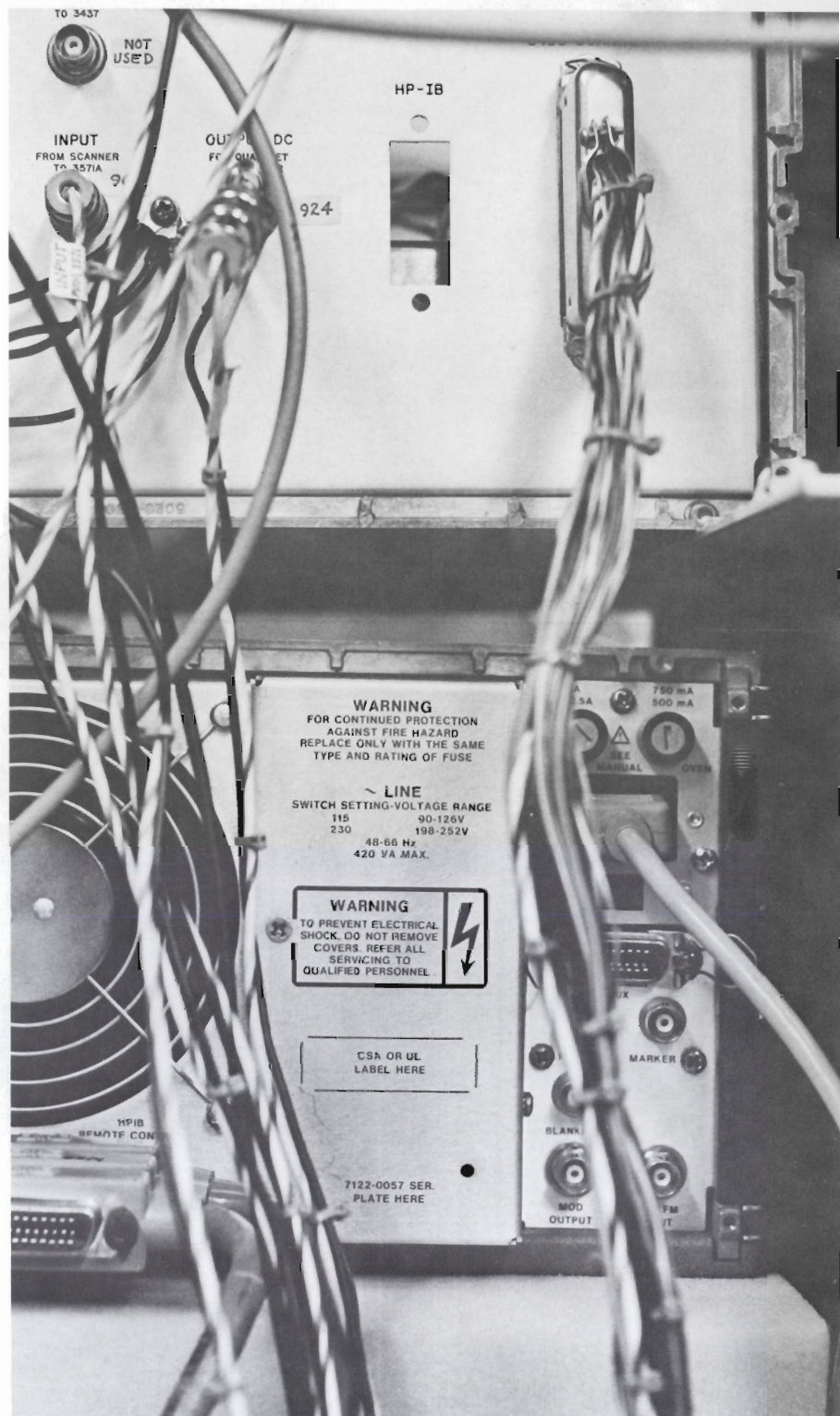


Measure

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

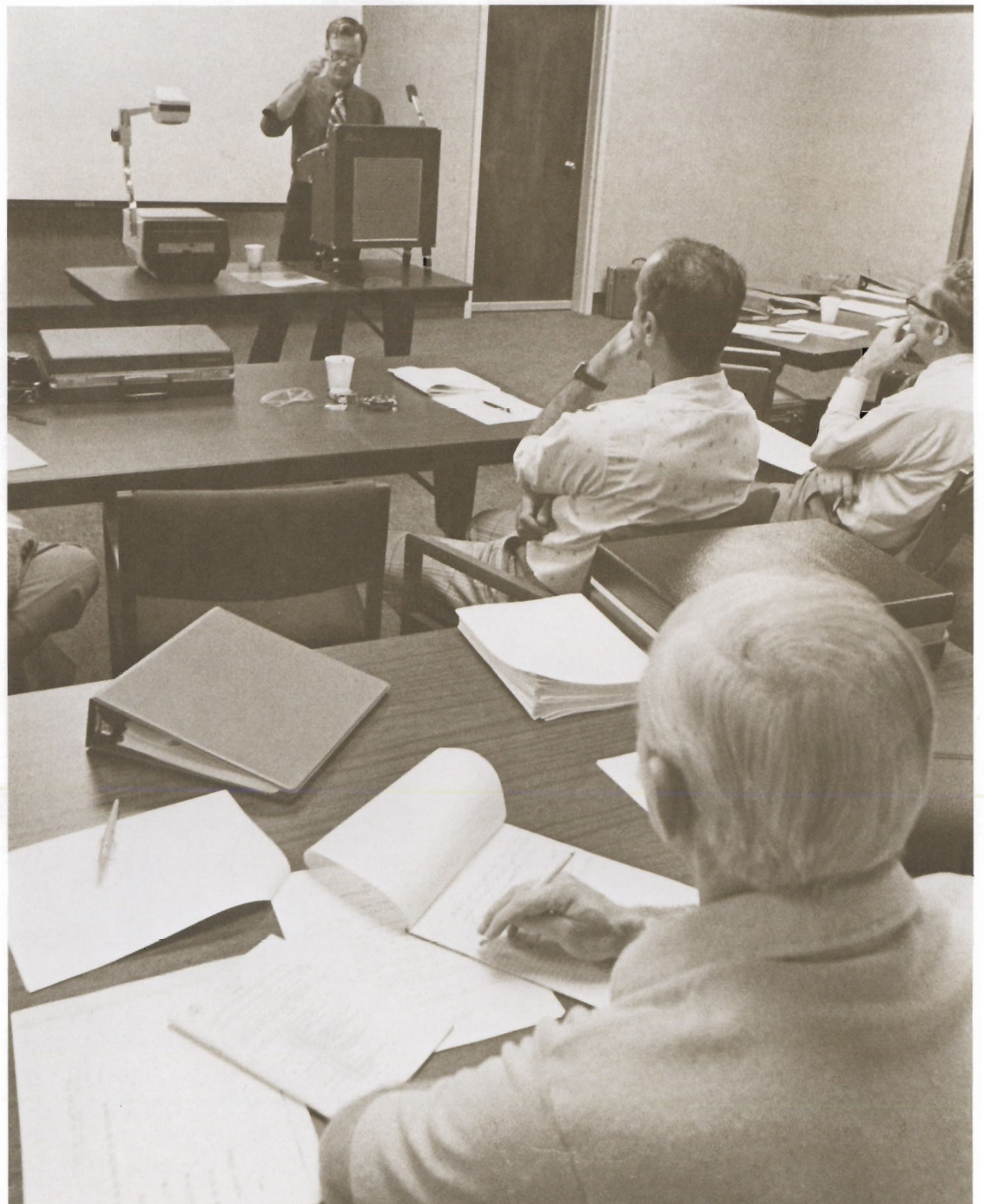


- Playing it safe (pages 2-6)
- Updating the organization (pages 7-11)
- Coming of age in Scotland (pages 12-13)
- First-half performance (page 15)

Product safety:

The game HP can't afford to lose

In response to ever-mounting tides of safety standards, regulations and litigation, HP has organized a company-wide network of product-safety specialists. Here, Marsh Johnson, Corporate product-regulations manager, opens a meeting of division product-safety administrators and country regulatory-agency coordinators. A key function, especially at the corporate and country levels, is monitoring the changes occurring in safety standards and regulations. The network keeps divisions informed of such changes. The product groups also maintain a high level of exchange and coordination among member divisions.



Hundreds of manufacturers of consumer products and their insurance representatives were afflicted with galloping goosebumps earlier this year by the decision of a California jury awarding more than \$125 million to the victim of an auto accident. It was the largest punitive damage assessment in the history of product liability.

Other manufacturers have been stunned by recent court decisions holding them liable for products sold as many as 30 years ago. A machine tool company was forced into bankruptcy by such a decision, even though its equipment had met the standard of its time and been resold and modified several times.

Fair or not, such suits are the by-product of a massive change in public attitudes toward product liability. The old attitude of "buyer beware" has been turned around almost 180 degrees into "seller beware." The result, at least in the U.S., has been a floodtide of hundreds of thousands of product-liability law suits filed each year. That's far, far ahead of the rate just a decade ago. Fortunately for the overburdened judicial system, if not for justice, most of these suits are settled out of court because the risks and costs of defending before a jury are so high.

So far, the torrent of torts and traumas has barely lapped around HP. We've been involved in relatively few product-liability suits, and judgments against or settlements by the company have been quite moderate. But there's no doubt that we are becoming more and more exposed as we move deeper into consumerland, and as we introduce more products that are intimately involved in life-saving actions and process-control decisions.

What are we doing to keep ourselves out of the legal soup? More to the point, how are we protecting not only ourselves but also our customers and their applications from the hazards—both legal and physical—of unsafe products?

A number of steps taken have been organizational. Every division now has its product-safety administrator, and within each product group the division coordinators hold regular interchanges of know-how. A corporate product-regulations manager, Marsh Johnson, coordinates overall policy and communicates matters that affect all divisions.

Still, if you want to know who ultimately is responsible for the safeness of our products, you don't have to look far. No, not just at the coordinators and the QA inspectors, though they certainly have much to say on the subject. It really is up to you as well as your neighbors in design, manufacturing, marketing and administration. Still there are a number of people who have special responsibilities in this area. Here's what MEASURE learned from some of them:

The havoc of failure . . .

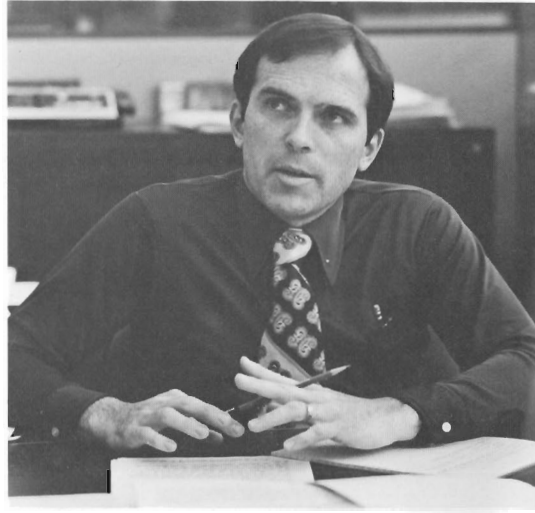
For Hewlett-Packard, product safety involves far more than the financial cost of liability insurance or liability exposure. Craig Pace, HP senior attorney, believes a far higher price would be the combination of damage to reputation, loss of engineering time responding to legal requirements, and the loss of customer confidence in the event of an unfortunate product failure brought to trial. Such notoriety could play havoc with an entire product line.

"Fortunately, a lot of dedicated and qualified people have helped keep HP 'clean' by constant attention to building safety into our products," he said.

The added legal and public attention being given to product safety requires that HP take a more formal approach in order to assure that its products comply with the myriad of governmental regulations and safety standards.

It is most probable that HP's real product-liability problem lies in the future. As the legal profession becomes more technically sophisticated, and our products affect more and more people's jobs and
(continued)

HP Attorney Craig Pace says increased product-safety awareness has inspired hundreds of thousands of law suits against manufacturers. So far, HP products have not attracted much legal lightning, but the company's exposure may be growing fast as HP products enter deeper into consumer-type markets.



product safety...

HP has embarked on a program to update many older models to conform to new safety standards. Here, at Stanford Park Division, product-safety administrator Ross Redeker (at left), production engineer Brad Kellar and his supervisor, Harry Bunting, discuss modification of power meter.



lives, we can expect a greater impact from the consequences of the "buyer beware" philosophy now so readily accepted by judge, jury and consumer.

While Craig does foresee legislative resolution for some of the present product-liability injustices, our real insurance must be the continued effort, concern and dedication of all HP people.



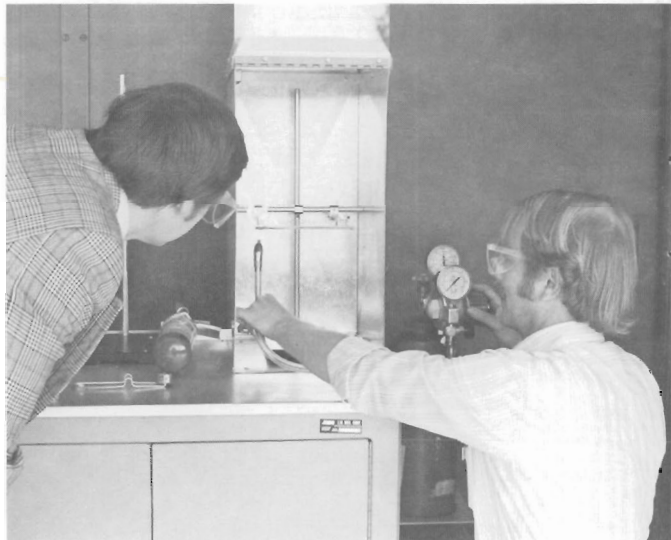
R&D engineers not only "engineer in" product safety, they sometimes invent it. This was the case recently in New Jersey Division, where Win Seiple developed what looks like a better transformer design at lower cost in response to the problem of meeting a new international safety standard. Win, seen at left, discusses the design with Augie Stuart, manufacturing manager.



Division materials engineers have a key role in meeting safety standards. Among their tasks are seeking out suppliers whose materials and components meet HP specifications, and reviewing existing products. Here, Jack Thayer of Stanford Park, looks over a fan he has just checked out for safety.



Another form of safety insurance is Incoming Inspection represented here by John Mullett of Stanford Park. In such areas all incoming shipments are inspected. Some items are tested on a sampling basis, but critical items such as transformers receive 100 percent inspection. At the other end of the line, of course, Quality Assurance inspectors sample the performance of HP products prior to shipment.



Toward common standards . . .

Although accompanied by far less litigation than in the U.S., product safety codes have been adopted by virtually all European countries. Dieter Gann, product-safety coordinator for Europe, says the company's response has been to name one person in each country to act as a focal point in product-safety matters. The tasks of this network include communicating requirements to the appropriate HP organizations, maintaining close contact with the local standard-writing and testing agencies, and participating in the national standardization organizations. In working with the national standards organizations and in fostering the trend to a common set of standards, HP is fulfilling its good-citizenship objective.

At the present time, according to Dieter, European regulations range all the way from strict liability of manufacturers to the old "caveat emptor"—let the buyer beware. Where liability laws apply, the local managements are held responsible. In the long run, however, Dieter

anticipates a trend toward the standards initiated by the European Economic Commission as a way of insuring equal marketing conditions for all member countries.

Finally, noted Dieter who is centered in Boeblingen, the company has not been involved in a liability case in Europe. He hopes we can keep it that way permanently.

HP's safety network . . .

More than 40 people around the company now have full-time product-safety responsibilities within the company's overall product assurance program, according to Marsh Johnson, Corporate product regulations manager. Most are at the division level. Product safety, quality control and product reliability are the three key activities in the overall program of product assurance. One of Marsh's chief roles is monitoring regulatory activity, and passing it along to the division safety people and their product-group coordinators. According to Marsh, HP also takes a very active interest in designing and drafting product-safety standards that are produced by the various international bodies. For the company, Marsh's department produces the HP Product-Safety Design Manual which sets general safety design and test standards for company products. Divisions have the responsibility for being the safety experts in their own product lines.

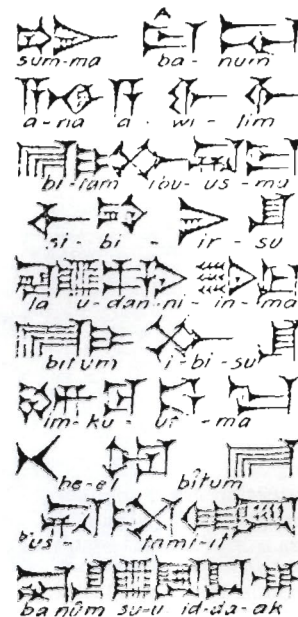
It begins with design . . .

How to turn a safety chore into a challenge was demonstrated at New Jersey division recently. Win Seiple, magnetics engineering leader, was asked to modify the design of HP transformers to conform to German requirements. Originally, it was generally conceded that conventional design would probably entail a 50 percent higher cost. But Win came up with a new bobbin design that is probably going to cost less than the original. The other transformer production centers in HP are very interested.

Of course, all aspects of design, including "human factors" as well as electrical and mechanical, are important to product safety. It's an old saying that safety can't be tested into a product; it must be designed safely from the beginning.



Independent testing by agencies which set and test product-safety standards is increasingly important to HP, particularly in medical, analytical and computational areas. Here are two views of testing activity at General Systems Division in Cupertino: At left, Mike Fraser of Underwriters' Laboratories and Bob Lundin of GSD's product-safety team, time a flammability test of a plastic; above, change in power supply design is discussed by UL's Steve Roll and Ron Morgan, manager of the GSD safety team.



In case you think "seller beware" is a newfangled notion, harken to this sample from the Code of Laws of Hammurabi, King of Babylonia (2200 BC):

"If a builder build a house for a man and do not make its construction firm and the house which he has built collapse and cause the death of the owner of the house—that builder shall be put to death."

(continued)

product safety...

We are tested...

How is the company facing up to the problem posed by the virtual suspension of the statute of limitations in product-safety cases?

One approach is "retrofitting," that is, upgrading the design of older products to meet the latest standards. For models still in production, the responsibility for making such modifications is held by division production engineers. Such changes are frequently not critical in terms of their potential hazard, but are made in the inter-

est of meeting standards that have changed significantly since the original product design.

Where a hazard has been demonstrated, however, the company has two further approaches. One involves the distribution of a red-bordered 'Product Safety-Service Note' issued by the division service engineers which explains how to eliminate the hazard. In the field, this is generally done by service personnel in the course of routine service work.

In cases judged to be more critical, such as a few that have involved medical products, recall to the factory or HP service facility has been employed. Among other things, this prevents their use during the period needed to replace components or redesign the equipment.

Revising the past...

HP products have always been designed to meet or surpass safety standards. Still, obtaining independent verification of conformity has become increasingly useful and even necessary in "consumer" markets. Agencies which prepare standards and test products to them exist in most industrialized countries, and their widely varying requirements have inspired a lot of the professional attention now focused on safety.

In the U.S., the best known test agency is Underwriters' Laboratories whose UL signature is affixed to thousands of electrical products of all kinds. That signature, incidentally, does not mean 'approved' but simply 'tested' and found to be in conformance to the agency's standards.

HP has had a long association with Underwriters, beginning with medical products. The current list now includes analytical equipment, HP components, calculators, and computer products. In addition, virtually all safety-critical components purchased by HP are listed by UL as well as by the other key international safety standards bodies. Such listing costs plenty, but in these times of lively and lucrative litigation it's a form of insurance we have to have over and above our own efforts and concern for the safety of our customers. □

As production nears completion, every HP instrument receives a "Hi-Pot" test which puts its "dielectric withstand" to a critical test in excess of 1000 volts. Administering such a test here is Cathy Foss of Stanford Park's power meter area.



Environmental testing is especially important during prototype development or in checking design changes. Mary West of Stanford Park conducts a temperature-rise test of an older instrument. Environmental tests are rigorous because the general idea is to test the instrument to the point of "fail safe."

Even products that have been in customer hands for years can be modified to meet new safety needs. Here, Gene Kahler of Neely's medical service department at the Santa Clara office, consults an HP safety service note advising of a potential hazard.





Dave Packard



Bill Hewlett



John Young

The HP organization:

Reaching a landmark— quietly

Except for an official transfer of titles and responsibilities plus a birthday celebration, you would hardly have known that HP made a rather significant change in its organizational character last month. No one packed up personal files and mementos. No speeches were heard. No offices changed hands.

In a brief announcement from the Board of Directors meeting on May 19, Bill Hewlett made official his resignation as Chief Executive Officer (one day later he reached age 65). Thereupon, John Young became CEO as well as president.

There was certainly no surprise in any of this. Yet, for the first time, the company was headed by a team of professional managers who were not founder-owners. Of course, Dave Packard and Bill Hewlett have indicated they will continue to take active roles in long-term matters through their roles, respectively, as chairman of the Board of Directors and chairman of the Executive Committee.

These roles and the various other changes are reflected in the updated organizational chart and text that follow:

HEWLETT-PACKARD CORPORATE ORGANIZATION June, 1978

| |
|--------------------------------|
| BOARD OF DIRECTORS |
| Dave Packard, Chairman |
| Bill Hewlett, Chairman |
| CHIEF EXECUTIVE OFFICER |
| John Young |

| | |
|---|---------------------------------------|
| ADMINISTRATION | OPERATIONS |
| Bob Boniface, Executive Vice President | Ralph Lee Executive Vice President |

| |
|--|
| Corporate Staff |
| Corporate Controller Jerry Carlson, Controller |
| Corporate Manufacturing Services Ray Demere, Vice President |
| Corporate Services Bruce Wholey, Vice President |
| Government Relations Jack Beckett, Director |
| Patents and Licenses Jean Chognard, Vice President |
| Personnel John Doyle, Vice President |
| Public Relations Dave Kirby, Director |
| Secretary Jack Brigham, Secretary and General Counsel |
| Treasurer Ed van Bronkhorst, Vice President |
| Marketing Al Oliverio, Vice President |
| International Bill Doolittle, Vice President |

| | | |
|--|---|---|
| Product Groups | | |
| <p>COMPUTER SYSTEMS Paul Ely, Vice President and General Manager</p> <p style="text-align: center;">Divisions</p> <p>Boise (Idaho) Ray Smelek</p> <p>Computer Service Tom Lauhon</p> <p>Data Systems (Cupertino, California) Dick Anderson</p> <p>Data Terminals (Cupertino, California) Jim Arthur</p> <p>Disc Memory (Boise, Idaho) Dick Hackborn</p> <p>Fort Collins (Colorado) Tom Kelley</p> <p>General Systems (Santa Clara, California) Ed McCracken</p> <p>Grenoble (France) Cyril Yansouni</p> <p style="text-align: center;">Operations</p> <p>Japan LSI, Cupertino</p> | <p>CALCULATORS Bob Watson General Manager</p> <p style="text-align: center;">Divisions</p> <p>Calculator Products (Fort Collins, Colorado) Don Schulz</p> <p>Corvallis (Oregon) Dick Moore</p> <p style="text-align: center;">Operations</p> <p>Böblingen Brazil Japan Singapore</p> | <p>COMPONENTS Dave Weindorf, General Manager</p> <p style="text-align: center;">Divisions</p> <p>Microwave Semiconductor (San Jose, California) Dick Soshea</p> <p>Optoelectronics (Palo Alto, California) Bob Zettler</p> <p style="text-align: center;">Operations</p> <p>Singapore/Malaysia</p> |
| Computer Systems Sales/Service Doug Chance | Calculator Sales/Service Bob Rogers | Components Sales/Service Milt Liebhaber |

| |
|---|
| U.S. and Canada Sales |
| Eastern: Rick Weaver • Midwest: Walt Wallin • Southern: John Salyer • Western: Phil |
| International Sales and Support |
| Europe: Franco Mariotti, Managing Director—Marketing Intercontinental: Alan Bickell, Director—Marketing: George Cobbe • Japan: Kenzo S |

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| RECTORS |
| man of the Board |
| Executive Committee |

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| VE OFFICER |
| President |

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| IONS |
| Dean Morton Executive Vice President |

| | | |
|---|---|--|
| roups | | |
| INSTRUMENT Bill Terry, Vice President and General Manager | MEDICAL Dick Alberding General Manager | ANALYTICAL Emery Rogers, General Manager |
| Divisions Böblingen Instrument (Germany) David Rose Civil Engineering (Loveland) Bill McCullough Colorado Springs John Riggen Delcon (Mountain View, California) Al Steiner Loveland Instrument Bill Parzybok Manufacturing (Loveland) Don Cullen Manufacturing (Palo Alto) Jim Ferrell New Jersey Art Darbie San Diego (California) Brian Moore Santa Clara (California) John Blokker Santa Rosa (California) Hal Edmondson So. Queensferry, U.K. Peter Carmichael Stanford Park (California) Rod Carlson Operations Japan Singapore | Divisions Andover (Massachusetts) Burt Dole Böblingen, Germany Karl Grund McMinnville (Oregon) Bill Craven Waltham (Massachusetts) Lew Platt Operations Brazil Japan | Divisions Avondale (Pennsylvania) Mason Byles Waldbronn, Germany Dieter Höhn Scientific Instruments (Palo Alto, California) Karl Schwarz |
| Instrument/Civil Engr. Sales/Service Bob Brunner | Medical Sales/Service Ben Holmes | Analytical Sales/Service Dave Nelson |

| |
|---|
| Corporate Development Fred Schröder Director |
|---|

| |
|---|
| Research & Development Barney Oliver, Vice President |
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| HP Laboratories |
| Administration Dan Lansdon, Manager |
| Electronics Research Lab. Paul Stoff, Director |
| Integrated Circuits Lab. Bob Grimm, Director |
| Physical Electronics Lab. Don Hammond, Director |
| Physical Research Lab. Len Cutler, Director |
| Solid State Lab. |
| Corporate Libraries Mark Baer, Manager |

| |
|--|
| es Administration |
| Scalzo • Canada: Malcolm Gissing • Corporate Customer Support: Carl Cottrell |

| |
|--|
| bsidiary Administration |
| : André Breukels • Germany: Eberhard Knoblauch asaoka • Southeast Asia: Dick Love • Brazil (Manufacturing): Odmar Almeida |

Working together:

The Hewlett-Packard organization

Philosophy:

The achievements of any organization are the result of the combined efforts of its people.

Hewlett-Packard seeks to sustain a high level of achievement by providing a realistic and simple set of long-term objectives on which all can agree. The company believes that, given these objectives, as well as the necessary resources and information, people can then go forward with a clear sense of their individual contribution to the overall performance. And, as experience has shown, they are able to do so with a minimum of supervision and a maximum of responsibility.

Providing this kind of participative working environment requires that special attention be given to the basic organizational structure of the company. The need is to create a working atmosphere that encourages the making of problem-solving decisions as close as possible to the level where the problem occurs. To that end, Hewlett-Packard has striven over the years to keep its basic business units—the product divisions—relatively small and well defined.

The HP product division is an integrated self-sustaining organization with a great deal of independence. It performs in much the same way the company did more than 22 years ago when its people and products were comparable in numbers to a medium-sized division today. Since then, the growth of the company to more than 30 operating divisions—most of them with worldwide product responsibilities—has created the need for a restructuring of the relationships that divisions have with corporate management and among themselves.

Coordination is achieved primarily through the product groups. Each group is composed of divisions whose product lines are closely related. Also, each group has a common sales force serving all of its product divisions. The role of this sales force is to be responsive to the specific needs of customers while presenting them with the invaluable “one-company” face.

Overall, HP strives for the flexibility of a small company while effectively applying the strengths of a larger organization. In doing this, the groups and divisions draw on the special resources and expertise of the corporate staff. The ultimate goal is to provide a framework which utilizes corporate resources and individual initiative to the optimum degree in meeting the responsibilities and objectives of the company.

Organization:

The accompanying chart provides a graphic view of the organizational structure of the company. The overall corporate organization has been designed to let the divisions and groups (represented by the gold areas) concentrate on their primary product activities without each having to master and perform all of the tasks of administration (gray areas) necessary in doing business on a worldwide basis.

In general, the structure outlines the normal and functional lines of responsibility and communication. However, Hewlett-Packard is not a military-type organization with rigid chain-of-command communications. In fact, direct and informal communications across lines and between levels is encouraged where useful and necessary.

Product Divisions

The fundamental responsibilities of a division are to develop, manufacture and market products that make contributions in their market place by virtue of technological or economic advantages, and are profitable to the company. The responsibility of a division is worldwide for its product lines.

In carrying out its basic mission, an HP division conducts itself very much like an independent business. As such it is responsible for its own accounting, personnel activities, quality assurance, and support of its products in the field. A division also has important responsibilities in representing the company in its local community.

Product Groups

Each Hewlett-Packard product group comprises a number of product divisions having related product lines. The management of each group has overall responsi-

bility for the operations and financial performance of its members. Further, each group has worldwide responsibility for its manufacturing operations and sales/service forces. The groups are assisted in this role by the two headquarters (Europe and Intercontinental) and four U.S. regional managements which coordinate the management of the sales/service manufacturing forces in their areas. Groups also provide a primary channel of communications between their members and the various corporate departments.

Corporate Operations

Corporate Operations management has day-to-day responsibility for the operations of the company. It is directly responsible to the president and chief executive officer for the performance of the various product groups, and provides a primary channel of communication between the groups and the president.

Corporate Administration

The principal responsibility of Corporate Administration is to insure that the Corporate Staff offices provide the specialized policies, expertise and resources to adequately support the divisions and groups on a worldwide basis. Corporate Administration also provides important upward channels of communications to insure a highly informed and expert voice is represented at the highest level of management. The Marketing and International offices, through the sales regions and two international geographic headquarters, provide a broad "umbrella" of administrative functions and services over all the field sales/service forces and international manufacturing activities of the groups. These offices, in fact, represent a physical extension of all Corpo-

rate Administrative staff services to insure that all policies and practices are carried out in accordance with corporate policy as well as local legal and fiscal requirements on a worldwide basis.

Corporate Research and Development

HP Laboratories represents another vital segment of corporate activity. Its role is to research and develop the advanced technologies, materials, components, and theoretical analysis useful to the divisions in their product-development programs. Through its endeavors in advanced areas of science and technology, HP Labs also helps the company evaluate promising new areas of business.

President

The president and chief executive officer has operating responsibility for the overall performance and direction of the company, subject to the authority of the board of directors. Also, the president is directly responsible for the corporate development and planning functions and for HP Laboratories.

Board of Directors and Chairman

The board of directors and its chairman have ultimate responsibility for the legal and ethical conduct of the company and its officers. It is the board's duty to protect and advance the interests of the stockholders, to foster a continuing concern for fairness in the company's relations with employees, and to fulfill all requirements of the law in regard to the board's stewardship. The board has an important role in counseling management on general business matters, as well as in reviewing and evaluating the performance of management. To assist in discharging these responsibilities, the

board has formed various committees to oversee the company's activities and programs in such areas as employee benefits, compensation, financial auditing, and investment.

Executive Committee

The committee meets frequently for the purpose of setting and reviewing top-level policies, and making coordinated decisions on a wide range of current operations and activities. Members include the Executive Committee chairman, the chairman of the Board, and the executive vice presidents of Operations and Administration. All are members of the Board of Directors.

Operations Council

The council is a coordinating body whose primary responsibilities are to turn policy decisions into corporate action, review operating policies on a broad basis, and bring appropriate matters to the attention of top management. Members include the president, executive vice presidents, product group general managers, the vice presidents of Marketing and International, and the managing director of Europe.

Channels of contact

The chart provides a picture of the general lines of responsibility, authority and accountability. Flow of information on this chart is both upward and downward.

Contacts and flow of information, between people within a department or between departments, are carried out in the most direct way possible (of course, in making such contacts it is the individual's responsibility to keep his or her manager properly informed). □



HP in Scotland:

At South Queensferry, innovation is a team sport

□ Like most success stories, this one is the result of people working together toward a common goal. Starting as a manufacturer of transferred U.S. products, South Queensferry Division found its own product niche and became a major design and manufacturing center for communication test equipment. Central to the story is an extraordinary working relationship between R&D and marketing, as well as close ties with the U.S. and the field sales force.

Some people at South Queensferry trace the division's history of product innovation back about 13 years to the time when Peter Carmichael, now the general manager and co-managing director of HP Limited, first joined HP. "Peter came to us with an idea," said Tim Brameld, marketing manager for South Queensferry. "That idea was the microwave link analyzer, which turned out to be extremely successful and persuaded us to stay in the communication test market."

Britain has a long history of achievement in communication technology, so it was a logical market for HP Limited.

Microwave links send signals via carrier frequencies of about 6 billion cycles per second, handling as many as 1800 phone calls at one time. The microwave link analyzer, or MLA, was a tremendous contribution to the testing of these links—helping to keep those 1800 calls from getting scrambled.

HP Limited has been manufacturing in the United Kingdom since 1961, starting in Bedford, England. Its manufacturing operation shared space with the country sales headquarters, and its first products were U.S.-designed instruments slightly modified for the European market. In 1966, when the move was

made to a new building in South Queensferry, near Edinburgh, things really began to click. The organization now had the facilities, the people, and an important product development in the offing. In 1969, that first MLA—"the Peter Carmichael one," as Tim calls it—was honored with the Queen's Award for Technical Innovation. South Queensferry was on its way toward becoming a division in its own right, with worldwide product responsibility. By 1971, a thousand MLA's had come off the line.

Another product area being pursued at that time was digital signal analysis. But it was the MLA that proved significant for South Queensferry. "It became a million-dollar-a-year product fairly quickly after its introduction," said Peter Carmichael, "and that started the ball rolling in the communication test product line. Sometime later it was decided that digital signal analysis should be centered in Santa Clara, so we stopped doing active design work in that area and

Close teamwork at South Queensferry is illustrated in this gathering of Peter Carmichael, division general manager at left, Tim Brameld, marketing manager, and Bob Coackley, R&D manager.

poured all our resources into communication test. It's a market where HP dedicated products have been growing at 15 to 20 percent per year, and we see no reason that won't continue."

A special version of the MLA was developed for the U.S. market, and a second-generation MLA some years later. That instrument, according to Tim Brameld, "was such a huge success around the world that it carried our entire R&D and marketing program. From that came the funding that enabled us to get more people into R&D and marketing and broaden our product line."

Product designers of HP's traditional test and measuring instruments have always been able to turn to the next bench, so to speak, to find out what the customer needed. Even today, and even in newer fields such as computers, the company's own experience with its products helps designers improve them.

But South Queensferry has no "next bench" for its home-grown products. Communication test equipment consists of specialized instruments aimed toward a relative handful of potential customers.

Because of this, a very close relationship has evolved between R&D and marketing. The HP R&D and marketing people spend a great deal of their time discussing laboratory projects with customers, and working with design engineers to insure that the customer's needs are met. Lab prototypes are taken out for demonstrations—some even in "breadboard" form—and the reactions of customers often result in changes. One of the division's newer instruments, the microprocessor-controlled selective level measuring set, or SLMS, was modified extensively after early customer liaison.

Tim calls this stage of the marketing effort "product definition." Customers often visit the plant, and "almost every product developed in the lab has been on tour to customer facilities at an early

stage." (Most of these customers are outside of the U.K., since 93 percent of communication test products are exported.)

The failure to lay this groundwork in defining the product can lead to expensive mistakes. "We've had some examples," Peter Carmichael lamented in his soft Scottish brogue. "Products that seemed good to us and seemed to do the right things. But we hadn't talked to the customers enough.

"After we've got an instrument," he went on, "our marketing people have got to be prepared to go out and work closely with the field sales people to acquaint them with the unique features of our specialized equipment and help them, to some extent, with the sales process. Of course our marketing costs tend to be higher than the company average."

For all its emphasis on becoming a fully product-responsible division, South Queensferry still recognizes the importance of its other manufacturing. "Our philosophy is to make the division self-supporting from our own new products, but we will probably always need a fair number of transferred ones," said Peter, "both because we think they're a marketing aid and because they give us enough volume that we're able to support adequate facilities such as the PC shop and the fabrication shop. We would like our own products to dominate, but we need a good balance."

The balance now stands at around 50-50, which Tim feels is optimum. "It helps for customers to see this breadth of product line. Also, because of our transferred products we have a good exchange of people and good relationships with U.S. divisions."

Bob Coackley, R&D manager, explained, "We have had increased success as part of the HP organization from the benefits of technology transfer. This has

come about by working closely with other Instrument Group divisions. We also try to keep a steady flow of U.S. visitors through the plant, and several of our engineers are encouraged to visit and work for a time in other HP divisions."

The 80 or so people who work under Bob, including more than 50 professionals, try to stay abreast of U.S. technology through close relationships with HP Labs and the instrument divisions. "It's difficult to do R&D from a distance," he insisted. "The best way to get support is to send people to the U.S."

The opportunity for South Queensferry people to meet and work with their counterparts in the U.S. helps them feel more a part of HP. And that's a good feeling, generally, in a country where the management style tends to be much more formal and hierarchical than HP's. Productivity at South Queensferry is higher than the British norm, and Peter thinks "the HP way" has a lot to do with it—"such things as flexitime, the absence of time clocks, the same pro-rata benefits for everyone, and especially the accessibility of management."

"Accessibility" for Peter means a small fishbowl office in the middle of the plant floor. "Visitors often ask me how I cope with trying to do any work or planning in this kind of office. Well, my answer is that I either cope with it or I take the damn thing home. I won't change the style of my office."

Meanwhile, some rather welcome changes are being made. A new generation of communication test instruments under development will be even better and "smarter" than current models. Sales and earnings are up, and there are plans for plant expansion. The days of being just an offshore manufacturer are over. With a little patience, and a lot of teamwork, HP Limited has come a long way from Bedford. □

HP News

First-half results reported

PALO ALTO—Hewlett-Packard reported a 22 percent increase in sales and an 11 percent increase in earnings for the second quarter of the company's 1978 fiscal year.

Sales for the six months amounted to \$783.4 million, a 22 percent increase over the first half of 1977. Net earnings increased 17 percent to \$68.2 million, equal to \$2.37 a share. This compares with earnings of \$58.2 million, equal to \$2.06 per share, during the corresponding period last year.

For the recent six-month period, orders totaled \$881.8 million, up 27 percent from a year ago. International orders amounted to \$437.1 million, a gain of 32 percent over the first half of 1977. Domestic orders were up 21 percent to \$444.7 million. President John Young said backlog increased by \$99 million in the half.

Young also announced cash profit sharing for the first half. He said the percentage payment would be 8.23 percent, up from 8.0 percent in the 1977 first half, and the highest first-half payout since 1966.

HP dividend raised 50 percent

PALO ALTO—The HP board of directors has decided to move to a policy of paying dividends on a quarterly basis rather than semi-annually.

At its meeting on May 19, the board declared the first quarterly cash dividend of 15 cents per share on the company's common stock, payable July 14 to stockholders of record June 22. These actions

effectively increase the annual dividend rate by 50 percent. A 20-cent dividend was paid on the previous semiannual basis on April 15 of this year.

Paul Greene to head new organization for LSI Operations

In a move which reflects the growth in scale and importance of LSI (large-scale integrated circuits) technology at Hewlett-Packard, a separate entity for LSI Operations has been established as part of the Computer Systems Group.

Paul Greene, director of HP Labs' Solid State Lab since May 1969, will transfer to Cupertino, California, on May 16 to become manager of a new organization called Cupertino LSI Operations. It will incorporate the present activity of the LSI department of Data Systems Division.

In announcing formation of LSI Operations, Computer Systems Group vice president Paul Ely pointed out that by the end of 1978 most CSG major product lines will incorporate proprietary Hewlett-Packard LSI.

Larry Lopp, who has been responsible for the successful LSI research and development activity at Data Systems Division, is R&D manager of the new organization. Dave Weibel of Data Systems Division is manufacturing manager of the present SOS process. Dick Chang, who headed all Southeast Asia operations of the Optoelectronics Division for three years, is program manager for the next-generation LSI process.

Hewlett-Packard amends U.S. policy on mandatory retirement

In view of the bill which President Carter recently signed extending the mandatory retirement age to 70 as from January 1, 1979, the Executive Committee has decided to amend HP's policy as of May 1, 1978.

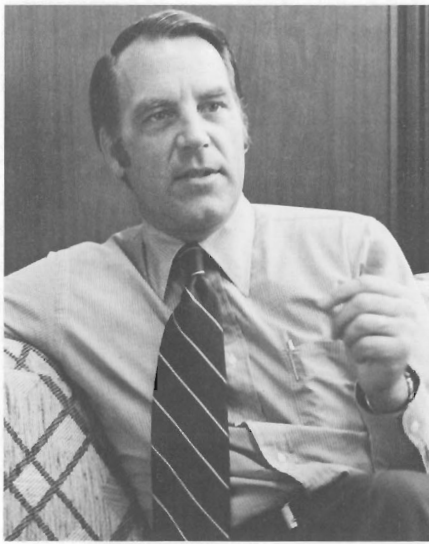
Effective immediately, retired employees of HP who wish to be considered for reemployment and are qualified for an open position may apply and will not be denied on grounds of age if under 70 years old.

Management change in Campinas, Brazil

Odmar Almeida has been appointed general manager of HP's manufacturing operation in Campinas, Brazil, effective May 1.

He replaces Guenter Warmbold, who established the Campinas plant for Hewlett-Packard in 1975. Guenter now returns to GmbH as facility manufacturing manager, reporting to German country manager Eberhard Knoblauch.

Odmar, a native of Brazil, has been marketing manager for the Brazilian factory since shortly after its startup. He joined HP in 1973, serving as São Paulo district instrument sales manager before transferring to Campinas. He received an electrical engineering degree from the Aeronautical Institute of Technology in 1961 and a PhD in electrical engineering from Stanford University in 1972.



From the president's desk

Our performance for the first half of 1978 was good on an overall basis—both compared to last year, and to our targets. Orders at \$882 million increased 27 percent over 1977 and were 6 percent over target, with the over-target orders coming from outside the U.S. Particularly strong were the United Kingdom, Germany, Japan and France.

Although shipments increased 22 percent over 1977 to \$783 million, we were a little under our targets. A number of divisions have had difficulties in moving shipments up to meet order levels, mainly due to establishing new products solidly in production. April was the first month in the half where we were able to exceed our shipping targets.

It's important that we give top priority to shipments over the balance of the year. The backlog has increased by \$100 million in six months, which is equal to three weeks of shipments. Almost all divisions have adequate backlog to better their shipment targets in the second half, and that should be our goal.

Expenses in general were well controlled. The direct production cost of our products grew at the same rate as shipments. Field selling expense increased more rapidly than sales in a planned move to add strength to our sales and service capability. R&D expenses, especially in the second quarter, were a little high reflecting extra effort on a few key new products. Our continuing objective is to keep expenses and shipments in balance each quarter to insure meeting targeted net profit percentages, and we came very close to meeting this goal.

Asset management—that is, how well we utilize the investment in plant, equipment and inventory—again looked good. Divisional inventory levels are well under control. An area for improvement is in the inventory pipeline, particularly between U.S. divisions and international destinations. It's important to ship as much at the beginning as at the end of the month to avoid overloading our shipping and invoicing facilities.

Accounts receivable, the amounts owed us by our customers, are a little higher than desired levels. Coping

with the growth in orders has made our job of collections more difficult. It's important for divisions and field offices to make a coordinated effort to improve our own systems in this area and action is well underway.

The end result of all this is net profit. The second quarter figures, compared with 1977, are difficult to interpret. This is due, in part, to the \$6 million charge in April 1977 which covered the initial six months contribution to our new pension plan. This does not affect the first half comparison when we earned \$2.37 a share versus \$2.06 in 1977 for an increase of 15 percent. This increase is less than the shipments growth rate (22 percent), but it's better than target as we anticipated the tax rate this year would be 49.1 percent versus 46.1 percent last year.

The payoff for all of us in good corporate performance comes in profit sharing. The 8.23 percent figure announced for the first half essentially adds another month's pay on an annualized basis to your income.

I found it interesting to look through the profit sharing history of our plan in its current form which goes back to 1962. The table below gives the percentage figures for each of the 16 years since adoption of the current plan.

| Year | 1st Half | 2nd Half | Year | 1st Half | 2nd Half |
|------|----------|----------|------|----------|----------|
| 1962 | 5.50 | 8.58 | 1970 | 5.23 | 4.10 |
| 1963 | 5.50 | 8.18 | 1971 | 3.93 | 4.40 |
| 1964 | 6.50 | 8.93 | 1972 | 6.05 | 8.29 |
| 1965 | 7.50 | 9.95 | 1973 | 7.36 | 6.34 |
| 1966 | 8.50 | 8.30 | 1974 | 7.90 | 7.71 |
| 1967 | 7.50 | 6.25 | 1975 | 6.66 | 6.74 |
| 1968 | 6.24 | 7.21 | 1976 | 5.50 | 7.28 |
| 1969 | 6.63 | 8.00 | 1977 | 8.00 | 8.38 |

It's easy to observe the electronics boom of the mid-sixties and the recession of 1970-1971. Setting aside these extreme periods, the profit sharing percentages for the last two years clearly reflect the strengthened overall performance of our company.

With full attention to the operating areas I noted, it may well be possible to improve on last year's second half figure.

One other item of recent business was my election by the board of directors at their meeting on May 19th as Chief Executive Officer (CEO) of the company. This completes the planned management changeover begun in November. Bill Hewlett, as Chairman of the Executive Committee, and Dave Packard, as Chairman of the Board of Directors, will continue to play active and important roles in HP affairs. As CEO I am responsible to the board of directors, the elected representatives of the shareholders, for the overall results of the company.

Under Bill's leadership as CEO over the last nine years the company has increased both sales and earnings per share by a factor of 5. We are in a very strong position from a financial, product, and people standpoint to continue this distinguished record.



Hallelujah! He'll retire now...

At 9:35 a.m., Friday, May 19, Bill Hewlett walked from the HP board of directors meeting for a coffee break. The photo tells some of what happened next – just as it had for partner Dave Packard the previous year. Of course, it helps to know the music to Handle's "Hallelujah" which a chorus of 15 HP voices skillfully handled with these special lyrics:

"Happy birthday, Happy birthday, William Hewlett,
William Hewlett. Happy birthday to you.

Happy birthday, Happy birthday, with a big cheer
from your friends here. We serenade you.

He made it oscillate by means of feedback. Happy
birthday, with feedback, Happy birthday, with feedback.

And for stability he used a lightbulb, Simple dim
bulb from a dimstore. Happy birthday, Happy birthday.

Today Bill Hewlett does so many things. He may be
at the ranch or at the Chrysler board meeting.

And he shall ski for ever and ever. And play cards
with so much skill that every day he's richer still.

And wedding bells shall ring very soon now, Our
founder and leader a legend for ever.

Sixty-five now, He'll retire now, HALLELUJAH!
Happy birthday William Hewlett?"

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