MEASURE

For the people of Hewlett-Packard
July-August 1987

Where in the world are we?

THE INSIDE STORIES

page 12

page 15

page 22

MEASURE

Editor: Jean Burke Hoppe

Art director: Annette Yatovitz

Contributors: Karen Gervais

Associate editor: Betty Gerard

Circulation: Kris Larson

Measure is published six times a year for employees and associates of Hewlett-Packard Company. Produced by Corporate Public Relations, Internal Communication Department, Brad Whitworth, Manager. Address correspondence to *Measure*, Hewlett-Packard Company 20BR, PO Box 10301, Palo Alto, California, 94303-0890 USA (415) 857-4144. Report changes of address to your local personnel department.

Hewlett-Packard Company is an international manufacturer of measurement and computation products and systems used in industry, business, engineering, science, medicine and education. HP employs more than 82,000 people worldwide.

A computer network is made of plugs, cables, switches, software and...

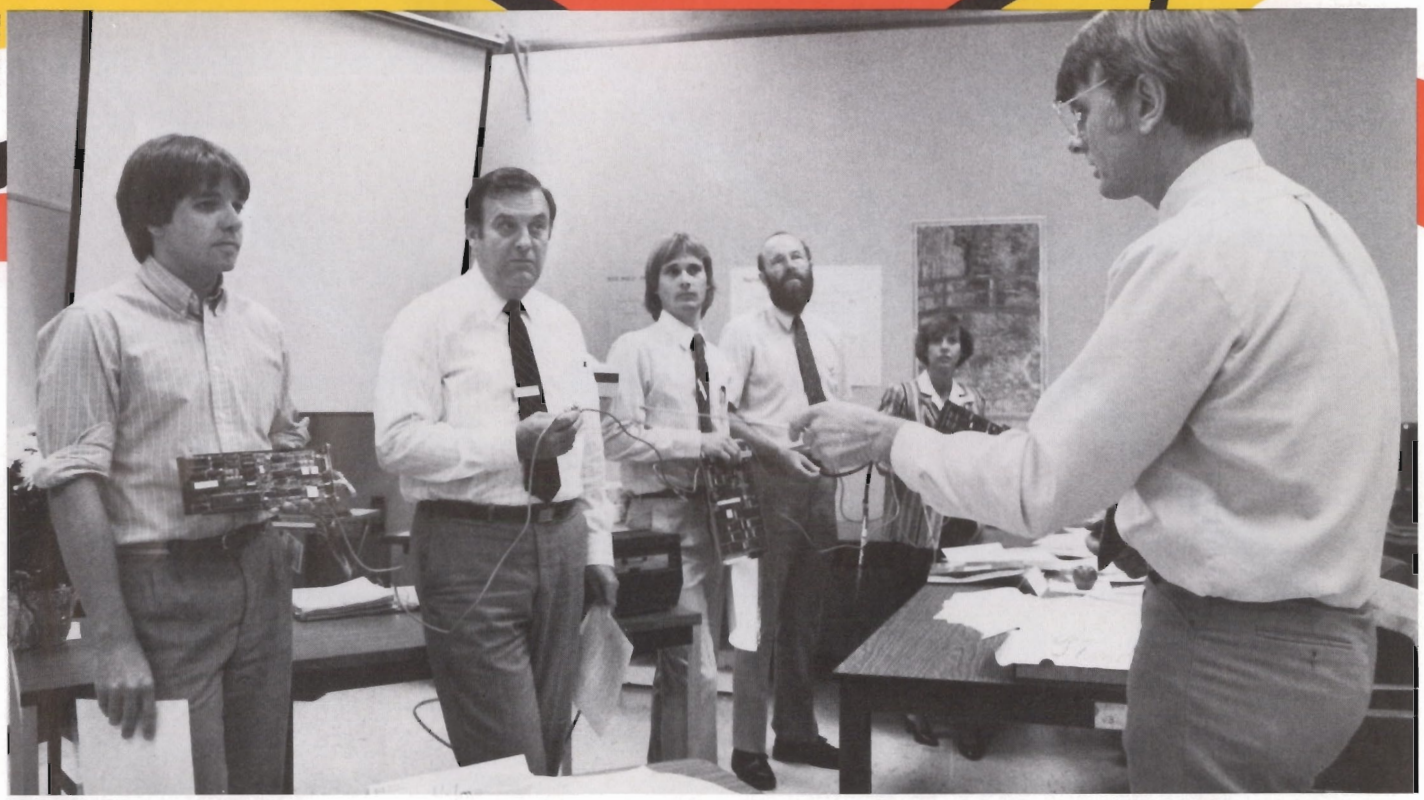
All the right connections

Sometimes Bob LaFollette of the Information Networks Group lies awake at night thinking about new ways that he can make networking come alive for HP's sales force. So far he's had his best training results with role-playing—asking sales reps in his classes to pretend they're computers in a network and "connecting" them with actual cables. He uses playing cards to represent the packet-switching of segmented messages that are the heart of HP's important new private X.25 network offering.

Getting comfortable with basic networking terminology is a must for sales reps, who are on the front line in Hewlett-Packard's drive to be recognized as *the* quality multivendor computer company.

Wim Roelandts, general manager of the Information Networks Group (ING), is sympathetic. "Networking is probably the most complex technology in computer science," he says. But since networking has no dedicated sales force of its own, everyone in the field needs to be familiar with its basic concepts to talk with customers. These days the first question in a sales call may be, "What can you connect with?"

Backing up the sales reps in the field are network con-



SHARON HALL

Under the tutelage of ING's Bob LaFollette, Analytical data systems product managers act the parts of computers in a local-area network. Holding scripts and communications interfaces are Dan Holmes, Ernie Bonelli, Doug Agnew, Roger Leibrand and Lynn Jerke.

sultants, a new role created two years ago by ING and the Worldwide Customer Support organization at the recommendation of a task force. Typically, these in-house experts have had many years of experience in data communication as systems engineers. Now they consult with customers on any or all stages connected with a network: needs analysis, network design and systemization.

This spring ING raised the stakes in HP's bid to overtake major competition —IBM and DEC—in the networking game. For a company that has been pretty quiet about its network capabilities, HP has initiated a string of high-visibility marketing events.

ING sorted its long list of individual network-related products (many introduced last year) into solutions to fill a customer's specific needs: networks for sales and service, the business office, engineering and manufacturing.

Overlaying these four specialized networks is a fifth solution with broader geographic reach: the companywide network. It's a new private X.25 network that allows companies to own and manage their own wide-area network (WAN) at considerable savings. HP is the first computer company to offer such a state-of-the-art system. It is based on X.25 switching nodes from original equipment manufacturer M/A-COM Telecommunications and controlled by an HP 9000 computer.

It's not a coincidence that HP's own worldwide private X.25 network is nearing completion this fall. The company's assessment of its own needs and the best way to satisfy them led to interaction with M/A-COM as first a customer and later a partner. A steady stream of potential customers visits the showcase installation at Corporate for a demonstration by Doug Avery and his data networks team. Such companies as 3M and Ford were early buyers.

HP's breadth in support is what clinches sales, according to Debby Brown, ING manager in charge of the marketing activity in the US for Grenoble Networks Division (GND) products. "It's a big advantage that we can really provide support with our own people worldwide," she says.

ING was happily surprised to discover how well its array of products fit together. "We might have the most complete network offering on the market today," says Bernard Guidon, ING marketing manager. A strong added plus is the company's worldwide leadership in protocol analysis—HP is the only provider of protocol analyzers for both wide-area and local-area networks (LANs).

The company has turned to some outside vendors to fill in a few gaps, such as broadband-to-baseband conversion, which moves work-group data into a companywide network.

As part of the introduction, the different phases of HP's network consulting can now be contracted for separately. Also new is HP SiteWire, HP's wiring plan built on AT&T's Premises Distribution System (PDS). This allows workstations in an office to be connected to a LAN through existing telephone wire.

At briefing sessions for outside consultants and the press, Hewlett-Packard made a point of its commitment to industry standards that will allow computer systems from many vendors to work together.

Attendees at HP's networking events in the US and Europe were impressed. The point was not lost on them that IBM and DEC are primarily focused on expanding their own proprietary networks (IBM with SNA and DEC with DECnet).

"HP appears to be coming at networking from a fresh perspective," said Vince Barrett of the Gartner Group. "Instead of trying to reinvent the wheel with a new architecture, their approach is systems integration, which will be more effective in the long run."

HP formed a separate group for networking in 1983. Wim Roelandts, who has a background in European support and division management, provides an

international perspective. Europe is several years ahead of the US in pressing for greater connectivity among computer manufacturers.

"We made a decision to change our strategy and design out our proprietary networks in favor of industry-standard networks," Wim says. AdvanceNet, the umbrella term for the company's networking efforts, was redefined.

It was a bold decision. At that time the Open System Interconnection (OSI) reference model for network architecture existed only on paper.

And HP had pioneered distributed networking with the HP 1000 in 1973 and the HP 3000 in 1977, using its proprietary DSN protocol as the "handshake" necessary between computers. The company has installed more than 40,000 computer nodes in networked configurations in the years since then. While continuing to support DSN where installed, HP has now moved toward the still-evolving OSI, complemented by other de-facto standards.

Since the company's customers also use IBM equipment (mainly as mainframes), HP also offers a complete set of products to allow interconnection with IBM's 26,000 SNA networks.

HP's traditional standards-setting activity has now been stepped up in the networking area. ING's Don Loughry, who helped guide the HP interface bus (HP-IB) to acceptance as the international IEEE-488 standard, chairs the group's Networks Standards Policy Committee. It has global representation and decides HP's position in various standards-setting committees.

As a multinational company, HP gives special weight to international standards-setting. Evelyne Roux and Cees Lanting from GND both speak for HP in OSI-related standards activity at the European Computer Manufacturers Association (ECMA).

Negotiations in the standards arena can be delicate, as companies try to arrive at agreement on a future direction without giving away the current secrets in their laboratories. Sometimes a standard and a product are being developed in parallel. Don Loughry admits that standards-setting in networking is "orders of magnitude more complicated" than his earlier IEEE-488 efforts. The field is so dynamic that "if you don't keep up with it, you're out of date in 60 days."

HP now has people on committees helping to develop standards for data communications, OSI protocols, graphics, database, UNIX, LANs and premises wiring, among others. The company is also cooperating with such emerging industrywide standards as General Motors' Manufacturing Automation Protocol (MAP) and Boeing's Technical and Office Protocol (TOP).

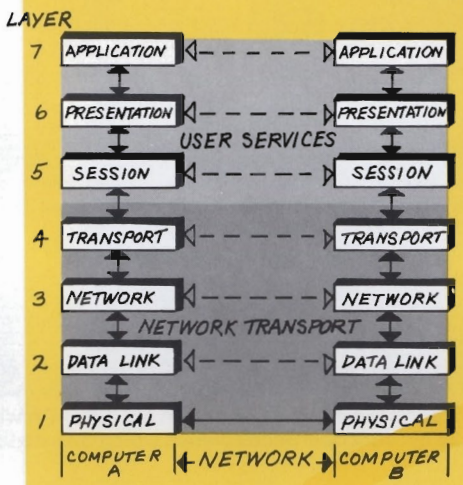
One special challenge is development of the Integrated Services Digital Network (ISDN), which is the next-generation telephone network—carrying voice, data and video at the same time. HP believes that ISDN will play a significant role in the transmission of voice and data across public WANs and in office automation in the future.

Germany, the UK and France are ahead of the US in telecommunications, and Europe has already accepted the X.25 technology enthusiastically for public networks. In France, two million telephone customers have small, free videotex terminals in place of directories. Their use has created so much traffic that the public network has become highly profitable. Not surprisingly, the impetus for HP to add a private X.25 network to its product offerings came from GND.

Multivendor demonstrations of connectivity are a popular feature of industry shows in Europe. At the huge Hanover Fair in Germany in March, HP joined 13 other vendors in exchanging messages through their compatible X.400 electronic-message systems. (The next month HP-UX OSI/X.400 was introduced as a product for Europe.) At the same fair, HP was present in two other multivendor network demos. Some 35 vendors, including HP, will participate in a similar X.400 demo at Telecom '87 in Geneva this October.

Adding to HP's networking presence in Europe is the Bristol Research Center's Networked Computer Systems Lab in the UK. It has the charter for networking research and developed HP's X.400 demonstration software shown in Hanover.

"Demonstrating a network is not a



Setting the standards

For manufacturers of data communications products, this diagram is the way to compatibility.

It's the OSI model (Open System *Interconnection) defined by The* International Standards Organization (ISO). Design guidelines cover everything from simple hardware like plugs and sockets to the complex software of codes and protocols.

Each layer has a clearly defined function and relationship to the layer above and below it. Two computers connected to a network match functions and protocols layer by layer.

The network transport is the lower part of the model (layers 1 through 4). These layers deal with the internal mechanism of the network and its interfaces to computer systems. (The OSI model's guidelines were followed when X.25 technology was defined in 1980. X.25 performs layers 1 through 3.)

The upper part of the model (layers 5 through 7) consists of user services which control processes on the computers themselves and interact with users or their applications.

No changes can be made in layers, although it's left open how each function is achieved.

matter of flashing lights," explains Alain Couder, general manager of GND, which organized both demos. "You see something on a screen and then it appears on another screen. The viewer has to trust that it's really going through the network."

The irony from a demo standpoint, of course, is that the aim of successful networking is to be completely invisible to the user. Networking is an underlying layer that connects all the pieces together but that doesn't do anything in itself—applications have to be written on top of it. "The holy grail of networking is to make information available to everyone—but how the network does it will be transparent," Wim Roelandts says.

Within the HP organization, ING has a character of its own.

"What's unique to networking is the many interfaces involved in tying all HP systems together and connecting with our competition, outside suppliers and standards bodies," Wim says. "The number of people we have to talk to and get agreement with is staggering."

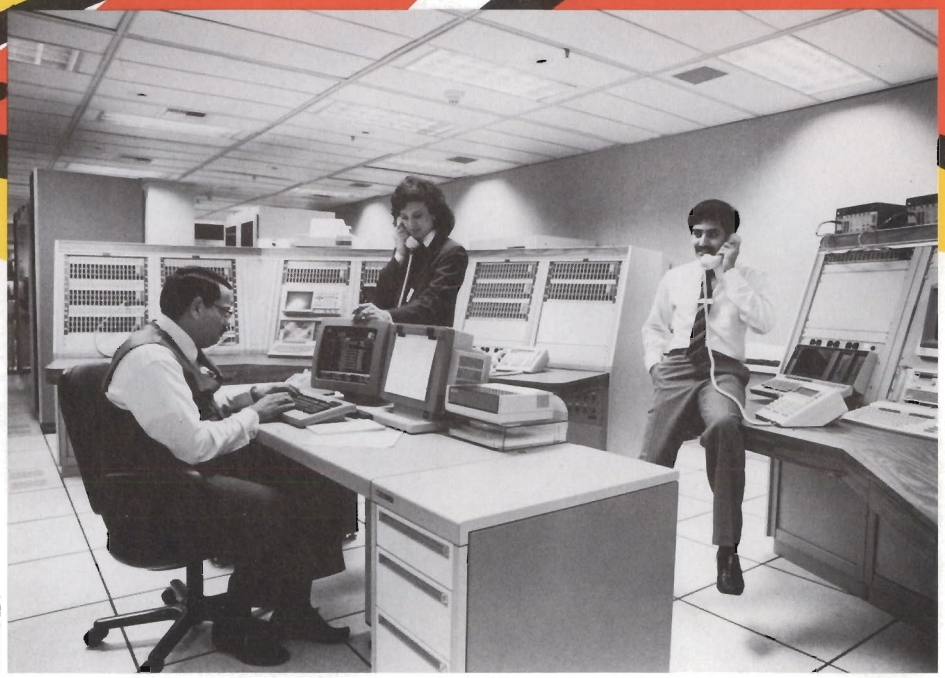
ING pioneered consolidation within HP. Manufacturing is consolidated at GND in France for Europe and at the Roseville Networks Division in California for the rest of the world.

The other two divisions in the group—the Colorado Networks Division in Fort Collins and the Information Networks Division in Cupertino, California—concentrate on software development.

Because of the complexity, ING has organized its support geographically in network marketing centers in Cupertino (for the Americas), Grenoble (Europe) and Hong Kong (Asia/Pacific). These centers provide an added level of on-line technical support for all its networking products.

HP's network consultants are part of the Worldwide Support organization but have strong ties to ING. In the US, the group's Network Marketing Center under Bill Hahn briefs consultants at quarterly meetings.

Jack Hymer, network consultant in Neely's Northwest Area, was on the task force that four years ago recommended creation of the role. He knows firsthand that networking expertise helps the sales force land "big deals."



THOMAS LEA

Corporate Telecom's Dennis Bacon, Kathy Crowley and Ramesh Gupta show off HP's own X.25 network operations center, which also doubles as a demo for customers.

"I get involved in the Request for Proposal stage in the sale of networked computers," he says. "HP's network design capability is used as a selling tool." He did the initial X.25 network design for 540 HP 3000s ordered by State Farm Insurance for their field claims offices and has designed major networks for the Washington Community College Computing Consortium and AMFAC.

An HP network consultant may not always recommend a solution that means an immediate sale of HP equipment. "HP isn't in it for the quick kill," says Mark Wechsler of Midwest's East Area. "We want to build credibility. If we do the right thing for a customer, we establish a long-term relationship."

He sees his job as demystifying intersystem connectivity for customers. "Networking isn't black magic," Mark insists. "Everyone's afraid of it, but you can talk in layman's terms to help a customer know how to apply all this."

Arie Scope, who helped conceptualize ING's new solutions approach, is convinced it isn't necessary to be a product expert to interest a customer in a network. He's just issued a new networking manual for the field that's organized in a radically different way: laying out alternative solutions to guide a customer to a match with needs. Each section has specific products listed at the end—quite a reversal from the usual approach of individual data-sheets.

"The arrival of X.25 shifted our way of thinking," Arie says. "As we began to think about networking from a customer's point of view, we realized that we should provide a whole network and not send customers to someone else.

"DEC says it 'connects' but it doesn't supply the whole network. HP is going one step further."

Bring on those cables and playing cards, Bob LaFollette. Looks like we should all make an effort to learn about the expanding world of networking.

—Betty Gerard

The author vouches for the good help provided a networking novice by six readable primers published by ING: Touring Datacomm, Connecting to Your Computer, Making the LAN Connection, Communicating with IBM, Networking with X.25 *(HP part numbers are 59574622, -25, -24, -23 and -35 respectively) and* Data Dictionaries *(59578527). They may be ordered individually or as a kit (59574681) which includes all six primers and a quiz.*

HP PHOTO

YOUR TURN

Measure readers share their views on matters of importance to employees.

Are we losing it, again?

I was amazed at the letter from Ken Hodor about the decreasing HP spirit in your March-April issue. In the past few years, we have all had to make sacrifices, but no one has lost his or her job. Hodor "senses" that HP has become a "faceless company that cares less about its people." I suggest that he be thankful he still has a job, and treat the people in his department to a box of Winchell's donuts. An awful lot of people who used to work at Intel can't afford even that. Perhaps Hodor would prefer to know how many "fun social activities" he could have when unemployed.

CRAIG CALLAWAY
Santa Clara, California

I personally do not feel that HP is losing the HP way, but I *can* see it changing. First and second-level managers now carry the burden of implementing the HP way and MBWA. It was easy before because higher level supervisors used to do all this work. Now it rests squarely on the shoulders of managers. And if employees do not see it, it is time for them to use the Open Door to tell their managers how they feel.

As a manager, I can see that HP has not lost sight of the individual. I am getting more and more coaching on how to be a better manager by being more supportive and giving my employees honest and open feedback. But with this feedback comes the need for employees to grow and stretch. Employees, faced with the reality of changing themselves, may misinterpret this as the HP way going away.

PETERE MINER
Sunnyvale, California

Providing perspective

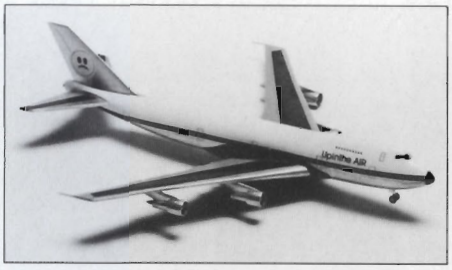
I just wanted to let you know I enjoy receiving *Measure*. It gives a broader perspective on Hewlett-Packard's involvement both in the world and the community that surrounds us.

The major articles and "Your Turn" are what I enjoy most. It is also nice that you publish both positive and negative comments. That gives the entire publication more credibility.

The article, "Mapping the mystery," in the March-April issue was one of the best that I recall reading in *Measure*. Thanks for the effort you put into this publication. I am just one employee, but I do appreciate it.

DEAN DOWDA
Colorado Springs, Colorado

TOM UPTON



Making fare decisions

As an executive secretary who makes plenty of airline reservations, I've taken a serious interest in HP's new travel policy. Your article about business travel pointed out the benefits of data collection and consolidated services. Intellectually, I understand what rewards HP can expect. However, there are many intangible aspects to consider when selecting the "lowest logical fare" or the "No-Tell Motel" instead of the Hilton.

I consider the salary that HP pays my manager while traveling. If I put him in economy class, route him through Denver with a two-hour stopover en route to New York, will he be able to accomplish the same amount and quality of work as if I had booked him in business class direct to NYC? Absolutely not! Why would I want to save the company $100 when my manager is going after $1 million in HP business? Having him arrive exhausted is not conducive to winning business.

Trying to save the company money is admirable, but not if it costs more in lost opportunities.

LAURIE JEDYNAK
Cupertino, California

Please leave your name and number

Are there any humans in HP? Why is it never possible to call any phone number for support people at the divisions and actually find a human at the other end of the line? Everyone has an answering machine. I envision the factories as vast, empty, silent spaces with the only sound being the whirring of tapes as they answer the phones and take messages.

The disease has spread to sales offices. Soon, field people will be replaced by these boxes as they take messages from customers. "I'm out of the office right now, but if you leave your name, company and purchase order number, I will be glad to send you an order acknowledgement as soon as I return."

As a former customer, I would have hung up and never called back had I once gotten a machine. How many unknown lost sales are there out there?

JOHN A. PEZZANO
El Paso, Texas

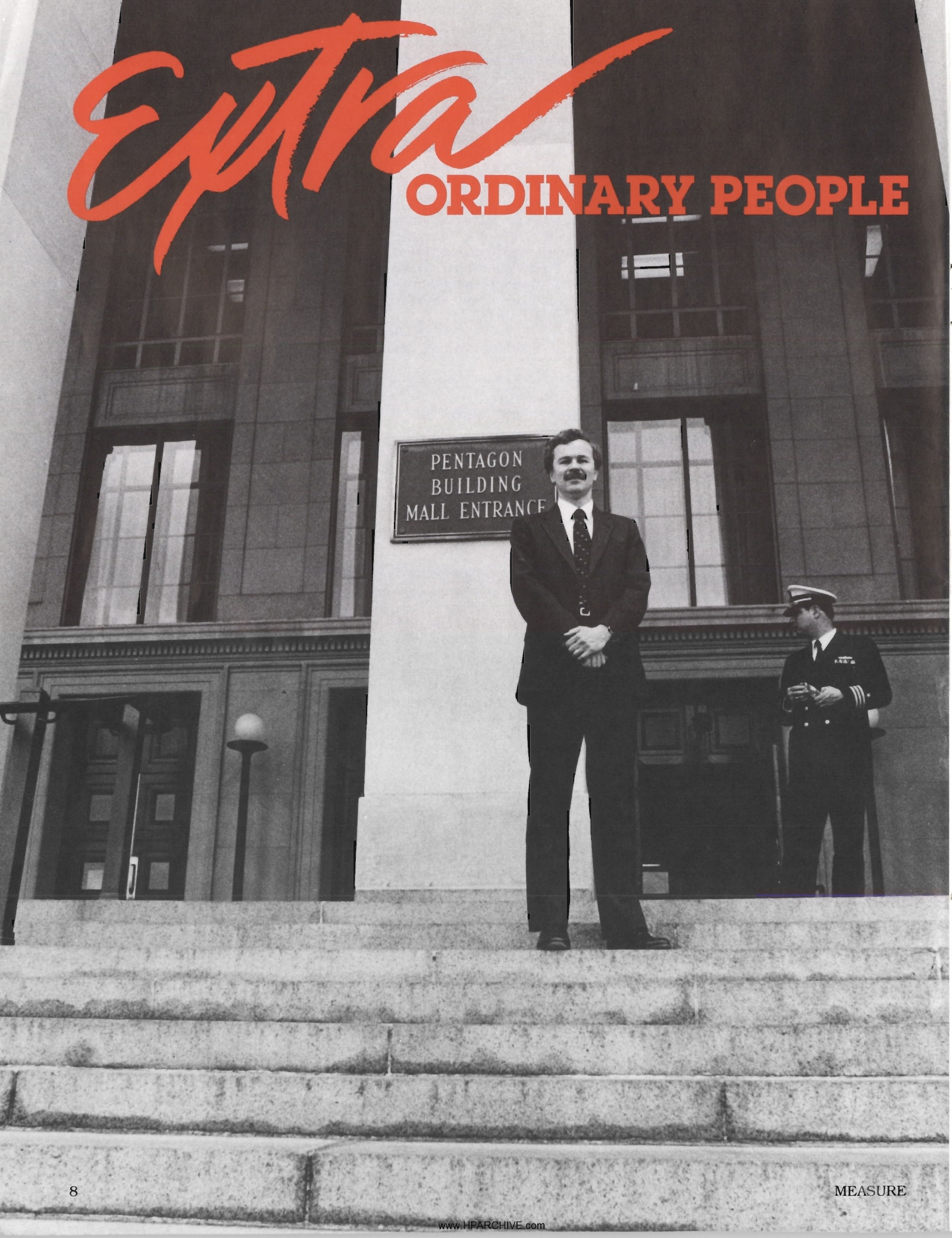
Please send mail

Do you have comments about something you've read in *Measure*? Send us your thoughts. We want to share your opinions and comments with more than 82,000 other HP employees.

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—unisex small, medium, large or extra-large.)

Address letters via company mail to Editor, *Measure*, Public Relations Department, Building 20BR, Palo Alto. Via regular postal service, it's *Measure*, Hewlett-Packard Company 20BR, PO Box 10301, Palo Alto, CA 94303-0890 USA. Try to limit your letter to 150 words. We reserve the right to edit letters. Please sign your letter and give your location. Names will be withheld on request.

Extra ORDINARY PEOPLE



PHOTOS BY JEAN BURKE

Do you think HP is drowning in acronyms? That corporate bureaucracy threatens to loom out of control, making it difficult to get things done? That it's hard to keep up with all the changes?

Tom Saponas now could tell you that it can be a whole lot worse. You could work for the US government. When he returns to HP, he vows to wage his own personal war against creeping bureaucracy.

In September, this Hewlett-Packard research and development manager from Colorado Springs, Colorado, will be wrapping up his year as a White House Fellow with the Department of the Navy. Tom will return to HP this fall as Group R&D Manager for the Electronic Instruments Group. He spent the first part of the year working for Secretary of the Navy John Lehman until the secretary left to pursue other interests, and the second part working for Lehman's replacement, ex-Marine James Webb.

For Tom, whose normal energy level is like an athlete's at the starting block, the inertia of the Washington political scene has been a tough adjustment. "I had a lot of big plans when I started, but it's hard to affect such a huge organization when you're just one person. And even though being a Fellow is prestigious, it's also a fairly powerless position. I spent a lot of time figuring out the rules and regulations—how to play the game."

The walls of his sterile, but spacious, Pentagon office are dotted with many photos from the first part of his year as a Fellow, including a personally autographed photo of President Ronald Reagan. To make him feel at home, he brought along an HP Vectra personal computer, complemented by an HP LaserJet printer and a plotter.

Learning your way around the Pentagon is a little like learning your way around HP Corporate headquarters. Every concentric hallway of the five-cornered building looks the same. And such an abundance of uniforms, braids, medals and saluting in one place sets a formal mood. A little stuffy, even. While having his picture taken, Tom Saponas joked that none of his former Colorado Springs co-workers would recognize him in the suit and tie he now wears to work every day. He's a long way from his Levis.

When his fellowship ends in September, Tom will return to Hewlett-Packard and Colorado Springs, where he has

HP's Tom Saponas' year in Washington has been filled with adventure and learning. Between trips around the world, he calls the Pentagon his home.

A year of meetings, a lifetime of names to drop

So far in his fellowship, Tom Saponas has met:

Ronald Reagan, US President
George Bush, US Vice President
Caspar Weinberger, Secretary of Defense
Edwin Meese, Attorney General
James Miller, Director, Office of Management and Budget
Ed Koch, New York City mayor
Walter Wriston, Citicorp chairman
William Webster, Director, Central Intelligence Agency
Fr. Bruce Ritter, Covenant House administrator
William F. Buckley Jr., *National Review* editor and author
William Bennett, Secretary of Education
Tom Johnson, *Los Angeles Times* publisher and chief executive officer
Brandon Tartikoff, President NBC Entertainment
Diane Feinstein, San Francisco mayor
Sam Donaldson, ABC News correspondent
Ernest Gallo, E&R Gallo Winery co-owner
Andy Grove, Intel chief executive officer
Jack Valenti, President of the Motion Picture Association of America
Sally Ride, first US female astronaut in space
Pat Robertson, television evangelist and presidential candidate
Jeane Kirkpatrick, former ambassador to the United Nations
Sandra Day O'Connor, US Supreme Court Justice
Richard Lyng, Secretary of Agriculture
Vernon Walter, US ambassador to the United Nations
Bud McFarlane, former director of National Security Council
John Poindexter, former director of National Security Council

"I spent a lot of time figuring out the rules and regulations— how to play the game."

Extra ORDINARY PEOPLE

US NAVY PHOTO

lived most of his life. He worked as a student at HP during the summer of 1970 at the Colorado Springs Division. He started full time with HP in Palo Alto in 1972 after graduating from the University of Colorado at Colorado Springs. He's worked in R&D all 15 years of his HP career, and has worked on the design of many HP products, including several early logic analyzers and the HP 64000 logic development system.

Tom's wife and two children accompanied him to Washington, D.C., for the year, leaving their home on six acres of woods in Black Forest, Colorado. "It was hardest on my wife, who gave up her job (as a social worker) and her friends for a lot of uncertainties. My son's biggest concern was whether or not they had trees in Washington." Accepting the fellowship meant a substantial cut in pay for the Saponas family. "It's something you do for a once-in-a-lifetime experience," he says, "not for the money."

On his Pentagon desk, Tom has the Department of the Navy organization chart and phone directory under glass. Its complexity rivals HP's organization chart, but it's impressively larger. "The acronyms and the duplication of titles boggle the mind," says Tom. "You learn the acronyms fast, and then totally forget what they stand for—a little like HP. You send letters to titles—no names—just to a title. At HP, as an R&D manager, I would generate maybe one memo a month. But memos are very big around here," he says, shuffling through a thick folder to prove it.

Tom reports directly to the Secretary of the Navy. He meets with the secretary once a month and attends his twice-weekly staff meetings. In addition, the White House Fellows meet as a group twice a week with government leaders, including the President's Cabinet and personal staff, as well as members of the House and Senate. The Secretary of the Navy's budget of $100 billion, the US government's second largest, is 14 times the size of HP's. The Navy employs 700,000 men and women in uniform and 500,000 civilians.

One project Tom completed this year was an executive summary for Secretary Lehman concerning the number of officers in the Department of Defense. He was asked to investigate because of efforts to decrease the number of officers by 6 percent by the end of 1989. The project provided him the opportunity to learn how to wrangle information from many different governmental departments— especially difficult because of rivalries between the services. Tom made extensive use of his HP equipment, complete with numerous bar charts to illustrate each main point, which Secretary Lehman presented to Congress.

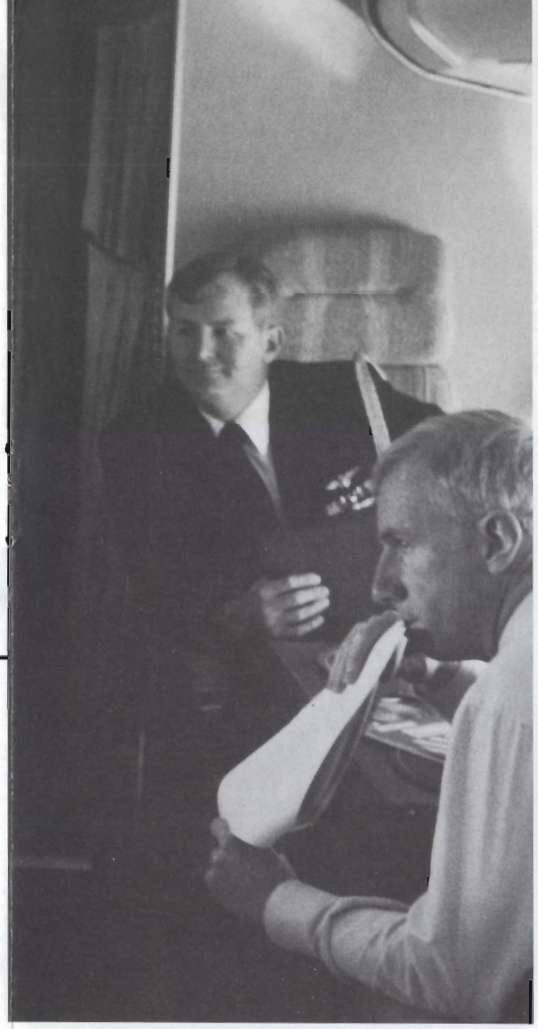
He also has served on a Blue Ribbon Panel concerning problems with a Grumman plane. There was the potential to lose more than $100 million on the project due to software problems. Tom listened to Grumman's defense for several days and talked with contractors. He proposed a compromise solution, which helped establish a better relationship between Grumman and the Navy, and also diminished the potential losses.

"You learn the acronyms fast, and then totally forget what they stand for— a little like HP."

He's implemented a task-tracking system for the Secretary of the Navy, which he says was a simple job for an HP R&D manager, whose life revolves around such systems.

The Secretary also once asked him to look into 26 major issues, to assign priorities to them, and let him know the status of each project. He discovered halfway through this endeavor that someone else had done the same task just weeks earlier. Mulling this over, he finally began to understand the logic of his seemingly redundant assignment. As an independent, non-military-type, he saw things differently and had different ideas. People also responded to him differently. Someone like him following up on the 26 issues caused an unusual situation. "Things started fixing themselves. Do you consider that rewarding? I don't know. I accomplished something, but it didn't feel rewarding."

Parts of the whole experience have been rewarding, though. "I'll look back on this year, and remember at least 50 once-in-a-lifetime experiences. It's not like HP where it really made a difference whether I was there or not, but the per-



Tom, with coffee cup in hand, attends an early-morning meeting aboard former Navy Secretary John Lehman's jet en route to Groton, Connecticut. Other high-flying brass include Captain Joe Prueher, Lieutenant Commander Rick Hess and Deputy Assistant Secretary Roger Duter. The admiral with his back to the camera is describing submarine tactics. Secretary Lehman is out of camera range to the admiral's left.

sonal rewards and contacts will always stay with me."

The greatest thrill so far, he says, has been his trip on an F-14 fighter jet out of Norfolk, Virginia, to West Virginia. With a few safety lessons under his belt, he was off on a low-level, tree-top mission. "It was exciting. The pilot did a loop, then flew upside-down over the target to see it better." They flew back to the shore outside of Norfolk, and did some practice dogfighting and acrobatics before flying back to Norfolk. "I think I was in the typical greenhorn's dilemma," he says. "The pilot was probably doing more than usual, like he might for a Congressman. It was great, but there was one six-and-a-half G-turn that caught me by surprise, and I passed out briefly."

He spent two days in March on the *Teddy Roosevelt*, the Navy's newest aircraft carrier. "Experiences like that have given me a real appreciation for the dedication, hard work and sincerity of the guys out there doing the job. The average age of an enlisted man on an aircraft carrier is 19-and-a-half. They're out there on the deck working about 20 feet away from where F-14s are taking off and landing. It can be pretty scary."

Tom's been to Keflevic, Iceland, and participated in real, operational missions with both Air Force and Navy pilots flying E-3 AWACS planes and P-3 Orions 24 hours a day, under all conditions.

Another trip few civilians would book was a stint on an attack nuclear submarine near Andaros Island in the Bahamas. The naval station there is a perfect test area for submarines, with ocean depths of 10 to 30 feet, except for a big hole by Andaros that drops to about 3,000 feet. It's acoustically quiet enough for tests, and well protected. Tom was on the test ship, and although it carried no nuclear warheads, it was testing torpedos that were diverted by electronics. He'll always carry a vivid memory of leaving the ship at 10 p.m. one stormy night. They were wearing life jackets, but there were 20-knot winds and waves crashing over the ship. Not to be forgotten.

The 11 White House Fellows have taken many trips together as well, though all are scattered in different Washington assignments. Of the hundreds of people Tom has met during the year, he thinks his favorite is ambassador-at-large Vernon Walter, who is now US ambassador to the United Nations. "He was a personal aide to Generals Bradley, Eisenhower and MacArthur. He was there when Truman met with MacArthur. He speaks seven languages. The man is walking history. Talking to him was phenomenal."

The group of Fellows just completed a trip to the People's Republic of China, and Tom was scheduled to head for Guam and the Philippines in July.

"It's been a special year. Meeting these people so informally, and being exposed to such off-the-record sharing of information has been great. There have been so many one-time experiences and incredibly inspiring events. I walk away sometimes and my head is just buzzing from listening to special people who cause you to really stop and think."

—Jean Burke Hoppe

How do you get to be one of the Fellows?

When HP's Tom Saponas, 37, was named as one of the 11 White House Fellows for 1986-1987, he told reporters, "It's something I read about 20 years ago in college. . . . I applied because it occurred to me that, gee, I'm getting old."

The purpose of the program is to provide gifted and highly motivated young Americans with some first-hand experience in the process of governing the nation and a sense of involvement in the leadership of society. President Lyndon Johnson started the program in 1964.

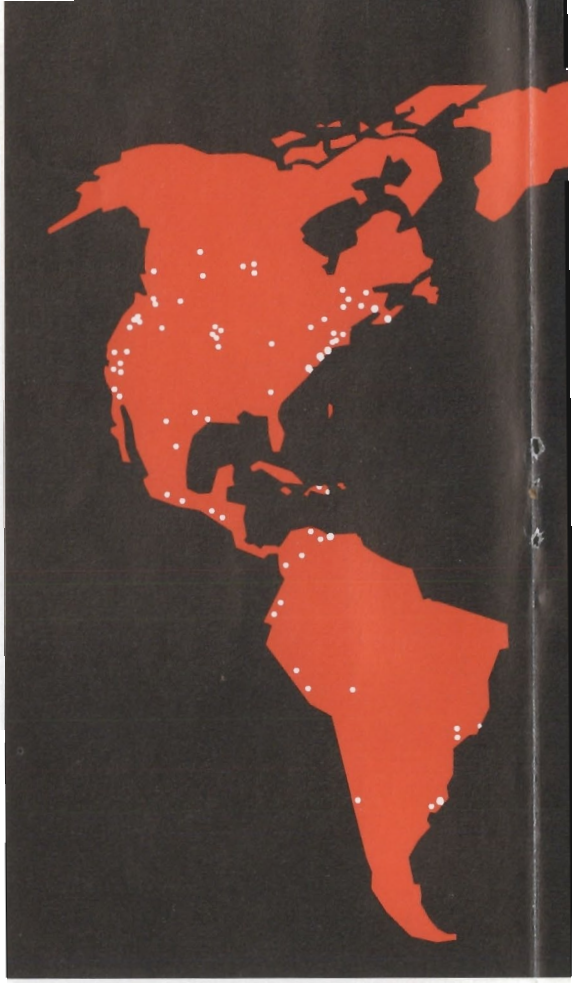
Tom was picked from hundreds of applicants after a grueling application process. The first application was 10 pages long and was accompanied by three personal evaluation forms from people with direct knowledge of the applicant's character and qualifications.

Regional finalists were picked and interviewed by a selection panel for one or two days. There are 11 regions, and Tom was one of 110 regional finalists. They also took part in group exercises and were given one hour to write an essay. ("That part scared me to death," says Tom, who nonetheless managed to whip out a thoughtful document about breaking the deadlock on the tax-reform bill before it had been passed.)

National finalists were chosen and invited to a three-day retreat in Virginia for more interviews with the White House Fellows Commission members. Winners were notified shortly after the retreat.

The Fellows arrived in Washington, D.C., in June and spent a week interviewing with different Executive Branch agencies. Both the Fellows and the agencies submitted wish lists, and the yearly assignments were determined by the Director of the Commission. Tom got his first choice.

Assignments start each September and last one year.



How in the world did we end up here?

Bill Doolittle remembers the anticipation in 1959 as he expectantly told Bill Hewlett the news.

"Bill, I got it! I found a space for us to start up operations in Switzerland—a 2,000-square-foot office in Geneva!"

Silence.

"Two-thousand square feet! For international? Are you crazy, Doolittle? We'll never need that much space! We'll have to find someone to sublease."

It was one of those unusual, and not often documented, cases where Bill Hewlett was wrong. And was he ever wrong. Consider:

○ International orders for the first and second quarters in 1987 exceeded those of domestic orders, topping the $1 billion mark. For the second quarter this year, international revenue exceeded that of the U.S.

○ HP now has manufacturing operations in 16 countries and sales offices or distributorships in 78 countries.

○ John Young's 10 strategic goals for HP in 1987 include "maintaining a worldwide perspective. . . . Many of HP's growth markets are outside the US (and) we must ensure our access to these opportunities."

HP's meteoric rise as a multinational organization has its roots in the 1957 Treaty of Rome. Bill Hewlett saw that treaty, which created the European Common Market, as the beginning of a European mass market, unrestricted by tariffs—just the edge that the growing US company would need to become a true leader in the electronics field.

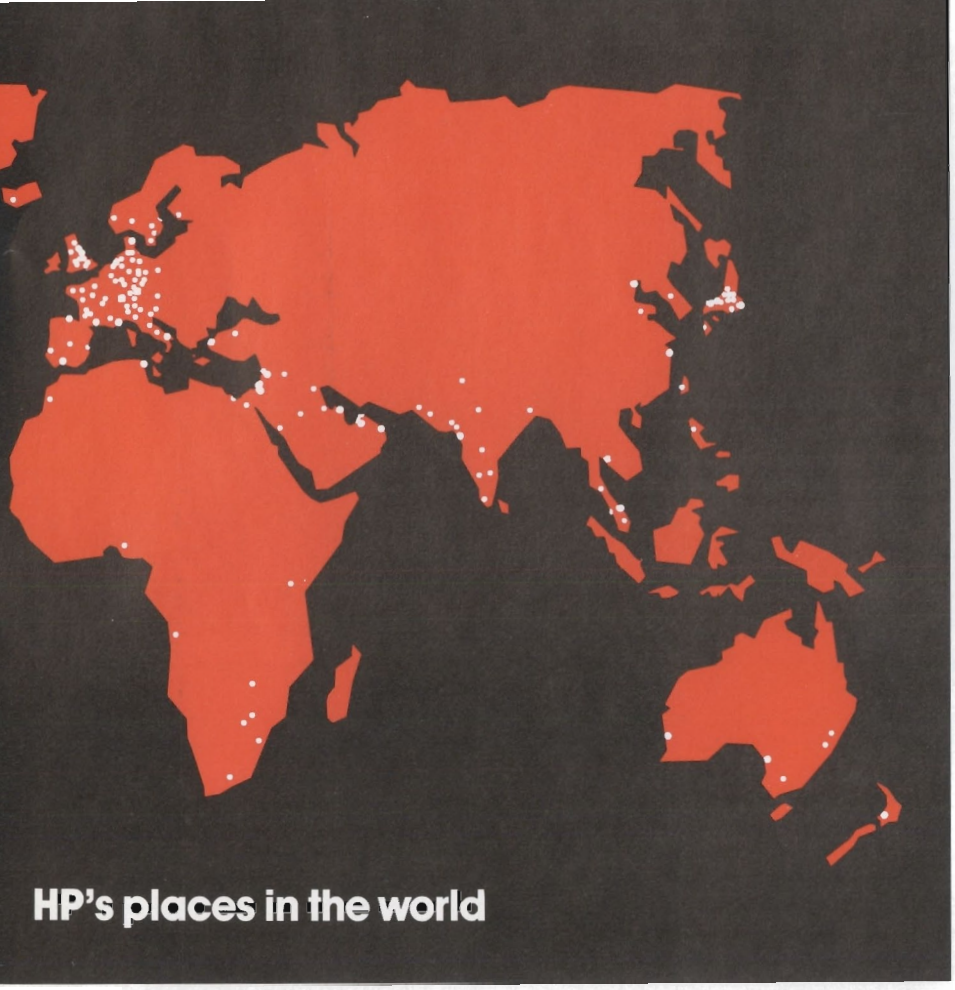
This edge would later be expanded to include sales, R&D and manufacturing facilities in locations around the globe, including Japan, Korea, Singapore, Malaysia, Australia, Mexico and Canada.

But the path was not always a smooth one, as Bill Hewlett would discover on his first overseas business venture. Leaving a skeptical Dave Packard behind to mind the shop in Palo Alto, Bill traveled to Europe in the spring of 1958 to select a country for HP's first overseas manufacturing plant. After a long, exhaustive hunt, which included interviews with government and business leaders, Bill Hewlett settled on Böblingen in southwest Germany, an area noted for industrious workers.

The selection of an area to begin European manufacturing opened up intriguing new problems for HP. It rapidly became clear to Bill that a corporate office was needed in Europe to handle incoming orders, to train European distributors, to set up a product warehouse and to serve as a holding company for HP's German operation. Bill picked Switzerland for its stable currency and even more stable relationships with other countries.

So in the fall of 1958, Bill Hewlett returned to Europe accompanied by Bill Doolittle, who was to serve as the manager of what would become Hewlett-Packard S.A., Ray Demeré, who would serve as manager of the German manufacturing operation, and Nate Finch, HP's corporate attorney at the time.

The four travelled with three objectives in mind: select an area in Switzer-



MEASURE MAGAZINE, OCTOBER 1963

In September 1963, this handshake between Yokogawa Electric Works President Iwao Yamasaki (left), Dave Packard and Shozo Yokogawa was the start of YHP, of which Shozo became president.

land for the corporate offices and set up the basic structure of the organization; lay the necessary groundwork for establishing the German manufacturing company and sales force; and recruit the first European employees to get the whole thing off the ground.

For Bill Doolittle, who would eventually become HP vice president for international, the trip was the first of many that would add up to 4 million miles in his career—without one piece of lost luggage.

For that first trip, Bill Doolittle stayed in Switzerland to take charge of establishing the company's new European headquarters. He eventually settled on the 2,000-square-foot office above a print shop in Geneva. "It was like starting over again in the garage," Bill remembers.

Amenities were few, and Bill was soon to learn firsthand the day-to-day trials of starting an operation in a foreign land—experiences some HP people in more remote locales even today can share: midnight phone calls (with phone time reserved days in advance) and long delays in receiving mail and supplies. Then there was the matter of the company name, not easily translatable and virtually unknown in Europe at the time.

"People would call us 'Julius Packard,' or tell us that they 'loved the Packard car,' and ask if the rest of our products were as good," remembers Arnold Staufer, HP's first European employee. "But when they saw the products we had, with technologies not widely available in Europe, they had no problem remembering the Hewlett-Packard name."

Arnold's first job with HP was to drive the traveling laboratory, a Mercedes bus affectionately dubbed the "demobus," because it literally was HP on wheels. The demobus was a mini trade show of HP products, which showed potential customers throughout Europe what the products could do. The bus was a popular and successful sales tool for the distributors on the continent who carried HP's products.

(The demobus concept would reappear in HP's marketing strategies in the late 1960s with the first and only flight of the "demoplane"—a prop plane loaded with HP equipment that flew around the world, bringing HP equipment for sales presentations in India, the Mid-East, Africa and other locales. In some locations it is still a fondly remembered logistics marvel, and a marketing feat not yet duplicated in the electronics industry.)

While HP Switzerland was settling in its new role that summer of 1959, a small sales force, HP's first overseas, was starting up in Frankfurt, West Germany. Headquarters were in manager Joe De Vos' living room; product servicing was done in his basement. Since some of HP's major competitors in Europe were also in West Germany, the location couldn't have been better.

But establishing the sales entity was only a minor step toward European customers viewing HP as a company with a future on the continent. "It wasn't until we set up a manufacturing entity that, in the eyes of the customers, we became one of them," Bill Doolittle adds.

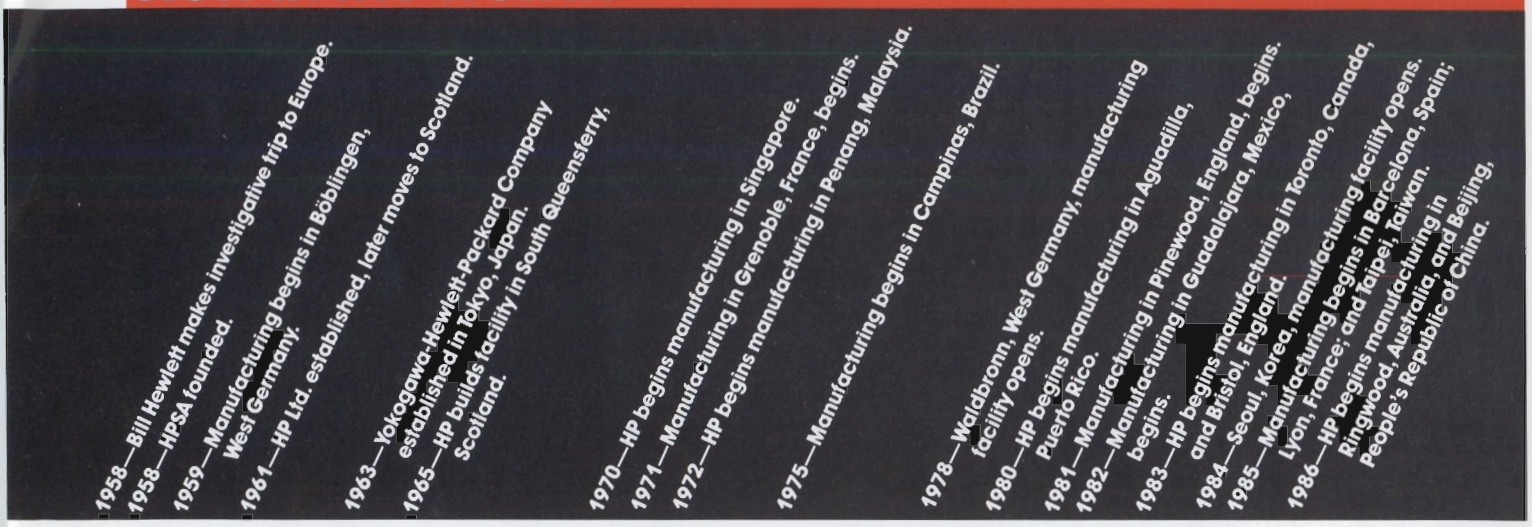
So the small Böblingen manufacturing operation became a pivotal part of HP's international strategies.

You would never have known by looking at it.

The now famous Palo Alto garage was big doings compared to the old knitting mill HP secured for its first overseas manufacturing. With its windows still painted to shield the light against nighttime attacks of World War II, one of the mill's biggest advantages was location. To ship products, the employees simply picked up a box and carried it to the train station across the street.

Inside the boxes were HP's first products manufactured overseas, assembled from kits sent from the United States. The US also sent managers to help the German employees learn about the company's technologies, about the

How in the world?



quality standards HP expected, and about the company itself. It was a time when the new HP employees were learning a lot about their American employer and when their American employer was learning a lot about them.

"Bill Hewlett used to tell us, 'It's much easier to put technology into a possessor of a culture than to put that culture into someone who knows technology.' And he was absolutely right," says Doug Herdt, one the original HP employees from the United States to work in Europe.

From the beginning, HP's international operations were seen as independent organizations, with roots in the culture of its country. The company has always hired local people and worked to blend HP's philosophies with the country's culture.

"There is a critical point in the development of any international organization when you link a company's culture with local practices," Doug says. "You have to decide how far you are going to go to adapt local cultures without going so far that you are unable to work within structures set by the home base."

But not all aspects of the HP way translated easily overseas. Even those early German employees who startled their friends with stories of how life at HP was different from working for "other" German companies had trouble accepting the idea of calling co-workers, boss or peer, by their first name—a standard practice in the U.S.

Fred Schroeder, a German national who had succeeded Ray Deméré as manager of the manufacturing facility, was the first to encourage the use of first names. He was met with doubts. "Although we were a small group and knew each other well, it felt strange to call Mr. Deméré 'Ray,' Mr. Schroeder 'Fred' or Mr. Warmbold 'Guenter,' especially since they were managers," remembers Ursula Bothner, who joined the facility in 1960 when there were 28 people. "But we decided to give it a try. Our friends at other companies were wide-eyed—this just wasn't done elsewhere. But it worked at HP.

"Looking back, I realize it was a good suggestion because it developed cooperation between employees," she adds.

What has been strikingly consistent throughout HP's history in overseas operations is the company's philosophies. At each location, HP has tried to add value to the community and the culture it operates in—not always an easy practice, and not always done by US companies. Says Lee Ting, director of business development for Intercon, "Our philosophy is that it's opportunistic to say, 'This market is growing, let's go while the going is good.' Instead, HP's philosophy that every individual can make a contribution is extrapolated geographically. Every country, every environment can be a contributor, and as a company HP can be a contributor to that country."

That philosophy of long-term commitment has been consistently held by top HP management since Bill Hewlett started the European operations nearly 30 years ago. What also is consistent is that the driving force behind today's expansion is the same as it was for HP in 1958: the ability to be a growing, competitive company. What is different is that many countries have stricter requirements about selling products within their boundaries.

"Today's world has countries who fell behind in the development of their technology bases. As a result, they are more direct in their requirements about how we are able to sell HP products in their markets. They believe that if they didn't have specific requirements, such as technology transfer or manufacturing for exports, it would take years for them to catch up in the world marketplace," Lee says. "Japan was a good example of relying on this approach to get where they are today."

Sometimes these requirements can lead HP into some unusual business arenas. In 1970, when the company was entering the Taiwanese market, HP had to show the government "export performance" before HP could earn the right to import products for resale. Since HP had no products to export, the company aligned itself with a local company and provided expertise in exporting a major Taiwanese product—tea.

Today, Taiwan has grown to a more complex organization, specializing in localizing software for the Asian market, aggressive sales programs, and the packaging of HP products with locally made products for sale in the country.

"Taiwan is an example of how we are helping support local industry," Lee says. "In any country, no matter where it is in the world, if we serve as just an importer of HP products, then we are not a good citizen of that country. That's the HP international tradition."

—*Karen Gervais*

Karen, manager of HP's general press relations, has added stamps to her passport from Mexico, Germany, Austria, Lichtenstein, Switzerland, Sweden, Italy, UK and the Netherlands so far this year.

JEAN BURKE

Procter & Gamble's Bill Carnes works with HP's Clark Wallace and Tim Acree to develop computer systems that track the success of P&G's consumer-marketing efforts.

This business has redeeming values

You could almost package a trivia game based solely on Procter & Gamble Company products. They've become that much a part of American culture in P&G's 150 years of business.

Try this test:

1. Who begged grocery store customers to please not squeeze the Charmin?
2. What coffee did the kindly Swedish housewife, Mrs. Olson, promote?
3. What soap is 99.44 percent pure?
4. On what product label does a macho, earringed cartoon character appear?
5. What product did, "Look Mom! No cavities!" sell?

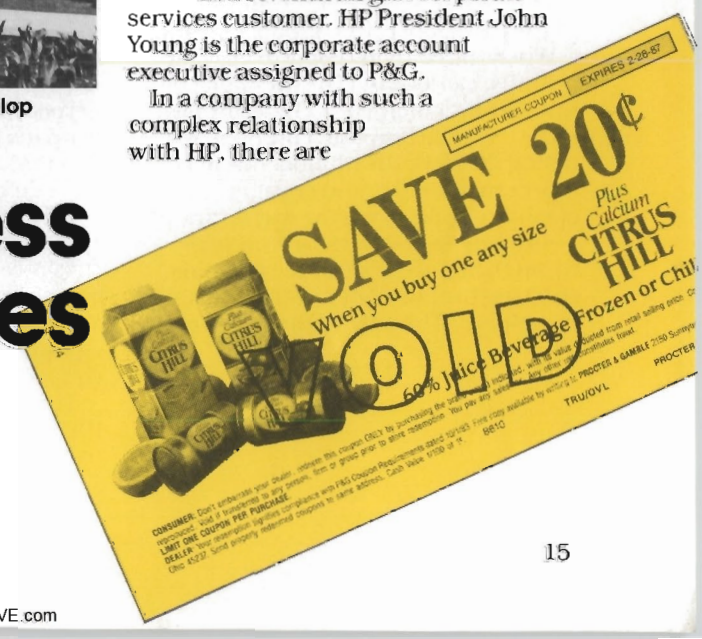
The answers, as though necessary, are 1. Mr. Whipple; 2. Folgers, "the richest kind;" 3. Ivory; 4. Mr. Clean (who, in a consumer poll two years ago, was recognized more often than US Vice President George Bush); and Crest toothpaste.

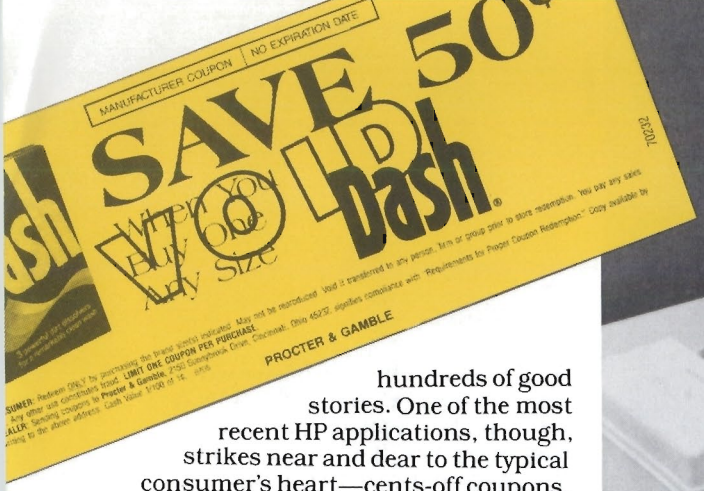
HP and Procter & Gamble have maintained a partnership relationship since 1975, working together to make technology improve P&G's research, manufacturing and business operations.

And the relationship has paid off for HP. For example, the HP Touchscreen II personal computer came out of negotiating with P&G about their needs. And P&G also provided early input into HP 3000 computer software design.

In 1986, HP was the top data-processing supplier to P&G. P&G is HP's largest personal computer and AEO services customer; second largest business systems and networks customer; third largest analytical equipment customer and seventh largest corporate services customer. HP President John Young is the corporate account executive assigned to P&G.

In a company with such a complex relationship with HP, there are





hundreds of good stories. One of the most recent HP applications, though, strikes near and dear to the typical consumer's heart—cents-off coupons.

You probably don't think much about coupons beyond that self-righteous moment at the grocery store checkout counter when you hand over your crumpled coupons and win back a few cents or dollars from the total bill.

But coupons are big business to major manufacturers and bring in lots of new business for companies like Procter & Gamble, where couponing is a precise science.

And, again, HP is helping.

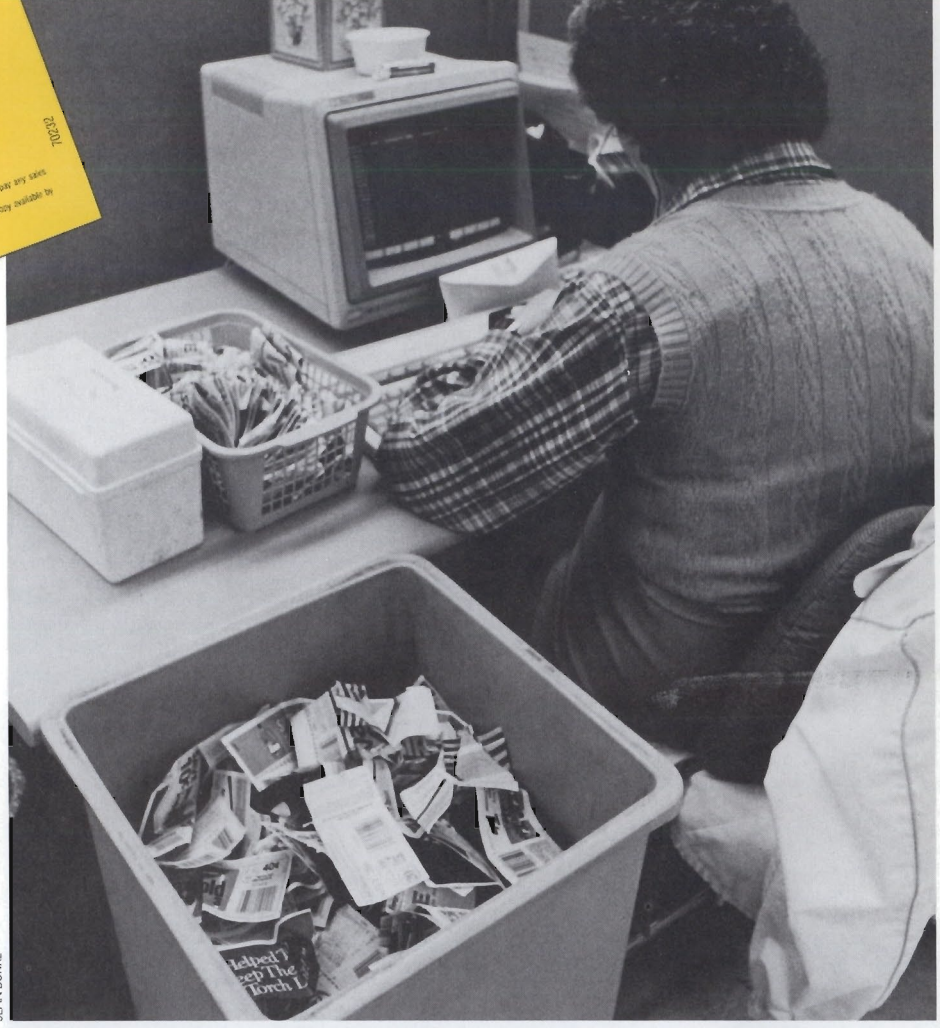
Inside a Procter & Gamble facility in central Cincinnati, the mountains of coupons returned for refunds mimic the gentle slopes of the surrounding Ohio countryside.

They're everywhere—millions of them—returned in huge cardboard boxes for refunds from large retail stores and coupon clearinghouses, along with stacks of what P&G calls "fine mail," the hand-addressed envelopes from Mom-and-Pop stores all over the country. It's a bargain-hunter's fantasy come true. HP computer systems help P&G turn retail refunds around as fast as the coupons come in.

Every Procter & Gamble coupon has five-digit numbers that appear on both ends of the slip and over the bar code. These numbers are the key to the database that stores information on brands, coupon values, regions where the coupon is distributed, the newspapers the coupon appears in and where in the newspaper the coupon appears.

When the coupons come to P&G for refunds, clerks enter the five-digit number into their HP 2392 terminals. If the terminal beeps at a number, it's telling the clerk the number doesn't represent a valid brand or value . . . one of many checks along the way for fraud.

As many as 100 clerks a shift tear through bag after bag of the coupons, entering the five-digit numbers at lightning speed. The only sound in the room is the frantic pounding of keyboards and flipping of coupons. Bill Carnes, P&G systems manager, says they first experimented with bar-code readers to enter the numbers, but found that they couldn't read the coupons as fast as people could.



JEAN BURKE

Millions of cents-off coupons come to this Cincinnati facility for processing. Clerks enter five-digit numbers from the coupons into HP terminals to track marketing programs.

At first, the clerks used to wear out the number pads on the keyboards within a month. A newer-model keyboard—with more rubbery keys—now in use is much more durable. To further the keyboards' life expectancies, Tim Acree, an HP 1000 systems engineer in the Dayton, Ohio, sales office, used HP's K-24 option to reprogram the keyboards so that each has three number pads instead of one. The tremendous volume of coupons also gives off a lot of dust, and there are the trials of paperclips, rubber bands and coffee spills to endure as well. The P&G employees are so proficient at their jobs that many of them sing or hum along to their Sony Walkmans while ripping through thousands of coupons per shift.

Tim Acree steered the project when P&G decided to go with HP equipment to handle this monstrous task. Five miles of newly laid cable connect the network of more than 100 HP 2392 display terminals with three HP 1000 computers and an HP 3000 computer.

P&G's Bill Carnes worked with Tim Acree and Bob Karasek and HP 3000 SE Mike Hornsby to lay the groundwork for the new system by translating old files (which had been written for an HP 3000 Model 37) from COBOL to FORTRAN. They got the application program working within a week, and P&G contracted with HP to complete the project.

Bill first suggested using the HP 1000 computers instead of the HP 3000 computer to handle this job, even though the HP 1000 isn't typically thought of as a data-processing machine. "We recognized its process-control advantage and its speed. The sheer volume was bogging down the HP 3000 when we first started. You think of the HP 1000 as being the machine for shop floors and all kinds of manufacturing and engineering jobs. But we saw the possibilities and asked HP to prove to us that

C. MOORHEAD & JOHN MUMME, COURTESY OF P&G

This 1954 P&G photo of coupon redemption shows how things have changed since those days.

JEAN BURKE

P&G's Alan McAllister and Bill Carnes (seated) check redemption data with HP's Tim Acree.

it could work in couponing."

P&G distributes more coupons than any other company, says Alan McAllister, project manager at the coupon redemption center. It's also the only company with this kind of operation, where each coupon comes back to be counted on P&G terminals and recorded for statistical purposes.

When the boxes of coupons come in from stores around the United States, the totals are tallied before the coupons are broken downs into boxes for easy handling by clerks.

Operators scan the names of retailers and clearinghouses that return coupons for redemption. Unknown or questionable names are noted.

A benefit of the coupon-tracking computer system is its usefulness in tracking down misredemptions, says Alan.

Suspect batches include those that have been "gang cut," and arrive back at P&G with matching edges, and completely unwrinkled. All suspicious cases are turned over to a special section for investigation.

Coupon mishandling ("a nice euphemism for fraud," says Alan) is widespread and a "very big deal" to P&G. Last year, a sting operation was set up in Miami and caught two busloads of coupon "misredeemers" who had redeemed coupons for a fictitious product. Store managers might tell employees to clip coupons from old magazines. A convenience store was caught redeeming coupons out of old newspapers that didn't sell.

These suspect batches might come in with eight to 10 sequential identifying numbers, a pretty good indicator of fraud. P&G's corporate security employees visit clearinghouses routinely to check their validity. They also visit stores to record their size, how many check-out counters there are, the volume of business and its suppliers.

All of this information on clearinghouses and retailers is stored in the HP 3000 computer for quick verification when suspicious coupons arrive at the facility.

The computer system handles accounting and payment of coupons as well. It also writes letters refusing to pay suspect coupons.

Originally, P&G coupons were mailed to homes, delivered door-to-door or placed inside product packaging. Sales reps in the field distributed coupons 50 years ago.

Thirty years ago, P&G used miniature IBM punch cards to track coupon redemption. When P&G decided to use magazines and newspapers to distribute its coupons, the punch card disappeared.

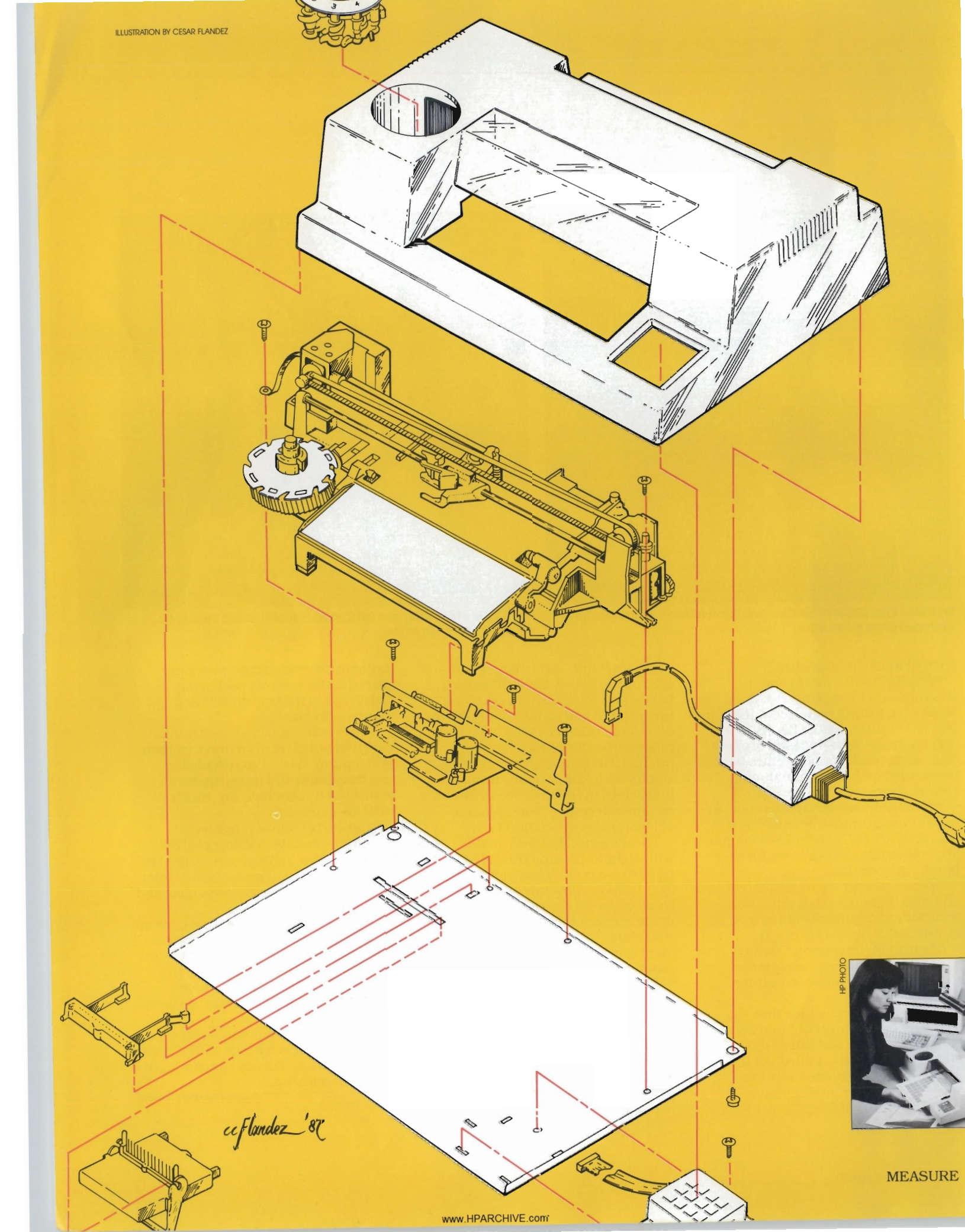
The new HP solution replaces "dumb" terminals that accepted five-digit numbers, right or wrong. P&G is able to access more sophisticated information now on dealers, consumers and market patterns.

"P&G is a major account that grew up on a project-by-project basis and now extends from Europe to Modesto," says Fred Bay, district sales manager in Cincinnati. "The return on their investment in HP technology has been more than 30 percent.

"It's truly a partnership. We try to listen to one another's needs and be open with each other. There's lots of integrity in the relationship."

—Jean Burke Hoppe

ILLUSTRATION BY CESAR FLANDEZ



cc flandez '87

HP PHOTO

MEASURE

Parts is parts

But for engineers at HP, sometimes the very best part is no part at all.

There's a battle under way to simplify the insides of your computer, your instrument and your plotter. Design and manufacturing engineers around the company are fighting to make products easier—and therefore less expensive—to manufacture. They routinely fight to reduce the number of parts in each product and to make the assembly process simpler.

Compare the guts of an old HP 9872 plotter, introduced in 1978, with the insides of the HP ColorPro plotter introduced two years ago (and shown in the drawing on the opposite page). The 9872 had 12 printed-circuit boards; the ColorPro has two. The 9872 required dozens of parts, including a collection of motors, pulleys and cables, to drag a pen back and forth across a stationary piece of paper. The ColorPro moves the paper instead, with an ingenious grit-wheel-and-pinch-roller assembly which is simpler and more reliable.

All told, there were about 10 times as many parts in the older plotter than in its newer cousin, and the former cost about 20 times as much to manufacture.

"San Diego Division has made a science of 'design for manufacturability' for years," says Dave Lima, program manager for computer-integrated manufacturing in the Corporate Manufacturing organization. "Even though simplifying designs this way makes good sense, it takes invention and courage to use a new design when the old one worked well. This is the essence of technical leadership."

"It's now the natural way for us to tackle projects," explains Phil Faraci, project R&D manager for the DraftPro plotter. The division routinely puts together a team with representatives from manufacturing, R&D and marketing as new products are discussed. "You start by looking at everything that's been wrong with your past efforts, then design attributes into the new product that prevent such problems later on."

San Diego has accomplished a lot by designing plastic parts that perform several functions for its line of plotters. The way to achieve that goal is VLSMI—very large scale mechanical integration. By making one part do more, the scheduling, purchasing and assembly jobs in manufacturing are easier to do as well.

In addition, pieces that used to be machined out of aluminum are now made in injection-molding machines that squeeze special plastics into tooled dies under heat and pressure.

Many of these complex parts were first designed on an HP 9000 computer. These files were then transferred directly to computer-controlled milling machines which actually cut the steel dies to make the molded pieces.

But San Diego doesn't have a monopoly on good ideas on the DFM (Design for Manufacturability) scene. There've been two conferences sponsored by HP Labs' Manufacturing Research Center to share some of the company's best DFM practices. The last, in April 1986, drew nearly 200 people from around the HP world.

There's also been a training course on the topic that played to about 1,000 manufacturing engineers and another 1,000 design engineers at HP divisions. They learned how they could analyze a product's design and assembly, quantify their analyses and improve the product's manufacturability.

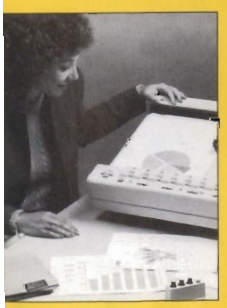
"In many ways, one of the best design efforts in the company has been the New Jersey Division's family of PC instruments," says Dave Lima. The modular multiplexers, counters and oscilloscopes share common cabinet parts and printed-circuit board layouts. "As a case in execution, these products and their processes were conceived, designed and executed as an integrated system—one that lends itself to just-in-time manufacturing." Division employees are hoping the family of instruments will become a marketing success as well.

Engineering teams for HP's family of new Precision-Architecture (Spectrum program) computers have held regularly scheduled manufacturability reviews. The result: the new machines have far fewer parts than those they replace. For example, an HP 3000 Series 70 business computer has about 12,000 parts and 28 printed-circuit boards. The new HP 3000 Series 930 has just 2,800 parts and 15 p.c. boards.

"Design for Manufacturability is one way we can integrate design and manufacturing business requirements," says Dave. "It's the combination of invention, teamwork and disciplined execution that spells leadership in HP's product lines."

"It used to be that the very best part an engineer could specify was the one that was easiest to design and cheapest to manufacture," says Phil. "Today, the best part may be no part at all."

—Brad Whitworth



The HP ColorPro plotter (left) is one of a growing number of HP products that's designed for manufacturability. Its older relative, the HP 9872 plotter (right) sold for nearly $7,000 (US) while the new machine lists for less than $1,300.

Designing your product for manufacturability

Reduce the number of parts and part types in the design

Improve quality of materials and parts

Simplify assembly and eliminate the need for adjustments and tests

Avoid springs, belts and other flexible hard-to-handle parts

Eliminate screws and other time-consuming fastening operations

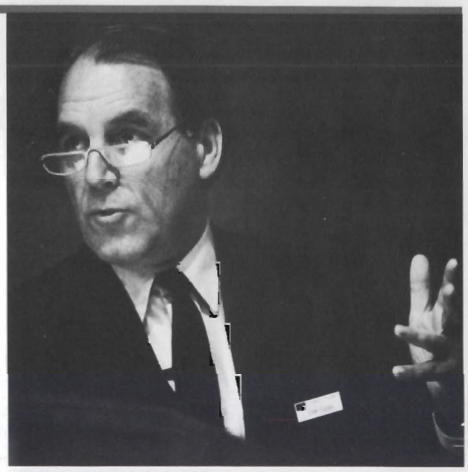
Put gravity to work with top-down, stacked assembly motions

Use technology advances to design parts that do more jobs with fewer pieces

LETTER FROM JOHN YOUNG

HP's president explains the significance of the Spectrum computer program.

JOSEPH MELENA



HP President John Young talks to security analysts about new computer products.

On May 21, HP introduced three new HP Precision Architecture computers and updated customers and industry analysts on the overall progress of our Spectrum program. At the risk of telling you what you may have already read in the external press, I'd like to devote this *Measure* message to the Spectrum program. I know it's a subject in which you're all keenly interested.

Most likely, your interest has been piqued by press articles that have described the Spectrum program as a "bet-your-company" kind of effort. Of course, any business decision—or any R&D investment—is a risk. But let me repeat what I said when we introduced our first Spectrum program computer: "We're not gamblers at HP. We're innovators."

When we began the program more than five years ago, we knew that HP Precision Architecture would provide long-term benefits for both HP and its customers. We also knew the scope of the effort we'd undertaken.

It would have been much easier to develop a new computer architecture if we hadn't intended to make it compatible with our installed base. It's an enormous undertaking to make the advances we've made *and* simultaneously ensure that customers can migrate their existing applications.

Now we've met both those goals and have begun to see the payoff from our hard work. In November we began shipping the HP 9000 Model 840. This first Spectrum program computer runs the HP-UX operating system and is ideal for technical applications, although many customers are using it for traditionally commercial workloads. Reviews of the Model 840 have been very positive. In fact, several customers have told us that they're getting even better performance than we'd specified. *(Editor's note: HP-UX is Hewlett-Packard's implementation of UNIX, a trademark of AT&T.)*

In May we announced enhancements to the Model 840 and, more importantly, three additional Precision Architecture machines that run HP-UX and fill out a growing HP 9000 line:

- the Model 825SRX, which is a "super" workstation;
- the Model 825S, a low-end, multi-user system, and
- the Model 850S, a more powerful multi-user system.

Our May 21 press release stated that at the time of their introduction, all three new computers offered "substantially better price performance than comparable systems from Digital Equipment Corporation" —a claim the release went on at great length to substantiate, I might add.

Last month we also provided updates on the commercial Precision Architecture systems under development—those that run the MPE-XL operating system. As we projected when we announced development problems with the operating system last fall, the HP 3000 Series 930 will begin limited shipments in mid-year. We're making good progress in tuning its operating system, and early results from our beta sites have been encouraging. While we don't yet have enough data to specify fully the Series 930's performance—which, as usual, depends on the applications being run—we are feeling good about the range of performance we're seeing and especially about the price/performance ratio.

"Let me repeat what I said when we introduced our first Spectrum program computer: 'We're not gamblers at HP. We're innovators.'"

As originally planned, the HP 3000 Series 950, the most powerful business system ever brought to market by HP, will ship at the end of the year. It's probably the only computer of this size in the industry that has the complete system processor on a single board—an example of the paybacks from our investment in Precision Architecture and VLSI technology.

All this makes 1987 quite a year of accomplishment. We started with just one HP Precision Architecture machine in production, and we'll end 1987 with six. These new machines demonstrate the wisdom of our Spectrum program "bet" in two important ways.

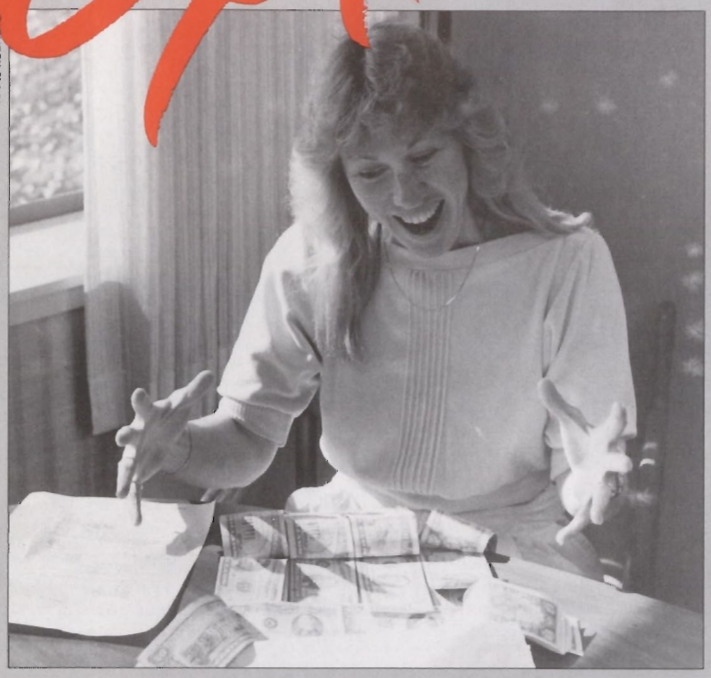
First, the simplified design will help us achieve significant production economies. The HP 3000 Series 930, the first commercial HP-PA computer, contains less than a quarter the number of parts of the currently top-performing HP 3000 Series 70. And since materials represent much of a computer's cost, the simplicity of HP Precision Architecture has enabled us to produce very powerful systems at extremely competitive prices. Customers will also benefit from lower maintenance costs and power consumption. HP Precision Architecture thus provides both leadership price/performance, high reliability and a low cost of ownership for our customers.

Second, it's quite a feat to bring to market six new machines in such a short period. Typically, when a computer manufacturer moves to a new architecture, it takes from two to five years to move from the initial system to a broad product line. We've done it in about a year, which demonstrates that HP-PA should enable us to move much more quickly than our competitors in meeting future customer needs. In today's fast-moving industry, time-to-market is a critical factor in the success and profitability of a new computer.

I'm very pleased with the results of the Spectrum program. We've invested a lot of time and money, and now we're beginning to reap the benefits. I think we'll see them for many years to come.

John

Extra MEASURE



HANS KUENDIG

Patricia Hite usually doesn't see the results in cold, hard cash when she quotes product prices to Intercontinental customers.

He's not indebted to Hewlett-Packard

They talk about money all day long, but HP's Latin American quotation staff members don't usually see the dollars they quote. An exception was Patricia Hite at Intercontinental in Palo Alto, who received a package early this year containing $1,310 in small bills. The money came from a customer in Guatemala who wanted an industrial power supply.

Clearly, he had a lot of confidence in HP's and the delivery service's honesty. He didn't request a confirmation of receipt, only a telex on the day his purchase would be shipped.

HP PHOTO

HP's Ray Smelek, Glaxo's Brian Elks and two HP 7937 disc drives.

Others would pale in comparison

When the first HP 7937 disc drives came off the line at the Computer Peripherals Bristol Division, they went to Glaxo Pharmaceuticals, the division's biggest UK customer.

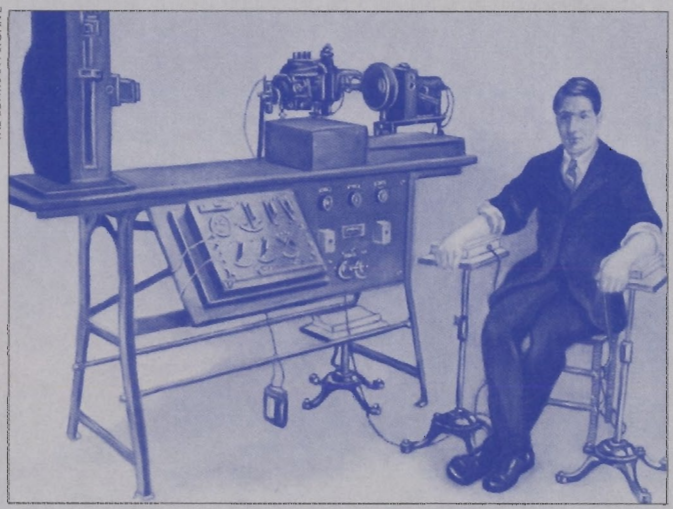
General Manager Ray Smelek presented the disc drives to Glaxo Operations Manager Brian Elks at an employee coffee talk. Brian shared some of his thoughts about his company's nine-year relationship with Hewlett-Packard: "The bedrock on which we have built our network and service is and remains firmly on the solid performance of HP hardware, which—I will tell you now for the first and last time while no one is listening—is second to none for reliability. I ask only for one very small favor. Please bring a little visual color into my life—and a touch of color to your boxes."

Nothing wrong some new rubber can't fix

HP Denmark's Steen Harreschou reports that employees there have been trying to capture a bit of HP's roots by starting a museum of the company's early instruments.

In the process, an old Model 50 electrocardiograph turned up for repairs after about 30 years of service in an Iceland doctor's office. The electronics still worked, but the rubber wheel that held the chart paper against the platen was worn, and the paper feed didn't work. There aren't available parts for this model anymore, but creative service technicians found a tire vulcanizing company to take on the project. After a retread job, and a wheel truing on the lathe, that old Model 50 was ready for the road again.

Steen reports that HP Denmark tried to talk the owner into a trade so the Model 50 could take its place in the museum and the owner could have the very latest and best money could buy. But the owner didn't buy it. He had a reliable instrument that did just the job he needed done—and an impressive service organization as well. No deal.



THE BETTMAN ARCHIVE

To use this early electrocardiogaph (not HP's), a patient put his arms in salt-water baths that served as electrodes.

Extra MEASURE

HP PHOTO

HP's Dave Poetker poses with Panacom's new terminal.

This tough-guy terminal posed on the job

Trade-journal editors want product photos directed right at their readers, and often toss out any others.

Since the Panacom Operation's rugged new HP Industrial Touch display terminal (HP 3082A) is useful in a broad range of industries, publicity shots were set up at a variety of Canadian customers' locations. To cover all needs, the terminal was photographed in black and white and in color, using cameras of several format sizes.

Dave Poetker, Panacom product manager who arranged the sessions, found himself the model (above) at Volkswagen. Other shots were taken at Jolly Green Giant (where the terminal was mounted on a post within easy reach of a forklift operator), Imperial Oil and Northern Telecom.

Helping out Panacom were some Colorado HP friends. Bill Porter of the Electronic Instruments Group was MARCOM manager for the product introduction June 1 and Ben Teel, Loveland Instruments Division graphics designer, was photo director.

The new terminal is completely sealed, with an enclosure that is NEMA-4&12-rated. That means you could squirt a fire-hose on it without damaging it—a demonstration not tried in the photos.

THE BETTMAN ARCHIVE

HP employees in the UK received the Queen's Award for export achievement on April 21st, Queen Elizabeth II's official birthday.

Queen-size award to HP Limited

Hewlett-Packard Limited in the UK won the Queen's Award for export achievement on April 21, the Queen's official birthday. This award is Britain's highest business accolade, given annually to just a few companies.

Standards for the award are high and companies must demonstrate significant and determined efforts to improve export performance over a three-year period. Exports from the Computer Peripheral Bristol Division and the South Queensferry Telecom Division and Microwave Operation satisfied the committee's stringent requirements.

UK employees were to be treated to a beer bust when HP Ltd. officially received the award from the Lord Lieutenant of Berkshire.

30,000

HP meets the Pepsi Challenge

Hewlett-Packard passed a milestone this month with the sale of the 30,000th HP 3000 computer system to Pepsi Cola Bottling Group. Pepsi will be using the MICRO 3000 computer system to manage its vending machine distribution and repair network.

The Purchase, New York, sales team managed to beat several competitors with their winning solution of a third-party software application and our HP 3000 computer system.

BOTTOM LINE

Hewlett-Packard Company reported a 13 percent increase in net revenue and a 28 percent increase in net earnings for the second quarter of its 1987 fiscal year that ended April 30.

Net revenue totaled $2.017 billion, compared with $1.778 billion for the corresponding quarter of FY86. Net earnings totaled $162 million, equal to 63 cents per share on approximately 258 million shares of common stock outstanding; comparable figures a year ago were $127 million or 49 cents per share. Incoming orders for the quarter were $2.077 billion, up 20 percent over the same period for FY86, with US orders up 14 percent and international orders up 27 percent.

For the first half, net revenue was $3.757 billion, up 11 percent over the first half of 1986. Net earnings were $278 million ($1.08 per share), compared with the year-ago $236 million (92 cents per share). First-half orders totaled $4.008 billion, up 17 percent from a year ago.

CHART CHANGES

Manufacturing activities of the Böblingen General Systems Division and the Böblingen Computer Division have been consolidated into a new Böblingen Manufacturing operation under **Wolf Michel** as operations manager.

In the Medical Products Group's CIPM/OB Care Business Unit, Critically Ill Patient Monitoring activities have been restructured. R&D, marketing and manufacturing functions of the former Waltham Division have been shifted to the business-unit level.

Doug Chance and **Lew Platt** have been elected executive vice presidents, **Jim Arthur** and **Bob Wayman** senior VPs and **Dieter Hoehn** a VP. Chance, Platt and Wayman serve on the Executive Committee. **Frank Carrubba** to director of HP Laboratories . . . **Rui Da Costa** to country manager for Argentina.

NEW PRODUCTS

A new portable, high-performance protocol analyzer, HP 4972A, from Colorado Telecom Division is designed for use in the field. It has powerful testing capabilities for IEEE 802.3/Ethernet networks.

The Network Measurement Division has replaced the HP 8510A microwave network analyzer with the improved HP 8510B.

Offering anesthesiologists new alternatives for measuring various blood gases: two new patient monitors (HP 78356A and HP 78354A) from Böblingen and a plug-in module from Waltham for the HP 78534 series of monitor/terminals.

Winning isn't everything

The Bay to Breakers Race in San Francisco is an annual event that brings out some of the city's most colorful inhabitants—along with a handful of serious runners.

HP was represented this year by Project Roadrunner, a 50-employee centipede made up of employees from all the divisions in the Bay Area. Their goals this year included reducing their race time to under 96 minutes (to break the 12-minute mile barrier) and to "get the competitive edge" on their rivals. They were also aiming for worldwide media coverage, which *Measure* is happy to provide.

For dramatic effect, each employee in the centipede carried a "flower," made of four helium-inflated garbage bags with a balloon in the center. And all 50 participants, as well as the 25 people who made up the support staff, were required to wear sunglasses for positive vibes.

Boss, you're going to laugh when you see all the mistakes you made in my performance evaluation.

PARTING SHOT

A salute to Lu Packard, HP's first lady

Lucile Packard, wife of HP co-founder and board chairman Dave Packard, died of cancer at their Los Altos Hills, California, home May 30. She was 72.

Lu, a native San Franciscan, met her husband when he was washing dishes in her Stanford University sorority house. They were married in 1938 after they both graduated.

In HP's early days, Lu once said her role was "typing the letters, keeping the records and heating up the coffee pot." But as the young company grew, so did her participation. She interviewed potential employees, baked metal panels for the company's new electronic products in her oven and began the practice of giving gifts to mark an employee's wedding or the birth of a new child, a tradition that has continued.

She also started the practice of providing morning coffee and sweets—initially baking all the treats for employees herself. She helped organize the first company picnics and beer busts.

As HP became more established, Lu redirected her energies to community volunteer work and active participation in the Packards' philanthropic activities. She served as the vice president, treasurer and board member of the David and Lucile Packard Foundation, which she and her husband established in 1964 to fund cultural, educational, conservation and community programs in Northern California. In addition, she served as vice president and board member of the Monterey Bay Aquarium Foundation—after the Packard family built the aquarium in 1984.

At the time of her death, Lu was chairman of the Stanford Children's Hospital Board of Directors, and vice chairman of the board of the New Children's Hospital, which will be constructed at Stanford.

Stanford has announced the hospital will be named the "Lucile Salter Packard Children's Hospital at Stanford" as a tribute to her.

Longtime friend Agnes Jarman told the *Palo Alto Times Tribune*, "Lu was a very special kind of person never impressed by her own importance. People who did 5 percent of what she did have a much greater sense of their importance. She never lost the common touch."

CAROLYN CADDES

Lucile Packard, pictured above with her husband Dave, will be remembered by her HP friends as a gracious woman who worked hard to make the world a better place.

MOVED LATELY? CHANGE OF ADDRESS SHOULD BE REPORTED TO YOUR PERSONNEL DEPARTMENT.

HEWLETT PACKARD

Measure Magazine
PO Box 10301
Palo Alto, CA 94303-0890
USA

KENNETH L MACY
15485 BEAR CREEK ROAD
BOULDER CREEK, CA 95006

Bulk Rate
U.S. Postage
Paid
Hewlett-Packard
Company