Measure

ENERGY:

It has been more than five years since the Arab oil embargo brought America's cheap-energy joyride to an abrupt halt. Hewlett-Packard's energy consumption has risen only seven percent during that time, even though plant space has doubled. An outstanding accomplishment, say the HP energy experts. But they also insist there's much more to be done to squeeze out that last measure of energy efficiency.

When Mike Fondiller of the Corporate Construction department took on the responsibility for coordinating HP's energy conservation effort, he thought—understandably—that he should start by finding out how energy was being used in a typical HP division, and establish some standards.

What he found, instead, is that there is no "typical" HP division. They're all different, at least in terms of energy use. They differ in the types of manufacturing and lab facilities they have, the age and design of their heating and air-conditioning systems, the extent of their waste treatment, use of night shifts, and any number of other factors. Setting useful guidelines for conservation turned out to be a complex task.

Mike also found, however, that all HP divisions were applying considerable effort and ingenuity to conserving energy. Corporate emphasis seemed to be needed and, in some cases, higher capital budgets to make changes in existing systems.

Since heating, air-conditioning and lighting account for 75 percent of the energy used in most plants (production requirements take about 25 percent), facilities engineers and managers are the central figures in this effort. We asked them what measures they were taking to save on fuel and electricity, and there were many common threads in their answers. There were also some out-of-the-ordinary methods being tried or proposed. But they were all using considerably less energy per square foot of plant space than the pre-1974 company average.

All plants have widened the comfort range, wherever possible, for heating and cooling inside air. For an office or production area the range is typically from 65

Air-conditioning maintenance supervisor Al Clark of Microwave Semiconductor Division tells how heat is recovered and recirculated through heat exchangers and other innovations in the division's new San Jose (California) plant. "With IC labs, energy conservation is more difficult because we have to exhaust such a high volume of air," he explains.

Where do we go from here?

to 78 degrees Fahrenheit (18 to 25 Celsius)—that is, no cooling takes place until the temperature exceeds a not-exactly-sweltering 78, and no heating above 65. Employees may have to compensate by wearing warmer or cooler clothing, but those are fairly comfortable extremes now that comfort is no longer the *only* consideration.

Most have also taken a good look at their lighting and found they could do with less. Light levels of 70 to 100 foot-candles are considered good these days —even less in aisles and corridors— whereas 120 to 150 was the standard when energy was cheap. In some plants almost a third of the overhead lighting has been disconnected altogether, without affecting operations, and energy-saving lamps and ballasts are now available to replace the conventional fluorescent tubes.

Pinching kilowatts

Other remedies for fuelishness are less obvious—and often rather expensive to implement. In older buildings the heating and ventilating systems were never intended to be energy efficient, and costly engineering changes are sometimes required to make them so. Such projects must compete for priority with a great many other items on the capital equipment budgets.

Those projects that are tackled first are generally the ones with the shortest "payback" time. Why install a solar energy system, for example, which might save enough to recover the investment in, say; twenty years, when there are plenty of less glamorous energy-saving measures that could pay for themselves in two or three years? In Loveland, a chilled water system for some of the clean rooms cost $11,000 but is expected to save $3,200 a

year on the plant's utility bills. Modifications to fans and temperature controls came even higher—$38,000—but the investment is being recovered at the rate of $14,000 a year.

The savings show up on monthly reports received in Palo Alto and compiled by Mike Fondiller. On the basis of such statistics as kilowatt-hours per square foot, Mike is able to rank the savers and the wasters among HP divisions. Variations in facilities make such judgements difficult, but he hopes to fine-tune the data to yield more information and help him pinpoint problem areas. "I believe we can reduce our energy consumption by another 15 percent," he says. "We could be saving another two to three million dollars a year."

One problem frequently mentioned is the difficulty of convincing people there really is an energy crisis—rather surprising in view of all that's been written about it, and the forecasts of shortages and "brownouts" we may face in the coming decades. "People would be willing to suffer a little discomfort if they were convinced there was a crisis," says Don Stebbins, Cupertino facilities manager. "We don't get much cooperation sometimes." Bruce Beletti, a maintenance technician in Don's department, says people even accuse him of putting computers ahead of people when regulating the air conditioning.
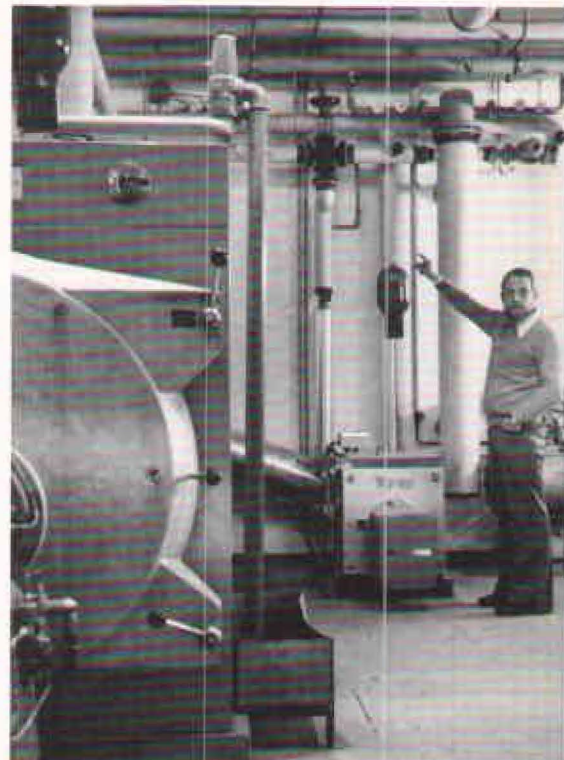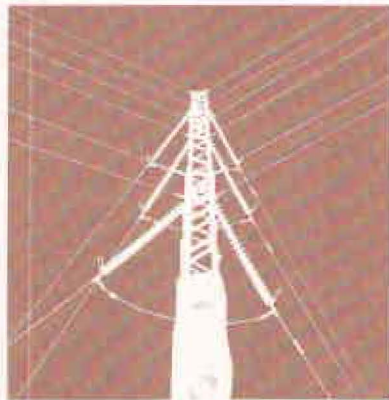
Erik Thoms, facilities engineering manager at HPSA in Geneva, shows how the large boiler on the left was replaced by the small unit and heat exchanger in the background, using 95 percent less fuel to do the same job. Phenomenal savings have been realized by recovering heat from the building's computers and improving the flow and regulation of air-conditioning, according to Erik, and solar heat is used for domestic hot water. At Swiss fuel prices, the cost of transforming HP's European headquarters into an energy-efficient building has paid for itself in three years.

Computer systems do place demands on air conditioners because of the heat they generate and the need for reasonably constant temperatures—particularly disc drives with their close tolerances. Keeping them cool can be a problem in a company that's constantly moving things around while also trying to save energy. According to Don, the movement of computers into the new building 47 was delayed until the air-conditioning problems could be solved. "Putting in rooms and filling them with computers raises havoc with air-conditioning systems," he explains. In another building his crew designed and installed small independent cooling units in some computer rooms in order to avoid running the building's large chiller for those rooms alone.

(continued)

3

ENERGY

The older Cupertino buildings are much less thrifty than the new ones. But air-conditioning equipment has been modified to make use of outside air to cool buildings that have a lot of heat from electronic equipment—instead of using the chillers to cool the warm return air. When heat is needed, more of the return air can be used. Air flows are also modified with the changes of season now, and a small boiler installed especially for the LSI cleanroom equipment allows a large boiler to be shut down during warm weather.

When Marcel Cohen of HP Labs became facilities engineering manager for the Deer Creek laboratory more than a year ago, he also inherited a facility that wasn't designed for efficiency. After carefully studying the original design, he was able to invest $19,000 in modifications that will save twice that amount in the first year. Ducting was rerouted so that half of the major systems can be shut off at night and on weekends, letting the other half serve all the critical cleanroom areas. The changes also increased the comfort of many employees, since the best way to conserve with the old system was to maintain a very cold building.
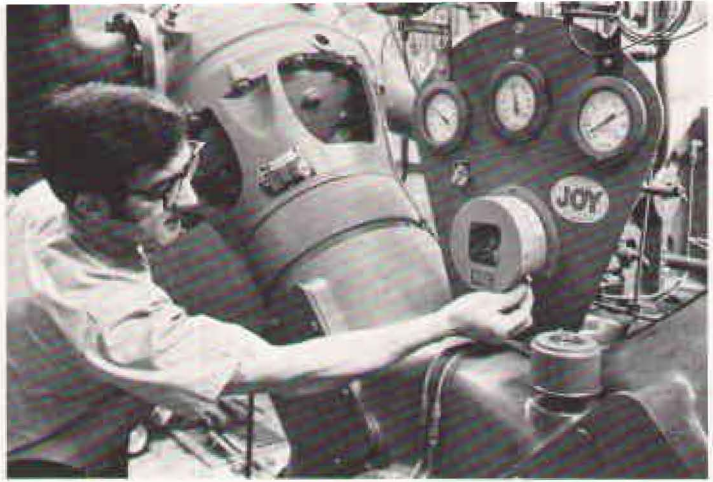
Russel David of Data Systems Division checks the operation of two cross-connected air compressors. After changing to a pressure-sensing system, the second machine is no longer left idling when only one is needed. Through the diligence and ingenuity of HP's building maintenance crews, such small modifications in the operation of existing equipment are adding up to big savings.

Some trade-offs

Environmental considerations, though they're also important, often work at cross purposes with energy conservation. Air scrubbers and wastewater treatment systems use a lot of energy, and government safety requirements that prescribe a certain volume of ventilation under laboratory hoods result in the removal of a lot of conditioned air from buildings.

On the other hand, the two-year drought in the western U.S. brought about many water-conservation measures that also save energy. Drip irrigation systems, more native landscaping, and such simple water-saving techniques as shutting off rinse tanks when not needed—all resulted in lower energy bills as well as water and sewer savings. In the Palo Alto Manufacturing Division, Sherm Davis reports that cooling water for the die-casting machines was not only put in a closed loop, but was run through a heat exchanger to heat domestic hot water, conserving both precious commodities at once.

Waltham Division's Joe Cerniglia reports that electric rates are particularly high in Massachusetts, and a proposed rate structure weighted heavily on usage during peak times could ultimately increase the cost by 30 or 40 percent, depending on what he calls the "demand profile" for the plant.

To keep tabs on the peaks and valleys of this profile, a demand monitor was connected to an HP recorder, and Joe has compiled an accurate history of energy use over more than a year's time. "There have been occasions," he says, "when we have either delayed or avoided turning on equipment so we wouldn't exceed our demand for the month." One exotic proposal under consideration would make use of the division's 200,000-gallon underground reservoir for chilled-water storage, an attractive proposal because some of the load could be shifted to off-peak hours.

A strict energy code was also enacted in Massachusetts last year. Joe reviewed the plant's lighting and found that 7000 lamps could be disconnected. The savings of 120,000 kilowatt hours per month brought the division into compliance, but Joe didn't stop there. As parts of the division's older structure were renovated, hundreds of energy-saving fixtures were installed in place of older types. A plan to cross-connect the heating, ventilating and air-conditioning systems between the new and old buildings is also being studied. It would make maximum use of the newer, more efficient equipment for both buildings.

It's not unusual in winter to have one building requiring heat and another on the same site requiring cooling, depending on the type of facility. Lots of people and equipment may generate too much heat, while cleanroom facilities may exhaust most of theirs—and getting it from an area that has too much to another that needs it is usually impossible or impractical.

But Santa Rosa Division has a unique central utility system housed in a separate building, supplying each manufacturing building on the site via an underground distribution system. Facilities engineering manager Bill Hollis explains what happens in the winter months: "When chilled water isn't needed for cooling, the chilled water supply line is converted to a heat absorption line. By circulating water through coils and absorbing the excess heat in building 2, then sending the warmed water to heater coils in heat-deficient building 1, we can conserve great amounts of energy. We call this a 'heat trade'."

Pulling together

Such responses from facilities people around the company are encouraging, although many express the feeling they could be doing more. Mike Farrell of South Queensferry (Scotland) Division tells us that most of the division's savings have been achieved manually thus far,

and date back to a miners' strike in 1974. But timers and other controls are gradually being installed for more efficient operation, he reports.

In the Stanford plant some savings are realized by turning artificial lights off altogether in areas with skylights, according to Jack Reynolds. Temperatures have been lowered on domestic hot water systems, and many automatic controls have been installed.

From Loveland (Colorado) we learn that the HP plant there won honorable mention in an energy-conservation awards program sponsored by a Denver association of Federal Government executives. The plant is also one of several that are experimenting with computer systems for monitoring and control.

Koh Loke Seng writes from Singapore to tell us his maintenance crew now operates only one of the building's two chillers and one cooling tower at a time, with good results. They also disconnected 879 four-tube light fixtures, and found they significantly reduced the cooling load as well as the lighting.

Nor should we neglect the sales offices, which have an impact due to their large automobile fleets as well as their buildings. In the Eastern Sales Region alone, according to ESR's Al Thoburn, over 500 cars are carefully maintained by HP mechanics for optimum performance.

All of these people need our help, and our acceptance of certain measures not only as desirable for the cost savings, but necessary to our survival. There really *is* an energy crisis, and where we go from here may depend on how firmly we believe in it. □
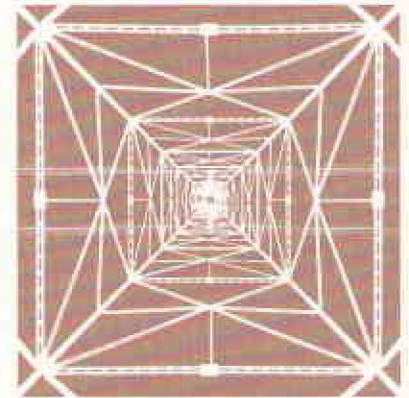
Cooling water from the huge die-casting machines in this modern Manufacturing Division facility is used to heat domestic hot water for the entire site. New air-conditioning systems were also installed in some of the older buildings, and even with much added space and production capacity, the division's energy use is at 1973 levels.

In energy, newer is better

The buildings on HP's Cupertino (California) plant site—some purchased and some built by HP—are said to use every known principal of air-conditioning except the ammonia absorption method found mostly on dairy farms. Needless to say, this collection of mismatched systems has never been a model of efficiency. When building 43 was occupied in 1977, however, it lowered the average energy cost per square foot for the entire site rather dramatically.

The reason is that the mechanical and electrical systems in all of HP's newer buildings are designed with energy conservation in mind. A special unit of the Corporate Construction department, called the engineering standards group, now makes most of the energy-related decisions that used to be left to outside consultants. Each time a plant or office building goes into service, first-hand experience is gained on how to save fuel and electricity. "Some things look good on paper," says the department's Jim Pettegrew, "but then they don't work so well in practice."

Although the corporation has adopted a single prototype building design for plants in the western U.S., every site's energy needs are unique. The Boise (Idaho) location illustrates the range of requirements, with the first of its three modern buildings being a "normal" manufacturing facility, the second having a large amount of cleanroom space, and the third with a concentration of fabrication areas. Each has different problems of heat transfer and ventilation. But experience over the past five years in Boise and elsewhere has led the company to adopt a few more-or-less standard designs.

For one thing, all new HP buildings have variable-volume fans, a marked improvement over older systems that blew a constant volume of air. Now the temperature can be partially controlled by the amount of air being moved (except in facilities such as IC labs which must have a constant pressure), whereas older systems require some of the chilled air to be reheated, and use up to seven times as much energy.

Refrigeration units have also been scaled down, according to Jim. Instead of one large chiller, which might run inefficiently much of the time, a facility may have two or three smaller ones that can be shut down when they're not needed.

Water used to cool equipment such as die-casting and plastic molding machines is now put in a closed loop, and circulated through a cooling tower rather than a chiller. Underground chilled-water storage has also been the subject of a great deal of study, and the first such system in the company is planned for the new addition to the Sunnyvale (California) site. Its principal advantage is that chillers can be run during off-peak hours when rates are lower, as well as making some use of the cooler night air. That water can then be used for cooling during the day. As in other plant expansion projects, the Sunnyvale construction presents an opportunity to tie in the older building as well, and make the entire facility more energy-efficient.

Sometime in the future, automatic monitoring and control of utility systems will also be standardized, using HP data acquisition and computing equipment. It's an area that's being studied, according to Jim. Where time clocks and manual controls are presently used, the ultimate system will have a network of sensors and a computing controller programmed with all the parameters for efficient operation.

Lighting equipment in newer buildings consumes 2 watts of power per square foot, compared with a pre-1974 standard of 4 watts, according to Lloyd Muegge, also a member of the standards group. In addition, much of the heat from the newer types of fixtures escapes above the ceiling instead of being radiated into the room, and is carried out by exhaust fans. Another objective is to make the circuitry flexible enough that a division can tailor its lighting to its own requirements, and turn off what isn't needed.

Although conserving the world's dwindling supply of fuel is important in its own right, corporations must also base their decisions related to energy on sound business practices. Jim Pettegrew, studying a computer printout, finds that a heat recovery coil being considered for use in a fume exhaust system will pay for itself in 4.9 years. "Now I have to decide if the thing will really last five years," he says. □

These manufacturing buildings at the Corvallis (Oregon) Division were built to HP's standard design, and their utility systems incorporate many energy-saving innovations.

Harold Buttner
dies at age 86

Harold Buttner, long a friend of Hewlett-Packard and a member of its board of directors from 1957 to 1970, died on January 12. He was 86. His interest in HP and involvement as director emeritus continued until his death in a Bridgeport, Connecticut hospital.

Harold came to know Bill Hewlett and Dave Packard very early in their partnership. His position at International Telephone and Telegraph Corporation, from which he retired as vice president of R&D, provided many invaluable contacts and associations. It was, however, for his personal warmth and wit and energy that his many friends in the company will remember Harold Buttner. His passing was sudden and peaceful.

Bill Hewlett doing well
after heart attack

Bill Hewlett has returned to Palo Alto for a period of convalescence following a heart attack that hospitalized him in Sun Valley, Idaho, on January 19. At press time he was reported in very good spirits and hopeful of a rapid recovery.

The attack occurred during a banquet in Sun Valley, his winter home. Bill had flown to Sun Valley from Palo Alto that afternoon after attending a meeting of the board of directors. Bill retired from full-time management last May, but remains as a director and chairman of the Executive Committee.

Reporting to
HP shareholders:
Beyond the bottom line...

Getting the Hewlett-Packard annual report into the hands of shareholders, including some 16,000 who are HP employees, takes the combined effort of a number of people at Corporate headquarters in Palo Alto and every accounting department throughout the world.

The man with the final word on HP's financial numbers is Vice President and Treasurer Ed van Bronkhorst (center), pausing here to talk with New York City securities analyst Robert Christensen after HP's meeting for financial analysts in Cupertino last month.

As some 16,000 HP employee-shareholders settle down to read this year's annual report mailed on January 12, they're on the receiving end of a company-wide effort to put significant financial and operating data into their hands. Along with more than 10,000 other HP shareholders, they'll have a sizable amount of reading matter to absorb.

The annual report is the glossiest of the financial documents that Hewlett-Packard and other U.S. corporations are required to issue in order to satisfy that country's governmental reporting requirements. Behind its urbane appearance lies some feverish behind-the-scenes activity by a number of Corporate departments.

Primary monitor of annual report contents is the Securities and Exchange Commission, an agency of the U.S. government. In recent years the SEC has asked publicly held companies to provide an increasing amount of information. The goal is to let shareholders judge how a company is running its business so they can make intelligent investment decisions.

According to Vice President and Treasurer Ed van Bronkhorst, the accounting profession had allowed practices to exist that confused or misled the public shareholder and led to tighter controls by both the SEC and the profession's own Financial Accounting Standards Board.

As the chief financial officer of Hewlett-Packard, van Bronkhorst has the final sign-off on the accuracy and completeness of the numbers furnished by the company. He has been involved with HP's financial reporting to the outside since 1957, when co-founders Dave Packard and Bill Hewlett first sold 10 percent of their stock to the public and the company became subject to SEC regulations.

The first annual report for 1957 was smaller and considerably less sophisticated than the current four-color, 40-page version but it included the same two basic types of material. The opening section told the story of HP in the company's own words through a management letter to shareholders and illustrated theme copy. At the back was the section about which the SEC has had a good deal to say in the intervening years—financial statements and notes on accounting procedures in 1957 took four pages compared with 16 in 1978. Among the SEC additions since 1957 are a management discussion and analysis of the consolidated summary of earnings, and a 5-year comparison of such "bottom line" statistics. (HP includes 10 years.)

In order that HP can "tell it like it is", someone has to pay close attention to what the SEC considers the "it" of appropriate information for shareholders. Since the Commission's changing regulations cover more territory each year, the staff under Corporate Secretary and General Counsel Jack Brigham reads a lot of fine type to determine the proper contents of the annual report and the more detailed 10-K form which must also be filed at year-end. (Interim quarterly reports follow the same strict rules.)

(continued)

Changing regulations for subject matter required in the company's annual report and other formal communications with shareholders is the concern of Corporate Secretary and General Counsel Jack Brigham (right). At left is Craig Nordlund of the General Legal department, who is HP's in-house legal expert on shareholder reporting and related financial matters.

reporting to shareholders

Last year, for example, the SEC required that companies supply information on what it would cost to replace all fixed assets. Replacement accounting was almost meaningless in relation to HP, which has fairly new facilities carried on the books at about what it would cost to replace them, and an inventory which turns over relatively fast. But a lot of HP people worldwide spent time pulling the proper numbers together.

This year the new SEC focus was on reporting financial information by product "segments" instead of lines of business. (HP has broken down its business into four major categories for a number of years, but some competitors have been using umbrella terms such as "electronics" to cover all activities.) Another new requirement (Footnote 11) was financial information by geographic area.

Making sure that accounting data for the annual report is accurate is the responsibility of Corporate Controller Jerry Carlson. This year HP entities throughout the world were in direct contact with the company's new auditors, Price Waterhouse, who were working on their first HP annual report. The outside auditors must be completely satisfied with the numbers before associating themselves with the statements—Price Waterhouse would share in any liability for error.

The consolidated numbers pulled together by the Financial Reporting group under Tom Kulp represent a massive year-end effort by HP accounting departments around the world. They must complete schedules in the "closing package" provided by Corporate covering various intracompany transactions as well as 11 categories of information required by the SEC. Also involved are production and sales departments which take an inventory to supply numbers for the schedule on "Property, Plant and Equipment Summary".

Getting the numbers from the field to Corporate headquarters in Palo Alto was greatly speeded up for 79 HP entities this year by new COMSYS "masks" for inputting data into simulated schedules on a terminal—an idea originated by the South Queensferry Division and developed by Financial Reporting for companywide use in 1978.

The annual meeting of HP shareholders traditionally is held on the last Tuesday in February, which sets in motion the preparation by the Corporate Secretary's office and General Legal of another formal communication to shareholders: the proxy statement. A modest printed pamphlet, it contains information about the meeting and company officers and directors. This year the SEC for the first time required a five-year biographical sketch on each of the directors and a breakdown of certain non-audit services performed by Price Waterhouse. The list of management remuneration disclosures was also expanded.

Equally as important as the content of the proxy statement is the timing. The New York Stock Exchange asks that the proxy be mailed to shareholders of record (as of January 3 this year) 30 days before the meeting along with a meeting notice. The annual report, which is mailed separately, must be timed to reach shareholders for their information at least as soon as the proxy material—since a vote is involved.

Also calculating backward from the date of the shareholder meeting is Merle Mass in Corporate Public Relations, who coordinates the editorial side and overall production of the high-visibility annual report.

After the theme was approved last July, interviews began for the news feature treatment used in this year's annual report copy. By October the narrative was just about completed and photography got underway. Final pictures representative of the company and its products were selected from shooting done by photographer Peter Krupp of the Corvallis Division. The columns of financial material put together by Financial Reporting started going to the typographer in early December, about the time that top management was drafting the letter to shareholders based on final year-end earnings.

Year-end consolidated numbers which go into the annual report are pulled together from all HP entities by the Financial Reporting group under Tom Kulp (left) for Controller Jerry Carlson (right).

A final press check of one section of the annual report occupies the full attention of art director Tom Martin (left) and Merle Mass (center) of Corporate Public Relations. With them is production manager Tom Park of Peninsula Lithograph Co. in Menlo Park, in charge of running 100,000 copies on the web press shown in the background.

Talking with the business press is part of the daily job for the Corporate Public Relations department under manager Dave Kirby (left), pictured with business editor Jim Mitchell of the San Jose *Mercury.* One major project of the P.R. department is overall production of the annual report.

To insure absolute accuracy, people from three key departments—Treasury, Controller, Public Relations—remained available to read each batch of corrected proofs until the final pasteup could be prepared for the printer's camera by January 5. On January 9 and 10 the press run of 100,000-plus copies was completed on schedule to make the critical mailing date for the annual report. Extra copies are used throughout the year for recruiting purposes and to fill requests from those interested in the company.

Some particularly sharp-eyed readers of the annual report are the financial analysts who advise large banking houses and other institutions about investments. HP management holds two meetings for them each year, and Ed van Bronkhorst is also contacted individually by several hundred analysts. He scrupulously avoids giving them "insider" tips that could in any way affect the price of HP stock. As an added precaution, he doesn't talk to anyone during the "blackout" period after the close of a quarter and the release of numbers to the public.

"I don't care if the caller is a major stockholder or a prominent analyst, they're not entitled to information more than any other shareholder," says van. Absolute fairness in keeping shareholders informed has been HP policy even before the disclosure rules became so strict.

Nor do HP employees in general receive privileged information before it appears in the public press—they would then become "insiders" according to the SEC and subject to penalties if they dealt in company stock on the basis of such knowledge.

These days it requires some precise footwork to make certain that news with a potential impact on the market value of

stock (something of a judgment call) reaches all interested parties at the same time. Peter Nelson of Corporate Public Relations works closely with top management to make certain that announcements about earnings and dividends are flashed simultaneously to the New York Stock Exchange and to newspapers and magazines via a specialized news service.

By far the most detailed information for shareholders is contained in the annual report: the publication that a lot of HP people throughout the world have strained to put together. □

11

HP and Herman Miller, Inc.:

With the introduction of the HP 300 computer system late last year, the HP world of employees, suppliers, customers and competitors was simultaneously exposed to an ultra-modern work station called Action Office. Both HP 300s and Action Offices appeared together in sales demo rooms, were linked in various publicity and sales promotion releases, and were featured most prominently as staff facilities at the Cupertino site of General Systems Division.

To observers they clearly seemed to have been made for each other—materials, designs, colors and functions all working as one to provide a handsome environment for the revolutionary products of the new computer age. Together they seemed to say that the computer is no longer a mysterious giant working away in the hidden recesses of large organizations, but rather is a highly functional and friendly device that almost anyone can use almost anywhere there's work to be done.

In fact, the HP computer system and the Action office were designed quite independently of each other. Action Office is a trademarked product line of the Herman Miller, Inc. organization of Zeeland, Michigan. Its appearance about ten years ago coincided with a wave of interest in "open office" planning. Developed by Robert Propst for Herman Miller, Action Office became the prototype and recognized leader in open-planning systems. It's a highly flexible system which creates work and storage areas through the use of modular units suspended from panels; floors are left clear and uncluttered of most furniture except for chairs and stand-alone units such as computers. Of course, HP and many other firms have had "open" offices for years, but have used conventional office furniture placed inside low partitions.

The marketing and development people at General Systems Division began looking at the new open-planning systems soon after starting work on the HP 300, then known as "Amigo." Dave Crockett, the program manager for Amigo, said they early recognized the need to come up with a setting that would emphasize and enhance the product's general business orientation and solve some customer problems.

GSD's relationship with Herman Miller has been very productive for both parties because both look on it as an opportunity to experiment and learn. In particular, HP has taken a strong interest in helping to develop a production and materials handling system tentatively titled Action Factory.

Jim Peachey, manufacturing manager for the Amigo line, is not yet prepared to acclaim Action Factory a success until he has had the opportunity to prove it with some studies that remain to be completed.

However, he said, "It works for us, and it's a friendly environment for product integration. This doesn't mean to say it will work for others, but as far as we are concerned, it is no longer experimental."

Action Factory is a total system that starts with the truck that delivers materials to the plant, and includes special carts that hold special trays for moving materials from station to station, and compact work stations where everything is in reach and open to view.

General Systems is interested in Action Factory for its own use. Among those contributing to its development have been Bob Schaeffer and Tony Napolitan as well as Jim Peachey. Herman Miller, of course, will market the system—and probably quite soon. It looks like another winner. ☐

A story of Action and Suspense

Dave Crockett, manager of the HP 300 computer line for General Systems Division, discusses the factors that led to the selection of Herman Miller's Action Office as an environment for displaying and promoting the sale of HP 300 computer systems. Action office provides for economical use of floor space because it uses flexible, modular panels to enclose space and to suspend most furnishings such as working surfaces, files and storage cabinets. The highly engineered office system with its "task" lighting and built-in wiring approach creates a very compatible setting for HP's new business computer products.

Action Factory is the latest concept to bring Herman Miller Inc. and HP into collaboration. The goal is to provide a totally modular system for materials handling and product integration in an open and friendly work environment. The open-frame approach, shown here at General Systems Division in Cupertino, was developed at HP. Ruthie McDaniel at left and Lucille Blanchard in the foreground said they enjoy the openness and ease of working within their areas.

Jim Peachey, manufacturing manager for HP 300s, demonstrates the flexibility and modularity of the so-called "C-frame" boxes used to move trays of materials such as the circuit boards shown here. A cart can carry as many as four suspended boxes. For work purposes, the boxes are unloaded and suspended on the frame of the next work station.

HP News

Restructuring of Technology Research Center

PALO ALTO—Two new lab directors have been named in a restructuring of the Technology Research Center of HP Labs. The change brings the total number of labs to eight, organized in three centers.

John Moll is director of the Integrated Circuit Laboratory, which will comprise the former IC Lab plus a portion of the Device Technology Department.

Pat Castro is director of the newly formed Integrated Circuit Processing Laboratory. She has served as operations manager of the IC Lab since its formation.

Bob Archer continues as director of the Solid State Laboratory.

Moscow games order

MOSCOW—V/O "Techsnab Export," a Soviet foreign trade organization, has ordered nearly $900,000 worth of Hewlett-Packard instruments and systems for chemical analysis to be used in the drug screening of athletes at the 1980 Summer Olympic Games in Moscow.

Big HP 3000 order

CUPERTINO—Hewlett-Packard has received a multimillion dollar contract to supply business computer systems to Automatic Data Processing, Inc. (ADP), Clifton, N.J., the world's largest independent computing services company.

HP anticipates that it will deliver approximately $25 million worth of HP 3000 Series business computer systems to ADP. Deliveries will begin in the first half of 1979.

Puette heads Computer Service Division

CUPERTINO—Bob Puette, formerly Data Systems Division marketing manager, has been named general manager of the Computer Service Division, reporting to Computer Systems Group marketing manager Doug Chance. He replaces Tom Lauhon, who has joined the staff of Computer Systems Group, reporting to vice president and general manager Paul Ely.

Second Paris-area sales office

ORSAY—HP France has opened a new branch office near Paris. The site is Evry, 25 miles from HP headquarters at Orsay. Staffed initially by 60 people, it will provide strengthened coverage in the Paris area for the sale of instruments, desktop computers and computer systems.

Regular dividend

PALO ALTO—At its meeting on January 19, the Hewlett-Packard board of directors declared a regular quarterly cash dividend on the company's common stock. The dividend, 15 cents a share, is payable April 13, 1979, to stockholders of record March 28, 1979.

As of October 31, 1978, the end of the company's fiscal year, there were 29 million shares of common stock outstanding.

Recruiting's new team...

Not-so-calm center of the 1979 company-wide recruiting "storm" is represented by this view of the college recruiting team in the Corporate Professional Employment office at Palo Alto. All those new faces and paperwork represent a new high in activity described in John Young's letter on the opposite page. Identifiable from left are: Doug Stone, Jim Gilfeather, Lisa Shemwell and Jere Carroll. Their biggest job currently is the Spring drive which will place 256 recruiting teams from all divisions on 174 campuses, resulting in some 12,000 campus-interview reports.

From the president's desk

Our professional recruiting activity, particularly the main thrust directed at college recruiting, is operating at peak intensity during this time of year. HP recruiting teams will visit about 50 college campuses this week, a major fraction of the more than 200 campuses we visit in the U.S. during the January-to-March recruiting season. A little background on this program will point out how critical its success is to the company's future.

HP's corporate objectives point out the importance of developing new products that are contributions to our customers. To meet this goal we must attract and retain a highly talented and innovative staff of engineers, scientists and other technology experts. Similarly, the manufacture of advanced products demands an equally capable group. The sales and support functions also are technically based. We have made it a point to have professionals in the field who fully understand our products and how our customers make use of them. To meet these broad needs for the top technically trained people, as well as professionals in other areas such as personnel and accounting, HP has mounted an intensive recruiting program over the years.

HP's practice has been to rely heavily on recruiting new employees directly from college for corporate R&D and division R&D and manufacturing needs. It has worked very well for us to hire new graduates, offer them advanced training by means of the honors-coop program, and encourage them to grow with the company. In a typical year, half of these new professionals come directly from college. The other half are experienced, that is they join HP from other companies.

In field sales, the background required is more extensive, and we have not had the facilities to train new college graduates. Thus, most field hiring has been in the experienced category.

However, many changes are now underway that complicate the recruiting process. A growing portion of our business is in computers and requires relatively even more professionals than our traditional activities. This is because of extensive software development in addition to the hardware, and to the comprehensive support and service our customers need in the field. Many of these field employees, therefore, increasingly are recruited directly from colleges. We also require a broader range of technical skills than before: people professionally trained in computer science, integrated circuits, chemistry, environmental science, mechanical, electrical and materials are all actively sought at BS as well as MS and PhD levels.

In addition to those trends, we have the added complication of fast growth in our company's size. When you put it all together, the scale of the program is impressive. Five years ago we hired 171 college graduates and 334 experienced professionals. Last year, the figures were 718 from college and 905 experienced. This year our targets are 1500 college and 1090 experienced—a dramatic increase that will test our best efforts.

To put this in perspective, the U.S. Engineering Manpower Commission estimates that there are at most 100,000 engineering students of all levels and types. We recruit from less than half that population, no civil or sanitary engineers for example, so HP's college recruiting alone accounts for more than 3 percent of the total available U.S. graduates.

Other companies have similar pressures for recruiting increases, and since the number of students is constant, the resulting competition for top graduates will be particularly intense.

We're well organized to conduct our recruiting program. We have about 400 engineers and managers involved in the effort at the schools—all coordinated by Corporate Personnel. The personal contact of our technical people with the students is a key factor in success so our recruiting team members carry a very special responsibility.

The challenge comes down to this: With greatly increased recruiting needs and basically a fixed supply of graduates, we must employ a great deal of salesmanship, at the same time screening for HP quality. Last year, each new graduate hired by HP averaged five other offers, and it will be even more competitive this year. It's vital that everyone involved in the recruiting process give this program a high priority to insure that we employ the talent needed in creating our future.
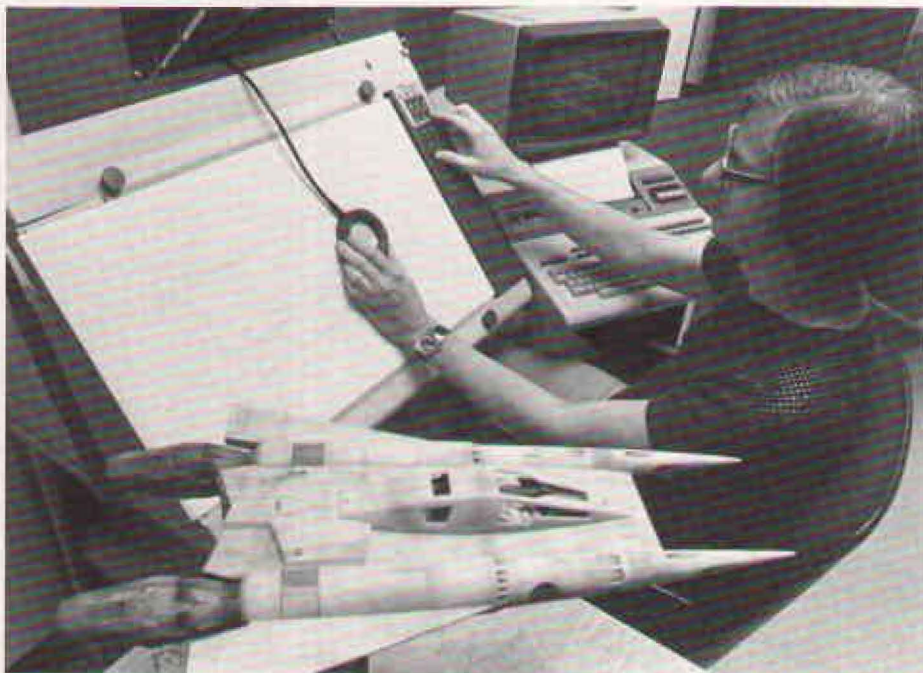
John Young

HP goes to Hollywood

The appeal of "Star Wars" and other recent science-fiction movies can be attributed in large part to the magic of special effects.

But a look behind the scenes of a Hollywood special-effects studio reveals that it has more to do with technology than magic—and, as in almost everything else these days, computer science is a part of it.

Nearing completion at Universal Studios is a space adventure called "Buck Rogers," a production that involved a lot of work with miniature spacecraft. An HP 9845 desktop computer and 9874 portable digitizer, both made in Fort Collins, Colorado, contributed to the filming of the models.

Pictured here with the HP system and one of the fighter craft for "Buck Rogers" is technical supervisor Colin Cantwell, a Hollywood veteran who designed the original models for "Star Wars." For this new epic, Colin programmed the HP computer system to help speed up the filming of the models. An operator enters the desired size, location and attitude of the spacecraft for a particular maneuver, and the computer draws the image as it should appear in the final film. It then specifies where the miniature is to be placed on the shooting stage and what lens to use on the camera.

For future productions, Colin plans to have the computer tapes read directly into the motion control system, so that even the movement of the camera and spacecraft can be under computer control. To Buck Rogers fans of forty years ago, that in itself would have been science fiction.