


# Measure

For the men and women of Hewlett-Packard  
JANUARY / FEBRUARY 1977



High level views of  
corporate performance  
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HP organization  
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landmark  
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New products  
take wing  
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*Spirit of FY 1976*

## Instruments Group

8080A Modular  
Pulse and  
Word Generator



4942A Transmission  
Impairment  
Measuring Set



Network  
Analyzer



547A Current Tracer



1611A Logic State Analyzer



# HP's daring young products and

□ Launching more than 100 new products during 1976 — and keeping them properly airborne and on course — was not an easy task for HP divisions and their group organizations. Economic downdrafts and capital-spending air pockets made takeoffs hazardous, after which our craft faced the headwinds of uncertain demand.

But once again, the ability of new products to provide great uplift to HP business was demonstrated in 1976. Momentum came from the outstanding developments introduced during the previous year or so, and was augmented by the various 1976 developments that had a chance to gain significant sales altitude.

All in all, it turned out to be a successful year — at the end quite successful, especially considering the turbulent conditions. The following aerial spectacle presents just a representative sampling of the 1976 star performers who will help provide the thrust for FY (flight year) 1977:

## Instruments Group

It takes a pretty large craft — on the order of an airship — to handle the 76 products introduced by divisions of the Instrument Group in 1976. Special lift came from several sources. More and more “smart” instruments showed up, made so through the use of microprocessors. Also, more of these instruments were designed as “bus-compatible,” that is, able to work automatically with other electronic devices through the medium of the HP Interface Bus. And HP-IB itself became the model for further agreements on an international standard for these interconnections.

With microprocessors leading the way to new generations of smart electronic equipment, HP has led in the development of instruments that help engineers design that equipment. Newest of these is the 1611A Logic State Analyzer from Colo-



# their flying machines...

rado Springs. It brings keyboard control to the task of speeding the design of equipment incorporating microprocessor components.

Speaking of microprocessors (again), two of them are employed in Loveland Instrument Division's new 3455A digital voltmeter used for bench or systems work. One microprocessor controls all functions, the other does computation and remote programming — clearly the state-of-the-art in multimeters.

Another HP development that came hard on the heels of a popular trend was Stanford Park's "Big Foot" — the 8950A transceiver testing system. It was designed with one eye on manufacturers of CB (citizens' band) radios, the other on large communication centers and agencies.

Extending Santa Clara Division's prowess in logic troubleshooting, the 547A current tracer is the first of its kind: An ultra-sensitive, low-cost (\$350) handheld probe that enables an operator to locate low-impedance faults, where there may be no detectable voltage changes,

by tracing the flow of current pulses. And to supply such pulses — voila! — the 546A logic pulser.

Very far up in the sophistication scale for instrument technology and capability is Santa Rosa's 8707A automatic analyzer system based on the new 8505A network analyzer. All 8505A functions are digitally controlled, processor-actuated, and programmable via HP-IB. Combined by means of the interface, the system uses a 9830A programmable desktop calculator and printer, S-Parameter test set, and programming to "do it all" with ease, speed and extreme accuracy.

Keeping pace with instrument technology, New Jersey Division introduced a new 200-Watt DC programmable power supply, the HP 6002A. Designed for wide

application, it can be adjusted manually or used as a system component with output voltage or current under HP-IB control.

In West Germany, Boeblingen Instrument engineers developed a 1-GHz pulse generator that is also believed to be the fastest of its kind, the HP 8080A. Delcon Division in Mountain View, California, unveiled three new products in its transmission-fault detection line. Meanwhile other instrument divisions were working hard on scores of projects, many of which will "fly" as new products this year.

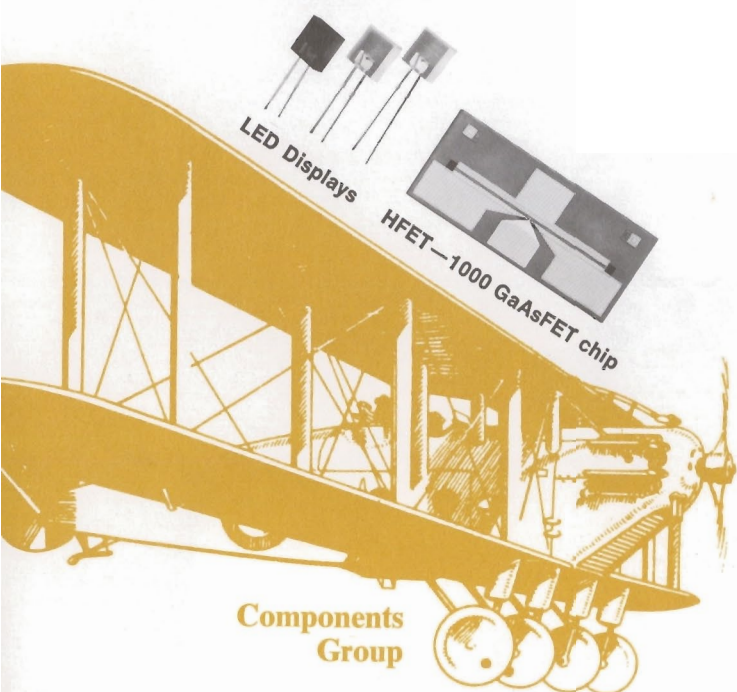
## Computer Systems Group

Without question, new products contributed a powerful thrust to the jet performance of Computer Systems Group in 1976.

Most important from several viewpoints was the new generation of HP-3000 general purpose computers, the 3000

*(continued)*

# Daring young products



Series II machines from General Systems Division. In all respects and more, they attained the lofty goals of their developers and seem well on their way to becoming one of HP's top products. The outstanding new feature of Series II is its operating system which continually analyzes the demands being put on the computer system and allocates resources (access to memory, etc.) according to those demands rather than by any pre-set protocols. This makes for very smooth handling of high-volume computer traffic, delivering lots of work at a very favorable price.

Data Systems Division, the "home" division for so many spun-off divisions and developments in the past, contributed several important items to its own lines of small computers in 1976. Chief among these was the HP-1000 systems, a new family of small computers (don't call them "mini" anymore — while physically small they're very powerful!). HP-1000 systems are designed for the high-performance sector of computation, instrumentation and operations management applications.

A major component of the HP-1000 system is another new product, the high-speed 21MX E-series computer. A

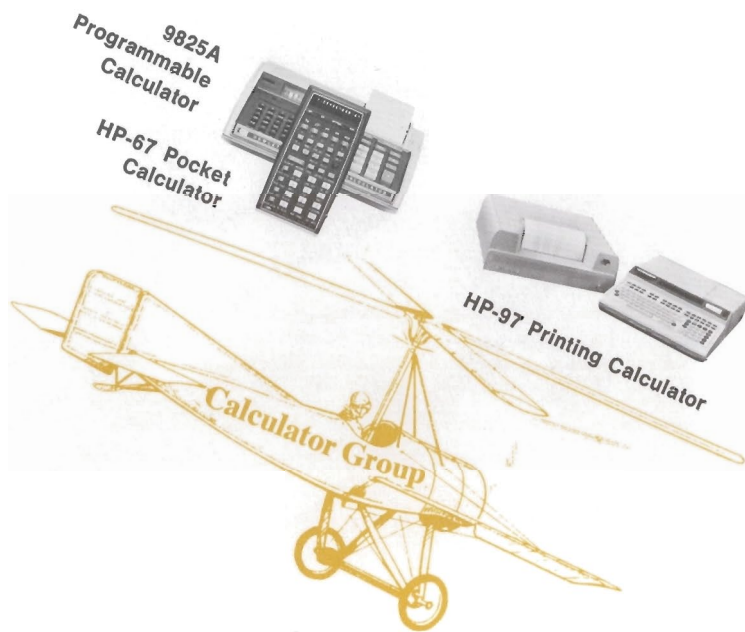
premium-performance machine, it executes programs 70 percent faster than the M-series, and offers much more opportunity for expansion of its computing power. E-series claims speed comparable to competition twice its price.

The Grenoble Division in France became a full-fledged product-responsible division in 1976 with the introduction of its first development, a series of numeric data entry terminals. The terminals, the HP 3070A and 3071A, are small desktop units designed for great ease of communication between operators and computers of all kinds.

For Computer Systems Group, the 1977 flight plan is higher and further: a wide range of major and minor developments on an international basis and involving important new technology.

## Components Group

In their first year as separate organizations, the two Components Group divisions rolled out additions that re-emphasize their status as full-fledged product divisions — versus the original



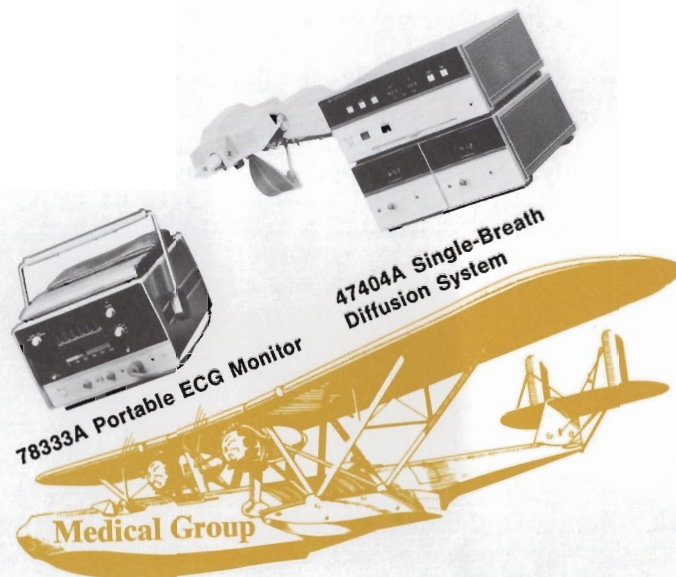
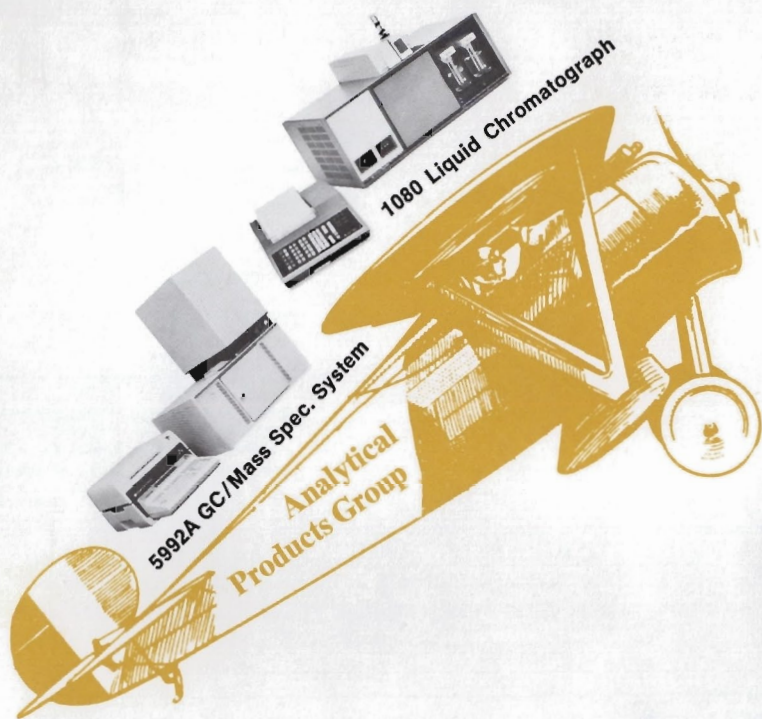
HPA role as primarily an in-house HP supplier. Microwave Semiconductor Division brought out the first of a new family of GaAs FETs (gallium arsenide field-effect transistors), the HFET-1000. The new transistors establish the state-of-the-art for low noise in microwave oscillators, an important quality in communications.

In the display field, the Optoelectronics Division developed the first series of rectangular LED lamps in three colors; they'll soon be showing up in such applications as instrument panel displays.

## Calculator Group

As everyone knows, the marketplace for electronic calculators — especially personal calculators — has been characterized during the past couple of years by sharply rising technological capability and rapidly descending prices. For that, one needs a VTOL — vertical-takeoff-and-landing craft.

During 1976, HP's Calculator Group divisions wheeled out some new products whose power boosted our craft back into the black after a sinking spell. No less than three new programmable personal calculators were introduced by APD (now Corvallis Division) on the same day,



## Analytical Products Group

Divisions in the Analytical Group have been getting a lot of vertical acceleration from the automation of their major product lines. Avondale's gas chromatography was first, with the 5830A system in 1973. 1976 was the year for liquid chromatography, yielding the first high-performance LC to be controlled with a built-in central processor. Listed as the HP-1080, it was developed at the Waldbronn Division in West Germany. In Palo Alto, Scientific Instruments Division brought out the first automated gas chromatograph/mass spectrometer system. The compact HP-5992A brings new speed and accuracy to the identification of unknown compounds.

## Medical Group

Rising to meet the special demands of the medical profession, HP made significant additions to several medical product lines during the past year. In the

area of breath analysis (acquired with the addition of Vertek Inc. in 1972), the Waltham-based development team introduced an automated diagnostic instrument. Designated the HP 47404A, it provides rapid clinical testing of the efficiency of a patient's lungs, upon analysis of a single breath. The automatic controls not only speed the testing but also leave the operator free to observe and coach the patients, thus increasing test accuracy.

Patient monitoring, a key medical line, was expanded by the addition of two new portable, battery-operated ECG monitors. Both the 78331A and 78333A are designed to provide maximum protection to patients and operators, and to minimize interference on displays which has been experienced from electro-surgery devices.

The HP medical team also announced development of the first portable automatic three-channel electrocardiograph. Developed by YHP engineers in Japan, the 1505A provides physicians and clinics the benefits of three-channel recording in an easy-to-operate module. □

July 1. These were the HP-97 with quiet printer, its pocket-sized version, the HP-67, and the HP-25C keystroke programmable pocket machine with continuous memory.

Loveland Calculator Division contributed the new HP-9825A desktop programmable machine, a powerful medium-priced calculator having many of the features and much of the speed previously found only in minicomputers. Its primary uses are in control, engineering, research and statistics.

All of the above reflect HP's determination to remain the quality and technological leader in this field. There will be even more evidence of this in the coming year.



*The billion-dollar question:*

**Is there still a place here  
for the individual?**

□ There it was in black and white; one billion, one hundred and eleven million dollars worth of HP shipments — sales — in FY 1976!

Ten years ago, with sales nearing one quarter of that figure, the billion-dollar goal looked challenging — yet formidable. Even then, questions were asked: How would growth of that order affect the style and character of the company? Would it become just another big company in which to lose one's individuality? Would HP initiative be swamped by stiffer, longer lines of authority and communication?

Well, where *do* we stand on such questions? MEASURE circulated such a questionnaire among the worldwide units of HP late last year, asking for a few individual responses from each. Among the many replies and names volunteered, the following were selected as broadly representative, or particularly thoughtful and challenging:

**Harvey Kellogg**, a 25-year employee now in the Mountain View Corporate Parts Center, feels very strongly that "the HP way" has been very well maintained in spite of the company's size. "Dave and Bill's basic philosophies still predominate," he insists. "There's still a small-company spirit — at least in the areas I've experienced — and occasionally I see new employees who don't necessarily think the way we do, but it's just a matter of time before they learn the 'HP way'."

**Viv van Zyl**, branch manager at Cape Town, South Africa, quickly realized as a newcomer that Hewlett-Packard had a special atmosphere and eight years with the company have confirmed that impression: "Soon after I joined the company I met Bill Hewlett. I expected the great man to be like I imagine all corporate presidents to be — cold, impersonal, business-like with only a few moments to spare. Well, a little over-awed I called him 'Mr. Hewlett' and he replied, 'That was my father's name; mine is Bill.' I was impressed because I came from an organization where people who worked for the company were not allowed to come in through the main entrance and where, in the 13 years that I worked for them, I only got to greet the top man once or twice a year although his office was only 30 feet away from where I sat. The feeling of always being part of the same family is something that I have always

experienced in my stay with HP.

"Like a small company, HP has preserved the ability to have the top guy reach right down to the bottom of the organization and say, as it were, 'Come on, chaps, let's do something about this problem' and then have everyone share in finding a solution. With feedback, everyone also gets to know the results."

**Chuck Taubman**, personnel manager for Santa Clara Division, has been in engineering as well as personnel work in his ten years with the company. He thinks decisions take longer in a larger company, and he sometimes finds that frustrating, but "I'm enough of a realist to recognize that it's one of the penalties you pay for being successful." He thinks many HP people have the feeling that decisions affecting them are reached in an impersonal way. "I don't think the decision-making process itself has become impersonal or de-humanizing, but many of the people who were impacted by a decision or know someone who was think that's what happened. They don't realize the thought that went into it, and they don't always recognize that it's impossible to involve everyone in the decision."

**Ralph Helper**, in his twentieth year with the Neely sales organization and presently its service manager, makes the point that the company's present size has served to reinforce the HP way of doing things:

"Our size and rate of growth, in fact, have required that more of our people get their jobs done through clearly defined objectives. The efforts that are presently being made along these lines — through training, management and communications — are better now than they have ever been. This demonstrates the corporate commitment to provide everyone the opportunity for growth and development."

**Reinhold Weyl**, customer assurance manager at Boeblingen, joined GmbH in 1960 shortly after it began operations and sees a loss of flexibility as the result of growth: "As divisions become larger, they develop relatively fixed systems for their capacity planning. Day-to-day or week-to-week adjustments to meet changing needs are now almost impossible to make, for instance. The paths of communication in our division are also significantly longer than some years ago."

**Mike Canvin**, instrument field engineer in Perth, Australia, has mixed feelings about the effect of company growth at the local level: "I think that too much 'parental' control has hampered our adaptability to a fast-changing local market. However, the responsibility and trust given an employee is tremendously satisfying — I feel I'm as close to running my own business as I'm likely to get. Working with a team of dynamic people who share the same outlook and ambition is good psychologically; I know many people who are envious of HP's working conditions."

**Candy Painter**, admin supervisor at the Boise Division, believes that most people relate primarily to their local organization. "At our Friday morning coffee-break division meetings, people are mainly interested in division performance. Being part of a billion-dollar corporation hasn't affected us at all at the division level — except we're proud of it."

**Alan Holdway**, Southern Ontario district sales manager in Toronto, joined HP Canada within a few days of arriving from the United Kingdom nine years ago.

## Billion-dollar question

He believes that encouraging individual initiative is still one of the company's major strengths and the factor that keeps HP one step ahead: "Each of us should fully understand that our jobs exist to serve the customer. If roadblocks develop and the system isn't getting the right results for a customer, we should question the procedures. Perhaps delivery times can be speeded up by an inquiry to the factory, for instance. HP continues to allow plenty of room for the individual to contribute and succeed."

**Cow Sai Lam**, materials manager at HP Malaysia who helped pioneer that division in late 1972, believes HP will continue to maintain the small-company style so successful in the past: "HP's policy on decentralization will allow each division to operate independently within corporate guidelines and perform well so long as there is sufficient communication between interrelated functions in the various divisions. In Southeast Asia we have always considered our operation as small without consciously realizing we are now actually part of a billion-dollar corporation. I don't see why — with similar enthusiasm and effort — we cannot maintain the same style of operation successfully."

**Mary Ann Shaw**, scheduler at the San Diego Division, points to her own development — up from minimum-wage clerk a few years after joining HP six years ago — as evidence that the system works very well. "I'm still going to college, and I think that anyone who takes advantage of the opportunities can grow in almost any direction they choose. The doors are really open here, and if something is bothering a person they shouldn't hesitate to speak out. For better or for worse — they'll get a response. The question of 'How big is too big?' is interesting. I'll always want to work in a good division, and that means growth. On the other hand, if this division doubles in size again — as it has done since I came here — then we would probably lose some of the qualities — become a number instead of a person. As it is, I no longer feel I know everyone as I did,

although that may not be too important. But the fact that the company continues to ask questions like this shows its interest and concern."

**Boh Tong Chiew**, production lead, is another HP Malaysia pioneer who thinks the HP way of doing things will survive continued growth: "As the company grows in size, personal contact between a person at the higher level and one at the lower level will become more rare. However, I believe that if the HP way of giving people trust and responsibility is practiced at every level — from the manager to the supervisor, from the supervisor to the lead and all the way down the line — then no matter how big the company grows, the HP philosophy will remain intact."

**Marilynne Brammer**, purchasing agent for Neely Sales Region, recalls the warm welcome she received when she joined Neely Enterprises as a secretary some 14 years ago. "But it was a relatively small company then, consequently personal growth was limited. Though I still feel I am working for a 'small' company, for those with initiative there are continuous new openings and opportunities to grow."

**Manuel Gonzales**, a manufacturing engineer at Santa Rosa Division, joined HP in 1959. It was easier then, according to Manuel, to deal with people on a person-to-person basis to accomplish something. "There are more people involved now in 'closing the loop,' you might say, on any task. You can't communicate on a personal level anymore — you almost have to use a mechanical means like a memo to make sure the job gets done. And I think you can still basically trust people to do it right, but you need better safeguards against error just because more people are involved."

Manuel also feels that stiff competition and the emphasis on holding costs down to maintain profit have brought about some profound changes in the company. "I think profit has become so important that other objectives related to people, customers, and so on, have lesser

The individual is still at the center of the HP world, according to most of the opinions expressed to MEASURE. Shown here is Joe Beck of Data Systems Division, checking some tests on 21MX computers nearing the end of production at Cupertino.

priorities. But then we have to stay in business to make any of them possible, and we're still way ahead of most companies."

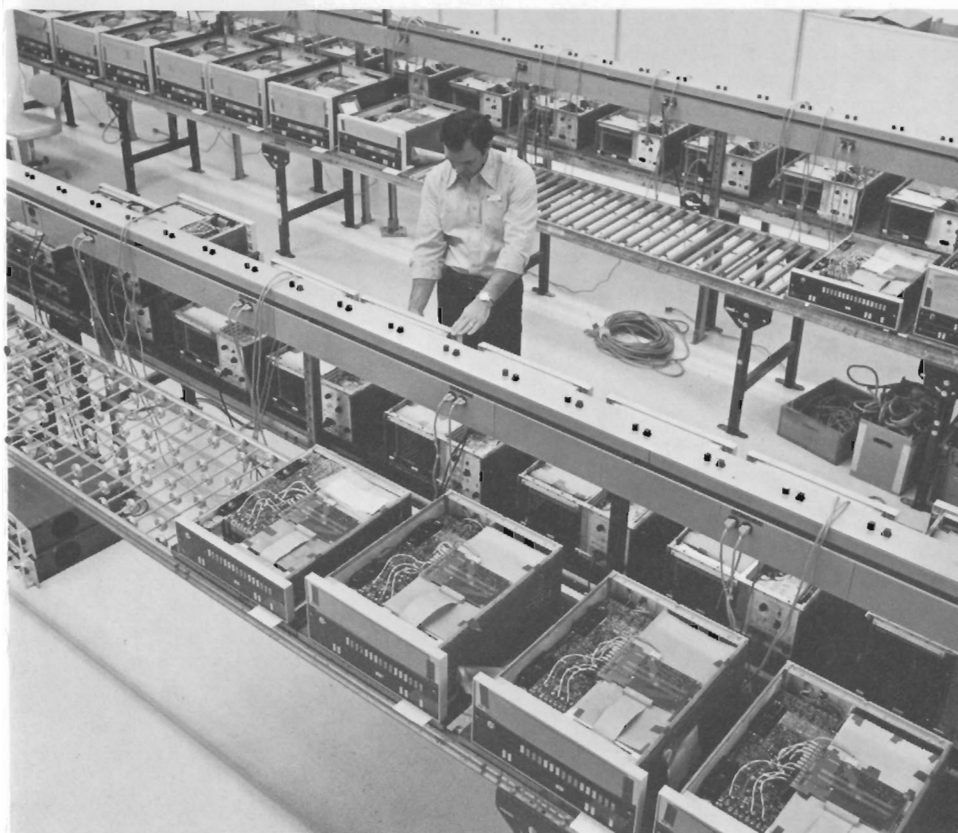
**Gail Logan**, a supervisor in Manufacturing Division and a 15-year HP veteran, feels that keeping the corporate objectives firmly in mind will do a lot to preserve the character of the company. "You can tell by reading those objectives that HP believes in doing a good job in a lot of ways. They show the company's consideration for the customer, the employee and every aspect of good citizenship — not just making a profit. Everything at HP seems geared toward accomplishing those goals. And when we find ourselves getting away from them, that's when we create problems."

To make sure supervisors were *not* getting away from them, the division included a discussion of the objectives and related policies in the agenda for a recent supervisory forum, according to Gail. "We discussed management by objectives, our concerns about 'the HP way' — what it means and whether we're losing touch with it — and all the things that make HP what it is. They're not easy to live up to, but I really think the company has been successful at it."

**Frances Walsh**, assembler in the Avondale PC area, says it is not as easy as it was 13 years ago to get around and meet people. "It's hard trying to keep the small-company style. You have to work at it. But in our own department we're very close, and that's what counts. Growth has brought prosperity. I've been able to provide a home for five children on my own."

**Robert Hofgaertner**, operations manager for the Instrument Division of GmbH and an employee since 1960, thinks the HP way is still alive although he suspects





that the percentage of employees who do not correctly understand the concept has risen: "HP still allows employees to find their own way; only starting points and goals are given. Our employees are used to the HP way and work accordingly, using their initiative and flexibility to make the best use of the resources of the large organization."

**Glenn Green**, marketing communications manager at New Jersey Division, thinks the changes he has observed over ten years at HP have all been for the better: "We now have a much larger reservoir of talent and resources to call on. We have more sales offices to represent us, more products to sell, and more public visibility. At the same time, we remain a relatively small unit. That's the key — to maintain local responsibility while making use of more interactive resources."

**Susan Lee**, order processing and traffic manager for Southeast Asia and the first local employee hired by HP in Singapore in 1969, thinks her division has done extremely well in relation to the corporate objective "Our People": "The company provides job-related training programs and

promotes from within wherever possible. HP Singapore has established competitive salaries and company benefits, and provided a pleasant working environment. During the economic recession, it didn't resort to retrenchment. Less attention has been given the 'Corporate Citizen' objective since other objectives demanded higher priority in a young and growing division."

**Gloria Viramontes**, quality assurance supervisor at Optoelectronics Division in Palo Alto, has only the best feelings about the company she has served for 13 years, and she doesn't think size has changed "the HP way" at all. But there are other changes: "The thing I miss is staying in touch with people. The company has gotten so big that I lose track of old friends, and there isn't the same togetherness we had years ago. And it takes longer to get to know new people in the division. There'll be times that I'll be surprised to see so many new faces in the cafeteria, and I wish I could get to know all those people."

**Jacques Brugere**, personnel manager at Orsay, thought he observed a signifi-

cant swing away from the HP management style during his ten years with the company, but that has since been changed: "At one time the French managers felt the HP way was fading away with more and more centralized management coming down the channels of verticalization and the horizontal lines of management. But today the pendulum of centralized versus decentralized management has returned to a more steady position. For me, the HP way is characterized by easy communications at all levels with attention and respect for everyone's contribution."

**Jack Carlozzi**, product line supervisor at Corvallis Division and an HP employee since 1956, believes that large size does pose a threat to the ability of people to be heard when they speak out as well as the ability of the company to respond. "When I started, the company had only 600 people. I can recognize the difference today. But management does strive for flexibility, for the personal touch. Actually, because of the company's large size, there are now more opportunities for achieving goals that you strive for."

**Rudi Almaschi**, Computer Systems salesman in the Boeblingen sales office, has seen some changes in the field as a result of rapid growth during his ten years with the company: "I'm convinced that HP has kept the flexibility of a small company at the level of product groups, but sometimes that is at the expense of not looking like a strong organization to customers. For example, several HP salesmen will call on the same account presenting different product lines with completely different purchase agreements."

**Cindy Wilber**, personnel assistant at General Systems Division, Santa Clara, has worked for large and small divisions during her 15-year HP career: "I definitely like the atmosphere and working relationships in a smaller division. I feel you can communicate on a person-to-person level more effectively. That's why I like the way HP splits a large division into smaller divisions according to product groups. People can take more pride in their work when they can see and understand the end result. Yet you still have all the benefits of growth opportunities of a large company."

□

*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 20 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 (blue 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 manage-

ment of each group has overall responsibility 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 Corporate 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.

### **Coordinating bodies**

Two coordinating bodies have special responsibilities:

**Executive Committee:** This includes the chairman, president, and executive vice presidents of Operations and Administration. The Executive Committee meets regularly in making coordinated decisions on a wide range of current operations and activities.

**Operations Council:** Members include the executive vice presidents, product group general managers, the vice presidents of Marketing and International, and the managing director of Europe. The Operations Council has primary responsibility for turning policy decisions into corporate action.

### **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).

□

# HEWLETT-PACKARD CORPORATE ORGANIZATION February, 1977

<b>BOARD OF</b>
Dave Packard
<b>CHIEF EXECUTIVE</b>
Bill Hewlett

<b>ADMINISTRATION</b>	<b>OPERATIONS</b>
Bob Boniface, Executive Vice President	John Young, Executive Vice President

<b>Corporate Staff</b>
<b>Corporate Controller</b> Jerry Carlson, Controller
<b>Corporate Engineering</b> Eb Reichtin, Chief Engineer
<b>Corporate Services</b> Bruce Wholey, Vice President
<b>Government Relations</b> Jack Beckett, Director
<b>Human Resources</b> Ray Wilbur, Vice President
<b>Patents and Licenses</b> Jean Chognard, Vice President
<b>Personnel</b> John Doyle, Vice President
<b>Public Relations</b> Dave Kirby, Director
<b>Secretary</b> Jack Brigham, Secretary and General Counsel
<b>Treasurer</b> Ed van Bronkhorst, Vice President
<b>Marketing</b> Al Oliverio, Vice President
<b>International</b> Bill Doolittle, Vice President

<b>Product Divisions</b>		
<b>INSTRUMENT</b> Bill Terry, Vice President and General Manager Ray Demere, Vice President	<b>COMPUTER SYSTEMS</b> Paul Ely, Vice President and General Manager	<b>COMPONENTS</b> Dave Weindorf, General Manager
<b>Divisions</b> Böblingen Instrument (Germany) David Rose Civil Engineering (Loveland) Bill McCullough Colorado Springs Hal Edmondson Delcon (Mountain View, California) Brian Moore Loveland Instrument Bill Parzybok Manufacturing (Loveland) Don Cullen Manufacturing (Palo Alto) Jim Ferrell New Jersey Art Darbie San Diego (California) Dick Moore Santa Clara (California) John Blokker Santa Rosa (California) Doug Chance So. Queensferry, U. K. Peter Carmichael Stanford Park (California) Rod Carlson	<b>Divisions</b> Automatic Measurement (Sunnyvale, California) Al Seely Boise (Idaho) Ray Smelek Computer Service Tom Lauhon Data Systems (Cupertino, California) Dick Anderson Data Terminals (Cupertino, California) Jim Arthur Disc Memory (Boise, Idaho) Dick Hackborn General Systems (Santa Clara, California) Ed McCracken Grenoble (France) Cyril Yansouni	<b>Divisions</b> Microwave Semiconductor (Palo Alto, California) Dick Soshea Optoelectronics (Palo Alto, California) Bob Zettler
<b>Operations</b> Japan	<b>Operations</b> Japan	<b>Operations</b> Singapore/Malaysia
<b>Instrument/Civil Engr.</b> Sales/Service Bob Brunner	<b>Computer Systems</b> Sales Ben Holmes	<b>Components</b> Sales/Service Milt Liebhaber

<b>U.S. and Canada Sales</b> Eastern: Rick Weaver • Midwest: Walt Wallin • Southern: Jack Corporate Customer
<b>International Sales and Marketing</b> Europe: Dick Alberding, Managing Director — Germany Marketing: F Intercontinental: Alan Bickell, Director — Japan: Kenzo Sasaoka • S Marketing:

**DIRECTORS**

Chairman

**MANAGERIAL OFFICER**

President

**OPERATIONS**  
Ralph Lee,  
Executive Vice President

**Groups**

<p><b>MEDICAL</b> Dean Morton, Vice President and General Manager</p>	<p><b>CALCULATORS</b> Bob Watson General Manager</p>	<p><b>ANALYTICAL</b> Emery Rogers, General Manager</p>
<p><b>Divisions</b></p> <p>Andover (Massachusetts) Burt Dole</p> <p>Böblingen, Germany Karl Grund</p> <p>McMinnville (Oregon) Bill Craven</p> <p>Waltham (Massachusetts) Lew Platt</p> <p><b>Operations</b></p> <p>Brazil Japan</p>	<p><b>Divisions</b></p> <p>Calculator Products (Loveland, Colorado) Don Schulz</p> <p>Corvallis (Oregon) Ray King</p> <p>Fort Collins (Colorado) Tom Kelley</p> <p><b>Operations</b></p> <p>Böblingen Brazil Japan Singapore</p>	<p><b>Divisions</b></p> <p>Avondale (Pennsylvania) Mason Byles</p> <p>Waldbronn, Germany Dieter Höhn</p> <p>Scientific Instruments (Palo Alto, California) Karl Schwarz</p>
<p><b>Medical</b> Sales/Service Bob Hungate</p>	<p><b>Calculator</b> Sales/Service Bob Rogers</p>	<p><b>Analytical</b> Sales/Service Dave Nelson</p>

**Corporate Development**  
Fred Schröder  
Director

**Research & Development**  
Barney Oliver,  
Vice President

**HP Laboratories**

Administration  
Dan Lansdon, Director

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.  
Paul Greene, Director

Corporate Libraries  
Mark Baer, Director

**Sales Administration**  
John Salyer • Western: Phil Scalzo • Canada: Malcolm Gissing  
Support: Carl Cottrell

**Subsidiary Administration**  
Eberhard Knoblauch • United Kingdom: Dennis Taylor  
Franco Mariotti  
Southeast Asia: Dick Love • Brazil (Manufacturing): Günter Warmbold  
Alan Bickell

*HP managers report:*

**“We’re in the best shape ever...”**

*“Management cannot be done by formula. To be effective you must apply common sense and judgment.”*

□ HP board chairman Dave Packard made that statement soon after opening the 1977 HP management meeting at Silverado, California, on January 10. In a brief review of the company’s performance in 1976, he indicated that HP people had made many sound applications of judgment and common sense to bring about some very satisfactory results in the face of a wide range of difficulties and challenges. And, looking ahead, he said the fine job done in 1976 had set the stage for a good year for HP in 1977. He added that he did not expect to see much variation in the way international affairs are conducted as a result of the change in the U.S. political administration.

A mood of optimism, good spirits and serious purpose prevailed throughout the meeting in the cool, sunny setting of Silverado. There were 117 HP executives on hand, representing all of the divisions and regions as well as major corporate functions. The participants discussed a broad range of topics including the government-business environment, corporate and group performances and outlook, management changes, proposed revisions and additions to the corporate objectives, personnel policies and practices, as well as ways and means of improving expense control, marketing strategies and R&D management. The following is a summary of some of the more general and non-confidential matters covered in the course of the meeting:

**“Strength to manage our future...”**

For openers, both Dave Packard and Bill Hewlett avowed their intention to remain in close association with the company for the next half-dozen or more years. Chairman of the board Packard, who will be 65 on September 7, 1977, said he would continue in that role. President and chief executive officer Bill Hewlett said he would resign those roles as of his 65th birthday on May 20, 1978. Thereafter he would take a key position on the board.

In making his position known, Hewlett said he considered it important to uphold the company’s policy on retirement, especially as a means of permitting new leadership to move up. He indicated great confidence in the leadership quality of the management team now in place. After outlining some of the recent changes made, he said: “It’s better now than ever before in the history of the company.”

On the same point, Packard noted that the company had greatly strengthened its management training program, and that he has been very impressed by the ability of the organization to staff its internal growth so capably. “We have the strength to manage our future very well,” he added.

(Two days later, at a meeting with nearly 100 security analysts and press representatives in Palo Alto, both of the founders provided some additional details on their personal planning. Family foundations will insure that there will be no unmanageable situations in regard to their HP stock.)



Exploring questions and sharing concerns are what the HP general managers' meeting is all about. Here, Marco Negrete, Computer Systems Group engineering manager, conducts a workshop session on R&D management at the recent meeting in Silverado, California.

The overall performance of the company in 1976 was reviewed by executive vice presidents John Young and Ralph Lee as well as Bill Hewlett. In general, they said, the HP organizations had done a fine job of trimming costs when it became evident that order rates would fall below target. A special commendation was due field sales people for a very conscientious effort in controlling selling expenses.

The improved "quality" of HP's earnings drew special comment. Earnings from the personal calculator line were now closer to the corporate average, and all product groups were contributing on a more equal basis to corporate profitability. This is a very healthy condition that will help HP avoid the effects of major ups and downs by a product line in particular demand.

Also contributing to improved performance was the job well done in controlling accounts receivable. On the other hand, inventories were above target at year's end, due to below-target orders, and will re-

*(continued)*



"We'll be around" sums up the plans that Bill Hewlett, left, and Dave Packard have regarding their relationships with the company over the next half-dozen or so years. As announced at the Silverado meeting, Dave will continue as chairman of the board of directors, while Bill will relinquish the HP presidency in mid-1978 but take a key role on the board.

quire attention to bring them into balance with orders. Basically, the company should aim to shorten the period of inventory turnaround, that is of the time between the ordering of parts and materials and the shipment of finished products. Several programs have produced significant reductions in the time required to process certain parts. However, some special problems exist where products are brought together for integration into systems.

Reviewing some of the factors involved in the company's long-range outlook, Fred Schröder, Corporate development director, pointed out that the path to continued growth for Hewlett-Packard lies in maintaining the quality of our products and in making those products more readily available to more people. He brought out that there is good opportunity to do this, citing instances among the top industrialized nations where our rate of market penetration is still quite low relative to the U.S. market.

## Managing the business...

Bill Terry, vice president and general manager of the **Instrument Group**, said the often-used description of the group as "mature" should be taken to mean "in the prime" and with lots of life left at 37 years of age. He noted that the past year was a good year for new instrument products — 76 in '76 — and that traditional HP instrument product lines accounted for more than 40 percent of total corporate shipments. He pointed to the group's important contribution in developing managers who are providing leadership in many other areas of the company.

For the future, the group will find itself concentrating on such areas as quality assurance, finding and filling the gaps in low-cost instrumentation lines, expanding the list of programmable instruments, developing better products at lower fixed-cost goals, and making it easier for the field engineers to serve their customers.

Paul Ely, vice president and general manager of **Computer Systems Group**, said 1976 was not only a successful year but also one of transition for the group. Milestones included reaching 10 years in the computer business, achieving a balance in the product lines, attaining profit goals, and bringing costs under control.



Among the six group managers reporting at Silverado was the newest, Bob Watson, who became head of Calculator Products Group last year. Like the others, Bob brought good news, putting HP's handheld calculator business into perspective as a solid contributor to profit in spite of some problems.

Now, he indicated, the group can really go to work on some important new challenges.

Ely reported some divisional highlights. Data Systems in Cupertino had a very successful 1976, and expects to expand the HP 1000 computer system in 1977. General Systems in Santa Clara had an outstanding year, doubling the installed base of new HP 3000 systems during the past six months. The Disc Memory Division faces the tasks of moving to Boise, Idaho, and of introducing a mainstay new product. The Grenoble Division brought out its first product development. Data Terminals ended 1976 with lots of momentum, and its terminals are having a major impact on HP's ability to do business in systems. Computer Service Division was launched during the year. Automatic Measurement Division is focusing on instrument subsystems, and will introduce several new systems products in 1977.

Overall, the group can expect to see continued emphasis on business basics, solid execution of new-product programs, capitalizing on short-term growth opportunities, and improvements in strategy and the means of managing it.

Reporting for **Calculators**, Bob Watson said the calculator systems business represented by Calculator Products Division in Loveland, and the Fort Collins Division had an excellent year in 1976 based primarily on the success of new products introduced during the year. Major growth opportunities have developed in two areas — small business accounting and information processing systems, and the use of calculators as instrument and systems controllers.

In the personal calculator area, APD (now the Corvallis Division) experienced many difficulties in moving their operations from Cupertino to Corvallis, Oregon. This proved to be a factor in the late introduction of several new products. Consequently, orders and profits were well below the original targets during the 2nd and 3rd quarters. With the announcement of the new products later in the year, the 4th quarter returned to more normal levels.

The significance of new products can be illustrated by looking at calculators



which are listed among the top ranking HP products for 1976, which didn't exist in 1975.

In many respects 1976 was the best year ever for the **Medical Group**, according to Dean Morton, vice president and general manager. Profits showed strong growth and assets were managed well throughout the organization. Still, there were problems — a slow start for international orders and some impact on domestic sales from government concern over the high cost of health care.

The group is projecting similar conditions for 1977 — that is, some problem areas but a good year overall. Contributing to that picture will be results from important R&D investments in the various product lines, plus an expected increase in big deal activity largely absent in FY 76.

In spite of complications and delays brought about by legislation, spending controls, and new government standards, technology is still one of the main hopes the medical community has for achieving high quality health care on a cost-effective basis.

For **Analytical Group**, 1976 was a vintage year of new products, according to group manager Emery Rogers. The group also saw a continuation of the resurgence in sales that followed the 1974 recession, thanks again chiefly to new products. Included in the 1976 crop were major items in all of the group's various specialties — gas chromatography, liquid chromatography, GC/mass spectrometry, nitrogen-phosphorus detection, and glass capillary system.

Now that so much of the heavy "front-end loading" in R&D investments needed to bring out so many new products is reduced, prospects for improved profitability are enhanced.

**Components Group** wrestled with some interesting challenges. Group manager Dave Weindorf reported the successful formation of two new divisions—Optoelectronics and Microwave Semiconductor — out of the former HPA. Business continued to be volatile, especially in those fast-moving markets using HP's light-emitting display products, including calculators and digital watches. Weindorf made note of a significant shift in the group's business. In 1973 some 35 per-

cent of components' shipments were internal to HP; last year internal sales were only 17 percent and due for even further reduction in the future. Meanwhile, selling through industrial distributors has grown significantly.

Goals for 1977 include starting the two-year development of the new San Jose

## Managing our human resources...

Many descriptions have been applied to HP's way of managing people. John Doyle, vice president-Personnel, offered the management participants an interesting paraphrase: "Hard-headed in general — but soft-hearted in particular." You can usefully and successfully be the latter, he said, only when hard, practical thinking has gone beforehand.

HP division managements should be able to rely on their personnel departments for much more than administration and essential records keeping. Important areas of personnel support should include good upwards and downwards communication, helping people fulfill their career goals, and seeking ways to foster better utilization of the extra human potential that exists in any organization.

To the people-management side of the business, Doyle said, personnel departments should bring new ideas, broad views, active and not just reactive participation, and a lot of local knowledge gained through moving around. They need to be friendly, creative, to be listeners, and outspoken. Moreover, they should set a good example by running a good department. And to do and be all of these, they'll need a good sense of humor!

According to Doyle, Corporate Personnel has a wide range of studies and projects underway in the areas of benefits and compensation. He noted that the term "guidelines" alone has been dropped in favor of "policies and guidelines" to give more strength and uniformity in particular areas — at the same time making sure that they are easily adaptable to local needs.

Discussing training, he said that while much has been accomplished, more remains to be done. By the end of 1977, he said, most courses necessary for supervisory training will have been developed and made available.

site for initial occupancy by MSD, maintaining stable employment in the face of volatile markets, finding new applications of existing technology, shifting to new technology, and achieving a broader product line while decreasing dependence on commodity-type sales.

Looking ahead, Doyle indicated that as the company grows and adds more and more divisions, it is going to be more difficult to hold the organization together. We need to be concerned about a certain lack of outward view, and a tendency to accept only "our kind" of people. Further, we need always to find ways of rewarding entrepreneurial activity — and to reconcile the demands of order and liberty, the two essential features of our organization.

**Affirmative Action** is more than a matter of complying with standards set by government agencies, according to Ray Wilbur, vice president-Human Resources. He noted that an increasing number of HP people are interested in our performance in this area. In addition, how HP does in its U.S. affirmative action programs has growing significance to its international operations. Out of the various programs, said Wilbur, have come ideas and programs that often are useful to our personnel practices around the world. Greater utilization of the capabilities of minority people and women in all of our global locations will prove of importance in our being a leader in these communities.

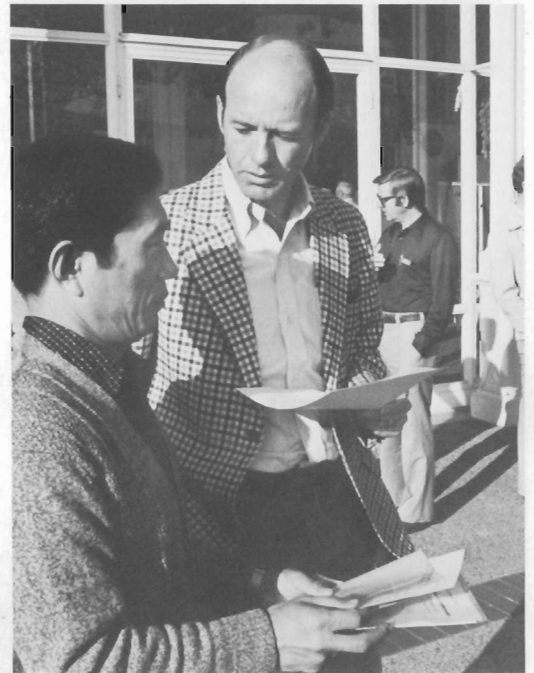
Wilbur pointed out that measuring our performance in affirmative action has two benefits. One, it provides the data and comparisons needed to inform the monitoring agencies including the corporation. But mainly, it leads to more opportunities for minorities and women, to the ultimate benefit of all. In this respect, he noted that in the ten years from 1966 to 1976, the HP employment population in the U.S. grew 2.75 times while the minority segment grew 6.5 times. He added that the three key areas of hiring, promotion and equal pay of minorities and women will require continuing attention by HP managers.

*(continued)*

**the management meeting —  
a worldwide gathering ...**



Franko Mariotti, European marketing manager (left), discusses calculator business with Tom Kelley of Fort Collins Division.



Ken Sasaoka, president of YHP (left), gets together with Dean Morton, vice president and Medical Products Group manager, to review the medical market in Japan.



Corporate Development director Fred Schröder (left), hears from Bob Brunner, Instrument Group marketing manager, and Karl Grund of Böblingen Medical Division.



Don Schulz, Loveland facility (and CPD) manager (left), meets with Kleber Beauvillain, manager of HP France.

## The management of money...

A wide range of the HP management discussions concerned money — how to protect the value of our revenues, how to put the cash to profitable use once we have it, and what's planned for capital spending in 1977. From these often quite technical presentations MEASURE extracted the following general themes:

The various means we can and do employ to protect our international organizations and revenues from exposure to inflation and currency fluctuations were outlined by assistant treasurer George Newman and Intercon director Alan Bickell. Typical protective techniques are to borrow in local currencies, retain a minimum of assets in local currencies, and on the other hand to increase dollar assets and decrease dollar liabilities abroad. Where fixed commitments (order backlog) are

involved, arrange parity-adjustment clauses and forward-exchange contracts. Our philosophy is always to preserve the U.S. dollar profit.

Jerry Carlson, corporate controller, said that U.S. companies will increasingly be required to develop new ways of comparing the cost of doing business today with the costs in prior years. It's called "inflation accounting" and is being sought by the Securities & Exchange Commission ostensibly on behalf of investors.

Frank Schlegel, Corporate tax director, described the tax environment in which HP is presently operating. He noted that the 1976 Tax Reform Act would affect virtually all U.S. organizations as well as the personal taxes of U.S. residents. In most cases the effects are adverse.

Sticking to its guidelines — no borrow-

ing, but using internally generated funds — HP will make a \$120 million investment in capital assets during 1977. This will be up almost \$20 million over 1976. Bruce Wholey, vice president-Corporate Services, said the allocations would be \$75 million for land and buildings and the balance for machinery and equipment. He noted that the cost of a building such as at Cupertino had risen in 13 years from \$15 to some \$35 per square foot. Moreover, where special features are required as in lab and IC facilities, that cost can easily double. This calls for a full consideration as to the need for a building project before commitments are made as well as continuing concern for its efficient use.

## Some areas of concern...

Some of the most fruitful discussions at Silverado took place when HP managers broke into small groups, rolled up their sleeves and tackled three challenging subjects in the workshop sessions.

### Expense control

One of the subjects covered was "expense control based on actual performance," and the discussion leaders were the heads of four HP product groups: Dean Morton (Medical), Bob Watson (Calculators), Paul Ely (Computer Systems) and Emery Rogers (Analytical).

The discussions centered around some hypothetical case histories, summarized by workshop spokesman Emery Rogers: "The first was one in which, rather suddenly, real trouble develops. Case number two was one where there was potential trouble, and the third case represented a rapid and dramatic turn for the better. How would we manage our business under those three circumstances?"

Many ideas, and some general consensus, emerged from these sessions. It was agreed that in the case of real economic crisis, expenses should be cut to the bone. There were a number of spe-

cific suggestions for lowering costs. On the positive side, the steps suggested were to try to increase sales by identifying potential markets better, speeding up the introduction of new products, and perhaps conducting R&D programs aimed at short-term payoffs. Other possible strategies included emphasizing peripheral products and extending credit.

It was felt that cost-reduction goals should be rather dramatic. "If you go for only a ten percent cost reduction," Emery Rogers explained, "you're likely to get five percent. But if you go for a thirty percent cost reduction, you might achieve it. That gets everybody's attention. It was also brought out that you have to cut back expenses by about thirty percent to offset a sixteen percent order fall-off — as we had in this example — and to maintain the profit target. This is a very, very difficult thing to do."

It was agreed that managers should always communicate honestly with their employees in such a crisis. "It's amazing what solutions will come forth when you get everybody working on the problem."

In the second case, that of potential trouble, the approach discussed was to "get more data" and make more person-



Emery Rogers reports for expense-control workshop.

to-person contacts with the field in order to produce more accurate forecasts.

"It was mentioned over and over that we should get the message across to everyone in the organization about the sensitivity of profits to shipments. When ship-

*(continued)*

## areas of concern

ments are down ten percent, this generally means profits are down about fifty percent.”

It was agreed that such a situation presented an opportunity to examine operations closely and get away from “fat cat” thinking. Capital spending should be reduced by “a little foot-dragging” on building plans and labor-saving devices. Resources should be allocated to short-term, high-priority projects. Managers should be sensitive to lab morale, it was suggested.

The greatest controversy, surprisingly, concerned the third case — what to do on the upward side of the business cycle.

Basically, the disagreements concerned just how aggressive or conservative a division should be under these circumstances. “Many people feel you should hold your dollar expenses on the up side,” Emery reported. “Others say no, that you should grab the opportunity in a big way.” Some managers advocated “rolling” targets, some felt selected expenditures should be increased, and others thought this was the time to make permanent gains in competitive markets.

“Don’t count your chickens before they’re hatched” was the more conservative advice given. “Redirect priorities, but don’t exceed targeted expenses. Change the forecast, but not the target.”

Managing when business is good, according to some, is more challenging than during adversity. And the most foolish words of all are “We’ve got it made!”

## Marketing strategies

Leading the workshop on “marketing strategies for the future” were Vice President Al Oliverio and group marketing managers Bob Brunner (Instruments), Ben Holmes (Computer Systems), and Bob Rogers (Calculators). General subject areas discussed were: selling across group lines; channels of distribution; customer services; and the effects of marketing and selling on our pricing structure.

The world of HP’s customers is not always organized the way our company is, explained Ben Holmes in summarizing the sessions. The challenge is to match up HP’s selling organization to the customer’s needs. “It should be done in a way that’s logical and explainable both to the customer and the field engineer.”

Along with the blessings of “verticalization” — that is, of each product group



Al Olander leads one of the R&D sessions.

having responsibility for its own products and its own sales force — there are also some conflicts and overlaps between groups. As the capabilities of calculator systems approach those of small computers, for example, the distinctions between calculator selling and computer selling become blurred. HP could reorganize its group structure when major “gray areas” appeared, or we could organize to effectively sell products across group lines as we do to a limited extent now. A third option would be to have a sales organization independent of the product groups. No conclusions were reached, the objective of the discussion being to bring out observations and suggestions for further consideration.

Workshop leaders also questioned whether HP needs new channels of distribution in order to reach new markets or lower the field selling cost in certain product areas. It was pointed out that each channel of distribution carries an inherent cost that’s very difficult to change. “For instance, if you’re selling consumer goods through retailers who have a traditional 40 to 50 percent markup you have a situation that’s vastly different from the 10 to 20 percent cost of our own sales force,” Ben Holmes explained. “So when we’re developing a new product, we have to plan for the particular channel of distribution we’re going to employ. Its cost should be considered very early on, because it’s almost impossible to change.”

Another future marketing consideration is the fact that the types of services customers want are constantly changing and growing. It seemed to the workshop participants that customer training could, in many cases, preclude the need for HP to provide expensive on-site services. “If we do a better job of training the customer, he will keep himself out of trouble. This will minimize the number of problems and phone calls we get later.” Technology could also provide improved customer support through such techniques as remote trouble-shooting.

The discussion revealed some customer concern over differing warranty conditions on various HP products. “We could do a much better job of setting warranty policies that are reasonable and understandable to the customer. It’s true that our wide diversity of product lines require different warranties, but they should be complementary and should assure best

overall customer satisfaction. This is particularly important in systems which comprise the products of several groups.”

### Managing research

In another workshop, participants addressed the question: “How can we improve R&D management and strategies?” The sessions were moderated by engineering managers Al Bagley (Instruments), Marco Negrete (Computer Systems), Ed Olander (Calculators), and Eb Rehtin (Corporate), who concluded that R&D management techniques at HP are generally good, with some improvement needed in specific areas.

In breaking down the overall question, several others were asked. One was: “To what extent do we have to enter new fields?” It was agreed that this depends on the rate of growth we’re aiming for. A modest growth rate could be achieved with present product lines; on the other hand, in technologies such as computer products, rapid growth is necessary just to stay in business. Since the question of growth rate is related to R&D, it was pointed out that if growth is too low there are not enough new opportunities for HP people. If it’s too high, it’s difficult to finance.

The second question entering into this discussion was: “Where do new fields and product areas come from?” HP Labs contributes many — especially in totally new technologies — but the divisions contribute many product ideas that are extensions of current technology. Some participants felt the profit-and-loss picture in a division weighs heavily in the emergence of new ideas; others felt it had more to do with the number of projects already being pursued.

“There are lots of ways ideas can be generated,” spokesman Eb Rehtin said, “and it depends on the kind of ideas you’re looking for. A lot of spontaneous ideas for products come from individuals. Others can be generated by committees, and these ideas tend to be in the nature of more complex systems architecture.”

How do we select which ones to pursue? “There was considerable concern about this in our workshops. When we do see a good idea, how can we make sure we have a management mechanism that picks them up, looks at them properly and tries to find a home for them — if they should have one — and then pro-

ceeds to exploit the idea?” It was a subject that seemed to generate more questions than answers.

Where do the strategies come from? In established product lines, the strategies tend to come from the divisions’ engineering labs, with inputs from the marketing and sales functions. In areas of new technology, it was felt that strategies should come from the product groups rather than the divisions. Also noted was the fact that divisions tend to be product-oriented and the group organizations more closely market-oriented, and that in some cases a more aggressive group overview might be needed.

Workshop participants discussed ways of managing so as to capitalize on good ideas, and a number of suggestions were made. The ideas — and perhaps the people as well — can often be transferred from the divisions to HP Labs for some period of time. Ways of reorganizing the company’s R&D effort were discussed, and pro and con arguments were brought out. “It was mentioned that we talk a lot about technical innovation,” Eb reported, “and perhaps aren’t doing enough innovation in manufacturing, marketing and sales. We also concentrate quite a bit on new technologies for existing markets, but who’s supposed to be thinking about applying existing technologies to new markets?”

Designing for manufacturing efficiency — a more important consideration in lower-cost products — was discussed, and there was some concern about sacrificing quality for the sake of efficiency. “Quality can suffer from such things as inadequate design of the tools we need and inadequate testing. If we want to get costs down, one approach is to come out with a conservative design when we go into a new product area, then put some engineering into it to bring the cost down once we’ve gotten established.”

Present management techniques, it was concluded, are necessary and sufficient for existing product lines. Improvements can be made in selected areas such as new products, architecture, and languages, and it was thought that increased emphasis on R&D at the group level would be worthwhile. “Finally, the best and fairest measurement of R&D performance is comparison with the competition, and a good measure of its health is the enthusiasm and dedication of the people in it.” □



# 1976 revisited

## January

HP Vice President Bill Terry elected chairman of Western Electronics Manufacturers' Association (WEMA)...Newly-formed Microwave Semiconductor Division moved into leased building in Palo Alto . . . Formation of the Fort Collins Division announced in Loveland, Colorado, and site search begun in Fort Collins . . . Jose (Pepe) Grapa named Latin American area manager for Intercon . . . HP's *Measurement/Computation News* received achievement award from *Sales & Marketing Magazine* . . . Work begun on 107,000-square-foot addition to Avondale (Pennsylvania) plant.

## February

HP reported 11 percent increase in sales, 18 percent decline in earnings for first quarter, fiscal '76 . . . Makro, international chain of wholesale stores head-

quartered in Amsterdam, ordered 21 HP computer systems worth \$6 million . . . Dick Alberding, managing director of HPSA, appointed to HP Operations Council . . . Maurice Merkt, retired HPSA director and legal counselor, passed away in Geneva . . . HP's eleventh annual European management meeting held at Montreux, Switzerland . . . First session of Management Seminar, a corporate training program for new functional managers, held in Palo Alto.

## March

Larry Motzkus, corporate benefits manager, killed in scuba-diving accident in Bay Area . . . Bomb exploded outside HP Labs' Deer Creek facility, damage estimated at \$75,000 . . . Plans announced for second building for the Corvallis (Oregon) Division . . . Cyril Yansouni named general manager of Grenoble (France) Division.

## April

San Francisco attorney Robert Kirkwood joined HP as government affairs administrator . . . President Bill Hewlett accepted campaign chairmanship of United Way of Santa Clara County . . . Employee donations to HP scholarship fund increased 30 percent over previous year . . . Chairman Dave Packard honored by World Trade Club of San Francisco for contributions to international trade.

## May

Frank Cavier retired as vice president and secretary after 34 years with HP . . . Jack Brigham named HP secretary and general counsel . . . Jean Chognard elected to newly-created position of vice president-patents and licenses . . . First-half financial results showed 13 percent increase in sales, 1 percent decrease in earnings . . . Ray Wilbur named vice president of human resources, John Doyle succeeded him as director of personnel . . . Computer Systems Group formed Customer Service Division, appointed Tom Lauhon general manager . . . Bill Hewlett and Dave Packard awarded Vermilye Medal by Franklin Institute . . . Phil Towle, corporate construction manager, retired after 25 years . . . HP took options on San Jose, California, building site (later dropped) . . . Bill Hewlett awarded honorary Doctor





of Laws degree from Yale . . . Larry Turner named to new position of advertising and sales promotion manager, Computer Systems Group . . . HP distributed nearly \$9.6 million in profit-sharing funds to employees.

#### June

Fred Schroeder appointed director of corporate development . . . HP dropped options to buy San Jose land, citing title clearance problems . . . Addressing business people in Chicago, Dave Packard called for honesty and integrity in business . . . Dr. Stephen W. Director, University of Florida professor, awarded HP-sponsored Terman Award . . . Harald Friis, former research consultant to HP and pioneer in microwave technology, died in Palo Alto . . . Employee-funded scholarship program awarded \$73,500 to high school graduates in U.S.

#### July

John Doyle elected vice president-Personnel . . . George Newman elected assistant treasurer and an officer of the company . . . Bob Watson appointed general manager, Calculator Products Group, succeeding George Newman . . . Al Bagley named engineering manager of Instruments Group, Marco Negrete engineering manager of Computer Systems Group . . . John Blokker succeeded Bagley as general manager of Santa Clara Division . . . Vik-

ing spacecraft landed on Mars, with help of HP diodes and transistors from Components Group . . . Plans for fencing many HP facilities moved ahead as tighter security measures implemented . . . HP's Loveland community struck by devastating flash flood on Big Thompson River.

#### August

Third-quarter results showed sales for the first nine months of '76 up 15 percent from '75, earnings down 9 percent . . . Norm Neely, founder of sales organization that became the Neely Region, retired . . . HP chosen to participate in Energy Efficiency Exhibit at Wescon '76 . . . Art Darbie named general manager of New Jersey Division.

#### September

Paul Ely, general manager of Computer Systems Group, elected vice president . . . Two HP products — the 2644A CRT terminal and 3465A digital multimeter — honored by *Industrial Research Magazine* as significant new technical products . . . HP Europhysics Award presented to Professor Wolfgang Helfrich of Freie Universitaet in West Berlin . . . HP began experimental vanpooling program in Bay Area . . . Don Schulz appointed general manager of Calculator Products Division, to continue duties as Loveland facility manager.

#### October

Bill Parzybok appointed general manager of Loveland Instrument Division, succeeding Don Schulz . . . Noel "Ed" Porter, vice president and HP director, died during heart surgery . . . HP plants and offices in the U.S. conducted United Way and United Fund drives in support of community services . . . HP marked tenth anniversary of its computer business . . . Disc Memory Division formed in Boise, Idaho, to take over manufacture of disc products, Dick Hackborn named general manager.

#### November

HP obtained options on another San Jose site near airport for Components plant . . . Midwest Sales Region began moving its headquarters from Skokie, Illinois, to new building in nearby Rolling Meadows . . . Strong fourth quarter boosted fiscal '76 sales to more than \$1.1 billion, up 13 percent over '75, and earnings increased 8 percent.

#### December

Profit-sharing checks totalling over \$13.6 million were distributed to 27,500 eligible employees . . . Andover (Massachusetts) Division moved into its new building on the Merrimack River.



# Talk about hitting targets!

When the Instrument Group started 1976 it recognized an opportunity to celebrate the U.S. bicentennial year in a unique way—by introducing at least 76 products. When the final tally was taken, vice president and group manager Bill Terry was able to announce a bullseye—but with not a plug-in to spare. The result was clearly an achievement for the Instrument divisions and cause for some celebration. A review of just a few of these products, as well as key products introduced by other groups during the past year, is offered on pages 2 to 5.

## Measure

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