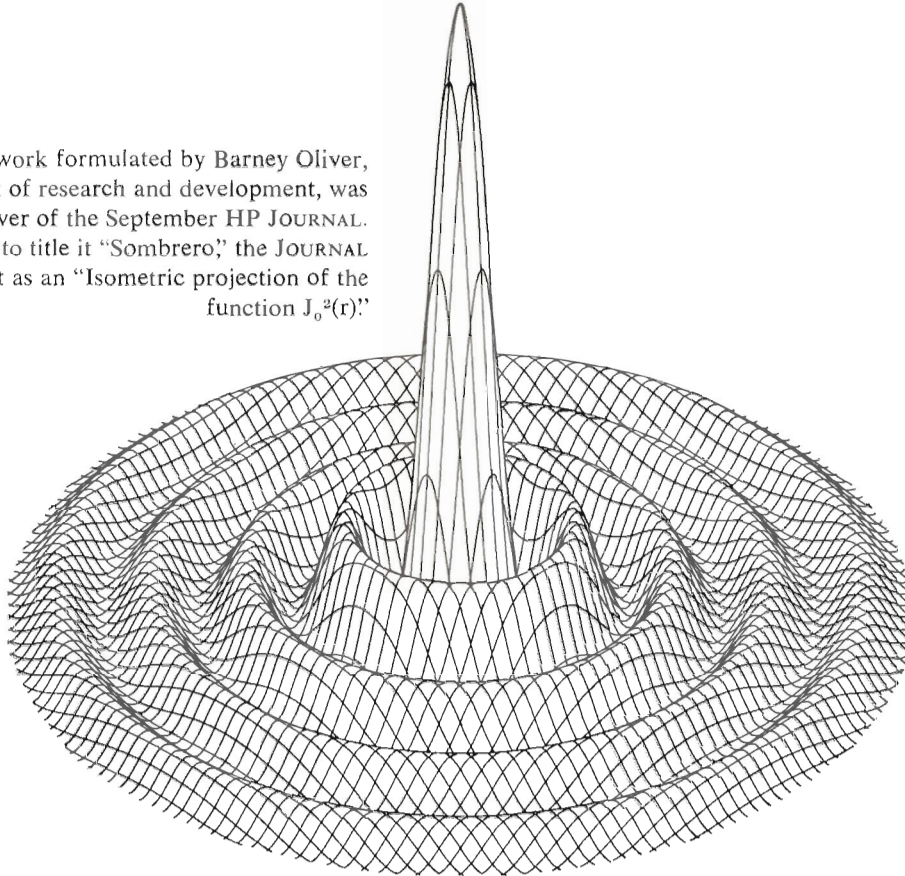


# Measure

For the men and women of Hewlett-Packard/OCTOBER 1969

# Portrait of the engineer as a calculating young artist

This spectacular work formulated by Barney Oliver, HP's vice president of research and development, was featured on the cover of the September HP JOURNAL. Resisting all temptation to title it "Sombrero," the JOURNAL described it as an "Isometric projection of the function  $J_0^2(r)$ ."



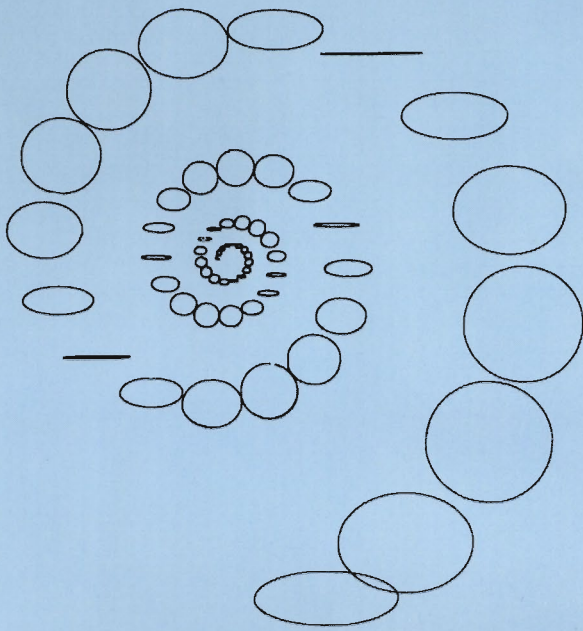
□ Whether or not it's art—ART—is a question that could keep a flotilla of philosophers afloat for years, propelled by winds of their own making. Or, perhaps the HP calculators and plotters that actually helped create the works shown here could produce an answer. There is no question, however, that these instrument-generated graphics are both interesting and attractive.

In any case, most of the Hewlett-Packard engineers and programmers responsible for these graphics were not really searching for artistry and aesthetics. These qualities are the natural byproducts of the creation of graphical solutions to mathematical functions and formulae. They appeal to the eye for much the same reason they serve the engineer and scientist: the dynamic design and orderliness they bring out of complexity.

New combinations of HP instruments make possible a fantastic range of graphic artistry and illustration, to single out just one area of their very versatile capabilities.

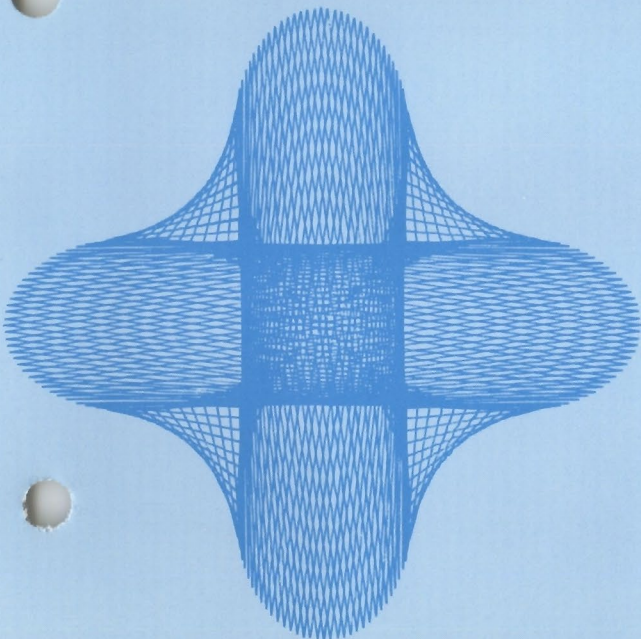
Last month, for example, the company introduced its automatic new 9125A X-Y plotter as peripheral to the computing calculator. This month, just about the time MEASURE goes to press, the company will introduce an even greater lineup, a new 'personal' computing system named the HP Calculator System 9100. Included is a "B" version of the 9100 calculator offering more sophisticated capability in problem solving, the 9120A calculator printer, and the 9160A optical card reader; other peripherals, including the 9101A extended memory, the 9150A large screen display, and a coupler module, will be in production shortly. These make up a computing system expected to meet the needs of engineers, scientists, educators and managers who need fast access to something more than an office calculator but less than a large computer.

The examples of graphics reproduced here were, for the most part, generated in the course of developing and testing these new products and their software programs. A few, obviously, were done for the fun of it:



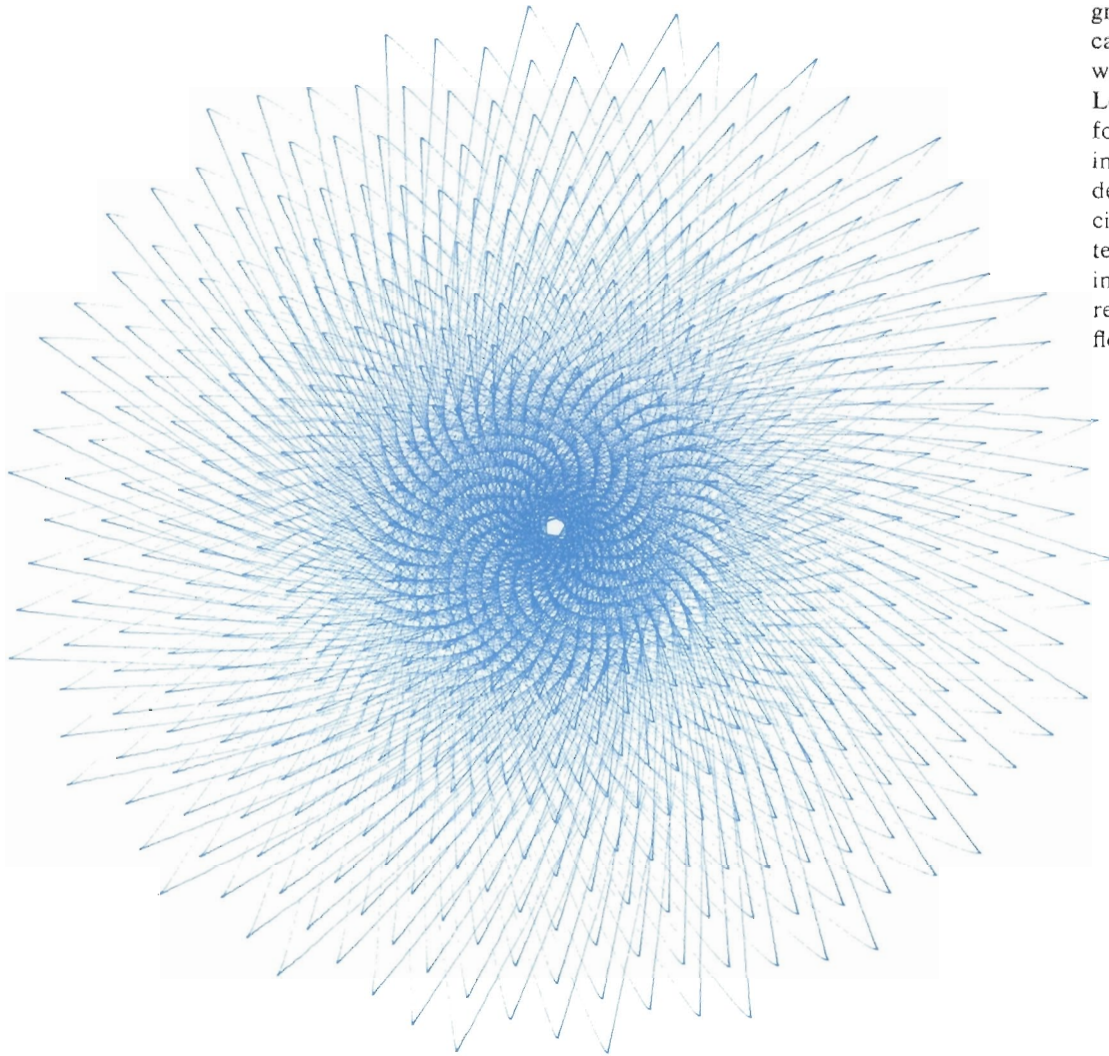
Some of the graphic versatility of the computing calculator and X-Y plotter combination is revealed in this program by Tom Osborne, consultant to HP on the 9100 calculator. His program results in this disk appearing simultaneously to tumble and spiral down into infinity, or at least as far as the plotter pen will take it. COVER: Tom's image is seen superimposed over an example of calculator-based graphic art.

According to Mike Wingert, mathematician and applications engineer for the calculator system at Loveland Division, attractive graphical forms such as this spiral are quite simple to program. As Mike puts it, "Different geometric figures are generated depending on what increment of the independent variable is used." Oh.



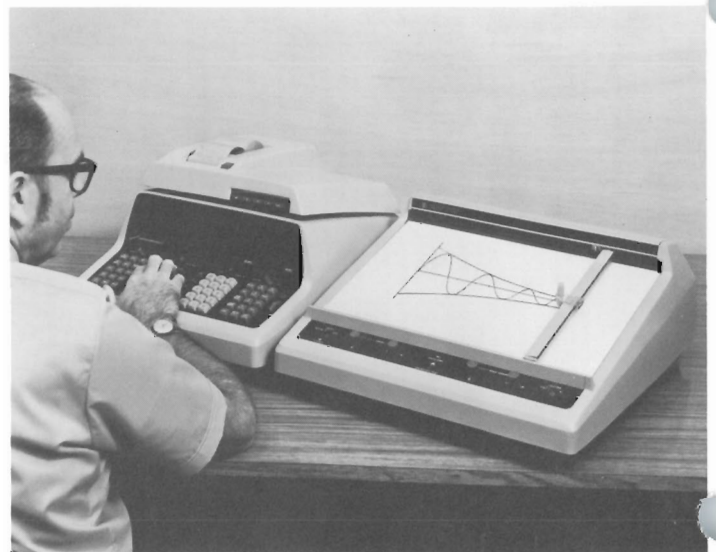
Though X-Y plotters will not draw true curves, they can create them. One way is by drawing a series of short straight lines joining a series of points programmed to form a curve. Another is by the manner in which the straight lines terminate or intersect, as in this propeller shape developed by Bob Colpitts. Bob, now with Mountain View Division, programmed this not-too-serious design as a member of HP Labs where he designed the electronic control circuitry for the new X-Y plotter.

*(continued)*



The program for this graphical output by an HP calculator-plotter system was actually written by Loveland's Mike Wingert for a customer. It was intended to be run in degrees and be used in his circuit board design. But in testing the program it was inadvertently run in radians, resulting in this delicate flowering spiral.

New HP 9100 Calculator System responsible for the preceding graphic works is operated by Al Sperry, calculator applications manager and editor of Loveland Division's **KEYBOARD** magazine circulated to calculator customers. Included here is new "B" version of calculator with printer mounted above, and new 9125A X-Y plotter. The new system is being introduced this month.



□ What does *she* think about her job? The 'girl' on the production line, that is. How does she feel about meeting production targets? About doing new kinds of work? About tackling production of a new product? About how and where her units eventually are used by customers? About costs? About passing on her skills to someone new? And about the value of her daily production?

It happens that there are now some 3,400 such production girls working in the company's manufacturing areas—one out of every four people on the payroll. But rather than try to poll 3,400 line girls, MEASURE chose to interview three women at the New Jersey Division's Berkeley Heights plant in the hope that they might be able to touch on themes and thoughts common to their co-workers around the company.

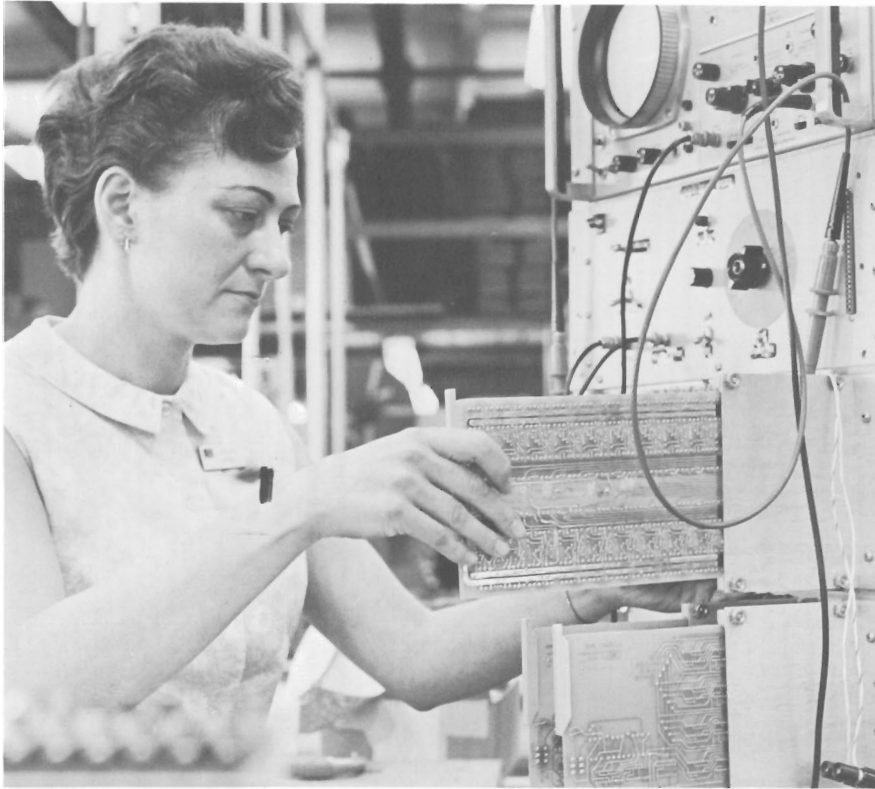
First, meet Millie Dean and Flo Loree. Friends for many years, they joined the organization on the same day 15 years ago, almost at the very start of the Harrison Company that HP later acquired. Millie works as a quality assurance inspector for one of the production lines. Flo operates a drill press that produces patterns of holes in the printed circuit boards.

Now meet Helen Horel who came to the company in 1960—from a job where she had to line up for such things as the paycheck and where there seemed to be too little scope for her obvious energy and initiative. She presently works as assembler on the programmable (digital) power supply line:

(continued)

Meet  
moderately  
modern  
Millie





and Helen

#### What was it like here 'in the old days'?

*Millie:* "I remember that Flo and I had just finished working with this firm in Summit that went bankrupt. We wanted to take a vacation and collect unemployment insurance for awhile after five years of working. But Bill Harrison kept coming around and asking us to work for his new outfit. He wanted girls who could wire and solder. He finally convinced us."

*Flo:* "It was like one big happy family in the old plant. Everybody knew everybody. There was always something interesting going on. In those days we used to have to clean the finished circuit boards by taking them outside. We'd scrub them, hose them down, then hang them in the trees. It looked like the strangest laundry you ever saw. Now they have washing machines."

*Helen:* "I remember about my second year they started to have picnics for us to kind of celebrate good times. Bill Harrison went all out. One time, when we had done so well, he decided on a spur-of-the-moment picnic. But all the meat arrived frozen and we couldn't do a thing about it. So we just waited until the next day."

"There was no air conditioning then. When things got hot in the afternoons, they just used to hose the roof down and order ice-cream pops for all hands. We got so crowded there that we had coffee service outside."

*Millie:* "Everybody got really excited about moving up here to the new plant. Air conditioning and everything!"

Mary Hildebrandt couldn't wait. She said she was going to take the first thing on four wheels that came along. Just then along came Angelo in the garbage truck, and before you knew it, Mary was on the back with the empty drums headed for the new plant. The plant looked huge and empty then, but now it's really filled up."

#### Do you like your present job?

*Flo:* "I like operating the drill press. Best job I ever had. The day just flies. I like the feeling of having produced so many units, of realizing at the end of the day that they are going out on the floor into production—without complaints or problems."

*Helen:* "I love the way this company works. I think it's because they don't push you. Really, you know what's to be done. Whatever the type of work, you know the goal and you try for that goal. There's a feeling of accomplishment in achieving the goal. You know it's for a good reason because all of us benefit. Actually, they never tell you out loud that you're doing a good job, but you always know it. It's the way they talk to you and approach you about a unit or a piece of work. Particularly if they let you have a chance at working on a new product."

"I just love working on new products—the bigger the better! There's a new one coming out soon that I can't wait to get my hands on. And the one I'm working on now—the digital unit—is just about a year old. I want to be part of what's going on."

## and Flo



### Are you aware of the dollars involved in your production?

*Helen:* "The way I look at the money is how well I can do the job so that it will prove itself in testing and so they can just sort of push it right out the door without any delays. Like these cables. You know when you're finished with one of these that it's worth about \$100 to the company—if it works right!"

*Millie:* "You have to be quality conscious. There's no sense in completing a unit if it's not going to pass the test when it gets to the tester!"

### Have the basic assembly skills changed much?

*Millie:* "You have to know more things now and be able to perform more kinds of work. The products are a lot more complicated so there are more things to test."

*Flo:* "There's a lot more variety of work to be done. That's a big help in avoiding boredom on the job!"

*Helen:* "Variety is important. I've done very nearly everything in the plant. I've inserted PC boards, and now I'm being taught how to pretest them so that when they get to the tester he won't have so many things to check!"

### Do you understand the instruments you produce?

*Millie:* "I used to have a fairly good idea, but they're so complicated now, and there are so many new instruments!"

*Helen:* "We got a general idea, I guess. I know that

my unit works with a computer, for instance, and yet I don't know actually what it does. I love to hear about them or see pictures of them in action. The moon landing, for example. It makes you feel a part of it. I've had several units used in such applications. It's great."

### Do you look forward to new things and new people on the job?

*Flo:* "I like to see the company grow even though it means a bit more crowding and getting used to changes. You can't stand still!"

*Millie:* "We always try to welcome new people, to make them feel at home and to show them how things are done. Because it's something embarrassing when you're new. I remember going up to a fellow in the supply cage and asking him to get me some particular parts. It turned out he was the new production manager. But he brought them back five minutes later!"

*Helen:* "I'm quite excited about the new units we will be working on. It will be bigger and more involved than any other product we have. I hear it will have push buttons up front, so already I've been thinking about possible problems we might have with these and how we might overcome them!"

### Do you look forward to your profit-sharing checks?

*Flo, Millie, Helen:* "Yes, yes, yes."

**Flight testing of giant new 747s  
is speeded by HP calculators**



**Boeing**

□ In mid-December, a Pan Am jet liner will lift off from Kennedy International Airport and head eastward for London and Frankfurt with 362 passengers—the largest passenger load ever carried by a commercial jet airplane. The plane, a new Boeing 747, forerunner of super jets of the 70's, should make its pre-Christmas inaugural flight as scheduled, thanks in part to many prior months of careful, meticulous flight testing during which Hewlett-Packard went along as a working passenger.

HP's involvement in flight testing the jumbo jets was first revealed earlier this year in an article in *FLIGHT TEST ENGINEER* magazine by J. G. Piersall, an aerodynamic analysis engineer for The Boeing Company. With hundreds of lives and millions of dollars at stake each time an aircraft takes to the skies, flight testing of a new aircraft must necessarily be thorough and meticulous. At the same time

it must progress according to a tight time table in order to meet the airline customers' anticipated flight schedules.

Traditionally, hoards of data are collected during a test flight and recorded on magnetic tape. Later, in the test engineer's office after the flight, this data is analyzed, results are computed and a decision is made as to the aircraft's flightworthiness. But, as often happens, if one element of the test flight does not go according to plan, the entire costly and time consuming procedure must be repeated.

Boeing engineers sought a method whereby the data could be analyzed during the flight and, if a problem arose, the step could be repeated immediately. But the data are too numerous and the mathematical formulae too complex to permit rapid manual calculation.

Then HP's 9100A computing calculator joined the





## **HEWLETT-PACKARD**

### **STATEMENT OF CORPORATE OBJECTIVES**

*This special four-page insert presents the recently revised Statement of Corporate Objectives for Hewlett-Packard Company. In his letter on page 15, President Bill Hewlett describes the basic role of the Objectives and discusses the revisions that have been made.*

## HEWLETT-PACKARD OBJECTIVES

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### 1. PROFIT

**OBJECTIVE:** *To generate the highest level of profit consistent with our other objectives.*

In our economic system, profit is essential to corporate survival and is the best single measure of corporate performance. It is not, however, the sole measure. Responsibility to our society, to our customers, to our employees—all are important factors against which the consideration of profit must be balanced. But without profit these other factors lose their meaning; a company that is bankrupt can meet none of its other responsibilities. Profit provides the money for growth, it is essential to the achievement of our other objectives, and it makes our company an attractive investment for our employees and for outside shareholders.

Profit is the difference between two large quantities—the price that is appropriate for our products on the one hand, and the total cost of providing them on the other. Small increases in cost can cause significant decreases in profit. Our success depends upon doing a myriad of jobs correctly and efficiently. The day-to-day performance of each individual adds—or subtracts—from our profit. Profit is the responsibility of all.

### 2. CUSTOMERS

**OBJECTIVE:** *To provide products and services of the greatest possible value to our customers.*

In the last analysis, it is the customer whom we seek to serve—through application of advanced technology, efficient manufacturing, and imaginative marketing. We will stand or fall on the basis of whether the products and services we provide excel in the market place.

If we can anticipate the customer's needs, if we can provide products that will enable him to operate more efficiently, if we can offer him the kind of service and reliability that will merit the highest confidence, if we can do all this at a reasonable price, then we are truly meeting our responsibilities to our customer.

### 3. FIELDS OF INTEREST

**OBJECTIVE:** *To enter new fields when the ideas we have, together with our technical, manufacturing and marketing skills, assure that we can make a needed and profitable contribution to the field.*

The original Hewlett-Packard products were electronic measuring instruments. Today our product line has expanded to include instruments for chemical and biomedical measurement and analysis, computers to automate measurement and to process the data, as well as electronic calculators and complete computer systems. Thus our growth has led to a continuing expansion of our fields of interest. To a large extent, diversification has come from applying our resources and skills to fields technically related to our traditional ones.

The key to HP's prospective involvement in new fields is *contribution*. This means providing the customer with something new and needed, not just another brand of something he can already buy. To meet this objective we must continually generate new ideas for better kinds of products. It is essential that before final decision is made to enter a new field, full consideration be given to the associated problems of manufacturing and marketing these products.

#### 4. GROWTH

**OBJECTIVE:** *To let our growth be limited only by our ability to develop and produce technical products that satisfy real customer needs.*

How large should a company become? Some people feel that when it has reached a certain size there is no point in letting it grow further. Others feel that bigness is an objective in itself. We do not believe that large size is important for its own sake; however, for at least two basic reasons, continuous growth is essential for us to achieve our other objectives.

In the first place, we serve a rapidly growing and expanding segment of our technological society. To remain static would be to lose ground. We cannot maintain a position of strength and leadership in our field without growth.

In the second place, growth is important in order to attract and hold high caliber people. These individuals will align their future only with a company that offers them considerable opportunity for personal progress. Such progress is more rapid and challenging in a growing company.

#### 5. OUR PEOPLE

**OBJECTIVE:** *To help HP people share in the company's success, which they make possible; to provide job security based on their performance; to recognize their individual achievements; and to insure the personal satisfaction that comes from a sense of accomplishment in their work.*

We are proud of the people we have in our organization, their performance, and their attitude

toward their jobs and toward the company. The company has been built around the individual, his personal dignity, and the recognition of his achievements.

We feel that general policies and the attitude of managers toward their people are more important than specific details of the personnel program. Personnel relations will be good only if people have faith in the motives and integrity of their supervisors and of the company. Personnel relations will be poor if they do not.

The opportunity to share in the success of the company is evidenced by our above-average wage and salary level, our profit-sharing and stock purchase plans, and by other company benefits.

The objective of job security is illustrated by our policy of avoiding large ups and downs in our production schedules, which would require hiring people for short periods of time and laying them off later. We are interested that each employee carry his full load and be eager to remain with and grow with the company. This does not mean we are committed to an absolute tenure status, nor do we recognize seniority except where other factors are reasonably comparable.

In a growing company there are apt to be more opportunities for advancement than there are qualified people to fill them. This is true at Hewlett-Packard; opportunities are plentiful and it is up to the individual, through his personal growth and development, to take advantage of them.

We want people to enjoy their work at HP, and to be proud of their accomplishments. This means we must make sure that each person receives the

## HEWLETT-PACKARD OBJECTIVES

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recognition he needs and deserves. In the final analysis, our human resources are our most valuable asset.

### 6. MANAGEMENT

**OBJECTIVE:** *To foster initiative and creativity by allowing the individual great freedom of action in attaining well-defined objectives.*

In discussing HP operating policies, we often refer to the concept of "management by objective." By this we mean that insofar as possible each individual at each level in the organization should make his own plans to achieve company objectives and goals. After receiving approval of his plans from his supervisor, he should begin a wide degree of freedom to work within the limitations imposed by these plans, and by our general corporate policies. Finally, his performance should be judged on the basis of how well he achieves the goals he helped establish.

The successful practice of "management by objective" is a two-way street. Management must be sure that each individual understands the immediate objectives, as well as corporate goals and policies. Thus a primary HP management responsibility is communication and mutual understanding. Conversely every employee must take sufficient interest in his work to want to plan it, to propose new solutions to old problems, to stick his neck out when he has something to contribute. "Management by objective," as opposed to management by directive, offers opportunity for individual freedom and contribution; it also imposes an obligation for everyone to exercise initiative and enthusiasm.

### 7. CITIZENSHIP

**OBJECTIVE:** *To honor our obligations to society by being an economic, intellectual and social asset to each nation and each community which we serve.*

All of us should strive to improve the environment in which we live. As a corporation operating in many different communities throughout the world, we must assure ourselves that each of these communities is better for our presence. This means building plants and offices that are attractive and in harmony with the community; it means solving instead of contributing to the problems of traffic and pollution; it means contributing both money and time to community projects.

Each community has its particular set of social problems. Our company must help to solve these problems. As a major step in this direction, we must strive to provide worthwhile employment opportunities for people of widely different backgrounds. Among other things, this requires positive action to seek out, train and employ members of underprivileged groups.

As citizens of their community, there is much that HP people can and should do to improve it—either working as individuals or through such groups as churches, schools, civic or charitable organizations. At a national level, it is essential that the company be a good corporate citizen of each country in which it operates. Moreover our employees, as individuals, should be encouraged to contribute their support to the solution of national problems.

The betterment of our society is not a job to be left to a few; it is a responsibility to be shared by all.



## behemoth bends its wings

flight test team. Small and light enough to be carried aboard an aircraft about to undergo testing, the 9100A easily met the testers' requirements for size and weight. But more important, the complex mathematical equations used in flight analysis are programmed into the calculator and stored on credit-card-sized magnetic cards.

In one example of flight testing, the big jets land and are braked to a stop as rapidly as possible. Then the "braking friction coefficient"—or the amount of friction between the tires and the runway surface—is computed. This quantity is then used to compute the distance needed to stop the aircraft in successive runs. Getting the braking friction coefficient formerly required lengthy computations. Now with the 9100A along, the airplane can immediately take off and the braking distance for the next landing will be ready in just minutes.

Other calculator programs allow flight test engineers to rapidly compute position errors (errors due to the location of the airspeed sensing device on the aircraft), the lift of the airplane during stalls, stall entry rates (acceleration of the aircraft when it enters the stall), the amount of drag the airplane has at different speeds and altitudes, and fuel consumption rates in air miles per pound of fuel.

By using the 9100A for inflight data reduction and quick-look data analysis, the test engineer is able to more fully use the airplane test time, to reduce the need for repeat tests, and to make faster design decisions.

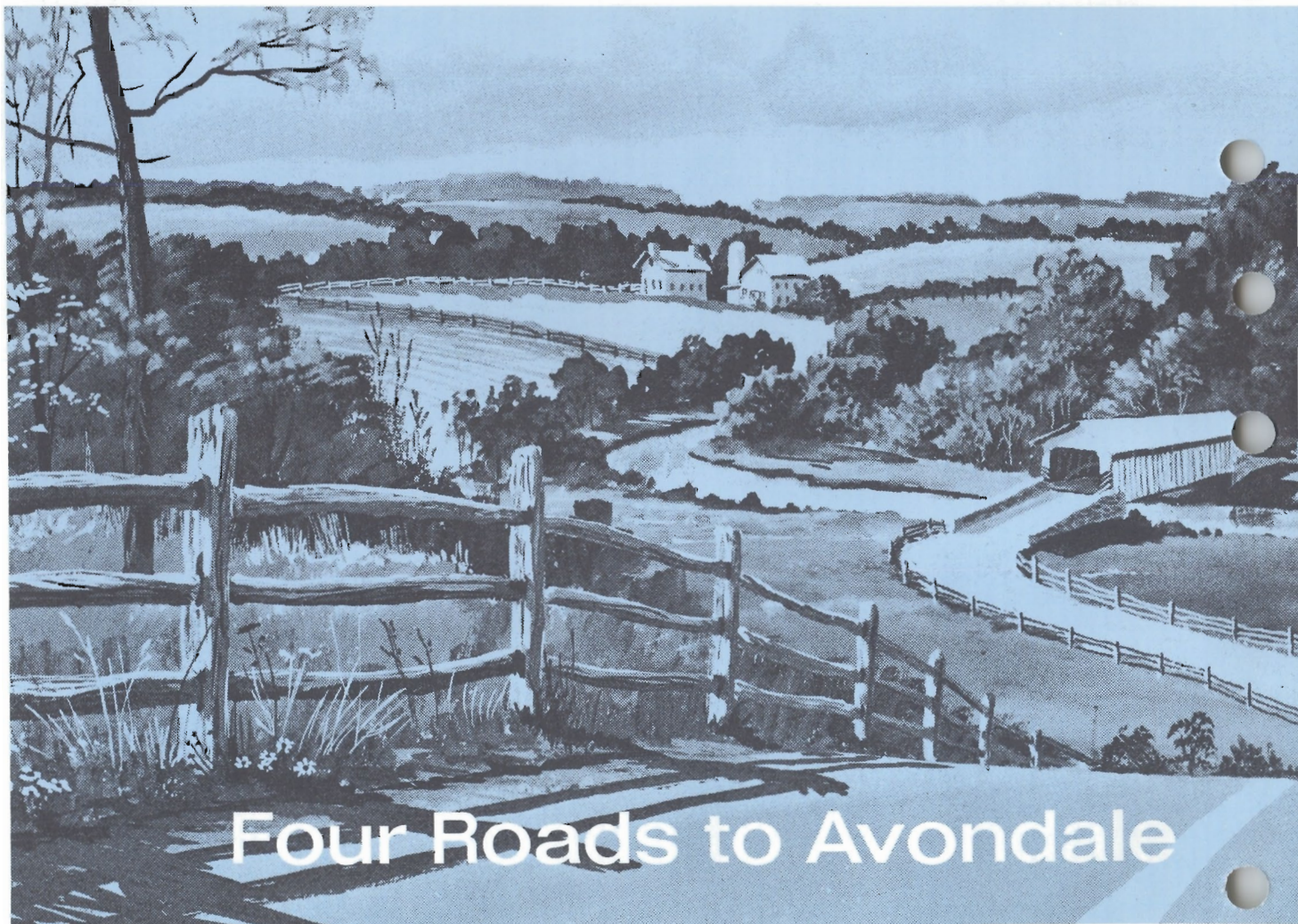
By the early 1970s, the 747s will be carrying hundreds of passengers in single leaps across oceans and continents under the bright colored marquees of such airlines as Pan Am, Lufthansa, American, SAS, United, TWA and El Al. A new era in mass air transit will have arrived. □

## Where we live:

□ Some of the company's well-traveled people say the HP "style" inside its manufacturing plants is such—so similar in many respects—that they sometimes have to think twice about where they are at a given moment. ("Is this Colorado? Palo Alto? Or South Queensferry?")

Outside, they discover other factors in common. For the most part—wherever there has been a choice—HP plants have been located in spacious and pleasant grounds, close to important educational facilities, and amid a generally attractive social and cultural environment.

But at this point, similarities taper off. The many differences in geography and local heritage come to the fore. So starting with this report from Avondale, MEASURE begins a series intended to explore the various areas in which HP lives. These won't be "Cook's Tours," but rather the personal views of the HP people who live there. The following report, for example, makes use of the unique fact that the Avondale plant draws its people from four different states: Pennsylvania (the home state), Delaware, New Jersey and Maryland.



### **Glad to be back**

“Around here,” said Rondal ‘Buff’ Nichols, factory maintenance superintendent, native and resident of Avondale, “the mushroom is king. It’s the backbone of the economy for a radius of six miles. Right here you’re just about in the center of it.

“This was the start of the mushroom industry. It’s still the world capital, but imports have become a bit of a threat. Italian settlers started it some years back. They came in as stone cutters, but then the quarries became flooded out so they went into masonry and mushrooming. At first they used to save up to go back home. But gradually they began to send for their families to come here.

“Quite a few of the Irish families came in to build the railroad and trolley car lines. Yes, Avondale used to be a rail center. There were two lines running between here and Philadelphia carrying bomb casings and coal. But that’s gone.

“When I was a boy it was mostly small farms. Every farmer had corn and potatoes and the like. Every town had its own mill to grind flour. And its own blacksmith, and everything was horses and wagons. They also had their own ice pond and ice house. They’d cut the ice in big blocks, store it in the ice house and there was your refrigeration.

“But all that’s gone now, too. The farms have been mechanized or sold out to bigger outfits. The kids have left the farms. Even the schools don’t teach farming anymore.

“Now it’s almost all mushrooms and cows. Even the corn goes for these. The heads of the corn feed the cows and the stalks are chopped up for mushroom beds.

“My folks were born locally. Mother taught school here for 40 years. Dad was an auctioneer. He had been in the army, and that’s where I wanted to go for a career. I spent some years in the U.S. Cavalry. Saw the world. But then I broke my back in a jumping accident. That ended that.



Buff Nichols, maintenance superintendent at Avondale plant seen in background, can look back on many changes to his birthplace. Yet Chester County still is green with crops and woods, uncluttered and relatively unhurried.

“For a while I thought I would settle in Florida. That was in 1939. But I soon got a bellyful of sunshine. I missed the seasons—particularly the winters and fall. I think that’s what the natives here really like. Deep down they like the changes of season.

“Of course there used to be sleighs on all the farms when I was young. The snow was higher than the fences so you could go anywhere. Never had to worry about the road, or getting stuck behind a stalled car.

“Well, I was glad to get back here. I went to work for an electrical contractor who was electrifying the roads and farms. We would stay on a farm for a week wiring it up and installing batteries and generators. Years later the power companies came in with power lines and took over from the battery people. The only industry that amounted to anything was the mushroom canneries.

“So when the original F&M plant came here it was a big deal. You see, even some of the sons of mushroom growers were having to look elsewhere for work. Machines and contractors had taken over much of the work the sons had done. It was very tough work, too, and I know a lot of them who appreciated factory hours and wages.

“Yes, it’s beautiful country. Lots of history. Lots of wealth nearby. For that matter, the old ‘castle’ that used to stand on the plant property represented some pretty interesting history. I’m not sure you’ve got room for that, though”

*(continued)*



Louise Virtue, living on Maryland's Eastern Shore, finds openness and friendliness in the Pennsylvania countryside where she was raised.

### ***Borders can be real***

Most Americans learn at a very early age that there's no actual 'bump' as one crosses a state border. The lines on the map are imaginary though legal. Still, as Louise Virtue travels north each workday from Perryville, Maryland, to the HP plant where she works as assembly group leader, change does take place.

"The 'Eastern Shore' people in our part of Maryland seem rather slow to accept changes or new people. My husband, who's from Pennsylvania, is town manager of Perryville and knows everybody. But socially I guess we're still newcomers. We don't let it bother us. That's just the way it is. Yet the people up in Pennsylvania we find very open and friendly—and also in Colorado where we go for vacations. I guess this is generally the case with farm and country people.

"Overall, the area has almost all of the things we enjoy. We're very close to the ocean, rivers, mountains, fishing, hunting, cities, sports—all kinds of recreation. And there are great educational facilities in this part of the country and plenty of job and professional opportunities. It's been very good for our family."



Dieter Hoehn, former HP GmbH engineer now at Avondale and living in Wilmington, Delaware, has discovered American hospitality, rodeos, the Great American Weekend, and the backyard barbecue.

### ***America discovered again***

Dieter Hoehn, a West German electronics engineer who transferred from HP GmbH to Avondale, arrived in the U.S. in 1968 to find himself driving a car through Manhattan at 5:30 p.m. on a busy Friday. After that shattering introduction things had to get better, and they did in Wilmington, Delaware, where he and his wife settled.

"We really feel at home and quite turned on that people looked out for us. There's been lots of hospitality by HP people.

"There seems to be more personal freedom here. Just tennis for example—you can play on any public court here. In Europe you would have to be a member of a club. Also, in such things as moving to a new home you don't have to register with the authorities here.

"Some things really surprised me. The emphasis on sports, for example. I was impressed at the emphasis on horse racing in this area. You can go almost every day. You can also go to events such as the rodeo in the East. There's such a great variety to choose from.

"Americans seem to think nothing of driving 300 miles for a weekend. This would be crazy in Europe. I do feel much safer driving here. The drivers are less aggressive.

"Wilmington is a nice area to live in. But also, it reflects many of the problems typical of American cities as well as the advantages of U.S. life. We enjoy it. We've even bought a barbecue."





Jack Wegener — New Jersey's 100-miles-a-day man.

### Constructive commuting

As one of New Jersey's two representatives at the Avondale plant, mechanical engineer Jack Wegener commutes almost exactly 100 miles per day via car to and from his home in Gloucester City. It's normally a 65-minute run each way.

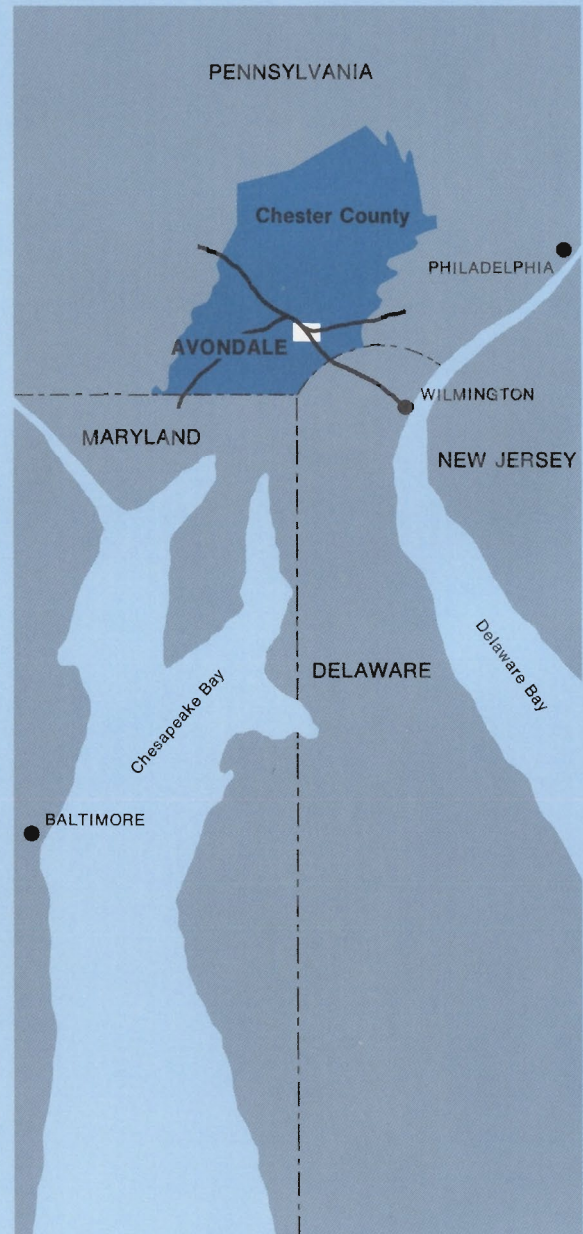
Why does a fellow subject himself to this daily excursion, involving travel through some densely packed industrial and urbanized areas? The answer apparently is: Commitment and loyalties.

"As one of the earlier employees at the Avondale plant," says Jack, "I've formed many strong ties with HP and its people here. Still, my wife and I are very involved in local and community affairs at Gloucester City.

"It's really quite an interesting community—old river town founded in 1623, typically very rough and ready in its early days. Nowadays it's largely a manufacturing center. But there's lots of history there and we like the way of life."

The trick in long commutes, according to Jack, is to use the time constructively: "I try to use the time to think, to plan what I want to do today or tomorrow. Besides, it's not that bad at all. I figure in the seven years I've been with HP that I have driven more than 250,000 miles commuting. In all that time I've only had one flat tire and no accidents. I enjoy the changing sights and countryside. I can tell you that the odors of mushroom country are quite different from those of industry?" □

*Avondale, as part of Pennsylvania's Chester County, is surrounded by history going back to early Colonial days. The county was founded in 1682, and visitors can still find early Quaker log cabins, stone homesteads of the Dutch, and stately English manors, as well as such famed Revolutionary War sites as Valley Forge and Brandywine Battlefield. Southeasternmost of the state's counties, Chester County abuts Maryland and the famous radial border of northern Delaware. New Jersey is nearby, too, just across the Delaware River. As a result, the HP Avondale plant has on its payroll people who live in four states.*



## News in brief

**Bethesda, Maryland** – Leasco Systems & Research Corporation's Time Sharing Group has taken delivery on seven HP Model 2000A time-shared systems. They are part of a long-term purchase agreement involving nearly 100 systems. LS&R, based in Bethesda, Maryland, is a computer-oriented subsidiary of Leasco Data Processing Equipment Corporation listed on the New York Stock Exchange. The systems average more than \$80,000 each, with the price varying somewhat depending upon the peripheral equipment included with the individual system. Most systems will incorporate expanded memory capacity, utilizing both magnetic tape and disc storage units. Each system can serve 16 users simultaneously. The seven sys-

tems already delivered are serving LS&R customers in the Washington, D.C., New York City and Boston areas. LS&R maintains centralized computers in several eastern cities. It leases time-sharing terminals and sells computer time to its customers.

**Palo Alto** – The new international sales region representing a consolidation of Hewlett-Packard Inter-Americas and Asia, Africa and Australasia regions has been named the Inter-Continental Sales Region.

**Waltham** – The Waltham Division has been renamed the Medical Electronics Division to reflect its exclusive involvement with the design and manufacture of electronic instruments for medical science and practice.

## People on the move

**Corporate** – Charles Hill, to section leader, electronics research lab, HP Labs, from Santa Clara R&D; John Olson, to product training, from Santa Clara marketing.

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### *Data Products Group*

**Cupertino** – Dwain Ison, to technician, quality assurance, from Microwave QA.

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### *Electronic Products Group*

**Manufacturing** – Don Borthwick, to manufacturing engineer, documentation, from Mountain View R&D; Sherm Davis, to production management staff, from Corporate plant engineering; Vernon Fay, to materials staff, packaging engineering, from stores clerk, Customer Service Center; James Hergert, to

tool engineer, from Microwave R&D; John Jenke, to inventory control, from accounting.

**Microwave** – Bill McDonald, to service engineer, marketing, from systems technician; Don Summers, to manufacturing supervisor, network analyzer, from production engineering manager.

**Santa Clara** – Randy Cornes, to government sales manager, from contracts manager, F&T East; Ronnie Olson, to R&D technician, from HPA R&D; James Shea, to division service manager, marketing, from Microwave marketing.

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### *Operations*

**Loveland** – John Mahorney, to components section, from Corporate product training.



## From the president's desk

We have just completed a review and revision of the Statement of Corporate Objectives for our company. Because of their importance to all of us in HP, a copy of the revised Objectives is included as an insert in this issue of MEASURE. And it is for this reason that I thought I might talk a little about the background and function of the Objectives, and about the revisions that have been made.

As most of you know, HP has long operated on the basis of "management by objective." Stripped down, this means that we like to give a set of guidelines to each manager—indeed to each person within the company—and then have you, within the limit of these guidelines, conduct your activities so as to create as flexible and dynamic an organization as possible. Obviously, all of these inputs must be headed in the same direction, and it is for this reason that a clear statement of Corporate Objectives is of critical importance.

Although we guided the operation of the company for many years with the same philosophies that are embodied in today's Objectives, it wasn't until 1956 that they were formally worked out and written up. There have been four revisions since that time—revisions which were necessary, if for no other reason, than to take into account our growth and related expansion into new fields. However, if one studies the Objectives since they were first written in 1956, it is readily apparent that the basic precepts have not changed.

These precepts are that we are a profit making organization; that we place great emphasis upon the integrity and dignity of our employees; and that the corporation recognizes and responds to its responsibilities to the society in which it operates.

It is not surprising, therefore, that the first Objective deals with profit. But, if the statement is read carefully it is quite clear that we are talking about profit consistent with our other objectives. This is a most important and key concept.

In years past we have often attempted to use specific numbers for our corporate profit objectives, but in view of the many types of business in which we now find ourselves involved, I have felt that this quantitative statement is no longer meaningful, and so these have been omitted.

I do not need to elaborate on the second Objective, the one that pertains to the responsibilities we have to our customers. I think all of you are aware that these responsibilities are the keystone for the long-term health of the company.

The third Objective, dealing with fields of interest, is more difficult to define. One is tempted to single out specific areas of specialization, but with as dynamic an organization as we now have I didn't feel this was either practical or advisable. Rather, I have chosen to establish some yardsticks for judging the desirability of our entering a new field. Do we have something new and valuable to offer? Can we manufacture it successfully and at a competitive price? Is it consistent with our marketing structure and philosophy? To me these are more realistic measurements than some arbitrary set of product areas that may be out of date in a year or so.

The next Objective, the one discussing growth, remains essentially the same, but the Objective relating to our people has been rewritten considerably. We want to be sure that it clearly and emphatically states our feeling that people are our most important asset, and that it is our responsibility to create an environment that is interesting, attractive, and profitable to all employees.

The sixth Objective discussing organization relates to management by objective, which I mentioned earlier, and in the latest revision this section has been spelled out in more detail.

The final Objective, the seventh, deals with citizenship. Since our earliest Statement of Objectives we have placed considerable emphasis on the responsibility the corporation and its employees have to the society that surrounds it. To me, this is not an idle statement but one that has been followed with great care and consistency. Dave Packard's acceptance of the position of the Deputy Secretary of Defense and his resulting personal sacrifices is one of the best examples of the fulfillment of this Objective.

At a time when the United States is grappling with many serious problems such as structural unemployment, education, and pollution of our environment, it is gratifying to realize that these have long been areas of interest to HP and its people. We intend to continue our awareness and involvement in each of these areas, and the many others that call for attention.

*Bill Hewlett*



## Whose hand is it ?

If you were around in the years before your community organized its united fund you may recall how the doorbell would ring at least once a week on behalf of this or that cause. All of them seemed worthy, all were needful. But how in the world could you evaluate them? Which were the most deserving? This year you have only two decisions to make, thanks to united community funds: How to give? Payroll deductions make that decision easy. How much to give? That's up to you. It's your one big chance to lend a helping hand.

### Measure

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