COMMENTS ON THE CHANGING HP SCENE
—AND THE PEOPLE BEHIND IT.

The corporate organization chart reproduced as the centerspread of this issue paints a pretty broad picture of the company. Its basic elements are some 42 product divisions supported by 15 major field sales and service organizations plus 14 corporate departments and the top-management team.

To a certain degree the HP chart follows the standard approach of such documents in showing reporting lines and levels of authority. However, the HP design deliberately emphasizes an even more important aspect: the central role of the factory and field selling organizations and the supporting role of the corporate and other management departments.

At the very heart of the HP organization (and the chart) are the product divisions and the sales regions. In the April/May 1975 issue, Measure took a look at their special geometry.

A triangle was drawn to represent the three “line” departments of a division—R&D, marketing, and manufacturing (sometimes jointly known as a “triad”) that have a primary responsibility for product lines. Around the triangle and touching all points we drew a circle.

The sales and service organization has its own geometry, beginning with two circles. The inner core represents the support provided by the sales administration—the regional managers, country managers and their staffs. The various sales and service forces are represented by segments in the ring created by the two circles. They face out onto the wide world of HP customers—a very large sphere in its own right.

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Around the triangle and touching all points we drew a circle. Its three segments are meant to represent the three main supporting functions—finance, quality assurance and personnel. By turning the “dial” these supporting departments can be in touch with any of the line departments.

All of the six departments are always in ready contact with one another. But where does the division manager fit? This was solved by placing the GM right in the middle—at least for a start. Actually division managers can or should move around a lot, or keep an open door when they can't. Their job is to keep the circle rolling along harmoniously and profitably.

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<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4</strong></td>
<td>The changing fabric of Southeast Asia</td>
</tr>
<tr>
<td><strong>9</strong></td>
<td>From superb to superb</td>
</tr>
<tr>
<td><strong>11</strong></td>
<td>The Hewlett-Packard organization</td>
</tr>
<tr>
<td><strong>13</strong></td>
<td>Organization charted</td>
</tr>
<tr>
<td><strong>15</strong></td>
<td>Getting a charge out of HP</td>
</tr>
<tr>
<td><strong>16</strong></td>
<td>Closeup</td>
</tr>
<tr>
<td><strong>20</strong></td>
<td>Your turn</td>
</tr>
<tr>
<td><strong>22</strong></td>
<td>Newsclips</td>
</tr>
<tr>
<td><strong>23</strong></td>
<td>A message from John Young</td>
</tr>
</tbody>
</table>

**PREVIEW**

- The changing fabric of Southeast Asia: Singapore and Malaysia are striving for more advanced roles in the industrial world. HP operations there are helping lead the way.

- From superb to superb: When you're in the upper one-half of one percent of U.S. companies surveyed during the past two decades, how can you improve? HP employees suggested lots of ways, and the company's doing something about those Open Line recommendations.

- The Hewlett-Packard organization: HP's success in keeping a small-company atmosphere in a multi-billion dollar corporation is due in part to the organization's structure. Here's why the company is organized the way it is.

- Organization charted: This special Measure pull-out section depicts the new HP organization.

- Getting a charge out of HP: There's enough power in a plastic foam cup to destroy most integrated circuits. It's Kim Gray's job to control that static electricity.

- Closeup: When aerial shells exploded over San Diego, Ron Dixon sat back and grinned. In this month's Closeup you'll meet HP's programmer-turned-pyrotechnician, a computer that goes to swim meets and a mother of invention.

- Your turn: There are a lot of issues that affect Hewlett-Packard: the economy, environment, social changes and technology are just a few. If you've got a comment or question about HP and its surrounding world, it's your turn to speak up.

- Newsclips: Major changes in organization and management are announced by the Computer groups.

- A message from John Young: Maintaining the Open Door policy is essential to the company's basic philosophy of openness and fairness.
In Singapore, some 2,000 HP employees manufacture a variety of increasingly sophisticated products.
Ten years ago, Penang was a rather sleepy island off the Malaysian mainland, known mainly for its spectacular beaches and tourist attractions. The island still attracts tourists, but it has also become a major manufacturing center, particularly for the electronics industry.

The coming of large-scale industry has irrevocably changed the face of the island. Today the roads are crowded with cars and motorcycles, and such signs of affluence as television sets, stereos and other consumer goods are widely evident.

Four hundred miles to the south, the winds of change are also blowing across the island-state of Singapore. An industrialized nation for some time, Singapore is now embarked on an ambitious "second industrial revolution" designed to move it from being a center for cheap labor to a center for high technology services.

Most of the HP production operators in Malaysia and Singapore are women, although an increasing number of men are being hired.

HP is playing a role in each of these transformations. When the company opened manufacturing operations in Singapore in 1970 and Malaysia in 1973, the emphasis was on producing labor-intensive components and computer core memories for plants in the U.S. Like other multinationals at that time, HP went to Southeast Asia because labor was plentiful and costs were low.

Today the picture has changed dramatically. In Singapore, nearly 2,000 employees manufacture a variety of sophisticated products, including instruments, consumer calculators, data cartridges and increasingly complex components. The plant no longer produces just for Singapore and the U.S., but now supplies products directly to most world markets. Together, HP Singapore and Malaysia turn out 90 percent of all components for the company's operations around the world, and it's claimed that HP Singapore is the
world's largest data-cartridge manufacturer.

The changes are having a profound effect on the way companies treat their Southeast Asian manufacturing operations (see box).

The two countries' social structures are in transition as well. In Malaysia, young women who probably would have married young and stayed in their traditional rural kampongs (villages) now don the uniforms of multinational electronics companies and go out to work in factories. They are more affluent and independent than they have ever been.

Rohaiya Bte Yusuff, an HP Malaysia production operator, is one of these young women. Just 19, Rohaiya has been with HP about a year. Like a number of HP Malaysia employees, she lives with her family in a nearby kampong and commutes to work on a company bus.

Her day begins at 5:30 a.m. While most of the other members of her large family are still asleep, she slips on her company-provided light blue uniform, grabs a quick breakfast of Malaysian style hot chocolate and buttered bread with sugar sprinkled on top, and sets off down the small dirt path of the kampong that leads to a main road. She catches a 6:20 bus which gets her to work in time to start at 7 a.m.

In both Malaysia and Singapore, HP is considered one of the best companies to work for, and is well-known for its "people policies." The HP Way is alive and thriving, despite the inherent cultural differences, although some facets still present a challenge. For example, the HP Open Door policy (see John Young's message, page 23) is a

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**a strategy of partnership**

"In the past, HP's overseas manufacturing tended to be seen as job-shop work which was farmed out. More and more, the U.S. divisions are looking at operations here as an integral part of their operations," says Lee Ting, managing director of Southeast Asia manufacturing operations. "We are no longer subcontractors. When divisions do their long-term planning, we are part of the equation."

HP Singapore, in fact, is adding a new dimension by staffing up for R&D work. R&D teams will be working on instruments, data recording devices and software for desktop computers.

These fledgling R&D efforts and the general trend toward manufacturing more complex products are consistent with Singapore's "second industrial revolution," the government's new far-reaching program of economic restructuring and upgrading.

In HP's case, the objective of Southeast Asian manufacturing operations has already shifted from labor-intensive production to full scale cost-effective manufacturing, according to Lee Ting.

"Cost-effective manufacturing is good, creative use of labor, and Singapore and Malaysia are becoming leaders in this field," he explains. "Our people here are constantly looking for better, smarter, more efficient ways to manufacture. We strive to bring in good professional engineering people who can help achieve this result."

So far these efforts have been very successful. A 10 to 15 percent improvement in standard production time is achieved when U.S. products are transferred to Singapore and Malaysia. Productivity is also high. According to Tan Soon Lee, HP Malaysia's optoelectronics product line manager, productivity in his group has averaged a 25 percent increase over the last three years.

"We're automating whenever possible," he notes, "and modifying our equipment to reduce handling time. We've even invented some of our own equipment."

Liong Wong, Singapore's manufacturing manager for desktop computers and acting manager for oscilloscopes, adds that HP's Southeast Asia operations have some special strengths which help increase productivity.

"In data cartridges, for example, we work almost three full shifts, which helps in terms of better utilization of assets. Also, we're set up to produce on a continuous basis instead of in batches.

"We also spend a lot of time training, developing and upgrading the skills of our production people," he adds. "It helps that our operators are really motivated and want to beat their own time and output records. Here it's a matter of pride."

Quality control and product improvement are also emphasized, says Liong.

"Our production and process engineers have been focusing on product reliability and improvement. We've made a lot of engineering improvements in
bit harder to implement in Southeast Asia, admits Malaysia plant manager Koh Loke Seng. “Our production operators are still somewhat reluctant to speak out,” he says. “This is not a culture that encourages speaking out, particularly by women. However, we are emphasizing the Open Door and using extended coffee breaks and other methods to encourage comments. Our main philosophy is that we want more people-oriented management than strictly production-oriented management. We tell our managers that they must walk through that open door to meet people because right now a lot of people are too shy to come in.”

accuracy, reliability performance and quality.” Both Singapore and Malaysia have also begun to organize production employees into quality control circle teams to get worker input on streamlining the manufacturing process. Singapore has six pilot circles in operation, and Malaysia nine. Seven U.S. divisions now have operations in the two Southeast Asian plants.

SINGAPORE
Corvallis Division
personal calculators
integrated circuits
Optoelectronics Division
optoelectronic devices
Desktop Computer Division
data cartridges
cartridge drive mechanisms
magnetics
Colorado Springs Division
oscilloscopes
New Jersey Division
analog meters

PENANG
Optoelectronics Division
optoelectronic devices
Microwave Semiconductor Division
hot carrier diodes
Data Systems Division
core memories

Rohaiya Yusuuff works to the beat of piped-in American rock and popular music at the HP Malaysia plant.

At night she returns home to a traditional family life in the kampong.

Much of the reluctance to speak out can be traced to strong cultural feelings, and the fact that Southeast Asian society is somewhat more hierarchical than that in the West. Despite working at high technology jobs, many employees are still deeply rooted in traditional culture. Rohaiya’s life off the job is very traditional. She lives with her parents, two sisters, two brothers, their wives, three young children and a grandmother in a large, airy wooden house built on stilts. While the house lacks some modern conveniences (such as indoor plumbing), it is comfortable and ideally suited for the hot and humid Malaysian climate. Relatives live nearby and much of Rohaiya’s leisure time is spent visiting with them or else bicycling with friends who also live in the area.

Life moves slowly and peacefully in the kampong, and residents for the most part have a rural lifestyle that Malaysians have followed for generations. There is a sense of community and warmth evident even to an outsider, and the kampong remains an oasis of traditional values in the midst of a rapidly changing society.

But kampungs, too, have been affected by the coming of industry. More and more residents, particularly young people, leave the villages to work in factories, and as they become more affluent and independent, often take up residence in the modern apartments and houses being built in Penang. Rohaiya’s kampong is scheduled eventually to be razed and residents relocated in order to widen the road leading to Penang’s new airport.
Ruhaya Husleln, production lead in the calculator department at HP Singapore, has been with the company for nine years.

Like a high proportion of Singaporeans, Ruhaya and her family live in a government-built high-rise housing estate.

In Singapore, another HP production worker leads quite a different life. Ruhaya Bte Hussein, a production lead who has been with HP Singapore for nine years, lives with her husband and young daughter in a large government-built high-rise housing estate.

Mohammed Ali, Ruhaya's husband, is a carpenter, and their six-year-old daughter, Noraiyen, attends primary school. Their one-bedroom flat is basic, but nicely decorated and comfortable. A stereo and color television stand at one end of the room, and one of the family's favorite TV programs is "Dallas."

Ruhaya works at HP Singapore's five-story complex, a plant that has been described as one of the most attractive in the country. HP's facility isn't really very different from company factories in other parts of the world. The traditional HP open-space arrangement, bright decor and cleanliness are also evident here. And many of the company's recreational activities are a part of HP life in both Singapore and Malaysia.

Ruhaya is a champion netball player, and practices with her team from the factory twice a week. She is also active in a marching group which each year takes part in the annual Singapore National Day parade.

Like her counterpart in Malaysia, Ruhaya has strong ties to traditional culture. Devout Muslims, she and her husband observe the month-long fasting period preceding Hari Raya, the Muslim New Year. During the fast, devotees are not allowed to eat food or drink fluids between 5 a.m. and 7 p.m.—a custom designed to remind the faithful of the perpetual hunger pangs of the poor.

But there are few poor in Singapore. The economy is flourishing, there is little unemployment, and the government sponsors low-cost housing, medical care and other basic services such as child care centers and schools.

Singapore is very much an urban society, but progress is never problem-free. As lives of Singaporeans shifted and concentrated into large housing estates, such as the one where the Husseins live, people from different areas and cultural backgrounds were suddenly thrown together. As a result, a lot of the cohesiveness and unity of more traditional living patterns has disappeared.

Currently, the government is sponsoring residents' committees in the housing estates to promote neighborliness and social cohesion. The committees set up talks, shows, festival celebrations, sports events and clean-up campaigns in an effort to rebuild social intimacy.

A neighbor of the Husseins typifies an attitude of some housing estate dwellers. While he recognized the positive aspects of living in the estates, he also voiced fond memories of his former life.

"I grew up in a kampong," he said, "and life was good there. It was not perfect, but in some ways it was better."
One year ago, Hewlett-Packard asked 8,000 of its then-38,000 U.S. employees how they felt about the company, their jobs, fellow employees, supervisors, managers, pay and benefits. HP got the answer—in fact a lot of them. Overall, the results of last fall's Open Line attitude survey seemed to reiterate the oft-spoken phrase "HP is a good place to work."

Employee's high opinions of the company placed HP in the upper one-half of one percent of more than 1,000 companies studied in the past 25 years, according to survey experts.

But Open Line also has given employees the chance to make HP an even better place to work. Since the day when the raw data was released eight months ago, thousands of employees have found themselves caught up in analysis sessions, Open Line task forces and response committees. Countless hours have been spent turning opinions into problem statements, and statements into concrete actions.

"Management was aware of most of the concerns that surfaced in Open Line sessions," said John Doyle, vice president of Personnel. "The results only confirmed what we felt was true, and gave us areas to focus on."

As expected, most of the analysis and actions have taken place at the local level in response to local problems. Starting in March at U.S. divisions and sales regions, analysis groups of 10 to 12 employees investigated concerns, identified problems and recommended actions (see next page).

Open Line has given division and region management many opportunities for innovative leadership. For example, Waltham Division compiled its 67 problem statements in a 95-page feedback report that listed each problem, recommendation and action. The division formed 13 task forces to develop action plans and define who should take the action, what action should be taken and when the action would take place.

Problems which cut across division or region boundaries were bumped up the Open Line ladder for action at the group or corporate level. Most of these concerns dealt with company-wide programs and philosophies such as pay, benefits, Management by Objective (MBO), Open Door, the HP Way and Management by Wandering Around (MBWA).

HP's job-posting program was one area where analysis groups felt improvement was needed. "The response didn't catch us off guard at all," said Jim Herbst, manager of Corporate experienced employment. Jim and his staff had been revising the job-posting system since August of 1979.

One of the problems that had plagued the job-posting program since its inception in 1977 was the volume of applicants. Many employees were left in limbo about the status of their applications. Today a copy of the application is returned to the employee to clear up any confusion.

Another Open Line concern was solved when it came to interviewing internal applicants. The new policy calls for at least the 10 best qualified HP applicants to be interviewed. "This means that in most cases you're pretty much guaranteed an interview," explained Jim. "You may not be a finalist, but at least you have the chance to sell yourself."

The Corporate benefits area was able to make a number of simple administrative changes to respond to employee Open Line suggestions. In changes that went into effect in September, employees may now enroll dependents in the dental program even if they do not have HP medical coverage.

"It was an easy change for us to make," said Art Young, benefits manager. "It takes into account the growing number of..."
two-income families, one member of whom might not be offered dental coverage."

Another administrative improvement of the company's medical insurance program went into effect at the same time. Previously only one insurance card (which most hospitals require for admission) was issued to an employee at enrollment time. If the parent who wasn't carrying the card had to take a child to the hospital, he or she was out of luck.

"Now two cards will be issued when you enroll so each parent can have one," said Art.

Open Line concerns about retirement, medical insurance, vacation, sick leave, and other benefits have been studied, discussed, evaluated and some recommendations put before the company's Executive Committee for consideration. "Open Line helped us focus on changes to programs which can take place over the next few years," said Ed Truitt, Corporate compensation and benefits manager. "But before the year is out, we plan to have addressed every Open Line issue."

To date HP's Open Line has made a big impact on the way things are done. Thousands of recommendations have been made on ways to run the company more efficiently and to make HP an even better place to work. In fact, the solution to one of the Open Line concerns about the HP Way disappearing has been the Open Line process itself. Open Line has shown that employees who are affected by a problem play a key role in solving the problem.

With all the Open Line talk of problems, issues, concerns and recommendations, it's easy to forget that employees highly recommend HP as a good place to work. The research firm that compiled HP's survey results said less than two percent of U.S. companies studied in the past two decades are in a class with HP. A class that could be described as "superb."

**Employees at HP's Santa Clara Division learned about Open Line actions at a series of meetings in the auditorium. First the 206 problem statements that emerged from analysis group sessions were explained, and some of the changes were announced. The results: an expanded flexitime start window (6 to 8:30 a.m.), the hiring of an industrial health and safety specialist, improved security, modified paging, and splitting the division's picnic in two to relieve overcrowding at HP's Little Basin picnic grounds.**

In the Midwestern Sales Region employees saw their training and development as a primary issue. While committees were busy studying recommendations, the region's publication, the *Midwesterner*, spelled out the company's current efforts in administrative training, and tested employees' knowledge of the Educational Assistance Program with a true-false quiz.

The Southern Sales Region solved an employee concern that pay curves weren't available or thoroughly explained to employees. "We feel intimidated when we have to ask for it," explained the analysis group. The group's recommendation was a mandatory showing at evaluation time with a thorough explanation. After that, a copy of the curve would be placed in the personnel file.

SSR's personnel department bought part of the recommendation: mandatory showing with an explanation. In fact, a line will be added to the performance evaluation that says "I have seen and understand my pay curve." However, Harold Gordon, the region's personnel manager, turned down the idea of including the curve in the personnel file, explaining that salary data is already in the file so the curve would be redundant.

One of the 54 issues developed by employees at the Computer Support Division in Cupertino was selling gasoline to help employees avoid long lines (and high prices) at local stations. General Manager Bob Puette explained that even if the division could get a gas allocation ("a virtual impossibility"), HP's handful of pumps would create longer lines than at the hundreds of service stations in the area. "The result is I don't believe HP could make a contribution by selling gas," said Bob.

At the nearby Cupertino Integrated Circuit Operation (CICO), performance evaluations had been a source of frustration for many employees, primarily because evaluations were overdue for many. This was amplified by an analysis group that added "evaluations usually do not include specifics." Personnel Manager Barry Hennings and his staff insisted that supervisors complete evaluations on time. Now the number of late evaluations is within one percent of the company average, and there are plans to lower even that percentage.

To demonstrate how the quality of evaluations should improve, Barry outlined the training course on performance evaluations each CICO manager and supervisor completes. He explained that two personnel people and Paul Greene, CICO's operation manager, review all evaluations. "When we run across one that is very general and open to interpretation, we talk to that supervisor about it and give some suggestions on how to improve evaluations," said Barry.
WORKING TOGETHER:
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 aim is to create a working atmosphere that encourages solving problems as close as possible to the level where the problems occur. 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 25 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 40 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 is served by a sales force which in some cases is shared with other related groups. The role of these sales teams is to be responsive to the specific needs of customers while presenting them with the invulnerable “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 an international 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 responsibility for the operations and financial performance of its divisions.
cial performance of its members. Further, each group has worldwide responsibility for its manufacturing operations and marketing program forces. The groups are assisted by four regional management centers in the U.S. and by two international headquarters (Europe and Intercontinental) which coordinate the management of sales/service and 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 internal audit 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, pay, 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, the president, 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 executive vice presidents, product group general managers, the vice presidents of Marketing and International, and managing directors of Europe and Intercontinental.

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).
for the past year and a half
santa clara division has been

GETTING A CHARGE OUT OF HP

You can’t see it. Most of the
time you can’t even feel it. But it’s there all right and
it’s been costing HP and
other electronics companies
thousands of dollars each year in
warranty repair bills.

The culprit is electrostatic dis-
charge, better known as static
electricity. It’s the force that makes
your car radio crackle for appar-
ently no reason and your polyes-
ter clothes cling together.

According to Kim Gray, the
trail leading to static was flagged
in 1979 when Santa Clara Divi-
sion’s marketing and production
engineers were investigating
puzzling failures of the Model
5045 digital integrated circuit
tester. The failed instruments had
been in good working order
when they left the plant, but upon
arrival at customer locations be-
came totally unusable.

As these cases were investi-
gated, a pattern began to
emerge: the customers reporting
the greatest number of instru-
ment failures were located in
very dry areas.

Once static was identified as
the cause of the problem, solu-
tions had to be found. Santa
Clara Division appointed a tech-
nical committee (composed of
Kim, Mike Wilson, Dick Harris and
Rex Brush) to learn more about
the problem and come up with
ways to combat its destructive ef-
fects on electronic instruments
and their components.

The more the committee
members learned about static,
the more widespread they dis-
covered the problem to be. Vir-
tually all types of integrated
circuits were found to be suscep-
tible to relatively low levels of
static discharge. In fact, most can
be destroyed by a 500-volt static
charge—the average amount of
static found on the hands of work-
ers seated at their benches in
Santa Clara’s production areas.

Armed with their newly ac-
quired knowledge about the
dangers of static, the committee
then offered its recommenda-
tions to division management. As
a result, Santa Clara is now im-
plementing a comprehensive
static control program, covering
three major areas of concern: (1)
research and development en-
gineers are being encouraged
to design new products with static-
resistant materials; (2) static-safe
work stations are being installed
in production areas; and (3)
static-safe packaging materials
are being used to store, handle
and transport the instruments
and components produced.

Santa Clara’s program there-
fore includes an awareness cam-
paign. For example, as each
production area receives its new
static-safe equipment, members
of the technical committee meet
with the people involved to give
them background information
and instructions for using the
equipment. Other static aware-
ness demonstrations are also
conducted from time to time,
both formally and informally.

And it seems to be working.
More and more production areas
are now equipped with static-
tree stations. It’s becoming a
common sight to see workers us-
ing conductive wrist straps at-
tached to grounded table mats
on the workbenches. High-static
clear plastic storage bags are
gradually being replaced by
black-tinted static-free contain-
ers. Similar programs are under-
way in Corvallis and Boise to
control the invisible menace.

Little by little, concern for
static control is being integrated
into people’s daily work habits.
The real test, however, will come
as quality assurance, warranty
records and customer feedback
are tracked during the coming
months.
Determining concentrations of unknown chemical compounds is a snap for HP's 8450A, computer-controlled, ultraviolet-visible light spectrophotometer. The instrument has been picked by judges at Industrial Research and Development Magazine as one of the 100 most significant technological advances of 1979. Using a special optical technique, the instrument passes light from the visible and ultraviolet ranges of the spectrum through a liquid sample and displays the entire wavelength range in one second. Conventional instruments would take several minutes to do the same test because light is passed through the sample one wavelength at a time. The award-winner was designed and is manufactured at HP's Scientific Instrument Division in Palo Alto.

Photos of Peruvian knitters provide Jackie Nichols with memories of her unusual April vacation. "I'm not a very good tourist," explained HP's Colorado Springs librarian, "so I went to live with the native people and got to know them firsthand." Jackie worked with a team of eight in Chinchero, Peru, putting together a museum for the people, including their handicrafts and lifestyle, "to preserve something of the heritage as it is now.

Jackie is a member of Earthwatch, a Massachusetts-based group that helps scientists get money and manpower for research, and provides unusual scientific expeditions for the public. Participants contribute an average of about $1,000 for the privilege of helping scientists in exotic places like gaseous volcanic craters in Zaire, coral reefs in Grenada or mountain villages like the one Jackie visited in Peru.
A process engineer at HP's Sunnyvale printed circuit facility is about to go down in history as one of the "Mothers of Invention" in a book to be published early next year. Mary Ellen Saxby is credited, along with two of her former classmates from Stanford University, with designing a new cable car grip that could save the city of San Francisco a lot of money.

"The underground cables get a lot of wear and tear from the grips," said Mary Ellen. "The city's Muni system has been spending about $250,000 a year replacing cables every three or four months. The grip we designed should at least quadruple the life of the cable."

The prototype that Mary Ellen and her male classmates built and tested has not yet been installed on San Francisco's major tourist attraction. In fact, because of a major overhaul of the cable car system, Mary Ellen's invention may soon surface only in the pages of a book alongside other female inventors like Catherine Littlefield Green, co-designer of the cotton gin, and Hazel Hock Waltz of Oakland, Calif., who invented the bobby pin.

A bag of silver dollars was the prize for Steve and Pat Toth in San Diego Division's first carpool contest drawing. The event is planned to encourage employees to carpool, bike, take the bus or walk to work and save energy in the process.

Steve, who works in the reliability engineering department, and Pat, who works in purchasing, will be eligible for the year-end grand prize—a gold coin worth about $150 on today's market. Steve's name was drawn from a total of 179 participants at the division.

Noel Van der Linden has two major construction projects under his belt—the new HP-Brussels office which opened in July and his own two-story home.

Noel joined HP three years ago to work in advertising and sales promotion. But he quickly added the role of general coordinator between HP and the construction company that built HP's new three-story office. As coordinator he watched construction schedules, engineering specifications and quality of workmanship as the new building grew.

He learned about construction from the ground up as he and his wife, Nadine, built their own home—including pouring foundations, building walls, installing plumbing and electricity, carpentry, finishing and painting. Their five-year project on the outskirts of Brussels is patterned after an old farmhouse. They moved in last spring.
When Bill Wilson visited Canada recently he was literally at the end of his rope. The North American Instrument sales manager was persuaded to try the sport of paragliding. The ingredients: a modified parachute, 700 meters of line, a power boat and a lot of faith in aerodynamics. At the end of his airborne mission, Bill really made a splash with his colleagues.

San Diego skywatchers have HP's Ron Dixon to thank for some of the most amazing fireworks displays on the West Coast. The 33-year-old manager of systems and programming at the San Diego Division has turned a "fascination for fireworks" into a hobby and part-time business that brings "oohs" and "ahhs" from crowds on evenings, weekends and the Fourth of July.

One of Ron's co-workers, Bruce Woods, asked him to help with an aerial display about 10 years ago, and he's been fascinating audiences ever since. There must be something infectious about the hobby because there are now four licensed fireworks specialists at the division and another dozen employees who help set up displays.

Ron's exposure to the high-technology world of HP has led to improvements in his role as pyrotechnician. Instead of using a safety flare to set off the explosive shells, microprocessors and solid-state circuitry send electrical charges to the 700 cylindrical mortars that made up this year's Fourth of July spectacular.

Each firework was designed to explode in time to music—everything from hard rock to concert hall classics—and was visible to many thousands of onlookers throughout San Diego's Mission Valley.
Chemical handlers at the Cupertino Integrated Circuits Operation were looking for the safest, fastest way to move potentially hazardous materials through the plant. Their answer is this first-of-its-kind chemical handling cart that resembles a space age ice cream cart.

Before the cart came along, bottles of chemicals were loaded on a pallet, moved through the plant on a lift, and unloaded onto storage shelves. Now the swivel-wheeled carts are loaded in the storage area, with as many as 40 gallon bottles of chemicals then pushed to user areas and parked in ventilated, fire-protected closets that serve as isolation rooms. The chemicals remain there until needed.

En route, the bottles ride in slanted racks in the enclosed cart. In the event of a chemical spill, reservoirs inside the cart would contain spilled solutions with little fume leakage while the operator moves the cart to a safe disposal area.

When U.S. swimmers set three world records in Irvine, Calif., Hewlett-Packard computer equipment was on hand to record winning times, lists of swimmers, lane assignments and provide biographical information on the participants. The four-day meet replaced the Olympic trials and national championships for the U.S. team, which chose to boycott the 1980 Olympics in Moscow.

At poolside, the public address announcer had information at his fingertips via on-line terminals hooked to an HP 250. The same information was given to ABC sportscasters Keith Jackson and Mark Spitz for use during their Wide World of Sports telecast.

Determination is evident on every face as this group of runners competes in the women's 800-meter event of the Corporate Cup National Championships held August 17 at Stanford University. In the middle of the front row is Celia Oakley of Santa Rosa Division, who represented HP along with Corporate's Chris Stokes (over Celia's left shoulder in this photo); they wound up taking fifth place. HP's runners placed fourth overall, quite a jump from their ninth place finish in 1979. The company's 21-member team represented seven divisions and sales regions, with 10 of them from HP's unofficial running headquarters, SRD.

Sixty-four companies competed this year in the Corporate Cup, which started out in early August with seven regional meets throughout the country before the finals were held. The 1980 championship was won by Texas Instruments. Other companies finishing ahead of HP were General Electric and Pacific Gas and Electric.
YOUR TURN

INVITES YOU TO QUESTION OR COMMENT ON MATTERS OF IMPORTANCE TO THE READERS OF MEASURE.

WHO’S ON FIRST?

Your report on the Computer Group's productivity trade shows in the July-August Measure was impressive with 6,000 attendance. In the interest of accuracy, though, they probably weren't the first ever sponsored by HP.

The metrology managers' symposia held in 1966, '68, '70 and '72 under HP vice president Noel Eldred and Carl Mahurin (both now deceased) drew 200 to 250 calibration lab managers for three days of technical sessions and tours and were highly successful.

More recently, four divisions kicked off the HP technical symposium concept at the Santa Clara facility in April 1978. Since then the RF and microwave symposia have played in Boston, Dallas, Los Angeles (three times), Munich, Paris, London, Santa Clara (twice), Chicago, Long Island and New Jersey to a total of about 5,000 key customers.

JOHN MINCK
Stanford Park Division

HP'S START IN EUROPE

Your July-August issue contained a letter on the subject of overseas expansion. I suspect too few U.S. employees understand the role of international divisions. The original concept was that by manufacturing in major marketplaces (Europe), HP could reduce the effect of tariff barriers and, consequently, have lower prices which, in turn, increased sales. As time elapsed, the barriers were eased, international costs increased nearer to U.S. levels, the U.S. dollar weakened and the overseas divisions no longer simply produced U.S. designs.

Here in Scotland now have 70 percent of our production coming from our own lab designs. We employ 800 people today, the same as we did in 1974.

JIM RIGBY
South Queenferry Division

ADD THIS ONE TO YOUR LIST

Enjoyed reading your list of misspellings of Hewlett-Packard. Here's one for your collection which wasn't on the list. It appeared in the November 1979 issue of Datamation: Hewlett-Packard.

ROLF ENGELBRECHT
HP—GmbH
Boblingen

WHAT IS MORE PRECIOUS THAN TIME?

I am single and live fairly simply. When I left HP my salary was more than three times my monthly expenses. I didn't really need more money; what I wanted was time. (What, after all, is more precious in this life that is all too brief?) The only way I could get more time was to leave the company.

Industrial employment will become much more attractive to me if in the future some or all of the following policies are implemented: part-time permanent jobs (say 20 to 30 hours per week with reduced benefits, if necessary); four-day work weeks; expanded vacation time or greater availability of unpaid leaves with a guaranteed job on return; job sharing, so that one could work six months then turn the job over to a colleague for the next six months.

Society is changing. More couples are choosing to be childless, more wives are working, more individuals are remaining unmarried. Some of the most creative people are in these categories. I hope business has the capacity to respond to these changes to continue to attract creative talent seeking creative outlets. I do hope that when industry begins to reflect some of these changes, Hewlett-Packard will again be in the vanguard.

GUY ARMSTRONG
Barre, Mass.
SO WHO'S NUMBER ONE?

If Hewlett-Packard is the second largest employer in Silicon Valley (*Measure* cover story, July—August 1980), who is number one?

ANN FOSTER
Neely Santa Clara

That distinction belongs to Lockheed Missiles & Space Company. The latest comparative numbers available are Lockheed, 20,200 and Hewlett-Packard, 16,500.

HP'S SHRINKING FLEET

If HP is so committed to energy conservation, why does the company continue to buy big cars and station wagons as fleet cars rather than compacts?

I can understand that some field engineers may need somewhat larger cars to carry demonstration equipment and some service engineers probably need to haul tools, repair kits and test instruments. But it seems to me that compact cars would be adequate for other people.

In addition to what could be substantial energy savings, I would imagine the company could save a good deal of money in reduced fuel bills and significantly lower purchase prices.

(NAME WITHHELD ON REQUEST)

HP has been in the process of "downsizing" (as the government calls it) its fleet for the past several years in an effort to cut fuel costs and capital investment. New cars added to our fleet come from an approved list of intermediate and compact cars. Full-size vehicles, including station wagons, haven’t been purchased for several years.

We look at our fleet cars as tools—the same as a wrench, a mill or a soldering iron. Unless they have the necessary features to accomplish the job, they are worthless. That’s why we still recommend four-door sedans for our sales force so they can transport customers when necessary.

After thoroughly researching car size, our present thinking is that further downsizing of service cars would make them impractical for their job, and we think moving to compacts for our sales people would be a mistake.

It’s true there are still a very few full-size station wagons and sedans in our fleet, and there will continue to be for a while. We have not, and we will not, sell off the entire fleet to buy smaller cars. The bottom line has to be equated to dollars but we will continue to make every effort to buy the least expensive, most fuel-efficient vehicles that can do the job.

MIKE TALBERT
Marketing Operations
Facilities Manager
Palo Alto

GOT SOMETHING ON YOUR MIND?

What public issues affect HP people and their jobs? Are there questions you have about company operations? Do you disagree with something you read in a *Measure* article?

Write! We want you to share your opinions and comments with more than 56,000 other HP employees in Your Turn.

Address letters via company mail to Editor, *Measure*, Public Relations Dept., Building 28A, Palo Alto; via regular postal service to *Measure*, Hewlett-Packard Company, 1501 Page Mill Road, Palo Alto, CA 94304. Try to keep letters under 200 words. Please sign your letter and give your location. Names will be withheld on request. Where a response is indicated the best available company source will be sought.
NEWS CLIPS
RECAP THE NEWSWORTHY EVENTS, CHANGES AND ACHIEVEMENTS WITHIN HP.

DOING THE Splits
In August, a new Business Computer Group headed by Ed McCracken as general manager was formed. It includes three divisions restructured from the former General Systems Division: Computer Systems Division, with responsibility for HP 3000 computer systems hardware and operating systems, headed by Dick Anderson; former general manager of the Data Systems Division; Information Systems Division (HP's first division) with Matt Schmutz as general manager; and a redefined General Systems Division under Bill Krause as general manager with responsibility for all HP 250 small business computer activity.

The group also includes the Boblingen General Systems Division, Commercial Systems Pinewood Operation in the U.K., and a newly formed Data Communications Operation under Andre Schwager. (See To market below.) Corvallis Division has split out the booming HP-85A activity as a personal computers product line under Dan Terpack as manager, with its own manufacturing, marketing and R&D support. In a redivision of general management responsibilities, fast-growing Neely Sales Region has created a third zone effective November 1 under zone g.m. Tom Tinkle, formerly Albuquerque (New Mexico) Instrument DM and ORDM.

CHART CHANGES
New general manager at Data Systems Division is Gaylan Larson. Larson was DSD manufacturing manager for four years before becoming HP 1000 Operations manager at that division in March. Roseville, formerly an operation at DSD, now is a division, under General Manager Al Seely. Art Dauer replaces Walt Wallin as Midwest Sales Region general manager on November 1 as Wallin cuts back from two hats to one, continuing as western zone general manager.

Ray Deméré, VP—Manufacturing Services, and his organization have moved from the corporate staff under Executive VP Bob Boniface to report directly to Executive VP Dean Morton, providing a closer relationship with divisions at the operating level. Responsibility for assuring compliance with technical regulations worldwide is now consolidated under Deméré. (Corporate Government Relations is assigned to development of policy in areas of safety, health and product regulations, hazardous materials and the environment.)

TO MARKET
Roger Ueltzen has been named to the newly created post of Technical Computer Group marketing manager. Former operations marketing managers now wearing division marketing hats: Bill Senske at Roseville Division, Joe Schoendorf at Data Systems Division. New marketing managers in the Business Computer Group: Bob Bond to Computer Systems Division, Ed Hayes to Information Systems Division, Fred Gibbons to General Systems Division.

Chuck Comiso is division marketing manager. Deme Clainos has a separate responsibility as marketing manager, personal computers product line. Computer Support Division has split the marketing function into a Customer Engineering marketing department under Dick Warming and a System Engineering marketing department under Dave Carver. Francis Marc is marketing manager—terminals for the Grenoble Division.

ABOUT NEW PRODUCTS
Rating a full-page story in Business Week's September 22, 1980 issue is Colorado Springs Division's new 1980A oscilloscope, which has internal microprocessors that make setup and operation easy. It also can be controlled by computer via HP-IB. A quote from Executive VP Bill Terry, who is pictured with the scope: "Until now, you almost needed a license to drive these things."...Vancouver Division's first new product is a typewriter-sized portable terminal, HP 2675A, which features high-speed thermal printing. Even more portable is Avondale Division's compact 3390A recording integrator used to control analytical instruments. It weighs only 5.5 kg (12 lbs.) and is about the size of a lab notebook. Data Terminals Division has introduced the 2626A data terminal which allows the user to divide both the display memory and the display screen into as many as four independent work areas.

BOTTOM LINE
Sales for the third quarter, ended July 31, showed a 31 percent increase in sales and a 33 percent increase in net earnings over the corresponding period last year. Sales totaled $810 million compared with $620 million in FY79; net earnings amounted to $70 million, up from $52 million for last year's third quarter. Incoming orders amounted to $762 million, a gain of 14 percent over orders of $667 million booked in the same quarter last year.

President John Young pointed out that "although total orders increased 14 percent from last year, the order growth rate this year continues to slow."

To keep costs and expenses in line with anticipated business volume, the company instituted a more restrictive hiring policy on September 4. While emphasizing that the new controls were not an absolute "hiring freeze," management did request approval of all new hires by a member of HP's Executive Committee. (About 5,000 new employees were added in the first nine months of FY80, bringing total employment to nearly 57,000.) Other controllable expenses such as travel and recruiting costs were also under scrutiny although not subject to top management review.
Two Boy Scout representatives visiting HP headquarters on behalf of United Way are shown a minicomputer area by John Young. The HP president served as vice-chairman of the 1980 United Way campaign in Santa Clara County.

A MESSAGE FROM JOHN YOUNG

In the last issue of Measure, I gave a status report on the Open Line survey and indicated I would be addressing some of the companywide issues that have been identified in the survey in a series of Measure letters.

I'd first like to discuss two questions in the survey related to HP's Open Door policy. One was "I feel free to make use of the Open Door policy." The second stated, "If I am dissatisfied with my supervisor's decision on an important matter, I feel free to go to someone higher in authority." The response to the first statement was 73 percent favorable and six percent unfavorable. The second statement scored much lower with a 60 percent yes and 30 percent no. The reasons for the difference in these responses as developed by the analysis groups' discussions coincide with my own impressions from many personal experiences. There is misunderstanding of the meaning and intent of the policy, and in some areas the implementation is either blocked or discouraged.

Open Door is a fundamental tenet of the HP Way. It's been practiced since the inception of the company, and is central to the HP attitude of trust and understanding that must exist between managers and employees at all levels. Because it is imperative that this policy be maintained in the same spirit in which it was conceived, it is appropriate to review what this policy is, and to re-emphasize its importance.

Let's begin with a definition. The Personnel Policy and Guidelines manual states: "A supervisor is expected to promote an atmosphere wherein an employee feels comfortable and free to seek advice and counsel regarding problems of either a personal or job-related nature. The employee may seek counsel from a supervisor, member of the personnel staff, or any level of management with the assurance that no adverse consequences will result from this action. This means that every employee, management or non-management, has the right to go 'up the line' to discuss misunderstandings, dissatisfaction, or other matters beyond his or her immediate supervisor. This policy functions best when two conditions are met. First, the employee's immediate supervisor must believe in the policy and feel free to share information where full communication takes place—not only problems, but new ideas, suggestions for saving or improvements in company operations. Second, management and personnel people "up the line" must be available, be sensitive to personal issues and, above all, insure as a basic management responsibility that the individual using the policy is protected from reprisal or other adverse consequences.

What do we mean by "up the line"? Depending on the nature of the issue, the employee may choose to talk to another manager with responsibilities similar to those of the employee's boss. Or, the employee may want to talk to a higher level management in the division or region (including the general manager): with a personnel manager; with a member of the corporate staff; or with a company officer, including the executive VPs and me.

Employees put this policy to work at HP headquarters. I'm pleased to report that our survey results indicate that the employee's immediate supervisor or any level of management have nearly equally been seen in an Open Door meeting. As a matter of courtesy, it's a good idea to tell your direct supervisor about a planned Open Door visit. But it's not required if circumstances make it difficult.

The Open Door policy is so important at HP because it characterizes the management style to which we aspire. It means managers are available, open and receptive. It's an integral part of management-by-objective philosophy. It is also a critical link in the communication process at HP. It's a procedure that encourages and, in fact, insures that the communication flow is both upward and downward within the organization. Another and very important consideration is that employees must have a mechanism they can trust to resolve problems and preserve equity and fairness in all relationships. The Open Door policy serves as an informal, but very effective, grievance mechanism.

I've discussed at length what the Open Door policy is—let me mention four things it is not:

- It is not a procedure that undermines the position of the immediate manager. Rather, it's a continuing reminder to managers of their responsibility to their people and the requirement to manage by HP policies.
- It is not a management option: it is a right accorded every employee.
- It does not necessarily mean the immediate manager's decision will be reversed or that a solution for all problems can be reached, but it does assure an objective review of the facts.
- It is not a procedure just for complaints, but rather should be viewed more broadly as a mechanism for sharing up and down the line. It's part of the everyday process that provides a climate of teamwork and common purpose. In that climate, an easy flow of communication can take place, not only about problems, but also about opportunities, aspirations and suggestions for improvements.

It's important for everyone to have a clear understanding of the Open Door policy and comply with its letter and intent. Only by doing so can we insure that this important cornerstone of the HP work environment will endure.
baseball, hot dogs, apple pie and volcanic ash

The great American softball tradition is alive in Vancouver, Washington, despite the threatening nearness of Mount St. Helens beyond deep left field. The volcano's on-again, off-again eruptions haven't disrupted HP's Vancouver Division softball games or any business operations. The division introduced its first product (a portable printing terminal) in August, held an open house for community leaders and began construction on its first permanent building. The only unscheduled change: the building's roof has been redesigned to withstand three inches of wet volcanic ash.