How women manage at HP

The spirit of the night shift
John Young: strategies for '85
The company tree: HP's organization
UPFRONT

MSD’s 20/20 team makes rejection easier to handle.

At first glance it appears to be another story about Total Quality Control—in this case involving many thousands of items supplied to the Microwave Semiconductor Division in San Jose by several hundred vendors. Certainly, it’s a dramatic enough story—the reduction in average reject rates for incoming materials from as high as 30 percent in 1980 to as low as 2 percent by the end of 1984. That translates into savings of many thousands of dollars.

Yet, as with most such stories (which, frankly, are not uncommon around HP), there’s another dimension to it, one that goes beyond the percentages and charts. It begins with people, a collection of employees who decided on their own to team up to solve a common problem. The participants came from purchasing, quality assurance, materials and various manufacturing areas—14 HP people, chaired by Carol Nogales of purchasing.

They called themselves the “20/20” team because their first target was to help improve the performance of vendors who had at least 20 percent rejection rates on 20 or more lots of material a year. Meeting every other week, the team laboriously reviewed each non-conforming material report (NMR) about such vendors. Team members were then assigned to contact vendors, discuss the problems and ask for improvements. In time this process was applied to all NMRs, with emphasis on “doing it right the first time.”

The effect of this undertaking can be readily seen in the chart (at the bottom of this page): a year-to-year decline in rejection rates. Along with it has come increased recognition, including requests by other HP entities and quality assurance groups for presentations and articles about the team’s efforts. In turn, 20/20 launched a program to recognize vendors’ achievements in quality. Suppliers who show consistent quality are awarded certificates attesting to their performance.

“We still have a way to go,” says Don Drozdlik, a materials engineer in the quality assurance department. “Getting the rate of rejections down closer to zero will allow us to do a number of other good things that depend on solid confidence in our suppliers. Just-in-time delivery of parts is one of those good things. We’re working on it.”

With 20/20 vision. M

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ON THE COVER

Carolyn Ticknor, one of only two women R&D managers in Hewlett-Packard, stands out in a room full of her male peers at the 1985 R&D managers’ conference in Palo Alto. Staffer Betty Gerard’s progress report on how women managers are faring at HP starts on page three. Cover photo by Sharon Hall.

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Reject rates for incoming parts have dropped from a high of 25 percent to less than 5 percent thanks to a vendor improvement program at the Microwave Semiconductor Division.
Pat Castro (left), Irene Bever, Poily Johnson, Nancy Anderson and Mary Chin are among HP’s growing number of women executives.

When Dick Anderson was general manager of the Computer Systems Division, women held half the spots on his six-person management team.

For Dick, now general manager of the Microwave and Communications Group, this seemed quite matter of course.

"I’ve thought a lot about the fact that when I was in high school, nine of the 10 outstanding graduates in my class were women and one was male (and it wasn’t me). You have to ask yourself why not appoint a woman—just as you would a man—on the basis of ability, presence, leadership skills, intellectual capacity and personality: all the things
that make a successful manager. I never had a qualm about the women I named to functional management positions, and the record shows I was right. As more and more women pursue technical careers, we'll see their rapid growth in companies. I hope HP will be a leader in welcoming them.

In the decades since equal opportunity legislation was passed in 1964, the numbers (see chart on page 5) show that the company has made a determined effort to recruit more women professionals. As more women enter the management pipeline, a small but growing number now hold executive-level positions at HP.

**Top of the ladder**

Some 50 women are currently ranked as functional managers or above, representing 5.6 percent of all top-level managers in the company worldwide and 6.2 percent in the U.S. (up from 5 percent in 1978). The first breakthrough in sizable numbers came in personnel. Today about half of HP's women executives head personnel departments. Recent months have brought a number of significant appointments such as the first woman operations manager, women R&D and manufacturing managers and the first woman area general manager in the field.

Even more women are knocking on that executive door. In the U.S., some 340 women make up 9.6 percent of middle-level managers. They are R&D project and section managers, product marketing managers, production and engineering managers, and district managers in the field.

They hold jobs in all functional areas, with many more in marketing (women make up 21 percent of all marketing middle-managers in divisions and in related jobs in the field) than in R&D (7 percent) and manufacturing (6 percent)—the three functional areas which have traditionally supplied HP's general managers. Women managers are 19 percent of the combined administration, finance and personnel middle-managers in the U.S.

One person who is frankly delighted to see women emerging into key roles is Pat Castro, director of the IC Processing Laboratory in HP Labs since 1979. She has been conspicuous as a highly-placed woman technical manager. "It's been no fun being the only lady at meetings," she says. Pat believes in active guidance of women so they can know what skills they need to move upward in the organization and to deal with managers at higher levels. "But you can't choose your mentor," she warns. "Mentoring is never discussed but develops spontaneously." Given the present percentages of men to women managers, that coaching generally comes from a man.

When other women ask her for advice about getting into management, Pat suggests changing jobs "to learn new facets of the company." It's also wise to look for managers with different types of managerial strengths, such as giving good presentations, skillful negotiating and a clear understanding of the businesses HP is in.

Nancy Anderson, marketing manager for the Computer Systems Division, was one of Dick Anderson's appointees when he headed that division. (Quinn Cramer continues as personnel manager while Rene Birkwood, who was quality manager, is now the director of software training for the company.) After getting degrees in math, she worked for two other companies before joining HP seven years ago. "Because the computer industry is so young, it is very accepting of women," Nancy says. It is not unusual for customers visiting the Cupertino, California, site to hear women professionals give all the presentations on the

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**A TILT TO THE DISTAFF SIDE**

HP's tilt toward computer systems and software—half of HP's design teams are working on software projects—will have an impact. According to the National Center for Education Statistics, women earned 34 percent of bachelor's degrees in computer science in 1981-82 and 8 percent of the electrical engineering degrees with a computer-science component.

HP has been recruiting heavily in these fields, which accounted for 28 percent of its U.S. college hires in 1984, and is getting far more than its share of available women graduates. And HP is hiring women professionals across the board in increasing numbers—they made up 29 percent of all undergraduate college hires last year.

Women chemists, for instance, are well represented in the Analytical Group's division and field marketing. Ginny Curtis, a former college chemistry teacher who began selling for HP in 1983, topped all Analytical field reps in the world last year with $3 million in sales.

It's just a matter of time, assuming that these women stay with the company, that they'll be competing for managerial jobs in large numbers.
HP annually makes Savvy's list of best firms for women. HP's Sherry Holt, left.

In the ranks of HP's professional employees in the U.S.—the pool from which managers typically rise—the number of women and the percentage they represent are steadily increasing.

agenda. On college recruiting trips, half of Nancy's interviews may be with women in computer-related studies.

She thinks of herself as a marketing manager, not a woman marketing manager. The advantages and disadvantages of her gender are "a wash—you have to be able to do the job."

What has surprised her about her role as a leader is how much attention people pay to even her casual remarks. "In some respects it's nice," she admits. "At lower levels, you wish you had more authority. But when you're at a place where everything you say, no matter how casually, is taken as marching orders, you sometimes wish you could turn it off—but you can't."

Nancy's counterpart at the Böblingen Computer Division is Brigitte Almaschi, who has served as marketing manager for several divisions in Germany since 1979. She was one of only two women in electrical engineering in her college class and is still a trailblazer as a career woman in Western Europe.

In the spotlight

She has found the attention that she gets in atypical roles to be both pleasant and unpleasant. "I learned that it's an advantage," she says, "but I sometimes have a hard time keeping an audience quiet, but when I get up, everyone waits for me to make a mistake. They really hear what I'm saying."

In Scandinavian countries, where it is common for women to work outside the home, Denmark, Sweden and Norway have passed equality laws, and Finland is about to follow suit. At HP's subsidiary in Finland, two of the five members of the local management team are women. Eva Leinonen, who joined HP in 1965 after receiving her B.S. in economics, is now the administration manager responsible for financial, admin, legal and commercial functions. Hannele Salminen is the personnel manager.

Laura Cory, operations manager for the Semiconductor Productivity Network Operation in San Jose, California, thinks it's just a function of time until a critical mass of women with both technical and business degrees is built up at HP and the appointment of women managers will become routine.

Right now, however, she realizes how few women she has as role models within the company. "I'm glad I can have lunch with Pat Castro to talk things over," she says.

Laura guesses that it may have been easier for her to become a line manager three years after joining HP because she came in as a manager—she was director of systems consulting for the Software Management Corporation when HP acquired the Santa Clara, California, software firm. After getting her M.B.A. at the Stanford Business School, she spent six years consulting with semiconductor manufacturers and working with high-tech start-ups.

She feels neutral about whether it has helped or hurt her career to be a woman. "But there are times when you need to keep your sense of humor," she says. "She says it helps when colleagues in Japan, struggling with the unfamiliar, treat her like a man and respectfully call her "sir."

Gaylan Larson, Manufacturing Productivity Division general manager to whom Laura reports, has his own theory on the success of women project managers. He's observed top performers heading both hardware and software projects at two divisions.

"In an effort to be more objective, we're now choosing people for first management jobs based on their ability to get something done rather than such criteria as presentation skills or technical knowledge. It's this quality of leadership that is just what's needed to progress in management."

Having it all

Carolyn Tieknor, an R&D manager at the Information Networks Division with responsibility for IBM connectivity, knew Laura Cory when both were getting their M.B.A.'s at Stanford. Laura was the first Stanford M.B.A. student to have a baby while in school, and Carolyn was the second.

A computer systems manager at the Bank of America for several years before joining HP in 1977, Carolyn was the first to apply financial analysis to hardware planning for HP's corporate computer center. As she took on more and more functions, she became a manager.

Her lab is charged with ensuring that HP 1000 and 3000 computer systems and the next-generation HP family of computers have data communications links with IBM machines. As an R&D manager, she spends part of her time working with other divisions.

The other woman R&D manager is Sara Dickson of the Advanced Manufacturing Systems Operation at the Data Systems Division. The new manu-
Manufacturing manager for the Santa Clara Technology Center is Irene Peceno. In the personnel area, Polly Johnson is California regional personnel manager for the Information Systems and Network sector.

**Payoff in visibility**

Irene Bever, who became Northwest Area general manager in the New York Sales Region last fall, thinks that being a woman has a payoff in visibility and access when selling. Perhaps it was reverse discrimination, but "it was much more difficult for a customer to refuse to see me," she recalls.

After joining HP in 1972, her division marketing tasks in Loveland led to increased contact with customers throughout North America and finally to a transfer to the field. She was first an applications engineer, then a desktop sales rep who won honors as "rookie of the year."

In 1979, Irene received her first managerial hat as a district manager for commercial computers based in the Englewood, Colorado, office. "It's the difference between doing it yourself and getting someone else to do it," she says. "You have to resist taking over." She became Rocky Mountain area sales manager two years later, then transferred to Bellevue, Washington, as area computer manager in 1983.

In her new position as area general manager, Irene oversees the integration of all computer and instrument activities for the five Pacific Northwest states and Alaska.

At the other corner of the U.S., Linda Jackson manages Southern Sales Region's Atlanta area applications engineering with 10 managers reporting directly to her. Both Irene and Linda credit Dennis McGinn, now marketing manager for the Information Networks and Peripherals groups, with encouraging their careers while he was a manager in their respective regions.

"I was uncertain whether I could handle technical sales and support without an electrical engineering background," says Linda, whose degrees are in math. "Dennis gave me the opportunity to join HP in 1976 in the Atlanta office. I learned basic programming and computer concepts in evening classes." Other managers saw to it that she received the financial background to prepare her for area management.

Mary Chin, U.S. field marketing manager in U.S. Field Operations, was the first woman to graduate in mechanical engineering from the Polytechnic Institute of Brooklyn in the school's 100-year history.

She deliberately charted her early career to cover the triumvirate of R&D, manufacturing and marketing. Just as many men do. "I think you learn a certain amount the first year on a job, then at a lesser rate after that," she says. She is now playing a major role in implementing last year's company reorganization in the field.

Says her boss, Vice President Jim Arthur, "Gender doesn't matter to me. We're looking for people at HP who can manage others and get things done." As the population of women in technical areas grows, he expects more women managers to rise to the top.

Often the continued learning is through formalized studies. Gail Hamilton, R&D project manager for the HP 64000 high-level software analysis instrumentation at the Logic Systems Division, will spend spring quarter at Stanford University. She's completing an M.S. degree in electrical engineering that she's been working on for five years through HP's Honors Co-op Program.

**Taking the reins**

Successful women managers, just like successful male managers, are willing to make decisive moves to further their careers.

Sherry Hoff's willingness to take a calculated career risk meant a move from district manager duties in Manhattan to managing HP sales, support and application activity for Motorola Israel. She's now back in New York as one of HP's first area marketing managers in the U.S.

Gloria Rennenger is now controller for the Peripherals Group after a series of division and group controllership roles. Earlier in her career she relocated to the San Francisco Bay Area so she could get her M.B.A. at night. "I've never been in a job where I felt stifled because I couldn't go on," she says.

Glenna Harding, who has just moved from a controllership to marketing manager at the Direct Marketing Division, wanted to be HP's first woman controller. She just made it; she and Gloria Rennenger were named controllers within two weeks of one another in 1980. Glenna believes that managing techniques are cross-functional. "You set objectives, point toward a goal and keep groups from stepping on each other's toes," she says.

Sue Bunton became the first woman HP personnel manager while working at the Avondale Division in 1969.

After leaving the company 10 years to raise a family and do community service work, Sue rejoined HP in the Englewood, Colorado, office where she is now area personnel manager.

She recalls the days before civil rights or equal opportunity legislation. "It's easier today," Sue says. "People won't make it unless they can deliver results. But now we don't have to go in asking for a chance to prove ourselves."

Talk to women at HP, including those
in management, and you'll hear certain refrains. One is the perception that while progress has been made, women are still locked out of the top councils of the company. Time is running out on the argument that women with the right credits haven't been around long enough to qualify for major slots. As one woman manager sees it, 'Women have to move more quickly through the lower ranks to have the energy and drive to become general managers.'

**Healthy skepticism**

When it comes to choosing a team, old clubby male attitudes often seem to change slowly despite support in principle for moving women up. The adage that 'A woman has to work twice as hard to be considered half as good' is mentioned often by women, and believed. Said one woman manager, 'Women are accepted in management now the way they were accepted in engineering schools in the '60s.'

Such healthy skepticism is good, in the view of Dr. Pam Shockley of the University of Colorado at Colorado Springs, who consults frequently with HP. 'Skepticism isn't a negative—it says, 'I'm watchful.' If no female at HP even cared about promotion, you wouldn't have the cream of the crop that you do.'

She first worked with the Loveland Instrument Division (LID) in 1980 to find out how women felt about their jobs and future in the company. Then she gave a career course for women on how to get through the business maze, and co-ed courses on constructive confrontation and working together.

Since then a series of forums open to everyone on career development have drawn some standing-room-only crowds, covering topics such as the two-career family.

Pam Shockley has since done similar work with the Lake Stevens Instrument Division and several other Colorado divisions, and surveyed HP women managers for one group.

"Being a statistical minority creates stress for women managers," she says. "Women aiming at management want the feedback and constructive coaching that men give other men but find hard to offer women. Women feel they are evaluated differently than men and must always be on guard how they present themselves professionally."

"Historically, sales has been a good place for women," she adds. "When women have their results measured, not judged subjectively, their contributions become clear."

"I'd suggest that any entity find out about issues from a woman's point of view," says Vice President Bill Parzychok, who was general manager of LID when the program began. "Men need to change their understanding of issues women regard as important. "We're changing at HP, but we still have a way to go."

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**A woman's work**

When Shirley Hufstedler was elected to the Hewlett-Packard board of directors in 1982, she became the first and only woman in that role.

Her distinguished career had already included serving as the sole woman judge among 120 Superior Court judges in California, the only woman in the United States on a federal appellate court, and the first Secretary of Education and a Cabinet officer in the Carter Administration.

She is the only lawyer on the HP board. Due to her legal training, she is held to a higher standard than other directors on issues with legal aspects. Her committee assignment is employee benefits.

She has seen ever greater acceptance of women lawyers since she was one of only two women graduated in the Stanford Law School class in 1949. (The top student in that class was Seth Hufstedler, her husband.) "When I entered the legal profession, lawyers were gendered male," she says. "That typecasting is almost gone today."

Women could move more rapidly into law in the 1970s than into a technical field such as electrical engineering, she points out. "It wasn't necessary to decide back in high school to take the right math courses." She sees computer science as so new that "it didn't have a chance to be gendered before women were very much a part of it."

While aware of the roadblocks that women still face in many traditionally masculine fields, she believes "you can think your way around them." She says, using an old football analogy, "if you go through the center of the line, you just get a bloody head."

One of Shirley Hufstedler's early requests after going on the HP board was to meet with small groups of women who work for the company in the Bay Area.

She talked to a project manager and her team, to other women engineering managers, to women in personnel and women lawyers.

"I wanted to find out what they're doing in their jobs, how they see themselves and the opportunities they have to grow and expand," she says. "What was the conspicuous down side? If they have families, how does it all work out? A wife and mother herself, she is sympathetic with the trade-offs that women have to make in their lives."

"As a director, I'm concerned for the health and vitality of the company," she says. "For that reason, it's important that women who have the go power should indeed get to go."
What has more than 97,000 parts and fills up a freight plane every week night? HP's Corporate Parts Center . . . the place with

The stock shot 'round the world

"Welcome to the world's largest hardware store," smiles Kevin Wallace. Standing in the stock room of the Corporate Parts Center (CPC) in Mountain View, California, Kevin, CPC's manager of distribution development, is dwarfed by 15-foot-high shelves crowded with countless HP parts and supplies.

Actually, there are more than 97,000 parts quartered there, give or take a few resistors, cables and P.C. boards.

It's no surprise that the parts are there: what's amazing is how they get shipped to virtually anywhere in the world with lightning speed.

Case in point: In Cape Town, South Africa, an HP customer engineer is troubleshooting a customer's computer which has crashed. He finds the cause—a part which usually doesn't fail and which he doesn't keep in his kit. He checks with his office, but no luck. The part isn't in inventory.

Phone calls to Johannesburg and to Parts Center Europe are to no avail. So the CE dials CPC knowing full well it's nearly midnight in California.

A material handler answers the ringing red phone in the warehouse and grabs a special "hot line" book nearby. The South African CE anxiously asks, "Does CPC have the part?"

The material handler checks the parts list on his computer terminal and quickly answers that the part is indeed in stock. The part is on an international flight by morning. Two plane changes and 37 hours later, it arrives in Cape Town.

Business as usual

The CE picks up the part at the airport late Saturday night, works until 2 a.m. to install it, and the system is up and running in time for the customer to open for business as usual Monday morning.

It doesn't always work that smoothly, of course, but in CPC's 30 years in business, HP's hardware store has built an enviable reputation.

Consider these typical statistics:

- More than 90 percent of all parts requested are in stock.
- 90 percent of all orders for U.S. customers are shipped within 24 hours.
- 5,000 line items are shipped daily.
- 1,200 packages are shipped daily.

We've increased productivity and efficiency a lot," says General Manager Harold Kramer, who has seen CPC grow from 125 to 430 employees during the last 12 years. "The one goal we haven't reached yet is to ship 70 percent of our export orders within four days. But we're getting close: We're now at 67 percent and climbing."

Harold credits this improvement to two factors: WITS, the Worldwide Inventory Tracking System, and the Kelly Lee, a Federal Express plane assigned to HP.

"WITS works wonders when there's only one widget somewhere in HP and it's needed right away by a customer," explains Harold. "The computerized inventory system tells us which distribution center has it."

The computer age has done other wondrous things for CPC. Today, six HP 3000s and four HP 1000 computer systems are the core of the hardware store's business.

"A lot of tasks are untouched by human hands," says Kevin Wallace. "More than half of all the parts orders transmitted to HP divisions are automatically generated by computer:"
orders are routed through the warehouse via bar-coded move tickets and machine-readable documents. Even the forklifts used to pick parts off high shelves are now controlled by a radio signal coming from an antenna embedded in the warehouse floor.

"To ship our orders, we use an assortment of carriers, but Federal Express is plainly the largest," says Greg Stein, CPC traffic manager. Last year CPC shipped 71,136 orders at a cost of $1.3 million. About $200,000 of that went to Federal Express.

**Controlled pandemonium**

The hours between 4 p.m. and 6 p.m. are described affectionately as "controlled pandemonium" by most people at CPC. That's when everyone at the warehouse starts pulling, consolidating and putting domestic orders on trucks going to Oakland (California) Airport. The Kelly Lee leaves Oakland at 7:40 p.m. and is the last plane into Memphis, Tennessee, the hub of Federal Express' business.

As soon as HP's flight arrives, the Federal Express people load its cargo into other planes. The planes then fan out to the cities where HP's major domestic sales offices are located.

"We get good cooperation from CPC," says John Neff, HP customer engineer in the Phoenix, Arizona, sales office. "Sometimes it seems that the part you need is the one they don't have, but for the most part, their service is good." Phoenix parts coordinator Marie English agrees. "The people at CPC are good to deal with. Only occasionally do I get frustrated by how long it takes to get my parts."

The problem appears to be well on its way to resolution. At the crux is a new warehouse management system that went on line early in 1985. Jim Scott, CPC's customer support manager, says software and hardware glitches are fast disappearing, and the new system should soon provide better service.

"During our transition to the new system, we got great cooperation from other divisions. They loaned us people to help ship our backlog. Everyone worked several weekends," he adds.

CPC's efficiency is directly related to the efficiency of the HP divisions that supply it with parts, says Harold Kramer. About 80 percent of all the parts stocked at CPC come from divisions. CPC buys the remainder directly from outside vendors.

While parts are certainly the heart of CPC, its employees perform two special functions for HP. One is parts identification, and the other is maintenance of HP's parts price list.

Parts ID has nine technical advisors who've been with the company 22 years on the average. Why so much longevity?

Manager Gene Baisch explains that the department's charter is to track down any part ever manufactured or put into an HP product. This requires a knowledge of now-obsolete products.

HP is committed to support any obsolete product for a minimum of five years after the last one is shipped. Even after that time, many parts—or acceptable replacements—will be supplied.

CPC's other function is pricing. The official parts price list is maintained by a department of nine headed by Matt Swett. "Twice a year we review the prices on all the parts that the company sells. The list is 300,000 parts long."

Matt estimates his department sends out 5,000 microfiche copies of HP's parts price list every month to various HP divisions and sales offices.

Much like HP itself, the company's parts business splits every time it is advantageous to do so. The first amoeba-like break came in 1964, when half the parts stock was shipped to Rockaway, New Jersey, which became known as the Eastern Service Center (ESC). CPC was then the Western Service Center. ESC is now long gone, and the only HP parts depot in the Eastern U.S. is the Medical Supplies Center in Andover, Massachusetts.

There is now a parts center in Europe as well. Established in 1978 in Böblingen, Germany, Parts Center Europe (PCE) is about half as large as CPC and is CPC's largest "customer." CPC ships 18 percent of its orders to PCE.

Other parts centers are in Roseville, California; Wimereux, U.K.; Toronto, Canada; and Grenoble, France.

"We like to think of CPC as helping give HP a competitive edge," concludes Kevin Wallace. "Customers of some other companies like DEC or Tektronix can't get immediate help from their parts centers. But an HP customer can call CPC directly in critical after-hour situations, and we'll respond. "It's one more way to ensure customer satisfaction."
PRIDE IN THEIR WORK

The wife-and-husband team of Anne Pusey and Craig Packer stalk 500-pound African lions. Instead of packing guns, however, the two University of Minnesota professors carry the PORTABLE from Hewlett-Packard.

They’re studying how lions communicate by roaring, and why the social cats live in prides or groups of three to 25.

The lions live in the Serengeti National Park in East Africa. As the research institute is 200 miles from the nearest electrical outlet, the battery-powered PORTABLE suits the Packers’ needs.

“We’re preparing a data base of survey records on 1,400 lions.” Craig says. “We also use the built-in word processing to write reports for the Tanzanian wildlife authorities.

“Thanks for the perfect Serengeti computer!”

SHOWING OUR MEDAL

Though Hewlett-Packard was the only American-based company represented at the Czechoslovak Socialist Republic’s (CSSR) largest fair in 1984, HP walked away with the gold medal for the new HP 5890A gas chromatograph.

The chromatograph, which is manufactured in Waldbronn, West Germany, is used as an analytical tool for the determination of chemical compounds. The chromatograph is billed as a “team player” that fits in small and large labs.

The Mezinarodni Srojitecky Veletrh, or International Industrial Fair, was also the occasion for another landmark. The HP sales region in Vienna, Austria, which covers Eastern Europe, celebrated its 15th year in the Czech city of Brno.
SUNNY SITE UP

The people at ARCO Solar believe in making power while the sun shines.

Located about 70 miles from Bakersfield, California, ARCO's Carrisa Plains solar energy project—the largest such power facility in the world—can currently generate up to six megawatts of electricity daily. That means that on a sunny day, they're beaming up enough power to satisfy the needs of about 2,400 homes.

The job of tracking the sun to catch the maximum number of rays on the 160-acre site is no mean feat. Hewlett-Packard computers and instruments, however, have made the task more manageable.

There are 756 33-by-35-foot "solar trackers" connected to HP 2250 measurement and control processors at various locations. The processors provide data for HP 1000 computers regulating the tracking mechanism.

MAGNANIMOUS FORCE

When Diane Naylor is not at her desk in the Midwest Sales Region office in Rolling Meadows, Illinois, she's likely to be rolling around town in a patrol car.

Diane, a region asset accountant, is the first and only woman in the local Police Department Auxiliary. She serves fully uniformed, armed and prepared to act as a backup for her regular police force partner.

It's not easy work—if you can get it. Over an extended period, Diane has spent the equivalent of 30 full working days training for police work.

She was put through interviews and tests more arduous than that endured by her fellow auxiliaries. "They wanted to be sure they had the right woman for the job."

"I just think it's a great town to live in. I hope I'm giving back to the community what it has given me."

COMPUTER CHRONICLES

Most museums that deal with the history of commerce give little more than passing mention to the computer revolution.

The Computer Museum, founded by Digital Equipment Corporation, corrects that deficiency. Located in downtown Boston, the 55,000-square-foot facility houses a dynamic chronicle of information processing—from Napier's Bones, an early palm-sized calculator, to the silicon chip.

HP's Touchscreen Personal Computers figure prominently among the contemporary models displayed in the PC exhibit. One of the Touchscreens, connected to an HP plotter, will render a souvenir view from a nearby museum window of the Boston skyline.
New links in the chain of command

Some predictable as well as unexpected changes quickly dated 1984 organization charts by the end of last January. Three officers retired—Bob Boniface, executive vice president of administration (see page 15); Jean Chognard, vice president of patents and licenses; and John Blokker, vice president of the Components Group. Then Paul Ely, executive vice president of the Analytical, Components, Medical and Technology Sector, resigned to become president of Convergent Technologies.

Rather than simply replace those key people, the Executive Committee took the opportunity to realign various responsibilities and reporting relationships. Broadly speaking, those organizations and functions in the operations side of the business now report directly to Dean Morton, executive vice president and chief operating officer. Those who fulfill a more corporate role report directly to John Young, president and chief executive officer.

John pointed out the significance of these recent changes as well as the mid-1984 reorganization at a meeting with security analysts in Palo Alto on January 23. “Overall,” he said, “they’re aimed at sharpening our focus on strategic markets where we can excel. They should give us the ability to use our resources more effectively.”
John Young's assignment was a tough one: recommend ways for U.S. industry to meet growing competition from foreign companies, both in U.S. and international markets. But HP's president had a lot of good help. The 30-member President's Commission on Industrial Competitiveness which John chaired included leaders from industry, labor, government and academia.

The commission issued its final report: "Global Competition: The New Reality," in both two-volume and summary versions. It describes the work that should be done in both the public and private sectors to reverse a decline in the ability of American industry to compete in world markets. "Government cannot legislate success," says the report. "The responsibility for being competitive rests with the individual private firms."

The commission's 30 major recommendations include actions for both private industry and government.

Here's a partial list:

**INDUSTRY:**
- encouraging labor-management cooperation and strengthening employee incentives
- increasing attention to manufacturing technology and management
- raising investments in research and development, productive assets and employee development

**GOVERNMENT:**
- creating a Cabinet-level Department of Trade to coordinate currently fragmented trade-policy-making process
- creating a Cabinet-level Department of Science and Technology to focus federally funded, non-defense research and development
- reducing the federal deficit and restructuring the tax system to lower the cost of capital

John presented the commission's findings to President Ronald Reagan, Vice President George Bush and the Cabinet Council on Commerce and Trade in January.

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From left: former Secretary of the Interior William Clark, former director of the Council of Economic Advisers William Niskanen, John Young, President Ronald Reagan, Secretary of Commerce Malcolm Baldrige and Secretary of State George Shultz.
LOCAL COLOR
I enjoy reading Measure; however, the magazine seems to focus primarily on activities in the divisions and international offices. I think the magazine should also focus on activities in the regional sales offices and area offices.

Also, if Measure incorporated this type of information in its articles, then people like myself working in admin departments would not feel left out or unimportant.

I hope Measure will continue to provide employees with news not only about new products, but about the most valuable asset the company has: its people.

CECE JENKINS
Naperville

We couldn't agree more. We received similar comments from our survey of Measure readers (summarized on page 20). In the future, you'll be seeing more stories reflecting local interests in various locations. We will also try to maintain a balance with U.S. and international coverage.—Ed.

HEAVY CHEVY
I enjoyed your article, "A Product of the Fabulous Fifties," in the January-February issue. It was interesting to compare the 1957 corporate objectives with those of today.

I was curious, however, about why you used a 1956 Chevrolet BelAir four-door hardtop instead of a 1957.

My wife and I have a running debate as to which was Chevrolet's most classic year. To keep peace in the family, my wife has her own 1957 BelAir two-door hardtop, and I have my 1956 BelAir two-door hardtop.

It was quite a treat to see one of our favorite cars in Measure.

STAN JAFFE
Santa Rosa

Believe it or not, we knew it was a '56, but were trying to illustrate the "fabulous '50s," not a particular year. Sharp-eyed readers, including John Halthouser, also pointed out the year and model.

The selection of the '56 should not be construed as an editorial endorse-

TO THE DEFENSE
Hewlett-Packard had $32,925,000 in defense contracts between October 1, 1982, and September 30, 1983, according to U.S. Defense Department figures published in the San Jose Mercury News. Hewlett-Packard was the 16th largest defense contractor in Santa Clara and San Mateo counties.

Is there anything employees can do to limit the amount of business HP does with the Defense Department?

GIGI BABCOCK
Pal Alto

U.S. federal contracts are important to Hewlett-Packard, but make up a relatively small part of our business. The total government volume is in good balance with the predominant market we serve: the private sector.

Doing business with the U.S. government is a normal thing for an American-based company to do. And like most corporate citizens, HP likes to see the government get a good value, whether it's for defense or social services.

Federal business makes an appropriate and welcome contribution to Hewlett-Packard's overall success.

CARL COTTRELL
Director, Federal Marketing
Palo Alto

WRITE ON!
Send us your thoughts.
If your letter is selected for publication, you'll receive a Measure T-shirt. (Be sure to send us a return mailing address and indicate your T-shirt size—small, medium, large or extra-large.)

Address letters via company mail to Editor, Measure, Public Relations, Building 20BR, Palo Alto. Via regular postal service, the address is Measure, Hewlett-Packard Company 20BR, PO Box 10301, Palo Alto, CA 94303-0890. Limit your letter to 200 words. Please sign your letter and give your location. Names will be withheld on request.
Working the other side of the clock
While many HP people in the U.S. are heading home from work, about 4,500 are already well into the swing of the second shift. And while most HP people are hitting their pillows, more than 860 employees are just hitting their stride.

The relative quiet and solitude of the night shift create an intensity that seems to imbue even the routine with great importance.

In the metal fab shop in the Stanford Park Division, there are three people and a supervisor in the die casting area on the graveyard shift. The environment is gritty and no nonsense. The work they do is critical, and at times, strikingly beautiful.

Metal worker Clarence Graham feeds ingots into a glowing furnace like he's offering aluminum sacrifices to a god-like industrial Moloch. At an average temperature of 1325°F, the ingots take only one to two minutes to form a silver-colored, molten mass.

Down the hall, machine operator Miguel Serrato runs a 630-ton Wotan injection machine. It rams the melted metal from the furnace into a cavity at about 700 feet per minute, landing with a shuddering thud.

Dennis Mulligan works late so he can be with his daughter. "It cuts the time she spends in day-care centers," he says.

Unseen by an army of the night toiling inside the Integrated Circuits (IC) Lab, the full moon casts its magic glow.
the other side of the clock

Regardless of the work they do, HP people on swing and graveyard shifts tend to develop a solid sense of teamwork. "The group is almost like father, mother, brother, sister," Clarence says.

Ruth Esguerra, fab supervisor at the Integrated Circuit Process Lab in Palo Alto, says that people on swing rely on each other. "We have to," she says, "because we cover more territory than the day shift."

Many evening and night workers take the off hours because they’re just plain ambitious. A high proportion take classes at local colleges or HP courses on site during the day.

Jim Reifers, a journeyman machinist at the Santa Rosa site, says, "I miss out on a few things like parties that the daytimers experience, but the extra money is nothing to sneeze at." Workers on the swing shift get 10 percent more salary than day shift, or two days off per month. The night shift gets an extra 15 percent pay, or three days off.

Others look at the swing and night shifts as a way to get a foot in the door. Bruce Galbraith, for example, is a computer operator in Santa Rosa who took the swing shift so he could get into electronic data processing.

"My wife works days," Bruce says, "She comes up to visit me for my lunch and her dinner. That’s about the only time I see her."

The second and third shifts can be hard on families. On the other hand, some employees prefer the hours because it lets them spend more time with loved ones. Bruce’s colleague, computer operator Dennis Mulligan, works late so he can be with his 2-year-old daughter in the morning.

Working on the other side of the clock isn’t for everybody. Production supervisor Nancy Alvarez, who works in manufacturing at the Santa Rosa site, says that it’s easy to tell when new hires aren’t going to make it. "They’re unhappy, tardy for work and always complaining. The majority, though, adjust really well.

"I wouldn’t be here if I didn’t believe that," smiles Nancy, who has been working second shift for seven years. "You might say I’m die-hard swing."

The die not cast: Clarence Graham says he learns a lot because he performs a wider variety of tasks than his daytime counterpart in the metal fab shop.

Spotlighted at their benches, Opal Crew (left) and Tina Harris focus on their jobs. Says supervisor Nancy Alvarez, "You change your work and lifestyle on night shifts."
Clockwise from left, Jeanette Brimmer, Dennis Gomez, Rita Broeder and Sue DeVito form a tight-knit team at the IC Lab.

A hearing dog serves as deaf swing worker Terrie Koiz’ “ears” at Loveland Instrument Division.

Custodian Carlos Hillard practices his solitary trade at the Personal Office Computer Division.
How does **MEASURE** measure up?

**Hundreds of employees share their opinions of HP's magazine.**

From time to time *Measure* has asked its readers if they think the magazine is doing its job. Last fall we asked a random sample of HP employees throughout the U.S. to complete a 38-question survey. The rate of response was 64 percent: 1,875 survey forms were returned from 2,785 sent out, with 961 employees adding comments and suggestions. We've included some of those comments in the box on this page.

We asked readers to tell us if they receive the magazine, how much of the publication they read, and whether they pass it along to others. We wanted to know their interest in particular topics and their opinions on the appearance and readability of *Measure*.

The results? More than 92 percent of our readers told us that they regularly receive the magazine. (Most who didn't have been with the company less than a year.) Three-fourths of our readers said they read at least some of the articles in each issue. Nearly half of the respondents pass *Measure* along to others.

Our readers said they had the most interest in reading about new products, research and development activities and the ways customers use HP products. Also near the top of the list were stories about changes in HP's organization and public issues affecting the company, and the regular message from HP's president, John Young.

Readers gave us higher marks for the look of the magazine than they did in our last study, conducted in 1978. Nearly 30 percent called *Measure*'s appearance "excellent," compared to 19 percent last time. Almost half of our readers rated the magazine's readability as "above average" or "excellent."

Will we be changing in the future? You can bet on it. We've got plans on the drawing board now to improve our product, reflecting your interests and attitudes. You'll be seeing those changes in the next few issues. M

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**WHAT OUR READERS TOLD US**

"Increase stories on new product research and HP products in use."

"Add more stories about HP people."

"I'd like to see more marketing information."

"A good portion of the articles are at times too technical."

"Present more information about companywide performance with more detail than quarterly reports."

"Better photography."

"Stories about HP's future strategic plans."

"We sometimes refer to you as Pravda since you issue the party line. Let's be more frank in the spirit of continual improvement of HP."

"Provide more facts about our competitors and how we rate in the marketplace to curtail HP's growing complacency."

"I'd like to see a bigger issue. When I'm done reading it, I always feel there should be more."

"Measure is a waste of money."

"I think it's a fine publication—far superior to the other corporation newsletters I've seen."

"Add a little color. Black and white can get boring. Even the daily newspaper is in color."

"Allow some negative statements about HP and HP products to appear. It could help your credibility substantially."
Boniface retires after 42 years

Perhaps no one better represents HP's promotion-from-within policy than Bob Boniface, who retired as executive vice president on February 1. Bob started his career with a part-time high-school job as an office boy sweeping floors and finished in a top spot on HP's management team.

Bob joined Neely Enterprises (a sales firm representing several electronics manufacturers, including HP) in 1942, and continued working part time while attending college. He was drafted in the Army as a private in 1943. After a three-and-one-half-year stint in the Pacific Theater, Bob was released as a captain in the infantry, decorated with the Silver Star, two Bronze Stars and the Purple Heart. He rejoined Neely and was promoted to business manager of the company in 1948. He served again as a captain in the Army during the Korean War.

In 1952 Bob was named Neely's vice president and general manager, and he continued in the top spot when HP acquired the firm in 1963, renaming it the Neely Sales Region. Seven years later Bob was elected HP's vice president of marketing.

Bob was appointed vice president for corporate administration and elected to the company's board of directors in 1974. A year later he was named executive vice president.

Bob has always led an active life outside the board room, too, enjoying golf, tennis and horseback riding. "My wife always loved horses, and I bought her one so I could play golf without a guilty conscience. But then she turned around and gave me a horse, which pretty well ended my golfing." Equestrianism became a lifelong habit.

Before long, Bob and his family were in the business of breeding and racing quarter horses, including a world champion two year old named Turf's Best. Bob is currently president of the Horsemens Quarter Horse Racing Association and a director of the American Quarter Horse Association.

At Bob's breeding and training farm in southern California, his ranch manager lured him into yet another outdoor sport: steer roping. "In team roping I'm the heeler," says Bob. "Someone else goes for the steer's head or horns, and I rope the hind legs."

Up against professional rodeo cowboys, he says, "I've won some events." They'd better hope Bob doesn't turn this hobby into a career, now that he's retired.
JOHN YOUNG

HP's president describes his new strategic issues for the 1985 fiscal year.

Since we just returned from our annual management meeting in Silverado, California, I'd like to highlight some of the challenges we discussed during the session, and briefly comment on the most significant changes in some of our strategic issues this year (see box next page for complete list of issues). Then I'd like to give you my thoughts on a subject that is by no means new, but which is of overriding importance—our profit objective.

Issue Number Two: We're basically on schedule in meeting our goal of reducing product field failure rates to one tenth their 1980 levels by the end of this decade. Now we must find ways to translate what we've learned about total quality control in manufacturing to other areas of our business.

One activity where we urgently need to devote more resources and develop better tools is software. It is an increasingly important part of the value we supply customers, as well as a growing portion of our internal costs. I want us to change our expectations on what quality software is and how we can better provide it.

Issue Number Four: Since our Monterey marketing seminar last August, the business plans I read show a growing appreciation of the importance of being more thoughtful about marketing plans. I'd like our new emphasis on marketing to include not just strategies, but everything we provide to our customers, including manuals.

There have been some dramatic improvements in manual quality in the past year, but we've still got far to go in supplying helpful materials that customers can easily read. I asked all the general managers at Silverado to get personally involved in the creation of one manual this year, and I hope the experience engenders a new appreciation and support for this part of our marketing focus.

Issue Number Five: We begin 1985 with a new organization ideally posi-
tioned to provide integrated solutions to customers. I've had a chance to talk to people in the field, and I'm pleased with the way things are falling into place. Yet a lot remains to be done. We are now working on business plans that focus what we can afford to do on achieving goals in a timely manner.

We also need to look at performance and find ways to match them with the business goals of our different organizational units. For example, the asset bases for our business units are no longer the same throughout the company. Software and hardware have some very different characteristics. In turn, these differences affect appropriate sales margins. Bill Terry, executive vice president, will head up a major examination of this issue during the coming year.

Issue Number Seven: I've deliberately substituted the term "workstations" for "personal computers" in this strategic goal. I've done so because some people have been confusing success in one specific product or one particular distribution channel with the success of our overall business goals. Customer applications that have been done on minicomputers, terminals and desktop computers will now be done on workstations. We need products that provide a logical growth path for existing customers. Incidentally, we have some outstanding products coming up in 1985 that will meet this need very well.

Issue Number Nine: This past year, I've compared notes with industry leaders on the issues that affect the success of their firms. I am increasingly struck by how farsighted Bill and Dave were when they established the basic working philosophy of this company. Our approach to employee relations, our self-discipline in asset management, our commitment to quality—all have earned us an enviable reputation. That high regard adds enormously to employee motivation, and it is certainly helpful in the marketplace. When we approach customers and say we want to be their business partner, our credibility adds greatly to the chances of forg-
First Quarter FY85

Hewlett-Packard Company reported a 17 percent increase in net earnings and a 20 percent increase in net revenue for the first quarter of its 1985 fiscal year ended January 31. Previously the company reported all income received from equipment sales and service revenue under the single term “sales;” from now on the overall term “net revenue” will be substituted and each category will be reported separately in the statement of earnings.

Net earnings totaled $116 million, equal to 45 cents per share on approximately 256 million shares of common stock outstanding compared with net earnings of $99 million or 39 cents per share during the first quarter of 1984. (The latter excludes a one-time benefit of $118 million or 46 cents per share due to a tax law change related to HP’s Domestic International Sales Corporation.) Revenue totaled $1.531 billion (of which $1.234 billion was equipment sales and $297 billion was service revenue), up from $1.278 billion for the same quarter in FY84. Incoming orders for the quarter were $1.692 billion, an increase of 15 percent over orders of $1.477 billion in the year ago quarter.

Chart Changes

Vice President Lew Platt heads the new Manufacturing, Medical and Analytical Systems sector. It includes the Manufacturing Systems Group, which Platt continues to head; the Analytical and Medical Groups, and Corporate Manufacturing. The Components Group and Corporate Engineering now report to Executive VP Bill Terry as part of a renamed Components, Measurement and Design Systems sector. HP Laboratories now reports to John Young.

With the retirement of Executive VP Bob Boniface (page 21), Jack Brigham has been named VP – administration and general counsel, reporting to John Young. Brigham oversees the corporate departments of government affairs, public relations, general legal, patents and licenses, grants, and aviation. Also reporting to Young is VP Bob Wayne, controller and chief financial officer. Corporate personnel and corporate development departments now report to Dean Morton.

The Vancouver Division and the San Diego Division became part of the Peripherals Group in December.

New Entities

HP and the Spanish Government signed an agreement February 11 for a new Barcelona Peripherals Operation under operations manager Wolf Michel to start manufacturing digital plotters this spring. The Semiconductor Productivity Network Operation under Laura Cory as operations manager has been formed within the Manufacturing Productivity Division. In the Design Systems Group, the DSG Technical Software Center (Art Darbie, general manager) in the Analytical Products Group, the Analytical Supplies Operation (Bob Kriner, operations manager) at the Greeley Division, the Personal Mass-Storage Mechanisms Operation (Rex James, operations manager) at the Gersm Division, the Ink-Jet Components Operation (Tom Haswell, operations manager) in Corvallis, Oregon.

Noteworthy

HP came in fifth in the 1984 Fortune survey of corporate reputations of 250 large U.S. companies. HP will grant selected U.S. universities at least $50 million of advanced engineering workstations and computer software over three years for the development and application of artificial-intelligence technology. First recipient is the Massachusetts Institute of Technology. ...HP has made a five-year, $55-million-dollar grant of cash and equipment toward a new Harvard Medical School program which will restructure the school’s general medical education.

New Hats

John Shanahan to GM of the Microwave Technology Division. Duane Hartley to GM of the Signal Analysis Division. Pete Hamilton to head Fort Collins Engineering Operation. Rick Justice to manage the worldwide major accounts program in Major Accounts Marketing. Bill MacAllister to director of patents and licenses at Corporate. Bob Board is the new president of HP Genench. The joint venture of HP and Genentech, Inc. introduced its first product February 5.

In Corporate Marketing, Mike Leavell is worldwide customer support manager. The Computer Supplies Operation becomes the Direct Marketing Division under GM Will Carleton, with the Instrument Products Operation reporting into that division. Lloyd Taylor is Corporate Marketing Operations manager with a broadened charter for the development and worldwide implementation of corporate marketing policy.

Moved Lately? Change of Address Should be Reported to Your Personnel Department.