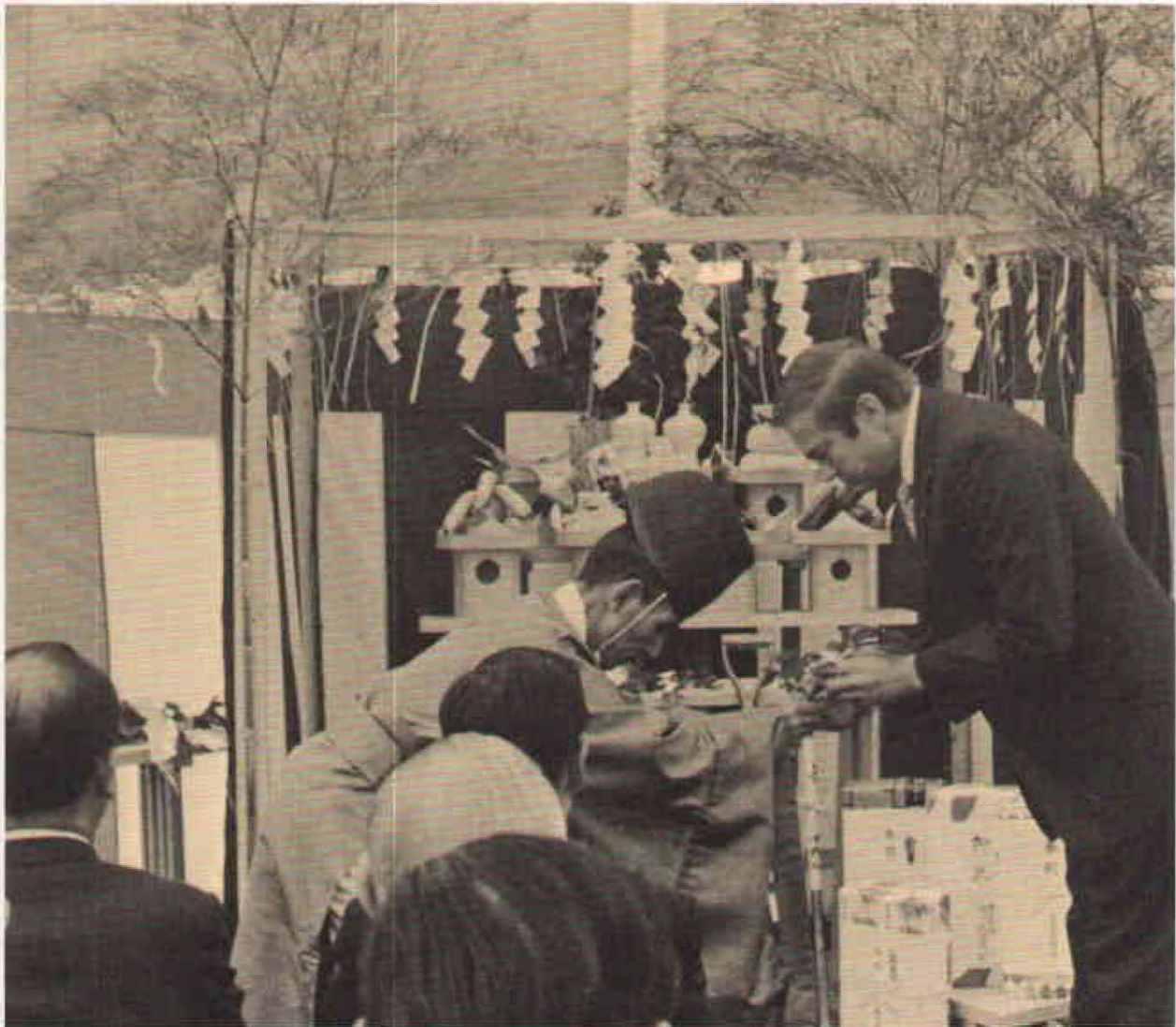


# Measure

For the men and women of Hewlett-Packard/NOVEMBER 1972

Another tradition was added to HP's building program recently. It's the *Jichin-Sai*, or Japanese earth-breaking ceremony. Purpose of the ceremony is to ask the Gods for safety during construction and prosperity thereafter. Y-HP Director Fred Bode is seen assisting the Shinto priest in his duties. The construction program will double factory and office space at the Y-HP plant—one of many such HP building projects going on around the world at this time.



# Building for people...

□ To say that HP plant engineers and corporate construction people are busy these days is a major understatement. Just to keep pace with present growth rates, there is a real need throughout the company for some 750,000 square feet of factory space per year, a footage equal to the entire stanford complex. The facilities men are also trying to catch up on some programs put on ice during the recent recession. Then, there are the dozen or so sales offices that always seem to be under construction at any one time around the world.

So the pressure is on, and to cope with it the plant and facility engineering men have been employing just about every resource at their command: constructing new buildings, leasing interim facilities, purchasing existing buildings, acquiring new plant sites, planning new structures, and shuffling departments to maximize the use of available space.

The individual divisions and regions have the basic responsibility for determining these needs. Their targets create the framework for measuring their needs for people and working space for as far as five years into the future. Divisional managements also have a major say in selecting plant sites, and in developing architectural and interior plans, as well as working with contractors and furnishers.

Under these circumstances you might expect to see some exotic results, such as high-rise monuments, mountain-top research aeries, or penthouse executive suites.

But that's just not the case. Because within the natural diversity arising from varied geographic locations and architectural styles, a remarkable family resemblance is evident.

"There's no book of rules on the subject," said one plant engineer. "But there is a very strong HP tradition in this area. It's an outgrowth of corporate philosophy and experience.

"You'll find much of the expertise in this tradition centered in the Corporate Construction department. Phil Towle and his people have tremendous experience going back almost to the beginning of the company.

"But you'll find that the division managers and plant engineers are generally well schooled in the HP building tradition. Sometimes we may want to depart a bit from the corporate constraints, but for the most part we support the concepts behind them. They really make a lot of sense."

To discover what the HP tradition means in practice, MEASURE called on several facility engineering people at divisions where major building projects are being completed or planned:

Design starts with people: In this case, Doug Carnahan, who heads development of the Santa Rosa project for Microwave Division, discusses the "inside-out" approach to planning work areas, using three-dimensional models. At the outset, people representing various functions filled out "activity sheets" that described what they like or didn't like about present work areas. Results were reviewed by seven-man design team and later with members of the architectural firm of John Warnecke & Associates.

The outcome is a plan to create areas that use a limited number of movable screens, plants and other means to achieve openness with a measure of privacy when and where needed. The "inside-out" approach of designing buildings around the needs of people is a very new architectural technique. It leads to the development of basic modules which are the initial "building-blocks" in designing the building.





A



B



C

- A Coffeetime communion—  
AMD, Sunnyvale
- B Individuality—  
Loveland, Colorado
- C Open floor—  
Microwave

Many advantages flow from HP's practice of designing work areas that are open: People can communicate better because there are fewer physical barriers in the way. They also communicate more comfortably with supervisors and the people of other departments when symbols of corporate status, such as larger offices and more plush furnishing, are not around to create psychological blocks. Other design contributions to improved interchange include coffee-break stations in the hallways, no executive dining rooms (etc.), and buildings seldom more than two or three stories in height. In addition to their role in good human relations, these plant layout considerations have also been found to be quite efficient from the point of view of cost.

(continued)



Total planning aims at an attractive and efficient plant environment on a location attractive to professional and technical people. When Medical Electronics Division sought much-needed room to grow, it explored various alternatives, including the purchase of existing facilities. Finally, it concluded that its present Waltham site was still a good first choice, and could well accommodate expansion (meanwhile, leasing some interim buildings). The challenge of bringing about the expansion went to Walt Henry, plant engineering manager (seated), and Emery Rogers, Jr., who is supervising the landscaping program. Nearest half of the building model represents the planned addition. However, the existing building will be completely renovated and integrated with the new structure. The addition will capitalize on a fine view of the lake across Highway 128, as well as a large copse of white pines, a primal forest tract represented at right of the building. In spite of added parking needs, all existing outside recreational facilities will be kept—in fact, added to when the forest project is completed.

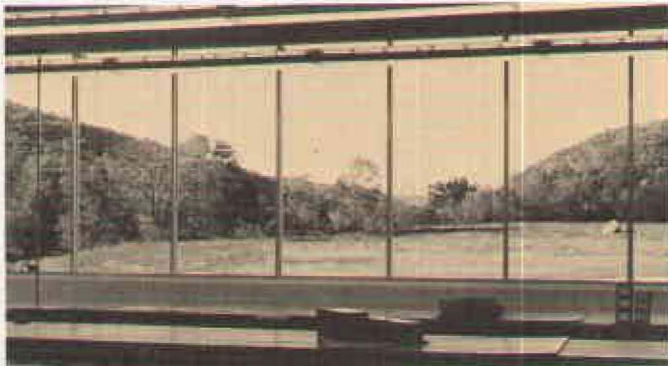


A

***Why the place looks familiar...***



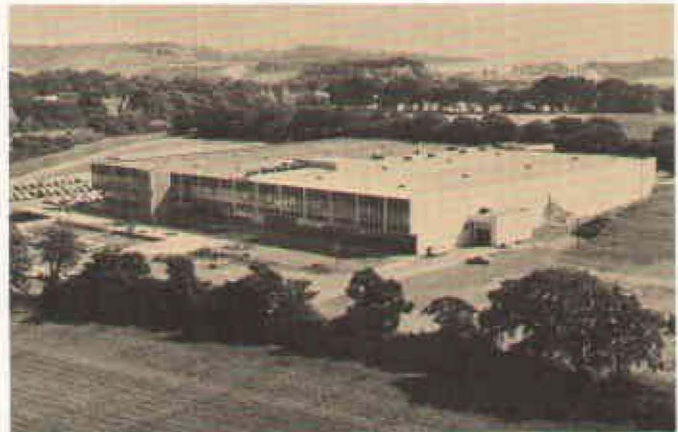
B



C



D

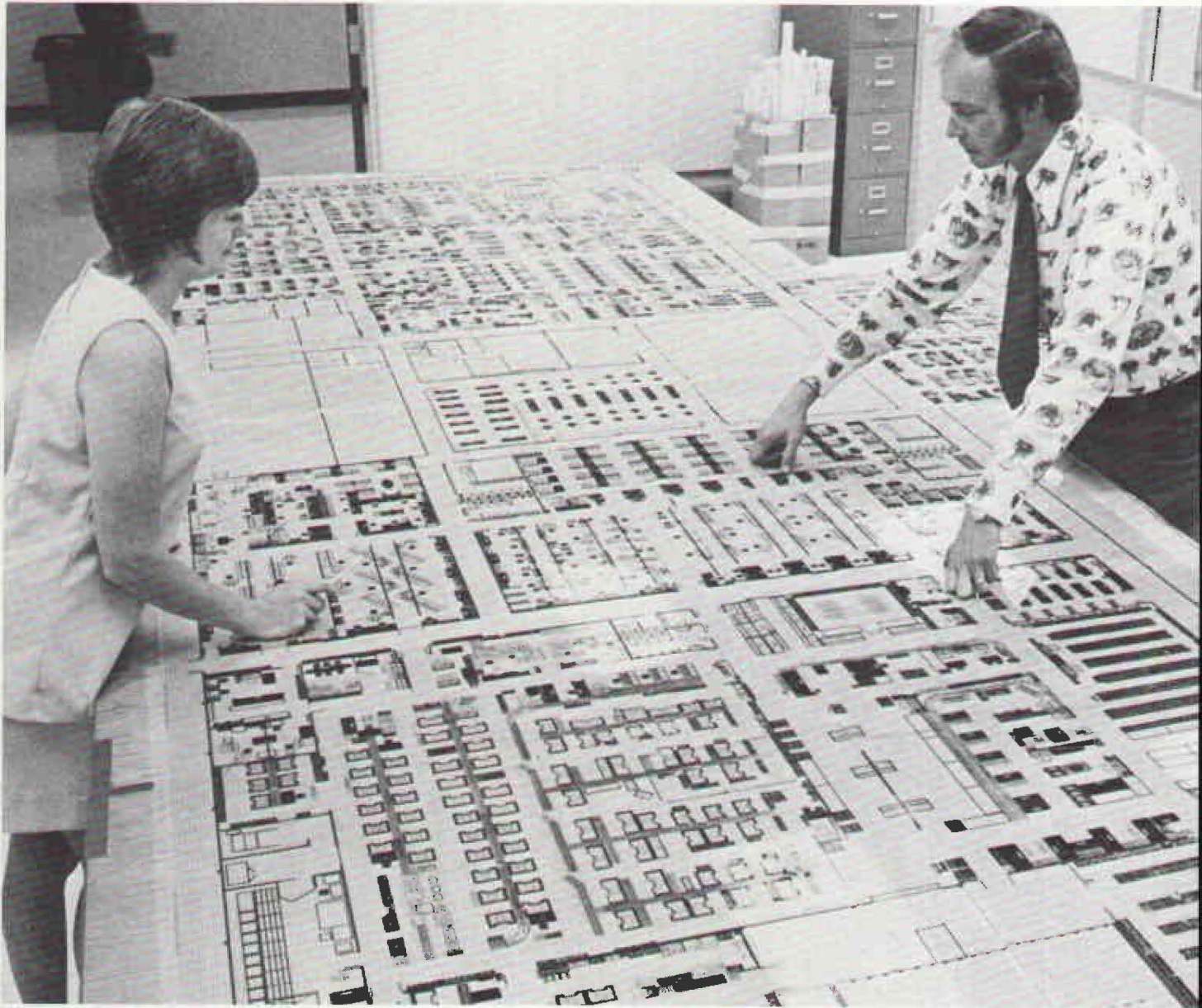


E

- A Site work —  
MED, Waltham
- B Trees saved —  
Cupertino
- C Looking out —  
New Jersey
- D Pike's Peak view —  
Colorado Springs
- E New expansion —  
South Queensferry, Scotland

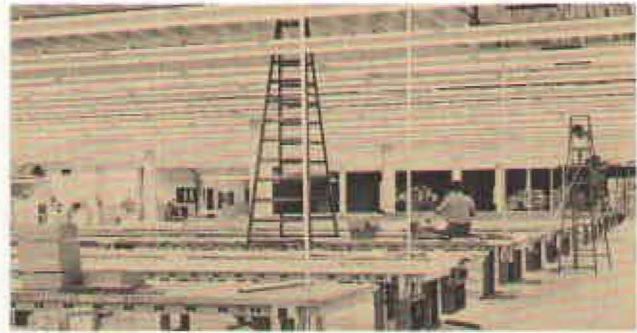
One underlying philosophy of HP is that people working in closely related activities should be given every opportunity to work near each other. That principle was behind the recent bringing together of two former units of Automatic Measurement Division into one building and one organization in the new Sunnyvale plant. Likewise, the New Jersey Division consolidated its two operations (each originally a separate company) in one plant recently expanded at Rockaway. On the other hand, the questions of optimum size and makeup of an operating division are carefully considered. In recent years this has resulted in giving the manufacturing operations of Microwave Division their own identity as the Manufacturing Division, and the divisionalization of Loveland into four organizations. Wherever you go in HP, chances are good you will encounter the following general exterior building characteristics: low-profile structures with clean rooflines, north-south orientation of windows (for low glare), pleasant patio areas, diagonal parking, directional signs that are unobtrusive but effective, recreational facilities, and well-tended landscaping.

*(continued)*



***A minimum of barriers, a maximum of flexibility...***

How do we adapt a building purchased from another company? Automatic Measurement Division faced that task this past summer when planning its move to the recently acquired plant in Sunnyvale. Some of the results are reflected in the floor plan being checked here by Operations secretary Bev LaRussa and AMD plant engineer Ray Johnson (Ray acknowledged much help from Corporate Construction, particularly Phil Tuttle's 18-foot floor layout). Detailed examination of the layout would reveal a minimum of partitions, work space averaging 110 square feet per person, harmonious color schemes, and broad aisles with direct access to exits. Many private offices had to be converted to use by two or more people, partitions removed, executive dining area converted to a meeting area, customer training facilities added, and various areas given the basic HP treatment as to light levels, colors, acoustics, utilities and floor covering. Elaborate centrex phone system was replaced by typical HP switchboard system which has advantages of lower cost and personal response of operators. All in all, the AMD people are very pleased with their new habitat—except for the signs already showing of still further space needs.



B



C



D



A

- A **Patio**—  
AMD, Sunnyvale
- B **Good lighting**—  
New Jersey
- C **Flexible usage**—  
Mountain View
- D **Privacy where needed**—  
ESR, Paramus

Comfortable working conditions are not a luxury reserved for the few. Corporate Construction manager Phil Towle notes that HP attempts to minimize differences between areas: Good lighting, acoustical ceilings, air conditioning, and tiled floors are as common in shipping and receiving areas as they are in marketing and administrative areas. HP's approach, of course is not only one of comfort but also of great practicality. Because of the uniform conditions and utilities, as well as movable partitioning, an administrative area, for example, can readily be turned over to production or warehousing or engineering departments. In fact, Walt Steele, facilities engineering manager for Data Systems, said the hallmark of an HP building is the flexibility in its uses. □

Product of a cooperative venture between the Medical Electronics Division in Massachusetts and Y-HP in Japan, the 1504A electrocardiograph is getting super reviews by MED sales people and customers. Easy to carry as a briefcase, it operates on battery or AC power, can be easily serviced on a worldwide basis, and sells for \$725 factory (Japan) with all accessories. It gives HP broad coverage of the ECG market and continues the fine tradition begun with the introduction of the first Sanborn battery-operated "Electrocardiograf" in 1924.



## The "go anywhere" ECG

□ "We like to look on the 1504 in much the same way Data Products regards the HP-35 calculator—as a small, low-priced instrument with big potential!"

In this manner, Medical Electronics Division's cardiography manager, Rick Balda, characterized the expectations held for HP's new 1504A electrocardiograph. Indeed, its features are outstanding:

- Along with portability and "anywhere" operation, the 1504 provides an ECG of traditional HP quality, and meets a basic need at a competitive price with worldwide serviceability.
- The 1504 reaches into a big global market—the private physician, the internist, as well as to cardiologists and technicians in those hospitals and clinics where portability and price are important considerations.

HP's medical field engineers, particularly those in the less industrialized countries, are very enthused over the machine and about their prospects for selling it.

And if early indications from the field truly reflect things to come, then there really will be an important marketing success to report in the months ahead. Meanwhile, the



1504 already represents another kind of success, namely as the unique outcome of a joint venture between two HP divisions. In effect, the product concept and worldwide marketing program were furnished by the Medical Division at Waltham, Mass., while product design and manufacturing have been responsibilities of Y-HP, the company's joint-venture company in Japan.

The stage for this cooperative enterprise was set about three years ago. Extensive contacts with distributors and customers in the Philippines, India, Israel, Greece and Spain, as well as HP salesmen in Canada, Australia, Brazil and Pakistan confirmed the desirability of developing a battery-operated ECG. Even at this point, according to Rick Balda, there was remarkable agreement concerning the main features of price, size and performance. These surveys and explorations gave MED a real track to run on.

The normal procedure at this stage would have been to call in MED's engineering team and turn them loose on the project. But several factors intervened to change this procedure.

As a start, MED division manager Dean Morton and his people had given considerable thought to the general concept of divisional partnerships. There was much to recommend the idea, particularly from the point of view of sharing technology and making best use of resources. A great many projects at Waltham, however, were of the systems type—as adjuncts or peripheral to other instruments—and really did not lend themselves to any partnership arrangement.

The 1504, on the other hand, was to be a self-contained machine; there was no technical reason it couldn't be done in partnership with another division.

Looking around for a division to take on the assignment, the MED cardiography team saw in Y-HP a combination of engineering skills and experience neatly matched to the needs of the 1504. In particular, the HP engineers in Japan had established an excellent record in designing instruments that combined high quality and performance with sharp cost consciousness. For a product that numbered the emerging nations among its principal potential markets, that combination provided just the kind of resource MED wanted for design of the battery-operated ECG.

So far so good. But the specific approach to making the partnership effective remained to be tested. It faced all of the attendant problems of language and cultural differences, as well as wide geographical separation.

According to Balda, the key to success was the centralizing of communications at each end of the partnership. Rick was the spokesman for MED, while Hauro Itoh, the project design leader, spoke for Y-HP during the design phase. Later, Shigeki Mori was brought in to help usher in the marketing phase.

Some problems cropped up, as you might expect on any project. "But in the end," says Rick, "we wound up doing the right things. We kept very close to time targets and design objectives. The cooperation was fantastic. We're now hoping to have Y-HP make a long-term commitment to the medical market!" □



Anchor men for the 1504 project at Y-HP were, from left, Hauro Itoh (engineering design) and Shigeki Mori (marketing). Success of the project has inspired the Medical Electronics Division to look to Y-HP for future product developments.

Manufacturing responsibility for 1504 gives Y-HP a product with big world-wide market potential.



# NATIVE SON





***It's not that things are very different in the State of Maine.  
It's just that the rest of the world has changed too fast...***

□ "I guess the geography I cover is somewhat unlike other sales areas," says Earle Bubar, HP's Man from Maine. "And the way I cover it might seem unusual to other field engineers. But it's not strange to me."

Indeed it isn't. Earle is a native son of Maine, attended its schools, learned its wilderness secrets as a fish and game guide, worked in its major industries—railroading and forest products, pioneered it for Hewlett-Packard products, and continues to make his home in Brookton, the small town in eastern Maine where he was born in 1928.

Nor does the fact that his kitchen table serves as his office seem strange to Earle. That's where the phone is located. That's where calls start coming in early on Monday mornings. And that's where his wife, Donna, spends much of her time, so customers will almost always find someone to answer their calls. As you might have guessed by now, Earle Bubar represents an all but vanished breed of salesmen—of fellows who work out of their homes, cover very large territories in which many small customers are widely dispersed, and who resist offers to move to more urbanized and concentrated areas where the living (and the selling) is theoretically easier.

Earle, or "Pinky" as he is sometimes called for reasons lost in youthful history, begins his business week from the aforementioned kitchen table. Based on the results of phone contacts and previous commitments, he'll be on the road by Monday afternoon—perhaps heading north along the Maine-Canada border to Caribou, southwest to Bangor, or south to Eastport and the rugged coastal country.

"When I first came to the company in 1960 I sold everything, including medical products. I also started in covering New Hampshire and Vermont as well as Maine. Tiny Yewell, who ran the New England sales area then, told me we were probably taking out only about \$3,000 a year in sales. Visits were sporadic and spotty. The hope was that my experience in the paper industry would introduce us into a new market. It turned out not to be all that much business. But other overlooked business did materialize.

"Mostly it's been ones and twosies. The business that justifies my mission here comes from a large number of very small accounts. That makes it really rough when quota-setting time comes around.

"Jim Hall (area manager) or Dan Devlin (district manager for electronic instruments) will ask: 'Where's the business coming from this next year?' And I'll just have to point out that at least 50 percent of the business is going to come from accounts that did zero business this year. You know it's going to happen from past history. But you have to have faith. It's not unusual, in fact, for one of these quiet accounts to spend \$10–15,000 all of a sudden. But it's a major expenditure for them that they probably won't duplicate for a number of years.

"The other 50 percent is fairly predictable, and is going to come from my larger accounts. For me, that's anything over \$10,000 a year."

On the road, Pinky tries to make two scheduled calls per day. "That's about the maximum," he said, "considering

*(continued)*



Earle Bubar racks up a lot of mileage covering the Maine sales circuit for HP. Customers are spread far and wide — and thinly — over this part of the country. But starting from a very meager sales base about ten years ago, Earle has built up the business by calling on many small customers.

## native son



that in most cases there's a two- or three-hour drive between stops.

"One point about our customers—they're not accustomed to seeing many visitors or salesmen, especially our competitors. So it doesn't necessarily require a lot of calls by me—just their awareness of our service, and doing the best you can for them when the opportunity arises. That, generally speaking, will assure you of their first call.

"Obviously, this territory is not going to get much management attention, and rightly so. There's not a lot they can do to help compared with situations where our offices are located near big accounts."

How does he go about the business of selling so many different products and product lines? Earle, who took his formal technical training through an ICS correspondence course in electrical engineering, says he doesn't find non-specialization all that tough.

"I'll probably sell half the quota of calculators that a calculator salesman does. And I think I actually sold the company's first time-share system. You keep up by study and experience—and by keeping alert to your customers' needs."

How well he has succeeded in this regard is reflected in a letter received last year from Professor George Krueger of the University of Maine's Department of Physics: "Over a year ago Earle recommended that we try the correlator (HP 3721A) in an investigation being carried out by Frank Doran, the Physics Department's second Ph.D. candidate. Doran was attempting to formulate an explanation for the



At one point in his life, Earle set out to be a Maine fish and game guide. He and his amphibian plane, which he still owns, took customers into areas he had discovered in his youth. Unfortunately for this plan, New England summers are too short and the winters too long, so he had to turn to more earthbound occupations. But he still knows the good spots.



way in which water waves are initiated on calm water in the absence of any wind. It has generally been suspected that air turbulence was probably responsible. However, Doran's investigation is apparently the first to actually establish the connection between air turbulence and the first wave disturbances.

"The refractive distortion of a narrow laser beam was used to monitor the air turbulence directly above the water. Earle suggested we take the signals from the detector and analyze them with the 3721 correlator. I must confess that at the time the suggestion didn't impress me. However, over the years I've found Earle's judgment sound, so agreed to the arrangement. Earle arranged for us to use the correlator for several days. The second morning that we used it we were able to obtain the evidence for what we feel is a very convincing explanation of how waves can be formed on initially calm water."

Even if there is less evidence of it than elsewhere in the country, Pinky and his fellow "Downeasters" have been witness to some significant changes.

"If you go down the coast you find fishermen fishing in much the same way they've done for generations. Perhaps they've added a power winch or radio communications, but that's all. And you can still see the craftsmen put those boats together by hand. But you don't see young people there, and these crafts are becoming lost.

"The family farms are vanishing, too. Lots of New York people are buying them up at high prices as vacation and retirement places. I know of one guy who once traded

an old cream separator for a piece of 1,500-foot lakefront property. He's now asking \$50,000 for it. That's got to be the world's most expensive cream separator!"

What keeps a man in one place for a lifetime, resisting all offers and pressures of progress?

"I've spent some time thinking about it—about the kind of life I want to lead," says Earle. "Basically, what I like here best is the people. The hustle and bustle of urban living has no attraction for me whatsoever—you know, where people hardly ever get to know their next door neighbors.

"By the same token, living here requires considerably more than just knowing your neighbor. There aren't a lot of services up here. If a neighbor has a hot-water system on the blink during 30-below weather, you help him. He'll do the same for you. So there's a great deal of interdependence among people, and a lot of friendliness—perhaps out of necessity, but what's wrong with that, if it's genuine?"

In case anyone gets the impression that Earle is really giving up too much in order to remain a native son, consider the fact that his home fronts on a large lake and that the amphibian plane tethered near the lake is Pinky's own get-away special, a link to his days as a fish and game guide. Consider also the fact that his son, Earle, Jr., has discovered the same love for the woods and waters of the Northeast and hopes to make a career as a forest ranger.

In any case, says Earle, "I'm definitely not looking forward to the day when I have to drive to the office. But it will probably happen."

But not too soon. Not in Maine. □

## News in Brief

**Atlanta, Ga.** — Gene Stiles has been named manager of Southern Sales Region. He replaces Dave Caldwell, who has retired.

Previously, Stiles was Southern Region sales manager for the company's Electronic Products Group. He has held production, engineering and sales positions with Hewlett-Packard since 1942.

Bob Rogers has replaced Stiles as EPG regional sales manager. Most recently he served as regional sales manager for systems in the southern area.

**Palo Alto** — An important phase will be launched this month in the company's new HEART order processing system. U.S. sales regions will begin implementing the instrument and system order-processing phase. Parts orders have been processed on a worldwide basis by the new system since mid-year.

Developed within Corporate Marketing Services, HEART is described as a highly automated system in performing order entry, order status, and shipping and billing tasks as well as the automatic collection of detailed information for statistical and reporting purposes.

**Palo Alto** — Total worldwide employment by Hewlett-Packard passed the 20,000-people mark at the end of September. The figure represents an addition of almost 3,600 people since September 30, 1971.

A breakdown of the 1972 count indicated employment of some 15,200 people in the U.S. organizations and 4,900 people in the organizations outside of the United States.

**Loveland** — Calculator products have received two significant awards for design.

In Milan, Italy, the Model 10 desktop calculator won the 1972 award for industrial design at the SNAU Exhibition. The award is given annually to the office machine which shows the best design.

The HP-35 pocket calculator was named as one of 1972's most significant technical products by Industrial Research, Inc., a trade publication.



## From the president's desk

A little nostalgia goes a long way, and I promise that I will not overdo it. However, every once in a while something comes up that I feel has sufficient general interest to over-ride my objection to dwelling on the past.

Last month, Dave and I were invited to have lunch with representatives from our company's medical insurance carrier, Connecticut General Life Insurance Company, in recognition of the 30 years they have been serving us. After a very enjoyable lunch, we were presented with a photo engraving of our first insurance application which had been signed August 21, 1942. As you may not be able to read the "fine print" on the accompanying photograph, let me cover some of the highlights.

At the time of the application there were 51 Hewlett-Packard employees, all housed in a little building here in Palo Alto that could not have been more than 5,000 square feet in size. The insurance policy we selected called for a payment of \$5 per day for hospital room and board for a maximum of 70 days, plus a \$100 miscellaneous expense. The charge for this coverage was 84 cents per month per employee. Now just the per diem charges alone for an unlimited period of time are over \$80 and the average cost is about \$7 per month. When we took out the original policy in 1942, we felt that each employee should carry some part of the cost load. It is interesting to note that the amount paid by each employee for the coverage was 10 cents per month.

Another item of interest is that our first month's premium deposited with the insurance company amounted to \$25. Today, with our present level of employment and coverage, our premium runs about \$450,000 per month, and our reserve with the company is about \$1.6 million.

Finally, you may be able to read that the application was signed by David Packard, Partner.

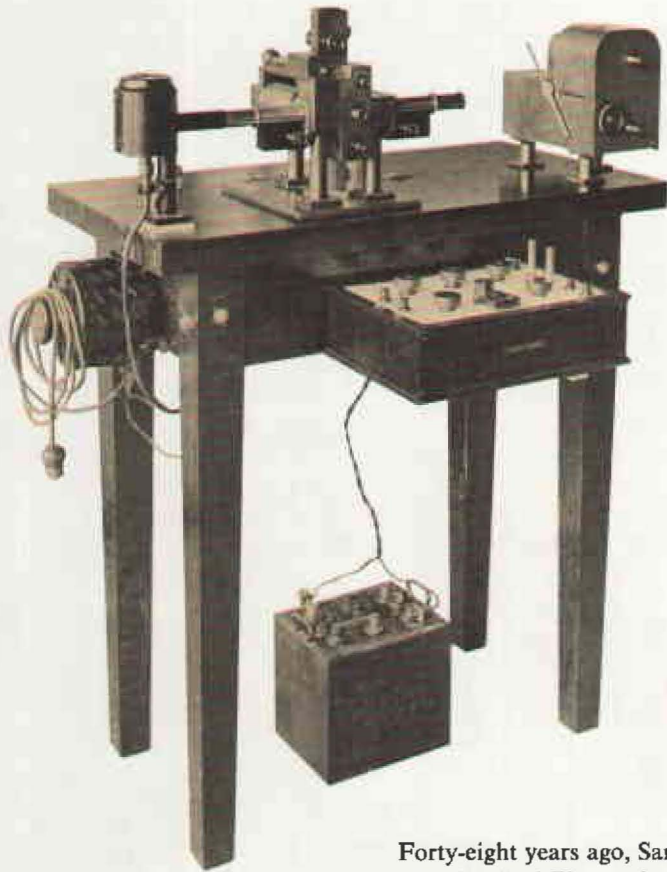
The figures give us some interesting insight as to what has happened in the intervening 30 years. First, it should be recognized that much progress has been made during this period in the concept of employee benefits. Insurance plans such as our first one were not nearly as common as they are now, and they were far less sophisticated and comprehensive. They were also far less costly than today's plans, but we must remember that coverage has improved and inflation has taken its toll during these intervening years.



Although Hewlett-Packard was no pioneer in providing insurance coverage for employees, in many respects we were ahead of our times. It was only a few years after this original policy and a critical illness suffered by one of our employees, that Dave and I realized the tremendous financial strain that a protracted illness could place on a family. Right then and there we decided that this should not happen again, and instituted one of the early plans of catastrophic medical insurance. As the years have passed since that time, we have tried to continue to be a leader in providing a variety of employee benefit programs for Hewlett-Packard people.

We were very pleased to receive this plaque from Connecticut General because it exemplifies the kind of relationship that can develop over a long period between a supplier and its customers. It has been a relationship of understanding, cooperation, and trust; the kind of relationship that is the true lubrication that keeps the entire system running.

*Bill Hewlett*



## Numero Uno

Forty-eight years ago, Sanborn Company—the predecessor to HP's Medical Electronics Division—introduced its first product. It was the battery-operated “electrocardiograf” pictured here. A heavy table was necessary to support the various items of equipment, so it could hardly be called portable by today's standards. Nevertheless, it became the pacesetter of its day and the forerunner of a long roster of quality medical products. Latest to join it also happens to be a battery-operated “go anywhere” ECG, the 1504A. But to see what they've done with it, and how they did it, turn to pages 8–9.

## Measure

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