

Measure

For the men and women of Hewlett-Packard / DECEMBER 1975

*The
grand procession
of new
products...*



On the road to 1976

□ In a year that saw nations and businesses mired in economic quicksands, Hewlett-Packard's business managed to stay healthfully dry — if not as high as might have been hoped at the outset. A good part of the company's buoyancy resulted from the sales stimulus of an impressive parade of new products introduced during the past couple of years.

This "ground effect" of a vigorous new products program is a well-established fact of life for Hewlett-Packard, sustaining the company's business in periods of downturn and giving it a special lift when the economy warms up. During the past year it had a double job to do: contend with the effects of worldwide recession and compensate to some extent for the fact that over the past two years HP no longer has had the market for advanced pocket calculators to itself.

How large was the 1975 parade of new products? As one measure, it is estimated that more than 90 new products were announced during the past year via news releases — not including all of the different versions, accessories and components that were developed. They ranged in size from almost invisible circuits for sale as components to computerized systems that would require a rather large truck to move.

Those 1975 products shown and described in the following procession, then, were chosen for both their economic impact and the way in which they represent new trends in products within the various product groups.

What's the outlook for 1976?

Reports from the product divisions indicate that an even longer procession of important new products will be unveiled during the next twelve months. It will be one result of the largest investment in product research and development ever made by the company — some \$89.5 million for 1975.

On with the parade . . .

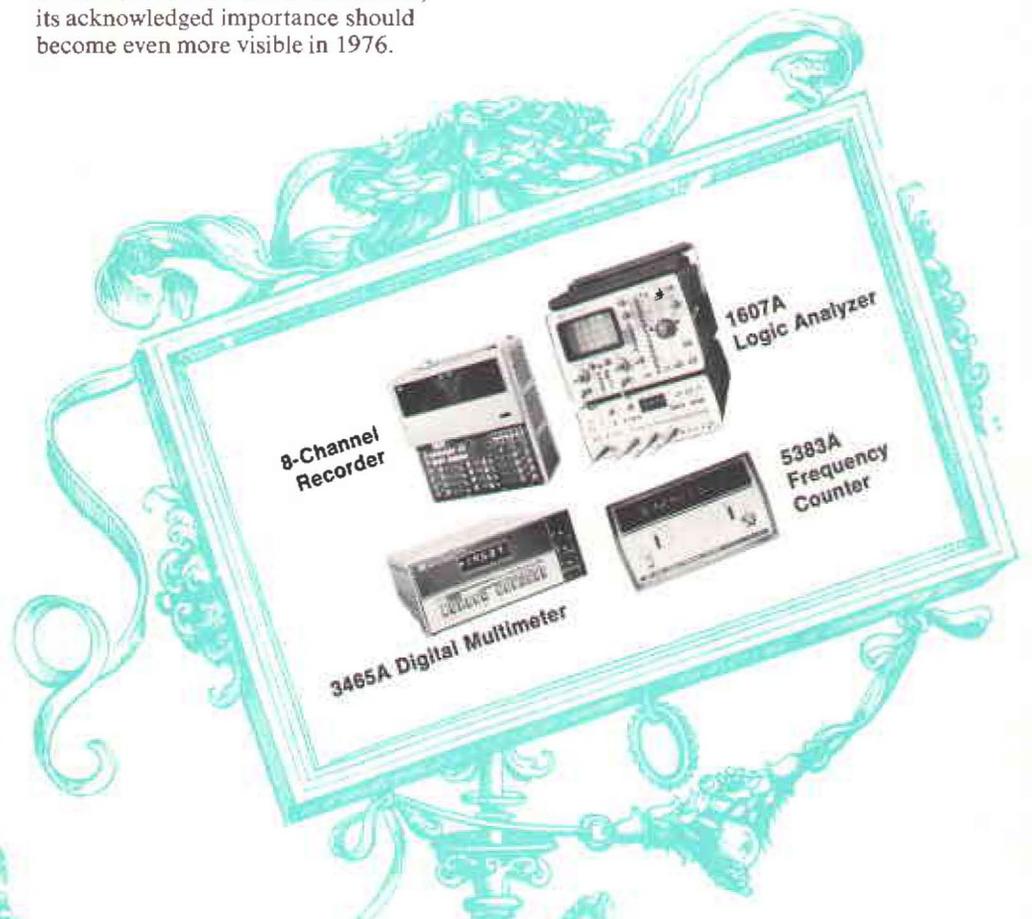


Adapted from "The Triumph of Maximilian I" (woodcuts by Hans Burgkmair and others, circa 1518).

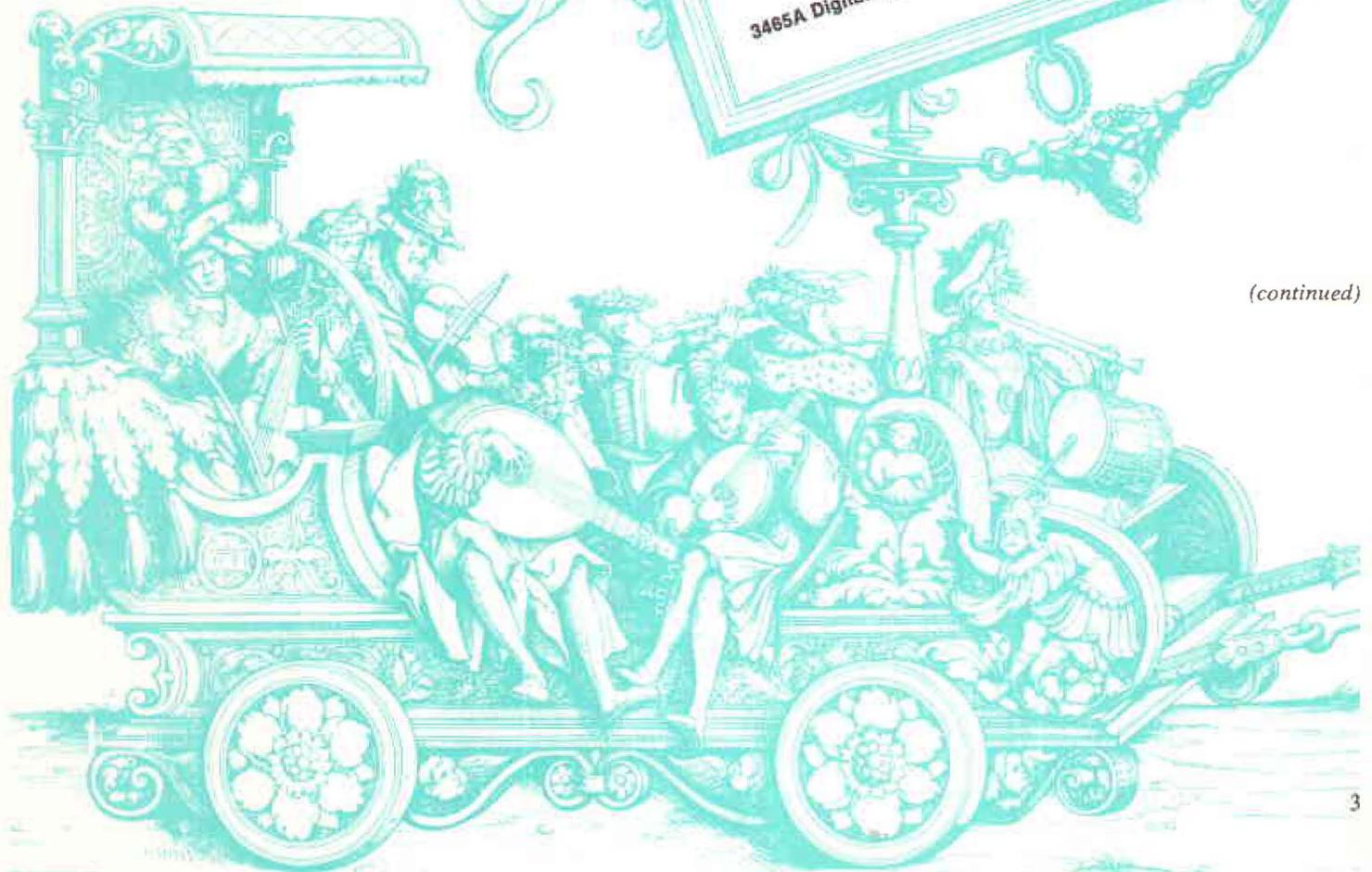
Instruments Group

Divisions in the Instruments Group added significantly to HP's traditional lines of basic electronic test and measurement instruments: Colorado Springs brought out the 1600A/1607A logic state analyzers which give customers in the digital equipment field a new way of looking at design data; using new laser-trimmed tantalum nitride chips, Loveland's 3465A digital multimeter is the first of a new family of low-priced, high-quality instruments -- and selling very well; Santa Clara marketed the 5328A universal counter, a versatile, medium-priced counter, and the 5383A frequency counter that provides direct counting over 520 MHz at low cost; San Diego introduced the world's first tape recorder that gives 8-track instrumentation recording on standard (usually 4-channel) tape; South Queensferry developed a new link analyzer which speeds the testing of long distance phone equipment so much that the phone system's load-carrying ability is increased; Boeblingen Instruments created the 1230A digital trigger which makes almost any modern oscilloscope more useful with digital circuits; Civil Engineering Products Division at Love-

land reports strong customer acceptance for its new 3810A surveying instrument which adds angle measurement to distance. Meanwhile, the HP Interface Bus received a full round of introductions to the HP field sales force, followed by customer training sessions at Loveland and Santa Clara as well as in the field; its acknowledged importance should become even more visible in 1976.



(continued)





Calculator Group

Some very important trends in calculators were exemplified by developments in 1975. Loveland's Calculator Products Division introduced a third-generation desktop machine, the low-cost programmable HP 9815A, more powerful and with greater interface capability than any in its price class. Three new pocket calculators out of Advanced Products Division represented the basis of a new second generation — HP-21 in the scientific field, HP-22 in business management, and HP-25 in programmable scientific applications. Each offers greater capabilities than its predecessors at lower prices because of new approaches to electronic design and advances in the manufacturing techniques. Also worth noting is the fact that, in spite of intense competition, HP's pocket calculator line remains soundly profitable. The company's excellent relations with retailers has been no small factor in gaining its reputation as the "class" leader in this field.

Computer Systems Group

From the viewpoint of new products, a 1975 highlight for Computer Systems Group was the introduction of the 2644A CRT minicomputer terminal, extending the success begun a year earlier with the 2640 terminal. Both terminals are outstandingly easy to use, and the 2644A can do a hard day's work of programming "off line." Their real importance lies in the fact that all of the major trends in HP computer systems involve the use of more and more terminals — distributed systems and the like — which can now be furnished out of HP's own efforts. The new 7905A disc memory provides memory capacity increased by three times at twice the speed, and at half the cost per unit of output — a much strengthened HP entry in this field. In minicomputers themselves, the evident trend is toward machines that do much more, with little increase in cost. An example is General Systems' 2000/Access, an improvement on the earlier 32-terminal 2000 timeshare problem-solving system which now, at the same time, can be a local unit in a very large IBM or CDC business computer network.



Components Group

Among the 50 or more new products generated in 1975 by the two component divisions, one that got a special reception was the 5082-9200 printed-circuit balanced mixer. The HP product supplants much larger and more costly units in television sets as well as FM and citizens band radio receivers, while improving overall set performance. In this manner it represents the kind of market situation that the Components people really aim for: penetration of a broad market with a unique HP contribution. A variety of new optoelectronic display devices and designs emerged during the year.



PC
Balanced Mixer

Solid State Lamps



43501A
Portable X-Ray

8030A
Cardio-
tograph



Analytical Products Group

Avondale Division's highly successful 5830A calculator-controlled gas chromatograph, first introduced late in 1973, continued to be the Analytical Group's leading new product in 1975, thanks to expanded capabilities and custom configurations. If that seems calm, the calmness is deceiving: all of the divisions, including Avondale (Pennsylvania), Scientific Instruments (California), and Waldbronn (Germany), have been pointing for 1976, and it promises to be a big year for new HP analytical developments.

Medical Products Group

A real cross-section of new and improved products came onstream from the Medical Products Group. Waltham introduced the 47201A oximeter very late in 1974, employing integrated circuits to solve problems in determining oxygen levels in blood. Clipped to the ear of a patient, this instrument provides the physician with an accurate blood-oxygen reading regardless of skin color, thereby eliminating the need for instruments inserted into the bloodstream. From Boeblingen came the HP 8030A, a second-generation cardiocotograph which gives physicians and nurses great flexibility and accuracy in determining the well-being of a mother and fetus before and during delivery. Three large computer-based systems emerged from Waltham — an ECG interpretive system, a patient-data management system, and an expanded catheterization laboratory system. Other new Waltham products include patient monitors with bright, non-fading displays. McMinnville introduced the versatile 43501A portable x-ray system which has broad industrial as well as some medical applications. □



5830A Gas Chromatograph

Aishabi Ali is an assembler at HP's component production plant near Penang, Malaysia, but her roots are deep in the traditions of Malay village life. At right she helps her brother-in-law work the rice paddy fields for a living.

Tradition lives in the kampong



□ Have you ever wanted to harvest your own food? Build your own home? To dwell on the edge of a tropical rain forest? And to share in a strong sense of family and community handed down over many centuries? Then you might like to know more about the life of Aishabi Ali. Aishabi does indeed lead that kind of life, meanwhile working for the past two years as an assembler at the HP components plant near Penang, Malaysia.

By means of a special report taped at the plant by Valerie Phuah, secretary to plant manager Teng Ong Keok, and Maria Malik, plant personnel manager, MEASURE learned some of the aspects of Aishabi's life in a typical Malaysian kampong or village.

Aishabi, 24 years old, lives near such a kampong with her sister and brother-in-law. Their home is about a dozen miles from the HP plant, but it is a long 12 miles. To connect with the HP bus that transports many of the employees to and from work, Aishabi must walk a mile or more around rice paddies to the nearest stop.

The large and comfortable house in which she lives is constructed almost completely of materials taken from the nearby forest and the plantations. Its design is very typical of the tropical coastlands of Southeast Asia. Since there is no true cold season there, houses are built for

as much natural air conditioning as possible. The roof, made of woven coconut leaves, sheds rain very efficiently but also allows warmer air to escape. The woven bamboo walls likewise provide some ventilation along with shelter.

The stilts supporting such houses are very functional. Their height serves to protect a household from potential floods during the monsoon season as well as from wild animals that sometimes wander in from the jungles. And when there are mosquitoes about, smoke from burning coconut husks is allowed to seep through the floor, driving the pests away.

Aishabi's brother-in-law is a rice farmer, one of the principal ambitions and occupations of Malay families. The heavy work is seasonal — planting and harvesting. At such times Aishabi will help when she can, usually on the weekends, or on weekdays when she is on the swingshift at HP. It is work she knows and appreciates because it provides Malays with the main staple of their diet. On the other hand, a wide range of other types of food is available — fresh fish and meat, fruit both cultivated and collected from the forest, and vegetables grown by the family. Food in fact is plentiful, and Aishabi and her family enjoy a high level of nutrition by world standards.

As anyone who has lived a rural life knows well, work on a farm starts early

and ends late. So, in addition to the support she provides with her HP income and work in the paddies, Aishabi also helps the household out with cooking, the washing, the house cleaning, and caring for her sister's children. And when all else is done, there is always the vegetable garden to tend.

Recreation is simple and relaxed. Organized athletic sports do not traditionally play a large role in kampong life, because most villagers are not inclined to hot, strenuous activity after a day in the paddy fields. So as the day wanes, people tend to seek company in the cooler quiet places where they can exchange news and discuss issues of the day.

Beyond these contacts with people of the village and those at work, Aishabi keeps up with the world via her radio and reading. Shy and quiet, Aishabi prefers the closeness and dependability of her family and village to the excitements of the city. That's a characteristic of Malay people resulting from long generations of rural life.

It is probably inevitable that the simple, rural style of living practiced by Aishabi and her people may change in time, becoming more complex as they adopt the ways of modern industry and the city. One would hope, however, that the traditions and values evident in Malay life will somehow be preserved. □



Typical of Malay housing, Aishabi's home is designed to cope naturally with tropical heat, floods, monsoon rains, mosquitoes, and even jungle animals.

Remember 1975?



January

Data Products shipped its 10,000th mini-computer . . . The corporate training and personnel development functions were merged into a new Corporate Training and Management Development department of Corporate Personnel . . . APD introduced the HP-55 programmable scientific pocket calculator . . . New headquarters for the United Kingdom organization were officially opened at Winnersh by Bill Hewlett . . .



February

Manufacturing operations in Brazil were announced, starting with rented space at Campinas near Sao Paulo and 50 acres purchased for a future site . . . Results for the first quarter of Fiscal 1975 ending January 31 were sales of \$212 million, net earnings of \$18.4 million (67 cents per share) . . . For the first time, International orders exceeded U.S. orders for a full quarter . . . HP's program to metricate its U.S. manufacturing was launched at various plants . . . Dave Packard received the 52nd "Washington Award" from the Western Society of Engineers . . . The *HP Journal* celebrated its 25th anniversary . . . First shipments were made of HP's own CRT computer terminal, the 2640A . . . A new basic scientific pocket calculator, the HP-21, was introduced at \$125 U.S. . . .



March

Dave Packard opened the first of a continuing series of Executive Seminars for HP managers . . . AMD installed a solar heating system designed and built by division people on its Sunnyvale plant rooftop . . . *Financial World* magazine, the oldest business publication in the U.S., named Bill Hewlett as one of the nation's ten most outstanding chief executive officers . . .



April

HP's new interface bus (HP-IB) received much attention from visitors at the IEEE show in New York. HP's display there

won "most effective exhibit" award . . . Scientific Instruments began its program of offering analytical service involving its electron spectroscopy (ESCA) system . . . IEEE awarded its Hoover Award to Dave Packard . . . Named "The Corporate View," a new series of six HP videotapes was distributed in a number of language versions to HP organizations as a means of introducing key topics in local employee orientation programs . . .

May

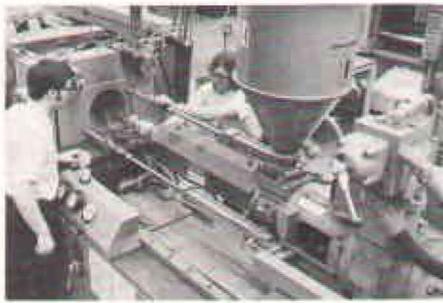
The mid-year cash profit sharing of more than \$10 million was distributed to some 25,000 eligible employees around the world . . . The second quarter of Fiscal 1975 (ending April 30) had net sales of \$248.3 million and earnings of \$23.9 million, equal to 87 cents per share . . . The structure and philosophy of the HP organization was described in a special issue of *MEASURE* . . . The HP Employees Scholarship program set records for numbers of contributors, amount contributed, applications received, and scholarships awarded — 84 out of 174 applications . . .

June

Site preparation work was started on plant locations at Boise, Idaho, and Corvallis, Oregon. Both are due for completion about mid-1976 . . . More than 100 HP general managers and corporate officers met at Silverado, California, for the annual management meeting; plans for the next five years were discussed . . . The company's financial position reflected a significant strengthening over the past year, moving from a negative net cash position to a strong net cash condition . . . After visiting many HP R&D departments, a new corporate engineering review team reported itself impressed by the high levels of morale and competence as well as the very sound product-development programs . . .

July

The HP board of directors increased the semi-annual dividend from 10 cents per



share to 15 cents . . . Bill Craven was named general manager of the McMinnville (Oregon) Division. He replaced Walt Dyke who resigned to devote full time to a charitable trust . . . Crew of the U.S. Apollo used an HP-65 programmable scientific calculator in docking successfully with the Soviet's Soyuz spacecraft . . . A new programmable scientific calculator, the HP-25, was introduced at \$195 in the U.S. . . .

August

Results for the third quarter (ended July 31) showed a 5.3 percent increase in sales and 11.8 percent increase in net profits over the 1974 period. Third-quarter sales totaled \$245,880,000, with net earnings at \$20,286,000 (equal to 73 cents a share) . . . Almost 500 people in the fabrication department of Palo Alto's Manufacturing Division transferred to Stanford Park Division . . . Computer Systems Group announced that two major product lines in Data Systems Division would be given division status. These became General Systems Division (Ed McCracken, general manager) and Data Terminals Division (Jim Arthur, general manager) . . . The HP-35, the APD product that launched the revolution in sophisticated pocket calculators in 1972, was retired . . . Jerry Carlson was appointed to the new position of corporate controller . . . A new pre-programmed business management calculator, the HP-22, was introduced at \$165 in the U.S. . . .

September

Bob Boniface was elected executive vice president, remaining as head of corporate administration . . . Groundbreaking took place for new Manufacturing Division facilities at the lower Page Mill Road site in Palo Alto . . . Carl Cottrell was appointed corporate customer support manager with worldwide responsibility for the replacement parts operations and coordination of efforts in customer support and service . . . HP employment worldwide topped 30,000 people for the first time . . .



Dave Packard and Bill Hewlett helped to dedicate the new computer products plant at Grenoble, France . . . HP held a major press conference in Paris to describe its growing operations in France . . . Medical Product's new oximeter received an *Industrial Research* award as one of the 100 most significant new technical products of 1975 . . .

October

HP's second generation modular instrument-enclosure system—known as System II—was in full production. The system solves a number of problems in design, manufacture and use of enclosures.

November

Late in the month the company reported preliminary figures for fiscal 1975 ended October 31, indicating an 11 percent increase in sales and a slight decline in net earnings. Sales totaled \$982,703,000 compared with sales of \$884,053,000 in 1974. Net earnings amounted to \$83,957,000, equal to \$3.04 a share on 27,638,000 shares of common stock outstanding. This compared with earnings of \$84,022,000, equal to \$3.08 a share on 27,298,000 shares in 1974. Orders went over the one-billion dollar mark for the first time, and also for the first time international business exceeded U.S. business . . . The 2000th unit of the new 2640 computer terminal was delivered to a customer in November, some nine months after initial production.

December

More than \$11,000,000 was paid out to some 25,000 eligible HP employees in mid-December as cash profit sharing for the second half of fiscal 1975. The payout percentage per employee was at 6.74 percent of base salary for the six months ended October 31 . . . *Dun's Review* magazine in its December issue named HP as one of the five best managed U.S. companies for 1975.



“Caring makes a difference”

□ Think that you can't change or influence the "system"? Think again. Among Computer Systems Group divisions at Cupertino are people who can provide proof to the contrary.

Their experience got its start when computer professionals in the area were asked by the Council for Community Action Planning to help evaluate some questions and concerns about a proposed computerized police file on juveniles for Santa Clara County. JIS (Juvenile Information System), as the system was called, was designed to provide an efficient and centralized record of youngsters who had had tangles of any kind with the law and society.

After months of evaluating JIS, the computer industry professionals were able to recommend some important modifications that would make the system tamper-proof while protecting individual rights.

Says HP's Adele Gadol: "Frankly, my feeling is that the police need as much help as they can get to do their job. There is no question that they have been burdened with an unnecessary responsibility, and that a system of this kind would certainly be useful. However, JIS was just not the right answer."

The volunteer professionals, including HP's Sandy Martensen, Jim Bechtold, Carol Guddal, and Carl Davidson as well as Adele, pointed out the potential problems they saw. Mainly, the system just wasn't very secure against mistakes or the deliberate entry of misinformation by anyone who could gain access to the system. Such access would be all too easy and as a result, great harm could come to some innocent youngsters and to the legal process.

The volunteers put their findings before the county's board of supervisors which was also advised that implementing the necessary precautions would nearly double the cost of the system. But, the citizens' team stated, morally there was no other choice. However, there was indeed a choice, and soon thereafter the board members voted unanimously to cancel the project.

Says Adele Gadol in retrospect: "I still feel that there is perhaps a need for such a system — but only for those people with a criminal record, and only if it doesn't deny due process of law."

Another HP participant was asked what the experience had meant to her: "I found out that a lot of people caring about something does indeed make a difference." □



Adele Gadol

What's in the air around you?
While this scene may look like a can
of shaving cream getting a shot, it's
all part of a program to make sure our
air is safe to breathe.



Industrial hygiene:

Your right to a safe environment

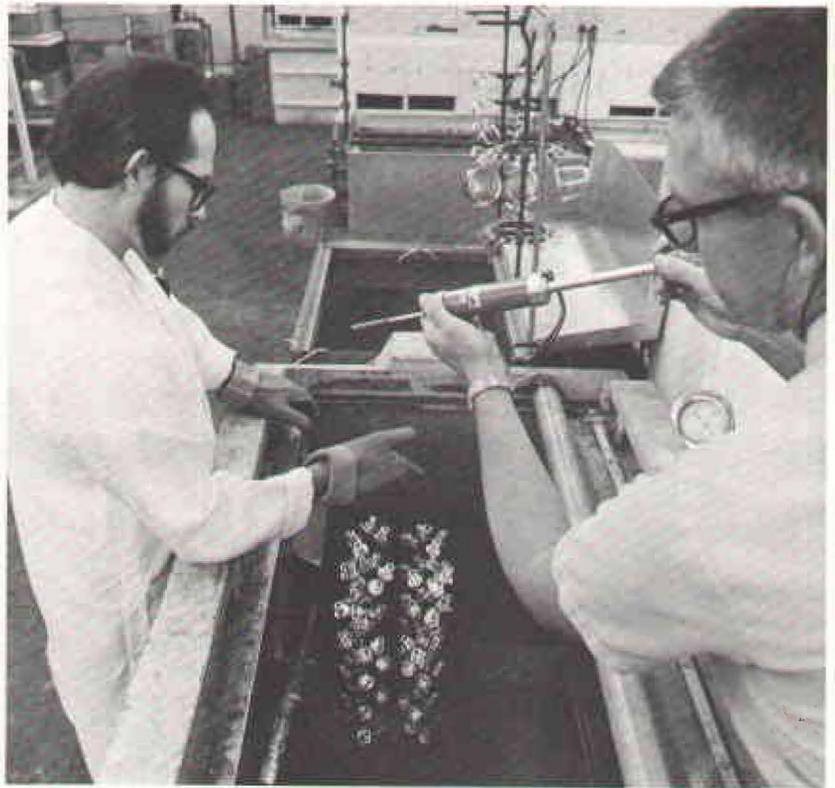
Warning: Breathing may be hazardous to your health.

Considering the alternative (to breathing, that is), a warning such as this would be unsettling if not shocking. But according to the U.S. National Institute of Occupational Safety and Health (NIOSH), the air in some industrial plants contains contaminants that can cause cancer and other diseases.

NIOSH is the research agency of the Federal Government that is charged with establishing health standards to be enforced under the Occupational Safety and Health Act (OSHA). The objective is to prevent job-related illness and disease from exposure to substances that are either known or suspected of being toxic. Some well-publicized examples for which safety
(continued)

industrial hygiene

In the plating shop at Stanford Park Division, John Williams degreases parts with trichloroethane while Al Doyle takes a direct reading of the fumes in the air. The test instrument has a detector tube for that particular chemical, and the degree of discoloration in the tube gives Al the reading. An even more sophisticated instrument sometimes used for direct readings is a portable infrared spectrometer, which can detect a variety of chemicals at very low concentrations.



Ricky Evans (left) cleans off ink used in a silk-screen process with butyl cellosolve while Larry Holbrook takes a "grab" sample of the air. The "Vacu-Sampler" is an empty aerosol container that sucks in a small quantity of air when the valve is pressed.

criteria have been established are vinyl chloride and asbestos fibers — but there are many more, and the long-range goal is to find the safe limits of exposure to nearly 400 substances now under study.

But how does this affect HP? Isn't ours a "clean" industry? It's true that the hazards in HP's manufacturing operations are minimal — certainly no cause for alarm — but there are a number of toxic and potentially harmful substances in general use throughout the company. If you work on a production line, you could be exposed to fumes from solvents, acids, epoxies, and solder. If you work in a plating shop there are acids, bases, solvents and cyanides. R&D labs use toxic gases, acids, solvents and arsenic. In the machine shops the air may contain oil mists, dust and chlorinated solvents used for degreasing.

The amounts of these contaminants in the air are minute, to be sure. "It's a question of what's being used and *how* it's being used," said Larry Holbrook, HP industrial hygienist. "If you're working with xylene under a hood it's no problem, but it could be if it were used on a bench."

To be certain that no actual health hazard exists at HP, Larry and other members of the Safety and Health Services department of Stanford Park Division monitor air quality in all Palo Alto facili-



Len Small of the Solid State Laboratory of HP Labs wears a personal sampling pump while going about his normal work routine. Over an eight-hour period, the pump draws and filters two liters of air per minute for later analysis.



Noise — in this case from an automatic punch press machine — is measured in decibels with an audio-dosimeter.

ties and are ready to assist other divisions in establishing similar programs. "So far we haven't found anything that even approaches a dangerous level," supervisor Al Doyle commented. "But the OSHA standards are revised now and then, and some will become more stringent."

Al's department also measures noise levels in manufacturing facilities — another form of "pollution" regulated by OSHA — and the electromagnetic radiation from microwave ovens.

Air quality is measured in several ways. Direct reading instruments are sometimes used, but are limited to measurements of certain substances. "Grab" samples are collected in various places, and all contaminants can be identified by analysis in HP's environmental laboratory in Palo Alto. One of the most effective sampling techniques involves collecting a small amount of air continuously with an automatic pump over an eight-hour work period, followed by laboratory analysis.

"There is no easy way of complying with OSHA's complex safety and health standards," Al Doyle explained. "The only way is through painstaking, laborious investigation and continuous monitoring of the work environment."

Is it all worth the effort? Said Al, emphatically: "You bet your life it is!" □



The primary purpose of the corporate environmental laboratory is pollution control, but chemist Marty Holderness also analyzes air samples for the industrial hygiene program. Here, she is about to inject a sample into an HP gas chromatograph.

The good news on profit sharing

PALO ALTO — More than \$11,000,000 was to be paid out to some 25,000 eligible employees in mid-December as cash profit sharing for the second half of 1975. The percentage per employee was set at 6.74 percent of base salary for the six months ended October 31.

First-half profit sharing amounted to \$10,319,000, going to a slightly larger number of eligible employees but at a slightly lower salary base, representing 6.66 percent of base salaries.

In announcing the figures on November 25, president Bill Hewlett said, "This increase in profit sharing is really a great demonstration of what happens when the whole team works together. Dave Packard joins me in thanking all of you and wishing you a very merry holiday season and all the best for the New Year."

HP reports higher sales, slightly lower earnings for 1975

PALO ALTO — Preliminary figures reported late in November by the company indicate an 11 percent increase in sales and a slight decline in net earnings for the fiscal year

ended October 31, 1975.

Sales totaled \$982,703,000, compared with 1974 sales of \$884,053,000. Net earnings amounted to \$83,957,000, equal to \$3.04 a share on 27,638,000 shares of common stock outstanding. This compares with earnings of \$84,022,000, equal to \$3.08 a share on 27,298,000 shares in fiscal 1974.

"Our net earnings, as a percentage of sales, dropped from 9.5 percent in fiscal 1974 to 8.5 percent in 1975," president Bill Hewlett said. "Contributing to the decline was a marked increase in our research and development expenditures. Reflecting the importance we place on the development of new products, we spent \$89.5 million on R&D in 1975, up 27 percent from the previous year. As a consequence, we will be introducing a number of important new products to the market in 1976 that are expected to add a substantial increment to sales volume.

"Reduced profit margins in our handheld calculator business also affected 1975 earnings. Our margins in this business, while acceptable, were considerably lower than last year, due primarily to increased competition and substantially lower

price levels throughout the industry."

Hewlett said the company's incoming orders in fiscal 1975 amounted to \$1,002,491,000, up 12 percent over orders of \$893,202,000 the previous year.

He noted that fiscal 1975 marked two firsts for the company. "It was the first year in which our orders surpassed the one-billion dollar mark," he said. "It also was the first year in which our international business exceeded our domestic business." International orders were \$502,074,000, up 18 percent from \$425,248,000 in 1974. Domestic orders were \$500,417,000, a gain of 7 percent from \$467,954,000 the previous year.

Incoming orders in all four quarters of 1975 were above the comparable quarters for the previous year. However, the increase in the fourth quarter was greater than in any of the other periods.

"We are encouraged by the large volume of orders we received in the fourth quarter," Hewlett said. "They amounted to \$249.2 million, up 23 percent from the corresponding quarter last year."

The 1975 figures are tentative; a final audit will be completed late in December.



From the president's desk

I can tell you that 1975 was a cliff-hanger, but because October was an excellent month for both orders and shipments we managed to come through reasonably well. It might pay to look back at the year and see what actually happened.

We started off with a relatively conservative plan of increasing orders and shipments by about 15 percent over 1974. Historically, growth for us has come from new products; thus, we felt that an increase in R&D spending was the way to keep the company moving ahead even if times continued to be slack. For this reason we increased our R&D budget by about 24 percent over the 1974 level, even though we were planning on only a 15 percent increase in production. Next year we will begin to feel the results of this R&D effort as new products come on stream.

To partially compensate for this larger R&D budget, we planned to hold down some marketing and administrative expenditures. A review of the year-end numbers shows that we did better than expected in reducing marketing expenses, more poorly in administrative costs and overran slightly our planned R&D budget due mostly to the increased costs of new product pilot runs.

In the important area of production costs as a percent of sales, we did very well — better than planned, in fact, even though our shipments did not come up to their expected level for the year. Controlling production expenses under these circumstances was not an easy thing to do, and great credit must go to all those associated with the production areas.

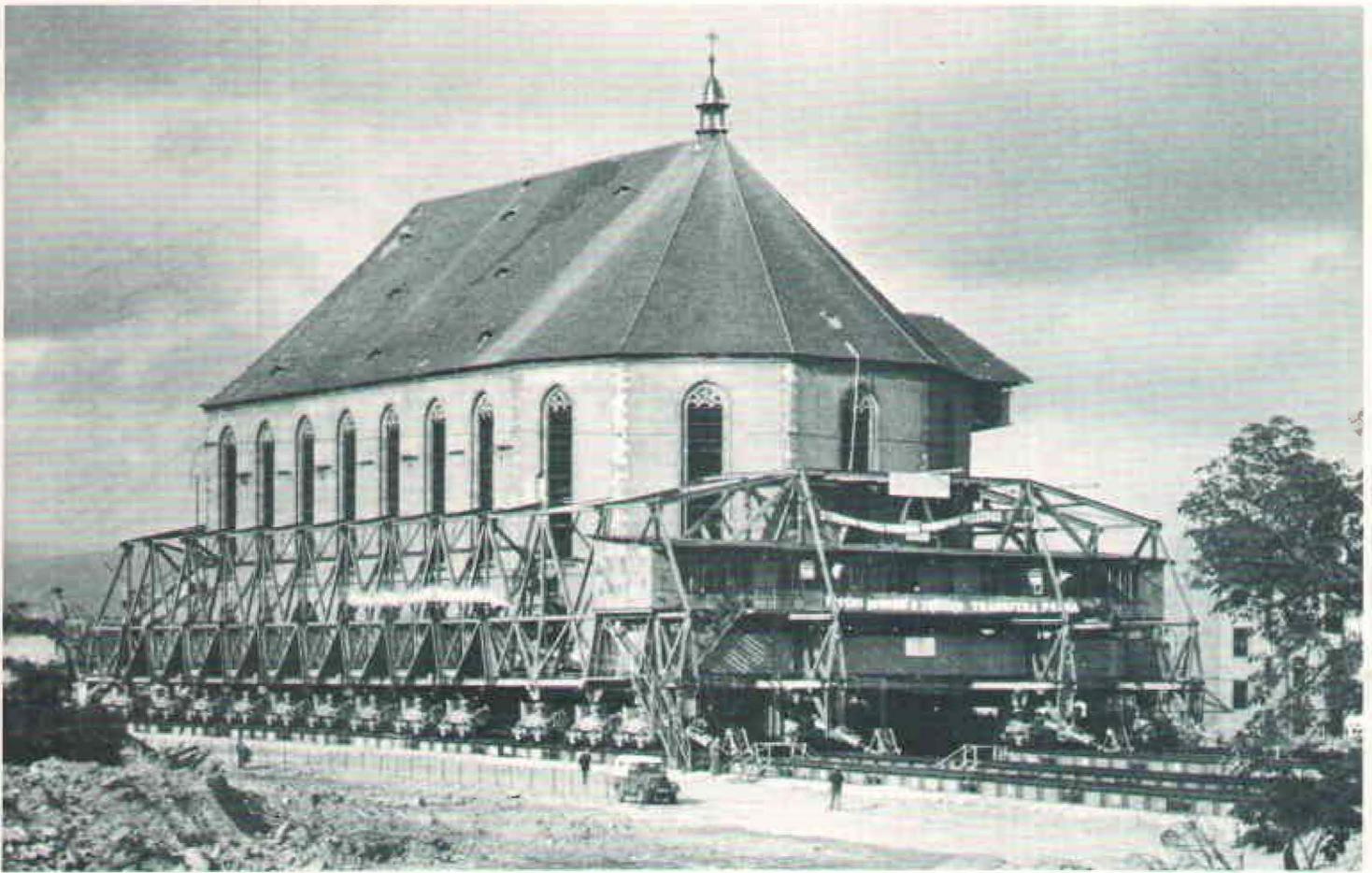
Orders started off the year in fairly good fashion, but by mid-year both orders and shipments had fallen behind schedule — particularly in the domestic area. We never really did recover from this slippage, particularly as in the second half international orders were weak. Although the pocket calculator business was under heavy competitive pressure caused by price reductions in the industry, we also were behind estimated order levels in most of our other product lines.

The net result of all of these factors was that our before-tax profits were less than hoped for, but still more than last year. This is the reason that the funds available for distribution under cash profit sharing increased, even though the after-tax results were slightly under last year. The slight decline in our after-tax figure was caused by an effective tax rate on earnings that was higher than last year. We are currently trying to find out some of the reasons for this higher rate.

But, when all is said and done, and taking all factors into account, a really great job was done and credit certainly must go to all of you for these fine results.

Dave joins me in wishing each of you and your families a very Merry Christmas and all the best for a rewarding and satisfying New Year.

Bill Hewlett



Mobile church

A beautiful and important work of Renaissance architecture, the 14th century Church of the Virgin Mary, in Most, Czechoslovakia, was recently moved over one-half mile with the help of two Hewlett-Packard Model 9821 desk-top calculators. The move was made necessary by the mining of high quality coal deposits beneath the church and much of the town itself.

To accomplish this remarkable task, an enormous carriage of steel was erected around the masonry church.

Then, the 12,000-ton church and carriage were lifted onto more than 50 trolleys and rolled on rails to the new location. Throughout this period, the calculators continuously scanned dozens of special sensors monitoring the church's balance and position down to deviations of four one-hundredths of an inch.

The job was so sensitive that it took several weeks to complete the move—the church racing along at approximately one inch per minute. But, like the tortoise, it got where it wanted to go.

Measure

EDITOR
Gordon Brown

ASSOCIATE EDITOR
Dennis Cresswell

ART DIRECTOR
Tom Martin

GRAPHICS ASSISTANT
Teri Ocagueda

MEASURE Correspondents — AMO, Karen Layton; APO, Chico Alexander; AVONDALE, Matt Wither; BOISE, Gale Hamerwright; COLORADO SPRINGS, Bob Lyons; CUPERTINO, Aras Boland; DELCO/DC, Ez Igha; EASTERN SALES, Bill Cloon; GRENOBLE, Pierre D'Aubert; HPA, Kathy Bolton; HP BENELUX, Amsterdam, Corv. Kelders; HP SINGAPORE, George Gopar; HP CANADA, Bill Wright; HP FRANCE, Oray, Jacques Erupere; HP GMBH, Bobbingen, Fritz Schuller; Frankfurt, Fass Gendel; HP ITALIANA, Tarquinio Frace; HP LTD., South Queensland, Peter Carmichael; Winters, David Reed; HP SCANDINAVIA, Sid Marn; HP SINGAPORE, George Gopar; SIDA, Josette Boumar; INTERCON, Sy Corson; LOVELAND, Peter Paterson; MANUFACTURING, Dave Dury; MANNVILLE, Chuck Wilson; MIDWEST SALES, Hairy-Maria Scasche; NEELY SALES, Bob Peate; NEW JERSEY, Roger Levy; SAN DIEGO, Marshall Hoyer; SANTA CLARA, Melba Cory; SANTA ROSA, Jack Groul; SCIENTIFIC INSTRUMENTS, Charlotte Russell; SOUTHERN SALES, Atlanta, Nancy Bald; Texas area, Helen Hobson; STANFORD PARK, Joanne Engelhardt; WALTHAM, Janet Dale; YHP, Missoula, Melissa



1501 Page Mill Road, Palo Alto, California 94304