-existent in Eastern Europe). Note the Russian version for "Hewlett-Packard Company."



Uncovering the math of Santa Claus...

Ten years ago, as a service to Hewlett-Packard people who then were the parents of youngsters in their pre- or early school years, Measure magazine sought to determine in a scientific way if Santa Claus was more than a myth. Results were astounding. Now a new generation has come along, even more needful and deserving of the truth. Accordingly, the editors again commissioned research by an organization specializing in stochastic analysis to retest the all-important question. Their new report, enclosed with an invoice listing assorted pizzas, superburgers, tacos, colas and chocolate bars as essential research expense, is summarized below:

FINDINGS: The following were revealed by our survey of representative demographic groups:
Finding I — Individuals in **Group Z** think **C (Santa Claus)** is real.
Finding II — **Group Z** gives more thought to **C** than does any other group.

ANALYSIS: These two findings were subjected to analysis by Bayesian Probabilistics and symbolic logic, through the use of two premises that we have found most people accept as having a high validity probability, to wit:
Premise I — The beliefs of experts are usually more valid than those of non-experts.
Premise II — The more one thinks about a subject the more expert one tends to become.

Then, if we further define:
People who think more = **X**
Experts = **W**
Beliefs of experts = **V**
Truth = **T**

The probabilities now are that:
If finding II is true, then Z is X. And if Premise II is applied, then X is W. So, of course Group Z can now be identified as W (experts).
And if Premise I is used, then V=T. Further, if Premise II is subjoined to Finding I, then C = V=T.

CONCLUSION: Therefore, as suggested by our original evaluation of the parameters, since **Group Z** consists of children, it is demonstrated beyond a doubt, and for the benefit of all:
There truly (T=) is a C (Santa Claus).

HP NEWS

Cash profit-sharing announced

PALO ALTO — The following is the text of President Bill Hewlett's cash profit-sharing announcement on November 22:

"Last May I had the unpleasant task of reporting to you that our cash profit sharing was going to be a disappointing 5½ percent.

"At the end of our third quarter, the results were so disappointing that we were compelled to announce that it would be most unlikely if 1976 earnings would equal those for 1975.

"Our August and September results were no barn-burners, and the extent of optimism was the hope that we might, just possibly might, match last year's earnings of \$3.02.

"When the books were finally closed on 1976, you can imagine our surprise and pleasure to learn that we had exceeded last year's earnings by about 7 percent at \$3.23 per share.

"I will not attempt to explain why the sudden turnaround. Sufficient to say that it happened! The effect on cash profit sharing was obvious and direct — it went up. The number for the second half of 1976 will be 7.28 percent of base eligible wages. This compares with 5.5 percent for the first half of this year and 6.74 percent for the comparable period last year. The total amount in dollars to be distributed will be 13.625 million, or for the whole year, 23.228 million.

"I said I would not attempt to explain our sudden turnaround, but this I know, we did a great job in controlling our expenses, of getting equipment out on time, and keeping our production costs down. You are all to be congratulated, and Dave and I wish you all the best for the Holiday Season.

"Thanks to all of you!"

Record quarter lifts 1976 results

PALO ALTO — Preliminary figures reported by Hewlett-Packard on November 19 indicate that the company had a 13 percent increase in sales and an eight percent increase in net earnings for the fiscal year ended October 31, 1976.

Sales totaled \$1,111,480,000, compared with 1975 sales of \$981,167,000. Net earnings amounted to \$90,546,000, equal to \$3.23 a share on 27,995,772 shares of common stock outstanding. This compares with earnings of \$83,582,000, equal to \$3.02 a share on 27,638,042 shares in fiscal 1975.

President Bill Hewlett announced the year-end results following a regular meeting of the board of directors. He noted that HP had an exceptionally strong fourth quarter, with sales and earnings up 16 percent and 59 percent respectively over last year's fourth quarter.

"Sales amounted to \$318,600,000, the highest for any quarter in the company's history," Hewlett said. "Earnings also set a quarterly record, amounting to \$33,227,000, or \$1.18 a share.

"A number of factors contributed to our strong earnings performance during the quarter. Orders of \$107,885,000 were higher than expected, leading to a sizeable increase in shipments. Our hand-held calculator business returned to profitability after an unprofitable third quarter. Our continuing, corporate-wide efforts to control expenses resulted in lower than anticipated costs. In addition, the normal year-end adjustments were uniformly favorable to the company, and our effective tax rate was lower than anticipated."

Hewlett said the company's incoming orders for the entire year amounted to \$1,149,715,000, up 15 percent over order of \$1,001,745,000 the previous year.

Domestic orders rose 18 percent to \$592,452,000 from \$500,348,000. International orders increased 11 percent to \$557,263,000 from \$501,397,000.

In the fourth quarter, domestic orders rose 28 percent to \$164,372,000 from \$128,638,000. International orders increased 20 percent to \$143,513,000 from \$119,859,000.

HP to protest U.S. Internal Revenue tax proposals

PALO ALTO — Hewlett-Packard has reported that the U.S. Internal Revenue Service has proposed an adjustment of the company's tax liability for the fiscal years ended October 31, 1972 and 1973.

The IRS seeks approximately \$7.5 million in additional taxes relating to earnings of Hewlett-Packard subsidiaries in Singapore and Malaysia. The company believes it has reported earnings properly, and as a result has not provided for this potential liability in its financial statements.

Following the regular meeting of the HP board of directors on November 19, President Bill Hewlett said the company intends to protest the proposed tax adjustment.

In a separate issue, which will have no material effect on current or future earnings, the IRS is challenging the company's method of computing deferred taxes applicable to HP's Domestic International Sales Company (DISC). These taxes, amounting to approximately \$8.5 million, have been fully accrued in the company's financial statements. This issue relates only to when the taxes are due.

Hewlett said the company has not accrued possible interest due on either of these issues. He also said the comparable issues exist in years subsequent to 1972 and 1973, but it is not possible to determine the amounts, if any, of potential liabilities for those years.



From the president's desk

Sometimes the responsibility of writing the president's letter can be difficult indeed — such as when I must comment on a poor quarter's performance. But those occasions are more than compensated for when I have the chance to discuss an outstanding performance, such as the last quarter of 1976 and the final results for the year as a whole.

Let's first talk about our fourth quarter. Our per-share earnings for the quarter were \$1.18. More than 70 percent better than the average quarterly per-share earnings of 68 cents for the first nine months of the year, and about 57 percent better than the fourth quarter of last year. There were a number of factors that caused this improvement.

In orders we were a strong 24 percent ahead of last year, and 16 percent ahead in shipments. We showed improvement in our manufacturing costs. Whereas last year this was 42.9 percent of shipments, this year it was 41.8 percent — an excellent improvement. In the area of general expense control we did even better, dropping from 33.9 percent to 31.4 percent. And, after adjusting for other items such as profit sharing, interest expense, and so forth, we showed a 45 percent improvement in pretax profit, and a 57 percent increase in earnings per share.

Thus it is evident from whence this improvement came. Our marketing people did a great job in bringing in the orders (and not apparently at the expense of November orders). Our production people really did an excellent job in turning out the highest quarterly volume ever. Earlier in the year I had asked our managers to try and hold down wherever possible our expenses such as field selling, marketing, R&D and general administration. Whereas they were not able to control all of the expenses to the degree desired, an excellent job was done in this area. All in all, a quarter to be remembered. I think that all of us saw its impact on

our cash profit sharing number announced last month.

For the year as a whole, the results were not quite as spectacular, but still most gratifying, particularly when you consider the very poor performance we had up through the third quarter. As you may remember we were all pretty disappointed along in August when the results for the third quarter were known. At that time we felt that at the rate we were going, we probably could not match 1975 earnings and so stated publicly. As you know, this had quite an effect on our stock price. Although it seemed rather drastic at the time, it is interesting to note that we are still selling at or slightly above the P/E ratio of other top electronics stocks. In other words part of the drop was caused by a general market shift and not just by our own performance. In a future letter I would like to comment on our stock price, what affects it, and how the price impacts our employees.

When one combines the results of the first three quarters with our very good final quarter, the year-end results are most satisfying. Orders were up 15 percent and shipments up 13 percent. Our cost of products sold as a percent of sales was not quite as good as last year, and therefore we lost a bit of ground there. Our expense growth just about matched our shipment growth, with the result that we showed a 7 percent increase in earnings per share. Not all that we had hoped for at the beginning of the year, but a lot better than we had reason to expect back in August.

As usual at this point it is difficult to foresee the future, but I must say that to date most of the signs are for modest improvement over 1976 with a chance that if the economy improves, 1977 could be a very good year.

Enough for business. This is the holiday season and Dave and I would like to wish all of you a very Merry Christmas and best wishes for the New Year — and once again, thank you for a great job well done.

Bill Hewlett

wishing you ALL the BEST
of health
opportunity
achievement
self-fulfillment
friendship
and prosperity
DURING 1977

Measure

EDITOR
Gordon Brown

ASSOCIATE EDITOR
Dennis Cresswell

ART DIRECTOR
Tom Martin

GRAPHICS ASSISTANT
Teri Ocegueda

MEASURE Correspondents — AMD, Karen Langford • APD, Crawford Beveridge • AUSTRALASIA, Robie Schmid • AVONDALE, Matt Whittier • BOISE, Sallie Hobart • COLORADO SPRINGS, Betty Lohm • BRAZIL, Campones, Jose Lacerda • CUPERTINO, Ardis Boland • DELCON/CSG, Ed Igen • EASTERN SALES, Bill Olson • GRENOBLE, Pierre D'Anthony • COMPONENTS, Kathy Belton • HP BENELUX, Amsterdam, Chony Koedam; Brussels, Yvette Andre • HP CANADA, Brian Wright • HP FRANCE, Orsay, Jacques Brugere • HP GMBH, Boeblingen, Fritz Schuller; Frankfurt, Fred Goedel • HP ITALIANA, Tarquinto Prisco • HP LTD., South Queensferry, Peter Carmichael; Womersley, David Reed • HP SCANDINAVIA, Sid Mann • HP SINGAPORE, Dick Love • HPSA, Josette Boulmier • INTERCON, Sy Corenson • LOVELAND, Peter Peterson • MALAYSIA, Maria Malik • MANUFACTURING, Dave Curry • MCMINNVILLE, Chuck Walker • MIDWEST SALES, Helen-Marie Boesche • NEELY SALES, Roseanne Peters • NEW JERSEY, Bob Muggleston • SAN DIEGO, Bob Reade • SANTA CLARA, Mollie Cory • SANTA ROSA, Jack Groat • SCIENTIFIC INSTRUMENTS, Keith Elledge • SOUTH AFRICA, Tienie Steyn • SOUTHERN SALES, Atlanta, Nancy Baird; Texas area, Helen Hobson • STANFORD PARK, Joanne Englehardt • WALTHAM, Janet Dale • YHP, Miako Harada



1501 Page Mill Road, Palo Alto, California 94304

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

BULK RATE
U.S. POSTAGE
PAID
PALO ALTO, CALIF.
PERMIT 137

45-01821

LARRY E NUTTING
5957 YERBA BUENA ROAD
SANTA ROSA, CA. 95405