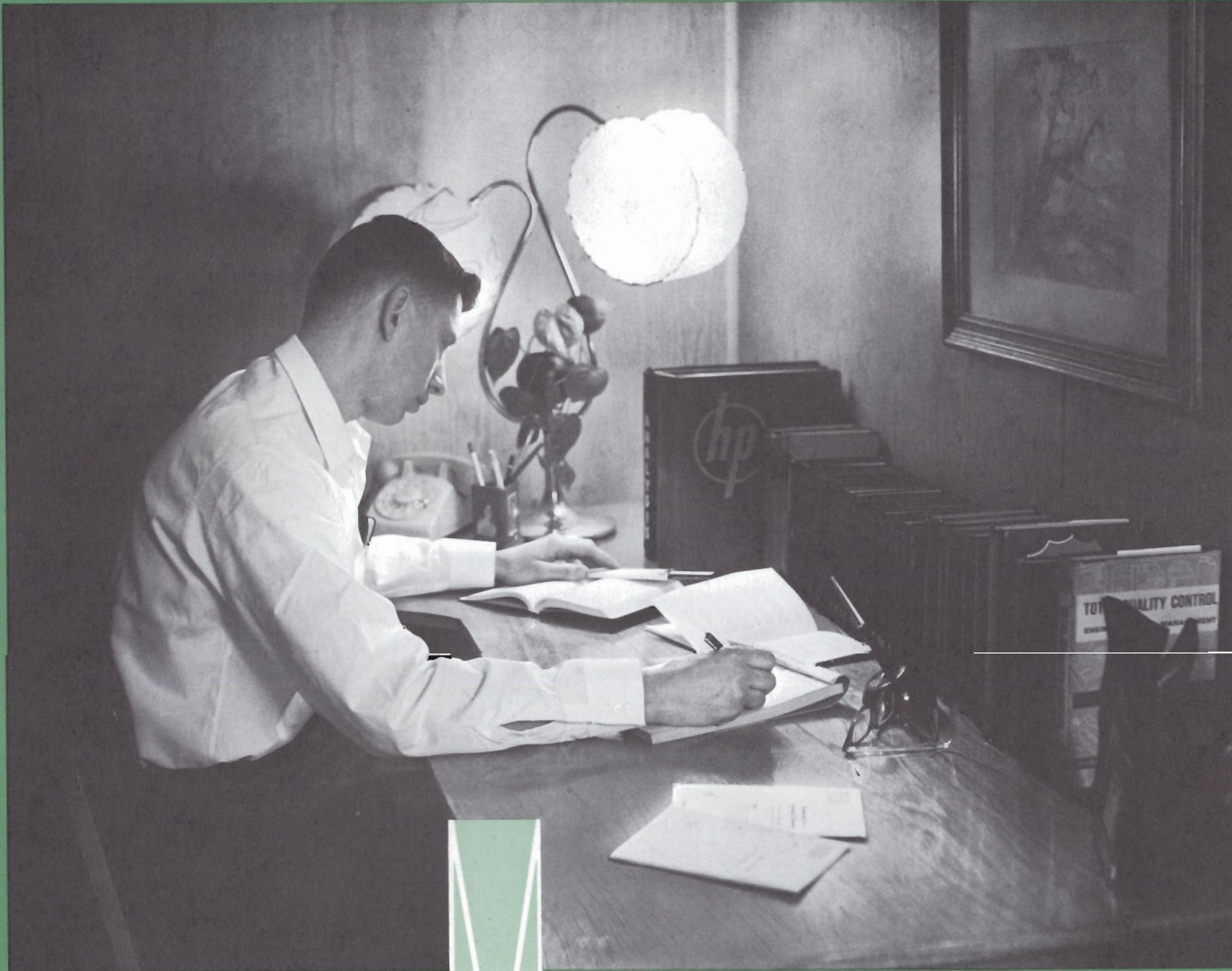


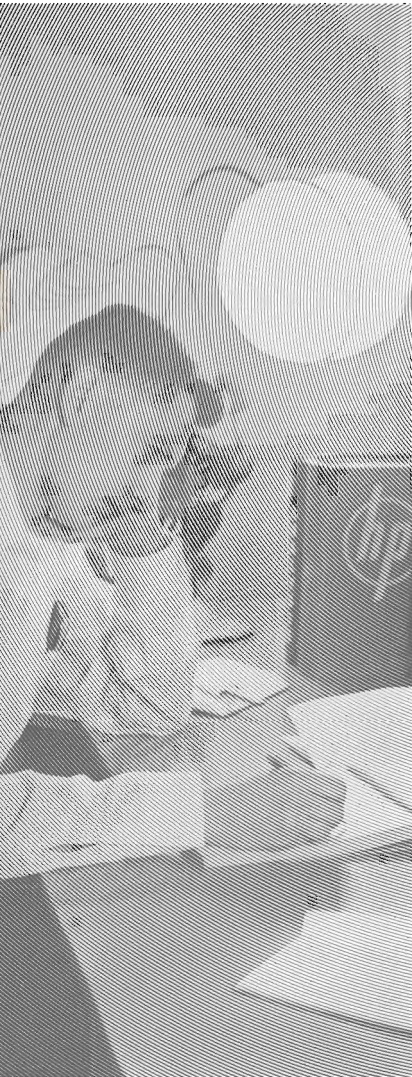
March 1965



# Measure

## In this issue

*Our need to know  
HP GmbH in perspective*



## OUR NEED TO KNOW: reach out intellectually

**A** FEW YEARS BEFORE his death in 1849, Edgar Allan Poe set out to write a series of books which would contain all the important knowledge man had accrued throughout history. How simple—and static—life would be if such a thing were possible. All one would have to do is study and retain the information contained in such volumes, and there would be no more to be learned.

But knowledge and understanding in this fast-changing world is not so easily acquired, and it is anything but static, especially among the scientific and technical disciplines.

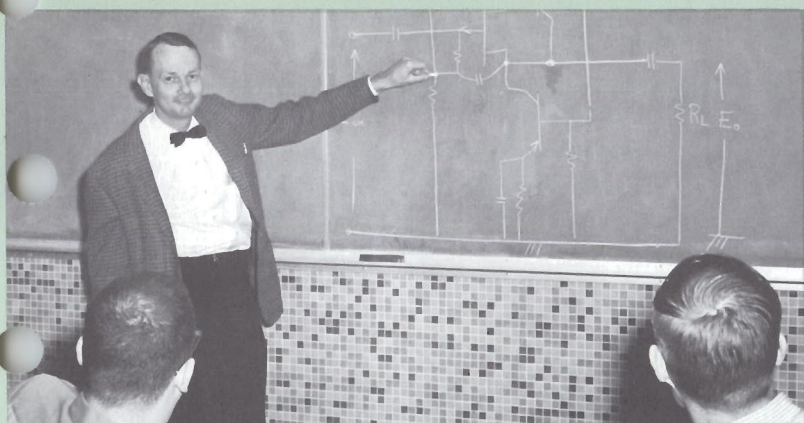
It is a fact that today's young scientist or engineer starts to become obsolete the minute he leaves the college campus. He must wage a constant battle against this obsolescence or fall back as a contributor to technological progress. Fortunately, a relatively small number fall back, the majority at least keep abreast, and a few lead the way into new territories of discovery.

There are any number of ways to keep the spectre of obsolescence away from the minds of men, and Hewlett-Packard scientists and engineers are taking advantage of many of these ways. There is home study, participation in professional societies, faithful reading of technical journals. There is attendance at company-sponsored seminars, formal study at universities, and even taking on the task of teaching others.

The man shown on the cover and at left is Chris Franks, who heads up the quality assurance operation for the Boonton Division at Rockaway, N.J. It has been 13 years since he was graduated from Rutgers with a B.S.E.E. He and his wife have two pre-teenage children and a home to manage in the town of Boonton. But, in spite of the demands of his job and family life, Chris did not stop learning when he was handed his diploma in 1952. He is currently involved in a 24-month correspondence course which calls for several hours of home study each week.

Five other HP men around the nation who are keeping ahead of the game in various ways are featured on the following two pages.

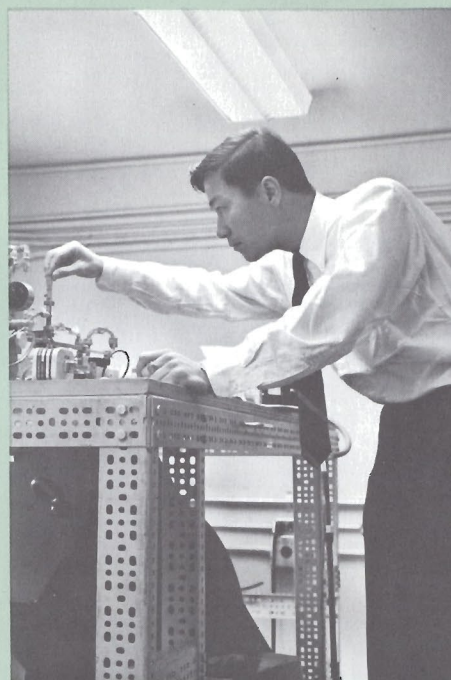
or fall back technologically



PROJECT ENGINEER PAUL BAIRD of the Loveland, Colorado, Division feels that teaching is an excellent way to keep up with the advances in science and engineering. "For one thing," he comments, "your students keep you on your toes. You have to be prepared for them, and this calls for reading and research."

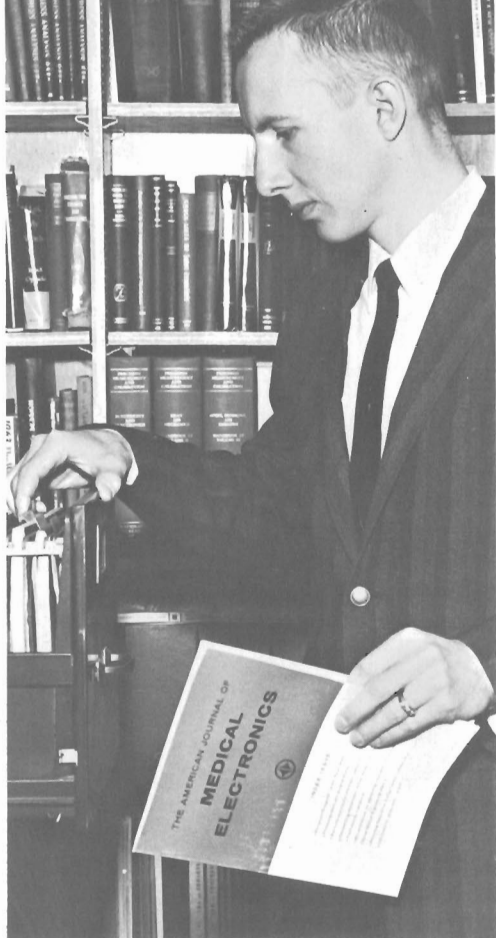
In addition to his job at HP, Paul is an adjunct associate professor at Colorado State University in Fort Collins. He is currently teaching a graduate course in transistor electronics and has been teaching similar courses here and at San Jose State College since 1960.

Baird lives in Loveland with his wife and two daughters. He attended Oklahoma State University where he received a B.S. in mathematics in 1951. Two years later he earned a master's degree in math at the University of Colorado and in 1960, after attending Stanford University part time, he obtained a B.S. degree in electrical engineering.



DICK CHANG IS ONE OF nearly 40 HP people who have or are taking advantage of the "honors cooperative program" at Stanford University in Palo Alto. Dick is working toward a Ph.D. in applied physics while serving as a scientist at HP Associates. Hewlett-Packard worked with Stanford to found the honors co-op program ten years ago. It, and similar programs at other HP locations in the U.S., financially helps employees obtain advanced degrees while they hold down jobs. Chang, who is single, received his B.S. degree in physics in 1962 from the California Institute of Technology. He grew up in Shanghai and left there for Hong Kong with his family in 1949 when the communists took over.

*keeping up with the advancing disciplines requires time, effort . . .*



REGULAR READING of relevant technical literature is one way Ronald Riggert keeps abreast of the latest developments in his field of specialization, medical electronics. He is a project engineer in Sanborn's medical instrumentation development section at Waltham, Mass. Some of his more recent contributions to his field are in new patient monitoring and display instrumentation for operating rooms and intensive care units.

Ron believes that engineers and scientists must constantly guard against "working in a vacuum. When you isolate yourself from other members of your field, you're just denying yourself the benefit of their knowledge and experience." The technical journals, he suggests, are the most convenient way for engineers to exchange information. He reads several each month with care, and scans a dozen others for ideas.

Riggert earned his B.S. and M.S. degrees in electrical engineering from the University of Nebraska, and then joined Sanborn in 1960. He is married and the father of two boys and a girl.

TRAINING NEVER REALLY STOPS for engineering sales people at Hewlett-Packard, and men like Leonard Gibson see to it that the best training methods and most complete programs are put into effect. Len is with the corporate marketing training department in Palo Alto. It is his job to instruct HP field sales personnel in the company's electronic products, pointing out their best features, advantages, innovations, and modifications, operating details, possible applications, and markets—in short, anything that will help the sales engineer make the sale.

With HP introducing a score or more new products every year and continually improving established products, Gibson finds that keeping up to date is absolutely essential to his job of keeping others up to date.



"YOU GET A FRESH POINT OF VIEW when you rub shoulders with engineers outside the company who are doing work similar to yours," says Jim Williams of the Colorado Springs plant. He thinks that participation in professional societies is a must for engineers who want to make contributions to their field.

Jim has been actively involved in IEEE since his college days at San Jose State, where he earned a B.S.E.E. degree in 1961. In the past, he has participated in the Rocky Mountain Bioengineering Symposium. He is shown here (center) with two fellow engineers in a planning session for an upcoming IEEE section meeting.

Aside from his work in IEEE, Williams is a steady reader of technical journals and is studying for his master's degree by attending extension classes at the University of Colorado. He is married and has two children.

... but the reward of learning is progress

## AROUND THE CIRCUIT

**W**E'RE WRAPPING UP PLANS this month for the formation of an Eastern sales region to encompass territories served by the RMC, Robinson, and Horman sales divisions. Geographically, the region will include the metropolitan New York City area, Washington, D.C., New Jersey, and most of Pennsylvania.

Carl Cottrell will be sales manager of the region. He most recently served as managing director of HPSA in Geneva, Switzerland, and has held a number of other positions in marketing since he joined Hewlett-Packard 13 years ago. Carl will take residence in the east about August 1.

Formation of the Eastern sales region will be another big move for us in our long range program to eventually restructure the entire U.S. field organization along regional lines. When the Lahana sales division was consolidated with the Neely sales division last month, we completed, in effect, the



W. Noel Eldred, Vice President, Marketing

## In marketing, it's "think regional"

formation of our first region. Neely now serves 11 Western states, Alaska, and Hawaii.

The Central sales region is just about established, with the Crossley division recently adding Cleveland, Detroit, and Pittsburgh to its territory. In January, 1966, Crossley will take on the territory covered by Harris-Hanson, and the Central sales region will then cover a 12-state Midwest area.

In time, we will create Northeastern and Southern sales regions, giving us a total of five here in the United States.



The field sales divisions within each region will retain their individual identities and will continue to operate as autonomous, profit-centered groups. This is essential to the company's philosophy of decentralized responsibility.

In fact, regionalizing the field sales organization enhances the decentralization policy and strengthens the position and effectiveness of each divisional unit within regions. It helps to make the sales organization more field oriented because

more decisions can be made in the field with less dependence on detailed direction from Palo Alto.

Strong regional management people can also provide more effective leadership where they are geographically close to the problems. This increased emphasis on local management will also allow better communications, resulting in greater awareness of individual achievements.

There is one other aspect to this new organizational structure which I would like to discuss. As we acquire new sales disciplines and penetrate areas such as the medical, chemical, and nuclear fields, we will require specialists to back up field sales people. Economy demands that these specialists cover large territories of a given industry. For this reason, they must cross over divisional lines and this requires coordination—at the field level—by a regional manager.

This kind of coordination has, in fact, become a critical need and it will become even more critical as we continue developing products and entering fields which are new to us.

As I talk about our plans for regionalizing field sales, I can't help being reminded of the great changes our marketing organization has experienced in the past few years. As recently as 1962, sales were handled by 14 representative firms. Then most of these companies—the best in the electronics industry—joined us and we were soon busy shifting responsibilities from Palo Alto to the field. Meanwhile, these "new" groups were assuming divisional status and several of them consolidated into larger, more efficient units.

And so, on looking back and looking ahead, it is evident that the only constant in the HP sales organization is "change."

**H**EWLETT-PACKARD Gesellschaft mit beschränkter Haftung is the full name for HP's German manufacturing operation—and with a handle like that you've got to be good. Seriously though, the success HP GmbH people at Boeblingen have had since manufacturing began five years ago is nothing short of astounding.

The first instruments were shipped in November, 1959, from a tiny room in a 50-year-old textile factory. There were something like five employees at the time, and their traditional German ingenuity served them well. If proper equipment was not available, they figured out how to get the job done anyway. Take the production of printed circuit boards as an example. These were dip-soldered in a frying pan on a coal stove.

But in spite of such an inauspicious beginning, the first year's operation showed a profit. With a staff expanded to 30 people, new quarters were located a few blocks down the street and plans were laid for construction of a plant they could call their own. This plant, with roughly 32,000 square feet of working area, was completed in 1961 in an amazingly short time—just 5½ months. Last November, on the fifth anniversary of HP GmbH's first shipment, a second building was completed, more than doubling their size.

## Big name, big ambition, big success

Currently, the plant is producing some 75 instruments ranging from generators, counters, and voltmeters to X-Y recorders, power supplies, and oscilloscopes. In 1964, more than \$3,000,000 worth of instruments were manufactured for sale throughout Europe. The volume of production this year is expected to exceed \$4,500,000 and an additional 25 to 30 people will be added to the present force of 215.

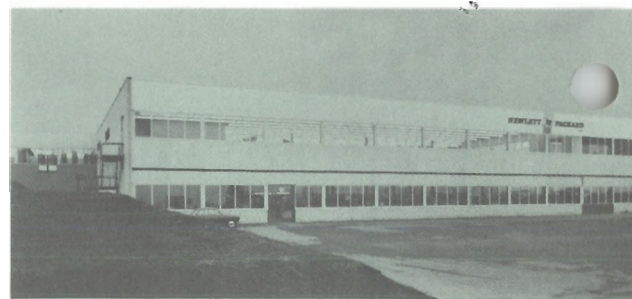
If generalizations can be made about a group this size, it can be said that the people there are young (average age: 28); highly trained (nearly all the men and half the women have completed formal apprenticeships; 34 percent of the men have gone to college); and they are healthy (half the sickness rate of European industry in general). They do not have far to commute because 50 percent of them live in Boeblingen, and the remainder live in the surrounding county and in the nearby city of Sindelfingen.

Boeblingen (pronounced "bou bling en," more or less) is located at the edge of the Black Forest near Stuttgart in the southern portion of Western Germany. Its 30,000 population relies on industries such as HP GmbH, IBM, and Mercedes.

HP people at Boeblingen are immensely proud that their town was selected as the site of Hewlett-Packard's first overseas manufacturing operation. But no one was really very surprised at the decision, considering the excellent skills of the people there and the central location within the European market.



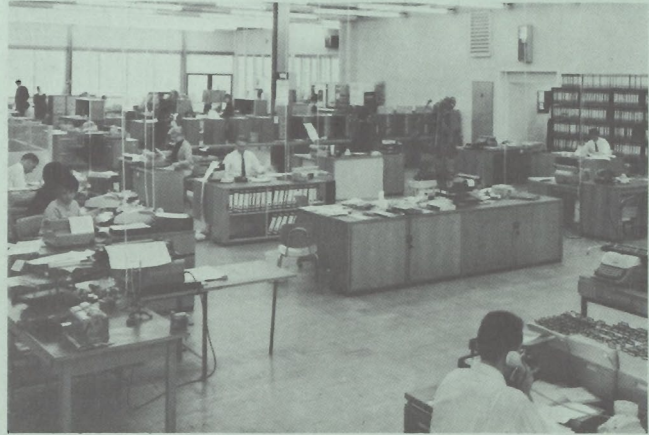
Test department occupies spacious, well-lit area in new plant addition.



New building at Boeblingen brings total plant area to 80,700 square feet.



Production line dramatizes change from operation when circuit boards were dip-soldered in a frying pan.



Administrative office area is plant's busy nerve center. Shipments are expected to exceed \$4,500,000 in 1965.

GmbH management team includes, left to right: Gunter Warmbold, manufacturing; Fred Schroeder, general manager; Wolfgang Ohms, engineering; Eberhard Knoblauch, business; Hans Fuchs, engineering services; and Gordon Brandt, staff assistant.



## PEOPLE ON THE MOVE

### HP PALO ALTO

**Budd Cady**, Western Service Center—to corporate Customer Service.

**Frank Culver**, engineering lab, Loveland Division—to corporate medical marketing coordinator, HP Palo Alto.

**John Kelly**, Microwave tool engineering—to materials engineering.

**Neils Neilson**—to supervisor, Western Service Center repair group.

**Ralph Reiser**, Frequency & Time R&D—to advanced R&D.

### BOONTON

**Fred C. Buckingham**, senior service technician—to service supervisor.

**Lionel F. Coates**, senior scheduler—to materials management supervisor.

### FLORIDA SALES DIVISION

**Dave Taylor**, evaluation engineer, Honeywell, Inc.—to staff engineer, Orlando office.

### ICM

**Gene Baisch**, Western Service Center—on loan to ICM.

### FREQUENCY & TIME

**Al Ennor**, corporate contracts manager, Marketing Department—to in-plant engineering, F&T Division.

**Hi Fujii**, corporate Marketing—to F&T marketing.

### MECHROLAB

**Don Norgaard**, advanced R&D—on loan to Mechrolab.

### NEELY

**Larry Amsden**, Product Training, Marketing Department—to Neely Sales Division, Palo Alto office.

**Tom Bailey**, assistant instrumentation engineer, Aerojet-General Corp.—to medical sales representative, Sacramento office.

**Ted O'Grey**, Western Service Center publications—to Neely Sales Division.

## F&M to join HP

F&M SCIENTIFIC CORPORATION will become a wholly owned subsidiary of Hewlett-Packard on June 30, bringing into the HP corporate family the facilities and personnel to enter a new field of instrumentation.

F&M, located in Avondale, Pa. (40 miles southwest of Philadelphia), is a leading manufacturer of gas chromatographs. These precision instruments are used throughout the chemical and related industries for the scientific analysis of various compounds.

Founded in 1957, F&M has 400 employees and last year had sales of approximately \$7,000,000. In addition to its headquarters in Avondale, the firm has a manufacturing facility in Amsterdam, Holland.

Although chromatography is a relatively new technique for materials analysis, its application has expanded rapidly, particularly in the field of analytical chemistry. In the eight years since its founding, F&M people have made many contributions to the field. This leadership in research and development has been instrumental in building the company to one of the world's three largest manufacturers of gas chromatographs.

F&M was founded by Frank W. Martinez, Jr., as a part-time occupation in the basement of his home. Most of his initial production was sold to his employer, du Pont, by prior agreement.

Within a year he had moved his manufacturing operation to a larger building, and began devoting full time to the business. Under the leadership of Mr. Martinez as president, and a highly qualified staff of officers and managers, the company has had an impressive growth rate each year.

By 1960, F&M had grown to 50 people, had established a sales force in the field, and was staffing up for increased research and development activity. Employment, sales, and attention to R&D continued to spiral upward during 1961 and 1962, and, coupled with a major reorganization of top management responsibilities, contributed to expansion both domestically and internationally.

The company formed a subsidiary in Amsterdam, Holland, in 1963, called F&M Scientific Europa. This new arm is assigned responsibility for manufacturing operations in a new plant completed that year for production of instruments for European markets.

## Best 1st quarter in history

HP'S FIRST QUARTER, which ended January 31, showed the highest sales and earnings since the company was founded in 1939.

Total sales of \$31,743,000 were up 11 percent over the same period of 1964, and the \$2,433,000 net earnings were up 31 percent.

Incoming orders—another barometer in estimating a company's progress—amounted to \$35,365,000. This is a gain of 24 percent over first quarter '64. "Nearly every operating division and subsidiary is contributing to the higher order level this year," Board Chairman Dave Packard notes.



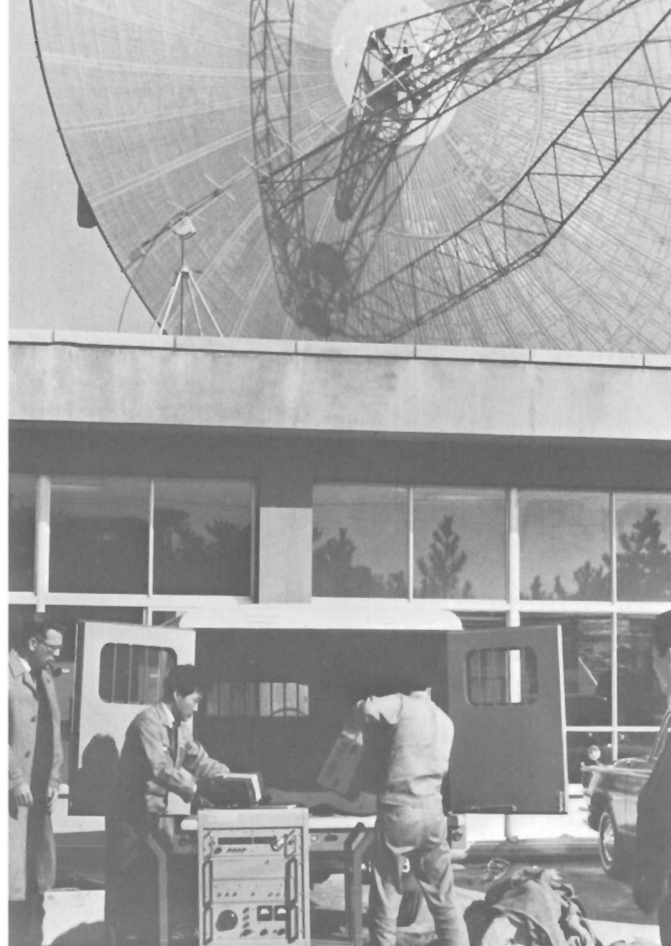
## HP atomic clocks fly again

TIME FLEW THIS MONTH AS NEVER BEFORE—and it was all because of an HP experiment which promises to stand as a modern classic of its kind.

On February 12, F&T division scientists loaded two of their new light-weight cesium beam clocks on a commercial jet at San Francisco International Airport and began a globe-girdling junket which would carry the incredibly accurate instruments 35,000 miles in 35 days. The purpose of the trip was to compare, with millionth-of-a-second accuracy, the official time of day standards kept by 17 timekeeping centers in the U.S., Japan, Canada, Switzerland, England, France, West Germany, Denmark, Sweden, The Netherlands, and Belgium.

Synchronizing clocks which are separated by thousands of miles, with the accuracy demanded by modern science, has long been a problem. Microwave communications via man-made satellite is one way to do this. Another is the "flying clock" technique, tested by F&T scientists last year and described in the July 1964 issue of MEASURE. Carrying an atomic clock of known absolute accuracy to the time centers serves as a valuable cross-check to synchronization by satellite communications.

As differences in the official time in countries around the world are known more precisely, the process of space research and travel becomes more exact, as do some of our more worldly endeavors such as navigating and mapping.



The flying clocks, with their HP cesium beam standard "atomic hearts," are unloaded at Koshima, Japan, preliminary to U.S. Navy project of synchronizing U.S. time with that of Japan.

## Neely-San Carlos to Palo Alto

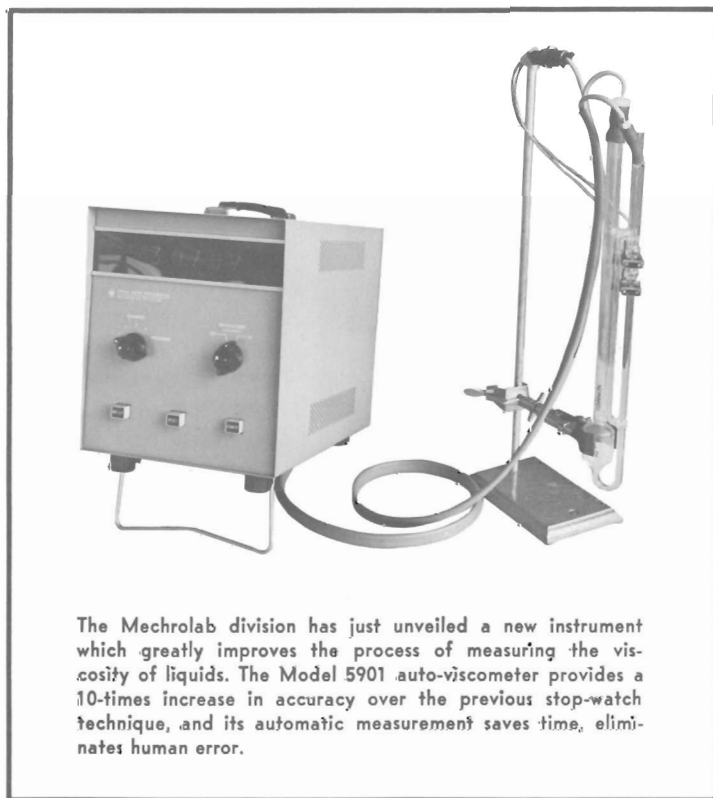


The 10,000-square-foot Neely-Palo Alto sales office is located on Embarcadero Road just a block from the Bayshore Freeway.

IT'S A NEW NAME AND LOCATION for Neely-San Carlos. On March 15, the sales office moved into new quarters in Palo Alto, and officially became Neely-Palo Alto.

In addition to much-needed space, the location has the added advantage of placing the office closer to key customer accounts on the Peninsula.

In a concurrent move, personnel from the medical sales office in San Francisco are also sharing space in the new building.



The Mechrolab division has just unveiled a new instrument which greatly improves the process of measuring the viscosity of liquids. The Model 5901 auto-viscometer provides a 10-times increase in accuracy over the previous stop-watch technique, and its automatic measurement saves time, eliminates human error.



*from the chairman's desk*

**I**N LAST MONTH'S ISSUE I gave a brief report on our recent management conference in Monterey, pointing out that a large part of the conference was devoted to discussing plans for our future growth.

From the market projections presented by each division at the conference, it is evident that our company will grow considerably in the next few years. In fact, we anticipate that by 1970 our sales volume will be twice as large as it is today. This means that in the next five years we expect to duplicate everything we have done in the past twenty-five.

Meeting this objective will require that each division spend a good deal of time and effort on long-range planning in all areas of its operations. It will also require an exceptional job of overall corporate planning to coordinate divisional activities and to be sure that we have the necessary resources and facilities to accommodate a much larger scope of operations.

Looking ahead five years, for example, we will need to expand our present plant facilities and build new plants at the most attractive and suitable locations we can find. We will need to have adequate financial resources to pay for our various expansion programs, both at home and abroad. With the addition of companies such as F&M Scientific to the corporate family, we will have to develop a broader, more versatile marketing program to do an effective sales job in new and promising fields of instrumentation.

Most important of all, we will need an adequate supply of skilled people to fill the many new jobs which are created by continuing growth. This means that we must devote a good deal of time to recruiting, to training, and to developing top-flight supervisors and managers from our own ranks.

To help us with this important planning job, we have asked Cort Van Rensselaer to come back to Palo Alto from Colorado Springs and to head up a new Office of Corporate Planning. This office will report directly to the Chief Executive Office, and will have responsibility for all planning activities of a corporate-wide nature.

Cort has been with the company for 17 years and, during that time, has held a number of engineering, production, marketing, and general management posts. His long and varied experience, plus his keen analytical ability, make him uniquely suited for this new assignment. We are sorry to ask Cort to leave the Colorado Springs Division while the division's new plant is still in its initial operating stage, but we believe this new job is so important to the corporate future that we want him to return to Palo Alto as soon as possible.

Stan Selby is moving from his current post as general manager of the Loveland Division to take over responsibility at Colorado Springs. Since Stan was with our original group in Colorado, he knows the area well and is one of our most experienced and competent managers. As time goes on, we will make several other adjustments in personnel to assure that our Loveland and Colorado Springs Divisions will continue to have the strongest possible leadership. This will enable them to maintain their key roles in our corporate growth and progress.

We have a big job to do in the years ahead, and are confident that by careful planning and by building in strength for the future, we will not only meet but will surpass our long-range objectives.

*David Packard*

## CONTRIBUTING EDITORS

BOONTON, John Ricci  
 COLORADO SPRINGS, Shirley Cochran  
 CROSSLEY SALES, Fred Harvey  
 DYMEC, Bill Dallenbach  
 FLORIDA SALES, Gene Cline  
 FREQUENCY & TIME, Nancy Jones  
 HARRISON LABS, Rose Harmon  
 HP ASSOCIATES, Bob Santos  
 HP BENELUX, Conny Koedam, Amsterdam  
 HP BENELUX, Monique Embourg, Brussels  
 HP (CANADA), Bob Russell  
 HP GmbH, Heike Wollrab  
 HP LTD., Dennis Taylor  
 HP S.A., Doug Herdt  
 HP VmbH, Hans Hubmann  
 HORMAN SALES, Colleen Molineu  
 LOVELAND, Walt Skowron  
 MECHROLAB, Peter Chiesa  
 MICROWAVE, Dean Abramson  
 MOSELEY, Frank Hicks, Jr.  
 NEELY, Mike Talbert, North Hollywood  
 NEELY, Patti Cooper, Englewood  
 RMC SALES, Dorothy Clink  
 ROBINSON SALES, Barrie Wilmarth  
 SANBORN, Jim Phelps  
 SOUTHERN SALES, Virginia Thornton  
 SOUTHWEST SALES, Helen Hobson  
 SYRACUSE SALES, Ann Ash  
 YEWELL SALES, Donna Coffey  
 YOKOGAWA-HP, Katsuto Kohtani

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# Measure

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 1501 Page Mill Road, Palo Alto, California



"I often say that when you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind . . ."  
 LORD KELVIN (1824-1907)

## Bridge to understanding



**F**IRST ISSUE OF A NEW MAGAZINE for Yokogawa-Hewlett-Packard employees has just been published at the Tokyo operation. The name of the publication means "Bridge" in English. The editors explain that this word symbolizes the magazine's purpose of serving as a "bridge of understanding" among all YHP people in Japan, and also represents one of the company's most significant product developments, the universal bridge. In the picture above, two members of the HP international department in Palo Alto are seen enjoying an advance copy of the issue. Hi Hayashi translates the articles for Corrie Petersen. Although he was born and grew up in San Francisco, Hayashi has fluent command of the Japanese language, partly as the result of special military intelligence training during World War II.