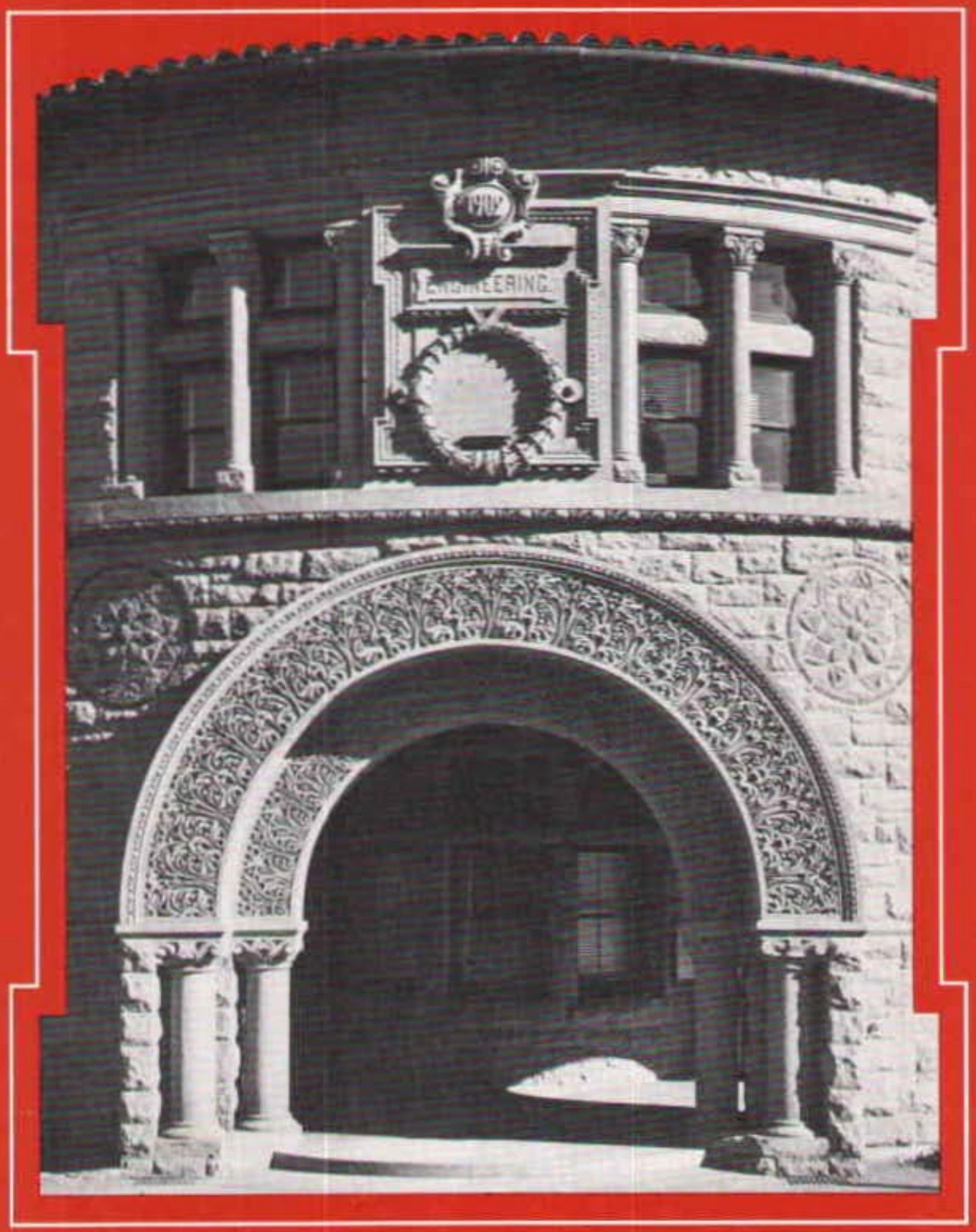
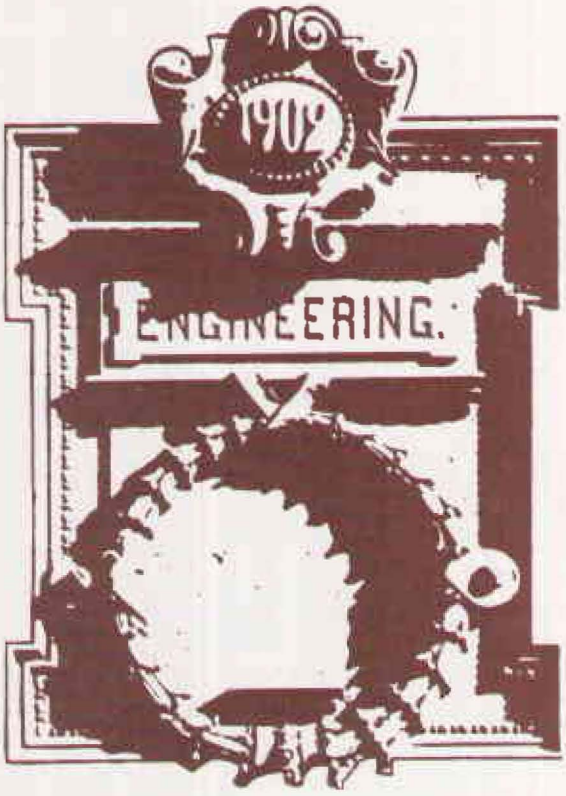
# Measure

For the men and women of Hewlett-Packard/DECEMBER 1979








# Making a

The Stanford University campus in Palo Alto, California, during the 1930's—particularly its engineering school—was the site for many of the events that resulted in the formation of the Hewlett and Packard partnership in 1939. Scenes here include the main Quadrangle (at right) and Palm Drive (above) the latter photographed by Yearbook Photographer Jack Beckett, now HP's government relations director. Freelance art director Jim McGuiness provided the sketches shown on subsequent pages.

# run for it...

## ...a look back at the origins of Hewlett-Packard as the company completes its 40th year in business—

*Co-founders Bill Hewlett and Dave Packard officially started their partnership in 1939. Unofficially, it started some years beforehand, as Dave Packard describes in one of the following discussions, based on an interview taped by the Bancroft Library of the University of California:*

☐ "It was really in our senior year that Bill Hewlett and I got acquainted and started going around together. In fact, we had been in a number of classes together during the whole four undergraduate years at Stanford. In addition to our interest in engineering and getting our business started, we also enjoyed fishing, in particular. Bill and I went on a pack trip during the summer of 1934 in Colorado, following graduation. We had a mule, and the two of us spent two weeks up in the Colorado mountains, packing and fishing. We developed a very close relationship fairly early on. As a result of working together, we generally had the same attitudes toward most things. We've never had any problem in coming out with almost the same conclusion on almost everything we've done. I don't know if you could explain how or why that came about, it just came out that way.

"Bill, I think, has been a little more interested in the engineering side and I was more interested in the business side.

"It was in my junior year that I got into an electrical engineering program, and I think this was a critical time. I had continued my interest in amateur radio when I came out to Stanford. They had a little amateur radio set-up in the engineering quarter there where Fred Terman had his laboratory. I was active in amateur radio when I was a freshman, sophomore, and junior, and it was as a result of my involvement in radio that I became acquainted with Fred Terman. I didn't really know very much about him, but he, amazingly enough, had learned quite a bit about me, and he stopped to visit from time to time. He'd known all about all the courses I'd taken and every grade that I had, and he asked me to come in one time and suggested that I might be able to take his graduate course in radio engineering during my senior year. I was pleased to do it, and that was really the time I got fully interested in electronics.

"You may recall that Terman had been developing this course which was the basis for his book "Radio Engineering"—which would become so famous.

"I was the first undergraduate who had been allowed to take this particular course. The sidelight of this is that Barney Oliver (now vice-president—R&D) came up from the California Institute of Technology the same year as a junior. Fred Terman reluctantly allowed Barney to enter the course and stipulated that, yes, he could take the course, but he'd have to understand that if he didn't pass the mid-term, he'd have to drop out. Well, who got the highest grade on the mid-term in the whole class? And who got the highest grade on every exam the whole year? Barney Oliver.

"I guess the thing that finally determined the direction of my life is that Fred arranged during this course for us to visit some of the electronics and radio firms in the area. Among them, Philo Farnsworth was developing one of his television tubes up in San Francisco. I remember seeing his laboratory. I was very intrigued to see what these people had been doing. And it was really as a result of those visits, and discussions with Fred Terman and Bill Hewlett toward the latter half of my senior year, that we decided that maybe we'd try and make a run for it ourselves. And Fred said that most of these electronics firms had been built up by people who hadn't had very much education. He suggested that it would be a great opportunity for someone who had a good theoretical background in the field to set up their own business.

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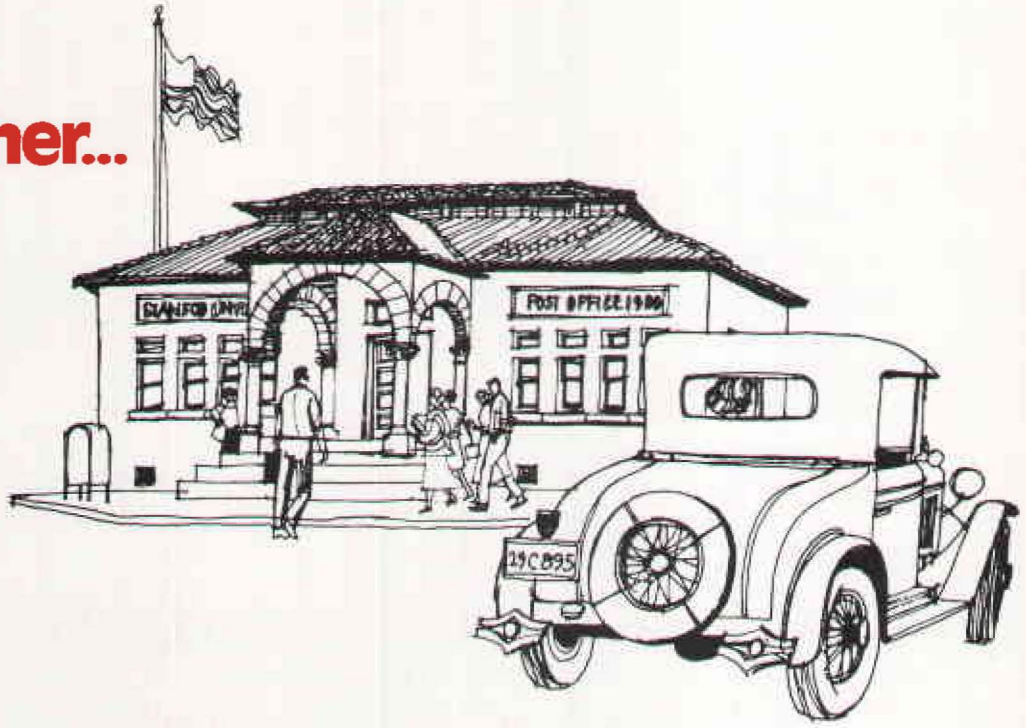
# getting together...




"And we were concerned about getting jobs. Ed Porter and Bill Hewlett and I had been making tentative plans to try to do something ourselves right after we got out of Stanford. Ed (who joined HP in 1946 and who was serving as vice president at the time of his death in 1976) had already built up a pretty good association with some people in the city in his radio repair business, and he thought he might get them to help us get started. Then late in the spring of 1934 I got an offer for a job with General Electric in New York. It was not to start until the following February, but in those days there weren't very many jobs available, so I decided I'd better take it.

"The thing that stimulated me to think about leaving General Electric in 1938 is that Fred Terman arranged an opportunity for me to come back here with the express purpose of getting together with Bill to see if we could get something started. He arranged this research grant which was to do some design work. The job was to build a tube and test its theory. Fred also arranged that I could get credit for the work I'd done at General Electric and, with just one year of residence, get my Engineer's degree at Stanford. We had in mind that this was the time when Bill and I were going to see if we could make a go of it. So Bill found this house on Addison Avenue in Palo Alto. The house is still there, as a matter of fact. We rented the lower floor where my wife Lu and I lived. There was a little building out in back where Bill lived, and a garage that we set up as a shop to work in. So I began taking courses at Stanford in the fall—classes in the morning, studying in the afternoon.

"I started doing some other things, and Ed Porter was largely involved. Ed had started a few years before to sell air conditioning equipment in the Sacramento Valley. He sold this equipment to most of the hotels. So we worked together with him and designed some control systems. Ed would send the specifications down, and we'd build the controls.

"To do that we had to set up the shop in the garage and get some equipment. Then Bill got a job making diathermy equipment for a medical clinic, and Fred Terman helped us. He also got someone who wanted a control drive for a telescope, so we made that. Then we got a job putting in bowling-alley controls. We had a bad time with that because the pushbutton we got didn't work right, and I had to go up and make a lot of service calls. So we were pretty busy between trying to go to class and get some of these outside things going, and then do the work on this design project.

"These were all just miscellaneous jobs we got to make a little money, with the thought that maybe one of them would develop into something that would be viable. Bill had developed an audio oscillator circuit in the lab at Stanford the Spring before I came out. And we'd talked about using that. As a matter of fact, Fred Terman arranged a deal with IT&T that paid for getting a patent on Bill's oscillator, in return for which they got some rights for it. We didn't have enough money to get a patent on the oscillator. We built a model of this, and Bill took it up to an I.R.E. (Institute of Radio Engineers) convention in Oregon in November, 1938. This attracted enough attention that we decided maybe we'd make a run for it. So we then built up a model more carefully and wrote a set of specifications. I remember having this model in the living room at Christmas time because we were taking some pictures to send out. We got a list of prospective customers, some of them from Fred Terman and some from other sources, and mailed out some letters. I don't remember how many letters we sent out. It couldn't have been more than 50. It was probably more like 25. But, amazingly enough, in a couple of weeks we got some orders back with some checks in the mail."

*Teacher, mentor, friend—Fred Terman exerted a profound influence on both the professional and personal lives of Dave Packard and Bill Hewlett. Now retired as Vice President and Provost Emeritus of Stanford University, and Director Emeritus of Hewlett-Packard Company, Professor Terman here recalls some of the circumstances that brought them together:*

Brought together at a recent Board of Directors meeting were Bill Hewlett, Fred Terman (standing), and Dave Packard. Professor Terman is a Director Emeritus of the company, and had a profound personal and professional influence on its founders as well as on the teaching and development of electronics.

☐ "I first became acquainted with Dave Packard in the fall of 1933 when he was a senior at Stanford. Dave wanted to enroll in an electronics course I was teaching that was really for graduate students. However, I let him in because he had had very good grades and had had experience as a radio 'ham.' As a result, I also got slightly acquainted with Bill Hewlett during that year, although he didn't take this course until the following year. During this period I learned that they were very good friends, and that they had a dream of someday going into business together —some kind of business that would be electrical and technical, though not necessarily electronics.

"Looking back on the 1930's, you'd have to say the electronics industry was in a pretty elementary state. The big activity was in manufacturing broadcast receivers. There was also a substantial volume of communications business—i.e., building radio receivers and transmitters for ships, radio equipment for short-wave communication, etc. There were even some people working secretly on radar in the period 1936-39, but I hadn't heard of it then.

"How did I get into electronics? I had always been interested in electrical things. In 1913-14 at age 13 I built a crystal receiver, using a silicon cat whisker (i.e. diode) detector. I had never seen a radio set but had read about them. After getting the receiver put together, I played around with it expectantly—and wonder-of-wonders—within 15 or 20 minutes I heard a signal—KPH—the San Francisco station that sent dot and dash signals to the boats, and I was hooked. I gradually learned the code. Finally, I built a transmitter and became a radio ham. That settled it. I was going into electrical engineering.

"In those days the big thing in electrical engineering was electrical power. I did my engineer's thesis at Stanford on a problem in the transmission of power at high voltage, worked for PG&E in the summer of 1922 doing some field work on power-line measurements, then went to MIT for further graduate work. Electrical engineers just didn't go for a Ph.D. in those days, but I was leaning toward a university type of career, and my father thought it would be a desirable thing to do, so I went off to MIT in Boston for two years of graduate school.

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# some experiments...


Seventeen-year-old Fred Terman appears to be operating his homemade dot-and-dash transmitter at his home in Palo Alto sometime in 1917-18. Becoming a radio ham led him directly into electrical engineering. Another ham named Dave Packard first became acquainted with Prof. Terman in Stanford's electrical engineering lab through their common interest in radio.

"In the summer after receiving my doctorate I discovered I had tuberculosis and I spent a year in bed. During that year I did a lot of reading about vacuum tubes, vacuum-tube oscillators, amplifiers, and other 'radio' subjects, and discovered that all the advanced circuit theory I had studied at MIT was applicable to radio systems. This discovery changed the entire course of my subsequent career. Meanwhile several job offers came in, including one from Stanford, which I accepted, in part because of the climate. During my first year of teaching I suggested to the head of the department that I develop an introductory course in 'radio.' This was offered in the spring of 1926 and I added additional work in radio the following year. Thus was instruction in electronics introduced at Stanford.

"As a ham radio operator, Packard had built radio equipment and it was this background that oriented him toward radio. How Hewlett happened to choose electrical engineering I don't know. His father (then deceased) had been a distinguished professor of internal medicine in the Stanford Medical School; even then Bill had an interest in medical electronics as evidenced by the fact that while a student at Stanford he built a diathermy machine as well as apparatus to record brain waves.

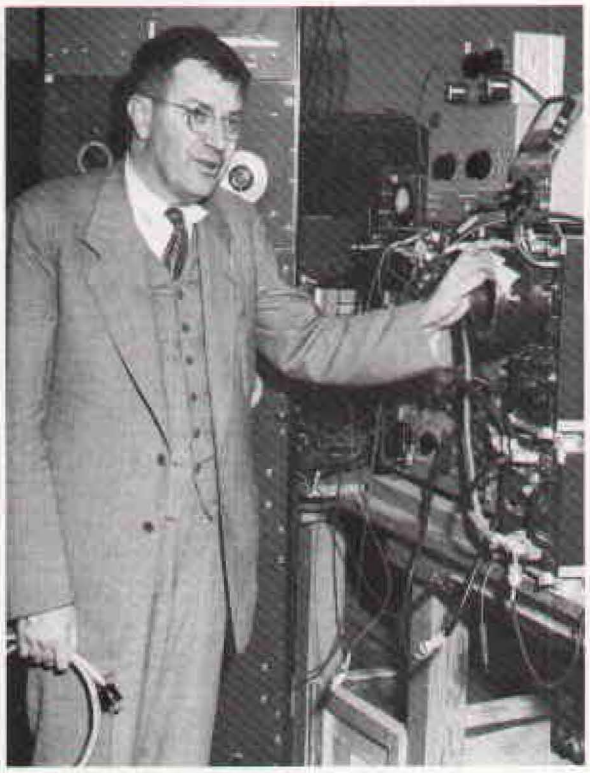
"It was my impression that as a boy Bill had not previously worked much with mechanical things or made things with his own hands. At Stanford we had a small student shop in the radio laboratory, and Bill got to playing around in this shop during his graduate years. He was an unusually energetic fellow, who always had to be doing something extra to wear off his surplus steam, even while taking a full academic load. And he did this by making things in the shop. When he got something made and working, that was it, and he would quickly lose interest. For example, he was one of the early skiers, and he built himself a portable transceiver that worked off of batteries—to carry out on the ski range. He enjoyed making it, and took it out on one or two trips, but soon it was taken apart and the parts used for something else. He got real satisfaction from making it and getting it to work.

"As I have said, my impression was that Bill hadn't done much of this before, and was finding that making things was a lot of fun. At the beginning he wasn't particularly skillful in either design or construction. I have said that he alone could create more disorder in the shop in one afternoon than all of the other fellows put together would create in a week. I know he hadn't done much in radio before, because he used to take circuit diagrams from the magazine QST, and go over them laboriously in great detail. I can remember once he looked up with a broad smile and said to me with obvious satisfaction, 'Well, I just finished studying this diagram, and I've figured out what every component in it is supposed to be doing.'

"In this period, when he was first building things, Bill's designs were pretty primitive. But he is one of the few students I've ever had who, as one watched, rapidly acquired a feel for nice ways of making something, a clever way of doing it. Most of my students seemed either to have been born with this kind of talent or they lacked it—and those who lacked such skills at the start never seemed to get much better—except for Bill Hewlett. He acquired the flair through his own initiative and drive.

"Meanwhile, Packard had accepted a job with General Electric. I felt Dave should have taken at least one year of graduate work before ending his formal education. However, this was the time of the Great Depression, 1934, and Dave was quite flattered to be offered a job by General Electric at something less than a dollar per hour.

"However, it turned out all right. He was with GE for three years, and made quite a position for himself there during that time. Their program called for the new college recruits to be assigned successively to different departments to run tests on generators, motors, and other



The success of the electronics industry that Fred Terman helped to spawn in the West and particularly the Stanford Industrial Park was evident in 1952 when former students Dave Packard and Bill Hewlett donated a substantial new wing to Stanford's Electronics Research Laboratory.

equipment as a way of becoming familiar with GE products. One of Dave's early assignments was in the vacuum-tube laboratory. The man in charge there spotted Dave as having unusual talents and somehow managed to grab on to him; that ended the rotation!

"In less than two years after Dave arrived at GE he was the senior author of an IRE paper announcing a new vacuum tube device—the GE version of the ignition tube which immediately became a widely used product. He thus achieved a position of importance very quickly.

"During that period, when Hewlett was in Palo Alto and Packard was in Schenectady, I would make a trip East once or twice a year, and would usually go through Schenectady and act as a sort of message carrier—tell Packard what Hewlett was doing, and vice versa. In a way, I was carrying personal impressions back and forth between these two young men who continued to nourish the idea that they would some time go into business together. They were also corresponding.

"Hewlett studied at Stanford for a year after graduation, went to MIT for a master's degree, then returned to Stanford and did some freelance research, took some courses, and built the diathermy machine, and also a rather bulky recorder for brain waves wanted by a woman doctor connected with the Stanford Medical School.

"To complete the requirements for an Engineer's degree at Stanford, Bill had to prepare a thesis. At that time I had decided to devote an entire quarter of my graduate seminar to the subject of 'negative feedback.' I had become interested in this then new technique because it seemed to have great potential for doing many useful things. I would report on some applications I had thought up on

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# the product...

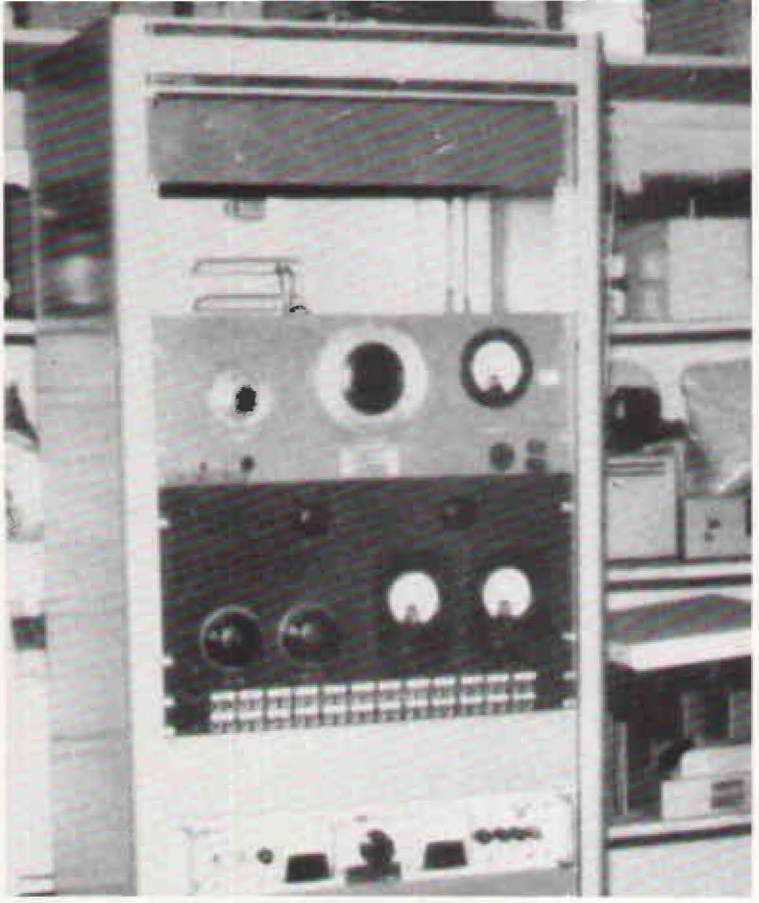
negative feedback, and the boys would read recent articles and report to each other on current developments. This seminar was just well started when a paper came out that looked interesting to me. It was by a man from General Radio and dealt with a fixed-frequency audio oscillator in which the frequency was controlled by a resistance-capacitance network, and was changed by means of pushbuttons. Oscillations were obtained by an ingenious application of negative feedback.

"I was already interested in audio oscillators. This was the time of the Great Depression and we didn't have money to buy apparatus. As a result we had been building our own oscillators.

"In thinking about the device described by General Radio, my reaction was that while this was an interesting idea, their spot-frequency oscillator was very limited in its usefulness. However, it appeared that one should be able to put in a variable broadcast tuning condenser in place of the various fixed condensers that GR cut in and out of the circuit to change frequency, and could thereby generate a frequency that was continuously variable. I suggested to Hewlett: 'Here's an idea. Maybe you can develop it into something useful.'

"It was just a raw idea, with plenty of things to be worked out—such as a way to avoid generating a lot of distortion. And that's where Bill made his first invention—he introduced a small incandescent lamp into the system, thereby providing a resistance that increased in value with the amplitude of the oscillations, but without introducing any nonlinearity.

"Bill worked out all the details, and then built a nicely packaged prototype that he demonstrated at a convention here on the Pacific Coast. He felt he had something that was both useful and marketable. However, Packard was in the East starting a promising career there, and had married Lucile only a few months before. Prospects of a partnership did not look too bright.

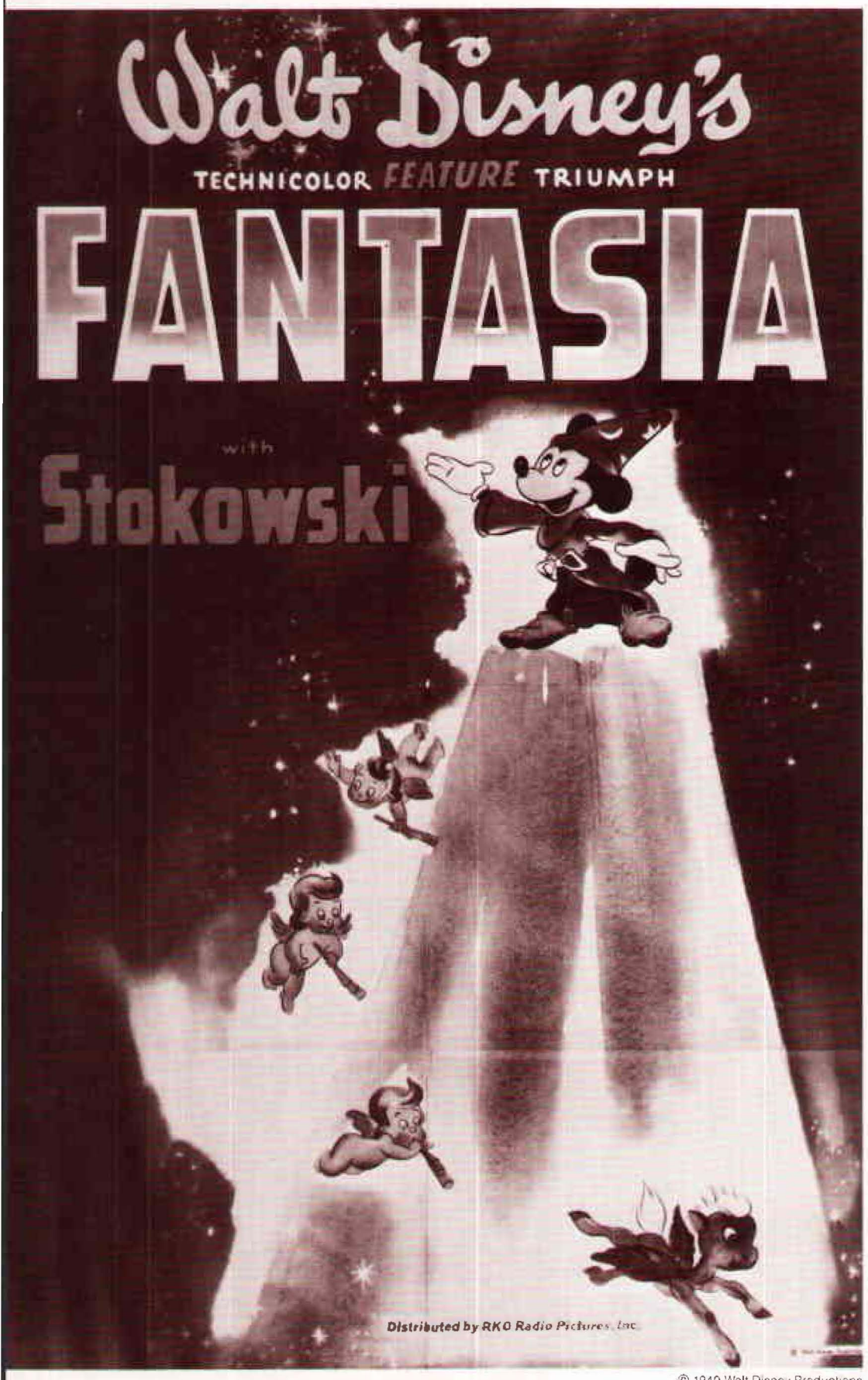


At least one of the first 200A's purchased by Walt Disney for "Fantasia" is still operating efficiently in the Hollywood sound studio, and is seen as the instrument second from the top. The movie itself is seen in revivals from time to time.

"Then, through an unusual chain of circumstances, my laboratory received a $1,000 gift—big money for those poverty stricken days. This gift was a by-product of the Sperry Gyroscope Company's interest in the Klystron tube, and was to explore some side ideas. Packard would be ideal for this assignment in view of his experience at General Electric with vacuum tubes, so I asked Hewlett: 'Do you think Dave would be interested in taking a leave of absence from GE to work on this project for nine months or so? We could pay him about $55 a month for nine months, and still have $500 for expenses. He could take a leave of absence from GE and so not burn his bridges behind him (remember there was a depression and good jobs were scarce), and decide for himself whether you are right in feeling you have an adequate basis for starting a company.'

"Hewlett's reaction was: 'I don't know, but I can write and find out.' I hope that letter was preserved, because on the basis of its contents Packard took a leave of absence and came out here. I saw the GE people a few months later, and they were very puzzled as to why Packard wanted to break his continuity with General Electric just to return to school, when his prospects in Schenectady were so bright!

"Back at Stanford, Dave worked half time on the tube project, and half time on formal courses. He told me subsequently that after being back a few weeks he knew he would never return to GE. With the oscillator, it was clear that they had something that would fly. You see, they built those first HP oscillators in Dave's garage, and sold them for $55, whereas competitive equipment cost $200 to $600. Very soon their confidence was justified by a large order. The sound engineer for Walt Disney's movie, 'Fantasia,' saw the oscillator, recognized it as good, and bought eight of them at one crack. This convinced the boys they were in business to stay!" □






Much has been made of the sale of eight 200A audio oscillators—HP's first product—to Walt Disney studios in Hollywood for production of the soundtrack of "Fantasia," a famous movie. Indeed, the sale did tend to confirm that the partners were really on to something big. While that makes a good story, the fact is that the 200A was its own best sales representative, having greater capabilities and being priced several hundred dollars less than competing instruments.

# Corporate in concrete...

*Photographed at sunrise in mid-September against a background of the existing Stanford Industrial Park complex in Palo Alto, the site of HP's new corporate offices begins to show the shape of the building to come.*

☐ In California, where folks are talking a good deal about both earthquakes and energy these days, the new Corporate offices building now under construction incorporates a number of reassuring features.

Its design, according to architects Ehrlich-Rominger and HP's own Corporate Construction, is state-of-the-art in terms of both earthquake resistance and energy conservation.

Eric Woods, Corporate Construction manager, points out that earthquakes are only one of the natural forces considered in designing company buildings. In Colorado and on the East Coast of the United States, for instance, wind and snow-loading factors must be taken into account. But admittedly, the dramatic force of an earthquake puts a special, short-term strain on a building. And since Palo Alto, like much of California, is rated in the likeliest zone for earthquakes, the new building must meet maximum code requirements for earthquake resistance.

It's true that ideas of experts continue to change on the best way to design a structure to ride out an earthquake, which causes the ground to move abruptly both upward and sideways. According to the current thinking, the critical concern is to support a building against "lateral acceleration"—that side-to-side shimmy

which, once felt, one never forgets. There's less worry about the up-and-down motion since the weight of a building tends to hold it down on the ground.

The new HP corporate offices building is therefore locked securely into the ground while still maintaining some "give" in the frame structure to bend slightly under the force of an earthquake. Poured concrete walls on their own footings will absorb that force and take it into the ground. The frame of the building consists of concrete columns on separate footings that support slabs of poured concrete (lightened through use of a waffle-like construction) that are tied to the concrete walls; a steel roof is supported on steel columns. The result is a reasonably light and flexible structure that provides superior safety against collapse.

Furthermore, the hillside building consists of three parts, separated by expansion joints, that can move independently without knocking together in a tremor.

Hewlett-Packard has been designing energy-conservation features into its buildings for a good many years. Starting with the first construction on the Stanford Industrial site in the mid-fifties, for instance, all HP buildings have utilized outside air to provide cooling whenever possible.

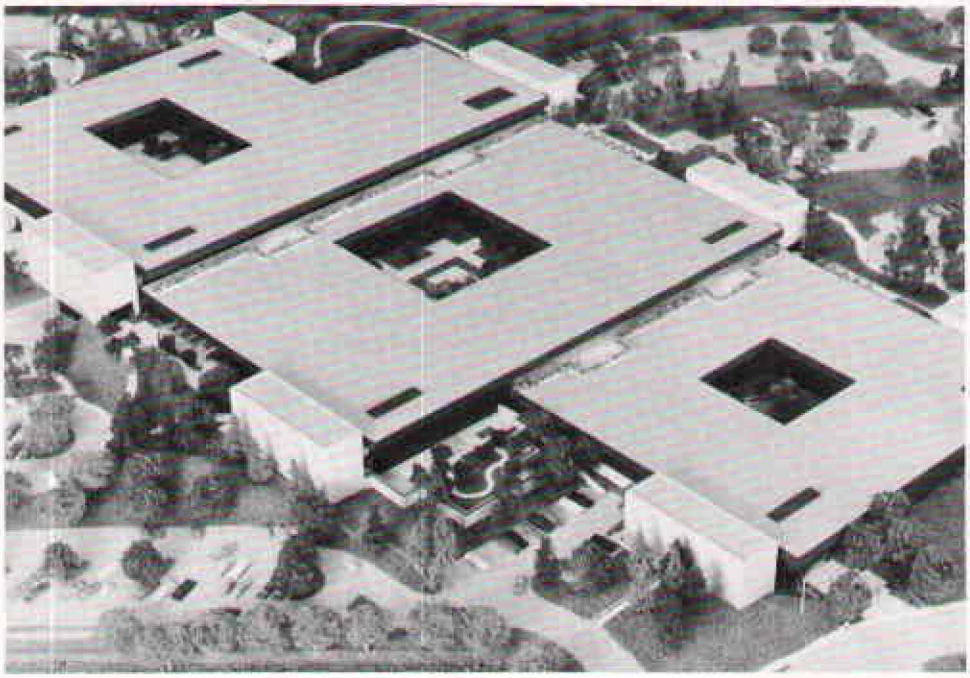
The shell of the new building is heavily insulated with Fiberglas to limit energy transfer. Inside, offices will have the same efficient "variable air volume" system used in HP's newer manufacturing facilities—the amount of air supplied to the space is varied, with the temperature remaining constant. (In older systems, temperature was changed by constantly heating or cooling the air.)

Like the present HP buildings higher up on the hill, the new Building 20 has a north/south orientation of the major glass areas to avoid sun on the surface as much as possible. (Overhead windows have been eliminated in the new design, however, with a conventional flat roof replacing the sawtooth roof.) Tinted glass further reduces the effects of solar radiation by 30 percent.

An array of solar panels on the roof will put the sun to work heating water for the restrooms and kitchen.

According to Corporate Construction's Jim Pettegrew, whose group planned the innovation, each group of solar panels will be connected with its own water tank adjacent to the area which will be provided with hot water. Two restrooms located back to back, with a total of 10 washbasins, will be served by 96 square feet of solar panels and a 120-gallon storage tank. The greater hot water needs of the cafeteria kitchen will require 832 square feet of panels and 300 gallons of storage. Altogether, eight groups of panels will have a total of 1,984 square feet of sun-collecting surface.

Back-up provision has prudently been made for heating water by electricity for those days when the sun doesn't shine—even in California. □



Site model of the Corporate offices building shows the three sections which make up the structure.

# Roundup


GOOD HABIT: For the second year in a row, the Santa Rosa spectrum analyzer team has come up with an award winner. Last year its RF analyzer won recognition by INDUSTRIAL RESEARCH magazine as "one of the 100 most significant product developments of 1977." This year a similar award was received for the microwave spectrum analyzer (8566A) used in evaluating performance of communication and radar systems. Hence the smiles of—from left—R&D program manager Siegfried Linkwitz, and project leaders John Lamy, Dee Humphreys, and Larry Martin. Also receiving one of the 100 awards for 1978 was General System's HP 300.

A WINNER: Last month the WOKINGHAM NEWS, a weekly newspaper serving the Winnersh community in which HP has its United Kingdom headquarters, named Jenny Mew as the winner in its 1979 "Miss Wokingham Commerce" contest. This only confirmed what HP people have known—that Jenny is a bright, attractive and go-ahead person. She started with HP Ltd. six years ago as a secretary in the handheld calculator sales department. Four years ago she began to sell products outside the office and department. Now she is Winnersh's first dealer salesperson, calling on retailers and stores in London and southern England. Her goal: a million dollar year in 1980.

GOOD LUCK WALK: Hardly your regular go-to-work gear, but Rose Bonnar-Halliday of South Queensferry's Pre-Fab department, is pleased to show it. Rose is dressed for what is known in Scotland as a Good Luck Walk. It's a quaint custom in which on her last working day prior to marriage—a bride-to-be appears in a mock wedding dress and hat covered with paper flowers. In the little potty she carries salt, coal and a tiny baby doll—all very symbolic of food, warmth, home, and children to be. The idea is for fellow employees to fill the potty with coins to help make those things possible. Good luck, Rose.

During the recent SICOB show in Paris, Valery Giscard d'Estaing, president of the French Republic (left), visited the HP booth and learned some key points about HP France from Country Manager Kleber Beauvillain: A magazine survey shows HP is the third ranking exporter of computer products from France; HP France also ranks as the country's 314th firm in terms of sales. In response, President d'Estaing expressed his satisfaction and awareness regarding the quality and reputation of the company.

# HP news

## HP reports 1979 results

PALO ALTO—1979 operating results "were the best in company history and reflected increased demand for HP products in all of the company's major product groups," John Young, HP president and chief executive officer, reported last month. "Sales of electronic data products were especially strong, totaling about $1.08 billion for the year, or approximately 42 percent more than last year."

Young said fourth-quarter earnings, a record, were nonetheless "impaired by greater-than-expected increases in materials costs, including premium prices paid for components which are in short supply and for a higher-than-normal volume of subcontracting for fabricated parts. We are monitoring these areas closely to minimize their impact on 1980 profit margins.

"In the last two years, we've experienced very rapid growth. Since 1977, total employment has increased nearly 50 percent to 52,000 and shipments have gained about 73 percent. Despite a generally favorable outlook for HP in fiscal 1980, we probably will not be able to sustain these rates of growth."

For the fiscal year ended October 31, the company reported a 36 percent increase in sales and a 33 percent increase in net earnings, based on unaudited results.

Sales totaled $2.35 billion, compared wtih $1.73 billion in the 1978 fiscal year. Net income amounted to $203 million, or $3.43 per share on approximately 59 million shares of common stock outstanding. This compares with $153 million, or $2.63 a share on approximately 58 million shares outstanding in 1978, after restatement for the company's two-for-one stock split in June, 1979. Profits as a percent of sales were 8.6 percent against 8.9 percent.

Incoming orders for the year totaled $2.53 billion, an increase of 35 percent from the $1.87 billion in orders booked in fiscal 1978.

In the fourth quarter, sales totaled $679 million versus $517 million in the year-ago quarter, an increase of 31 percent. Fourth-quarter earnings were up 8 percent, to $56 million, or 93 cents a share, from $52 million, or 87 cents a share. Incoming orders were $638 million, an increase of 28 percent against $501 million in last year's fourth quarter.

HP's electronic data products represented approximately 45 percent of sales during the year. Electronic test and measurement instruments accounted for 42 percent, medical electronic products for 8 percent, and analytical instrumentation for 5 percent.

The company's international business accounted for about 49 percent of all orders during the year, with orders from customers outside the U.S. amounting to $1.24 billion, up 39 percent from $898 million in 1978. Domestic orders increased 31 percent to $1.28 billion from $977 million the previous year. In the fourth quarter, international orders rose 32 percent to $306 million from $231 million in the year-ago quarter. Domestic orders were $332 million, up 23 percent from $270 million in 1978.

## New HP philanthropic foundation

PALO ALTO—A philanthropic foundation which will oversee most charitable contributions of the Hewlett-Packard Company in the U.S. has been established by HP.

The new Hewlett-Packard Company Foundation will be headed by Emery Rogers, who was named executive director. Rogers also was named to assume the broader position of manager-corporate contributions, where he will coordinate HP's philanthropic activities around the world. He was formerly general manager of the Analytical Products Group. Dean Morton, HP executive vice president, will serve as acting general manager of the group until a successor to Rogers is named.

HP's worldwide contributions of cash and equipment are expected to total about $8 million in the company's 1980 fiscal year. Only domestic cash contributions will be handled through the foundation, which will be funded by contributions from the company.

Besides his foundation duties, Rogers will also be active in certain aspects of the company's university-relations activities, including doctoral recruiting and the coordination of research grants and associate programs. He will oversee the company's nationwide participation in the annual United Way campaign, and he will manage HP Scholarship Fund, an annual fund-raising drive among HP employees which accounted for most of the 153 $1,000 college scholarships awarded to children of company employees in 1979.

HP typically makes donations of cash and equipment to various health and welfare agencies, colleges, universities, hospitals, medical clinics and other similar organizations, especially in technical and scientific fields. Many of the donations are made in areas where the company has major facilities.

## African sales shift

GENEVA—Responsibility for sales of HP products to 36 African countries in close proximity to Europe has now been shifted from Intercontinental headquarters in Palo Alto to HPSA headquarters in Geneva. Effective November 1, all administrative and quota for these counties will be located in Geneva, with HP Athens responsible for sales development.

# From the president's desk

The end of October signaled the close of fiscal year 1979 for our company. This year end is a little more special than most in that it winds up the decade of the 70's and concludes HP's 40th anniversary. I looked through the file of past annual reports to review our sales progress over the four decades, and the figures tell an interesting story.

After the first decade of business (1949) sales revenues were only $2 million per year! Those 10 years, of course, reflected the dislocations of World War II and HP's participation in the foundation of the electronics industry. By 1959 sales were up to $48 million including those of the first acquisitions. That same year we formed the initial divisional structure, and began our first international manufacturing in Germany as well as our own marketing in Europe.

Major growth took place in the third decade with '69 totaling $327 million. We changed from outside sales reps to an HP sales organization early in the 60's, and formed our first product group toward the end of the decade. Computational products and related systems were beginning to have an impact on sales and accounted for 15 percent of the total in '69.

The 70's continued the growth of computers, the further development of our organization through several new product groups, and the clear recognition that HP had become a major corporation in absolute size. The table below makes the comparison clear.

| | 1969 | 1979 | Growth Multiple |
|---|---|---|---|
| Sales | $327M | $2,361M | 7.2 |
| Net Profit | 25.6M | 203M | 7.9 |
| People | 15,840 | 52,030 | 3.3 |
| Shipments per person | $20,600 | $48,800 | 2.4 |
| Percent of Sales (approx.) | | | |
| Instruments | 70 | 40 | |
| Computers | 15 | 40 | |
| Other | 15 | 20 | |
| | 100 | 100 | |

The product composition of the company was perhaps the most striking and far reaching change of the 70's, and it will have a continuing impact on the character of our business. The significant improvement in productivity also is evident. To put it in perspective, if we were working at the same level of effectiveness today as in the 1960's we would require an additional 60,000 people!

The year 1979 itself was one of good progress and growth. The shipments increase of 36 percent was a major accomplishment. Costs and expenses were in balance for the year so our earnings increased by 33 percent. We made a concerted effort during the year to improve our asset management and we achieved considerable success. All categories of assets grew less than the growth in shipments: inventory +34 percent, accounts receivable +32 percent, and land, buildings and equipment +24 percent. This allowed us to finance the year's growth and keep the $100 million cash balance we started the year with, another big accomplishment.

The only areas where '79 could have improved showed up in the 4th quarter. Our expense levels grew faster than desired and were in excess of our planned levels. We also began to feel the financial effects of a general industry shortage and higher prices of semiconductors. Our own manufacturing capacity limits were pushed in some fabrication areas such as printed circuit boards, and that also added to costs since we had to rely on more subcontracting. We expect that actions already initiated will start correcting these conditions, but the situation will require forceful management in the months ahead. At the same time, orders will be harder to come by in 1980. Our worldwide field marketing organization, therefore, will have to make every effort to meet or exceed our quotas each month to assure an orderly shipment program during the year.

So, 1979 was a year of very fine performance to cap four decades of growth by our company in size and distinction. As we enter the 80's we do so with strength and with the expectation that our future opportunities are at least as good and probably better than any time in the past.

Thanks to all of you for your part in making 1979 a successful year. A very happy holiday season to you and your families.

John Young

# BRUSSELS SPROUTS...

☐ Recently the HP Logo was changed from "rampant" to "passant" (example at lower left on this page). When such a change occurs what does one do with the left-over logos?

Fernand Ducheyne, HP-Belgium's Instrument Sales Manager, knew what to do with this one. Made of sugar, it decorated a birthday cake prepared in celebration of the Millenium in Brussels, 979 to 1979, a 1000-year anniversary. Obviously, Fernand found his solution quite tasty.

HP's office in Brussels, Belgium, seems to have developed a Christmas party tradition of its own —staging cabaret reviews. This was exemplified in last year's version of the movie "Grease" shown in rehearsal here. The year before it was "Paris at Night." This year, show coordinator Jacqueline Dahaen, telephone operator at the office, has cooked up a "Tour of HP Offices Around the World," with a cast of 25. Dream trips are imagined to offices in New York, Madrid, Rio de Janeiro, Paris and other locations, ending with a science-fiction finale. ☐


Measure

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