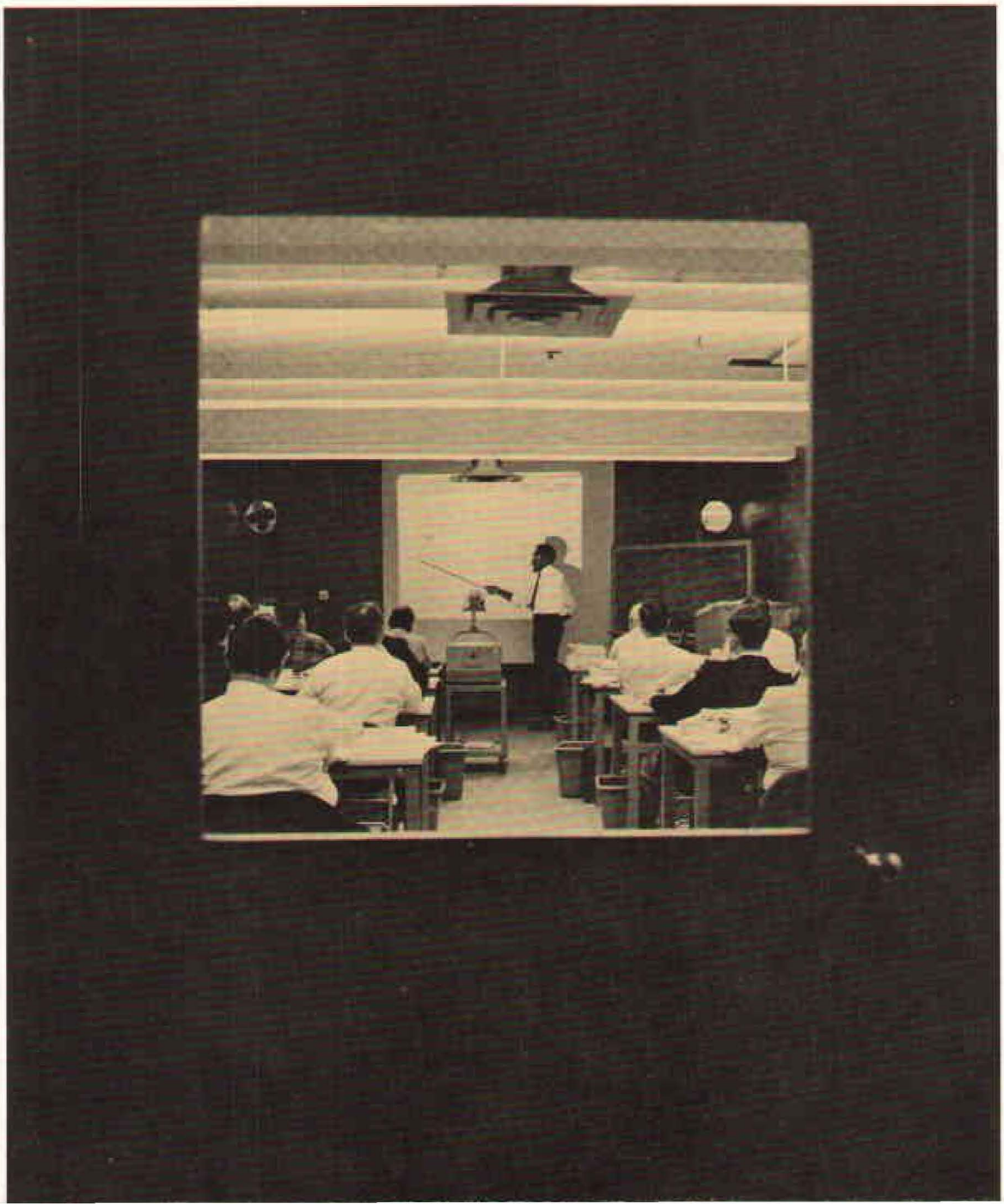
Measure

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



New Cupertino plant production floor stands empty at this mid-April moment. But the big hall soon was teeming with action, and personnel people were very actively recruiting many more professional and hourly people. Expectations are that the plant, which HP purchased last year in Vallco Park near San Jose, will be filled to capacity by the end of this year. No end is presently in sight in drive to hire good people, and lots of them, and this means priority business for Dan Mirich, group personnel manager, and his team that includes George Lewis at Palo Alto Division, Keith Elledge at Cupertino, and Dixie Smith at Mountain View.

Open for business

New Data Products Group sets its priorities: (1) Sell, sell, sell today; (2) Plan a corporate strategy for tomorrow

What special role in HP's future will the Data Products Group have? That broad but important question was put by MEASURE *to Carl Cottrell, who heads the newly formed group. His response came in the form of a kind of "chalk talk" that Carl has been presenting to people and organizations both inside and outside the company:*

"As everyone knows, the computer field is growing at an explosive rate. While that offers us exciting possibilities for new growth, it also requires a carefully planned approach to pick those markets and products where we can balance rapid growth against a proper financial return. We are going to build on our line of computers and calculators in a way that will bring HP a major increment of new business while helping to expand our traditional instrumentation markets.

"This means that we need a group plan which is the basis of an overall corporate Data Products strategy for, you see, every division in our company is either using the computer or is contributing products to the total data products line. Also, our growth rate will be faster than any other part of the company, and so we must be sure that our use of corporate resources does not impede the progress of others.

"We want each division of the company to understand our strategy and contribute to it so that real synergism occurs out of the combination of new products and markets and our established strengths in engineering, manufacturing and marketing.

"Anyone who has really succeeded in the business has not just supplied a computer to the market and nothing else. On the contrary, he has produced total 'families' of software, terminals and peripheral devices. Then he has combined them into systems which solve a customer's problems. That's exactly the way HP's instrumentation business has worked, so it should not surprise anyone that Data Products will be pursuing a similar course of action.

"There is no question in my mind that we are going to be able to meet our equipment needs. Technically we can manufacture almost anything. In marketing data products, though, you can't be all things to all people. So we have to decide which markets make sense right now and expect to go on from there, one market leading to another.

"As a first phase, our group sales and service managers — Bill Davidow and Ernie Matlock — will initiate a sales and service plan that will keep us moving very strongly for the next year or so until our long-range strategy can be worked out in detail and set in motion.

"We face a period of intensive build-up, particularly in the field forces. We have to build the kind of field systems

(continued)

Cover: *Training of customers and HP marketing people is key element in strategy of Data Products group. At front, Roosevelt Mallory of Cupertino Division instructs visitors. Such training will be conducted in Data Centers which will serve also as regional showplaces, and as sites for applications programming and engineering as well as sales and service activities.*

support capability that customers in the data products field have come to expect. In this respect, the focal point of our customer support will be at our new regional HP Data Centers. These will place complete sales demonstration, training, application software support and product service facilities within easy reach of local customers. In addition to existing centers at Slough (England) and Paramus (New Jersey), we plan to set up major HP Data Centers at each of the three other sales region headquarters (Atlanta, Skokie, North Hollywood) and smaller data centers in other major cities. These centers represent a major investment for HP, but they should prove to be a key factor in convincing customers that we can indeed support what we sell.

"For the next few years we will be working on those markets we see just in front of us. We will zero in on HP-proven markets such as instrumentation systems, time-sharing, selected original equipment markets, as well as the mathematical computation and education fields.

"As we continue to expand our capabilities, we will see new solutions to problems that will open entirely new HP markets. I do not think we will have to worry about competing too directly with the 'giants' either; there is plenty of room for us to grow without that. It just isn't possible to say or predict where we will finally go. But we will go wherever we can make a contribution, and we are going to make contributions right across the board — terminals, peripherals, software, processors and, most important, their application.

"The cost of entering this field of markets is going to be higher than we are used to. But if the costs (and risks) are high, the rewards are also very great. It's really going to be a new world for HP and, I believe, a most fulfilling one."

open for business

Information storage devices, including analog and digital tapes and disc memories in combination, are going to be extremely important to Data Products Group, with HP computers or for sale as original equipment. Mountain View Division has prime responsibility in this area. Priority has been given to the development of a family of disc products which provide high operating speeds and rapid access to data. Here Jim Huff, technical writer, at right, discusses disc development with Roger Fairfield, R&D project leader. Under Gordon Eding, the division also is working toward completion of a full family of tape devices, including a portable unit for rugged field applications.

Cupertino Division will concentrate on production of computer products such as 2100 family of processors shown here, along with supporting instruments and software. Checking shipping tag is Wes Brooks. Cupertino facility will be joint headquarters for the division headed by Tom Perkins as well as Data Products Group. Data Products' strategy envisions close liaison with divisions outside the group because of the strong marketing relationship of such products as the Loveland calculators, new plotters from San Diego, terminals from New Jersey, and CRTs from Colorado Springs.

With computer manufacturing and software moved to Cupertino, Palo Alto Division has more room for growth in its main area of responsibility — computer-based systems. Here Leroy Rickel and Bernie Teague load a 2118 system into rack. Products of almost every HP division are represented in such systems. Note the double set of manuals, part of software package that goes with each system. Jerry Carlson, PAD division manager, says the principal distinction between PAD systems and those of Systems Division is that the former are designed as high-volume, packaged products requiring a minimum of custom engineering. Major market is in data acquisition systems, but areas such as automatic testing, process control, manufacturing automation and numerical control show excellent promise.

The touch of pride

Twenty-three years ago, when he was 17 and an apprentice tool and die maker, Paul Reid's eyes lost their battle with glaucoma. Since then, however, Paul has gone on to win the war that all sightless people must fight — the inner struggle to accept his condition without bitterness and to get others to accept him as a man who can earn his own way.

Well, down on the machine-shop floor of Building 4 at HP's Stanford Park complex, Paul's associates have become real believers. More than that — fans. "He's got just a great touch with machines and tools," says Bill Kelley, who supervises Paul's area.

"We have more than 200 different jobs in this shop and Paul can do just about all of them. His touch is extremely sensitive, particularly when working with a new part. Just the other day he checked two pieces of metal stock that were supposed to be identical and said one was different. You couldn't see it by eye. But we measured, and sure enough it was off by less than half the thickness of a human hair."

When Lew Cantwell of the Manufacturing Division hired Paul some eight months ago, there was concern about the hazards of his working with machines and getting around the busy floor. But Lew was determined to give him the chance.

Paul's deftness with machine tools and his productivity quickly settled the first point, Argus, his big, good-natured German shepherd, took care of the other concern, guiding Paul expertly and unhurriedly through the shop traffic and into the sunshine they both enjoy (rain caused the only complaint ever heard from Paul — because he couldn't give Argus his walk).

"Paul's a very independent and happy guy," says Bill Kelley. "It's no problem for him to keep on working and talking or joking all at once. Of course, nothing ever distracts him."

Taming of the troublesome tube

Cathode ray tube manufacturing is not an impossible technology, but it certainly qualifies as one of industry's fickle arts. According to the CRT team at HP's Colorado Springs Division, fate has the habit of pointing its troublesome finger at one batch of tubes during production, only to leave others alone. Because of the magnifying action of high frequency CRT's, even the smallest mote of unseen matter can become a monster that shows up as a flaw or like a case of measles when the tube is illuminated.

But these days at the Springs there's a new and real feeling of confidence that they've licked many process control problems — that the erratic activities of the fickle finger have at least been corralled, if not altogether cinched down. Talking to the team members, you don't have to listen hard to detect a sense of pride and satisfaction in the way this progress is being achieved.

The feelings arise in part from the well-trained production team in contrast to the small inexperienced group involved when CRT production was transferred from Palo Alto to the Springs some five years ago. They also arise as a consequence of the success achieved by the in-plant and process engineers in solving many difficult production problems and from the enthusiastic help and support given them by the CRT R & D group. Facts such as a greatly improved productivity rate and lower unit cost are also sources of satisfaction, as is the fact that the division's tubes are in use in a wide range of HP instruments in addition to oscilloscopes.

The pride comes from the knowledge that, as CRT Manufacturing Manager Wally Klingman says, "in spite of a technology that is difficult at best and mysterious at times, we have learned how to make tubes — high quality tubes.

"It was pretty rough getting into this business. There wasn't a lot of experience available to us at the time. It took a great deal of persistence and patience by a lot of people here and in Palo Alto to cope with the many frustrations

(continued)

With almost anything and everything a potential source of contamination in cathode ray tubes, extraordinary protective measures are taken at all steps. Here Mary Abeyta inspects CRT gun mount. Note the "clean room" clothing and procedures.

Among efforts to improve CRT quality was a worldwide search for superior glass. Here Jean Jones checks effect of heating — "fritting" as it is known in the trade — on a storage tube funnel. Face mask is worn to protect super-sensitive CRT.

taming the tube

that came along. At times you could see banks and banks of instruments just sitting there waiting for tubes."

Without doubt, the most persistent and elusive enemy of CRT production is contamination. Almost anything can be a source of contamination — people, air, water, minerals and supplies. It's known, for example, that when the local water district periodically switches from one reservoir to another, a new set of contamination problems can arise. There is nothing unique about this. In fact, contamination control is something that still challenges the whole industry.

The low-cost, variable-persistence storage CRT is one of a number of contributions by Hewlett-Packard in the art of oscillography. In the very first instance, it took a brave kind of decision just to enter the oscilloscope field in the late 'fifties in the face of well established competition. But Bill Hewlett and others were convinced that this important measurement technology should not be passed up by HP, and that the company could make worthwhile contributions to it. The first major contribution in the CRT was development of the expansion mesh. This provided two-way CRT magnification — both vertical as well as horizontal. In time came the storage tube. Meanwhile, numerous advances in both design and production methods added up to a significant improvement in the performance of conventional CRT's.

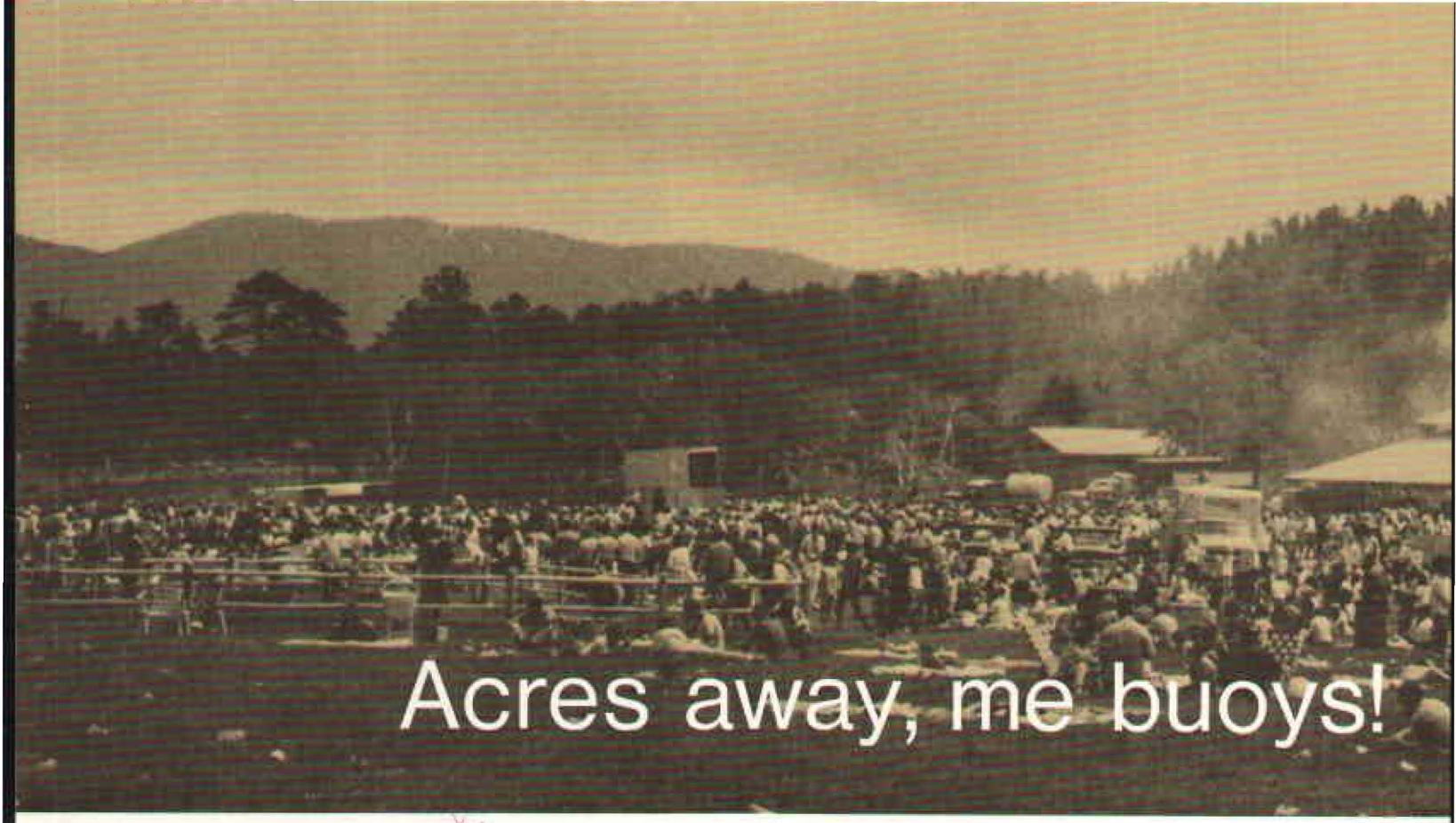
But real success has to be measured in the marketplace. Here the products of Colorado Springs Division are rated high in quality and competitively priced. Other HP divisions make extensive use of the Springs' tube products for such instruments as the calculator, spectrum analyzer and loudness analyzer, in medical instrumentation and other data display devices. Now entirely new markets may open in the near future. But that's another chapter in a story that's already one of success.

CRT production has grown significantly even though the growing variety of functions and sizes has increased manufacturing complexity. Discussing specs of a finished tube are, from left: Al Steppler and Norm Glaeser.

In addition to contamination, another CRT production problem can be alignment of electron gun — something like TV tubes. Here, from left, Bea Pierce, Norma Sayre and Ed Pallas discuss a refinement in fabrication process.

CRTs produced at the Springs presently have wide use in HP scopes and as displays for products of other divisions. Wally Klingman, CRT manager, pictured here, as well as Division Manager Bill Terry see the possibility of supplying outside users in the original equipment market.

CRT supervisors are now an experienced team. Several are specialists who were brought in to deal with particular problems in quality control. From left: Ed Pallas, Gerry McGonicle, Don Griffith, John Young, Jim Davis, Ray Wheeler and Don Gardner.



Acres away, me buoys!

Would you believe that this is Hermit Park? Normally this Loveland area HP recreation facility is a scene of great serenity. Here a wide meadow makes a great setting for the division's annual picnic. Any company person can use any of the various recreation areas. Campers should reserve in advance.

Wilderness vacations or family fun can be yours at company-owned recreation areas

Club Sandwich on Peter's Pond is the Cape Cod getaway for Waltham Division people. The beach and boating attractions are obvious. Fishing is also said to be good. Six new cabins have been built to accommodate overnight visitors (campers and tents are prohibited by local ordinance).

Question: *What kind of a picnic spread would you have if you placed a Club Sandwich alongside a Little Basin near Hermit Park in Sourdough Valley?*

You guessed it — more than 2,500 acres of Hewlett-Packard recreation area. Go to the head of the chow — sorry — barbecue line.

The four HP recreation areas pictured on these pages are more, much more than picnic places, though they are certainly that, too. All of them have some degree of wilderness surrounding facilities for family and group-style recreation and camping. Each is now equipped with cabins or other overnight campsites available to employees and their families on a reserved basis.

East to west, here's what they have to offer:

- Club Sandwich is a Waltham Division operation at Peter's Pond on Cape Cod. This pond is a great natural attraction well stocked with fish and excellent for boating and swimming.
- Hermit Park is the Loveland Division's area — 1,350 acres of mountain property high in the Rockies. It's still relatively unimproved, but a great place to really get away

(continued)

from it all. It just happens to back up on a big national park, and fishing streams, lakes and beaver ponds are only a short trip away.

- Sourdough Valley serves the Colorado Springs Division with 570 acres of beautiful mountain country well equipped for camping and picnicking. Some cabins are available through reservation.
- Little Basin is HP's California recreation area situated in the Santa Cruz Mountains, approximately 40 miles from HP's Stanford Park complex. Lots of trees, lots of fun, fine facilities.

All of them are yours to use.

acres away

A place with the name of Sourdough Valley has just got to be good, and it's fun for HP's Colorado Springs' families. Note the building materials in the background, evidence of the continuing program of improvements common to all HP recreation areas.

Here's the pond at Little Basin, one of a wide variety of outdoor facilities available to HP people at this Northern California site. The various "wildlife" views shown with this story were photographed in Little Basin by Neely's Bob Reade.

News in brief

South Queensferry — Hewlett-Packard Ltd. has won "The Queen's Award to Industry" in recognition of its technological innovation in the field of microwave-link analysis. HP Ltd.'s breakthrough in microwave-link analyzers has brought significantly improved standards for microwave telecommunications and color television transmission by facilitating the performance-checking of microwave communication links.

Cupertino — Hewlett-Packard people have begun to occupy the new Cupertino, California, plant. Full occupancy — by about 350 employees — is expected in mid-May. The $5.5-million plant has 150,000 square feet of floor space and is located on a 46-acre site at Wolfe and Homestead Roads in the Vallco Park area. The facility houses HP's Data Products Group, under General Manager Carl Cottrell, and its newly designated Cupertino Division. The division, headed by General Manager Tom Perkins, began manufacturing its line of digital computers and related equipment in the new plant last month (see pages 1–5).

Mountain View — Brian Moore has been appointed general manager of the company's Delcon Division. The division manufactures ultrasonic industrial detectors and cable fault locators. Moore joined HP's Pasadena, California, plant in 1966, becoming manager last year. Succeeding him there is John Parks, formerly the plant's fabrication manager.

Chicago — Based on audience surveys by Industrial Marketing magazine, HP's Wescon exhibit was one of the five most remembered exhibits among all industrial shows in the U.S. in 1968. The survey placed the HP exhibit third only to exhibits by IBM and Miehle-Goss-Dexter at their big industrial shows. Product interest and exhibit design were cited as reasons for remembering the HP show (see Bill Hewlett's letter about the 1969 IEEE show).

News even briefer — *For the record, the following summarizes those news items that would have been reported in normal March and April issues of* MEASURE *but which were excluded because of the special double issue:*

- HP sales for the quarter ended January 31, 1969, totaled $71,546,000, a 21 percent increase over sales of $59,120,000 for the corresponding period of 1968. Net earnings of $5,342,000 were up 51 percent over the $3,533,000 earned in the 1968 first quarter.
- George Bennett, a Boston investment manager, was elected to the HP board of directors.
- Bruce Wholey was appointed technical services manager of the company. Dean Morton succeeded Wholey as manager of the Waltham Division.
- Bob MacVeety was appointed general manager of the Eastern Sales Region, succeeding Carl Cottrell who now heads the Data Products Group.
- HP Australia Pty. Ltd. has opened an office in Perth to serve Western Australia.
- John Young, HP vice president and general manager of the Palo Alto Electronics Group, was elected to the board of directors of HP Ltd., the company's manufacturing and marketing organization in the United Kingdom.
- Bill Terry, general manager of Colorado Springs Division, has been appointed to the board of management of HP GmbH at Boeblingen. The board was formed recently to meet requirements of German corporation law.
- The 115 headquarters people at HPSA have moved into the new quarters at Meyrin, a Geneva suburb.
- A new leased marketing office has been opened in the King of Prussia Park near Valley Forge, Pennsylvania.

U.S. Bonds: Payroll Savings Plan Offered — HP's annual U.S. Savings Bond campaign has been announced for the first two weeks of June. At that time the payroll savings plan will be explained to new employees, and all HP people will be offered an opportunity to participate. Besides helping to fight inflation, U.S. Savings Bonds offer significant tax advantages when used for education or retirement. Eric Isacson of Corporate Planning has been appointed coordinator for this year's campaign.

People on the move

Corporate — Bob Clark, to corporate Marketing Services, from CSC data processing; Bob Levy, to Palo Alto personnel, from F&T publications.

Data Products Group

Group — Dan Mirich, to group personnel manager, from personnel manager, Loveland; Ed Smith, to sales, from marketing manager, F&T.

Cupertino — Keith Elledge, to personnel manager, from corporate Personnel.

Mountain View — Tom Thompson, to tool engineering, from same position, F&T; Bill Wilcox, to marketing staff, from CSC repair; Dixie Smith, to personnel manager, from corporate Personnel.

Palo Alto — George Lewis, to personnel manager, from corporate Personnel; Norm Nilsen, to finance manager, from administration manager, Eastern Sales.

Operations Group

Delcon — Mark Runyan, to marketing staff, from same position, Microwave.

Waltham — David Domke, to regional sales manager, from sales engineer; Walter Elwin, to production control analyst, from expediter; Donald Greene, to production control analyst, from assembly leadman; Ralph Greenidge, to associate technical writer, from test leadman; John Hart, to engineering project leader, from project engineer; James Larsen, to engineering project leader, from project engineer; John Olivieri, to packaging engineer, from materials handling manager; Sarkis Sarkisian, to line supervisor, from special products leadman; Joseph Simone, to medical manufacturing engineering manager, from production engineer.

Palo Alto Electronic Products Group

Group — Jim Phelps, to group personnel manager, from corporate Personnel.

F&T — Dick Buchanan, to marketing, computing counters, from R&D; Papken der Torossian, to frequency standards, from R&D; Fred London, to product marketing manager, digital signal analysis, from sales engineer; Everet Penn, to material records file coordination, from manufacturing engineering; Gil Reeser, to marketing, computing counters, from R&D; Dave Smith, to manufacturing engineering, from R&D.

Manufacturing — Doug Carnahan, to Stanford Park facilities engineering, from Palo Alto plant engineering; Blaine Carruth, to Stanford Park facilities engineering, from corporate plant engineering; Tom Holden, to Santa Clara product support, from fabrication; Carl Nelson, to finance staff, from corporate finance; Carl Nunes, to material control, from EDP operations; Dennis Paboojian, to fabrication manufacturing supervisor, from information systems.

Microwave — Fred Basham, to production engineering manager, signal generators, from R&D; Jim Hergert, to signal analysis, from manufacturing tool engineering; Ron Regehr, to R&D, from HP Laboratories (solid-state).

Systems — Neil Dickinson, to fabrication supervisor, from R&D, Mountain View.

International — Will Carleton, to business manager, HP Canada, from finance staff, International Operations.

Eastern Sales — Ron Galli, to regional analytical sales manager, Paramus, from sales manager, Avondale; Jack Lennon, to field engineer/calculators, Albany, from service technician, Albany; Ed McDonald, to regional medical sales manager, Paramus, from field manager, medical instrumentation, King of Prussia; Dick McGrane, to sales representative, medical instrumentation, Cherry Hill, from mobile field engineer, Paramus; Tony Martinelli, to area manager, Lexington, from district manager, Lexington; Jim Prestridge, to regional data products sales manager, Paramus, from area manager, Lexington; Dick Stone, to field manager, East Hartford, from field engineer, West Conshohocken; Dan Terpack, to account manager, Lexington, from field engineer, Lexington; Bob White, to field manager, Providence, from field engineer, Lexington.

Midwest Sales — Joe Palladino, to field engineer, Pittsburgh, from International Import Marketing.

From the president's desk

As most of you know, March is the time of the big IEEE Show and Convention in New York City. Although we participate in a number of such shows throughout the year, this is the largest and most important one. This year, for example, it attracted some 60,000 engineers and scientists from all parts of the United States and from a number of other countries.

It is for this reason that we lay so much stress on this particular show and that extra efforts are made to exhibit some of our more significant instruments and contributions of the year preceding. In general our displays are limited to items of interest to the electronics engineer. Medical and analytical instruments are best presented at other shows in these fields.

This year I felt we had an exceptionally well organized and interesting presentation. Each product division participating had its own section of the display area, with engineers well trained in these products to provide interesting demonstrations for our visitors.

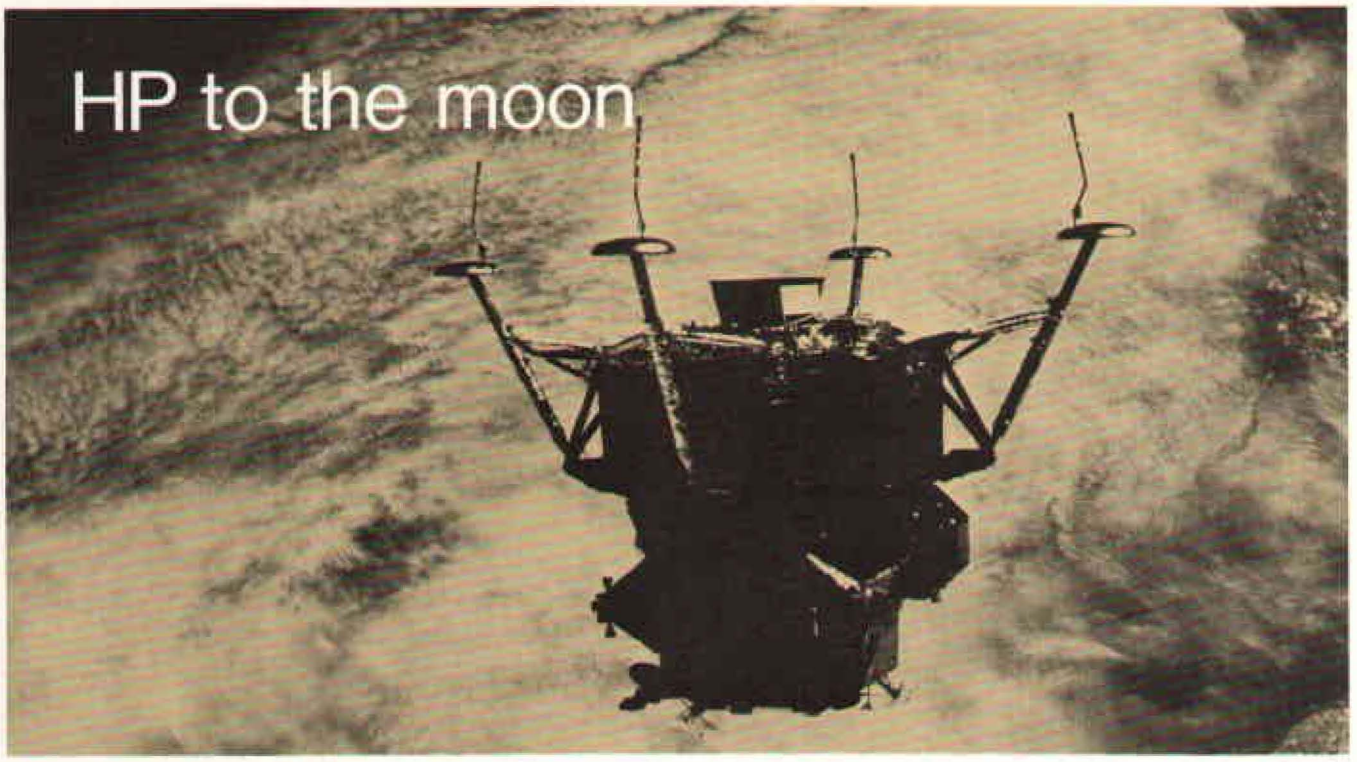
It is difficult to pick out specific HP displays for comment, but I had the feeling that F&T's computing counter, San Diego's plotter, in conjunction with the desktop calculator, HPA's solid-state displays, and our computer-controlled data acquisition setup were particularly noteworthy, and were usually so crowded with visitors that it was hard to get close. I am sure that when the inquiry cards are tabulated we will have a much better idea of specific areas of customer interest. In all, I felt it was a very successful exhibit on our part, and I received a number of favorable comments about it.

The IEEE show is more than just an opportunity to present our own products. It provides a chance to observe in what directions our competitors and suppliers have moved. I always make it a point to walk around at this show because it attracts exhibits from most of the instrument manufacturers. I was impressed this year with the relatively large number of companies who are concentrating on the low-cost, lower-quality instruments. In years past this has also been true, but with a few exceptions not too many of these products are successful in the marketplace. Nonetheless, it serves as a reminder that quality pays, and that innovation and contributions of new ideas make a hard-running company such as HP difficult to catch.

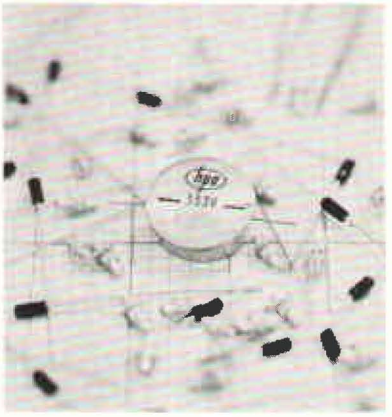
On the other hand there is some formidable competition appearing in a few specific fields. In general this competition is from well known and highly respected companies, companies who have the same standards of excellence that we pride ourselves on and that our customers have been willing to pay for. This serves as a reminder that we live in a highly competitive environment, that we cannot rest on our oars, and that we make progress by the quality of our ideas, by the reliability of our products, by the service we render our customers and by our willingness to take risks in new areas of great promise.

Bill Hewlett

HP to the moon



If all goes well with the Apollo project, a number of Hewlett-Packard products will land on the moon this summer. Others will be aboard the command module and have a vital role in communicating with the moon landing vessel and — in one instance — guiding it back to an orbital rendezvous. All of the products are solid-state devices. Included are high-power PIN diodes and microwave detector hot-carrier diodes from HPA Division, and solid-state switches now produced by the Microwave Division's component section. The diodes for the most part are involved in the Unified S-band communications system and serve a variety of functions. The switches, on the other hand, have a key role in the rendezvous guidance antenna system. Actually only one 3530 switch would be needed for this function, but eight of them have been installed to reduce any possible risk virtually to zero. All of the items shown (typical of those at right) are shelf-type products, but very rigorous environmental testing was performed by HP to insure the highest possible quality and safety rating.



Measure

EDITOR
Gordon Brown

ART DIRECTOR
Tom Martin

CONTRIBUTING EDITORS — AVONDALE, Charles Butler • COLORADO SPRINGS, Ed Ilgen • EASTERN SALES, Louise McArthur • FREQUENCY & TIME, Kathy Johnson • HARRISON, Dorothy McMahon • HP ASSOCIATES, Jean Ewings • HP BENELUX, Amsterdam, Hans Vinkenoog • Brussels, Yvette Andre • HP (CANADA), Doug Pidduck • HP GmbH, Klaus-Dieter Laidig • HP FRANCE, Jacques Brugere • HP LTD., South Queensferry, Isobel Paterson • Slough, Maureen Philpott • HP S.A., Sid Mann • HP vGmbH, Franz Nawrátil • LOVELAND, Nancy Sorenson • MICROWAVE, Frank Williams • MIDWEST SALES, John Lilliedahl • MOUNTAIN VIEW, Doug Hansen • NEELY SALES, Bob Reade • PALO ALTO, Joe Bailey • ROCKAWAY, John Ricci • SAN DIEGO, Gerry Royce • SOUTHERN SALES, Regional-Atlanta area, Mattie Ferguson • Florida area, Gene Cline • Texas area, Helen Hobson • WALTHAM, Janet Dale • Y-HP, Yosuke Ishikawa

1501 Page Mill Road, Palo Alto, California 94304

HEWLETT-PACKARD COMPANY
1501 Page Mill Road
Palo Alto, California 94304