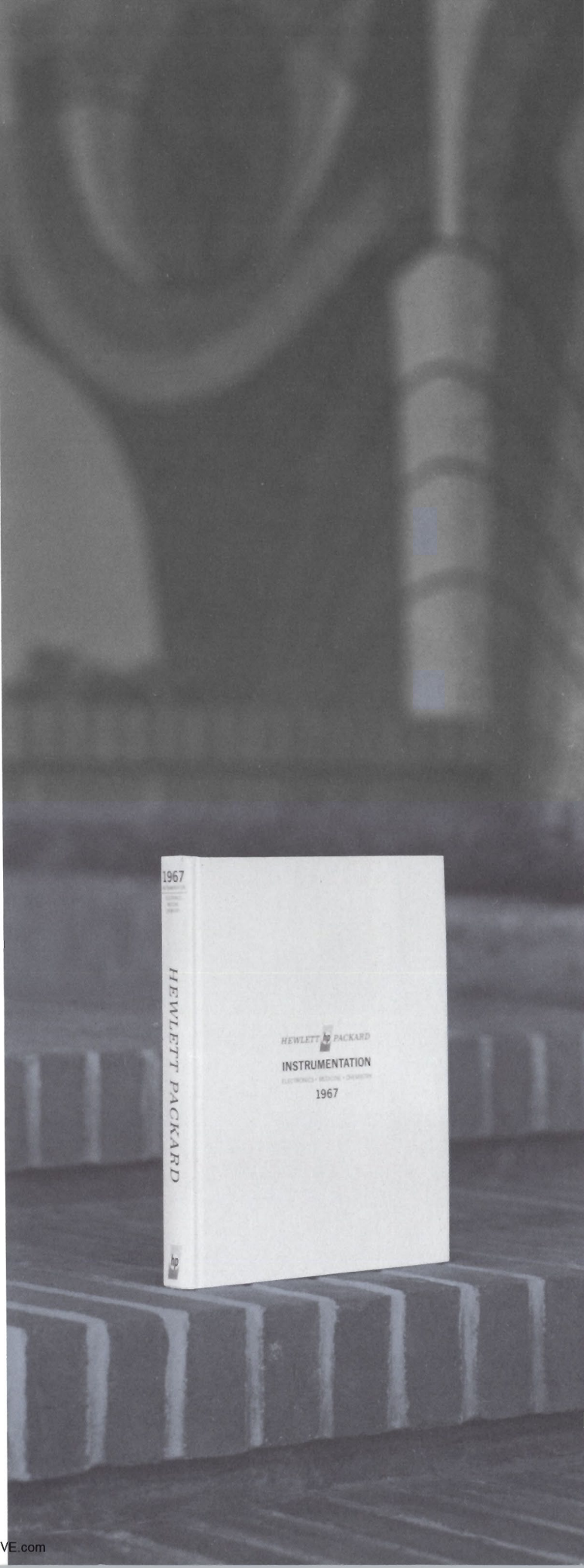


Measure

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



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The 70-ounce salesman



Tight production schedule of big 1967 HP catalog required very close cooperation of suppliers. Here HP's Steve Duer explains to representatives of printing and art service firms how they fit into the production timetable.

HP's 1967 catalog

□ The smallest book in the world is less than one-eighth of an inch square. The largest volume is a 500-pound giant equipped with a 12 h.p. engine for turning the pages. Somewhere in between these extremes—*Poems by Edgar Guest* is the former, *The Story of the South* the latter—lies a brand-new publication, *Hewlett-Packard INSTRUMENTATION Electronics • Medicine • Chemistry 1967*.

With 170,000 copies printed, each having 593 printed pages and weighing in at 4 lbs. 6 ozs., the new HP catalog is a publishing landmark in its own right.

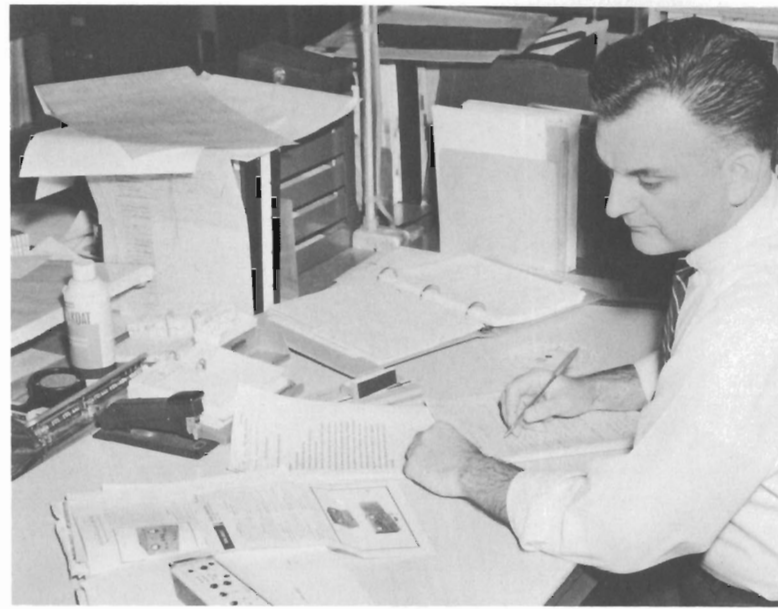
More important than size, however, is the fact that the 1967 version is the first annual HP catalog. All previous catalogs were numbered, and generally were replaced only on an every-other-year cycle. Now, plans are already being made for the start of work on the 1968 catalog.

Some pretty good reasons were recognized for publishing on an annual cycle at this stage in the company's development. A mail survey of more than 1,000 representative HP customers last February, for example, revealed that well over half of them felt that catalogs lost their usefulness in a year to 18 months after publication. This finding dovetailed neatly with a belief which company marketing and manufacturing people had come to hold, namely that the accelerating rate of HP product development and replacement made a speedup in the catalog's publication cycle necessary as well as desirable.

A second important decision reflected in the 1967 catalog is that it is a general catalog presenting information about HP's medical and chemical instrumentation as well as the electronics line. There's no doubt it would have been much simpler to publish separate catalogs dealing individually with these three disciplines. But, again, arguments for the general approach were very strong.

A general catalog would provide strong corporate identity in all three disciplines. Customers would be impressed by evidence of the company's overall capability. Many users in the chemical and medical fields would be interested in exploring possible uses of electronic instruments and systems described in the catalog.

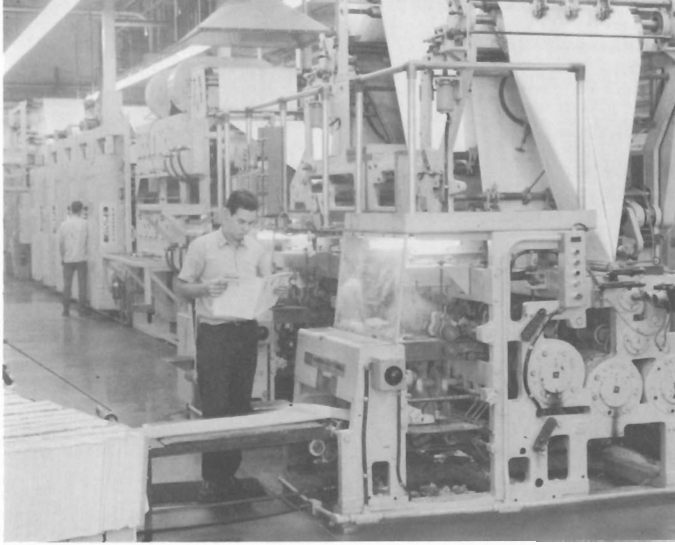
Following management's approval of this approach last June, based on recommendations coming out of an intra-company catalog meeting in April, 1966, the catalog team set about the task of organizing, designing, writing, producing, and distributing what must rank as one of the largest printing jobs in industry. It faced a tough deadline: distribu-



Basic legwork in writing product data sections of 593-page catalog was performed by divisional editors such as Rockaway's Frank Montesion.



Coordinating new catalog project were Steve Duer, left, and Carl Anderson, assisted by Mary Unciano, all of corporate advertising.



Only a handful of U.S. firms qualified for big printing job. Kingsport Press of Kingsport, Tenn., printed the total run of more than 100-million pages.

tion to divisions and customers during the first two months of 1967 to allow as much use as possible during the year.

Fourteen editors, representing manufacturing divisions and customer service, went to work getting the story of their products written and arranging required photography. A coordinating group, headed by Steve Duer and Carl Anderson of corporate advertising, then had the job of herding the material through production. With so many words and pictures to process, so many people involved—including art services and typographers in Palo Alto and the printer in Tennessee—it was a job calling for coolness and exactitude, and a good measure of midnight oil. Changes and additions were being made right up until press time.

The magnitude of the entire project can be seen in the fact that only a handful of printing firms in the country really were qualified to handle it fully. Of these, Kingsport Press, Inc., of Kingsport, Tennessee, was finally selected because it had all necessary facilities under its own roof and could assure delivery of a quality printing job, on time and at a competitive price. More than 400 tons of paper stock, plus many more tons for the hard-cover bindings, were processed.

Distribution of the catalog has been another major project. Field sales offices and divisions started receiving copies shortly before Christmas. Early in January, announcements were mailed to customers asking each to confirm if he wished to receive a copy and to make address corrections. As the cards flow back, mailings to these customers are made from depots at Kingsport, the Southern Sales Region's Orlando, Fla., office, and Neely Sales Region headquarters in North Hollywood.

Finally—will they make good use of the new catalog? Evidence from the 1966 survey indicated that more than half of HP customers buy their instruments directly from the catalog and feel that it usually provides most of the information needed. Other sizable segments said they generally used the catalog prior to asking for more data or demonstrations.

The 1967 version, with a great many improvements that aid the reader in locating items of interest and in comprehending their importance, promises to be not only the biggest but also the best-read HP book ever. Until 1968. □



Giant job of mailing catalog to customers is exemplified by this view of the company's addressograph files in Palo Alto. Here Doris Fernandez checks plates prior to mailing of catalog announcements to customers.



Early copy of the finished product—4 lbs., 6 ozs. of catalog—is reviewed by Neely's Phil Scalzo, right, for customer at Litton Industries. 1967 catalog was designed to meet needs expressed by customers in an extensive survey.

We get letters

Occasionally, amidst the flood of general business correspondence received by HP divisions, a gem of humor pops up to brighten the day. Sometimes it comes from a youngster asking for help with a school project, or from someone asking about employment. There are even "please send money" pleas from would-be inventors. Usually, the humor is unintended, which makes for most of the fun. Here are a few samples. . . .

I would like to express my gratitude to you for the use of the Electro-Cardiograph on Friday. It added and simplified the talk Mrs. _____ gave on the heart and its diseases. Mrs. _____ used her son as the victim of this display.

May I have some free literature on what you pack and how you run your company. I would be pleased if you could.

Please send your worn heads to us. It is possible to repair them, and we will be happy to advise you of the costs after we examine them.

Would you please send me some free literature on what you make and how the company is runed.

At the present time I am going to college. To ameliorate my education I have to work this summer. I am looking for a pragmatic financial situation to proliferate my education... I am not trying to be succinct in my attitude, but the greatest remuneration must be a means to an end. I am very sincere in the proliferation of the entrepreneur's enterprise. Would you reply as soon as possible.

My social studies teacher wants us to write a report on an industry. The industry I chose was electronics. I also chose to write the report on how transistors, diodes, triodes and computers work. I would greatly appreciate any information you have.

I was very disappointed at the company the last time I wrote for information. All I received was last year's annual report. Last year I wrote to American Telephone and Telegram for information; they send me many booklets which I used for a report. I am not a stockholder of AT&T. P.S. Please rush the information. I need it in two weeks.

Can I secure from you the circuit diagram and operating instructions for your model 524D scaler, so that I can attempt to build one?

October 12, 1964

Gentlemen:

I am responding to your ad for a secretary. I am in my 8th month of pregnancy and would be able to work until approximately Oct. 25, 1964.

Materials management:

□ Every few years, it seems, a brisk alarm is sounded in executive suites across the country. The alarm is echoed in the headlines of business magazines and the financial columns of daily newspapers. Pretty soon, many people are talking about it—just as HP managers did at the company's recent Monterey conference. The subject in question is inventories—and what to do about them.

The fact that so many organizations and people can become concerned about such a subject indicates the importance attached to it. For example, when enough firms either speed up or slow down their rate of inventory building, the federal government is vitally concerned because such trends have an important influence on the nation's total productivity and prosperity. At the other end of the spectrum, inventory decisions by individual businesses have a direct impact on the number of jobs they can offer and the level of profits they can expect.

In spite of this evident importance, it is apparent to specialists in the fields of cost accounting and materials management that not too many people in industry have a clear idea of what is properly meant by inventories. They say that most people think of inventories as boxes, bins, or barrels full of raw materials and "nuts-and-bolts" parts, and shelves full of products awaiting shipment. That's true—as far as it goes. But a complete definition includes all work in process, along with all direct labor, manufacturing overhead, and all materials used in manufacturing. In HP's case, it also includes all instruments used for demonstration purposes, and parts stocked, by the sales organizations.

All of these are items with which HP's managers must concern themselves—and which show up as assets on the company's consolidated balance sheet. At the end of the recent fiscal year, for example, the dollar value of HP inventories was \$53.6-million—one-third of the company's total assets. The very size of this figure makes obvious its im-

It's more than minding the stores

portance in a key measure of performance—return on assets.

Inventories have other definite effects in the financial picture of the company. Very important are the costs of maintaining them. For every \$100 in inventory value, the company spends an additional \$20. This includes the costs of purchasing, receiving, freight, storage, obsolescence due to engineering changes, spoilage, deterioration losses, property taxes, and insurance, as well as the cost of financing inventories—interest. During the past year, the company found it necessary to increase its short-term borrowing in order to finance its continuing growth. High inventories further increase borrowing requirements and, in turn, increase interest expense.

A prime goal of HP managers, then, is to bring about any reduction in inventories that will not impair the company's over-all performance. Experience has shown that a realistic target for HP inventories is an average of 12 to 15 weeks' supply on hand. Within the electronics industry, HP has long been a leader in the management of its inventories—keeping its levels controlled by “turning over” inventories at a rate of up to four times a year. Many differences exist for individual items within this target and, of course, special situations such as national emergencies and shortages come along to influence decisions.

Day to day, the task of making inventory decisions at HP is directed by the materials management group of each of the manufacturing divisions. These groups generally are headed by a materials manager and include specialists responsible for making up the master production schedule, for purchasing (sometimes described as inventory control), and for production control. They employ a number of well-defined methods and guidelines, including the over-all corporate target.

Most important of the divisional devices is the master schedule. Based on a combination of experience and fore-

casts furnished by the marketing group, the master schedule tells the division's purchasing personnel what they will need to procure in the months ahead. The purchasers need to know, or find out, the supply situation for each item and make due allowance in “lead time.”

A second factor is the “safety stock” which must be carried as reserves in case a production schedule is suddenly boosted or in the event a supplier fails to deliver as promised. Most “safety stocks” provide a cushion of a few weeks' supply. But where material shortages must be anticipated—as have occurred recently in copper components—both the lead time and the safety margins have been extended.

What can be done, then, to bring inventories back to “normal” following a period of buildup? HP inventory control buyers start by reviewing every item requisitioned more and more closely. If feasible, they will squeeze the safety margin. They'll reduce volume purchases unless the savings on volume discounts are too good to pass up. With long-term supply contracts, they will ask for more frequent shipments to allow for more flexibility in making possible postponements or other adjustments. And they will start all over again next month, and the next, going over every item point by point.

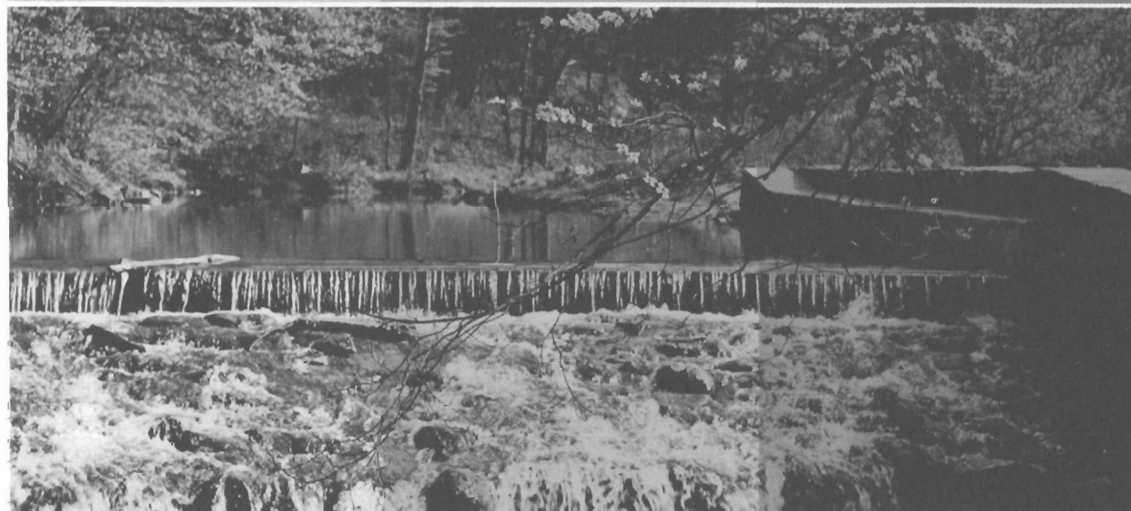
It is, of course, a complex and constant challenge. Production management will become concerned if inventories seem low. Marketing management will become equally concerned if shipments become delayed by inventory problems. And, as noted, financial management has an interest in keeping inventory trim as a means of reducing costs, improving profits (and profit sharing), and freeing funds for other tasks.

HP's inventory control managers accept these points of view and their accompanying pressures as natural forces with which they will always have to contend. Seldom a dull day—especially these days. □

ASSETS

	1966	1965
	(Thousands of Dollars)	
CURRENT ASSETS:		
Cash	\$ 2,268	\$ 3,534
Notes and accounts receivable less provision for losses in collection 1966—\$126, 1965—\$98	40,618	31,950
Inventories:		
Finished goods and work in process, at approximate cost	33,973	25,146
Raw materials, at lower of cost or market	19,620	10,386
Deposits and prepaid expenses	2,133	1,546
TOTAL CURRENT ASSETS	\$ 98,612	\$ 72,562
PROPERTY, PLANT AND EQUIPMENT, AT COST:		

POLLUTION



**1997,
OR THEREABOUTS:**

“Grandpa, how many wars did you fight in?”

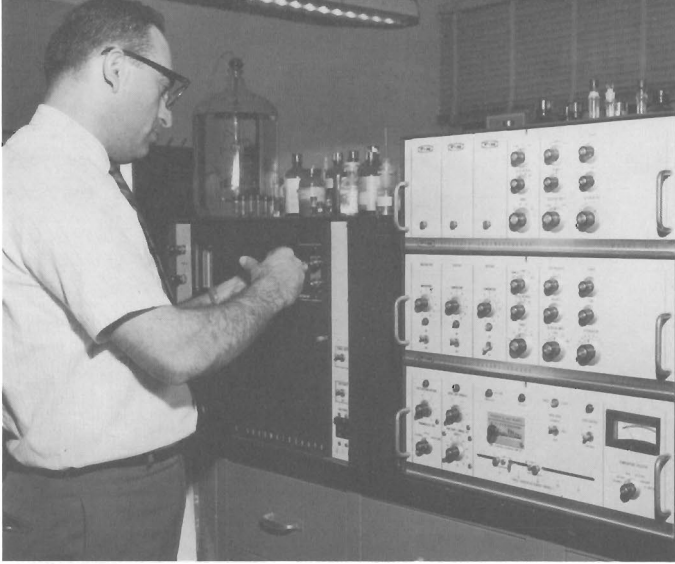
“Well, son, there was the war against crime. Then poverty. Also illiteracy, hunger, disease, inflation, over-population, urban congestion, noise, deconcentration, suburban sprawl, metropolitan blight, and of course environmental pollution.”

“Which was worse?”

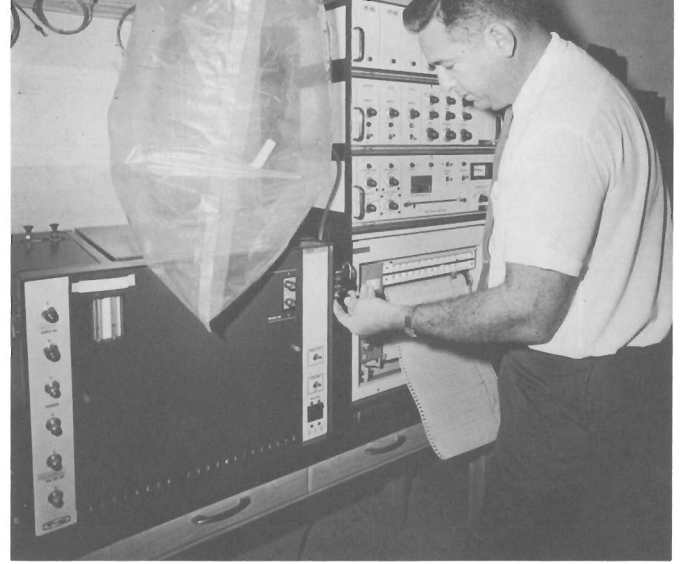
“Pollution, sonny. Seemed like it was everywhere—in the air, in the water, in the soil, in plants and animals, foods. Came mostly from man-made fumes, cars, chemicals, and wastes. I recall it was back in the fifties that we first started to get worried, and by the mid-sixties we had a real war on our hands.”

“Who won, Grandpá?”

“Who knows? Haven’t heard from the surface in some time.”



Water pollution researcher at Department of Interior's Taft Engineering Center, Cincinnati, uses an F&M model 810 research gas chromatograph to identify contaminants. Many of the nation's rivers, lakes, ground waters, harbor and coastal waters are threatened by pollution.



Air pollution control laboratory operated by Florida's Dade County Health Department tests continuing flow of samples brought in by field teams. An F&M 810 gas chromatograph is used to locate and evaluate pollutants and their sources.

HP instruments enter the battle against a problem of growing magnitude

□ During the next five years, about \$5-billion will be put to work in the United States to combat the huge general problem of pollution. The enemy—smog, smaze, soil and water pollution, contamination of foliage and foods, etc.—is not only big and complex, but also downright peculiar in many ways. Would you believe, for example, that a river—the Detroit River—could become a fire hazard? Or that West Coast smog is quite different from East Coast smog? That huge Lake Erie is in danger of dying? That only rubbish fish now can live in the lower reaches of the Mississippi River? That we could pollute the Pacific to the point where mussels are out-of-season all year round? And come near to wiping out the oysters in Chesapeake Bay?

Those represent only a few exotic samples drawn from a lengthening list of problems. Countermeasures necessarily must be on an equally big scale—regional, national, and even international. Professionals in the pollution field call their approach “environmental control.” It means scientifically analyzing the causes of pollution, establishing standards of control, and constantly monitoring the environment to detect any breakdowns in control standards. Obviously, it's a job calling for the use of scientific recording and measuring instruments of many kinds, and in great abundance.

Most directly involved of all HP organizations is the F&M Scientific Division. In particular, F&M's gas chromatographs, which can accurately identify and measure minutely small traces of material, are installed in numerous laboratories engaged in pollution control and research. Typical installations include an auto exhaust analysis laboratory at the Taft Engineering Center, Cincinnati; an air pollution control laboratory operated by Dade County (Florida) Department of Health; pesticide control research at the Department of Agriculture's Soil Residue Laboratory at Tipton, Ga.; water quality research at the Department of Public Health laboratories in Athens, Ga.; metropolitan water supply analysis at Trenton, N.J.; and ocean pollution research by

the New England Shell Fish Commission. F&M instruments are also being used in basic pollution studies at universities across the country.

Last June, F&M really jumped head-first into the environmental control field when it signed a contract with the federal government for development of a specialized line of five portable laboratories. Each will be designed to test a different type of food product—grains, forage, dairy products, thick-skinned fruits (oranges), and thin-skinned fruits (tomatoes)—for presence of contaminating pesticide chemicals. Agricultural inspectors will then be able to walk right out into the middle of an alfalfa field, take a sample, run it through the portable, self-powered F&M gas chromatograph, and perform all other necessary tests on the spot. Delivery of the first prototype labs is scheduled for mid-1968.

The HP quartz thermometer produced by Dymec Division is another instrument finding an expanding role in control research. Its accurate sensing of temperature changes at remote locations through the use of probes makes it an especially valuable tool in projects where temperature is a factor.

HP's commitment to serving the environmental control market is seen in a variety of activities and approaches. F&M's marketing and technical personnel maintain a heavy schedule of scientific contacts and seminars. Typical was a gas chromatography short course on the analysis of air and water pollutants presented to a national gathering of engineers and chemists last year in cooperation with the University of Florida and the Florida State Board of Health.

During the course, F&M organized teams of specialists to sample and test the waters of Hogtown Creek as it meanders around and through the Florida community of Gainesville. Sure enough, the project traced down several key sources of pollution, including drainage from the host University of Florida.

There's got to be a moral there, somewhere. □

HP news in brief . . .

Montreal — HP (Canada) Ltd. has opened a sales office in Edmonton, under Manager Robert Sayliss, and added instrument servicing facilities at its offices in Ottawa and Toronto.

Monterey, Calif. — From January 11 to 14, 118 HP officers, directors, and key managers attended the company's annual management conference here, reviewing 1966 accomplishments and discussing the challenges of 1967 and beyond.

San Francisco — Jack Beckett, government relations manager, has been appointed convention director for Wescon (Western Electronic Show and Convention), which is scheduled at the Cow Palace here August 22-25. Alan Simpkins, Delcon general manager, will be chairman of the future engineers show; Dave Kirby, public relations director, will chair the PR committee; and Austin Marx, corporate planning manager, will be registration committee vice chairman.

Tokyo — Y-HP and its employees responded generously after a raging typhoon destroyed or extensively damaged employees' homes. The high winds rolled one employee's home over and blew the roofs off others. The Y-HP facility itself also was damaged.

Palo Alto — The annual presentation of service awards emblematic of 25, 20, 15, 10, and five years' employment with HP was made recently at corporate headquarters and at field locations; 1,065 employees received awards representing a total of 7,900 years of company service.

Tokyo — Tsutomu Mochida, Y-HP's import and export expert, has been granted a customs broker's license after successfully completing an intensive, 16-day class. His

studies ranged broadly over importing and exporting, but particularly focused on the Japan Customs Bureau's new "duty declaration by payer" expediting system. When final test results were posted, Mochida ranked second in the class of 400—missing first by only half a point.

Montreal — Last month HP (Canada) Ltd. displayed HP instruments at the Electrical and Electronic Measurement and Test Instrument Conference, held in Ottawa Jan. 9-11. Earlier HP (Canada) exhibited at the annual convention of the Canadian Independent Telephone Association.

Boeblingen — HP GmbH's plant will be expanded by 75 percent with the addition of a 65,000-square-foot administrative, manufacturing, and warehousing facility. Construction will begin this spring, with completion scheduled for mid-1968.

Amsterdam — F&M Scientific Europa N.V., the European sales organization for F&M chemical instrumentation, is being assimilated into HPSA, effective March 1. Some FME employees will remain in Amsterdam, joining the local sales office of HP Benelux, while others will transfer to HPSA headquarters in Geneva. Charles Euston, FME managing director, will return to an assignment in the F&M Scientific Division.

Pasadena — Moseley's 7035A x-y recorder has scored its 1,000th sale, just nine months after introduction. Number 1,000 came off the assembly line January 25.

Palo Alto — The HP board of directors has declared a regular semi-annual dividend on the company's common stock. The dividend, 10 cents a share, is payable April 15 to stockholders of record March 31.

People on the move

Datamec — Joe Parks, accounting staff, F&T Division—to order administration supervisor, Datamec Division.

Dymec — Doug Felder, materials management staff, HP - Palo Alto—to buyer, Dymec Division.

Frequency & Time — Charles Adams, physical electronics, HP Labs—to frequency standards development, F&T Division; Chuck Little, Western Service Center staff—to marketing service engineer, F&T Division; Pete Pizzino, lab support staff—to marketing service engineer; Darlene Watson, physical electronics, HP Labs—to frequency standards development, F&T Division.

Harrison — Charles Horvath, cost accounting - production planning — to finance manager, Harrison Division.

HP Associates — Brett MacKinnon, product training, corporate Marketing—to regional sales engineer, HP Associates.

HP - Palo Alto — John Kusters, F&T engineering staff—to physical electronics, HP Labs; Mike Lindheimer, engineering staff, Sanborn—to special project lab, HP Labs.

Microwave — Michael Hamm, materials management manufacturing services — to special handling staff, Microwave Division.

International — Andy Mellish, production department staff, F&T Division—to manufacturing manager, HP Ltd., South Queensferry; Lee Seligson, corporate Personnel staff—to personnel manager, International Operations.

Western Service Center — Bo Holmstedt, product training, corporate Marketing—to Western Service Center (in training).

Eastern Sales Region — Ted Majkowski, staff engineer/service technician, Endicott—to area service manager, Syracuse; Joe Takacs, finance manager, Harrison Division—to internal audit manager, Eastern Sales Region.

Midwest Sales Region — John Stokdyk, corporate Finance staff — to accounting supervisor, Midwest Sales Region.

Neely Sales Region — Ron Miller, repair staff, Western Service Center — to staff engineer, Neely Sales, Englewood.



from the chairman's desk

Last month we held our annual management meeting in Monterey. The meeting, lasting three days, was attended by 118 people, including all our corporate officers, several of our directors, and the top managers of all operating divisions and subsidiaries.

We spent considerable time reviewing our 1966 performance and identifying those areas where we can do a better job in 1967. As I mentioned in our annual report to stockholders, we had to borrow several million dollars in 1966, largely to cover our increased inventories and accounts receivable. These two items received a good deal of attention at Monterey and will require more effective management control in 1967 if we are to reduce our borrowings and meet our profit objectives.

We discussed ways of controlling costs and of maintaining our long-standing policy of financing growth from profits. Although every industry in the country is afflicted with rising costs, we see no reason why we cannot continue to expand our operations on a "pay as we go" basis. This will require us to manage our resources more efficiently, to be more selective in our product development efforts, and to achieve greater economy in our day-to-day operations. Some costs, such as taxes and the things we buy from other companies, are largely beyond our control. But the great majority of costs *are* controllable, depending upon the good judgment and common sense we bring to our individual jobs.

We also discussed, in some detail, our plans for both the short and long-term future. Our projections indicate that there is still ample opportunity for contributions and growth in our traditional area of electronic instrumentation. Good opportunities also exist in some of our newer areas, such as medical and chemical instrumentation. These are large and growing markets, and we intend to work hard at building the technical and marketing capability required to serve them in a significant way.

In the past five years, our shipments have grown at an average rate of 18 percent per year. Over the next five years, barring a major downturn in the economy, we expect to generate comparable growth. We also hope to achieve higher profit margins, so that we will have adequate resources to finance this anticipated growth.

While listening to the discussions at Monterey, I couldn't help but recall our company's first management meeting. It was held in early 1957, 10 years ago, and was attended by 22 managers. At that time we were a company of 1,300 people, with a single plant in Palo Alto, and with annual sales of only slightly more than \$20 million. There was a great deal of enthusiasm at that meeting, and also a great spirit of dedication in working toward common goals.

Although our company has grown tenfold since then, it was evident at Monterey that enthusiasm and dedication are still predominant characteristics of our management group. I believe they are characteristic of our entire company, as well, and will certainly hold us in good stead as we face the challenges of 1967 and beyond.

David Packard

MEASURE

EDITOR,
Merle Mass

ASSOCIATE EDITOR,
Les Carpenter

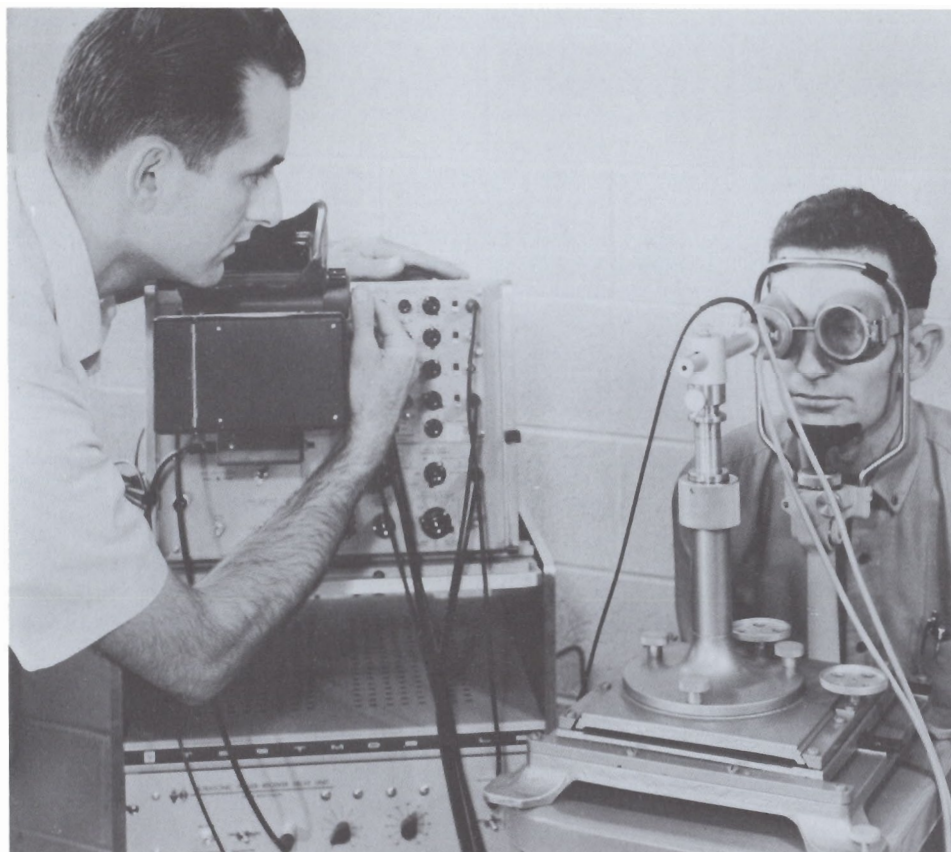
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MELBOURNE, VICTORIA, AUSTRALIA



It had to happen. Science at last has successfully ripped the veil of romantic mystery from the human eye. The device responsible for this scientific service is called an ocular reflectoscope. It uses an ultrasonic system to obtain precision measurements of the internal structure of the eye. Engineered and constructed by Automation Industries, Inc., of Boulder, Colorado, for Optometric Center of New York, the ocular reflectoscope employs an HP oscilloscope to display information received from the ultrasonic transducer fitted to goggles placed over a subject's eyes. Performance of the new equipment is said to exceed previously available measurements "by a factor of 10."