



Measure

For the men and women of Hewlett-Packard/SEPTEMBER 1967

At WESCON '67



A candid customer goes comparison



When Farinon's crewcut Ernie Gilmore went "shopping" at Wescon, he was a sales target for HP and its competitors:

Polarad . . . Tektronix . . . Collins . . .

□ Ernie Gilmore, like thousands of other electrical engineers, came to San Francisco's Cow Palace and the '67 Western Electronic Show and Convention with a special shopping list.

And Ernie didn't have all day—only half a day, to be exact. That's what comes from having large responsibilities in a small firm such as Farinon Electric.

"I like to kind of racehorse the show all the way through from start to finish. That way I see the most and miss the least—and I can be back on the job in the afternoon."

At the top of Gilmore's list were a number of test instruments potentially useful to Farinon as a manufacturer of multi-channel, point-to-point radio communications equipment.

"I'm interested in group delay test equipment. HP doesn't have any here at the show, but I understand such equipment is coming in from England soon."

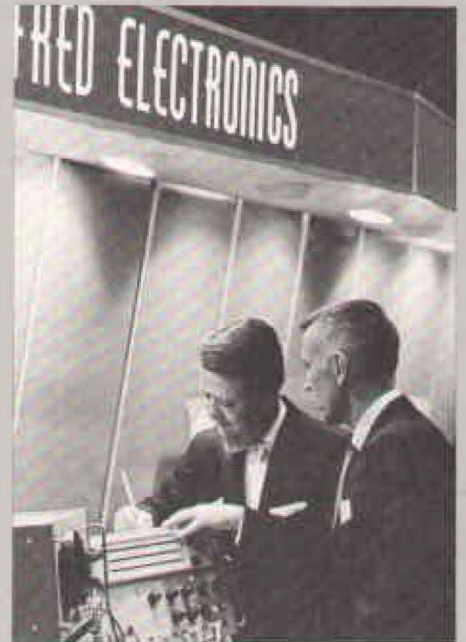
"I plan to take a good look at spectrum analyzers. The thing is, we sometimes have to haul these on planes. Frankly, one of your competitors' products appeals because it's light and easy to handle. But another competitor offers the same type of product in two 50-pound sections. Who would want to carry those around in the field?"

Gilmore thought, too, that he would take a look at the new HP network analyzer. "We're not in the market for one now, but I'm interested because of future possibilities."

New electronic devices make up another "item" on Gilmore's check list.

"Capacitors and diodes are a real problem for us. So much of our equipment is in the high RF range—starting at 80 megacycles—that our needs are special. The HP diodes we've had—about a thousand now in use—have performed well. The only trouble so far has been with physical damage in the field."

shopping



... Varian ... Alfred ... Microwave Associates ... Fairchild ... Non-Linear Systems ... Singer ... and many, many more.

"Even the standard devices—transformers and condensers for example—that we use in our low-frequency components can be a problem. Sometimes they come assembled wrong and need fixing. So we are always on the lookout for improvements."

Walking through row after row of Wescon exhibits—1,100 booths showcasing the products of 580 companies—Gilmore was able to ignore most of the displays and appeals directed at the visitors.

"So much of this stuff is basically oriented for military uses that it's of very limited interest to us."

However, on a half-dozen occasions Gilmore would become very interested in an item. At one point he spotted a cable insulation supplier who offered more variety than his present source. At another booth he signed up for more information on metal boxes.

"We're doing some of this work by hand now. Maybe they can help us."

Farinon Electric, with plants in San Carlos, California, and Montreal, Canada, and a payroll of some 200 employees, has definite ideas about preserving its small company atmosphere. Most employees are stockholders, and profits are shared. Separate new groups are formed to accommodate new growth areas—such as Farinon Microwave, which started recently in Palo Alto.

During a pause in the Wescon tour Gilmore remarked on his company's attitude to the quality of products it uses in its manufacturing operations.

"Every failure in a test instrument means real delay and money to us. If we have to send out for repair service it means the man using it is not able to do the job as planned and that can hurt each of us in the pocketbook."

"You can believe we're very conscious of quality—in our own products and our competition, as well as in suppliers such as HP."

"Keeps everybody on his toes." □



Armed with a considerable amount of competitive literature, Farinon's Ernie Gilmore visits HP's exhibit, where he pays particular attention to the new 8410A network analyzer system, the 180A oscilloscope, sweep oscillators and components.

Personal file:

Where there's a will . . .

□ A person's last will and testament has been called the single most important document he or she will ever sign. Yet estimates are that more than 50 percent of property-owning Americans die without leaving a will.

Many fail in this task from sheer laziness. Then there are those who have a superstitious fear that signing a will may somehow hasten the inevitable ending. But a great many more simply shrug it off because they fail to realize the value of their estates and do not appreciate the complexities that can arise when no will is made.

In spite of taxes and inflation, the fact remains that the American worker of today can accumulate a sizeable stake. The various forms of insurance available, retirement benefits, and such programs as HP's profit sharing, practically guarantee that even a young employee will represent far more of an estate than imagined.

Court records are filled with what one observer has called "horror stories" of legal disputes resulting from the failure to make out wills—or from neglect in making wills conform to changing circumstances. Because the courts must take over where no will exists, many a "wrong" person has been named beneficiary. And many estates have been thoroughly depleted by legal costs.

Economist Sylvia Porter recently drew up a list of basic rules to follow in planning and preparing a will:

▬ "Get an experienced lawyer to draft your will, rather than attempt to write it yourself.

Unless the provisions are complicated, the legal fee is usually under \$100 and sometimes as little as \$15. But legal knowledge is crucial in making a will that conforms to State law and that will save your survivors time and money in carrying out its provisions.

▬ Draw up a separate will from that of your spouse. Even if your wife owns absolutely no property of her

own, she will probably inherit a portion of yours at your death and must have a will of her own for the redistribution of that property.

▬ Choose an executor whom you trust and who also is trained to handle the many complicating details of administering your estate—such as submitting it to court for probate, making an inventory of your assets and getting them assessed, dealing with inheritance taxes, setting up trusts for children and so forth.

You might consider a bank with professional trust officers as well as a lawyer experienced in this field as your executor.

If you insist on a spouse or a friend as an executor of your estate, appoint this person as co-executor along with an experienced executor.

The executor's job can be a difficult, time-consuming one you probably wouldn't want to wish solely on a friend.

▬ Don't leave your will in a bank safe deposit box (even a box shared jointly by husband and wife) if State law prohibits opening it without a court order.

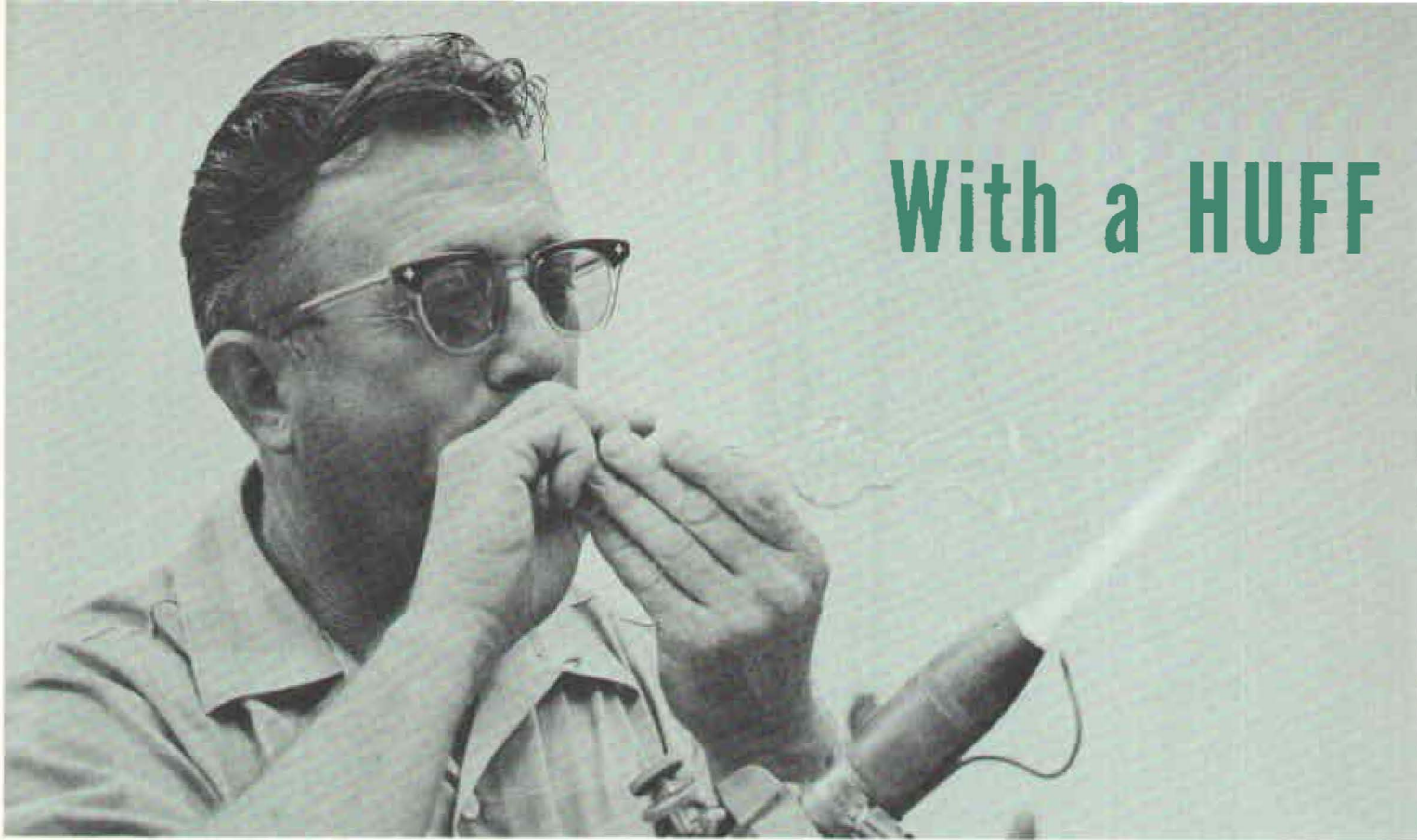
Leave it in the custody of your bank trust department, your executor or your lawyer.

▬ Reexamine your will at least every three years to keep it up-to-date in terms of your assets, tax law changes, your marital status, the number and needs of your children.'

According to HP personnel officers, another rule to follow is to keep your company records up-to-date. In particular, changes in beneficiaries reflecting changes in your family situation should be promptly reported to Personnel. In so doing, you will greatly reduce the chances of legal mix-ups and delays.

Finally, say the experts, in making your will and keeping it current you may even benefit in the here and now from the advantages your lawyer can show you. □

With a HUFF



□ When you hear it proclaimed that “nothing compares with the sight of a good man making good use of a good pair of hands,” chances are that the speaker is a fight fan defending his liking for fisticuffs.

Or, it could be someone who had just seen HP’s research glassblowers at work. This particular sight is a reassuring one, when you consider how so many of the old traditional handicrafts have given way to machines in recent years.

But not glassblowing, or at least not that lofty branch of that ancient skill as practiced by two F&T Division technicians. Bob Lorimer and Keith Kelley do things with glass that even Bombay ivory carvers would admire—experimental electronic tubes that curve in and out and through and over each other; heat resistant glass-to-metal joints involving three or more different types of glass in zones; a strange looking “tree” of glass that yields tiny rubidium-filled bulbs specially developed for an F&T project.

“The need for glassblown materials in this company is large,” said Lorimer, a Canadian-born veteran of more than 30 years in the craft.

“Most of our needs can be bought outside—the standard beakers, retorts, flasks, and tubes that machines can produce. But any time you want to develop new ideas involving different materials and shapes you have to do it by hand.”

The records show that more has been done to and with glass in the past 50 years than in all of the previous

5,000 years of its known historical use. Originally just a simple mixture of silica sand and soda that had been fused by fire, glass has become one of the super materials of modern life.

“Just think about the fact that one glass company, Corning, has over 65,000 formulations for glass. We don’t have to remember all of those, but in this scientific work we do have a working knowledge of a great many,” said Lorimer.

“We also need to be able to understand and work with many other materials and processes important in research—welding, soldering, molding, annealing, etc. There’s a lot more to it than glass.”

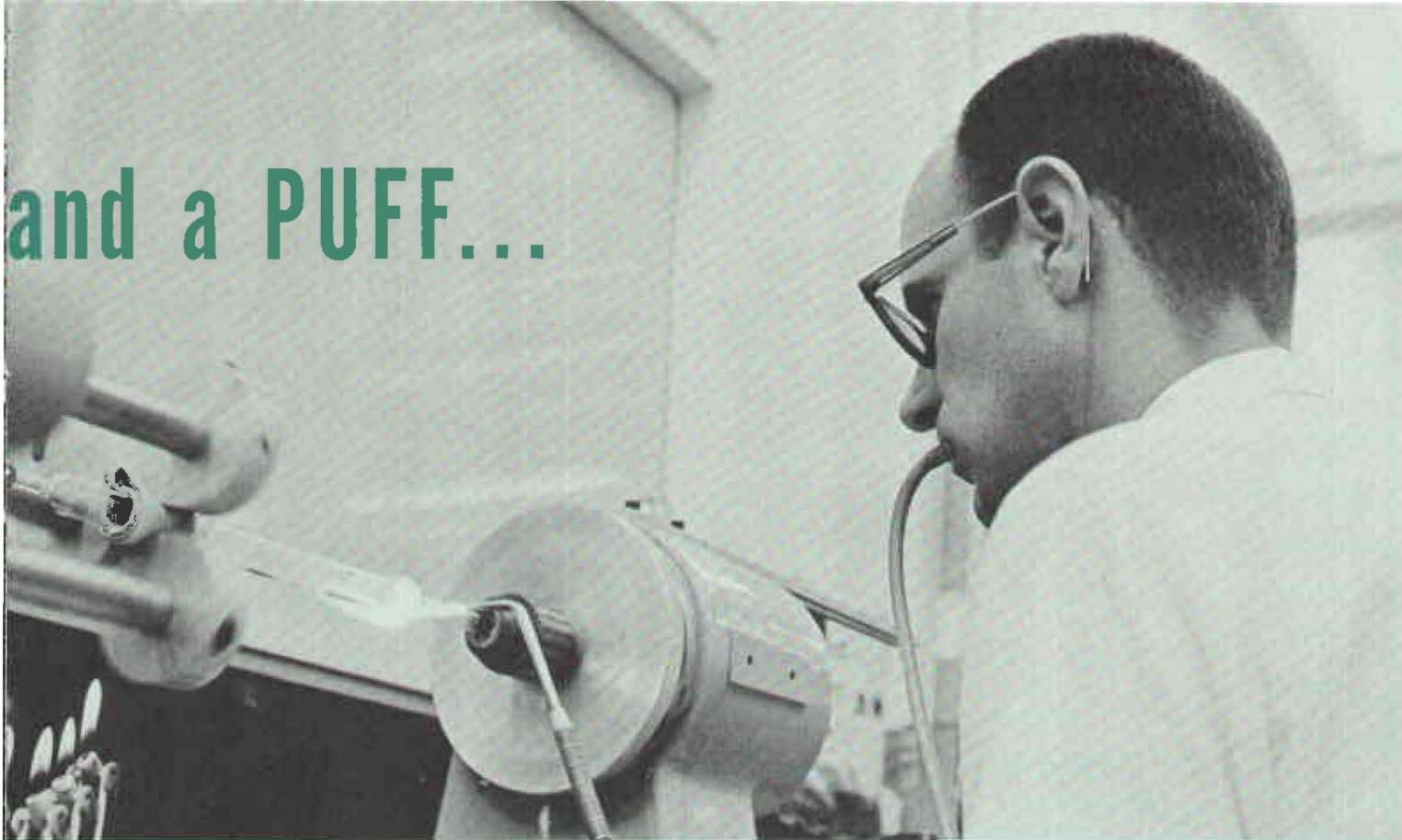
Working with gas flame and lung power, or with the assist of a lathe when bigger items are involved, Lorimer and Kelley make their work seem simple. A huff and a gentle puff and a smooth bubble forms. But try it yourself and you soon learn otherwise. Try to form a sphere yourself and all you get is—well—a blob of melted glass in most cases.

“Glass does seem to have a mind of its own,” says Lorimer. “You’ve got to learn to stay one step ahead of it.”

The F&T glassblowing team discourages requests for artistic samples of their work. “This is technical work we do here—not art,” is Lorimer’s explanation.

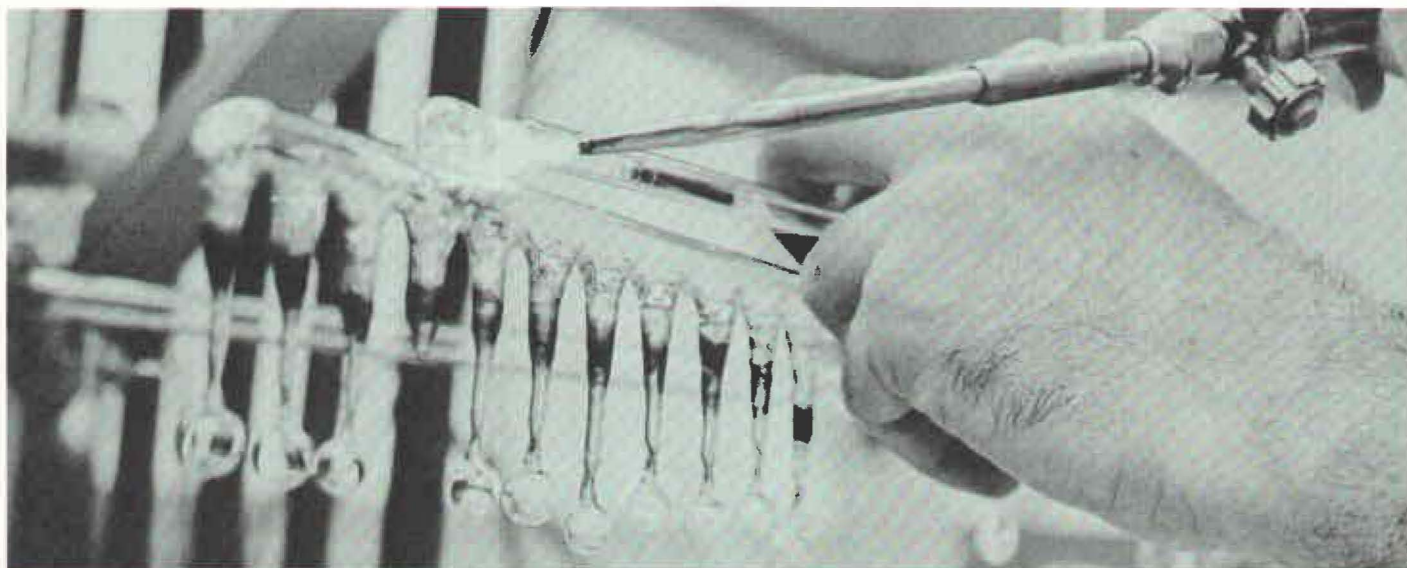
Most observers might agree that it is not art for art’s sake since everything Lorimer and Kelley produce has a useful purpose. But there is obviously art in the way they produce it. □

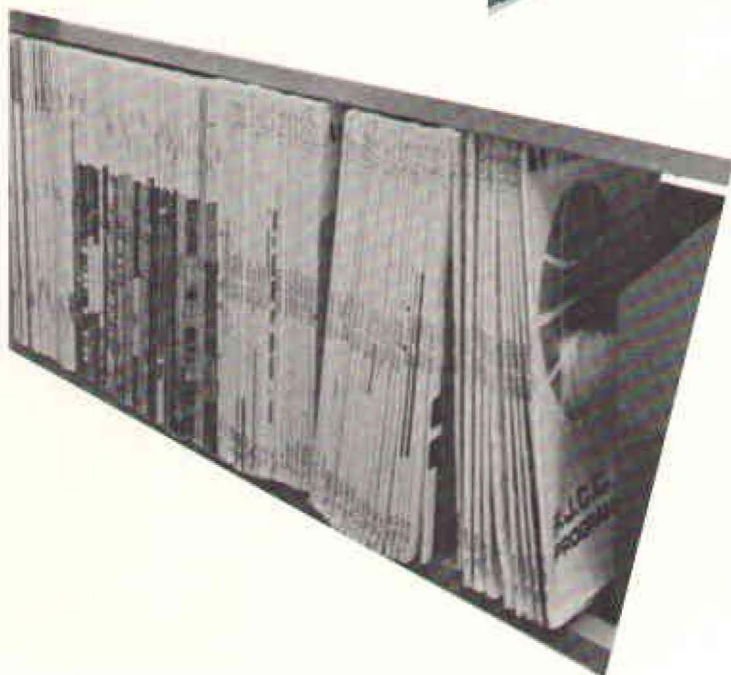
and a PUFF...



Working with Pyrex, a glass unknown 50 years ago, F&T's Bob Lorimer, left, begins handcrafting another intricate flask to be used in a product development program. At right, Keith Kelley employs a lathe to turn large section of glass tube which eventually will be warped and expanded into many strange but functional shapes. Their work, for F&T researchers, frequently calls for glass-to-metal joints—something which only the most skilled craftsmen can undertake.

The tree of glass, below, with its crop of bulbs is representative of the kinds of advanced work done by HP's research glassblowers. Elusive rubidium is forced through the maze of tubes by working behind it with a gas flame. Rubidium has an affinity for cool places. Finally it is driven down into the tiny bulbs which are harvested by cutting them off with the torch. The bulbs then become an important component in an F&T product.





Library with the board

□ In the quiet room, great technical achievements become catalog items, historic crises footnotes, and the clashes of industrial powers merely index numbers.

But don't be misled. Library systems such as the one at HP are considerably more dynamic than they appear on the surface. For, to perform a role of creating a central source of work-related information, the library has transformed a once-passive institution into a busy intersection for information traffic.

As in most libraries, the HP library provides a general reference service, particularly in the fields of science, technology, and business. It can quickly uncover specific information, for example, about the electrical properties of an exotic new material—if that information is in published form. A phone call is usually sufficient to set off this kind of investigation.

A step beyond general reference is a more sophisticated style of HP librarianship known as "literature searches." More than 165 of these have been undertaken in the past year, each involving the preparation of bibliographies, abstracts, or photocopies of articles on specific subjects.

When an engineer or administrator wants continuing information on a subject, this takes the form of a "literature surveillance." All incoming publications are screened for articles dealing with the subject, and photocopies are sent directly to the requestor. At last count, more than 250 surveillance requests were active.

The HP library reaches out into virtually every important library in the country for needed literature and information, according to Mark Baer, HP libraries manager. This is possible through memberships in key organizations of libraries and associations devoted to interchange of



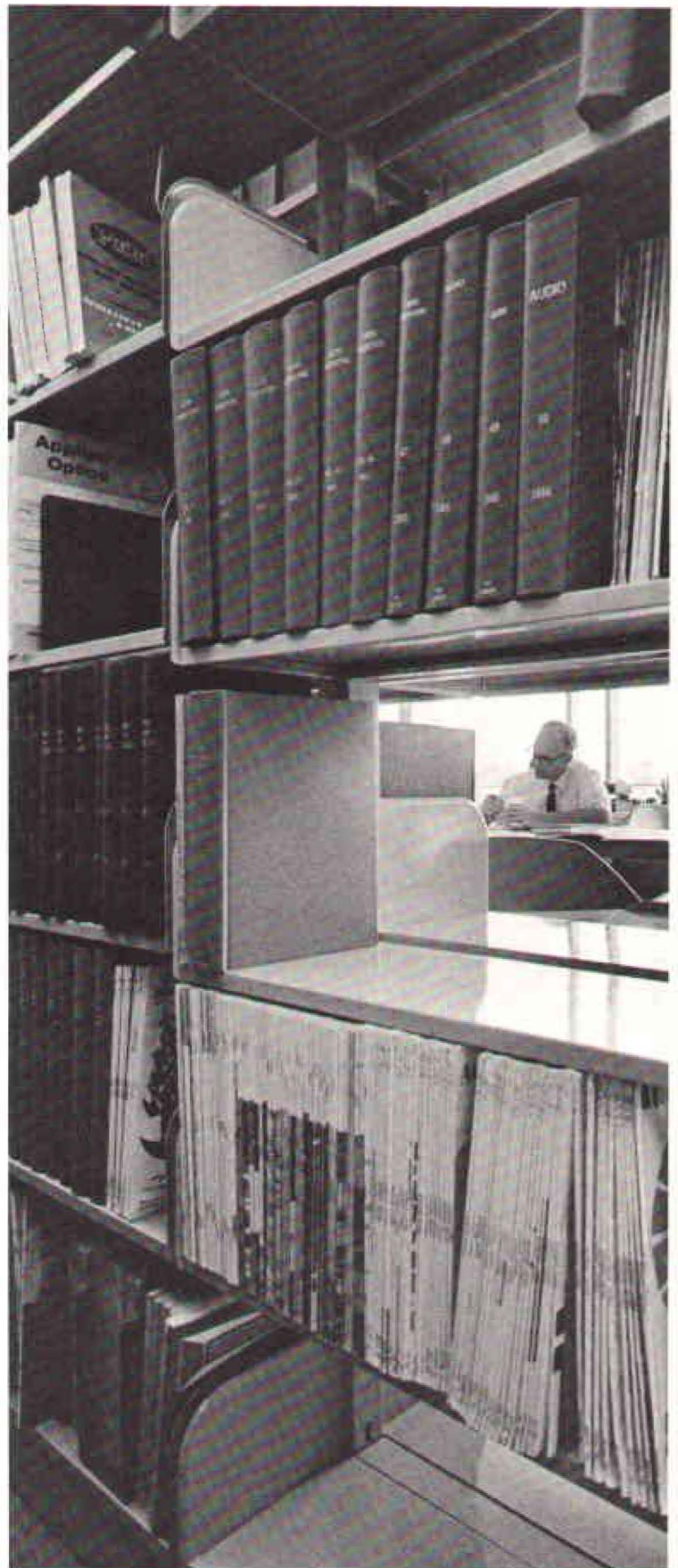
ing-house reach

information. Even information classified as "secret" by the Department of Defense, NASA, and the AEC is available to HP researchers provided it is related to their work and they have a security clearance.

Branch libraries at the operating divisions have an important role. Thirteen such libraries of book and periodical literature are maintained, in most cases by the secretary to the divisional engineering manager. But here again, the literature resources of the entire HP organization, overseas as well as in the U.S., are available locally at these branches under procedures coordinated by the corporate library. One important common reference source is the monthly HP Library Bulletin which now circulates to more than 450 employees.

The central library staff now includes two graduates in library science, Baer and his assistant, Bill Petru, plus three library assistants. Full-time librarians are also maintained by the Sanborn and F&M Scientific divisions, which have special research needs related to the medical and chemical fields. In addition to librarians, the central staff also includes a technical illustrator as a service to company authors of technical papers.

As might be expected, some requests that come through channels can be rather specialized. Petru recalls one customer's request in particular. It seems that in doing research on frogs he had had no trouble taking readings of their small heart using Sanborn ECG equipment. Now, he said, he was turning his attention to silkworms. What sort of information could HP furnish regarding the ECG of silkworms? Unfortunately, not too much. But his final question went completely unanswered: "To get a silkworm's ECG," he asked, "where do you attach the electrodes?" □



Palo Alto—Sales and earnings for the nine months ended July 31 reached new records. Sales were \$180,174,000, up 22 percent over sales of \$147,324,000 for the first nine months of 1966. Net earnings were \$15,353,000, up 20 percent over last year's \$12,751,673. Per-share earnings were \$1.24 vs. \$1.04 a year ago. Orders of \$186,864,000 were up 18 percent over last year's \$159,015,000.

Geneva—Ground was broken last month for HPSA's new headquarters at Meyrin, just west of Geneva. When completed in early 1969, the new two-level building will house HPSA's 85 employees in its 40,000 square feet (4,000 square meters) of floor space.

Brussels—Belram S. A., the Belgian firm that has been HP's electronic distributor for Yugoslavia, has added the company's medical and chemical disciplines.

Washington—Frederick L. Horman died July 31 at the age of 64. He was president of Horman Associates, Inc., of Rockville, Maryland, the electronic sales firm that represented HP in the District of Columbia, Maryland, Delaware and northern Virginia and West Virginia from 1953 until it was acquired by the company in 1962.

Dallas—The Texas area/Dallas district office has started construction on its new headquarters in Richardson, a suburb 10 miles northeast of Dallas. Completion is expected in about six months on the one-story, 17,000-square-foot structure.

Geneva—HPSA is establishing, effective November 1, subsidiaries for direct marketing of electronic, medical and chemical lines in Denmark, Norway and Finland. John Beyerholm will manage Hewlett-Packard A/S, headquartered in Naerum, a suburb of Copenhagen; Ian McGeorge will manage Hewlett-Packard Norge A/S in Baerum, a suburb of Oslo; and Pentti Halinen will manage Hewlett-Packard O.Y., Helsinki.

North Hollywood—Neely Sales Region has established a third sales district in Los Angeles and promoted Phil Scalzo to head it. The three Los Angeles districts and managers are: North, Jim Arthur; Central, Bill Wilson; and South, Scalzo. Concurrently, George Combs was appointed a district manager at Palo Alto under Jack Ingersoll, Northern California area manager.

Palo Alto—HP's educational assistance program has been expanded to include courses taken at junior colleges. Employees who receive prior approval from their supervisors and from Personnel and who receive passing grades in job-related courses will be reimbursed for books, lab fees and any tuition or registration fees.

Adelaide—HP Australia has opened a branch office, its second, here under Gray Morgan, field manager.

Paris—On September 1, HP France began construction of its new headquarters building near Orsay, 15 miles (25 kilometers) southwest of Paris. Completion is expected in the summer of 1968 for the two-story, 22,700-square-foot (2,000-square-meter) structure.

Paramus, New Jersey—When the Eastern Sales Region moves into its new headquarters here at year end, it will launch a new technical training center. Under Bob Wolfe, the center will give new technicians an intensive, three-month course in HP operations, service administration, technology and maintenance.

Wellington—Hewlett-Packard (N.Z.) Limited was established September 1 to serve the company's electronics customers in New Zealand. Don Watson is the manager of the new firm, a wholly owned subsidiary of HP Australia. Concurrently, Dental & Medical Supply Company, Limited, HP's medical distributor in New Zealand, became distributor of HP chemical instruments as well.

Lisbon—HP's chemical line has been added by Telectra, Lisbon distributor of the company's electronic instruments.

Dedham, Massachusetts—*Microwave Journal*, published here by Horizon House, has given HP's Microwave Division its annual award for the outstanding new microwave product introduced at IEEE. The award cited a network analyzer system wedded to the Dymec computer, as introduced at the 1967 IEEE show.

People on the move

Corporate—Jerry Brown, to supervisor, central shipping, from assistant traffic manager; John Cage, to college relations manager, corporate Marketing, from director, special projects lab, HP Labs; John Donovan, to corporate Legal staff, from government sales staff, corporate Marketing; Stacey Hennell, to assistant traffic manager, from supervisor, central shipping; Allan Petretto, to product training, corporate Marketing, from senior service technician, Neely-North Hollywood; Dan Smith, to product training, corporate Marketing, from customer service, Loveland.

HP Associates—Don Flynn, to product marketing engineer of semiconductors, from regional sales engineer for Eastern; Jim Girard, to regional sales engineer for Eastern, from same position for Midwest; Herb Willet, to regional sales engineer for Midwest and Southern, from product marketing engineer of photoconductors.

Loveland—Don Auppelle, to industrial design staff, Loveland, from corporate industrial design staff.

Microwave—Richard Lyon, to in-plant engineering, from R&D; Kerry Geringer, to product designer, R&D, from product designer R&D, Colorado Springs; Irene Tonnesen, to sales services, from printing services, Dymec.

Paeco—Harmon Traver, to planning staff, from manufacturing supervisor; Ed King, Jr., to production manager, tape heads, from tool designer.

Eastern Sales—Ray Faller, to medical sales representative, Norwalk, from medical staff representative, Englewood; Norm Nilsen, to administrative manager, Syracuse, from finance manager, Paeco.



from the chairman's desk

In many ways, last month's Wescon Show was the best in Wescon history. Attendance reached 45,000—far greater than any previous show in San Francisco. The technical sessions attracted large crowds, and most exhibitors, including our own people, reported heavy booth traffic and considerable interest in their displays of new products.

Perhaps the most significant aspect of the show to makers of test instruments was the clear indication that our business is becoming much more competitive. In looking over the various exhibits, it was readily apparent that more firms are getting into the instrument business, and that the established instrument manufacturers are offering a broader range of equipment than ever before.

This increased competition, particularly noticeable in such areas as digital voltmeters, counters and pulse generators, is developing from several different sources. It comes from smaller companies that have the advantage of being able to concentrate their efforts in one product area and also being able to react quickly to shifting trends in technology and markets. It comes also from companies that are primarily manufacturers of integrated circuits and other components, but are now making a strong bid to capture a sizeable share of the instrumentation market.

Even more significant is the appearance in our industry of companies whose principal products and interests are non-electronic but who are now making a real effort to gain a foothold in electronics. These well-established firms, supported by ample resources, recognize that entry into a new field requires a large investment of manpower and money, but are quite willing and capable of paying the price. There is no question but that they will bear close watching and will provide increasingly strong competition.

All of these developments indicate that we are operating in a tougher, more competitive business climate than ever before. It is a climate in which no company, however successful, can afford to rest on its laurels. Nor can it afford to overlook the ingredients that assure continuing growth and success in such a fast moving industry as ours.

The most important ingredient, of course, is a truly creative product development program. While we have long prided ourselves on the creativity of our engineers and scientists, I am convinced that we can do a much better job of generating new, ingenious ideas and converting these ideas into practical, useful products. It is not enough that we upgrade and improve existing instruments; the name of the game is innovation, and we must constantly innovate if we are to outdistance the competition.

We also must strive for better quality and reliability in our instruments. There is simply no excuse for an HP instrument to operate in a manner that does not merit the customer's highest confidence. If we cannot consistently provide him with devices that work properly, and are backed by prompt, efficient service, he is very apt to buy them from someone else.

All of us should recognize the increasingly competitive nature of our business, and the severe demands this places on each of us. At the same time I hope you share my confidence that we have the built-in strength and capability—in engineering, in manufacturing, in marketing and in service—to meet these new challenges and to maintain our industry leadership, however strong the competition may be.

David Packard

Measure

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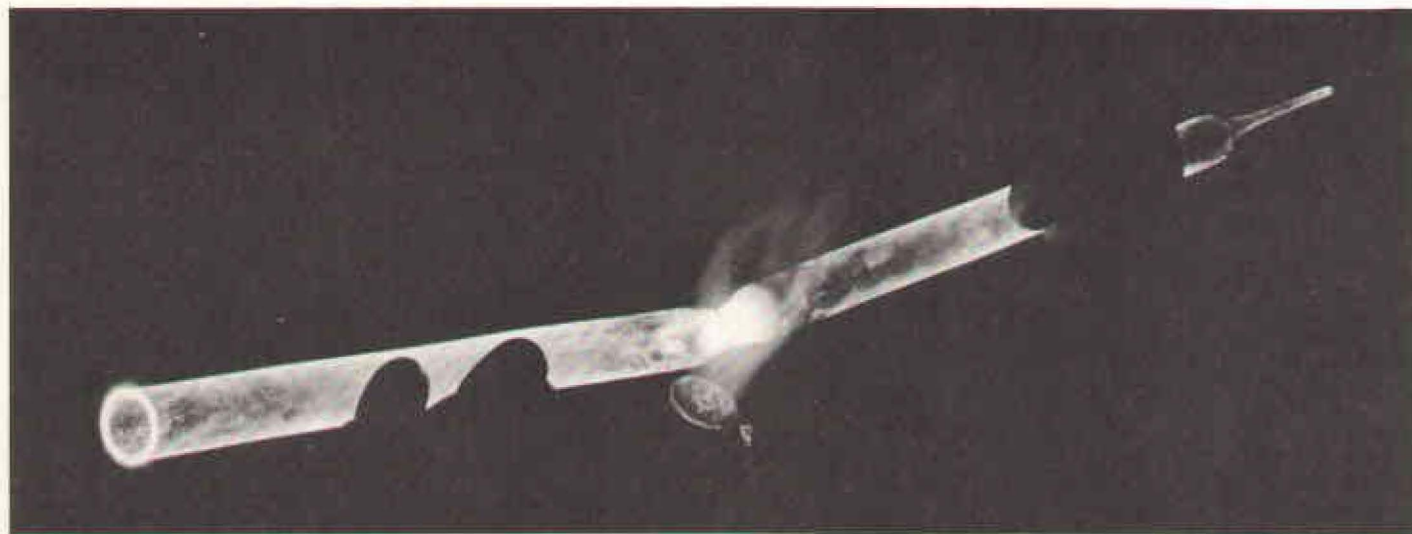
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Halt! Who glows there?



This luminous shape is not really much of a mystery. It's actually fused quartz glass being heated to 1800°C. The light transmission properties of this special glass make it useful in certain F&T Division research projects. The mystery—for most people—is how the division's glass blowing specialists manage to transform simple tubes of glass into complex electronic devices. See pages six and seven for an explanation.