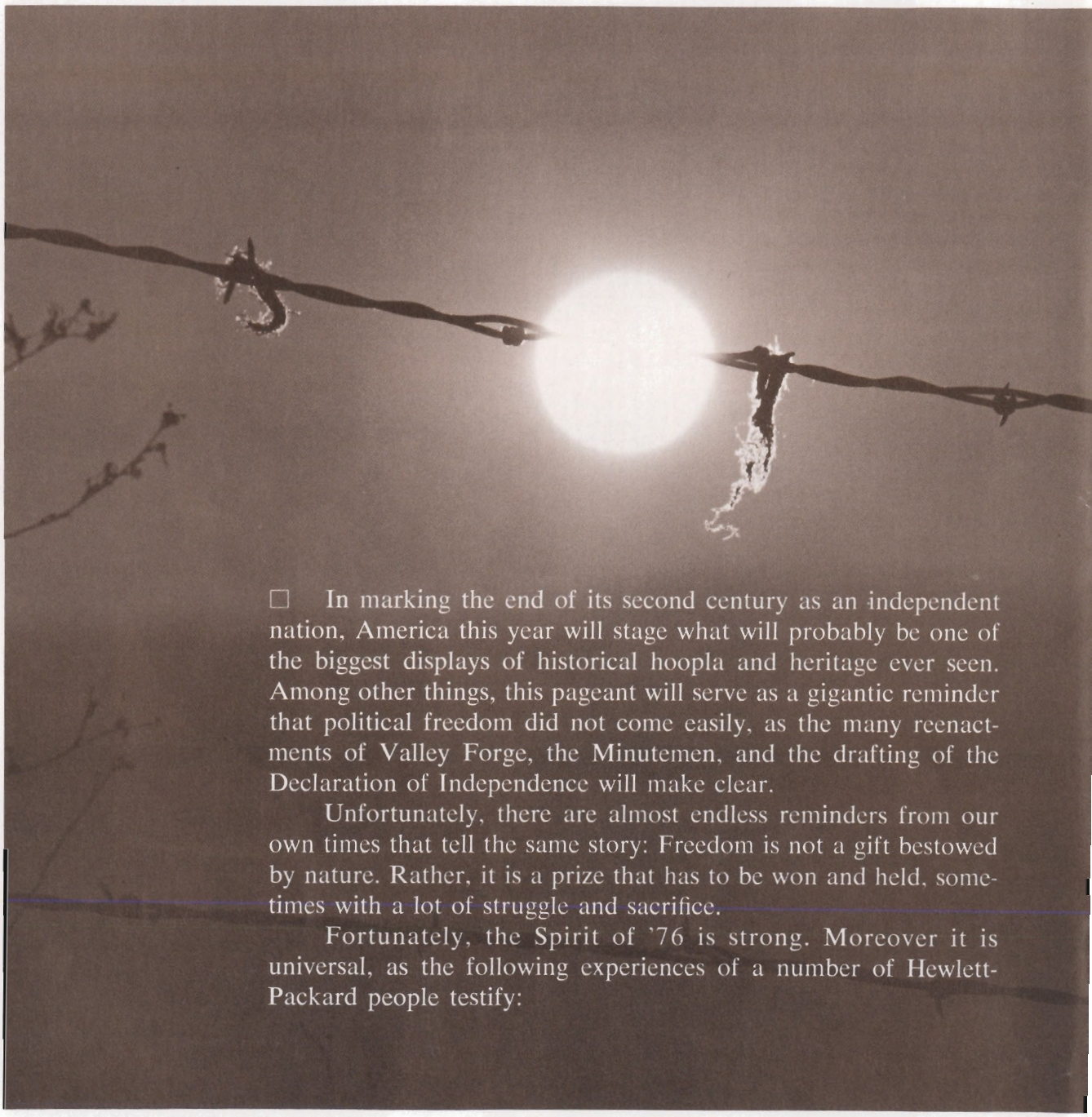
Measure

For the men and women of Hewlett-Packard / JANUARY 1976

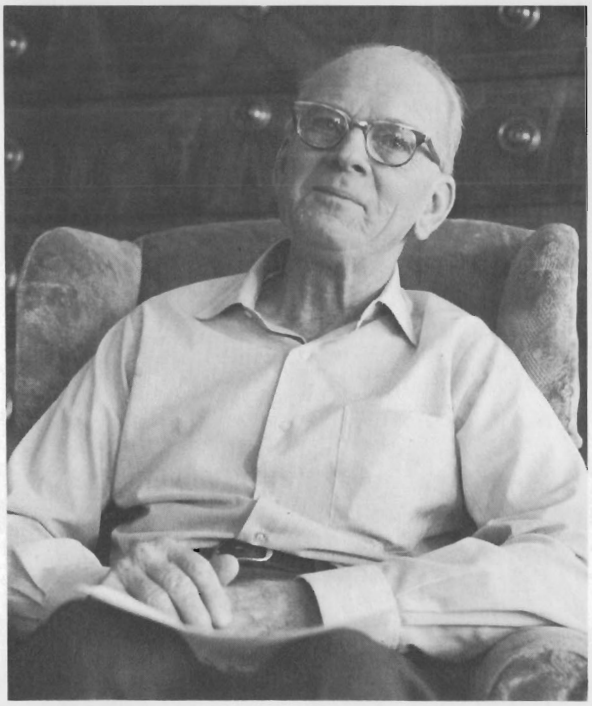
They chose freedom



□ In marking the end of its second century as an independent nation, America this year will stage what will probably be one of the biggest displays of historical hoopla and heritage ever seen. Among other things, this pageant will serve as a gigantic reminder that political freedom did not come easily, as the many reenactments of Valley Forge, the Minutemen, and the drafting of the Declaration of Independence will make clear.

Unfortunately, there are almost endless reminders from our own times that tell the same story: Freedom is not a gift bestowed by nature. Rather, it is a prize that has to be won and held, sometimes with a lot of struggle and sacrifice.

Fortunately, the Spirit of '76 is strong. Moreover it is universal, as the following experiences of a number of Hewlett-Packard people testify:



Paul Crommelin

Alla and Peter Kirchevsky

As a guard master (sergeant) in the Royal Netherlands horsedrawn artillery, **Paul Crommelin** recalls how Holland's pre-World War II military strategists used to debate the question of motorizing the army. They decided to stick with horses, arguing that vehicles in that flat country would be confined to vulnerable roads, and be too noisy to move secretly.

As it happened, of course, in May 1940 the German army swept through the horses and over the Lowlands in four days of panzer blitzkrieg. Paul Crommelin was not only out of business as a sergeant, he was in imminent danger of being dragooned into the labor forces of the invaders.

In fact, Paul, now with the Customer Repair Center at Mountain View, was picked for shipment to a work camp. Then, at his job in an Amsterdam steamship office, he was quietly contacted by a member of the Dutch underground resistance. Paul was told to go through all the formalities of labor conscription, but was promised that he would never have to go.

"I went to the railroad station — and there was my contact. He simply crossed my name from the list, tore up my ticket, and told me to disappear. Officially, it would seem as if I had departed but never made it to Germany."

For almost three years Crommelin remained in hiding, first on a farm, then in a small village. Twice he took special risks. First was when he applied for a ration card. Next was when he and Teresa were married, which required the public posting of banns. On another occasion, a known Quisling politician asked questions about Paul, but did nothing.

More distressing was his narrow escape when the Nazi occupation force, in reprisal against sabotage and the shooting of a general, seized all the men of his village — all except Paul. ("They ordered everyone to go to church. But I didn't trust them.") Out of 850 hostages, only 33 came back.

The ordeal ended on April 17, 1945: "I saw a man on a motorcycle, a Canadian. Then came tanks, followed by infantrymen. I can still picture them marching in my mind. I ran to tell Teresa. We both cried."

"We immigrated to California," said **Alla Kirchevsky,** "because we had read so much about it in books, and decided it was where we really wanted to live. It turned out to be so much more than we had ever imagined."

For certain reasons, Peter and Alla Kirchevsky are reticent to discuss their reasons for leaving Russia a year ago, saying only, "we wanted to live in a free country." But it is known that Peter played clarinet with the Moscow Symphony Orchestra, a prestigious position. Alla spent a number of years before leaving at the University of Moscow, where she received the equivalent of a masters degree in civil engineering.

Yet, Peter and Alla were willing to sacrifice their positions and possessions for the opportunity to come to America. And sacrifice it they did — as soon as Peter applied for a visa, he lost his job. During the three long months they spent waiting for permission to emigrate, the Kirchevskys were without income — and, if permission had been denied, without a future.

But, at last, during the early thaw of

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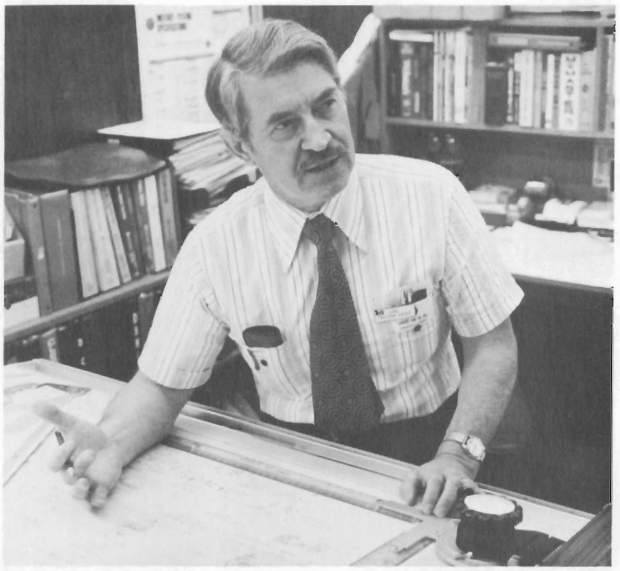

Bill Voros

detente, permission did come through. Peter and Alla left for Italy, where they waited for two months for a visa to immigrate to the United States. Upon receiving the visa, they boarded a plane for San Francisco.

But, Russia doesn't let go of its people that easily. The Bureaucracy and customs of that country keep a hold on its people even after they are no longer citizens. For Alla, there was the long wait for her college transcripts to work their way through the Soviet government and be transferred to this country. Meanwhile, she had been hired as a permanent employee in the Data Systems printed circuit/loading department.

Peter discovered to his surprise that classical music is not as popular in America as in Russia — with little demand for classical clarinetists. While attending school to learn English and train for a more lucrative future, he has been working the swing shift in the Data Systems Building Services Department.

Both plan to work hard at improving their use of English and in furthering their careers. But mostly they pin their hopes on their 16-year-old son, Alex Alexander, who aims to enter the University of California next year.

Do the Kirchevskys have any regrets? No, they have something completely different. Something they didn't have before: "Hope."

When **Bill Voros** saw a Soviet T-34 tank blast a hole through his Budapest home, he got the message: Get out of town!

"That was 19 years ago and it was a very difficult decision for me and my family," recalls Bill, now an associate tool engineer in the Mountain View fabrication department of Data Products. Voros had seen his country torn apart by World War II and turned over to Russian troops by the Potsdam Agreement. By 1956 he and almost all of Hungary were living in hope that some sort of international support would be given to the popular uprising against communist oppression.

"That was the one time when all Middle Europe had a chance to break free," says Bill. "But the opportunity was not recognized by the Western nations. Without outside help there was no hope against those tanks and rockets surrounding the city. So we decided to escape. We didn't want to live within a system of repression, even though we could have remained there in reasonable comfort. Mostly, we wanted our two sons to have a chance for an education free from political indoctrination — and a better life for ourselves."

Quickly, the family gathered a few valuables, bade a few hush-hush farewells, and began walking toward Austria. Suddenly, five Russian soldiers arrested them. After two days in prison being investigated by a Russian officer, they were escorted to a train returning to Budapest and told to make no further visits to the border.

But just before the train departed the Voros family walked out the other side of the railcar and again began walking toward Austria. This time the guide got them there safely.

"We were exhausted — but it was a wonderful feeling to be free again."

By "again" Bill Voros is referring to the fact that he had had one other brush with captivity. Not wanting to fight for or against Germany, he nevertheless was a fighter pilot defending his country in World War II. But in 1945 the invading Russians captured him, assigning Bill and other men to work in Siberia. However, a Slovenian student whom he had befriended managed to have him put on the "old people's" list.

"I was sick, thin — and with my beard I must have looked very beat up! In any case, they let me go."

Such memories have strengthened Voros' belief in the value of personal freedom: "There may be deficiencies in our system and our lives here. But the real solutions will never be found through tyranny, but only by freedom of the individual to act in a responsible way."

Tran Nhon and Family

Jerry Byma

Sometime during those last frantic days before the communist takeover of Saigon, **Tran Nhon** and his wife took their three youngest children to an orphanage — with the almost certain knowledge that they would never see them again. "I gave them up because I felt it was hopeless for our family to get out," Tran explains in nearly flawless English. "If we couldn't, at least the children would have a chance." The photo of Tran and his family was taken just days after that decision was made — obviously a period of great stress and uncertainty.

Three of the six Tran children stayed with their parents because the orphanage wasn't accepting anyone over ten years old. Nor was there any certainty that the younger ones, ages eight, nine and ten, would get on one of the "babylift" flights to freedom. "But anything was better than hopelessness," Tran says now. "We had a family discussion, and although the children were very young, they understood. I told them that if they stayed behind with us there was no future, and that I might be killed because I worked for the U.S. Government."

Today, with his family together again in California, Tran works as a material handler at HP's Santa Rosa plant. It doesn't compare with the high-level professional job he held in Saigon, but he feels lucky to be working at all, and confident that there will be other opportunities in the growing Santa Rosa Division.

How was he able to escape with the rest of his family? "I would call it a miracle," he answers, describing the confusion that surrounded Tan Son Nhut Airport. "We moved from place to place those last few days, waiting to hear what to do."

When word came that they could board an evacuation flight, they had one hour's notice. The official that issued their exit permits was so busy he signed and stamped them without even filling in their names. "We took what we had on our person," Tran relates. "My wife took some family pictures and one of the children had a hymn book. That was all."

Once they were out of the country, finding the other children took considerably longer. At Camp Pendleton, Tran found their names on a list of "orphans" that had been there but had been flown to Oregon. With the help of the Red Cross, they were located and reunited with the family a month later.

Tran has fled from the same enemy twice before — once in 1949, from a communist-controlled region in the north to an area under French control, and again a few years later when the country was partitioned and thousands of Vietnamese moved south.

His parents, a brother and many relatives are still in Vietnam, but for their safety Tran doesn't try to correspond, and he doubts that he'll ever see them again. "But as far as my children are concerned, I think this is a land that is good for them," he says.

Officially, in his native Czechoslovakia, **Jerry Byma** is a condemned man. His 'crime,' for which he was tried *in absentia*, was that of "staying abroad without permission."

Jerry, the industrial calculator product coordinator for ICON sales region, readily admits his guilt. He is also completely unrepentant, as is his wife Maria who fled with him and their two children.

The main purpose of the Bymas' flight in 1968 was to find a political system that would not conflict with the family's religious views. At that time, hard-line communists were threatening the regime of Alexander Dubcek.

"In a real communist state," says Jerry, "all schools are government controlled, and conflict is inevitable for anyone who seeks the full, free practice of a religion. Every child sooner or later will find that either the parent or the teacher is not telling the truth, and that's the beginning of moral dishonesty and political opportunism. For the children's sake we wanted to avoid that kind of conflict."

A very careful period of preparation preceded the escape. "After all," Jerry

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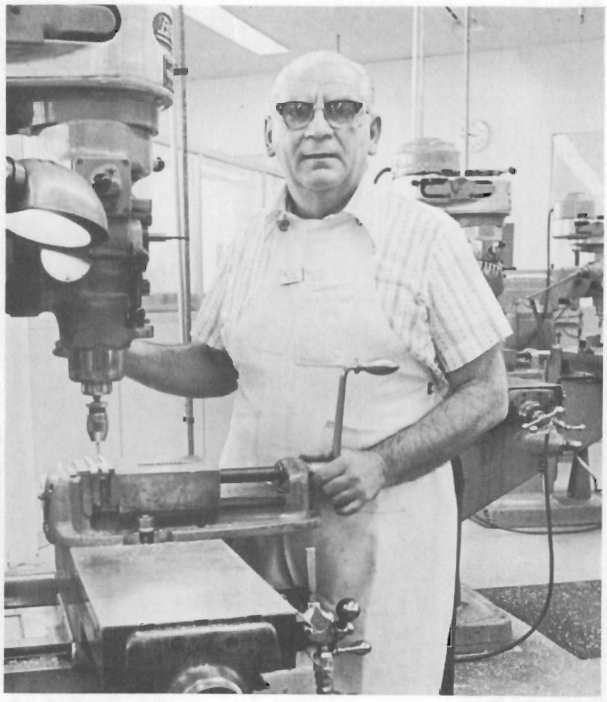
They chose freedom



Kaz Bytomski

notes, "there were no guidelines for getting away. I had to invent my own."

Starting in 1967, Jerry's first step was to get a driver's licence, buy an old car (a 1941 Mercedes costing eight months salary), and then wangle a vacation invitation to Austria.

In August 1968 they made their break without incident. Three days later the Russians invaded Czechoslovakia — ending Dubcek's experiment in developing socialism with a "human face." The Russians had seen that experiment as a major threat to their Leninism (labeled by one Czech philosopher during Dubcek's "Prague Spring" as an "Asiatic adaptation of Marxism"). The invasion put any thoughts of return far behind the Bymas and the other thousands of Czechs seeking freedom.

In 1939 while sitting at home, **Kaz Bytomski** discovered that he was no longer a citizen of Poland, his homeland. Instead, by means of the Hitler-Stalin pact, his country had been annexed and divided in halves, Kaz's half going to Russia which now claimed his loyalty.

It wasn't long before the secret police arrived in town and notified Kaz that he would have to fulfill the obligations of citizenship by joining the Red Army. When he refused, Kaz was summarily arrested as a 'German spy,' interrogated, then sentenced to death. When asked if he wanted to apply for clemency, (that is, change his mind) Kaz declined.

Then, while waiting on death row at Homel prison in the Ukraine for his execution, Kaz received a letter from 'Father Stalin.' The letter informed him that his sentence had been commuted to 25 years hard labor in the Ural mountains; Russia, it seems, needed workers, not dead men.

Within a year, the German Blitzkrieg was roaring across the Russian front. Kaz was called into the prison warden's office and once again offered the opportunity to join the Red Army. Once again, he refused. This time, though, because of his university training as a technician, he was given another chance. Offered the position of maintenance engineer at a coal mine in Khazkhazan, near the Gobi desert, Kaz accepted — anything would be better than prison or the Soviet army.

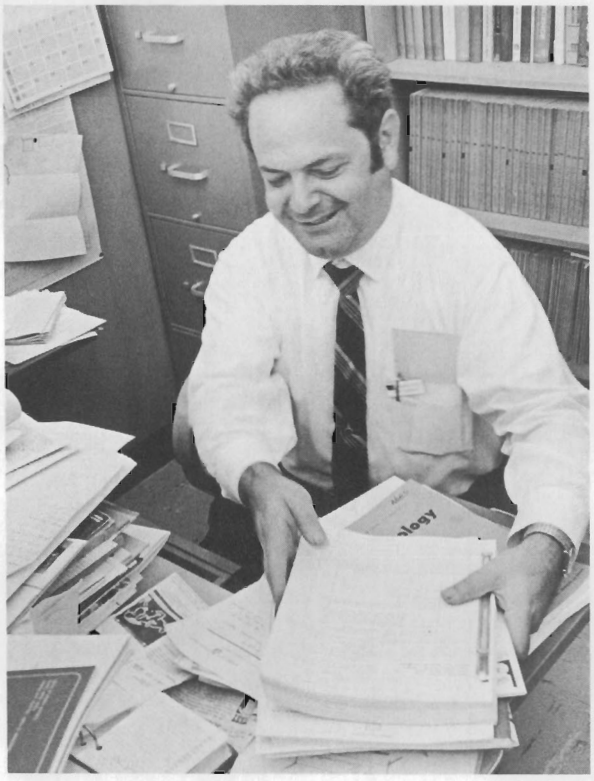
Released from prison camp and escorted to the nearest train station, Kaz was free to make the journey unassisted. Aboard the train, he encountered a number of other displaced Poles, and learned from them of the existence of a Polish embassy near his destination. Said Kaz, "I decided at that moment to divert my journey."

Gaining asylum in the embassy, Kaz joined the Polish Navy (operating for the war's duration from England), and obtained passage from Russia aboard a British cruiser.

Kaz spent the rest of the war in the Polish Navy. After demobilization, he enlisted in the British Merchant Navy. In 1950, he emigrated with his new bride to the United States, where he found employment as a tool maker and supervisor in a small machine shop on Long Island, New York. Moving to California in 1959, Kaz joined Hewlett-Packard in 1965. He is presently employed as a tool and die maker at HP's San Diego Division.

Christine Ho of the HP Taiwan marketing service group twice has survived the upheaval and displacement of her life by the swirl of events in the hottest political cauldron of recent history, Vietnam.

In the first instance, Christine and her family were living peaceably as members of the Chinese community in Haiphong, the major port of North



Egon Loebner

Vietnam. In 1954 the forces of Ho Chi Min took possession of the city, compelling thousands of families to seek refuge in the south. Eight-year-old Christine became a refugee and then a resident of Saigon. In time she worked for a U.S. government agency there, married, and began raising a daughter. While life there was not at all easy in the midst of war, there was a hope and belief that the South would survive as an independent political entity.

As the world knows, that hope came crashing down less than a year ago. Christine and her mother and daughter found themselves milling about in the confusion on Tan-Son-Nhut Airport. Finally after more than 24 hours of uncertainty and no sleep, they were ushered aboard a C-130 aircraft.

In spite of exhaustion and lack of passenger comfort on the cargo plane, Christine found herself very happy — able to "breathe the air of freedom again." That feeling was reinforced a few days later when she was reunited with her husband at the Taipei airport.

Christine still feels a sadness in recalling that her father, brothers and friends were left behind. But, she says, "We lost everything. Now we have to start over again. I am very grateful for my job here; it is the most pleasant thing I have ever had since my arrival."

Having survived imprisonment at the hands of the Nazis in World War II, **Egon Loebner** and his wife Sonya don't need any lessons in the value of freedom. But they're grateful that the three Loebner children — all born in the United States — are now getting a taste of life under Soviet oppression. On leave from HP Labs, Egon is serving our State Department as science and technology chief at the U.S. Embassy in Moscow.

According to Egon, the family's experience in Russia has made better Americans of his teenagers. "Mindy, the youngest, is quite distraught that she'll be missing the celebrations of the two hundreth birthday of her country," Egon writes, "especially when she is just learning to more fully appreciate many of the ideals and realities for which it stands."

At an age that most Americans remember for graduation day or the senior prom, Egon was sent to the first of five Nazi concentration camps where he spent three and a half years — and where his parents and many friends and relatives perished. As to how he escaped death, he says only that he was saved "by a sequence of improbable events." In the face of hunger, sickness and exhaustion, he kept up his spirits through mental exercises.

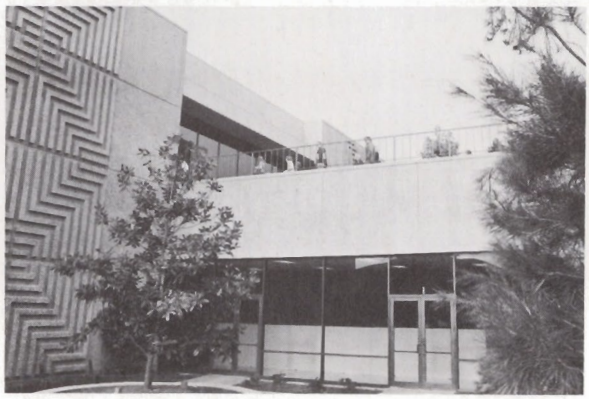
Egon was freed at Flossenbuerg in April, 1945, by members of General Patton's army. Sonya, whom he met later in Czechoslovakia, was freed from another concentration camp at about the same time. Both wound up in the United States, and they were married in Buffalo, New York, where Egon was working toward advanced degrees in physics.

A high Soviet official once asked Egon why he would leave his beautiful home in Palo Alto for a small government apartment in Moscow. Egon replied: "My country has been very good to me, as you can see for yourself. I would like to, in a small way, repay the debt I owe for the wonderful opportunity it has given me in rebuilding my life."

That, says Egon, is the reason he and his family will not be home for the bicentennial. □

Set amidst 190 acres of rolling pastureland in the hills above the Northern California community of Santa Rosa, HP's new Santa Rosa plant is a showcase of the harmonious blending of industry and the natural environment. But you'll have to drive up to it or fly over it to see the buildings which are screened from the town below by trees and hills.

Two buildings provide 250,000 square feet of space for the division which now numbers some 1,200 people. To restore vegetation moved during construction, more than 20 acres have been landscaped, largely with trees.



Santa Rosa shows its style

☐ Among the 6,000 people of California's Sonoma County who took the guided tour of HP's new Santa Rosa plant on "open house" day last November 22, there was general agreement: it's a beauty!

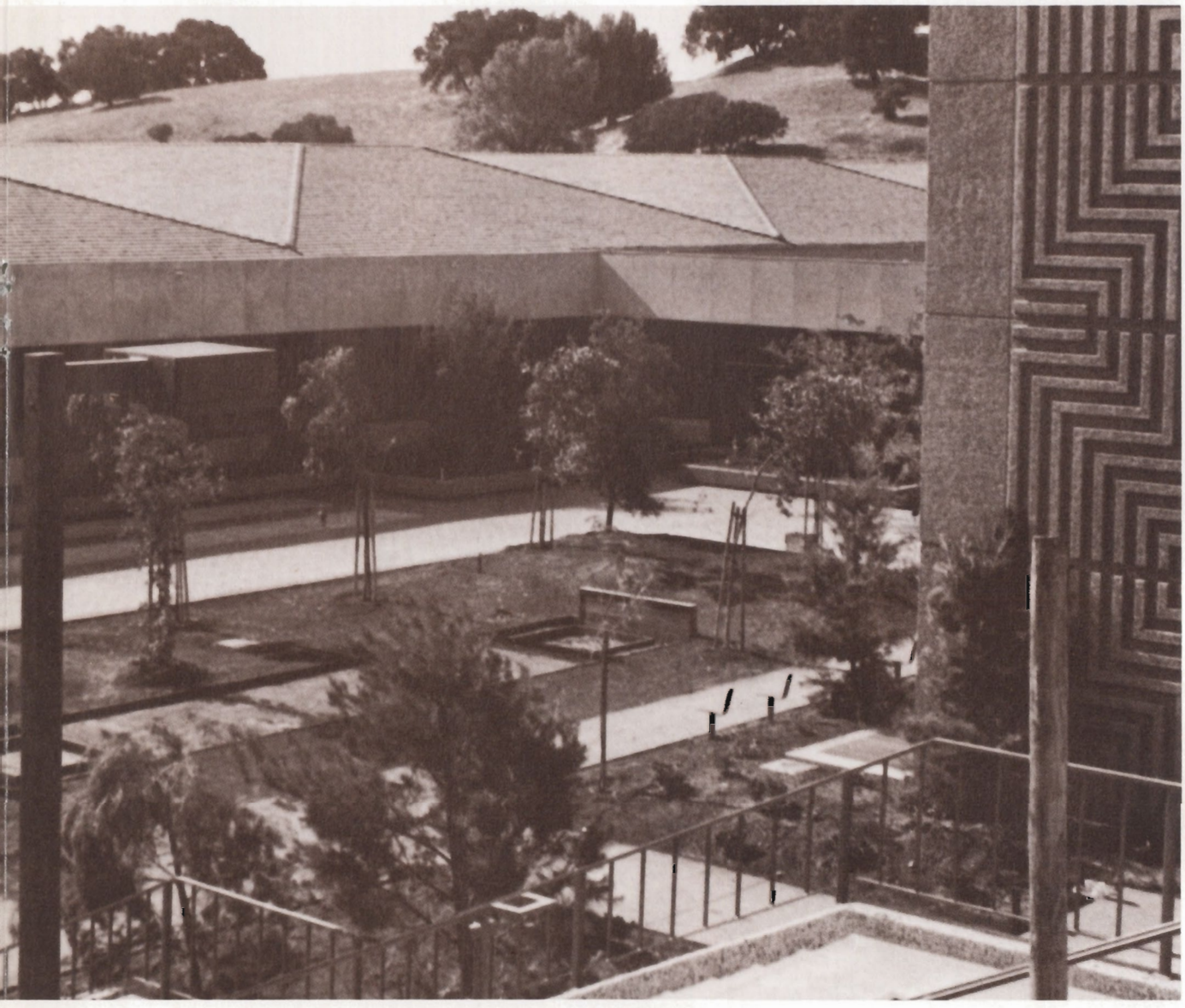
What's more, according to some experienced observers, the plant is going to look even better in the future — as finishing touches are completed, trees fill out and the landscaping matures.

The attractive appearance of the facility clearly fulfills a pledge made by HP in 1971 when it announced plans to build on the 190-acre site located on the rim of the magnificent Fountain Grove ranch overlooking Santa Rosa. That promise was to create an architectural style blending harmoniously with the environment of hills, trees and meadows.

At a gathering held prior to the open house, division manager Doug Chance told community leaders that the move-in was almost complete. By the end of 1975, he said, the division will employ close to 1,300 people. With the exception of the fabrication and machine shop operations remaining at the leased Airway Drive building, all will be working in the two Fountain Grove buildings. Chance also noted that 1976 will be a "vintage year" for new products generated by the lab teams.

Some other interesting economic facts were brought out. Bill Hewlett reported that of the 1,000 people hired locally by the plant, more than half were unemployed at the time of hire. "Yet," he added, "after only a few years of operation, these people are as productive as those at any HP plant."

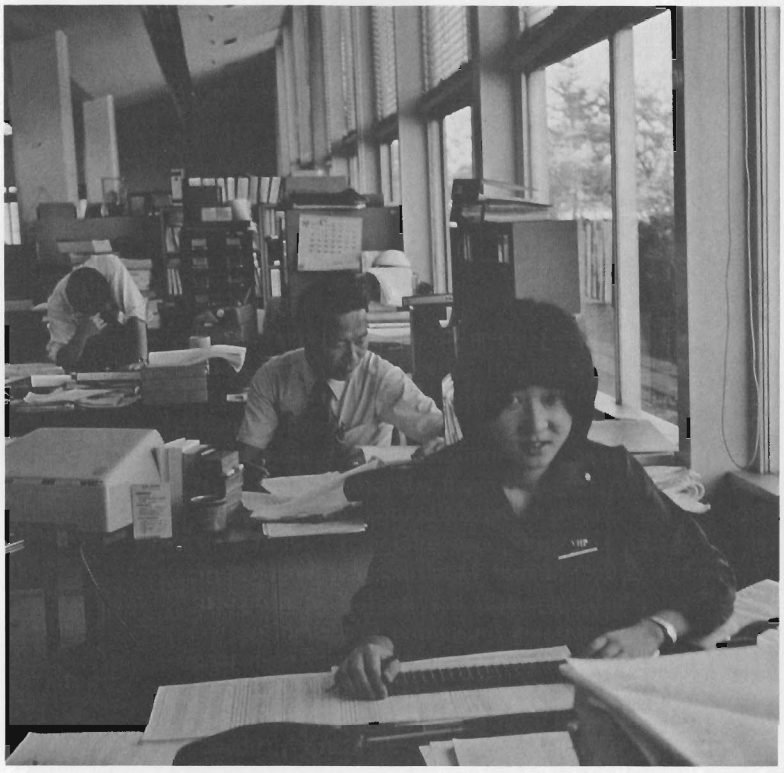
Next stage for the Santa Rosa Division will be construction of a third building, to be started this summer for occupancy late in 1977. Beyond that, Doug Chance says, "further expansion will depend a lot on the economy and the success of our local team." ☐



More than 6,000 people from the community turned out on a Saturday afternoon last November to inspect the new HP plant and learn something about its people and products.

HP in pictures

No, your eyes do not deceive you. That really is an abacus — or "soroban" in Japanese — in use by Mitsue Hosoya of the YHP plant's finance department. Mitsue is employing the device to check some numbers produced by a computer. It turns out that the soroban, in the hand of a practised user, can out-perform the adding machine and its successor, the "four-banger" calculator, in a number of basic math functions. HP visitors to Japan, including Doris Benson of ICON who provided the photo, report that the soroban is quite commonly used in restaurants and stores — placed right alongside the cash register which is used simply to display the total produced by the time-honored mechanical hand calculator. Readers are invited to calculate their own conclusions.



See the U.S. for 1¢ per mile? Avondale (Pa.) Division's Bud Brassil led his 43 Boy Scouts on a 5,500-mile, 17-day venture to such places as Yellowstone National Park and the Grand Teton mountains for just over $50 out-of-pocket expense per trooper. Of course, it really costs quite a bit more than that, but the extra came from selling cakes and highway flares, and doing jobs such as cleaning up the HP picnic grounds. In any case, Bud, a 14-year electronic technician at the Avondale plant, is most interested in arranging an exchange of ideas and experiences between his troop and other HP-led scouters around the world.

Scenes similar to this have been repeated often, with somewhat the same cast of characters, as the "division review" has become an HP institution. On this recent occasion, Eric Hill explained a new manufacturing information and accounting system — nicknamed MANIAC — that has proven successful at San Diego Division.

Inside a division review

One result of HP's becoming a "big" company with dozens of semi-autonomous divisions is that the close attention of top management is no longer possible.

Or is it?

Something called the "division review" has evolved from what was once termed an R&D or product review. At least once a year at each manufacturing division, a team of top corporate managers assembles for a day or more of briefings on subjects ranging from Affirmative Action to quality control, with a great deal of emphasis on product development.

When Measure put in its bid to observe a recent review of the San Diego (California) Division, General Manager Dick Moore was understandably nervous about it. "This is a pretty important report card for us," he explained, hoping the presence of our cameras wouldn't de-

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Dick Moore, San Diego general manager, began the morning session with an overview of the company's plans and performance. Other presentations were made on finance, manufacturing, personnel, marketing, R&D and customer assurance (a department that includes quality assurance and customer service — a successful combination, according to Dick).

Vice President Ray Demeré (left) of the Instruments Group and Bruce Wholey, vice president for manufacturing, checked the output of a new printer for quality.

With Executive Vice President Bob Boniface, Dick Moore talked about the additional building space his division will need to accommodate expected growth over the next few years. Finance manager Larry Welte (left), discussed the effects of inflation and other factors that influence the division's plans.

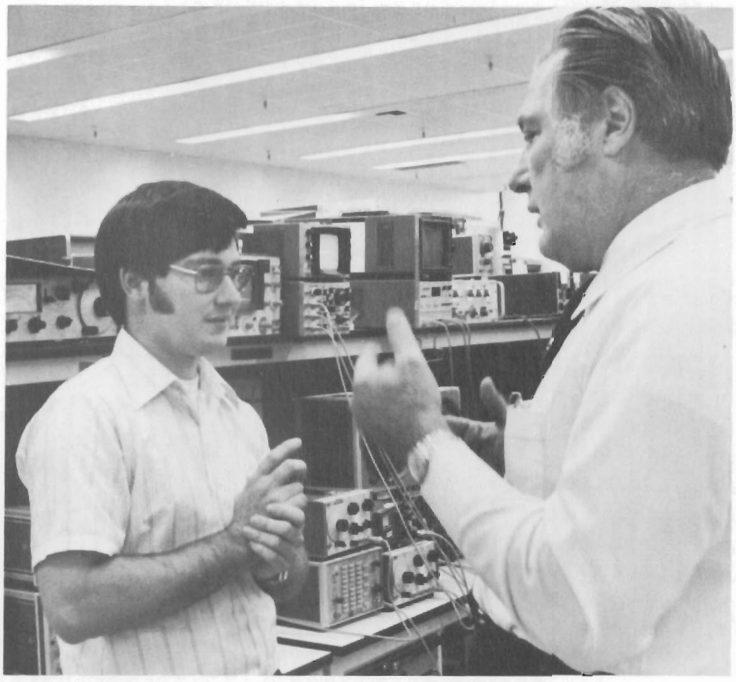
tract from the presentations. (As it turned out, everyone was too busy to notice.)

San Diego Division numbers just over 700 people, producing graphic and recording devices that include X-Y and strip chart recorders, instrument tape recorders, and plotters.

Perhaps the most impressive thing about the review was its thoroughness — the detail of the presentations, the pointed questions, the amount of technical data reviewed on new developments. In a billion-dollar company with over 3,500 products on the market, one can scarcely imagine the chairman being concerned about the bandwidth capability of a new recorder. But Dave Packard was. In a half day of conference-room sessions and several hours in the plant and the labs, it seemed that nothing escaped the attention of Hewlett, Packard, the vice presidents and other members of the review team.

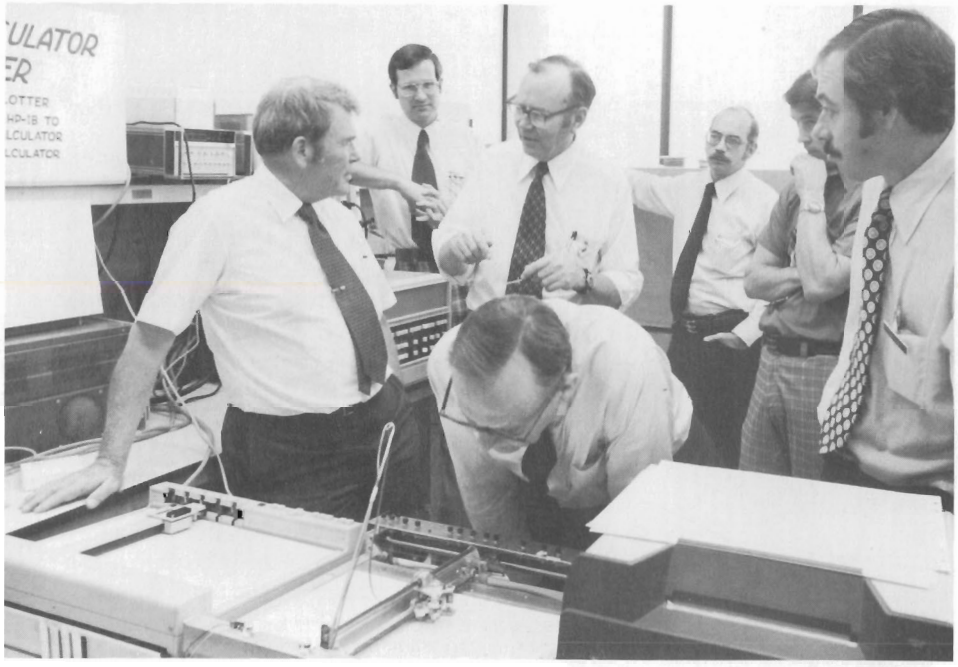
In general, the visitors liked what they heard. And it wasn't a one-way conversation by any means; the lively dialogue left the San Diego people with a number of important ideas and suggestions.

But most important, according to Dick Moore, was being reassured by top management that some of the division's plans are really as exciting as he feels they are. "It's almost as if we've passed a final exam," he said. □



Throughout the day, there were many person-to-person exchanges as well as group discussions. Barney Oliver, vice president for R&D, spoke with San Diego's John Fenoglio about a promising new method of recording data on tape.

The technology for a new family of strip chart recorders was demonstrated by Allen Johnson and carefully scrutinized by Dave Packard.



In the division's R&D lab, President Bill Hewlett and Executive Vice President Ralph Lee discussed a new calculator plotter while Francis L. Moseley, an HP director, took a close look at the "breadboard" model. (Moseley is the former head of the company that, by acquisition, became HP's San Diego Division.) Calculator-related developments were of particular interest to Ray King (right), general manager of Advanced Products Division.

HP NEWS

High-powered new desktopper

PALO ALTO — A powerful medium-priced desktop programmable calculator with many features previously found only on minicomputers was introduced by Hewlett-Packard on January 19.

The new 26-pound HP 9825A calculator, priced at $5900 (U.S.), is designed primarily for use in the fields of engineering, research and statistics. The 9825's speed, interfacing abilities and computer-like features make it particularly well suited for use as the controller of an instrument system, for pilot process control applications, remote data collection and production control. It can also be used as a powerful stand-alone computing tool.

Significant contributions embodied in the 9825 that provide major user benefits include: Two-level priority interrupt, live keyboard, direct memory access with input speeds up to 400,000 16-bit words per second, high-performance bidirectional tape drive, multi-dimensional arrays, automatic memory record and load, extended internal calculation range ($\pm 10^{511}$ to $\pm 10^{-511}$), and optional plug-in read-only memories (ROMs).

The 9825 uses a high level programming language called HPL. This formula-oriented language is easy to learn and ideally suited for controller applications as well as for data processing.

Bill Terry elected WEMA chairman

PALO ALTO — Bill Terry, vice president and general manager of Instruments Group, was elected 1976 chairman of the board of WEMA (Western Electronics Manufacturers Association). Terry previously was treasurer for the trade association.

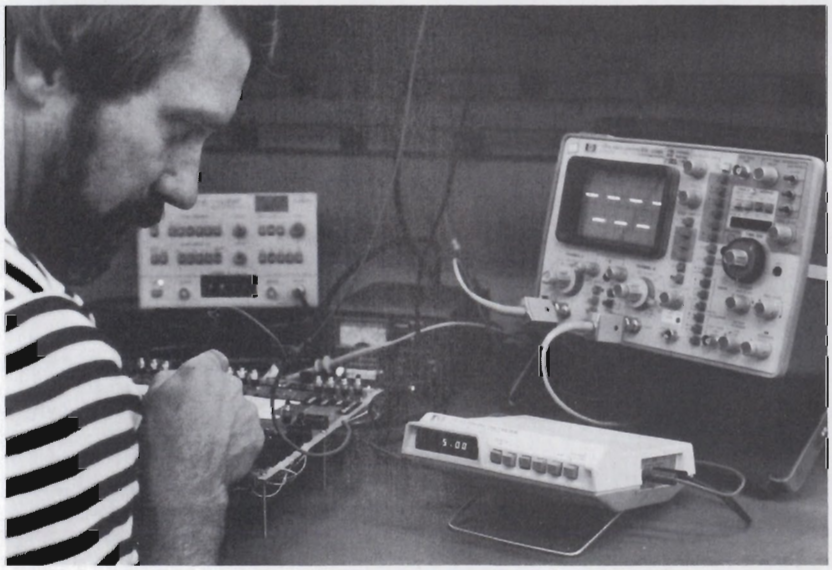
Annual report theme: Corporate responsibilities

PALO ALTO — HP's annual report to shareowners for fiscal year 1975 presents a special theme based on "the four dimensions of HP responsibility."

The report, being distributed to HP shareowners this month, notes that the company imposed on itself certain responsibilities long before "corporate responsibility" became a current topic of discussion by industrialists, eduators and legislators.

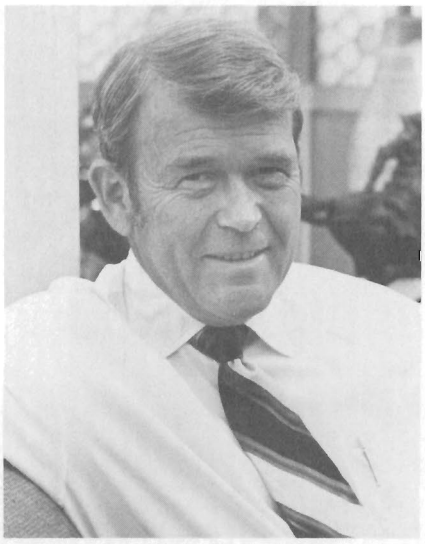
In an introduction, the report states that "Three areas of responsibility were identified and incorporated into HP's management philosophy: responsibility to customers, to employees and to the community. Later, when stock ownership was extended to the public, a fourth was added — responsibility to shareowners."

The report goes on to discuss how the company applied its resources and energies to those four key responsibilities in 1975.



New autoranging digital multimeter — for $225!

LOVELAND — A major technological advance enabled Loveland Instrument Division to offer this new 3½ digit, five-function, fully autoranging digital multimeter for only $225 in the U.S. Very rugged and compact, it measures a wide range of voltages, resistance, and current. Autozero, autopolarity and autoranging are built in. Development of fine-line, tantalum nitride resistor technology, employing laser trimming, allowed HP to eliminate the use of costly discrete precision resistors. Indications so far are that the 3476A/B will gain very wide acceptance.



From the president's desk

Someone the other day asked me an interesting question — "A year or so ago we had a big push to conserve energy. What really happened?" The answer is that the program was very successful, but somehow we forgot to tell people the results. So, let me now give a report on what we have achieved.

We attacked the problem on two main fronts, transportation and in-plant energy use.

In the case of transportation, our first step was to change over from "full size" to "intermediate size" company fleet cars. Based on data available from the National Association of Fleet Administrators, this has resulted in an estimated reduction in gasoline consumption of about 430,000 gallons per year, and an annual cost savings of about $240,000. Additionally, we converted to diesel power on those few large trucks that we operate. As an example, on the Santa Rosa-Palo Alto round trip this represents a fuel savings of almost 6,000 gallons a year.

We also are evaluating the propane conversions we made on some of our light-duty pickups and vans. Propane has the advantage of being a clean burning fuel and thus we may legally remove the smog devices. This provides greater fuel economy, and since at the moment propane costs less than gasoline, we also derive a substantial cost savings.

In the case of in-plant energy use, there have also been some noteworthy improvements. When we first looked into this area of energy consumption a number of interesting facts came to light — most of which pointed out that when energy was cheap we tended to use it wastefully.

Overall, there have been many specific changes instituted to conserve energy. Some are more technical in nature, while others are obvious, like turning out lights when not needed. Just an example: Our air conditioning systems were set with very tight limits. Thus, even on a cold day, if the inside temperature rose above the thermostat level, the cooling system was activated and asked to bring the temperature back to a proper level. So, whether we were too cold or too hot, we were consuming energy unnecessarily. The solution was a simple one. In winter, set wider limits between when heat was turned on and off, and disable the cooling system. If there was a slight overshoot, the temperature might rise momentarily, but would quickly return to normal. Thus, we could avoid wasting heat to get rid of heat.

I could give other examples, but what really counts, though, are results. What has been the net effect of all of these efforts?

A simple comparison can perhaps give the best total picture. If one looks at our U.S. manufacturing operations as a whole in the two years prior to the energy crisis (1972-1973) and the two years following (1974-1975), one finds that the trend of increased use of total energy — natural gas, oil, electricity — has been halted. In fact, there has been no essential increase involved, despite the fact that our shipment volume has increased more than two-fold from 1972 to 1975. Put another way, if you equate it to total heat units per square feet of floor space, there was an actual drop in usage of 21 percent from the 1972-1973 period. An impressive record.

We also have had some interesting experiments such as that at Automatic Measurement Division in Sunnyvale where the engineering staff designed and installed some 300 solar heat panels on the roof that supply up to 60 percent of the total heating needs. This experiment has attracted quite a bit of attention in terms of the potential of solar heating.

On a longer-term basis, we have revised our architectural standards for new building design to insure greater efficiency in energy utilization. Some typical examples are improvements in insulation methods and materials for walls and roofs, thermal glass where climate justifies, better siting of buildings relative to sun positions, reduced window areas, more sophisticated heating/cooling systems, better reuse of heat generated in certain production processes, and use of more efficient lighting techniques.

In other words, we have taken the energy crisis seriously. We have been able to reverse the trend of ever-increasing energy demands, we are working energy-saving concepts into future plans, and we have taken major steps to increase our transportation efficiency. Finally, as new ideas and technologies become available we will review them carefully to determine if they are applicable to HP.

Bill Hewlett

Lessons learned on the football field...

The so-called "Vow Boys" on Stanford University's football squad of the years 1933 and 1934 were a team of winners. Twice they won the championship of the West Coast, and twice went to the Rose Bowl.

Take that big fellow playing "end" — Dave Packard. Even though he did not get to play as much as he would have wished, he especially enjoyed the experience of membership on a winning team. He also won a letter on the varsity basketball team. As a member of Stanford's 1931 freshman track team in a match against arch rival University of California, Packard won the low and high hurdles, the discus, and tied for first in the high jump. (He also was elected Phi Beta Kappa for academic achievement.)

Last month Dave Packard received the ultimate award that a college footballer can win — the Gold Medal Award by the National Football Foundation and Hall of Fame. He was the 19th recipient; former winners include five U.S. presidents. Actually, the Foundation's Gold Medal is not based on performance as a football player; rather it reflects one who later has "excelled in his chosen profession."

In accepting the award, presented by foundation Chairman Vincent dePaul in New York last December 9, Packard said: "Football had a profound influence on my life and on what successes I've been able to achieve. I learned some of the most important lessons of life and success on the football field."

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