

# CABLEGRAM

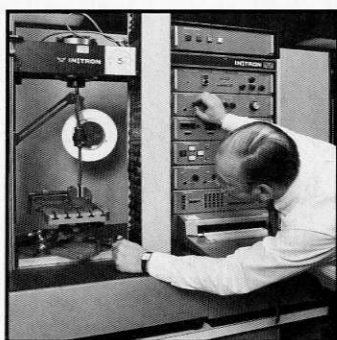
PACKARD ELECTRIC



Packard Electric works with its suppliers to assure the best quality productive material. See story beginning on page 8.



photo: Reilly



**On the cover:** Detlev von Schwerdtner, component engineering, performs a terminal retention test on a 14-way twist connector made by Packard-Reinshagen for the Opel Omega sold in Europe.

Photo: Shawn Wood, Studio 7

## Test the difference!

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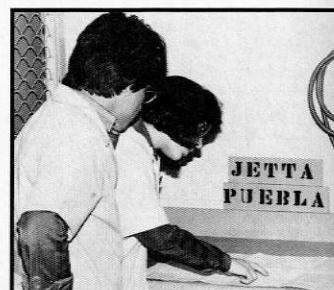
Packard Electric's competitive analysis team examines competitors' products to see what they've got — and what they don't. Linda Ware, team coordinator, explains how the division's various staff areas work together to get the job done.



## Jetta

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Packard strengthens its foothold in Volkswagen of America territory by expanding its role as a supplier for the VW Jetta and Golf vehicles. Rio Bravo V's reputation for good quality is earning high marks for the division.



## Packard Electric Cablegram

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## "We need only the best suppliers" Page 8

Suppliers join Packard Electric in the battle to reduce costs as the division prepares for future competitive battles. With an elite group of trusted suppliers, Packard expects to meet its world-class quality goals by 1988.



## If the shoe fits . . .

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Kabelwerke Reinshagen gains a new assembly facility in Austria, now called Packard Bergenland. Former workers for Dr. Scholl, Inc., are being trained in the production of wiring assemblies for sale to the European automotive market.



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# A word from the general manager

## "Do it right the first time, every time"

As you know, I promised to share with all Packard Electric employees my vision of the Excellence concept, and to further define the six Absolutes of Excellence.

We've looked at the importance of focusing on the customer; now let's take a closer look at our second absolute of Excellence, "Do it right the first time, every time." That's our performance goal — but what does that translate into on a day-to-day basis?

Let's start with the definition of Excellence, which is exceeding your customer's expectations. The second absolute speaks directly to the customer's expectations. As customers ourselves, you and I expect the products and services we purchase to be

top quality. Packard Electric's customers are no different!

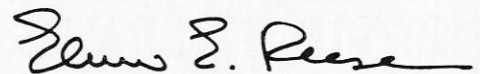
That doesn't mean we can't make a mistake. Excellence is an attitude change. When employees with good attitudes make a mistake, they do everything in their power to correct that mistake and see that it doesn't happen again.

There are areas at Packard that ARE doing it right the first time. What we need now is for every area to strive to meet performance goals.

Excellence training continues, and is spreading the concept across the division. The training begins with Excellence 101 and 102, which teaches us to identify our customers and define their expectations. We're going to meet divisional goals

through this top-notch training developed by Excellence Director Bill Wehmer. Additional training will take us through all 10 steps toward Excellence.

Our efforts aren't going unnoticed. Customer feedback tells us that we're on the right track. Our customers expect continuous improvement, and we're making every effort to do so. But we can't be satisfied to be better than what we were yesterday. We have to strive to be even better tomorrow! That's the key to developing an excellent attitude. Yes, it will take more up-front planning and attention to detail, but the results — a satisfied customer — will be well worth the effort.



ELMER E. REESE  
General Manager  
Packard Electric Division

# Test the difference!

Packard Electric's competitive analysis team examines competitors' products to see what they've got — and what they don't

by Patricia Reilly

Why would anyone take a Mercedes-Benz wiring assembly, remove it from its rightful place in a Mercedes-Benz vehicle and then subject it to all kinds of tests designed to see just what would happen?

It's Packard Electric's friendly way of saying, "You've got a good product — we want to know what makes it tick."

In the recesses of Packard Electric's test labs, various components of the division's power and signal distribution systems undergo testing. If you keep looking, you'll also see a Toyota wiring assembly. You might see one from Nissan or Ford as well. Why all the mixed

company in the test labs?

Competitiveness, answered Linda Ware, senior application engineer, Future Vehicle Concepts and coordinator for the Competitive Analysis Team. "We conduct a total analysis of the design and performance of competitive wiring systems," she explained. "In order to maintain our position as the world's leading supplier of power and signal distribution systems, we need to know what our competitors are doing."

Competitive analysis identifies technical capabilities of competitors, and allows Packard Electric to make comparisons between the competitors' products and its own. It's also a means

of zeroing in on future trends in the industry, according to Ware.

Dave Burgner, manager, Future Vehicle Systems, said Packard's future as an industry leader depends on this.

"We believe we are leaders in the field of power and signal distribution systems for automobiles," he said. "This leadership **REQUIRES** that we not only know what products our competitors are employing, but also that we understand the technologies they represent. Through competitive analysis we can accomplish this objective."

## Teamwork

Of course, competitive analysis tests had been performed to some degree all

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*"In order to maintain our position as the world's leading supplier of power and signal distribution systems, we need to know what our competitors are doing."*  
— Linda Ware

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Linda Ware, left, senior contact engineer, Application Engineering, examines underhood wire routing and the type of sealed connectors and harness protection on a 1987 Ford Taurus. Bob Bachman, right, cable engineer, and Gale Cannon, senior market analyst, are part of the competitive analysis team coordinated by Ware.





In Packard Electric's test labs, a 14-way twist connector made by Packard-Reinshagen undergoes a terminal retention test. This connector is used on wiring harnesses produced by Reinshagen for use in GM's Opel Omega sold in Europe.

along, but it was only in the spring of 1986 that the division decided to consolidate such activity. Now the work can be carried out more effectively and with better communications.

"We were able to eliminate redundant effort," Ware said. "For example, previously we might have one group attempting to purchase certain assemblies in order to study cable, without knowing that another engineering group had already purchased those assemblies."

Coordinating diverse areas from Product Assurance and Future Vehicle Concepts to Connection Systems and Cable Engineering requires teamwork. Ware serves as the focal point for competitive information flowing in from the major engineering groups, and Marketing and Sales.

Specialists from various staff areas strengthen the Competitive Analysis Team with their expertise. Their job is to analyze competitive product offerings and to communicate their findings to appropriate areas of the organization.

"We're still in the process of building our data base," Ware explained.

With competitive data Packard Electric is able to:

- identify technical capabilities of major competitors
- determine future technological trends in automotive power and signal distribution systems
- provide GM customers with not only the best Packard innovations, but the best innovations worldwide
- assure the division's position as technical leader in the design and manufacture of automotive power and signal distribution systems

Ware coordinates the team's competitive analysis efforts. The competitive analysis team works to communicate and share competitive information using the CARS (Competitor Archive Retrieval System) program, developed by the Marketing Department for the P2S2 computer

system. Competitive manufacturers' wiring assemblies are distributed to each team member for analysis and testing. Ultimately the team compiles this information for publication.

"The information we have gathered will provide divisional direction for future vehicle designs," Ware explained. "We can adapt certain ideas from our competitors and use them in our own designs. Frequently we find aspects of our designs showing up on their products."

#### **Only the best competitors**

Usually the team chooses vehicles with high quality, unique features or significant strategic importance, such as Mercedes-Benz vehicles, upscale Toyotas, Ford's Taurus and Honda's new Acura Legend.

After completing the competitive analysis process, the team compiles and distributes competitive information. The team also creates wiring sys-

tem displays of competitors' products for the Product Engineering Display Room.

"We're not done when we've completed an analysis," Ware pointed out. "We continue to add information to our data base. It's an ongoing process."

"What we're doing is important for our future business. We've got to be aware of what's out there, competitively speaking," she said.

Carl Rausch, chief engineer, Application Engineering, noted the importance of competitive analysis in the face of GM's global competition. "Both Packard Electric and General Motors are competing in a world market," he said. "We've got to be positioned to recognize and to react to opportunities for Packard products."

"We also need to be able to react quickly to opportunities to apply or improve upon our competitors' developments," he concluded.

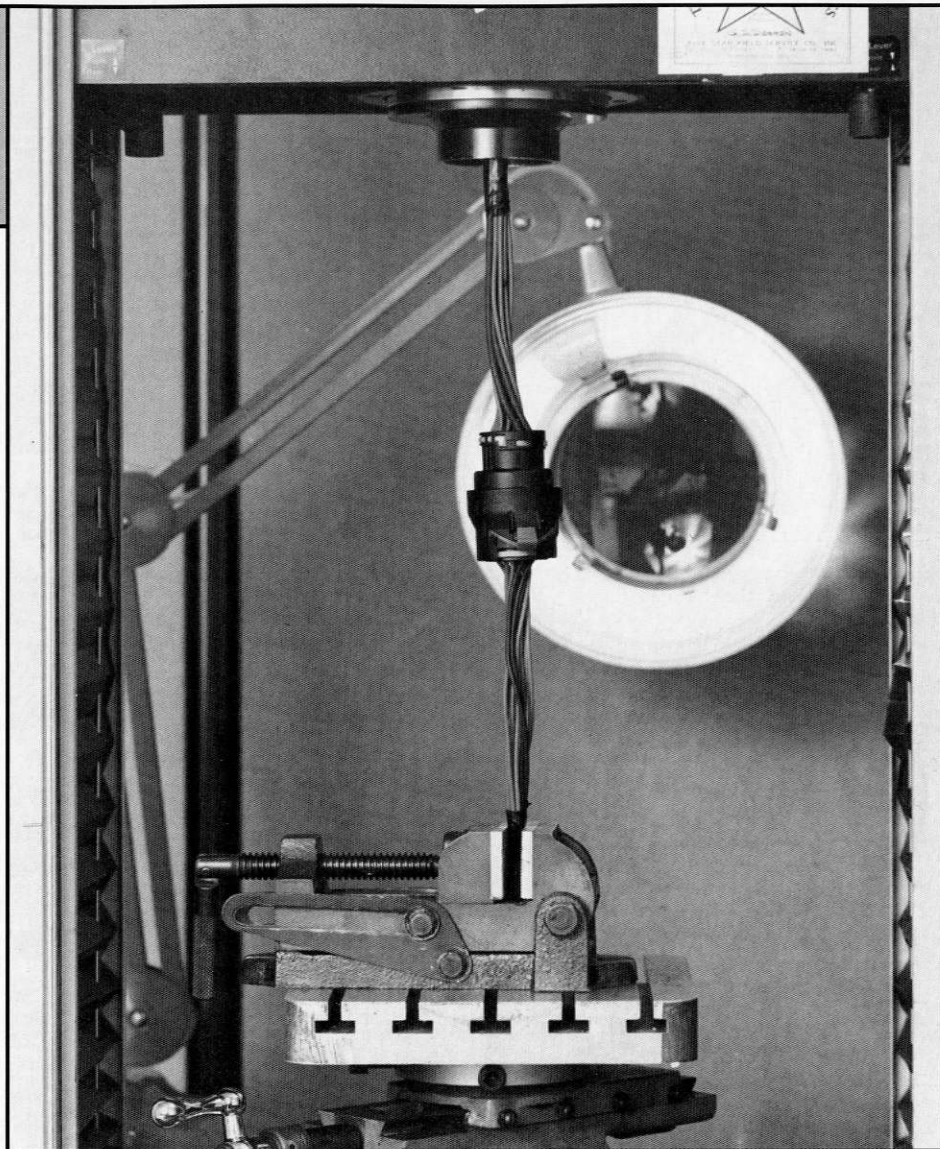


photo: Shawn Wood, Studio 7

## Jetta

### Packard strengthens its foothold in Volkswagen of America territory

What do German automakers demand from their American suppliers? They demand the same things they demand from their German suppliers — high quality, superior service and some good old fashioned engineering know-how.

All of Packard Electric's customers are increasing their demands, of course, but Volkswagen presents a special challenge. VW wants everything that Packard Electric's customers would want in a power and signal distribution system, but built to a German design as well.

Last year Volkswagen decided to manufacture a portion of its Jetta vehicles in North America for sale in the U.S. Originally VW sourced its wiring harnesses from Germany, according to Chuck Cunningham, plant manager, Rio Bravo Electricos V. After start of production for the 1987 model year, VW offered Packard Electric the opportunity to bid on the business.

"Based on our quote, we were awarded the business for the 1988 model year," Cunningham said. "It's been a very good year for us from a business sourcing standpoint."

VW awarded the 1988 model year business to Packard based on its quoted price, delivery history and quality reputation.

- Price: Packard Electric's prices were competitive with other manufacturers bidding on the business

- Delivery: Rio Bravo V, which currently supplies VW with harnesses for its Golf vehicle, has had 20 consecutive months with no premium transportation
- Quality: Packard Electric was one of only 27 of Volkswagen of America's 300-plus suppliers to the Westmoreland facility to rate a "1" on its quality index. Westmoreland builds the VW Golf.

"It sounds easy, but at the time it was a struggle to get this business," said Al Fisher, Sales. "Volkswagen was tough to please, but it was important to gain this business because it's part of our VW worldwide growth strategy."

For the 1988 model year Packard Electric will supply the total wiring system for every vehicle built in VW's New Stanton, Penn., plant, where Jetta and Golfs are built. The Golf has a U.S. wiring system, while the Jetta has a German Central Electric system.

"There is value for us in learning to build to the German design," noted Cunningham. "An advantage for them is that our wiring will enhance the quality of the Volkswagen product."

Packard Electric currently supplies components for the Golf vehicle from Plants 3 and 11 in Ohio and Plant 22 in Mississippi. Rio Bravo V in Mexico performs lead prep and final assembly. (See sidebar)

Jetta initially will use German-supplied components.





photo: courtesy  
Mexican Operations

Rio Bravo V employees work as a team to maintain Packard's ranking as a top-quality supplier to Volkswagen of America.

## An 'obsession with quality' earns high marks for Packard as one of VW of America's top suppliers

Packard Electric jumped into an international prizefight to go after the VW Jetta business, and emerged victorious. A good deal of the credit for that victory must go to the division's obsession with quality.

Rio Bravo Electricos Five (RBE V), the Packard plant dedicated to Volkswagen, has successfully exceeded its customer's expectations. Further, the division's plants supplying components, including Plants 3 and 11 in Ohio and Plant 22 in Mississippi, have contributed to the overall superior quality.

"The relationship we've built with Volkswagen reflects our history in supplying them over the past two years," said Chuck Cunningham, plant manager, RBE V. "When all the factors are weighed, the scales tip in our favor.

"In my mind, the single most important factor was quality. Price is a given. What separates an excellent supplier from the others is the ability to do more than compete on price."

Rearrangement of the RBE V facility will point Packard Electric in the direction of continuous improvement. New tooling for the upcoming Jetta business has already gone through the debug stage.

Meanwhile, English-speaking and Spanish-speaking employees alike are taking classes to learn to read German prints and specifications. They plan to build the product from untranslated German prints — so nothing gets lost in the translation.

"We've become multilingual down there," Cunningham said. "We have to become educated in German. That will eliminate the need for a multiple print system. It will also allow us to react to changes more easily."

Rearranging the facility to better suit the customer's needs, and learning the customer's language to improve communication are two examples of Packard's effort to do it right the first time.

"We are the benchmark which other Volkswagen wiring suppliers are judged against when it comes to providing a high-quality electronic power and signal distribution system," noted Al Fisher, Sales. "To the customer, that says it all."

Volkswagen of America, Inc., expressed recognition of Packard's efforts: "The positive attitude of your organization toward continuous quality improvement of harnesses supplied to Volkswagen is certain to benefit VW warranty, as well as the production flow in Westmoreland," said R. T. Chrysler, vice president of Purchasing, and P. A. Sorensson, vice president of Quality Assurance for VWOA. "The result of this attitude has been an admirable and steady improvement as measured by the Wire Harness Audit. Congratulations to the Packard team!"

Mike Shagena, purchasing agent, Body, Plastics and Electrical Group for Volkswagen of America, Inc., expanded on the importance of quality: "The vendor has to have the capability to meet our quality requirements. They need to be able to perform the testing that's required to meet the Volkswagen worldwide quality standard. Packard has come a long way to become one of our top suppliers."

"With the help of our friends at Packard-Reinshagen, we will have the opportunity to penetrate future Volkswagen vehicles with Packard components," Fisher said.

Two factors make the Jetta business an attractive one to Packard. Learning to build to the German design will help the division gain respect and influence in other markets. Second, increased sales are a plus when they support the division's global growth strategy.

### Hard work ahead

Priorities for Packard include developing a unique manufacturing plant to supply the Jetta, and adapting its manufacturing systems to this new product. Cunningham said he expects the division to meet the challenge, but with a good deal of hard work.

"We got the business through a lot of effort to be the best supplier that Volkswagen has," he said. "Hard work got us the business, and it will help us keep the business."

Twelve other facilities devoted to wiring are internal to the VW system. Packard is the only non-VW supplier of power and signal distribution systems. Fisher thinks that point will be significant going forward.

"We not only broke into the system as a non-VW supplier, we happen to be the best," he declared. "We've shown everyone else that we're competitive outside General Motors on quality and price. This also opens doors for us. It gives us an inroad for future business."

# Preparing for future competitive battles:

**'We need only the best suppliers'**

When the stormy winds of competition become a hurricane's gale, Packard Electric and its suppliers will be holding hands and hanging on for dear life. Togetherness is a means of survival when natural market forces threaten to upset the competitive equilibrium.

Supplier involvement is no longer an option. It has become a must in the competitive world where the customer is king and service is paramount.

Like a branch of the service preparing for competitive battles of the future, Packard Electric's rallying cry is, "We need only the best suppliers." With an elite group of trusted suppliers, the division can meet its World-Class Quality goals by 1988.

"We're looking to upgrade our supplier community," said Tom Shepherd, Purchasing. "We need our productive material suppliers to provide us with the best products and services at the lowest total cost to Packard Electric Division. To do that we must become deeply involved with our suppliers and involve them in our needs and expectations."

To remain a world-class competitor, Packard Electric needs world-class suppliers. In order to assess which of its suppliers can help Packard meet its

quality goals, the division examines those suppliers' capabilities, targets areas for improvement and selects target dates and measures actual performance.

Having top-quality suppliers eliminates the need to inspect incoming parts. That allows Packard Electric to reduce inventories and pay greater attention to critical dimensions and attributes.

## The competitive storm

"We are expected to provide General Motors with quality that is world class, while also meeting the challenge of the competition in terms of price," Shepherd noted. "We can only do that with the help of our suppliers. We can't make a world-class product if we have poor quality from our suppliers."

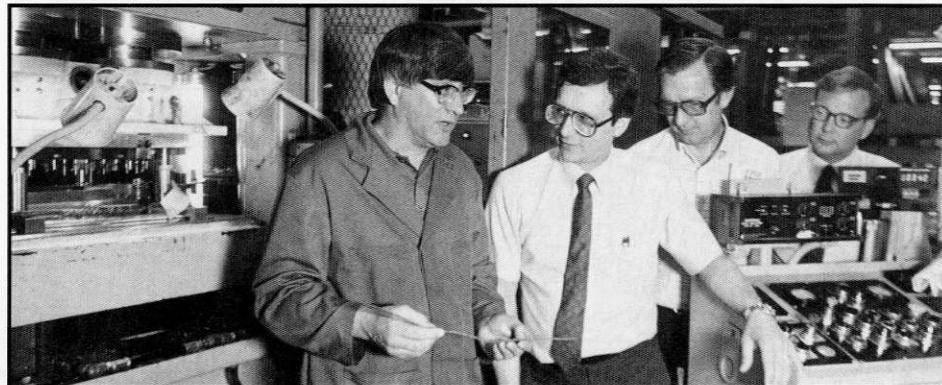
"Suppliers can also help us by early involvement before designs are frozen. This generally enhances buildability."

Packard currently has a number of programs in place to ensure high quality from suppliers. They include:

- a minimum rating of three for all suppliers under the Supplier Performance Evaluation And Reporting (SPEAR) program, with Statistical Process Control integrated into their manufacturing operations
- a SPEAR 1 or 2 rating for suppliers of parts for the GM10, GM25 and Saturn car programs
- supplier involvement at the design stage
- supplier responsibility for first article inspection reports
- supplier responsibility for providing production parts for saleable vehicles
- 100 percent conformance to specifications
- failure prevention analysis on all critical dimensions
- process control documentation
- part dimension capability analysis

Many of these programs stem indirectly from a 1984 supplier conference sponsored by Packard Electric at Baldwin Wallace College near Cleveland, Ohio. Since that time, Packard has focused on the need for creative business relationships — ones which will result in quality and product improvements.

"In the past few years we have begun defining and measuring our quality programs," Shepherd said. "This past fall, GM made an all-out effort to develop consistency across all divisions in the implementation of corporate programs. Standards have been established



(From left) Bob Vargo, tool and diemaker; Tom Bruner, senior divisional buyer; Bill Surdakowski, process engineer; and Paul Kuhn, technical service engineer from Olin Brass, discuss metal formability in the stamping of female Metripack terminals in Plant 11 in Warren.



on appraisal and measurement systems. Training programs now exist so that a SPEAR rating from Packard would be the same as from another division. We're measuring quality in discrepancies per million pieces received."

### Select suppliers

"The corporation also is moving to reduce its total number of suppliers, keeping those select suppliers that can help meet its current and future needs. Reducing the supplier base increases the time that Purchasing, Engineering and Quality can spend with supplier management. This is the real key to improvement."

As a result of its current efforts, Packard Electric has seen material cost improvements, fewer material complaint notices and an improved supplier quality index (now at 143.8 out of 145). The division is seeking a long-term working relationship with those suppliers that can do the job. As a reward, business placement goes to those suppliers who have shown the cooperation toward continuous improvement in quality, price and services, according to Shepherd.

"We are finally beginning to tap the creativity of our people in producing products more competitively. We're also beginning to tap that same creativity in our suppliers," Shepherd explained. "The only way we can effectively do that is to commit ourselves to a long-term relationship with our suppliers. By working with each other we show we're committed to each other. As we develop trust, we will begin to accomplish more together."

### A willingness to commit

Such a commitment takes time and effort. Just as Packard has become more responsive to its customers' needs, the division has asked for more services and quicker response times from its own suppliers.

Purchasing has concluded that is more easily done with fewer suppliers. Those selected suppliers can expect longer-term contracts, but also pressure for continuous product and cost improvements.

"From a buyer's point of view, our relationships with our suppliers are building in a positive fashion," Shepherd said. "We've gotten the attention of our suppliers regarding our competitive challenge. They know it's a serious issue. They need to do everything they can to help us, and are showing a willingness to do just that."

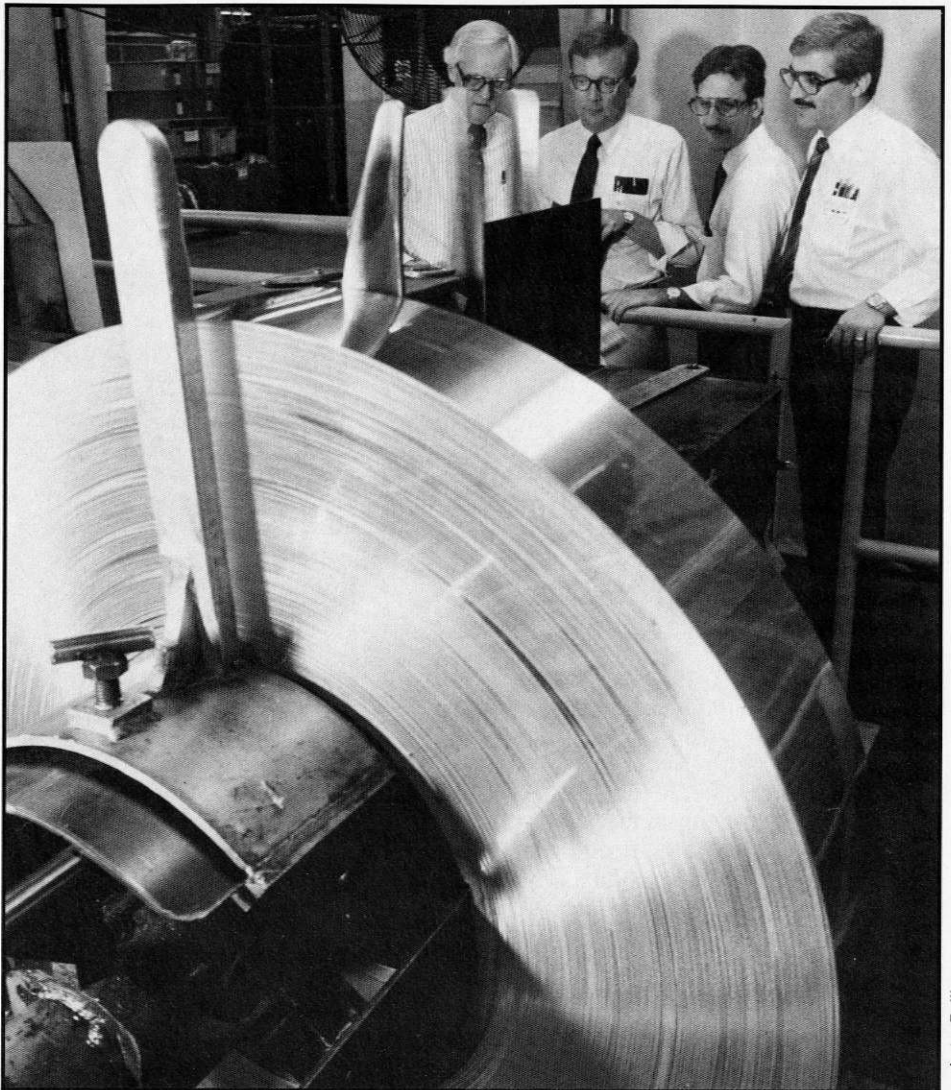


photo: Reilly

(From right) Angelo Lucarelli, stock supervisor; Richard Polenick, Materials Engineering; Paul Kuhn, technical service engineer, Olin Brass; and Curt Linke, Supplier Quality Assurance, observe a coil of material being fed into the electro-plating operation in Dept. 1140.

## Suppliers join Packard in battle to reduce costs

Many of Packard Electric's suppliers are heeding the call to arms in the battle to reduce costs and become more competitive. Olin Brass is one of those suppliers.

Olin Brass is a SPEAR 2 supplier that provides Packard Electric with 100 percent of its alloy strip requirements.

"Reducing the number of suppliers where possible gives us the opportunity to work more closely on the competitive issues with the remaining key suppliers," said Tom Bruner, Senior Divisional Buyer, Metals. "The innovation of our agreement with Olin allows us to view both our operation and theirs as a synchronous manufacturing unit."

An Olin engineer, Paul Kuhn, helps Packard solve problems on-site. He spends approximately 60 percent of his time at Packard facilities.

"Being the sole source to Packard entails a great deal of responsibility on Olin's part," Kuhn stated. "Packard Electric and Olin Brass cannot accept the traditional buyer-seller relationship. Working together, we can better understand what is necessary to meet the needs of the ultimate customer."

# Plant 23 in Brookhaven celebrates 10 years of technology and teamwork

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Packard-Brookhaven recently marked its 10-year anniversary, as plant employees participated in a week-long celebration commemorating the opening of the facility in January, 1977.

Pictures of the plant's early years took employees for a trip down memory lane. Plant 23 workers wound up a week of celebration with games, contests and group activities.

"I'm very proud of Plant 23 and the people who work here," declared Ed Zuga, plant manager since May of 1983. "Throughout the Brookhaven plant's short history, we've had a group of interdependent employees with a

common responsibility and a common goal — to be so good that the customer can't do without us. That's the attitude that makes this plant and its people so special. Celebrating our 10-year anniversary gives us a chance to recognize that and appreciate it."

## **A look back**

In 1976 Brookhaven's start up team began work from trailers, which served as a temporary worksite until the plant was ready. Lead prep production began on January 31, 1977, with 16 employees. Nick Bozich was the first plant manager.

In May of 1978, Plant 23 held its first open house. By the summer of

1978, the plant's production figures exceeded those of the start up plan. Employee involvement programs were also running smoothly. John Lambert replaced Bozich as plant manager.

In April of 1985 the Harvard Business Review singled out Packard-Brookhaven as one of four featured plants in the U.S. with a radically different work force strategy.

"We do things a little differently here, but I believe it's the best way for us to get the job done," Zuga emphasized. "Satisfying the customer is what counts, and we know how to do that. We have 10 years behind us to prove it!"

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## **From shoes to wiring:**

Kabelwerke Reinshagen gains  
a new assembly facility  
near Austria-Hungary border

Packard Electric's global growth strategy achieved another success early this year when Kabelwerke Reinshagen formally announced its plans to begin wiring assembly production in Austria.

Called Packard Electric Bergenland, the operating company is located near the city of Graz in the easternmost section of Austria bordering Hungary, according to Ray Connolly, divisional comptroller. Formerly operated by shoemaker Dr. Scholl, Inc., the plant was in the process of shutting down last year when the Austrian government offered it to Packard-Reinshagen.

To stem the imminent job loss from the Scholl departure, the Austrian government allowed Packard Electric to take over the plant for a nominal fee. In return, Packard agreed to train the former Dr. Scholl assembly line workers into wiring harness production jobs, Connolly said.

Over the past several months, Dr. Scholl has been phasing out its production of wooden clogs and sandals, and





photo: courtesy  
Mississippi  
Operations

Brookhaven employees take seriously the plant's motto: "To be so good our customers can't do without us." Plant 23 recently celebrated its 10-year anniversary.

Packard has begun phasing in its own production in addition to training new employees.

#### Wiring vs shoes

"Making the transition from shoe operations to wiring harness operations has been easier than it would seem," pointed out Hans Weiser, managing director, Kabelwerke Reinshagen. "There are some similarities in the way the respective assembly line operations are run."

Reinshagen manages the business out of its Neumarkt operations in West Germany. Assemblies made in Austria will be shipped to Reinshagen for sale to car companies.

Eventually up to 600 Austrians will be employed in the manufacture of wiring assemblies and sub-assemblies for the European automotive market. The transition from shoe manufacturing to wiring assembly manufacturing began in late 1986 — four months after the plant was originally slated to close.

"The Austrian government knew we had run out of harness capacity in Ger-

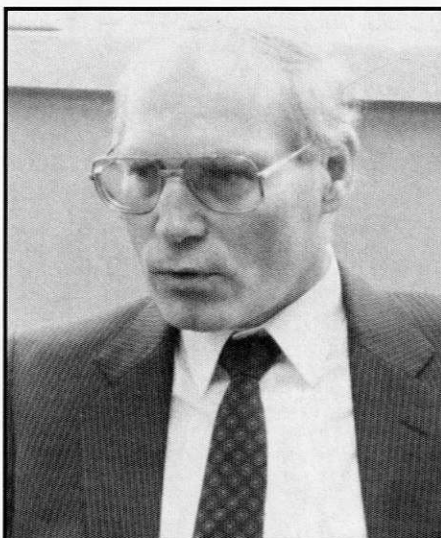


photo: Kearney

"Making the transition from shoe operations to wiring harness operations has been easier than it would seem. There are some similarities in the way the respective assembly line operations are run." —Hans Weiser, managing director Kabelwerke Reinshagen

many," explained Connolly. "They made us an offer that was economically attractive for both parties. It's an inherently competitive situation. It will add to the capacity of Kabelwerke Reinshagen, permitting us to sell more product to European carmakers without incurring unreasonable expense."

#### A case of good timing

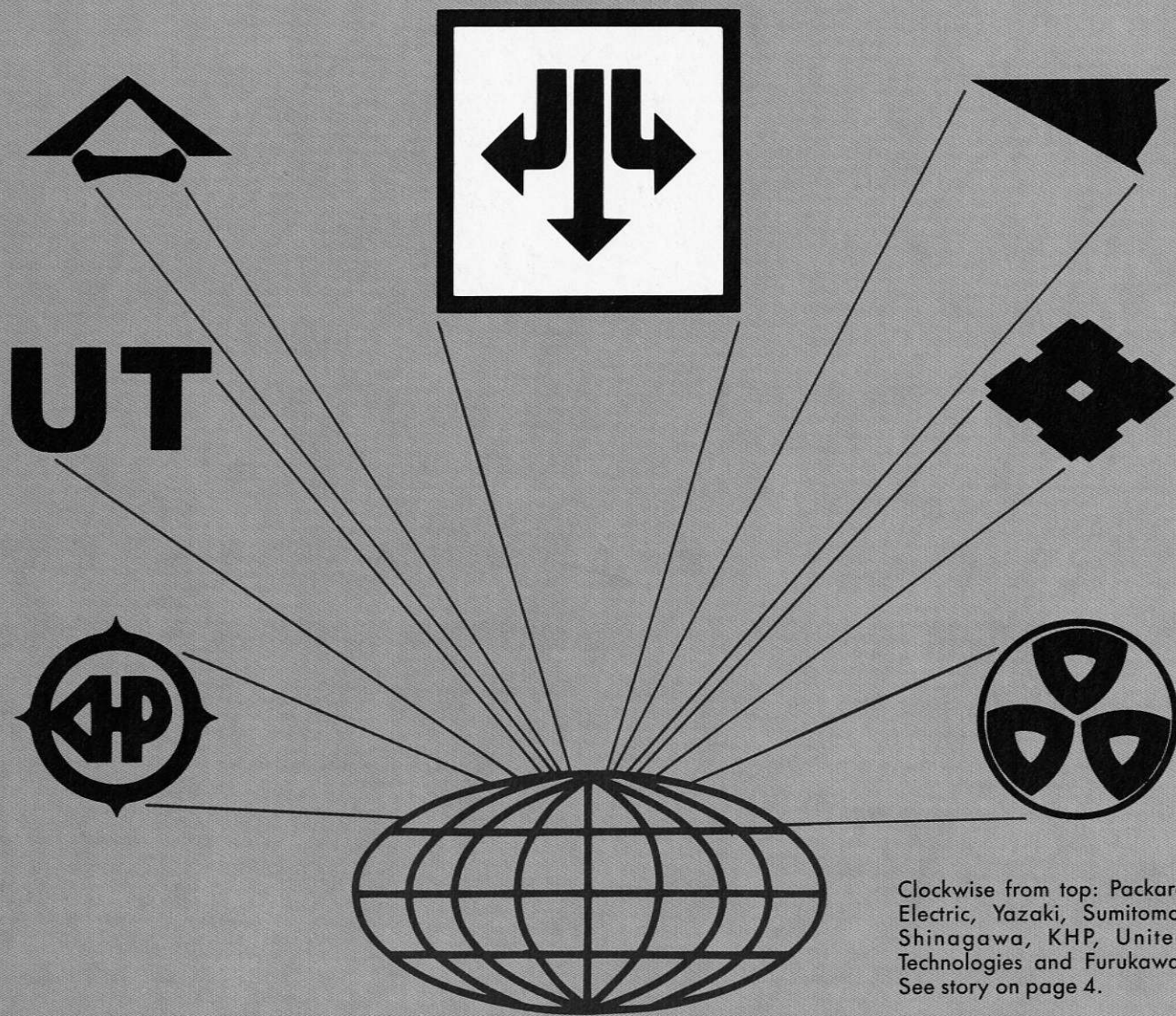
This experience has shown how companies can cooperate with the government and with each other to alleviate the effects of plant closings on workers, according to Weiser. In this instance, Dr. Scholl delayed the closing of its plant until Packard Electric could begin phasing its operation in, thus maintaining a stable work force.

This allowed Packard Electric to begin training the former Dr. Scholl employees prior to production. These employees then had adequate time to learn to produce a perfect quality wiring assembly, Weiser added.

"This is a significant operation both for Packard Electric and for the people in the community," he concluded.

# PACKARD ELECTRIC

## COMPETITIVE ANALYSIS



Clockwise from top: Packard Electric, Yazaki, Sumitomo, Shinagawa, KHP, United Technologies and Furukawa. See story on page 4.