

CABLEGRAM

PACKARD ELECTRIC

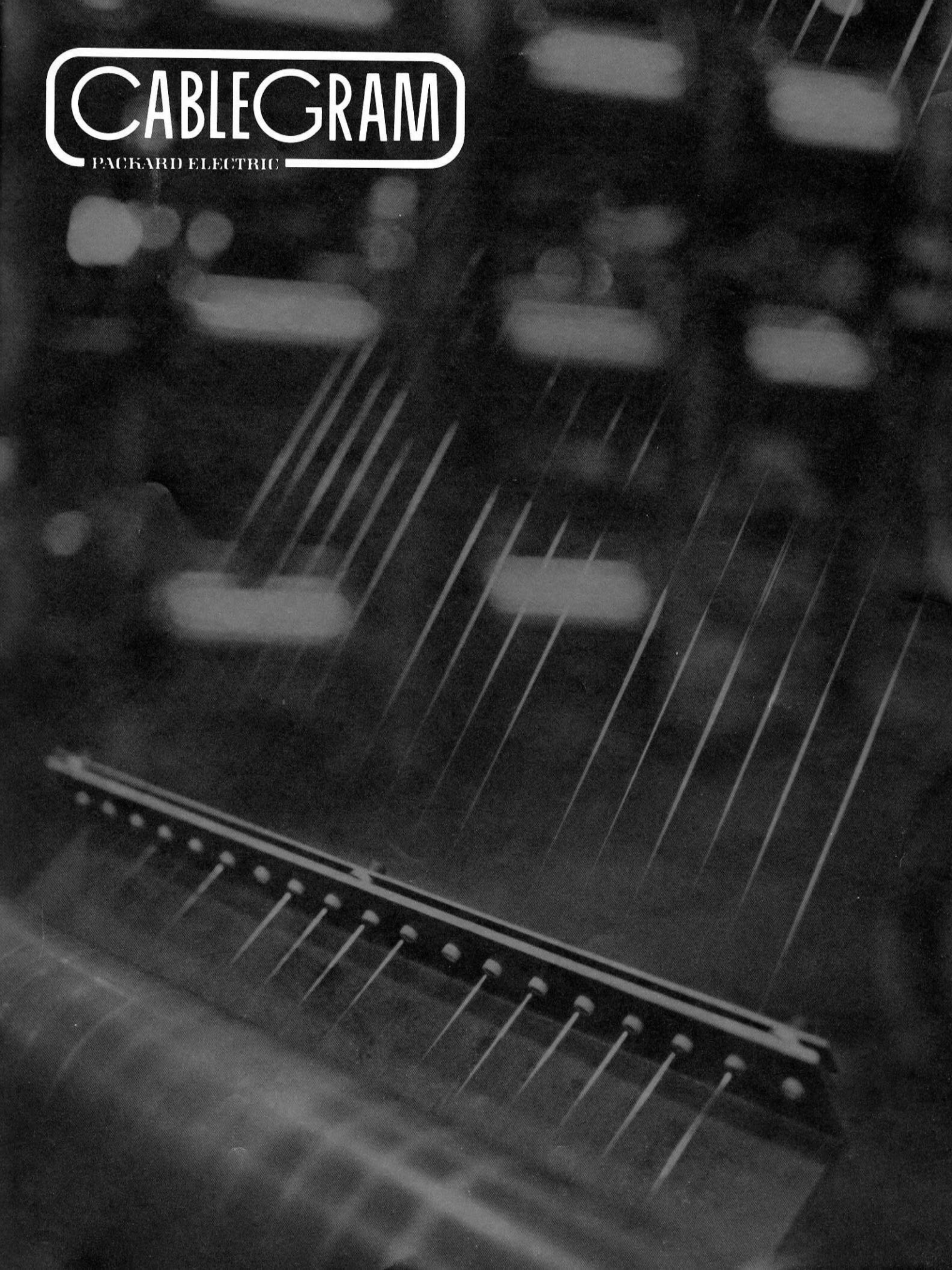




photo: courtesy New United Motor Manufacturing, Inc.

New United Motor President Tatsuro Toyoda believes the customer-supplier relationship will be key to the success of the GM-Toyota joint venture.

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On the cover:

IN THE BEGINNING . . . Packard's product starts right here in one of the division's cabling plants. The cover photo is a closeup of one of the processes which the wire goes through before it is made into leads for use in Packard wiring assemblies. (Photo by Richard Clapp) See related story on page 4.

Packard Electric Cablegram

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New United Motor:

by Michael Hissam

Packard Electric plays a very significant role with New United Motor Manufacturing Inc., the General Motors/Toyota automobile joint venture in Fremont, Calif.

That role, as Tatsuro Toyoda, New United Motor president, professes, is "to help us achieve our fundamental goal of producing the highest quality products in the world at the most competitive cost of any manufacturer."

Success for New United Motor depends on relationships with its more than one Japanese and 70 North American suppliers. Packard Electric is one of 12 GM divisions presently supplying components for the New United Motor-built Chevrolet Nova.

Mr. Toyoda affirmed that New United Motor's expectations of its suppliers are very strict. "We evaluate each supplier in terms of quality of their product, price of their product, time of delivery, problem-solving ability, as well as their attitude concerning continued improvement."

Once a prospective New United Motor supplier has been proven to be qualified and obtains the business, a long-lasting relationship is formed. "We consider our suppliers to be part of our family, and part of our team, in terms of producing a quality product. We work very closely with our suppliers to ensure that we receive the quality parts we need for our system to be effective," he explained.

Ron Knox, New United Motor's manager of Purchasing — Parts and Components, has observed firsthand the development of the Packard/New United Motor relationship.

That relationship has not always been pleasing to New United Motor. He cited a "fundamental change in the attitude" at Packard for turning the situation around: "When you look at the performance of Packard as compared to a Japanese supplier at the start, Packard was about 100 percent wrong in any dimension. Attitude needed improvement; the quality was far

'KAIZEN'

Packard's efforts translate into constant improvement for New United Motor

by Michael Hissam

"You don't have a harness for New United Motor that I don't know!" declared Robert Christopher. "I'm the first person here to see the Packard product — from pilots to production. And let me tell you something, your improvement is unbelievable!"

Christopher works in New United Motor's Receiving and Inspection area. He's the first person to see the Packard product. His job is to check whether Packard built its product to New United Motor's demanding specifications.

It wasn't always easy. "A year ago I must have been writing 10 quality reports for about 300 of your parts. I'm

still writing reports, but for very few of your parts. I'm the guy who works with the man on the assembly line who puts your products in our cars."

A 56-year old "volleyball at lunch" aficionado, Christopher expresses enthusiasm about the Packard improvement effort. He quickly singled out Packard Resident Engineer Pete Longiotti as key to the improved customer satisfaction record. "He's one of only three or four on-site representatives that suppliers have had the wisdom to make available to us. Pete moves quickly to solve problems; he's out there on the line with us getting prob-

"Our suppliers are part of our teams," declares New United Motor Manufacturing, Inc. President Tatsuro Toyoda

below acceptable Japanese standards. Costs were out of control, and there were some delivery problems. Packard just wasn't performing the way we expected."

Understanding on the part of the division triggered the change to the better, he said. "Packard has developed an understanding of the problems as well as our expectations, and has brought itself up to be 'average' in our experience with North American suppliers and maybe 'above average' with their commitment and attitude."

Knox also pointed to improvements at Packard's Rio Bravo IV operations in Mexico, the dedicated divisional supplier operations to the joint venture. "In the past year, the layout and house-keeping has improved significantly at Rio Bravo IV. We see the kinds of layout techniques now like what we have at New United Motor, which is what

we encourage our suppliers to do. The process at Rio Bravo IV is fundamentally the same as we would expect to see in a Japanese-type supplier.

Increased worker involvement in the planning, layout and "Kaizen" (constant improvement) is what Knox sees as newer opportunities for Rio Bravo IV.

Overall, opportunities for Packard see continued efforts on improving quality — "Now tackle the costs associated with the division's products.

"From what we've seen, the Packard management commitment is there, the ideas are there and are communicated to us the customer. We want to see the results of the cost reduction efforts."

Dealing with Packard and other suppliers follows a consistent approach of "facts and details," according to Knox. "We detail the problem as much

as possible and we offer assistance in problem solving. Our first approach is to work with the supplier to help solve the situation. And we don't expect to see that problem again. In a way it's an iron fist and a velvet glove — we can't continue to support suppliers if they perform poorly!"

New United Motor's expectations for Packard are "no different" than those for any other supplier, Knox stated. "We expect 100 percent quality components shipped 100 percent to schedule, and we expect constant productivity improvements. We also expect Packard to be our wiring harness supplier for the life of this business."

"With the commitment and attitude by Packard, there's no doubt in our mind that Packard can solve problems and go forward. We're very positive about our analysis of Packard and the situation with Packard."

lems solved right away. His work makes me feel good as a customer."

Christopher also credited Longiotti with the ability to spot potential problems before they cause disruptions at the Just-in-Time oriented Fremont, Calif. facility.

"If everyone improved a little here and there, it would all add up and help secure our jobs."

—Robert Christopher

"I think what we've learned here," Christopher noted, "is 'Kaizen' or constant improvement. My input is welcome all down the line. Packard is improving, but could do even better if it did the same thing — study and improve. If everyone improved a little here and there, it would all add up and help secure our jobs."

Christopher was one of about five thousand employees put out on the street when GM closed the facility in 1982, two years before the plant re-

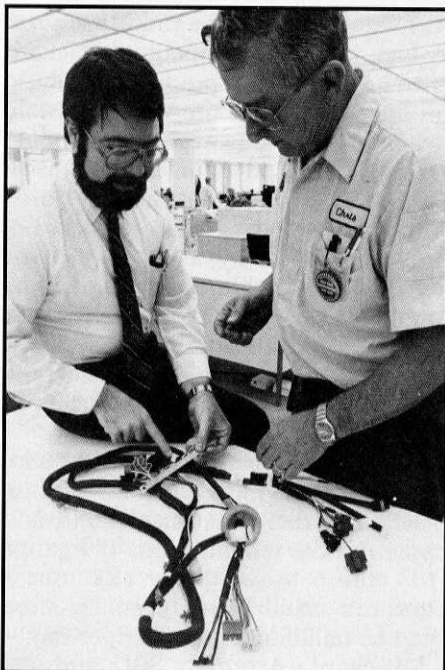


photo: Hissam

New United Motor employees Pete Longiotti, (left) Receiving Inspection, and Robert Christopher check dimensions on a Packard harness.

opened as part of the GM/Toyota joint venture. "I saw this place go down once — nobody cared about quality. Somebody once said, 'We don't have to give them (GM and customers) nothing!'" Given the opportunity to speak one-on-one to any Packard employee, Christopher would deliver a message calling for more improvement: "Thank you for the good stuff now. There are very few bad harnesses. If you focus on the little things, it's going to add up to a big difference for the better. Kaizen is going to eliminate errors. This industry is going to change — it's got to!"

"Besides, our over-the-hill gang needs better parts to make a better car," he quipped.

**See related stories on
pages 8 and 9.**



Shrinkwrap packaging helps eliminate tangles — a quality improvement that will enable Packard Electric's Wire and Cable Strategic Business Unit to make gains in the highly competitive wire and cable industry.

Being number one isn't good enough

Packard invests in technology to secure its future leadership position in the cable business

Competitor Profile

ESSEX

- Subsidiary of United Technologies since 1976
- Has locations in California, Indiana, Kansas, Kentucky and Michigan
- Began production in 1930 as Essex Wire Corporation
- Major customers include United Technologies Corporation and Chrysler

Essex Group's divisions include Telecommunication Products, Magnet Wire and Insulation, Power and Conductor, and Wire and Cable.

The Essex Group subsidiary produces high voltage cables, telephone wire and cable, magnet wire, building wire, and automotive primary, battery and ignition cable. The importance of each of these businesses fluctuates. Essex Group currently has a 14 percent share of the North American automotive wire and cable market.

Essex Group is a vertically-integrated operation. It makes its own rod and draws wire from the rod. Essex is working to improve quality and lower prices.

Nobody sells more automotive wire and cable in North America than Packard Electric.

But Packard isn't satisfied with being number one. Leadership today does not guarantee leadership tomorrow. That's why the division is developing technology to upgrade its products and processes and strengthen itself in this highly competitive industry.

Like its major competitors, Packard is an in-house cable producer. In-house producers manufacture wire and cable for use in their business's end product — in this case, power and signal distribution systems. Most major North American suppliers of power and signal distribution systems have their own in-house cable suppliers. For example, United Technologies has Essex Cable, Yazaki Corporation has Yazaki Cable, and Packard's Assembly Strategic Business Unit (SBU) has Packard's Wire and Cable SBU.

Packard Electric's automotive wire and cable products include thermoplastic and thermoset insulations, and come in sizes ranging from 4/0 gauge (103 mm) to 24 gauge (.22 mm). Packard's cable plants produce more than 60 million feet of cable per day.

"Packard's Assembly SBU, and ultimately General Motors, is the cable SBU's largest customer," said Scott Yoder, business planning coordinator, Wire and Cable SBU. "We must be competitive so that our Assembly SBU

can be competitive. Being competitive means more than just having the lowest cost."

He continued, "We have to provide quality cable products, delivery and service that allows our customer, the Assembly SBU, to excel in the marketplace."

Not only does the Wire and Cable SBU compete indirectly with other in-house cable producers, but it competes directly with independent producers who sell to outside markets. These include manufacturers such as Prestolite, Indiana Insulated, Dixie Wire and Therm-O-Link. Lower labor costs for the independent producers means Packard must have better technology and productivity to compete.

Product evolution

Wire and cable products are evolving to provide the smaller gauge sizes needed for the downsizing of the automobile. Cars are sporting more and more electronic devices such as on-board computers, yet there is less and less space available to accommodate the wiring for such devices.

This has brought about the introduction of thin wall and miniature cable. Packard has acquired state-of-the-art equipment which will help make these technological advances possible. For example, high speed fine wire extrusion lines have been installed in Plants 10 and 22. Packard-Warren will begin using an



John Gray, Dept. 1045, service, covers a barrelless pack of wire with shrink wrap. Only the plastic base is returned to Packard after use by the customer.

photo: Richard Clapp

accelerated electron beam unit to cure the smaller gauge crosslink cable. In addition, both cable plants will install multiwire drawing equipment scheduled for production use next year.

"Technological advances will also help us improve the quality of cable delivered to our customers," said Darlene Engelke, senior market analyst. "A good illustration of this is shrink wrap packaging."

Less scrap

Shrink wrap helps reduce scrap by minimizing cable tangling and allows visual inspection of the cable prior to shipping. In addition, it will allow Packard's cable-making plants — Plant 10 in Warren and Plant 22 in Mississippi — to provide cable in smaller packages to their customers. This enables scheduling to requirements and reduces their inventory.

"Reducing scrap will reduce our overall costs, which is important in supplying our customer with the low-

est cost product," Yoder pointed out.

Packard also markets its cable through its distributor program. The distribution program was begun in 1982 with Anixter Brothers based in Chicago. Anixter sells Packard cable products to more than 350 lower-volume customers.

Packard Electric continues to regard the wire and cable industry as an attractive business in which to compete. The division will continue to devote resources to the development of new cable designs and processes.

And with good reason. The demand for high-quality wire and cable is growing because of increasing vehicle wiring content. This will mean more business for Packard's Wire and Cable SBU.

"The challenge is improving design, processing and quality, while downsizing the cable," Engleke explained.

"The experience of our people in making cable is a big plus. We have

made major strides in our cable operations as our people have embraced Statistical Process Control (SPC)."

Packard is also benefiting from the experience of its Reinshagen (West German) subsidiary in manufacturing wire and cable. Unlike Packard-North America, Reinshagen has a broad cable product line, including energy cable, ship cable, building wire, elevator cable and aviation cable. Reinshagen's experience with various processes has been particularly useful.

Ultimately, Packard must continue to upgrade its wire and cable products and processes in order to meet the challenge of the marketplace.

"We have efforts underway to implement product and process technologies that will improve our competitive position," Yoder declared. "We are definitely moving forward. Our success depends on our ability to give the customer what he wants."

World-class quality is no longer a concept in the far distant future. For the GM-10 program and Packard Electric

By Patricia Reilly

Taurus and Sable are the latest one-two punch thrown by Ford Motor Co. in the fight to gain command in the mid-size domestic car market. General Motors will counter with its own new entry — the GM-10, or W-car program — in the 1988 model year. GM-10 will have to pack a lot of punch in order to beat its competition.

Those working on the GM-10 project know that this particular car family must have a quality level better than that of its competition. GM-10 must achieve customer satisfaction through world-class quality in order to stand up to increasingly aggressive mid-size vehicle manufacturers.

*"Owners rate their new cars good, fair or poor in terms of customer satisfaction."
— Shepard*



photo: courtesy C-P-C

"Quality is our number one operating priority," said Bob Danek, manager of Quality Assurance for the GM-10 program. "Everyone involved with GM-10 will have some contribution to our ultimate level of quality."

Partnership

Danek and Doug Shepard, staff Reliability engineer, recently visited Packard Electric to share the GM-10 program philosophy and point out how the division can attain its quality goals. All GM-10 suppliers are considered partners in the program and, as such, are expected to achieve world-class quality in their products and help with the design of their products into vehicle systems. With the high electrical content in the GM-10 vehicle, the quality of Packard Electric's power and signal distribution systems will be a critical measurement of the success of the program.

What exactly will that mean to Packard people in Warren and Mississippi as they produce components, and to those in Mexico as they assemble the division's product?

Danek clearly outlined the expectations for GM-10: "Each component or part assembled or manufactured in your plant must be produced with processes that are stable, in control and capable of producing to specifications for every part, every day," he said. "Our world-class quality goals are based on the best of the competition. That's where we have to be."

GM-10 quality improvement process

Knowing what the division needs to achieve is important. Knowing how to go about achieving it is equally so. The GM-10 quality improvement process includes these specific steps:

- Identify problem areas for improvement.
- Establish improvement goals relative to world class quality with measurable benchmarks.
- Determine true root causes of problems rather than symptoms.
- Establish and implement irreversible corrective actions for problem areas, including projected dates.
- Establish a method to verify desired results.
- Start over on the next problem.

Packard is one of 21 General Motors divisions racing to meet quality goals for the introduction of GM-10 in the 1988 model year. Each of the divisions needs to win its race if the GM-10 vehicle is to achieve the quality ratings of its competition.

CAMIP

Measuring the difference is only too easy. Data from the Continuous Automotive Marketing Information Program (CAMIP) indicate that the world's best vehicles rate 97 "good" votes on overall satisfaction out of every 100 customers surveyed. GM's current mid-size cars average an 86 percent rating. GM-10 needs to achieve that 97 percent to be a world class competitor.

"CAMIP is a survey that General

the time is now

Motors sends to 100,000 new car owners every quarter," Shepard noted. "We send it not only to owners of new GM cars, but also to owners of other makes. Sometime within the first 12 weeks of ownership, these owners will be able to rate their new car good, fair or poor in terms of customer satisfaction."

In addition to a 97 percent overall CAMIP rating, GM-10 is aiming to achieve a 142 average on the quality index and a maximum warranty frequency of .9 events per car over a 12-month period.

These improvements are necessary in order to meet the first mandate in GM President F. James McDonald's 'New Quality Ethic for General Motors Corporation.' It states, "Every GM product must be the unquestioned quality leader within its market segment, as perceived by the customer."

Ambitious goals

As Danek pointed out, "They're ambitious goals, but they're based on the best of our competition. That means someone is reaching them right now, so they ARE achievable. If we implement a management system that meets the quality principles, quality will result."

"Quality is our number one operating priority."
— Danek



photo: courtesy C.P.C.

According to Danek and Shepard, the GM-10 vehicle must be prepared to compete for customers with the world's best vehicles. World class quality will soon be a minimum standard as GM throws its newest entry into the slugfest developing over the mid-size car market of the nineties.

Packaging **Attention to quality doesn't end when the product is built**

Improved packaging of Packard's product is a result of teamwork with the customer, who is the receiver and the next user in the automotive manufacturing process. Chevrolet-Pontiac-GM of Canada, a Packard customer, should see improved quality in the GM-10 wiring assembly because superior packaging will help prevent product damage.

GM-10's Product Development Team (PDT) approach promoted early attention to packaging. Key representatives from vehicle assembly plants examined wiring installation plans with Packard's Application, Co-operative Involvement and Manufacturing Development engineers.

"As the wiring and vehicle design progressed, we reviewed our particular design by taking the assemblies to Detroit and trying them out in a model," said Doug Foster, Manufacturing Development engineer. "From a processing standpoint, we decided we needed to pay special attention to packaging for GM-10."

Something new

GM-10 assemblies require special packaging because there are some newer installation procedures associated with this car project. For example, assembly plants are planning off-line stations to subassemble the entire instrument panel, including wiring, radio, gauges, steering column, brake pedal, and air conditioning unit and ducts. This "cockpit" subassembly will then be robotically installed in the vehicle.

This places even more importance on keeping the various branches of the wiring system from catching on the car's sheet metal. To solve this potential problem, final assembly

operators in Mexico will wrap branches of the wiring assembly with tear tape. Tear tape will hold the branches together and prevent them from tangling. During installation at the assembly plant, the tape will be removed.

"It's important that our wiring be contained to prevent product damage," Foster explained. "Using tear tape protects the product and also allows us to increase the density of our pack — we get more wiring harnesses in each box."

Customer communication

Four months ago Packard began implementing a "Divisional Final Assembly Packaging System," which was developed by the Material Handling, Assembly Reliability, Manufacturing Development and Cooperative Involvement engineering group. This system helps determine assembly plant packaging needs by including extensive questionnaires.

Packard uses data collected from the questionnaires to customize packaging and handling requirements according to the customer's needs. Early communication also allows assembly locations to more efficiently plan their plant layouts.

Packaging considerations include the use of returnable or expendable containers, and the quantity of product packed in each container.

"We're making an effort to systematize the way we consider packaging and communicate the results of our efforts," Foster pointed out. "This will continue with each new vehicle program. It's a great opportunity for us to have an impact on Packard's product quality and reliability after it leaves our doors."

Commitment and attitude

A former employee can now offer a customer's insight into Packard Electric's product

By Michael Hissam

In 18 years with Packard Electric, Dale Johnson learned much about the division's role as a supplier of automotive signal and power distribution systems. Just over eight months as Materials Management advisor at New United Motor Manufacturing, Inc. has given him a new perspective — a customer served by the people with whom he worked for years.

Successes in the Packard/New United Motor relationship spark the Packard-based pride in Johnson; he quickly uses the "we" and "our" to describe the gains and positive impressions Packard makes with the General Motors/Toyota joint venture.

Constant improvement, "Kaizen" in Japanese, is what Johnson wants Packard to embrace as this partnership continues.

"Commitment and attitude by Packard and its people are things that New United Motor appreciates about Packard. There have been some problems along the way — concerns by New United Motor over quality and Packard's price — but each time we view Packard, we see significant improvement."

Perception of Packard as a major partner committed to New United

Motor's success came through the division's move to establish Rio Bravo IV, a dedicated Packard operation in the supply of wiring systems. Rio Bravo IV is located in Ciudad Juarez, Chih., Mexico.

Johnson, formerly manager of Reliability and Quality Assurance at Packard, explained, "Since Packard began Rio Bravo IV, it has done one of the better jobs of implementing the New United Motor/Toyota manufacturing philosophies. Every time we go there we see significant improvement. Rio Bravo IV is not yet perfect, but is rapidly becoming a model operation within Packard."

Joint quality study

Packard demonstrated additional commitment to the partnership through a Product Evaluation Program (PEP) study jointly conducted with New United Motor, according to Johnson. Nine Packard and three New United Motor people studied the Rio Bravo IV operations.

"They learned about the product and the process of building a wiring harness set. They also reviewed past quality problems associated with wiring. Quite honestly, over the first year of the venture there had been what would be considered a high level of quality problems.

"Then here in California, they spent one week viewing the unpacking, handling and installation associated with the Packard product. They were at each work station at the various locations where the Packard product is installed in the cars we build."

He offered an additional opinion of the joint effort: "I think this study showed that there is a significant commitment on the part of Packard. It was a very constructive one, which to the best of my knowledge was the first time a supplier has offered to participate in a study of that magnitude at New United Motor. It spoke well for Packard."

A Packard effort to seek cost reduction in its manufacturing processes for New United Motor "reflects well" the ability of the partnership to aim for longer-term solutions. As Johnson explained, "Packard gave New United Motor an uncomfortable price quotation for 1986; there was some concern. Both Packard and New United Motor looked at the problem as an opportunity. New United Motor found a way to accommodate some of the price increase, while Packard moved to begin a tremendous cost reduction program involving Mexico and the various Warren-based staff areas.

United States, Mexico, Japan

*Elements from three
cultures forge an
alliance as
Rio Bravo IV shows
the 'customer is king'*

By Michael Hissam

When Packard Electric gained the wiring harness business for the New United Motor (General Motors-Toyota) joint venture, it provided the division with a unique learning process. Packard had the opportunity to learn more about the Japanese approach to the automotive business and Toyota had the opportunity to learn about Packard.

To be successful two cultures needed to learn how to work together. To be competitive Packard chose to add a third culture — Mexico's. This formula is the key to Packard's success in its association with the New United Motor venture.

Rio Bravo IV is the assembly plant through which the division provides New United Motor the electrical wiring for the Nova vehicle. More than 1,000 employees work at the Rio Bravo IV

facilities in Ciudad Juarez, Chihuahua.

"If there's one thing that makes this plant successful it is the people!" declared Jim Walker, Rio Bravo IV manager. "These people feel they can succeed. They know the importance of customer satisfaction."

People power at Rio Bravo IV begins with careful assessment of prospective new employees. Those selected start a special training program featuring continuous evaluation and suggestions for improvement or what the Japanese refer to as 'Kaizen.' "This is where their commitment to customer satisfaction, quality, productivity and enthusiasm begins."

Customer is king

Rio Bravo IV employees embrace the "Customer is King" philosophy, according to Walker. "The entire workforce

We're sharing information, and the more we share, the more likely we will find a way to meet our common objectives."

While citing the PEP study and cost reduction efforts as positives, Johnson offered additional suggestions for Packard to strengthen its position as a supplier to New United Motor. "There is the need to execute, to implement, to translate the ideas into getting the job done and improve the business. So much improvement potential is really so simple: pay attention to detail, do it right the first time, execute. Too often the execution stage is not emphasized enough."

He went on to point to what he calls the "confirmation stage."

"Sometimes it's tough to test the plan. Has that plan achieved all the results you want it to achieve? Can you get the data to tell you it has? If it has achieved the result you want, then you look at it with one more question — How can I get it to improve?"

Getting it to improve means realization that 99.9 percent may seem good, but it's not nearly good enough from the assembly standpoint where thousands of parts, components and processes must come together right — the first time — to achieve customer satisfaction.

here knows it exists to satisfy the customer. They know that each station here is a supplier to the next which is the most immediate customer. These people know they must do the job right the first time and every time."

Plant rules also reflect the coalition of cultures: Mexican family-centered life, Japanese dedication to detail and American drive and innovation. "We make only rules that are necessary and consider how they are to be taught. The rules are aimed at achieving 100 percent conformance to specification."

The lexicon grows

Adaptation of certain Japanese manufacturing approaches has seen addition of Japanese words into the Spanish language for Rio Bravo IV employees. Each of the "Four 'S' words becomes a method to keep the entire system in check," as Walker explained:



photo: Hissam

Former Packard employee Dale Johnson now serves as Materials Management advisor at the New United Motor Manufacturing, Inc. plant in Fremont, Calif.

Looking back at Packard and forward to a continued relationship between the carmaker and the division, Johnson urged additional thought about customer/supplier relationships. "Previous manufacturing philosophies made it rather difficult to focus on the customer and also the suppliers in the process. There really wasn't the identification nor the communications back then. What I've learned since is that it's important for each of us to offer feedback to our suppliers. Every person in the manufacturing process must strengthen the relationship with his or

her supplier.

"It means that if I'm in lead prep in Plant 12, I've got to strengthen my relationship with the wire makers in Plant 10 and the metal parts people in Plant 11. It means I must also focus on my role with my customers in final assembly."

Commitment and attitude of how to do the job right are what spells success in the customer/client relationship, Johnson stressed. "There's no problem with problems. I firmly believe that mistakes, errors and problems are signals for improvement."

"'Seiton' calls for a place for everything and everything in its place; it helps us properly store material. 'Seiketsu' or the discipline of keeping everything neat and orderly, quickly spots anything that is out of place or wrong in the manufacturing process. 'Seiso' strives for clean tools and equipment and preventive maintenance. 'Seiri' calls for only the material needed to do the job — and nothing more!"

Visual aids become an important factor in keeping Rio Bravo IV "a finely tuned instrument." Japanese-inspired Andon lights over production machinery alert plant members with the Spanish messages "Trabajando" for working; "No trabajando" for not working and "Ayuda problema" for help needed.

"By using the Japanese 'Five whys' approach we keep asking why — ¿Por

que? in Spanish — to get to the root cause of any problem.

Asking 'Why?' five times leads to the solution. With this approach, we can trace every reject back to its source," he said.

Employee impressions

Walker summed his feelings on the 18 months Rio Bravo IV has been in operations: "We learned that waste or 'muda' — disrespect for materials — is one of the worst sins. Each component or product is treated with respect because we know there is a customer waiting for it. Respect for materials is making this Packard effort very successful.

"Take care of the employees, take care of the customer and the marketplace will take care of you!"

How do you capture a criminal?

Meet the team that handcuffed one of the division's chronic quality problems

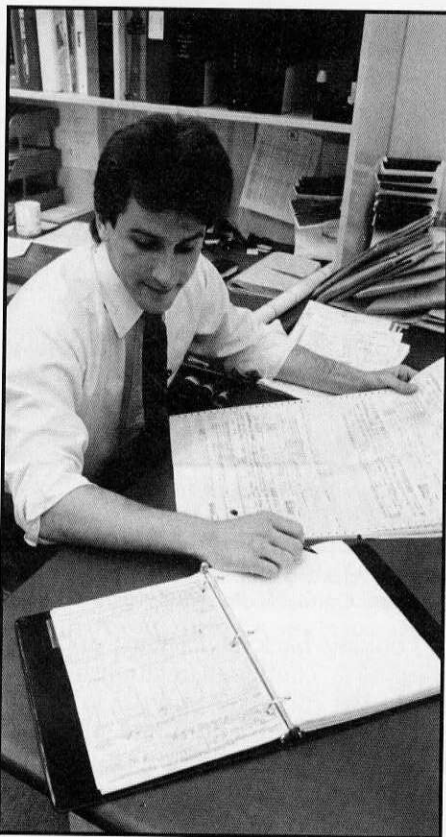


photo: Reilly

Nick DiNardo, tool engineer, coordinates tool build for the redesigned fuseblock.

ing the missing fuses problem for Fuseblock #12034359 marked the division's first capture.

PEP study

"We originally identified this problem through a Product Evaluation Program (PEP) study and in-plant data collections at the Baltimore assembly plant," said Dan Rydzak, justification coordinator and Reliability engineer. "It applies to all General Motors light duty trucks."

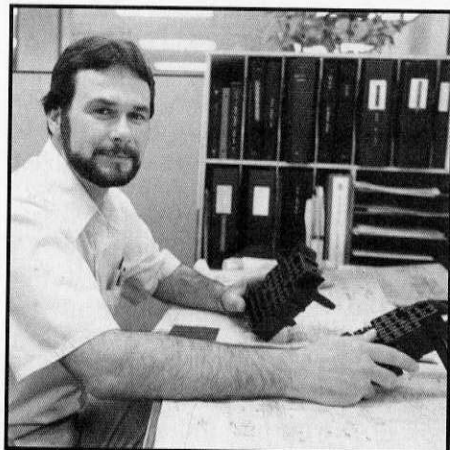


photo: Reilly

Joe Sandy, Manufacturing Engineering, makes plans to modify equipment used to insert the fuses.

While the FBI's Ten Most Wanted List features fugitives from the law, Packard Electric's version of the list features some of the division's products. While the FBI seeks lawbreakers, Packard seeks to capture quality offenders.

Packard recently succeeded in capturing its first quality offender by solving a missing fuse problem with 12034359 Fuseblock. Missing fuses in this fuseblock had caused numerous customer complaints. Identified as the source of a recurring quality problem, the fuseblock was placed on the division's own Most Wanted List on August 1, 1985.

Packard Electric's Most Wanted program was started by the division's Reliability and Quality Control Department as a means of lending high visibility to certain chronic quality problems. This increased awareness of the quality problems would help focus the division's efforts in solving them.

Ten quality problems were placed on the original Most Wanted List when the program began last summer. Solv-

As justification coordinator, Rydzak was responsible for gathering and tracking data related to the missing fuses. He also made sure the information got to the right people.

Taking the solution from concept stage to implementation required a lot of cooperation.

"We had already begun working on the problem when the Most Wanted program attracted divisional attention to it," Rydzak added. "The Most Wanted program helped to bring together the people who have the expertise needed to solve the problem."

Indeed, the solution to the missing fuses involved the efforts of people from Application Engineering, Components, Tool Engineering, Manufacturing Engineering and Reliability and Quality Control.

Solution coordinator John Zuppo, supervisor, Application Engineering, helped develop a list of potential solutions to the problem.

"The missing fuses came from an area of the fuseblock in which they were not fully protected," Zuppo explained.



Because these particular missing fuses became dislodged during han-

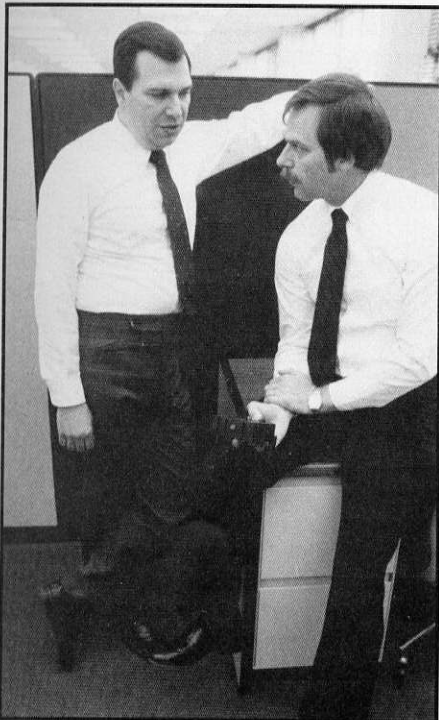


photo: Reilly

John Zuppo, (left) supervisor, Application Engineering, and Dan Rydzak, Cooperative Involvement engineer, discuss a potential solution to the fuseblock quality problem.

neering, expedited the tool design and the first production samples. Jim Johnson, production engineer, Mississippi Operations, modified the print pad so that the color printing on the fuseblock not only remained visible, but actually improved. Joe Sandy, Manufacturing Engineering, modified the equipment for inserting the fuses.

*"This is a success story.
By working together we came
up with the right answer."
—John Zuppo*

Once in place, the solution showed dramatic results. Assembly plants saw the incidence rate of missing fuses drop more than 90 percent.

"The Most Wanted program really helped bring the problem to light," Zuppo commented. "We no longer worked as individuals — we worked as a team. It motivated everyone to do more!

"This is a success story. By working together we came up with the right answer," he continued.

Rydzak said he expected the incidence of missing fuses to drop even further as the assembly plants use up their old stock of fuseblocks.

"It was a tremendous effort by everyone involved," he said. "The Most Wanted program was a big part of our success."

He paused and allowed a small smile.

"And it felt good to know we got the first one!"

Another capture?

Merrie Lee Soules, manager, Reliability and Quality Assurance, emphasized the ongoing nature of the program.

"As we solve the problems represented by the parts on our Ten Most Wanted List, we will replace them with other parts which cause quality problems," she said. "People are beginning to respond to the Ten Most Wanted program. In fact, we may be seeing another capture sometime soon."

ding, solutions under consideration included:

- adding a protective wall next to each "troublemaker" fuse on the fuseblock
- adding circuit breakers at Packard Electric, thereby adding a cost to each vehicle using this fuseblock
- installing a dummy fuse to be removed at the assembly plant

Packard decided that the most effective solution was to add a protective wall next to the cavities in which fuses tended to turn up missing. This would prevent them from being dislodged.

Working together

Zuppo coordinated efforts to ensure the solution could be put into place. Wanda Wheeler, Component Liaison, developed mock-ups to test the solution and worked with the Component Liaison group to change the fuseblock's design. She also helped speed the accompanying paperwork through the system. Nick DiNardo, Tool Engi-

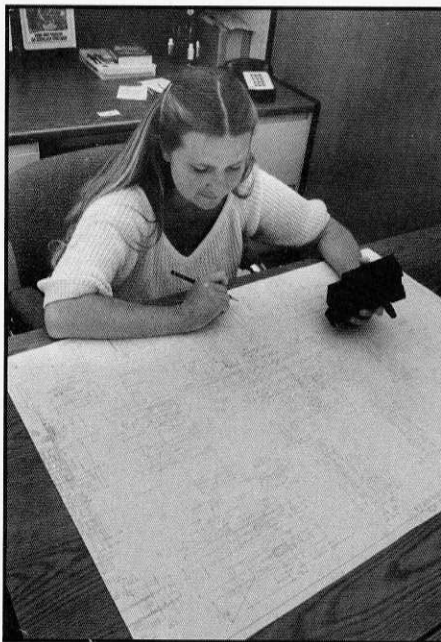


photo: Reilly

Wanda Wheeler, Component Liaison, checks the new fuseblock design.

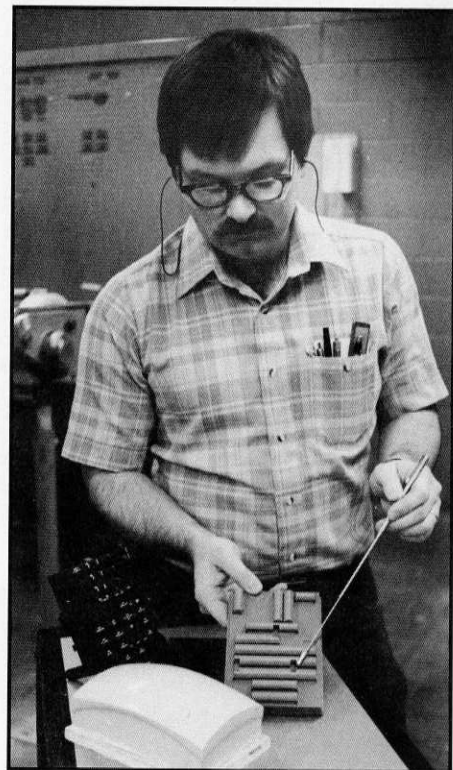


photo: Magee

Jim Johnson, production engineer, Clinton, Miss., shows the print pad modification that improved the color printing on the new fuseblock.

Packard-Clinton and local schools 'grow and learn'

by Beth Magee

Packard-Clinton is helping local students grow and learn through its adopt-a-school program.

An adopt-a-school program is a partnership between a business or community organization and a school. The goal of the partnership is to provide mutual benefits while developing a better understanding between the private business sector and the educational system.

Since a local principal first introduced the idea in December, 1984, Packard-Clinton has implemented a successful adopt-a-school program with two schools.

Schools benefit from projects ranging from individual tutoring to financial assistance. Businesses benefit from the relationship they develop with the community. Adopting a school can often establish or reaffirm a company's image as a good citizen.

"When the staff learned of the adopt-a-school philosophy, we thought it was a great thing," said Terry Lee, Personnel Director, Mississippi Operations. "It provides a direct avenue for businesses like Packard to become involved with the educational system, positively affecting the local community and the future of our children."

Packard-Clinton decided to adopt two schools — Lovett Elementary in Clinton and French Elementary in Jackson.

"Adopting two schools may have been a bold step because no other business had done so," explained Lee, "but we felt we should select a school in Clinton where the plant is located and one in Jackson where the majority of our employees live."

Clinton's Personnel Department coordinates the program. It established two committees, one to work with each school. These committees are composed of hourly and salaried employee volunteers from the Clinton facility.

Dave Meyers, manager, Engineering and Plant 22, chairs the Lovett Committee. Lee and Gary Miller, IUE Local 698, co-chair the French program.

Each group works independently to select projects based on the needs of the particular school. Committee

members have worked on projects including: landscaping school grounds, constructing adopt-a-school signs, judging science fairs, designing adoption caps, assisting with Halloween Carnivals, conducting safety awareness programs, talking with the students about Packard Electric and touring them through the plants.

Both committees recognize students for outstanding academic achievement through honor roll programs or annual achievement awards.

"Things like the Packard Honor Roll have had a tremendous impact on these

kids," said Miller. "Our interest has encouraged them to set goals and has stimulated their desire to reach those goals."

Reaching goals — growing and learning — is the heart of the reciprocal relationship between Packard-Clinton and its adopted schools. The kindergarten group at French Elementary sings, "Packard we love you so. We're glad that you adopted us. We'll try to do our best in reading, math and music too. Of course, we love to run and play. But we want the world to know, that Packard and French work hand in hand to help us grow and learn."



Liz Barlow, (right) Dept. 2163, conducts a tour of the Clinton facility for students from Lovett Elementary School. photo: Magee