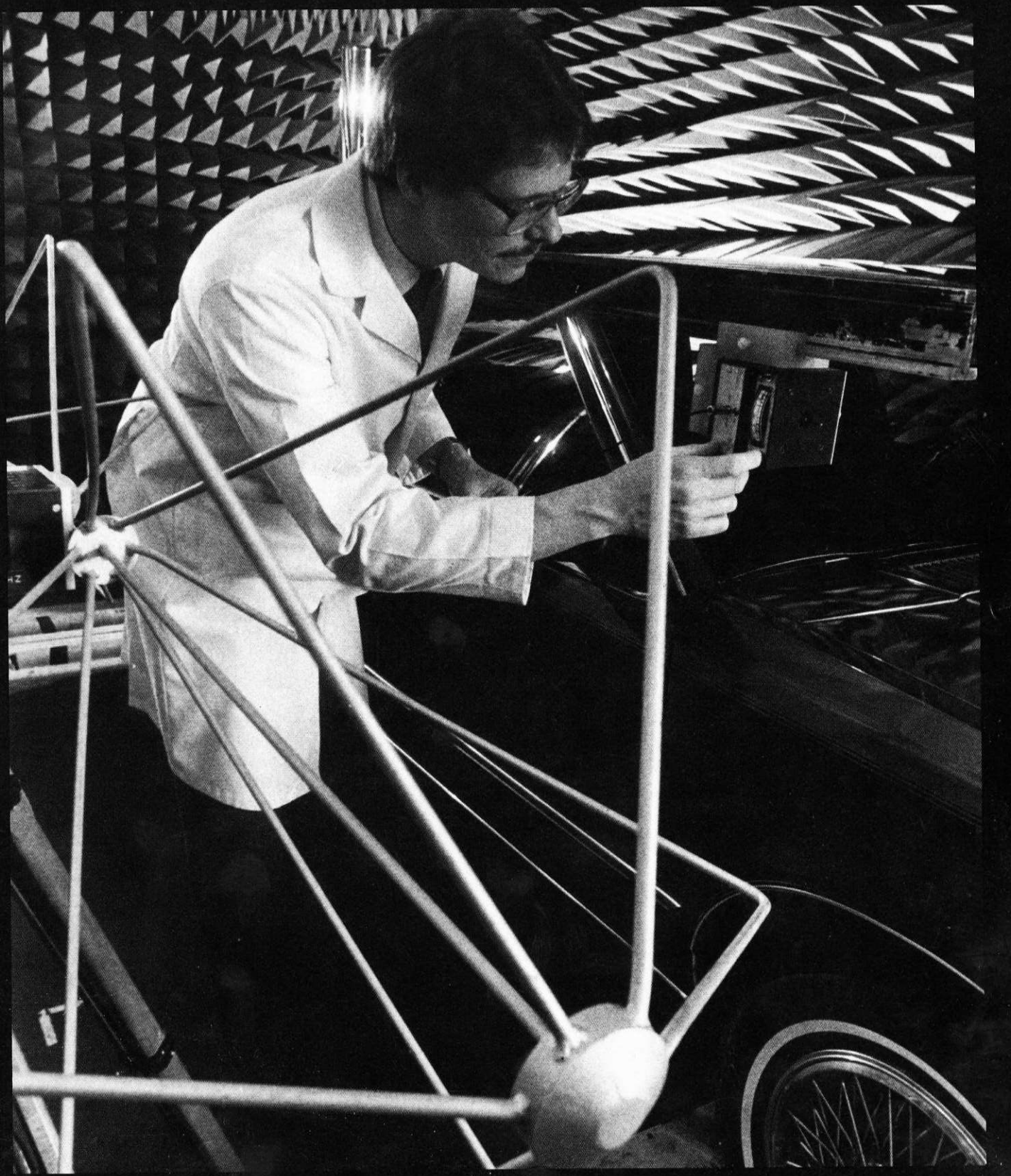
CABLEGRAM

PACKARD ELECTRIC



Bob Sovacool, project engineer, readies a vehicle for electromagnetic compatability testing in the EMC Chamber in Warren. This type of testing assures proper operation of the vehicle's electronic systems near broadcast transmitters.

A word from the general manager

Making excellence a way of life

As you recall, a year ago I spoke to all employes — on videotape — regarding Packard Electric's Mission, Objectives and Strategies and introduced the Division's newest objective - Excellence. We identified Excellence as one of the Division's major objectives. Excellence is doing everything right the first time, every time, in everything we do.

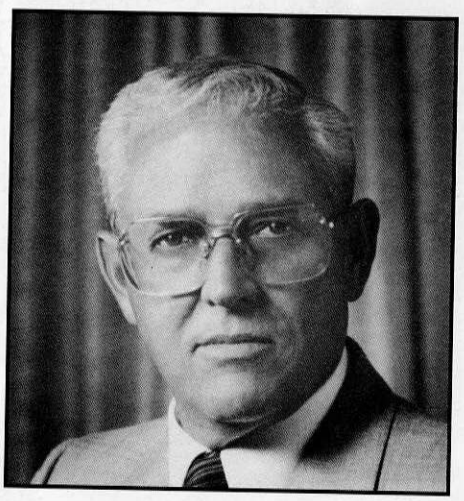
Now I want to update you on our progress in developing this concept and making Excellence a reality and a way of life.

The Task Force on Excellence has been and continues to be very active. Related task forces on Job Requirements and Training and Behavior as well as Process Certification and Capabilities and Burden and Super Burden have made their recommendations to the Executive Committee. The work of all task forces is in the process of being finalized. During the course of their work, it became obvious that two of these important issues — Job Requirements and Employe Behavior and Attitudes — should be integrated into the Excellence Task Force Analysis. This is now taking place. As the concepts of excellence develop, they will be integrated into our operations.

I have said on many occasions that we must strive for Excellence and find better ways to operate our business. We can see success stories. There are areas in Packard Electric today that have demonstrated excellence: the cutter bank in Mississippi; visual production controls in Mexico; Pull-to-Seat and our Just-in-Time operations in Warren; shrink-pack cable operations at Reinshagen; and elementized wiring from our suppliers are all prime examples of Excellence in the Division.

Excellence is an ongoing process - a process that we all must embrace in order for Packard Electric to have the highest quality product and be the lowest cost producer of power and signal distribution systems in the world today.

Elmer E. Reese
General Manager
Packard Electric Div.



Building a bridge

Packard's Cooperative Involvement engineers make customer satisfaction their chief goal

"You have to react quickly — be understanding and diplomatic, but tough."

That phrase describes the division's Cooperative Involvement engineers, according to Jerry Gilley, superintendent, Reliability.

Packard's approximately 20 Cooperative Involvement engineers are among the first to know it when Packard Electric does — or doesn't — achieve customer satisfaction at vehicle assembly plants.

Their job is to use quality information gathered at vehicle assembly plants to provide feedback about product design, wiring installation, packaging and training. To gain this information, Cooperative Involvement engineers establish data collection systems in various plant areas to monitor quality problems. These include problems such as broken bulbs, crossed wires, disconnects and unseated terminals.

"Our goal is to make sure that the vehicle is shipped from the assembly plant in perfect condition from an electrical standpoint," explained Gilley. "The Cooperative Involvement engineer serves as the liaison between Packard Electric and the assembly plant — the engineer must get the two minds to meet."

Recently, the division's Cooperative Involvement team split into two groups. Gilley has responsibility for the Buick-Oldsmobile-Cadillac and non-allied section, while Bill Clupper, superintendent, Reliability, leads the Chevrolet-Pontiac-GM of Canada and GM Truck and Bus Cooperative Involvement effort.

Dividing into two sections has allowed Packard to better please the customer — GM's vehicle groups. B-O-C Cooperative Involvement efforts emphasize working with new car programs, while C-P-C efforts concentrate on adapting the Cooperative Involvement to existing car programs.

Fewer warranty claims

"As we build cars with fewer electrical defects, we save the division money it would be paying out in electrical warranty claims," noted Clupper. "Thirty percent of all electrical warranty claims are related to wiring and connection systems."

Of that 30 percent, the failures can be divided almost equally between design, quality and installation problems. The Cooperative Involvement team is able to directly address assembly plant installation problems.

Causes of electrical failures can be hard to pinpoint, however. Cooperative Involvement engineers must look at many possible root causes — and even then they can't be sure their detective work will turn up the real cause.

"For any one defect there may be 10 root causes that could create the problem," Gilley pointed out. "That's why it's important that our engineers talk to people at the assembly plants. Tracking down and solving quality problems can be like attacking a swarm of mosquitoes — it's impossible to swat them all, so you've got to drain the swamp."

In other words, establishing preventive measures is the only truly effective way to improve product quality. Structured data collection systems help indicate which quality problems are most serious.

The three assembly plant locations most useful for data collection purposes include the test area after installation of the wiring assembly, the repair area and the salvage accumulation area. After gathering data, the Cooperative Involvement group provides other Packard quality improvement team members with the information they need to solve quality problems.

"The Cooperative Involvement program has provided the tools to measure the progress of engineering design programs," Clupper added. "We helped develop the Design Quality Index, which allows new designs to be compared on a car-to-car basis."

Cooperative Involvement efforts help Packard Electric evaluate its products, and try to ensure that assembly plants handle the division's product with care.

"Our problems tend to be recurring problems," Gilley commented. "When we've done our part toward solving those problems, it's then easier to go to the assembly plant and ask for their cooperation, too.

"We gather the facts that tell us exactly where we stand with regard to customer satisfaction. After all, customer satisfaction is the real name of the game."

photo: Reilly

(From left) Lisa White, Cooperative Involvement engineer, Packard Electric, discusses a connector breakage problem with Steve Meyers, electrical coordinator, B-O-C Lordstown, and Chris Noll, repairman.

Packard battles competitors in the Mexican arena

by Michael Hissam

photo: Hissam

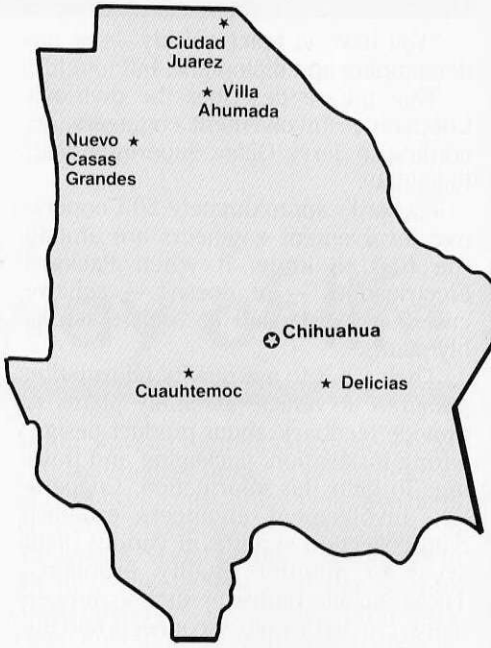
Jack Williams

What many thought only to be Packard Electric's prime cost-savings option — Mexico — has become an arena for cost competitiveness and quality. Packard's four Mexican subsidiaries and the division's major signal and power distribution system competitors — Yazaki, United Technologies and Chrysler wiring — stare each other eyeball to eyeball over the sun-parched earth of Ciudad Juarez, Chih. Each is ready to grab the other's business the hard way by proving itself to be the best.

Jack Williams, general director, Mexican Operations, quickly pointed out that being cost competitive in Mexico is not just a question of labor. "Labor's just one part of our cost. There's transportation, facilities, inventory and utilities, to name a few. Yes, we certainly do have to control all elements of cost in order to maximize our contribution to Packard's ability to compete."

Tackling those costs while striving for world-class quality and improving service to GM and non-GM customers is the role in 1986 for the operations' 15 facilities, including engineering and administration locations. Employes are primarily associated with final assembly of components supplied by the division's United States facilities.

"What we have to do," he noted, "is to be always one step ahead. Going to Mexico was the easy part. To be the best



CHIHUAHUA

Hans Weiser:

Reinshagen's new director points Packard Electric's European Operations toward a strong '86 performance

Packard Electric-Europe's new management team will face a multitude of challenges in 1986. Starting from scratch, however, will not be among them. Reinshagen prepared last year for the retirement of three top directors by forming the team that would succeed them.

Hans Weiser, managing director, Packard Electric-Europe, pointed to the experience of the new management team's members in the automotive and cable industries. According to Weiser, he and his team know what opportunities they will face this year.

"Both the automotive and cable markets are highly competitive in Europe," he explained. "We need to satisfy the customer. Even though Europe is a conglomeration of nations with different languages, cultures and business practices, it is imperative that we overcome nationalistic thinking and focus on the customer."

Focusing on the customer becomes increasingly important as Reinshagen battles for market share with competitors who are offering more and more electronic sophistication in their products. Packard Electric-Europe competitors include Siemens, AEG, Kabelmetal, Kromberg and Schubert, Draxlmeier, United Technologies, Labinal and Leonische Drahtwerke and others. Defending and strengthening market position will depend on implementing quality improvements and developing new technology.

Weiser also cited developments which will improve Reinshagen's competitive position. Reinshagen will produce new and higher-performance products. Services such as design and construction assistance, or the creation

among competitors is to be the most creative. That's what we have to do, and we have to work with Warren and Mississippi to stay out in front. Our operations in Mexico complement Warren and Mississippi."

Packard's ability to earn additional business is as much the key to any expansion of the Mexican Operations as it is to growth in Warren and Mississippi.

Concerning production schedules, Williams explained, "'86 and '87 appear stable in volume. Content is increasing as more options are added to the signal and power systems. More content has meant more work for Warren and Mississippi as well as Mexico."

Quality's competitive role

Mexico's gains in quality during the past year "were realized with help from the division." Use of newer quality-related systems including ALRO (At Line Ring Out) and SPRO (Single Point Ring Out) have become key factors in what he called "a major step forward in quality at a time when content and complexity — and potential problems — increased."

He went on to point out, "Quality gives us a critical opportunity to stay ahead of our neighbors down here."

Respect for material will gain additional prominence in Mexico in 1986, he stressed. "The people's attitude about materials is tremendous. They want their customers to receive products which are defect-free. They know that respect for materials means proper handling, care, movement, assembly and packaging."

Management, in Williams' opinion, is the make-or-break factor in employes' respect for materials. "It starts with management, not out on the floor. The Japanese have a tremendous respect for materials. It's apparent in everything I've seen or read. We have been working with our Mexican Operations' workforce to try to do the job right the first time. It can only do that job right when management gives them the proper tools, adequate training and the right material."

Rapid communication

Packard's newly-implemented production scheduling system offers Mexico a cost-savings opportunity through reduced inventory levels. "This system requires accurate, rapid communication.

"Everybody has to input the right information the first time. If it's not timely and correct, both the supplier and the user will suffer. It's as simple as that."

Mexican Operations personnel are learning the new scheduling system along with their partners in Warren and Mississippi. "We would like Mexico to receive everything from Warren and Mississippi on time. Remember, our customers expect us to supply them on time," Williams added.

Just-in-Time inventory and shipment has been a practical experience in Mexico despite the lengthy "pipeline" of Packard components to Mexico and finished goods to nearly 48 customer locations in the United States. "We've been gaining experience with Just-in-Time delivery with our NUMMI (Rio Bravo IV) plant. The NUMMI (GM/Toyota) plant in California currently receives two shipments per week from us. As their volume increases, they told us they will expect a shipment each day. We're also beginning that now with GM in a pilot program. Good planning and schedules go a long way to reducing inventory and realizing the cost-savings competitive advantages of Just-in-Time."

In addition to on-time delivery and perfect quality, NUMMI also rates its suppliers on their ability to reduce costs. "It teaches us that we must be different. Another rating area is for our response to their engineering change requests. It's something we must do to compete for their business."

Confidence in ability

Williams, now in his ninth year as director of the Mexican Operations, expressed confidence in the division's ability to get the job done. "Excellence is not just another buzzword. Our technological leadership and positive attitude transmitted into production can help all of us with costs and quality. We're all in this together!"

of flexible supply systems at a cost savings will increase customer satisfaction.

Reinshagen also plans to support customer quality programs by establishing computer lines for data exchange between customer and supplier.

"We expect to see growth in cable production volume this year," Weiser continued. "This will result from our generally improved economic conditions and the increase in the automobile's electrical content. One of our challenges is to manage this growth with flexibility."

Automakers face stiff competition on the cost and quality fronts. Because General Motors requires world-class quality parts to meet that challenge in Europe, suppliers such as Reinshagen must work to meet expectations.

This will entail changes in production methods in 1986, according to Weiser.

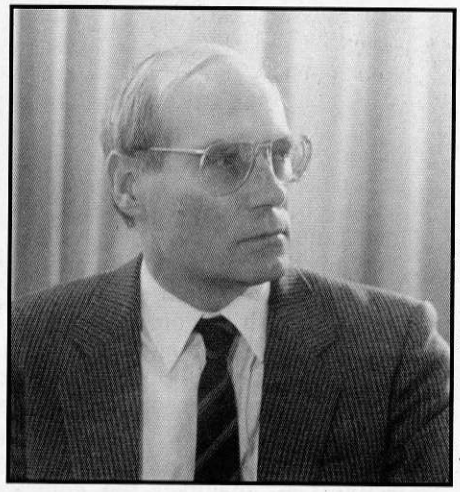


photo: courtesy Kabelwerke Reinshagen

"Our challenge is to manage growth with flexibility."
—Hans Weiser

Manufacturing reliable wiring systems with quality testing and without added cost will be one of Reinshagen's goals.

"We have to make our people aware that our quality improvement program is so essential to our success that it will determine whether or not we survive as a business," Weiser declared. "This year we'll present a broad informational and motivational program about quality to our employes."

All of Packard's European Operations come under Reinshagen's responsibility. These include subsidiaries in Portugal, Spain, Great Britain, Ireland and Tunisia in Africa.

He anticipates another strong performance this year, following 1985's 16 percent increase in sales.

"We performed well last year, and that should give all our people an incentive to be even better this year!"

CABLE FOCUS

Hanging Tough

by Patricia Reilly

As products relating to power and signal distribution systems become more complex, Packard finds itself competing in a variety of markets against a larger array of manufacturers. This has become especially true in the connection systems business.

For example, in the connection systems market, Packard competes not only against wiring assembly manufacturers such as Yazaki and United Technologies, but also against traditionally non-automotive component specialists such as AMP and Molex.

"These non-automotive manufacturers are becoming increasingly aggressive in the automotive market," said Scott Bailey, manager, Marketing. "AMP sells its connection systems worldwide. Now they're focusing that expertise on the North American automotive market."

It's the job of the Component Strategic Business Unit to develop Packard Electric's plans to compete in the connection systems market. Thus, SBU members continually evaluate the competitive environment and develop the division's long-term strategy accordingly.

Connection systems include metal parts, plastic connectors and connector assemblies. Packard sells commodity connection systems, which are systems that many manufacturers use, and custom connection systems, which are designed for specific applications. Over a period of years many custom connection systems become widely-used and evolve into commodity connection systems.

With commodity connection systems, price often determines who gets the business. With custom connection systems, the level of technology is often the determining factor. Packard has successfully maintained the upper hand when it comes to technology, but must struggle against smaller, cost-competitive manufacturers to maintain the commodity connection systems business.

As recently as 20 years ago automobiles contained only a handful of connection systems. Now vehicles are seeing a tremendous proliferation of various connection systems, which is a driving force behind market segmentation.

For example, cars first began sporting on-board computers in 1980. That required a high-density electronic connection system. It also paved the way for other competitors — competitors with electronic expertise — to enter the automotive arena.

"There are hundreds of variations in connection systems today, and naturally Packard Electric competes strongly in some market niches and is vulnerable to competitors in others," said Roy Szanny, Component SBU coordinator. "Our product application has grown tremendously."

Explosive growth

Packard has kept pace with the competition in trying to master the explosive growth in automotive electronics. As electronics firms have gained knowledge of automotive requirements, so has Packard gained knowledge of electronic applications.

"We're seeing a merger of the two markets," Bailey added. "So far Packard has done a good job adjusting to new demands. We have an advantage in that we have traditionally designed our systems to withstand moisture, high temperatures, vibrations — everything a product in a car will see — whereas non-automotive competitors are starting with systems designed for controlled climates."

Packard engineers are currently working to combine the best features of both automotive and electronic applications.

Connection products must continue to perform whether they've been exposed to high engine compartment temperatures, or severe road salt splash at winter temperatures. The division is the center of this type of expertise within General Motors.

GM depends on Packard to design custom connection systems to accommodate many new parameters. For example, the division may need to

Increasing competition in the world market forces Packard to increase its technological strength.

photo: Richard Clapp

Margaret Mansell, Dept. 1156, operates computer-controlled machinery putting terminals into 77-way transition blocks. Plant 11 produces many of the metal parts and component assemblies for the division's connection systems.

"miniaturize" a functioning design for the customer. Two examples include current work on a 130-pin electronic header connector and miniature connections which must fit inside MacPherson Strut rods. These control vehicle ride electronically.

"It's our job to stay within restrictions, and also meet quality, reliability, durability and performance requirements," Szanny noted. "We can compete in this business because of our overall expertise. We have good people, experience and our own technology to draw from. This alone doesn't give us an overwhelming advantage. But it's a key to our staying ahead of of the game."

Competitor Profile

AMP

- 1985 sales totaled $1.6 billion
- international headquarters are located in Harrisburg, Pa.
- United States subsidiaries include branches in Valley Forge, Pa., Milford, N.H., Austin, Texas, and Wolcott, Conn.
- has subsidiaries in Canada, Central America, South America, 14 European nations and six far Eastern nations
- employs 22,800 workers

AMP's competitive strategies

AMP is diversifying into closely-related electronic product and market areas where it can extend its technical, manufacturing and marketing capabilities. Its corporate objectives stress new product innovation. AMP bases its growth on electronic world markets and geographic expansion. This includes aggressive growth in the North American automotive market.

With a firm commitment to new product development and advanced technology, AMP's goal is strong penetration of high-growth markets. It has placed an increased emphasis on electrical and electronic distributor sales programs.

AMP will maintain its rate of technical spending at nine percent of sales to preserve its status as industry leader.

With an "AMP is quality connected" theme, the corporation strives to do "everything right the first time." It places a balanced emphasis on product quality, delivery, price, technical support and services. AMP also prefers a selective, long-term relationship with major customer accounts.

AMP has stepped up cost reduction measures through its "Cost Improvement Program" and its "Quality Improvement Program."

Building to requirements:

This customer-driven challenge

signals change for Packard's operations

(Foreground) Ron McHenry, packer, Dept. 4530, enters a lead code to generate a component inventory label. McHenry and Jim Flask (background), Dept. 4530, are among the many Cortland plant employes who helped Plant 45 to become one of the first Packard plants to implement scheduling to requirements.

photo: Richard Clapp

For many years Packard Electric has run quite well in a manner similar to a well-stocked grocery store. The shelves were full of Packard product, and a customer whose part wasn't scheduled to run immediately could be pretty sure of getting that part by asking for it. The division had inventory on hand, and lots of it.

No longer.

As competition with other manufacturers increased, Packard took a long, hard look at its scheduling system. It was a system that had worked well, but was no longer suitable for the new demands being placed upon it. Packard decided it had to change with the times. That change is called scheduling to requirements, according to Don Dedow, general Manufacturing manager. "Our customers' buying patterns have changed," he said.

"They're buying only what they need. We can't afford to build ahead and hold onto excess inventory. That's why we're changing our own production methods to begin scheduling strictly to customer requirements."

Scheduling to customer requirements — building exactly what customers ask

Viewpoint

Scheduling to customer requirements isn't a perfect system, but it IS a better one! Packard Electric and its people are going to change for the better — and we'll all feel some "growing pains" as this happens.

Yes, we're going to see some changes in the way we do things. We will need more changeovers, and we'll need to become more efficient in doing them. We'll also see our customers getting material when they need it without the significant cost of premium transportation. And most importantly, we'll be freeing capital tied up in inventory, which we need to improve our processes.

I'm not saying scheduling to customer requirements is a cure-all. It won't be. It is, however, the first step in what I'd like to call "The Packard Electric Production System." It's one of the changes we must make to satisfy the customer

for when they ask for it — seems to be a rather simple concept, yet it will have far-reaching ramifications on the way Packard Electric operates.

For example, the division must rely on its people to produce quality parts because inventory will no longer be available to cover mistakes. Also, scheduling to requirements will mean that nearly each part number is cycled each week. For Packard people, this means more frequent changeovers.

Machinery will require preventive maintenance to avert a breakdown at a crucial moment. It is this type of mistake excess inventory used to hide.

"We've got a lot of money tied up in 'in-process inventory.' Our objective is to improve material flow while operating with a minimum of inventory at all levels of manufacturing," explained Chuck Scarbrough, Materials Management Systems. "We're changing old habits. We may be 100 percent efficient in producing more leads than are actually required, but if we throw them away as excess, we are wasting money rather than making money."

Building to customer requirements has come about for a number of important reasons. It will improve Packard's operating performance. It will detect quality problems more quickly, as the customer receives product that was manufactured most recently. And it will improve Packard's competitive position.

The change Packard is making is customer-driven. For example, Saturn Corp. will aim to deliver the customer's car within seven days of receipt of the order. Packard must cut its own lead time, increase its manufacturing flexibility and learn to produce in smaller lots, according to John Martin, director, Materials Management.

"We have been using production systems that have far outlived their time," declared Martin. "Producing to true customer requirements is the first step in our answer to the question, 'Do we want to stay in business?'"

Scheduling to customer requirements prevents misallocation of resources among Packard plants. Plant 10's standard pack for cable used to be two barrels. Plants ordering cable from Plant 10 would receive two barrels of cable even if they needed less. In the future Plant 10 will provide cable in fractions of the standard pack to accommodate scheduling to requirements.

Packard Electric introduced scheduling to requirements in pilot areas in Clinton, Miss., Plant 18 in Warren, and in Mexico to supply the New United Motor Manufacturing, Inc. (NUMMI) operation. And the division found that it works.

Scarbrough said he expects to encounter many problems along the way, however. For example, some pieces of equipment aren't capable of cycling each part number weekly. Plans to correct these problems are underway.

"This is a case where less is better than more."
—Scarbrough

"Building to customer requirements will affect the way we do business, but it will eventually improve Packard's bottom line," Scarbrough added. "We want to better satisfy our customers, improve material flow and free up inventory dollars for investments in our future. This is a case where less is better than more. We must make it work!"

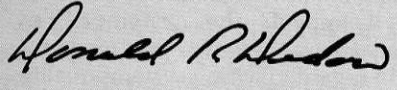
and make capital available for our future survival.

We've tried this system on an experimental basis, and we've found that the end results are better quality (an average of more than 142 on the Quality Index), conformance to specifications, reduced inventory, and satisfied customers who are getting quality products quickly, on time, and how they want them.

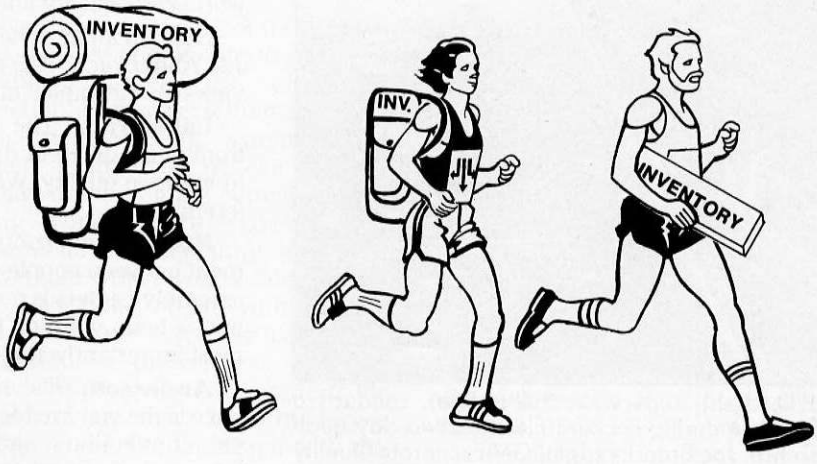
You can't argue with positive results.

Our customers no longer order large quantities. They only want what they will use the next day or the next week. And we don't want large quantities sitting in our inventory stockpile.

We're going to have to trust this new system — it will help us survive. I'm confident we will make it work.



Shedding the weight of excess inventory will help Packard in its race toward competitiveness.



artwork: Michael Verina

It adjusts temperature, barrel count, footage per barrel and diameter. Automatically. And it tells operators if something has gone wrong and where. Packard-Clinton is the first to put a fully computer-controlled wire extruder into operation at Packard Electric. It's a glimpse of the ...

Machine of the Future

by Beth Magee

If one were to take a trip on a time machine into Packard Electric's future, the scene might resemble an area of Packard-Clinton's Plant 22. Housed here is Packard Electric Division's first completely computer-controlled wire extruder in operation.

Like other extruders, this machine applies insulation onto wire. Similarities end there, however, as state-of-the-art features enable this machine to run automatically, make adjustments at the touch of a finger, and produce quality cable while reducing scrap.

"It is the machine of the future," said Hank Magusiak, senior Process engineer. "Initial production began in December."

Robert Henderson, process engineer, will customize the machine to Packard-Clinton needs and will work with the operators. In full operation, this extruder will enable Plant 22 to make more quality cable with less scrap — things which are essential to Packard's future.

Once programmed for a part number, this machine automatically adjusts temperature, barrel count, footage per barrel, diameter and other functions which previously required manual attention.

The machine automatically prints identification tag and production reports, thereby eliminating many identification problems.

"Misidentification is one of our biggest quality problems," said Magusiak. "Printing features built into this machine should impact this tremendously."

Downtime will also be reduced.

"When the machine malfunctions, it will tell the operator why, and identify the problem area. This will save time formerly spent locating the problem," he said.

An Infotouch Display communicates

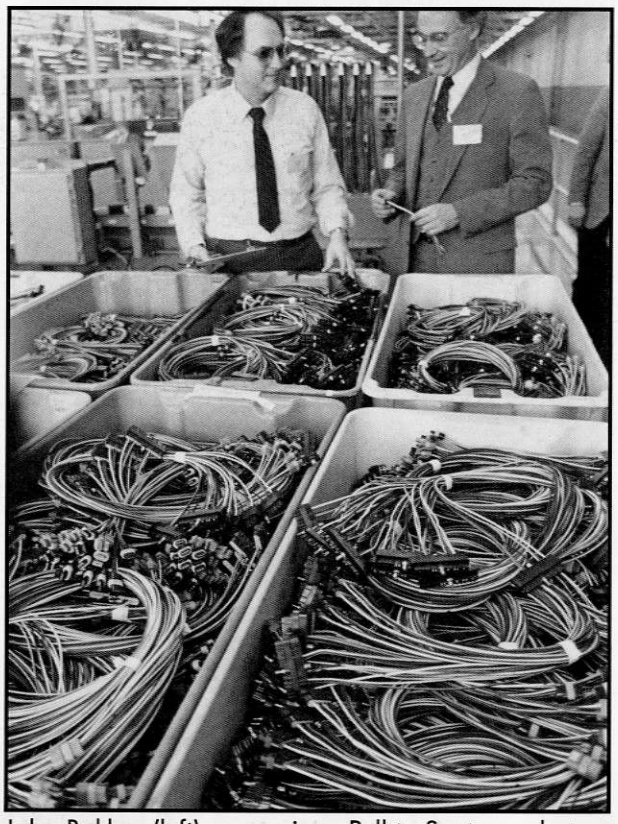


photo Reilly

John Bakker (left), supervisor, Pull-to-Seat, conducts a tour of Plant 14 during Packard Electric's two-day quality conference. Joe Bransky (right) GM corporate Quality and Reliability, was one of the more than 200 participants at the conference.

Quality conference addresses critical wiring-related issues

Packard Electric saw two choices it could make in regard to quality: pay now for the effort to make its product world class, or pay later with the loss of customers.

Packard clearly stated its choice when it co-hosted with B-O-C Lordstown a two-day quality conference focusing on the quality performance of power and signal distribution systems. Almost 300 participants from 59 of General Motors' operations attended the conference.

Three vehicle group quality directors spelled out their thoughts on world class quality and customer satisfaction at the event.

Later, in an interview with the **Cablegram,** Warren Hoops, B-O-C; Joe Anderson, C-P-C; and Tom Maxwell, Truck and Bus, offered their views on the impact of the two-day quality conference held in Warren.

Cablegram: The Quality Conference brought together people from many different divisions to focus on what can be done as a team to improve quality. What was the major accomplishment of this conference?

Hoops: The continuation and significant partnership development between people from the B-O-C, C-P-C, component divisions and assembly centers is a strategic step forward for General Motors. We're now a team working together in the interest of the corporation and, most importantly, the customer.

Anderson: The major accomplishment of the Quality Conference is the way we focused our attention on the significance of electrical connections and wiring as it impacts the customer. The information and education I received during these two days made me more aware of things I can support in regard to wiring systems quality.

problems. It allows the operator to monitor functions and control variables simply by touching the screen. The system features six main screens with a series of corresponding displays.

A "Fault Menu" monitors the line and identifies problems as they arise. A "Normal Run" screen allows the operator to check the machine's speeds. A "Temperature Menu" monitors temperature. "Machine Inputs" allows the operator to look at the part number in the system and make desired changes. A "Report Menu" prints production reports and identification cards.

Automated features create tighter production parameters. For example, a permanently-mounted striper produces a more precise stripe at higher speeds.

"Tighter parameters will allow us to produce a much more consistent cable, and a better-quality product," added Magusiak.

Quality and productivity are essential as Packard-Clinton addresses the challenges of the future, he concluded.

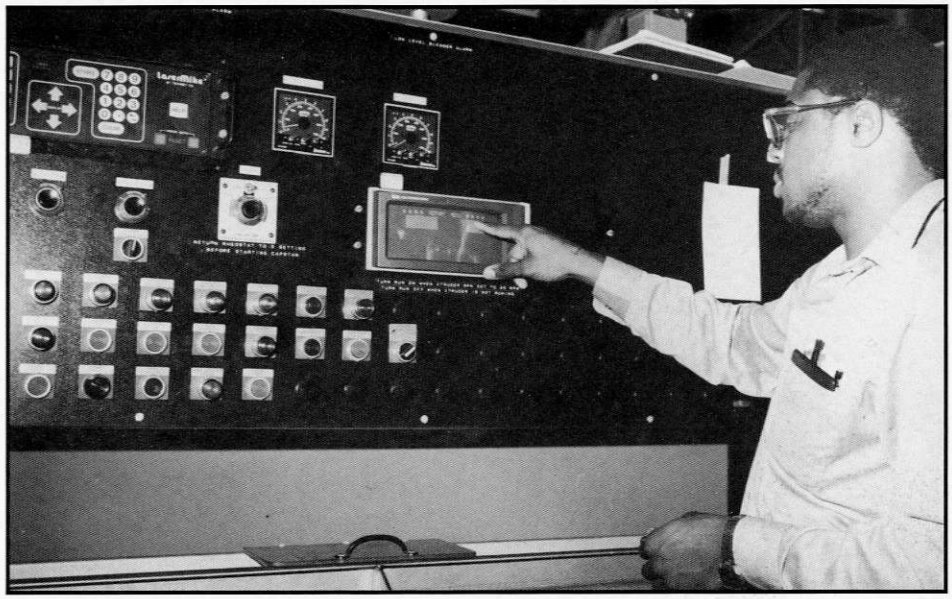


photo: Magee

Robert Henderson, process engineer, operates the Infotouch display on a computerized wire extruder in Clinton, Miss.

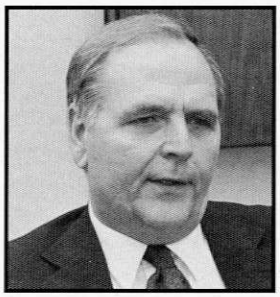
Maxwell: This experience re-emphasized the necessity for improving electrical quality in all our product lines. We've made some significant quality improvements in other parts of our product, and now it's time to concentrate on the electrical wiring area. We need to be aware of the opportunity we have to make signifcant improvements.

Cablegram: What are your quality expectations of Packard Electric as a supplier?

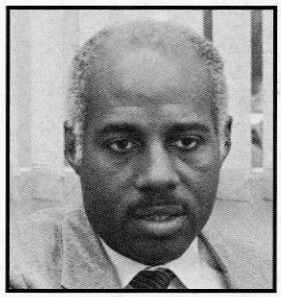
Hoops: Packard Electric has demonstrated outstanding leadership in satisfying customers. You place people in auto assembly centers and they respond promptly to any problems. Packard understands its competitive position within the marketplace. We want a continuation of our partnership. We want Packard input early in the design stage. This allows us to take advantage of your expertise with your product. We appreciate Packard people.

Cablegram: Tell us about the gains in quality you've seen at Packard. Where is this division's momentum with regard to quality?

Anderson: You're operating on several fronts. In the areas of research and advanced technology Packard is very aggressively pursuing some of the requirements that are appropriate to our ever-improving drive for customer satisfaction. Packard is setting standards in the manufacturing, assembly and shipment of material. We can all emulate this. You are on the cutting edge — having worked with NUMMI (New United Motor Manufacturing, Inc., GM's joint venture with Toyota located in Fremont, Calif.) and others with international experience — you are leading the corporation in these areas. Packard Electric's responsiveness to requests for support and customers' concerns serves as a role model. I'm impressed with the way you're coming along.



Maxwell



Anderson

Hoops

photos: Kearney

Cablegram: Let's talk a little about the customer/supplier relationship. Where are the opportunities to strengthen this relationship?

Maxwell: Packard's directness with the customer/supplier relationship is extremely important. You have spent the necessary resource — time — to try to identify who can help solve quality problems. In the past, that relationship hasn't been as direct and candid. The opportunities are there. However, the frightening thing is that I'm not sure everyone in Geneal Motors understands how quickly we must resolve some of these critical issues. I think the Quality Conference has helped point out that the area of electrical systems in our vehicles is a very critical issue.

Packard Electric Cablegram

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Doing it right

Rio Bravo I and Cableados score 145 on GMPCP rating

Packard Electric's Mexican Operations' Rio Bravo I and Cableados plants have chalked one up in the excellence column — doing it right the first time, every time.

Achievement of the maximum 145 General Motors Product Compliance Procedures (GMPCP) rating last month in the first corporate audit for the Mexican Operations has gained notice not only in the division, but in Detroit.

Carol Essad, divisional GMPCP auditor, explained that corporate auditors conducted the first formal audit in Mexico to measure compliance to procedures in final assembly of instrument panel and computer command control/engine combination "combo" harnesses. "The harnesses and the procedures related to assembly are complex.

"What we're seeing here is the result of the training and skills reinforcement for the hourly production (operativo) and inspection people in these plants."

Corporate auditors scrutinized the adequacy of manufacturing and quality procedures, and ability of the two plants to meet those procedures in the areas of building, inspection and material control.

"This 145 is the first maximum score on an audit by the corporate team this model year anywhere in GM," she stated. "In addition, the Packard Electric Mexican Operations' respect for material was the best the audit team has seen."

Jim Albrecht, manager, Reliability and Quality Control, Mexican Operations, noted that achievement of the top score was no easy task. "Any deviation from procedures would have resulted in a less than perfect result."

He congratulated the Rio Bravo and Cableados employes. "This 145 audit represents what can happen with the properly channeled efforts of everyone associated with these plants. These people, as well as all of Packard, have a right to be proud. It is this type of effort that also helps customer satisfaction — our customers know they are getting the product and the quality they want!"

In a report to Albrecht and Essad, the corporate auditors said, "The sincere commitment of plant management as well as production and inspection personnel to building quality products could not have been more obvious.

"The audit team would like to offer our respect and congratulations for a job well done."