Measure

For the men and women of Hewlett-Packard/MARCH 1980

For people who schedule HP production lines, the hot spot gets hotter

There's no question that HP master schedulers work in a hot spot—and that it's getting hotter. As division managements focus on improved asset management through reduced inventories and smoother shipping schedules, the role of production scheduling departments will inevitably become more critical and involved. MEASURE takes a look at this important and changing role:

"There are times when you really sweat blood," said one master scheduler thoughtfully. "You work 12 hours a day to prepare the master schedule, knowing it will trigger many thousands of dollars worth of material orders, and affect the work load of a lot of departments. And sometimes you go home and lie there and think, did we make a mistake? Is that going to cost our division a couple of thousand dollars—or a hundred thousand?"

Somewhere, in every HP division, a skillful juggling act takes place to produce a master schedule that turns marketing predictions into actual production schedules stretching into the future. The sales forecast, which represents at best a good guess, must be balanced against the past history of actual orders, the factory's current capacity to build, the delivery times which customers will accept, and a reasonable amount of inventory that provides a cushion without tying up too many dollars.

The master schedule usually looks out over a horizon of 12 to 18 months. If at all possible, the first few months are considered "frozen" since it is almost impossible to turn off orders that have already been placed for materials and work in progress. Beyond the freeze period, the master scheduler has some leeway to tweek the system by "pulling up" a run that will be needed earlier than anticipated, or "pushing out" one that can be delayed. Every change becomes translated into actual work and purchase orders.

This masterful juggling act, which is probably fully appreciated only by those people who are consulted in the process, is typically done in a division by one or more master schedulers.

It's not a role for the unsure; the rounds of consultation with marketing and production, along with others, must end at a fixed date by committing a decision to paper. The general manager, who has set the dollar targets for the division, will often want to doublecheck the master schedule.

One former master scheduler, remembering his days in the hot spot, believes that the master scheduler is the one person who impacts everyone in a division, particularly by making a mistake. "If a master scheduler starts to make errors, the effect is instantaneous," he says. "Even the general manager can't screw up a division as fast as the master scheduler."

Where does the master scheduler fit into a division? Since the master schedule is closely tied to ordering materials, master schedulers traditionally report at HP to the materials manager. However, master scheduling is now often placed in production as part of an increasing emphasis on production control. Bill Dowlin, manufacturing manager for Santa Clara Division instruments, places such importance on correct master scheduling that the function now reports directly to him. At the Waltham Division, on the other hand, the master scheduling function was broken off from manufacturing two months ago and reports to a newly formed operations department.

The role also changes with the product group. Instrument divisions with many long-lived products and fewer fluctuations in demand often assign scheduling decisions to production section leaders, with one master scheduler to coordinate plans. Marketing forecasts are less critical except for new, fast-moving, or dying products.

In computer divisions, however, the master scheduler stays in close touch with the marketing department and also pays attention to such economic forces as a rise in interest rates. The addition or loss of a single systems order can cause a large dollar swing in incoming orders. Inventories are kept lean and orders shipped out as promptly as possible.

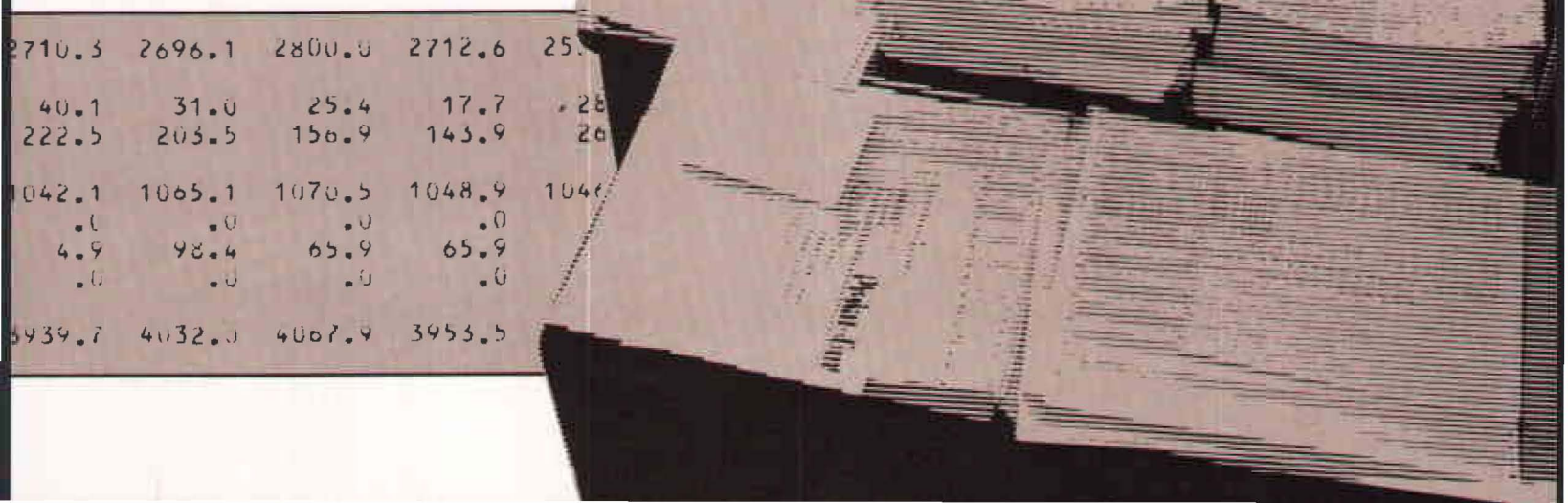
BEGINNING BACKLOG	(7)	2487.5	2381.8	2366.
FINISHED GOODS INV	(9)	138.5	52.4	42.
DEFERRED BACKLOG	(8)	.0	148.8	173.
ORDER FORECAST	(3)	995.6	1018.8	1018.
CONSIGNMENT ORD FCST	(17)	.0	.0	.
LARGE ORD FCST	(5)	.0	45.6	385.
LOF PAST DUE	(67)	.0	.0	.
TOTAL DEMAND	(15)	3342.4	3540.8	3903.

Cover: Even with the computer's help, master scheduling the start of a production run means talking to many departments throughout the division—and often in a hurry. On the run in this photograph is Alecia Flores, one of the two master schedulers at the Data Systems Division in Cupertino, Calif.

In the counters and printer section of Santa Clara Division, product line section manager Barbara Wright talks over with master scheduler Ed Begun the amount of work she can get through her area in a certain period of time.

Others have their own scheduling concerns. Components divisions worry about the factor of "yield" in their planning, and must start more components than the number actually desired. Corvallis Division builds for a volatile retail market. Its master schedulers chart production for operations in Singapore and Campinas, Brazil, in addition to Corvallis, and also control the flow of materials to all three factories. Waltham Division exchanges master schedules and forecasts with the Boeblingen Medical Division since the two divisions sell one another a number of instruments that are tracked in master schedules.

Whatever the particular concerns, the master scheduler is negotiating between various points of view within the division. Production people, for instance, may be frankly skeptical about the reality of sales forecasts. "There's a natural difference of attitude between marketing and manufacturing," explains one master scheduler. "Marketing wants to sell as many widgets as it can and would love to have everything go out the door the day the order comes in. Manufacturing, on the other hand, wants to have a nice predictable flow of work. It would be perfectly happy with orders to build 50 widgets a month for the next 50 years."



the hot spot

Sharing information are Data Systems Division's master scheduler Al Smith (standing), runbook scheduler Judy Coleman and Bob Mort, cabinet line scheduler in production control.

These old adversary roles are breaking down in a number of divisions, however. Concern for production planning has led to an emphasis on teamwork, and an effort to give a number of departments a chance to help develop a production plan and a master schedule that everyone can live with cheerfully.

It's an approach that Tom Cunningham, materials manager at the Disc Memory Division, heartily approves. "The master scheduler is the catalyst to get the team together and to ask the right questions, then get the results back into the planning process," he says.

Skip Creighton, DMD production control manager, is also the master scheduler, reporting to Tom.

His month begins with a production planning meeting attended by the general manager, all functional managers, the marketing services manager who does the actual forecasting, the order processing supervisor, the production manager and all his managers, the materials manager, and the purchasing manager.

The group, usually 15 to 18 people, reviews the new forecast presented by marketing against the new backlog and current master scheduling plan to decide if a change should be made to the 12-month master schedule.

"I may see that we're running above an acceptable level of backlog (orders booked but not shipped) and weeks of availability (when you can actually ship an order received today) and recommend that we pull up the schedule. We try to stay competitive on our delivery dates within our industry.

"Since one-third of our division's total products represent the bulk of our sales dollars, the group only reviews those major instruments. (As the master scheduler, I determine the production of the rest myself.) One rule is never to hold up a major product by not having a minor product available."

DMD uses a computerized master scheduling system developed by General Systems Division for its own use.

"Even with computer models for trying out the effect of possible changes on the master schedule, it's always a matter of judgment when you make changes based on manpower, test or materials constraints," Skip says. "Human intervention is always a factor in master scheduling."

Skip considers it "an ideal arrangement" that Jerry Worth, who develops the forecast for marketing, is a former master scheduler himself.

"Jerry realizes the real importance of the forecast and the danger that any inaccuracies might result in our committing millions of dollars in purchasing parts unnecessarily. He tries to show a *real* demand for our products just as we try to support his forecasts realistically with our scheduled production."

Things were simpler in 1957 when John Veteran, now Corporate Materials Services manager, did the master schedule for all of Hewlett-Packard except for a couple of acquired divisions.

"I'd have a monthly meeting with Bill Hewlett, Dave Packard, Ralph Lee and Noel Porter to go over production plans," recalls John. "I'd load all the lines perhaps five percent over what they could do, and we'd go over the number of employees in the shops to see if we should do some hiring. I learned the hard way to crank in the expectation of windfall orders. You have to be exact enough so you have the necessary parts, but you need a buffer—you can't call it too close."

PRODUCTION BENCHMK	(21)	96	110	110	131	126	123
ACTUAL PRODUCTION	(24)	96	110	113	100	136	136
PRODUCTION (CUM)	(22)	96	206	319	419	555	691
PROD'N vs BNCH (cum)	(25)	+0	+0	+3	-28	-18	-5
PROD'N vs BNCH : +-%	(26)	+0%	+0%	+1%	-6%	-3%	-1%
ACTUAL SHIPMENT	(32)	102	118	108	109	136	136
SHIPMENT (CUM)	(35)	102	220	328	437	573	709

"The master scheduler also gets involved with products coming out of the R&D labs that may replace earlier products," John points out. "We discovered that you don't chop off an old product until its replacement has had a successful pilot run and you don't run ads too early."

The art of master scheduling continued to evolve. First came an awareness by company management that finished goods inventory had built up too much, and more attention was paid to getting orders out the door promptly. By 1970 HP was keeping careful track of everything made, whether sold or not sold, in order to know the inventory on hand.

Some things don't change, in John's view. As he sees it, "A master scheduler must be a good coordinator who's not afraid to speak up."

Automating the process...

For 20 years Bill Ludwick was a master scheduler, part of that time sharing with John the entire load of scheduling HP production. Today, as manufacturing systems manager for the San Diego Division, he's involved in the automation of master scheduling that is taking place in a number of locations.

He'll match SDD's five-year-old computerized master schedule with that of any other division for speed in recalculation: "In half an hour, our two master schedulers can go in, take a production line, and finite load the production in hours for an entire year."

But the human element is still important in master scheduling, according to Bill. "A lot of judgment goes into the job. It takes intuition to know what you can and can't do."

Juergen Zocher, master scheduler for the Boeblingen Desktop Division, spent last month in the U.S. comparing methods for inventory management and master scheduling. At his host Desktop Computer Division, production control manager Sue Schmidt showed how a 9845B desktop computer actually schedules production of its own product line, taking build plans into consideration. DCD also has a master schedule program on an HP 3000.

The differences in systems between divisions were interesting to Juergen, who was looking for ways to improve his own capacity planning program. He noted that while automated programs for purchasing are coming from Corporate, divisions are developing their own automated master schedules.

At the Santa Clara Division, for instance, a new labor model gives SCID master scheduler Ed Begun answers to questions like these: Are we going to have enough people in place to do this? When do we have to start hiring? Where will we put them? When should we train them? Where will we put material?

General Systems Division has a new financial modeling program added to its automated master schedule, while Santa Rosa Division production managers begin this month to use a new on-line master production schedule to model their production and shipment plans.

But while the tools for master scheduling continue to change and improve, the basic technique stays the same. You start with orders, whether they come from a manually written order book or an automated entry system, and book them against runs. You know how many working days it takes to make an item, how long it takes to finish a run, and how many items are completed at the end of each working day. Options are a consideration. So are kits. You find out where the division stands on units left to sell. You know the future sales that are forecasted. If your division sells to forecast and builds to capacity, how far apart should the runs be scheduled?

Alecia Flores, who does master scheduling and production planning at the Data Systems Division along with Al Smith, likes putting together jigsaw puzzles and seeing how things work. That may be one reason she thoroughly enjoys master scheduling, which she began doing last August after working in order processing and purchasing.

She had a chance to work with a solid teacher. Senior master scheduler Al Smith has had years of experience in production control, the last four and a half years as a master scheduler. DSD's inventory of work in process has dropped dramatically since a new automated master schedule which Al helped develop can now schedule smaller runs more frequently.

The division's master scheduling system MASH uses orders stripped off the COSMIC automated order entry system and tapes of marketing forecasts to print a 350-page preliminary master schedule. Freed from routine computation, Alecia and Al have time for a careful monthly review of the schedule with section heads and supervisors from the various production lines, along with people from order control and production control. At the end of the month they go over long-term plans with division general manager Dick Anderson, and the division marketing and manufacturing managers and controller.

"In master scheduling, you sometimes feel you're walking off a cliff and you hope someone will catch you," Alecia admits. Then, changing the metaphor, she adds, "You have to be willing to make an almost crystal-ball decision based on your knowledge and experience and inputs from people." □

150	150	150	160
121	121	127	140
812	933	1060	1200
-34	-63	-86	-106
-4%	-6%	-8%	-8%
121	121	127	140
830	951	1078	1218

Many of the techniques that Hewlett-Packard has learned about managing its own production schedules, purchasing of materials, and inventory control are now offered for sale to other manufacturers as software for the HP 3000 computer.

The new Materials Management/3000 introduced by the General Systems Division in February should be particularly useful for manufacturers who assemble standard, multi-piece products in lots.

The system can be adapted to each manufacturer's specific needs. GSD will back up the new software with customer training and factory support.

HP carts protect Olympic hearts

Hewlett-Packard has been going to the Olympic Games regularly since 1968 when company equipment helped establish a worldwide telecommunications network that brought the games into your living room from Mexico City. HP was back for the 1972 games in Montreal and the 1976 games in Munich with equipment to test for the presence of drugs in athletes. And for the 1980 Winter Games in Lake Placid, N.Y., Hewlett-Packard helped protect the lives of team officials, visiting diplomats and Olympic staff members with a precautionary heart-monitoring program.

"A number of diplomats and staff members had a history of heart disease," said Dr. Gene Drago, chief cardiology adviser for the Olympics. "The heart-monitoring program allowed us to perform electrocardiograms (ECGs) on some of these people when they arrived at the village, store the basic heart information in the computer and, if necessary, recall that information instantly to help diagnose any problems."

Anyone connected with the Olympics could volunteer to have an ECG taken, either at the Olympic Polyclinic or at Lake Placid Hospital. Two remote "heart carts," donated to the Olympics by the Medical Products Division, sent test information over telephone lines to a central HP computer at St. Clare's Hospital in nearby Schenectady, N.Y.

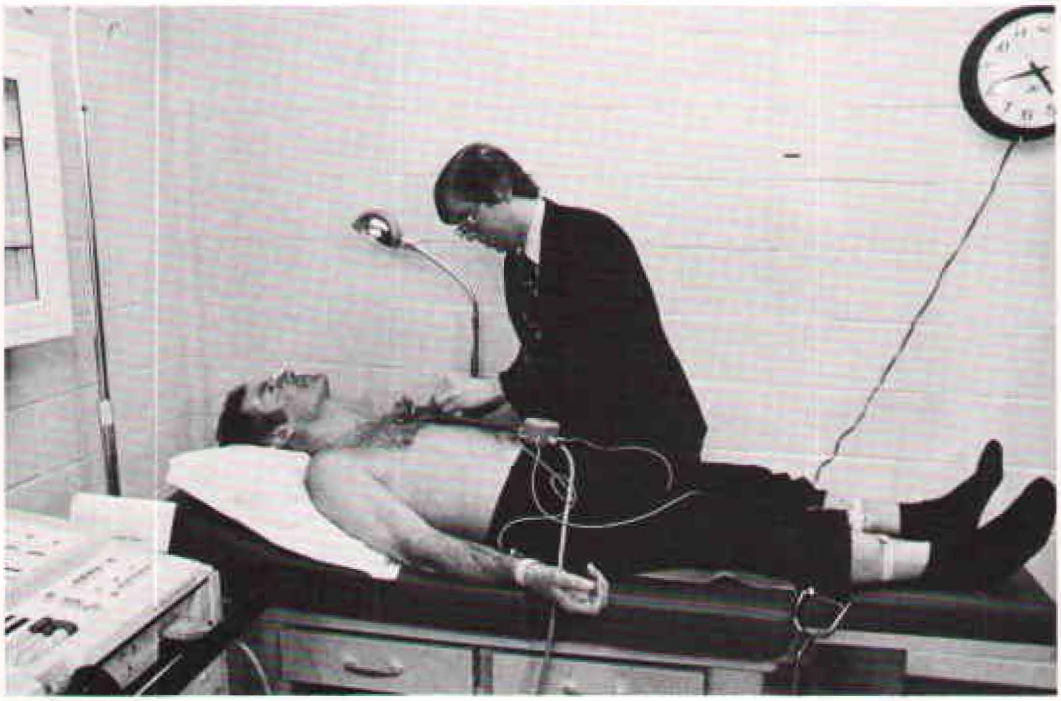
The computer's job was to collect, analyze, edit, distribute and store ECGs. More than 30 hospitals, clinics and health-screening centers in the United States now use this ECG management system.

While the athletes were competing at the various Olympic sites, the ECG system stood ready to take a second ECG of anyone who experienced chest pains or other heart irregularities. Test information was sent from the carts to the computer which instantly analyzed the new information and, by comparing it with stored data, helped doctors diagnose the problem.

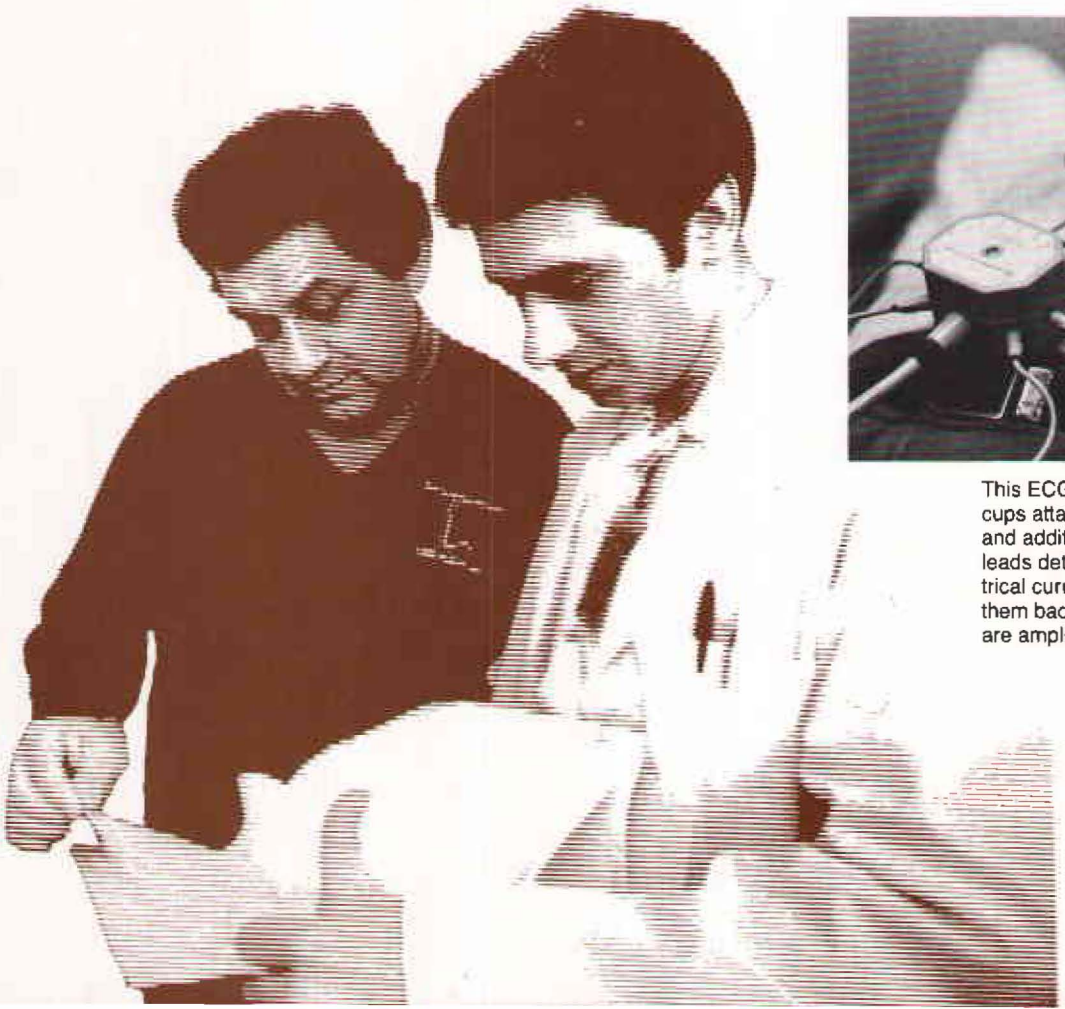
More than 200 ECGs were run through the HP system during the games. Two people who suffered heart attacks are glad the system was there. An ABC-TV unit manager and the treasurer of the Olympic Committee were taken to the Lake Placid hospital where ECG tracings showed their conditions warranted transfers to specialized coronary-care facilities.

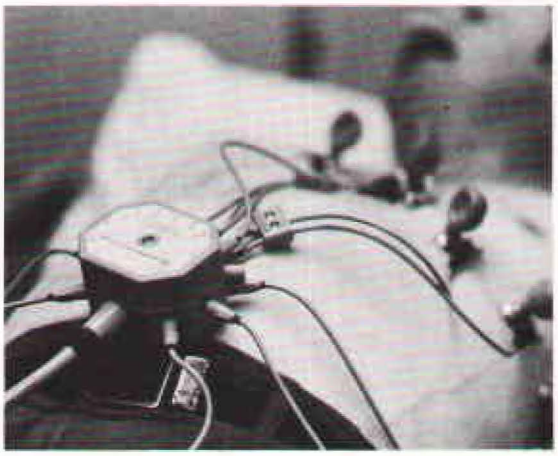
"There's no question that the system helped save their lives," said Dr. Drago. The staff of the Lake Placid hospital agreed; they were so impressed with the cart's performance that they decided to purchase it to continue offering the service to the small New York community. □

Before the Olympics begin, Ed Stomski places one of six electrodes on the chest of Art Devlin, five-time U.S. Olympic Ski Team member and a commentator for ABC Sports. Devlin's electrocardiogram is transmitted from the remote HP "heart cart" over telephone lines to a central HP computer at St. Clare's Hospital in Schenectady. If a heart-related problem should develop during the stress of Olympic activities, a second ECG would be taken. The HP computer can instantly compare the "before" and "after" ECGs and help doctors diagnose heart problems.



RIGHT: Devlin, who is vice president of the Lake Placid Olympic Organizing Committee, stares at the hospital ceiling as Stomski positions one of the leads on his chest. The electrode is smeared with a gel to insure good electrical contact for the test. BELOW: Dr. Gene Drago, chief of cardiology at St. Clare's, discusses ECG results with Nick Brilis, an Olympic medical technician.





This ECG cable sends six leads to welch cups attached across the patient's chest and additional wires to all four limbs. These leads detect the minute amounts of electrical current the heart produces and send them back to the heart cart where they are amplified.

Working in Sweden: it takes more than money to motivate

Sweden is a country of immense attractions, openly proclaimed in its own tourist literature as "Sweden the fantastic." But not all of those attractions are geographical and physical: students of the social sciences, for example, particularly those interested in the whys and wherefores of human work motivation, will find much to fascinate them in this California-sized kingdom.

By way of background to that point, Swedish governments over the past few decades have developed some of the world's most far-reaching programs of income equalization and economic security as well as social welfare programs. Several aspects are particularly noteworthy: differences in take-home pay are quite small even when the gap in authority, experience and skill is large; the income paid to unemployed people is only slightly less than that paid for working; it is extremely difficult to be laid off or fired—and very costly to employers.

MEASURE asked some of the people in the Stockholm office of HP Sweden how they viewed these aspects of their economic system, particularly the factors affecting work motivation:

"From a salary point of view it is quite hard to make a difference between a 'star' and a 'par' performer," commented Leif Ericson, country manager of HP Sweden (officially described as Hewlett-Packard Sverige AB). The present tax system was set up 21 years ago as a means of redistributing income more evenly. On the surface it does that: because of the progressivity of income tax rates it takes an extremely big increase in salary to make much difference in pay. What you find, then, is that take-home pay for most people is not too far apart.

"On the other hand," said Leif, "there is a vast difference in what people of different salary levels can afford. You see, interest on bank loans is totally deductible from income tax, and banks will make loans based on pre-tax salary levels, not take-home pay. This provides a tremendous incentive for higher-salaried people to borrow money and to invest it in homes, cars, boats, mountain cabins and the like.

"That's about the only way the average working person in Sweden can build a stake, but it's done at the risk of going

Leif Ericson, country manager of HP Sweden, questions a system that makes it difficult to reward "stars."

rather heavily into debt. In my view this system has tended to widen the economic 'gap,' not equalize it."

In the absence of significant differentials in take-home pay, what incentives are available to a Swedish business organization in attempting to motivate people to do a good job?

Birgitta Hedblom, personnel manager of HP Sweden, lists several factors which she believes are most effective for Hewlett-Packard, and give it a competitive edge:

- The HP environment is very important. This includes the "HP way" in general, and the opportunity to work with the latest technology in particular. Technically minded people find themselves constantly challenged by HP's new product technologies and absorbed in adapting them to the solution of customer problems.
- Cash profit sharing represents an important "difference," in effect adding about an extra month's salary to annual income.
- While HP's stock-purchase program as such is not permitted in Sweden, the company has set up what is called a "ghost" stock sale. It's identical to the regular plan in terms of employee and company contributions, but no stock certificates are involved. Accumulated funds plus interest are paid every two years.

Birgitta also mentioned the importance of social and recreational activities. Sweden's long, dark winters create a special need for letting off steam, socially and physically, and Swedish business organizations increasingly provide the focus for employee interaction after work hours. In the case of HP Sweden, almost all are organized spontaneously by interested individuals: soccer teams, tennis matches, squash tournaments, gym classes, bowling, boating, crayfish hunting, ski trips and Christmas parties. An orchestra is soon to be formed.

Birgitta Hedblom, personnel manager of HP Sweden, believes the HP environment is an important factor in job motivation.

Company-centered recreation tends to be strong in Sweden, and HP Sweden is a good example as represented by last year's football (soccer) team shown here.

SWEDEN—the market place

From discussions with various sales and service managers of HP Sweden, the picture emerges of an organization serving a relatively small but sophisticated marketplace, and one with all the usual challenges of growth plus a few special problems of its own.

As country manager Leif Ericson pointed out, Sweden is rather large geographically, spreading 1,000 miles north and south, but lightly populated with 8.4 million people, most of them concentrated in the southern half. The standard of living is high as is the Swedish standard of technology, and all of the competitors that HP meets internationally are active in this market.

It seems to be a very healthy market. In the 1979 "Economy World Championships" prepared by three Scandinavian publications, Sweden placed fifth. Rankings were based on industrial development, labor costs, unemployment, consumer prices, balance of payments and gross national product. World Bank surveys in the years 1977 and 1978 placed Sweden fifth among the world's richest nations, based on per capita income.

Principal markets for HP products include telecommunications, electronics (radio and TV manufacturing), national defense communications and control systems, machine-tool manufacturing, medical systems, and business applications.

While HP sales in Sweden comprise only four percent of total sales in Europe and a little over one percent of worldwide sales, they are a close second only to the U.S. figure in per capita sales. That's a comforting figure because it indicates a solid base of usage and acceptance in the Swedish economy.

At the same time, there are some uncertainties to face:

- Because of its high productive capacity, Swedish industry exports as much as 35 percent of the total national product (GDP—gross domestic product), making it quite vulnerable to international economic downturns.
- Much debate has been underway about automation and the use of labor-saving machines such as microprocessors, as well as the future of nuclear power.
- For HP, growth has been the order of the day, up to a 50 percent annual rate in the service organization and almost as high in several product areas. It is not expected that these rates will continue indefinitely, but they've definitely served to stimulate and motivate the people attempting to cope with them.

New HP Sweden people receive orientation on service organization from Kenth Bondesson, service manager.

Service tech Lars-Gunnar Andersson works on a 5345 counter. The Stockholm office maintains a licensed standards lab.

Two women in the Stockholm office of HP Sweden offer a pretty good demonstration of the power of combining personal motivation with on-the-job opportunities. Both came to the company in administrative jobs and with absolutely no technical background; both now are in responsible marketing positions and have acquired solid university training in related product fields.

Annsofi Rosenqvist joined HP as a secretary in the sales department eleven years ago after a friend introduced her to the company. Trained in languages, she soon became intrigued by the various products she was seeing for the first time, especially computers.

"I wanted to understand them," Annsofi recalls, "so I began taking university courses in computer sciences—software, programming, systems analysis, EDP operations management and the like. For one thing, I didn't like the idea of not having good answers to questions when I was taking phone calls from customers." Her studies extended over a number of years in order to have time for other major interests—husband, home and 2-year old child.

Annsofi's job now is marketing coordinator between Christina Granström's Marketing Communications department and the Data Systems sales department, plus backing up the department by answering customer calls. She also is quite involved in employee activities, screening job candidates and orienting new people, and serving as an employee representative on the board of directors of HP Sweden.

Anne Eriksson, Components staff engineer, joined the HP order processing department in 1974, then switched to the Components sales department as a secretary six months later. "I soon discovered that the sales manager was out of the office at least 80 percent of the time, and found myself being annoyed when I couldn't answer a customer's question.

"So, I began taking basic electronic courses, and trying to understand our product line better. Eventually, at evaluation I presented a schedule of further development which was accepted. It involved some time off for classes as well as evening courses. And my husband—who is an instrumentation technician for autos and boats—took on some extra chores at home to allow that. That was important because we have a 6-year-old daughter."

Anne received her university degree in December, 1978, more or less making her position as staff engineer official. Her hope is to move into field sales as soon as she has acquired enough experience.

Meanwhile, she feels customers are very receptive to women in technical positions, and says they are enthusiastic at the opportunity to discuss technical matters. "They seem to open up. It seems to be an advantage." □

Anne Eriksson became a staff engineer in Stockholm after being frustrated by her inability to answer customer questions.

Annsofi Rosenqvist also launched a new career in computer support as a result of seeking answers for customers.

"Marco Solo"... adventures in our newest sales territory

When HP took its electronics roadshow to China in June of last year, analytical products were deliberately left behind. But analytical's omission turned out to be an opportunity and a challenge for Bob Reed, Intercon's Far East sales manager for analytical products.

Bob became the first HP salesperson to visit China "solo," when he spent three weeks of December conducting seminars and providing training on HP equipment.

"In a sense, it was better that we didn't go and make presentations at the June seminars because they were geared toward the electronics industry," said Bob. His trip focused on chemistry and related fields that are important to China's future development.

"Because the country is rich in natural resources, they have to market those resources or products made from those resources," said Bob. His first stop was China's largest petrochemical works where he provided a two-day training seminar on the fundamentals of gas chromatography. "It was an extreme contrast to see the very advanced petrochemical equipment and current technology inside the

plant, but see bicycles and donkeys hauling people and material outside."

Bob's one-man analytical equipment roadshow moved next to Peking for a four-day seminar for local industries and institutes. Besides presenting current technical information about gas chromatography, Bob tried to relate the advancements in technology to his audience's specific needs.

"All the presentations were for technical impact, and were not designed to be a sales blitz," said Bob. "There were lots of questions about Hewlett-Packard, its organization, its analytical products and everything under the sun. They were impressed with our products, but just as important, they were concerned with reliability, support and spare parts, primarily because of their relative isolation from the rest of the technical world."

The last stop on Bob's December itinerary was Canton where he was scheduled to lead a small seminar with Chinese environmentalists. The "seminar" turned out to be a lecture for almost 400 interested listeners. "I found the people were friendly and eager to learn. On one occasion I had a dozen scientists follow me to my hotel room which we transformed into a classroom. We even got the hotel to find a blackboard which we parked on top of the bureau during our question-and-answer session.

"I'm proud of Hewlett-Packard for becoming involved in China. The people there want to deal with outsiders on a friendship basis. I think HP's attitude of emphasizing training and support is going to help guarantee their success and ours," said Bob.

Bob plans to write another chapter in those success stories soon. He was invited to return to Canton in April to present an in-depth analytical products seminar.

Igor Solinc, Instrument sales manager for HP's representative in Yugoslavia (ISKRA), was remodeling his 100-year-old farmhouse last year when he noticed a rough concrete patch in the two-foot thick wall. Prying the patch open in order to examine and repair it, Igor was more than a bit surprised to find a container filled with a thick packet of currency. Counting them: 500 big bills, each 1,000 dinars. A half-million dinars!

With his wife, Janka, a local criminal court judge, Igor sped to their bank to have the find appraised. The bills had been issued by a previous national government of Yugoslavia, but—who knows?

Of course, the banker knew. So now the Solincs have a guest room named The Treasury. Be prepared for the sight of walls papered with 1000-dinar bills.

General managers generally aren't paid to do general maintenance jobs around the facility. But that's what Ed McCracken of General Systems Division found himself doing last January 29 as a result of a United Way commitment. His services for the day were pledged to go to the department having the highest employee participation in the 1979 United Way Campaign. The winner was the Facilities Department which put Ed to work repairing benches and hanging signs in the new recreation area. Pete Delgado made sure the nails went in straight.

Highland Fling: Relaxing between dances are these old age pensioners being entertained by HP employees at South Queensferry, Scotland. Each year the HP social club invites 140 local pensioners to the HP clubroom where they are treated to a full evening of professional cabaret, dining and dancing. Along with tired feet each takes home a big bag of groceries donated by the club.

HP news

First quarter reported

Hewlett-Packard reported a 31 percent increase in sales and a 22 percent increase in earnings for the first quarter of the 1980 fiscal year.

Sales for the quarter ended January 31 totaled $664 million, compared with $505 million for the first quarter of fiscal 1979. Net earnings amounted to $54 million, equal to 91 cents per share on 59 million shares of common stock outstanding. This compares with earnings of $45 million, equal to 76 cents a share on 58 million shares, during the corresponding period last year.

President John Young noted that "orders were above our expectations, shipments were strong, and we were able to make some improvement in our cost of sales, as a percentage of revenues, from the fourth quarter of 1979."

Incoming orders amounted to $800 million, up 37 percent from orders of $582 million in the first quarter of fiscal 1979. International orders were particularly strong, amounting to $420 million, up 41 percent from last year's first quarter. Domestic orders rose 33 percent to $380 million.

Young said all product groups contributed to the higher level of sales and orders in the quarter. Preliminary figures show that, for the quarter, HP's electronic data products accounted for approximately 48 percent of total sales. Electronic test and measurement accounted for 40 percent, medical electronic equipment 7 percent and analytical instrumentation 5 percent.

New Microwave/Communication Group formed

A new Microwave and Communication Instrument Group, headed by Hal Edmondson as general manager, has been formed within the Instrument Group. This new group is made up of the Santa Rosa Division; the Stanford Park Division in Palo Alto and its Spokane, Wash. operation; the Manufacturing Division in Palo Alto; the South Queensferry Division in the United Kingdom; and the Delcon Division in Mountain View.

Edmondson, in addition to his new group role, will continue to serve as general manager of the Santa Rosa Division, a post he has held since 1977.

The new organization is the first in a series of smaller management units to be established within the Instrument Group, according to Bill Terry, vice president and general manager of the Instrument Group. Realignment of the remaining divisions into new groups is expected to take place during the coming year.

Computers bound for China

Hewlett-Packard has closed a $1.8 million order with the United Nations Development Program for five HP 3000 Series III computer systems to be installed in the People's Republic of China. The U.N. group is helping China establish an information processing and training center to support the country's modernization efforts.

The sale is subject to U.S. export-control approval.

Expansion planned in North Carolina, Colorado, California

- Hewlett-Packard has purchased about 240 acres of land near Raleigh, N.C., as the site for a new manufacturing facility. The property, seven miles north of the metropolitan Raleigh area, has been under option for the past year. Initial plans to assign a product line from the Analytical Product Group to the site are still under review, and no final decision has yet been reached.
- Hewlett-Packard has obtained an option to purchase about 230 acres of land for a second manufacturing plant in Colorado Springs, Colo. If purchased, the site will be used to accommodate general company growth. No operating unit has yet been chosen to occupy the site within the northern city limits.

HP's Colorado Springs Division currently employs more than 2,200 people in the production of electronic test instruments and has been in operation since 1963.

- In January Hewlett-Packard purchased 500 acres of land north of downtown Roseville, Calif. as a permanent site for a plant. In the meantime, the Data Systems Division operation moved into a new 65,000-square-foot leased facility built for HP. Two other Computer Groups divisions have transferred activities to Roseville: Data Terminals and Computer Support.

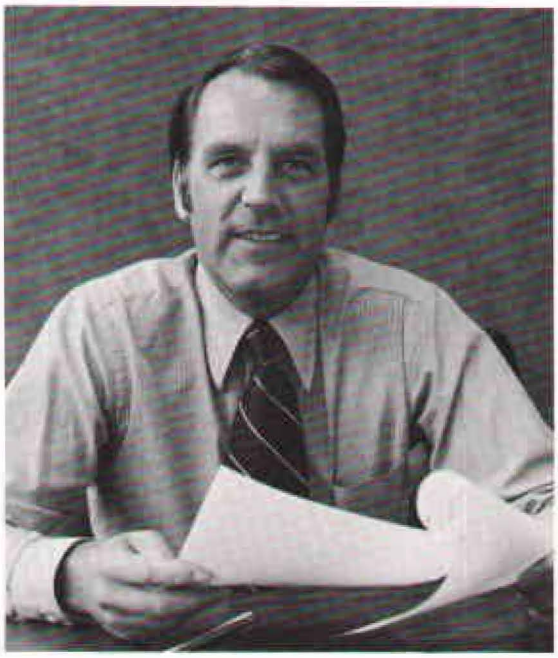
HP names in the news

- Lew Platt, general manager of the Waltham Division, has been named the new general manager of the Analytical Group. Platt will replace Executive Vice President Dean Morton who has served as acting general manager since October 1979.
- Mike Forster has been named general manager of the Manufacturing Division in Palo Alto, replacing Jim Ferrell who will become manufacturing manager of the new Data Terminals Division in Roseville, Calif. Forster had been manufacturing manager for the Manufacturing Division's printed circuit operation since July 1976.
- Hewlett-Packard's personnel organization has been restructured recently to include four new group personnel managers: L.A. Fulgham—Computers, John Flaherty—Instrument, Jim Phelps—Medical, and Lee Seligson—Analytical, Components, HP Labs and Corporate staff.

Other recent personnel appointments include: Frank Williams—International personnel manager; Marshall Hiner—U.S. sales regions personnel manager; Ken Capen, personnel manager for the Corporate staff; and Harry Portwood—Corporate manager of Affirmative Action.

- Several management changes for the Components Group were recently announced. The new line-up includes: Dick Soshea—group engineering manager; Rick Kniss—group marketing manager; Paul Sedlewicz—general manager of the Microwave Semiconductor Division; Pete Manno—marketing manager of the Optoelectronics Division; and Dick Chang—manufacturing manager at OED.

From the president's desk



Our first quarter performance figures have now been compiled. All things considered, operating results are satisfactory, but we have a number of areas to work on over the balance of the year. Let me comment on the key items of interest.

Orders were surprisingly strong during the quarter considering the mixed economic environment in which we're working. U.S. orders increased 33 percent and international moved ahead at a brisk 41 percent, to give us an overall growth of 37 percent. Strong demand for our newer products, such as the 85A and 41C personal computers from Corvallis and the 500A medical station from Waltham, has certainly helped. During the quarter we announced price increases on new orders averaging about 3½ percent, and some of our order strength may have been accounted for by customers placing orders before the new prices took effect.

Shipments grew 31 percent, and at $664 million we were almost level with the fourth quarter last year. First quarter revenues were virtually unaffected by the price increases mentioned above. Average daily shipments were higher in the first quarter because we had fewer shipping days. Even so, backlog increased by $139 million which leaves us with good shipping flexibility in most divisions.

When we reported our fourth quarter earnings last year, I commented that the costs of our products had increased over prior months due to subcontracting premiums, higher prices for precious metals such as gold, component cost increases caused by a general industry capacity limitation, and a few other special problems. We asked for everyone's attention to these cost problems, and I'm pleased to report we've made some progress. Cost of sales as a percent of revenues decreased from 48.5 percent in the fourth quarter to 47.1 percent in the first quarter. This means that some specific situations have been turned around, but more work remains to be done.

We asked our operating managers to keep dollar expenses flat from fourth to first quarter, and that goal was achieved. Thanks to everyone for showing restraint.

Our net profit was 8.2 percent of sales. This matches our fourth quarter, but is below that of the first quarter last year. It is important to remember that in these times of high growth, profit margins have to be kept up to finance that growth. We plan to spend $350 million on capital equipment, land and buildings in 1980 to provide the facilities we need. Profits are far and away the most important source of funds to provide this investment in our future. Improving our net profit margin over the balance of the year is a top priority for all of us.

On the asset management side, commendations are due to all the people working on accounts receivable collections. With interest rates as high as they are, our customers' inclination in many cases is not to pay us any more rapidly than necessary. In looking at our figures, the ratios are favorable, but we'll have to work to keep them there.

We've had a growth in inventory of $44 million since October 31. This is a big increase, and many activities are over target. Inventory levels are another area where we need significant improvement in the months ahead.

The outlook for the balance of the year continues to look promising. While I don't expect that we will sustain the first quarter order growth rate in the following quarters, we should be able to achieve our projections. The weakness in consumer spending in the U.S. is strongly offset by real increases in defense research and development outlays and by other areas such as the National Science Foundation which has a budget increase of 20 percent this year.

As I indicated above, we need to concentrate on reducing our product costs and inventory levels, and on moving up our shipments quarter by quarter. The key goal is to improve our profit margins each quarter as the year proceeds. We have a good start in 1980, and with attention to these areas we can have another outstanding year for HP.

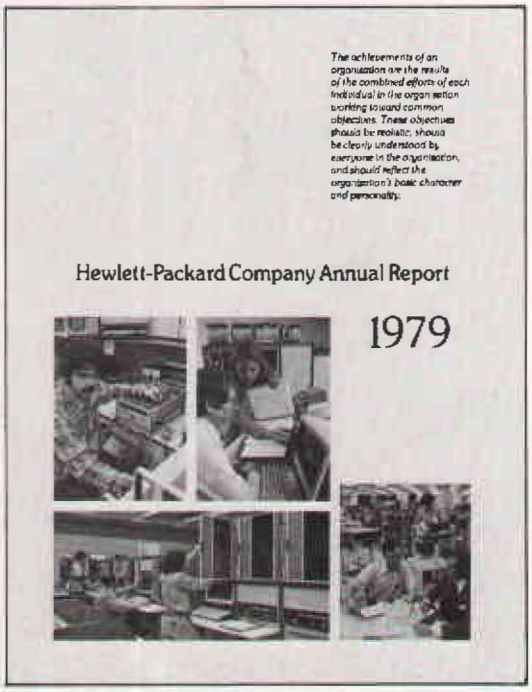
John Young

Cover to cover...

"Aren't you on the cover of my annual report?"

Linda Dotson, systems engineer at HP's Neely-Santa Clara office, has to answer "yes" to people who ask that question. "I knew the pictures were taken for possible use in the annual report, but the photographer explained that they might not get used at all. I never thought I'd be on the front cover."

Linda was one of eight HP employees whose likenesses appeared on the cover of the report that was mailed to shareholders in January. More than 20,000 of the shareholders are HP employees.



Mike Spate, a technician II who's pictured at his workbench at the Mountain View Customer Service Center, is glad one shareholder's prediction didn't come true. "The guy told me, 'Now that *you're* on the cover, HP stock is sure to take a nose dive!'" said Mike.

But most of the comments about the prominent placement have been kind. "My supervisor actually asked me to autograph his copy," said Linda. "Some people now call me 'the HP Cover Girl.'"

Measure

EDITOR
Gordon Brown

ASSOCIATE EDITORS
Dennis Cresswell
Betty Gerard
Brad Whitworth

ART DIRECTOR
Tom Martin

HEWLETT PACKARD

1501 Page Mill Road, Palo Alto, California 94304

MEASURE Correspondents—ANDOVER, Frank Orlandella • AUSTRALASIA, Geoff Windsor • AVONDALE, Peter Ward • BOISE, Mark McDonagh • BRAZIL, Campinas, Jose Lacerda • COLORADO SPRINGS, John Cardon • COMPUTER SUPPORT, George Lewis • CORVALLIS, Dick Anderson • DATA SYSTEMS, Steve Strain • DATA TERMINALS, Polly Johnson • DELCON/CSC, Ed Ilgen • DISC MEMORY, Don Harris • EASTERN SALES, Vince Macrina • DESKTOP COMPUTER, Gale Hamelwright • GENERAL SYSTEMS, Ken Coleman • HP CANADA, Brian Wright • HP FRANCE, Jacques Marquizeau • HP GmbH, Ernst von Glasow • HP ITALY, Alice Pantera • HP SINGAPORE, Charlie Marshall • HPSA, Bob Posey • INTERCON, Judy Hansen • LOVELAND, Jackie Peake • MALAYSIA, Maria Malik • MANUFACTURING, Shirley Gilbert • McMINNVILLE, Chuck Walker • MIDWEST SALES, Jessica Tollman • MSD, Shirley Gilbert • NEELY SALES, Roseanne Peters • NEW JERSEY, Bob Muggleston • OED, Gary Ruppel • SAN DIEGO, Tamara Jaynes • SANTA CLARA, Bill Higgins • SANTA ROSA, Dave Curry • SCIENTIFIC INSTRUMENTS, Hilde Harris • SOUTH AFRICA, Chuck Bonza • SOUTHERN SALES, Edith Varnell • STANFORD PARK, Joe Shepela • UNITED KINGDOM, David Reed • WALTHAM, Janet Dale • YHP, Saori Ohmori