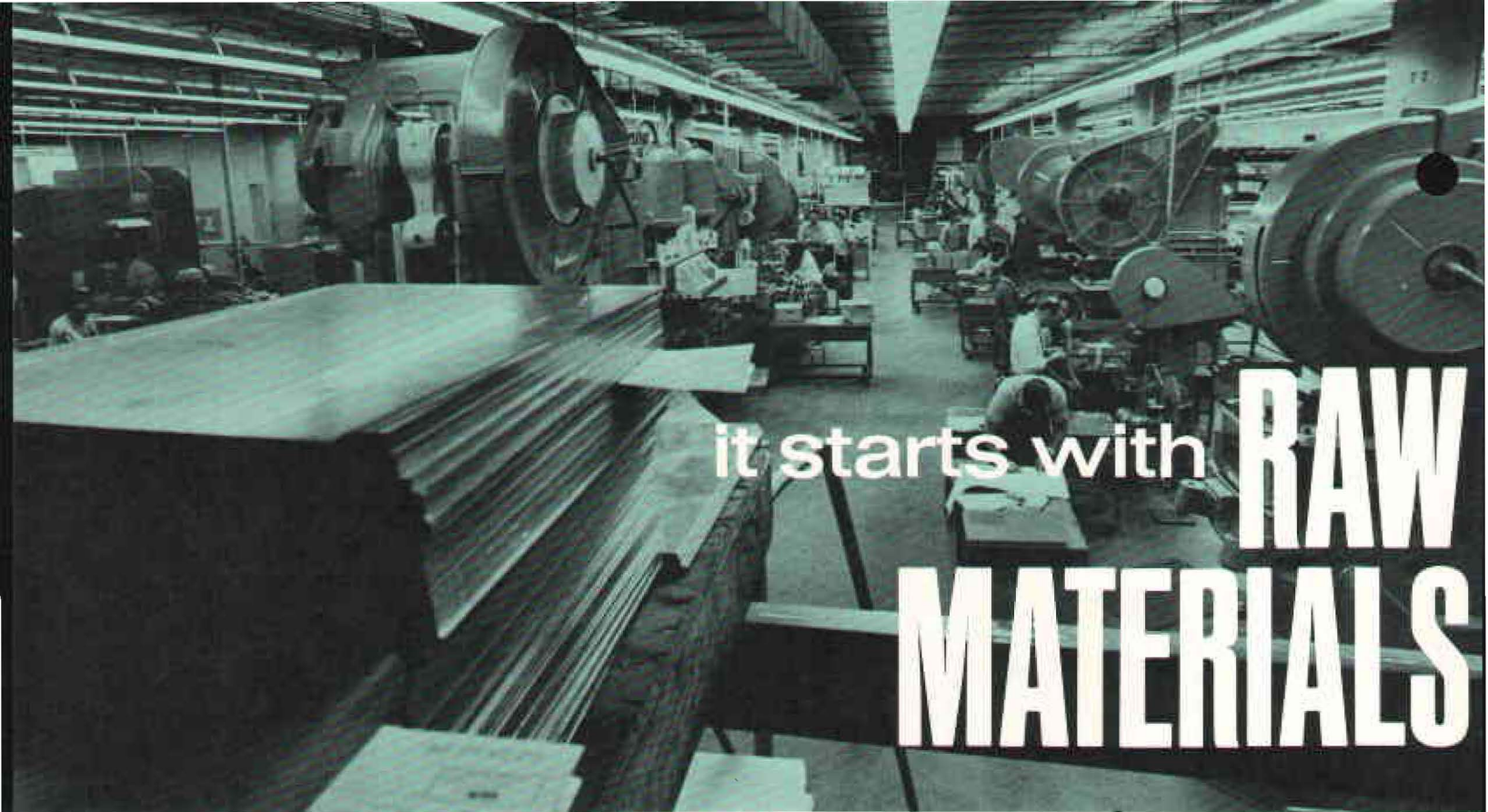


Measure

For the men and women of Hewlett-Packard/JUNE-JULY '70



it starts with **RAW MATERIALS**

An HP instrument is the "added-value" result of hundreds of industrial skills applied to thousands of basic materials

□ When they arrive, they're sheared, pounded, punched, perforated, extruded, melted, die-cast, milled and drilled. When they leave, they're parts of instruments marked: "Fragile: Handle With Care."

At last count, HP was turning more than 6,000 different raw material stock items into parts and using 750 different chemicals to process those parts for the company's 2,000-plus products. And the number of new items—those added to the files each year—continues to increase at the amazing rate of 30 percent a year.

What do you think of when you hear "raw materials?" Huge stacks of sharp-edged metal? Bulging burlap bags and barrels piled high? That's certainly part of HP's raw materials story. Aluminum, brass, copper, steel, nickel alloys, plastics, chemicals, insulation materials, flux and solder, bulk gases, quartz, mica, molding compounds—we

use them all at HP. But there are some interesting contrasts, too—from crude bars of steel at 20 cents a pound to Paliney 7, a gold-silver-platinum-palladium alloy costing about \$1,250 a pound and ordered by the "pennyweight" (0.05 of a troy ounce). There's titanium, tantalum and molybdenum, too—among others. These are special items and used sparingly, of course, but they qualify as raw materials because HP takes and processes them further.

Aluminum, especially the vinyl-clad sheets used by all divisions, is far and away the raw material in greatest use by HP—more than a million pounds a year.

There are many companies that could provide HP with its finished components and parts, perhaps even at less cost than we might do in-house. Why, then, do we do it ourselves? One important reason is the convenience to engineers who often need a part quickly. Even more importantly, this capability gives an extra assurance of quality.

Because quality is essential at HP, it begins with the raw materials themselves. Materials engineers constantly are seeking new "state-of-the-art" materials which offer greater strength, more flexibility or whatever other characteristic is desired. It's their job to evaluate materials offered for sale, determine which are HP quality, and then pass their findings on to the buyers.

After they're bought and delivered, raw materials undergo some interesting ordeals. Shown here are just a few of the materials and processes which are part of our everyday activity:

Cover: More than 60,000 sideframes and other parts are die-cast each month for corporate-wide use at Manufacturing Division's Palo Alto shop. About 90 per cent of HP's die-cast parts are made here; the remaining percentage is sub-contracted—usually by individual divisions. The aluminum arrives in ingot form, is melted down at 1300°F. Die cast operator John Bass is shown using a transfer ladle to move the liquid aluminum from a breakdown furnace to a holding furnace prior to its being poured into molds.



When light from a pinhole oriascope is reflected in a rock of quartz crystal, it creates a parallelogram shape which determines in what direction the crystal will be cut. It's the first of 100 steps in altering the raw, almost worthless crystal formation into wafers costing up to \$60 each. They are used as a time base in Santa Clara's counters, in atomic standards and in Avondale's quartz crystal thermometer.



It doesn't look like it, but that glob on the scales will soon become a gear turret for Microwave's 606A Signal Generator.

Frank Wies makes certain there's exactly 236 grams of the alkyd molding compound, the amount required for the turret.

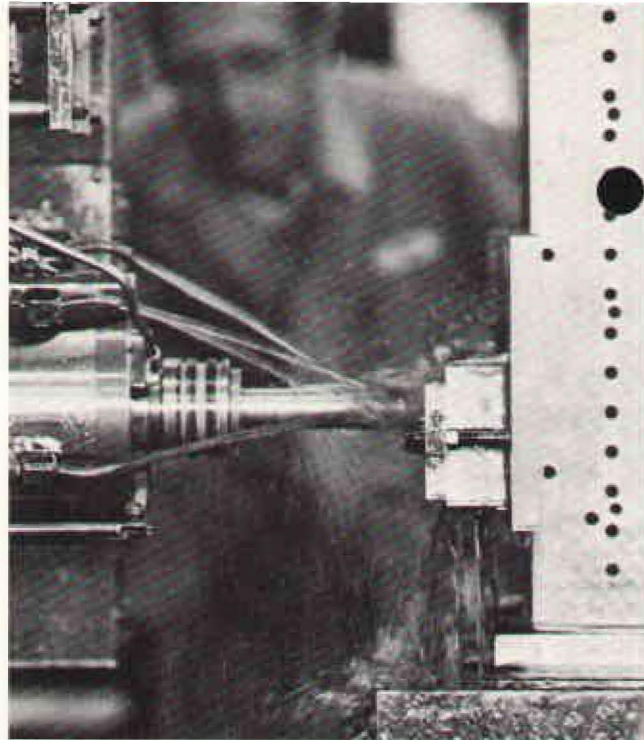
Many other parts such as terminal boards, rotor shafts and cable covers get their starts as powders or pellets for molding and extruding.



Miniature electronic parts with diameters as small as .0002 of an inch can be turned out on Manufacturing Division's new Swiss Automatic Screw Machine. All types of raw materials—brass, aluminum beryllium, copper, stainless steel, nylon, teflon and others—can be fed through the machine. It threads, mills, knurls, drills and reams many of the parts formerly purchased from outside companies. Rudy Luginbuhl examines one of the "little wonders" just made. These machines are used extensively in Switzerland for making high-precision watch parts.

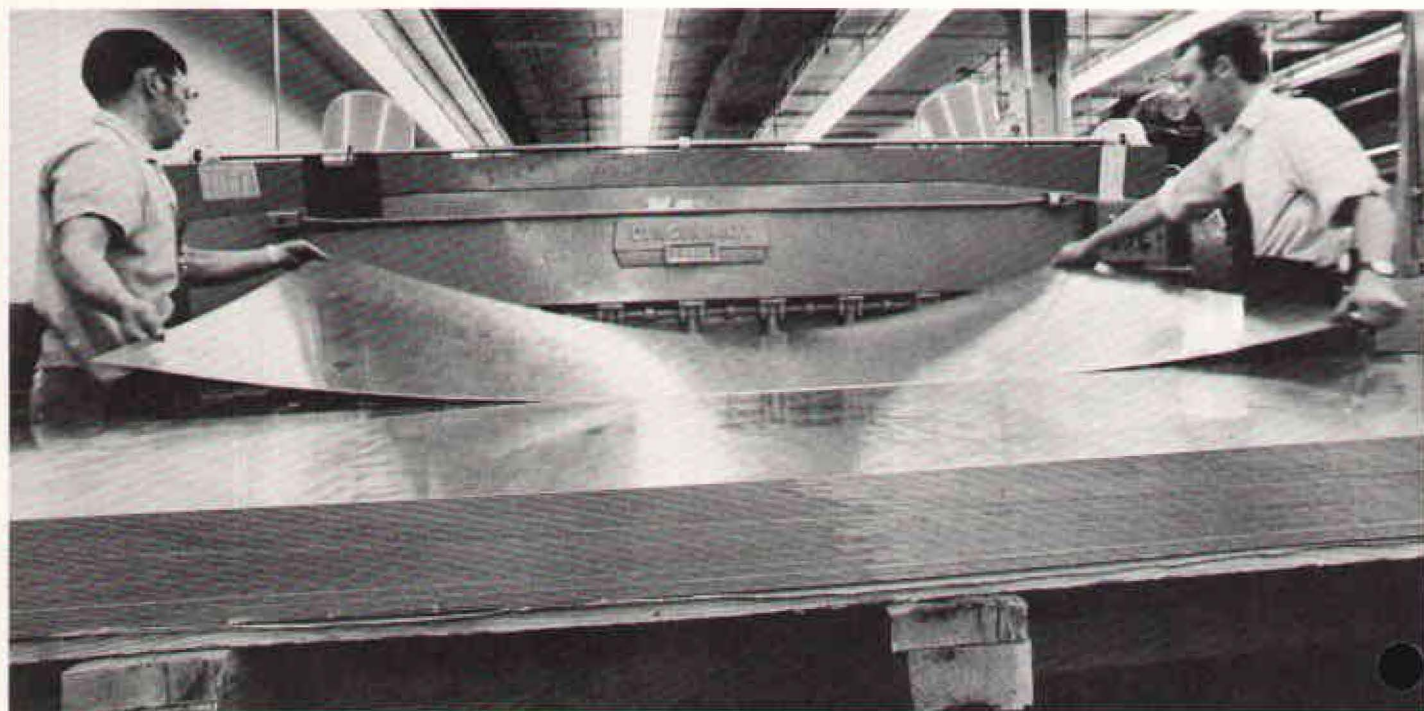
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RAW MATERIALS



Many processing operations are handled by expensive machinery. Much of it can be computerized as well as run manually. Don Dick of Manufacturing Division watches over a K&T Milwaukee-matic which costs more than \$200,000 and drills, mills, taps and reams instrument parts and castings with extreme accuracy. Various divisions also have numeric control machinery in operation.

Processing of aluminum sheet begins at the shearing machine, where Sam Sugimoto (left) and Jim Hamilton take a turn cutting sheets down to workable sizes. Manufacturing Division cuts about 70 tons of aluminum sheet each month, about 25 tons being vinyl-clad. Much of the corporate raw aluminum sheet metal work is done by this division, but other divisions maintain their own shops as well, usually for special items and in case of emergencies.





Close to \$3 million is invested in steel rule dies, die sets, BL units and stamps "librared" in Manufacturing Division's tool crib. Each of the dies and sets is used to make a single part from aluminum sheet for a certain instrument, and it's estimated that each of the nearly 4,000 dies, sets and molds gets used at least once every nine months. Here, Buddy Franklin, Aldo Paganinni and Don Knox "check out" a die set.



Amador Gonzalez, using a suction cup for safety, puts aluminum front panels into a blanking machine, which punches out meter windows, notches and other cut-out sections. Other machines perforate, punch and form the raw sheet before it's ready for painting, engraving and final assembly.

A special nickel alloy called "Mu" metal is used at Colorado Springs for the magnetic shields around CRTs. Here, Dick Hunter puts the shields through an annealing process to relieve stress and prevent brittleness in the metal. Just as each division's products are unique and different from one another, so are there raw materials and processing techniques special to each.



□ Recent introductions of two significant new HP instruments raise some very interesting questions: How and where do we get the big ideas that take us into brand new markets?

Offhand, there would seem to be considerable differences in the way the new 3800A distance meter from Loveland was invented compared with the new 5525A laser interferometer from Santa Clara Division. One is used by surveyors in measuring distances up to two miles, the other in pinpointing positions to within a millionth of an inch.

The Loveland Division instrument came into being as a result of what might seem an inspired accident: On an official mission to Afghanistan in 1965, President Bill Hewlett watched a surveyor using a European-designed distance meter. Set-up time dragged on much too long. One difficulty, Hewlett noticed, was in modulating the source of the light beam that served as the "yardstick." Surely, HP technology—particularly in the area of photo-diodes—would have some contributions to make here?

So right there, in the shadow of the Hindu Kush Mountains, the idea for the 3800A project was born. Very soon thereafter, Hewlett's first block diagram for such an instrument was being discussed and elaborated by Paul Stoft, director of HP Labs' Electronics Research, who asked Greg Justice to head the research team that at its peak numbered eight HP Labs people.

On the other hand, the laser interferometer, which

permits such applications as the rapid calibration of machine tools to within a millionth of an inch, appeared started at the other end of the spectrum. A number of potential applications were clearly known in advance. But needed at this point, according to Don Hammond, director of the Physical Electronics Lab, were some technical breakthroughs and a lot of laboratory effort.

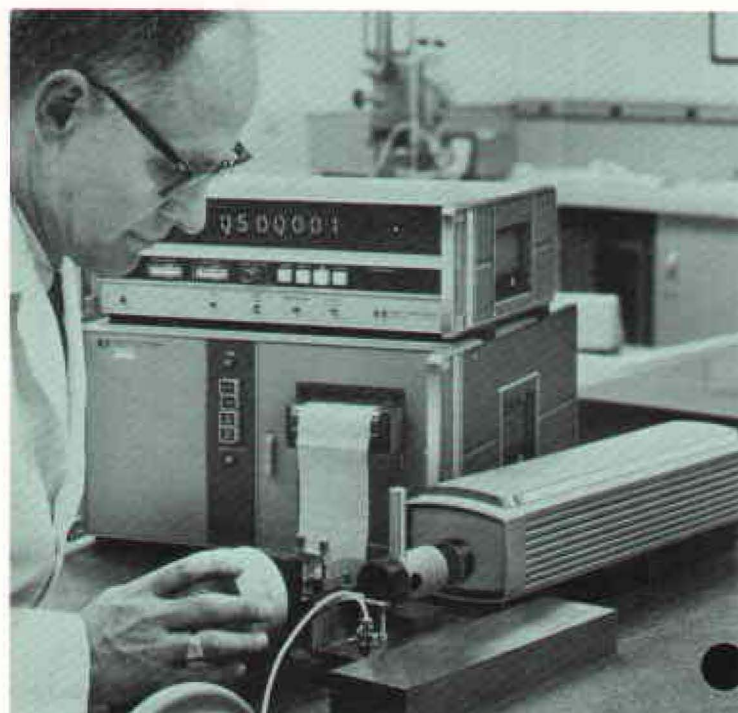
These needs came to a sharp focus as the project moved to a certain stage of development. One major problem was the complexity in the use of four laser beams. Al Bagley, Santa Clara Division manager, suggested as a possible solution that the project people try "heterodyning," a technique not then used in interferometry. Len Cutler, now head of Physical Research, seconded this thought in proposing the use of a two-frequency laser beam. A number of other Lab people, including Joe Rando, Bill Kruger and Hugo Fellner, helped significantly to make the new approach—and the 5525—a reality.

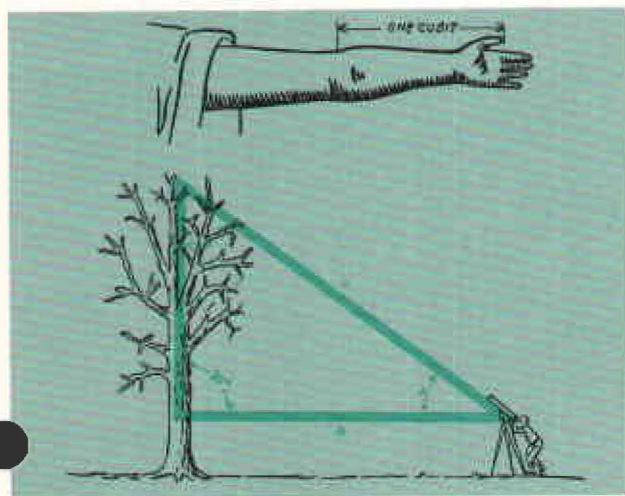
The question is, are these two experiences really that different after all? Both had a common base of HP's technological involvement, creativity and awareness. Both had their moments of "synergism"—the bringing together of new ideas to spark even bigger and better ideas. And both took a lot of hard work and patience to bring to market.

It is almost coincidental that both also concern themselves—in quite different ways—with physical distance measuring. That's a new road for HP. The journey is well begun. □

How do you measure an idea?

The new 5525A laser interferometer introduced by Santa Clara Division represents the company's first venture into the physical distance measuring field and a significant step in employing its electronics technology outside the electronics field. Here the new system is used in a calibration lab to check a micrometer head and provide accuracy within millionths of an inch. Major potential uses include machine tool calibration, positioning of cameras in semiconductor manufacturing, camera positioning in astronomy, photogrammetric measurements, and in instrument calibration labs. New techniques are employed, including "optical heterodyning" and a two-frequency laser developed by HP Labs team, resulting in a fundamentally new position-measuring method. The wavelength of laser light is used as a microscopic yardstick to measure distances ranging from a millionth of an inch to 200 feet.





Compared with older, more conventional distance-measuring instruments, HP's Model 3800 puts an impressive list of improvements in the hands of land surveyors: High accuracy with low cost, for short-to-medium-range work (up to two miles), ease and speed of operation, compactness, and direct readout. A major factor is the use of a Gallium-Arsenide (GaAs) light-emitting diode as the transmitting source of the light beam that is the instrument's "yardstick." The Loveland Division team that took on the final engineering, manufacturing and marketing responsibilities for the 3800 sees it as the first in a family of related instruments and systems serving the surveying equipment market.



Computer Col

seeking

HP's Juris Brempelis instructs 18 customers in the use of HP computers and computer software. This group spent two weeks at the Data Center located inside the Paramus, New Jersey, headquarters of the Eastern Sales Region. According to Charles Chernack, the Center's training supervisor, 50 percent of such customers have never seen a computer before. Other groups come for input-output instruction in the use of hardware, involving three to five days of study. In addition to basic courses, the Center teaches advanced programming so that customers can learn to make maximum utilization of the products they buy from the company. HP data products people also receive update training here in advance of marketing new products.





ege

**HP's new "Data Centers" are becoming busy campuses for customers
hardware know-how and software assistance...**



□ Even though Hewlett-Packard is in the "mini" side of the computer business, this doesn't mean that HP data products sales people can easily lug a sample around for customers to see and try. On the contrary, even the simplest HP computer system weighs on the order of several hundreds of pounds, and its price is considerably beyond that of a voltmeter or signal generator.

So, if we can't reasonably bring a computer demonstration to the customer, why not bring the customer to the computer? Right on! And basically, that is what the company's recently announced investment of \$2-million in a worldwide network of Data Centers is all about.

The goal of such Data Centers is to bring data products people together to learn about HP computers, data acquisition systems, time share systems, automatic instrumentation systems, and to help solve applications software problems. Most of these people will be customers who come for the purpose of developing an understanding of the equipment they expect to buy, or to work up new applications programs for equipment they have already acquired. The traffic should also be fairly heavy in HP people receiving training for sales or service positions in data products and as systems analysts. Some of the industry's

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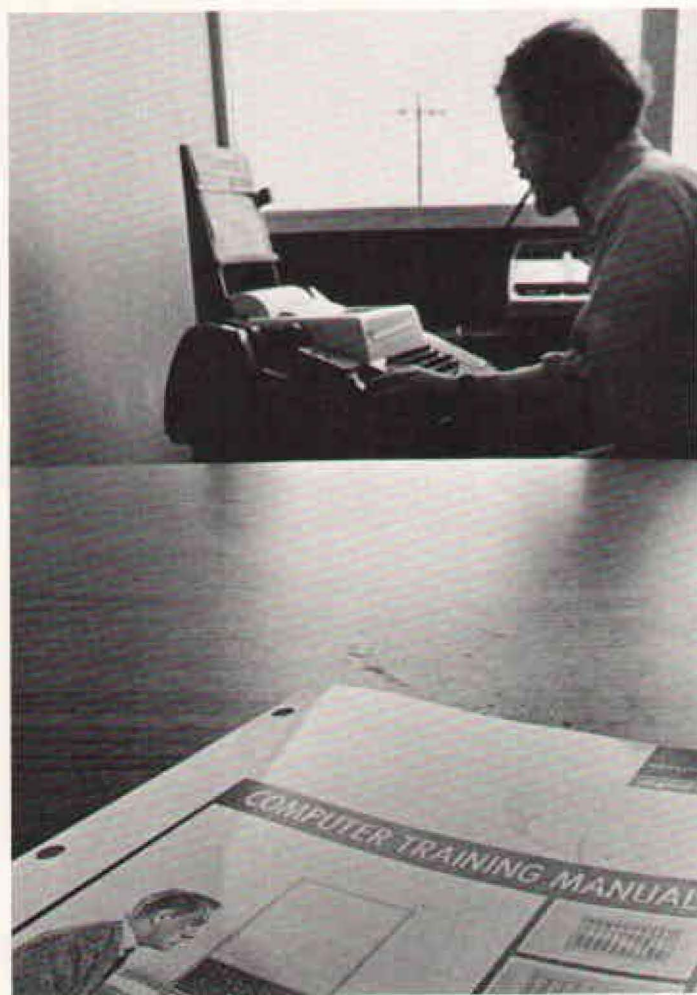
computer college

most experienced engineers and systems analysts will staff the centers as instructors and counselors.

Actually, use of the future tense doesn't apply at such centers as Paramus, N.J., and Slough, England. These two have been in full operation for over a year, and are still growing. Atlanta, Fullerton, Milan and Skokie have operated for about six months. Eventually, other centers are destined for Australia, Canada, France, Germany, South America and Sweden as well as additional locations in the U.S.

Serving as a kind of "home" to the field data centers is the Cupertino Division's own original data center at the factory. Here, advanced training and programming facilities and services are available in support of Cupertino products to the HP field people.


HP's concept of a "computer college" is not new or unique in the data products industry. The manufacturers of the bigger numbers-crunching computers have found such facilities necessary. But Hewlett-Packard is the first among producers of small-scale computers and instrument systems to establish data centers of this type. Shown here are views inside the Eastern Sales Region's busy Data Center at Paramus, New Jersey:



A major objective for the half-dozen HP Data Centers now in operation is to help get customers' systems up and operating as quickly as possible — no one wants a \$100,000 system to sit idle very long. Likewise, many HP systems are so busy in their customers' hands that their programmers can't get the time to work up new programs. For these reasons they come to a data center where HP systems and systems analysts are available to help them as in these views at Paramus: upper right, "toggling in" a program change on a high-speed data acquisition system; lower right, loading a tape recorder for data transfer in the main computer room; and left, entering a program via the teletype.

Where
we live:

Colorado



Looking for
the best
of both worlds

□ To newspaper readers, Colorado has seldom been a dateline for front-page, crisis-type news. Most often it has appeared as a source of stories dealing with sports events, with snowfall at the big ski resorts, Pike's Peak hill climbs, jeep treks through the mountains, the price of beef, Peggy Fleming, the Air Force Academy, and the sagebrush sagas of Buffalo Bill. But once in a while the Columbine curtain is lifted to yield news of a different kind: arrival of a new industry, temperature inversions over Denver, urban problems, forecasts of a 100-mile-long city running along the eastern rim of the Rockies, uranium strikes, and student activism.

So, what is the situation in Colorado? Where is it *at* as they say? In the past of William F. Cody? In the present, with its light blending of people and industry? Or coming to a megalopolized future? These questions make for an interesting debate that is getting livelier by the day throughout America's highest state. In discussing their attitudes toward their home state—their reasons for choosing or staying there, HP people at the Colorado Springs and Loveland divisions inevitably find themselves taking part in this debate. Their hope, obviously, is that they will not have to make an absolute choice between economic growth on the one hand and untouched environment on the other, but somehow continue to enjoy the best of both worlds. The following are some of their views on this subject:

(continued)



Where we live:

Ray Hanson, R&D Lab, Loveland:

"I suppose I'm one of those old fashioned types who wants some living space. That's the way I was brought up. One time I spent four years within a half-hour's drive of downtown New York. But I eventually felt closed in. Now I have a home 13 miles west of Loveland, up in the mountains at about 7,000 feet elevation, on five acres of rugged timberland. It's built right into the hillside facing the afternoon sun, and has natural wood siding.

"We've worked out a school bus arrangement getting the neighborhood children up the mountain each day. We also have a lot of snow up here in wintertime, so road clearing is one of our frequent problems. We've also had to lay in our own water supply. So it's kind of a pioneering environment, though that's too strong a word.

"But that's the way we like to live. Conservation is kind of a personal thing with me and I pursue it on that level. However, I have spoken publicly on the subject when asked because I see the need for stronger measures. I feel that, ultimately, we are going to have to change our whole life style if we are to preserve open spaces and still provide a good living for people. My proposal is that we should create a combination of open areas and highly populated areas, and do a good job of environmental control and planning through the efficiencies that would be possible. Strangely enough, I've found city people more concerned with keeping the mountains beautiful than the mountain residents themselves."



John Copley, contract administration, Colorado Springs:

"When I was a youngster growing up here in Colorado Springs, there was no industry whatever. It was almost all tourism or retirement trade. Then about 1953 Camp Carson turned into Fort Carson with a large permanent force. And, of course, the Air Force Academy came and the town began to grow considerably.

"Some of the older folk had their ideas as to how things should be run, and the newer people had *their* ideas.



So we went through the throes of a small town growing up, but it has worked out quite well.

"What we really needed at the time was some light, clean industry offering year 'round employment—which is what HP brought in.

"My own view is that growth of this kind will enhance our ability to enjoy the Colorado environment. Certainly it has allowed people to develop the recreational areas around Colorado Springs. I'm a ski nut myself, and bringing in industry has made it possible to build the facilities we now enjoy. Without the people we would still be using rope tows, that's for sure."



Myrna Warehime, production line, Loveland:

"My commute from Greeley—21 miles—is considered quite a long way by local standards. Most of the HP people I work with live right here in Loveland. Greeley is a good sized community, about 30,000 people. But it has no major industry.

"In any case, we live there because it's good for my husband's business. He operates his own truck, generally hauling livestock from the local farms to Denver four or five times a day.

"We enjoy the college town atmosphere, but we also like to get away in the mountains. That's where I was born—way up in Crested Butte, in a log cabin on a ranch my dad owned.

"Colorado represents a good life for young people, and there are plenty of cultural activities and good communications with the rest of the world. Really, I would just as soon not see it changed too much."

Ethel Harrison, assembler, Colorado Springs:

"My husband and I didn't know what we were getting into when we came here—except that there was a position here in the Air Force that he wanted. Just call us lucky, I guess. We've been together through Wisconsin, Ohio, Okinawa, the Philippines, and Minnesota. He now has about two years to go for 20-year retirement. After all that experience we plan to retire here. I think what we like best is to look at the mountains and enjoy the four seasons. Yet the winter is actually rather nice here. Not like the Great Lakes area at all where it's so tough.

"Our two boys like Colorado very much. There are so many things to do. They can be on a weekend campout in the mountains and be just a few miles away. The schools are progressive, too. They've just started the system of advancing students at their own individual pace. It will take some getting used to."





Jim Bauer, printed circuit production supervisor, Loveland:

"Fifteen and twenty years ago, this was farm country. The only industry was sugar beets. People worked hard, but I think they were happier even with just a dollar in their pocket. The big thing used to be

to go to town on Saturday night. Get in your car and head for town and sit there and watch people for a while. Now everyone goes off in their own directions. And now there's more tension and pressure, even here in Loveland.

"Still, I welcome growth. Industry's going to change things. If nothing else, it's going to make for more competition in jobs—make a market. But I sure don't look forward to being socked into a big city reaching from here to Colorado Springs.

"Because the reasons I stay here are the mountains and open spaces. We like to get in the jeep and be fishing in five minutes. Or take the trailer and go camping for the weekend.

"You know, I've been to California looking for a job—was going to make a million overnight. But there were too many people for me, too much traffic and congestion. We should make plans to avoid that here."



Ginny Mortenson, finance department, Loveland:

"Loveland is really a very friendly community now. I hope we won't ever lose that. Everybody knows everybody else. The kids are safe wherever they go. But if they ever get out of line you're bound to hear about it.

"We've been here 10 years. Both of our families have strong Colorado ties and my husband and I went through

the University of Colorado together. We particularly enjoy the mountains and the people, and the atmosphere for bringing up a young family.

"Opportunities are not all they might be for men. In fact, there are more employment opportunities for women, because of the kinds of light industry that have come in. No doubt things will change, but I think changes that just happen are not always desirable."

Hap Steiner, methods improvement coordinator, Colorado Springs:

"During a trailer vacation here one year, my wife and I looked at each other about the third day and decided: This is it! This will be our home. So, in 1965, after 27 years in the Air Force and a dozen different assignments, and over 11,000 hours in the air as a test pilot and in combat, I was very happy to come to roost here.

"I don't see how we could have made a better choice. The area has all the opportunities and facilities we want for our family—the schools and colleges, the cultural and recreational activities. Yet it's still open and uncluttered.

"Maybe some day it will become the same old rat race as elsewhere. But I think not, because there's a real consciousness in the community, an awareness of possible problems that are becoming acute. All of the organizations I work with, the Scouts, the Horticultural Society and other outdoor groups, have the same strong determination to preserve the environment. So many of us came here because of the great environment, that it's very natural for us to think strongly about it.

"I must say that I hit it just right with Hewlett-Packard. I'm a hobbyist, a tinkerer—sheet metal work, carpentry, you name it. So when I retired out of the Air Force and took on methods improvement here, I was really practicing my hobby." □



Colorado

In the past, Colorado has been known as the nation's highest state, split by the rugged Continental Divide with its 54 peaks topping 14,000 feet. To the west are sheep, scenic wonders and snow. Then, to the east where the Great Plains meet the mountains, have grown the population centers, the horizon-to-horizon sugar beets, and cattle-fattening lands. Now industry is discovering the benefits of the Colorado environment, its central location and its independent and industrious people. HP's facilities at Loveland and Colorado Springs have helped to make these advantages more widely known.



News in brief

Palo Alto — The company reported sales of \$174,068,000 for the six-month period ended April 30, a 15 percent gain over sales of \$151,959,000 during the corresponding period of fiscal 1969. Net earnings amounted to \$11,704,000, equal to 46 cents a share on 25,411,927 shares of common stock outstanding. This compares with earnings of \$11,688,000, equal to 46 cents a share on 25,216,634 shares, during the first half of last year. President Bill Hewlett noted that 1969 figures relating to number of shares and per-share earnings have been restated to reflect the company's two-for-one stock split that occurred February 25, 1970.

Hewlett said incoming orders for the first half totaled \$174,046,000, a 6 percent gain over the corresponding period last year. "Our sales and orders, although up from the first half of 1969, fell considerably

below anticipated levels. As a consequence, we had a 3 percent decline in earnings during the second quarter. Earnings amounted to \$6,148,000, or 24 cents a share, compared with earnings of \$6,346,000, or 25 cents a share, during the corresponding quarter last year. Sales for the quarter totaled \$91,698,000, up 14 percent over a year ago, while incoming orders were \$86,865,000, down 1 percent from 1969's second quarter."

Hewlett said HP's domestic business "has been particularly soft, reflecting continuing uncertainties in the nation's economic climate and major cuts in U.S. government spending. "During the first half our domestic orders totaled \$106,927,000, declining 6 percent from a year ago. It is encouraging to note, however, that international orders were up 31 percent to a record first-half level of \$67,119,000. Our interna-

tional business now represents 39 percent of the corporate total, and we expect this share to increase with the continuing expansion of our overseas markets."

New York — Based on 1969 sales, Hewlett-Packard is now 293rd in size among the top 500 U.S. industrial firms, according to FORTUNE magazine. This was up from 313th position the previous year. FORTUNE's May "500" issue also ranked the company 310th in assets, 201st in net income, 257th in invested capital, 234th in employees, 89th in net income as a percent of invested capital, and 56th in earnings-per-share growth rate over the past decade.

Palo Alto — Distribution of \$2,700,270 was made late in May to more than 11,000 eligible employees under the company's cash profit-sharing plan.

People on the move

Corporate — Soheyl Asbagh, to Technical Services, material management (specifications) systems analyst/programmer, from systems programmer, PA EDP Center/Programming; Richard Kahnberg, to lab stock materials staff, from materials staff, corporate Materials specifications; Attilio Melera, Bob Moody and Harold Rocklitz, to HP Labs, Physical Electronics Lab, from technical staff, Avondale-West; Frank Musso, to finance manager, Customer Service Center, from finance, Automatic Measurement Division; Dick Wilson, to corporate Finance, government contracts auditor, from finance manager, HP Labs.

Avondale — Scientific Instruments, Palo Alto: Mason Byles, to manager, from marketing services manager; John Hearn and staff, from scientific instruments, Microwave; Norton Bell, Bob Board, Bill Kruger, George Stutler, Reese Turner and Harry Weaver, from HP Labs, Physical Electronics Lab.

Delcon — Paul Winninghoff, to engineer, from same position, Microwave.

Electronic Products Group

Manufacturing — Jim Blalock, to assemblies manager, components, from R&D engineering, components; Lloyd Burkhardt, to process engineer, fabrication, from manufacturing engineer, components; Howard Edwards, to fabrication foreman, from process engi-

neering; Frank Gerrity, to section manager, Milwaukee-Matics, from fabrication foreman; John McCabe, to quality assurance engineer, from tool engineer; Bill Madden, to fabrication foreman, from lead man, Milwaukee-Matic; Art Turnbull, to section manager, fabrication, from fabrication manager, Avondale Division; Stan Wight, to accounting, from fabrication foreman.

Microwave — Bud Edgar, to project engineering manager, from systems production line manager; Ted Dennison, to quality assurance manager, from project engineering manager; Reed Ogden, to marketing sales engineer, from systems project administration manager; Dick Were (and staff), to material management manager (and staff) from same position, Manufacturing; Scott Wright, to RF network analyzer product manager, from network analyzer market development.

New Jersey — Bill Dudley, to sales manager, power supplies, from sales engineer; Paul Hartung, to materials engineer, from lab technician; George Sanford, to service engineer, from production control expeditor/scheduler; Joe Skowronski, to personnel manager, from marketing development engineer.

Data Products

Mountain View — John Russell, to finance manager, from accounting, Microwave; Jim Treybig, to marketing manager, from advertising and sales promotion manager, Cupertino.

International

Shushi Asai, to accountant, from YHP accounting; Joe Bailey, to applications engineer, HP Italiana (Milan), from same position, Automatic Measurement Division; Fred Bode, to YHP staff, from district manager, Neely Sales (Fullerton); Derek Cowan, to assembly wire/test manager, HP Ltd., from production engineering, International; Art Fong, to YHP staff, from senior staff engineer, Microwave; Kiyo Kadoya, to YHP staff, from repair section, Customer Service Center; Lok Lin, to International Operations staff, from technical staff, Automatic Measurement Division; Lee Ting, to International Operations staff, from sales engineer, Automatic Measurement Division; Constantin Sevastopoulos, to marketing, Intercontinental Sales, from applications engineer, Cupertino.

Sales Regions

Midwest — Fred Bless, to region service manager (Skokie), from district service manager (Dayton); Gary Christian, to senior analytical field engineer, from analytical field engineer (Cleveland); Phil Eder, to calculator field manager, from calculator field engineer (Skokie); Bill Poindexter, to district service manager, from service representative (Dayton); Dick Vitales, to region calculator sales manager, from region service manager (Skokie).

Southern — Wallace Berry, to electronic field engineer, from staff engineer (Atlanta); Mark Davis, to staff engineer, from service technician (Atlanta).

From the president's desk

Last year at this time I reported to you on a trip I had just completed to our operations in Europe. I recently revisited this area and I think that to again review our commitment to the international market might be appropriate.

As most of you know, there has been a considerable slackening in our domestic order rate during the last six to eight months. To date, the same has not been true for the international market. For the first six months of this fiscal year, 39 percent of our orders came from abroad, and this trend is continuing. It is interesting to note that over 70 percent of these orders are being filled with products manufactured by our U.S. divisions, and that 75 percent of the materials used in the overseas manufacture of the remaining portion originates in the U.S.

It would be a mistake to think that all of the strength and growth in our international business is simply confined to the prosperous economy in Europe. Whereas about two-thirds of our international orders do come from Europe, the actual growth rate in international business is larger in our non-European markets. The advantages of geographic diversification (as well as product diversification) should thus be evident. It is rare indeed that the economies of the many countries in which we do business will all be depressed at one time.

I returned from Europe via Singapore, where I visited our most recently established plant. First, let me comment on the city of Singapore itself. One cannot help being impressed with the tremendous programs that this city-state of slightly more than two million people is carrying forward. Everywhere one sees signs of modernization and progress. Swamps being filled in to provide land for expansion—shanties being pulled down and replaced with modern, low-cost apartments—attractive multi-tenant factories being built within these housing complexes, only a short, pleasant walk from employees' living quarters.

One is impressed with the intelligence and far-sightedness of the people in government, and with the apparent harmony in which the three principal ethnic groups—Malay, Chinese, Indian—live and work together.

In the case of HP Singapore, we have the top two floors of a new (not quite finished) seven-story building. We already have about 60 employees trained and hard at work—just four months from a standing start!

The principal items of manufacture are core memories for our computers and calculators. This work is so fine that you have to study it with a microscope, and what I saw was exceptionally good for first production. By manufacturing these core memories ourselves we not only replace purchased items (which, incidentally, are also manufactured overseas), but we also have an opportunity to introduce improvements in construction that will further reduce costs. Needless to say, the entire Singapore team, under the direction of Joe Barr, is doing a great job.



Bill Hewlett

Measure covers the Santa Clara waterfront

As you can see from the sign, the occasion was the shipment by the Santa Clara Division of its 20,000th Model 5245L counter—truly one of the landmark instruments for the company and the electronics industry. To publicize the event, Marketing suggested appropriate photography, beginning with . . .



the division manager, Al Bagley, to represent a product that has generated more than \$50-million in sales and become the most widely used counting device of its type in the world. In turn, Bagley said . . .

"why don't you get a picture of some of the original design crew that put it together in 1961?" Such as, from rear left: Chuck Lowe, Larry Lim and John Gliever, and in front, Jeff Wolfington and Al Low. The design guys said, "In all fairness . . .



"you should also photograph some of the original manufacturing team to represent the hundreds of production people who have worked on the 5245L over the years." So here they are; from left, Ann Stallings of line fab, test leader Dave Keller, line supervisor Ray Rooney, wire-line leader Bernice Scott, section manager Jack Booher and manufacturing manager John Morton.



Finally, the Public Relations man said: "That's all well and good (or words to that effect), but we all know that newspaper editors wouldn't know a counter from a cuckoo clock. Let's give them something they can relate to." Such as this view of Lynne Johnson, Santa Clara secretary and the 20,000th 5245L. A customer might be excused for wanting to order both.



Measure

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