PACKARD ELECTRIC

Cablegram

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Rootstown to reopen

PACKARD ELECTRIC'S ROOTSTOWN PLANT will be producing about 52 million pounds of plastic materials by 1987. The division expects to outfit the currently-vacant plant with processing lines to produce nylon, polypropylene and thermoplastic elastomer compounds.

IUE Local 717 members at Packard Electric's Warren Operations accepted on April 8 a tentative agreement on contract language pertaining to the placement of a new Packard operation at the division's now-vacant Rootstown plant.

Greg Whitman, Local 717 president, and Harold "Nick" Nichols, Local 717 shop chairman, announced that members ratified the agreement by unanimous vote.

Elmer E. Reese, Packard general manager, added, "This is a very positive step taken by Packard people—a step that will see this division move into a new and competitive business venture. I am very proud of the support that the local's leaders and members have given this proposal."

The Local 717 members' unanimous vote will permit Packard to proceed with investments in the plant which will include four major processing lines to produce nylon, polypropylene and thermoplastic elastomer compounds.

Reese indicated, "The investments Packard will make in renovating the Rootstown plant, and in new equipment and technology, reflects our confidence that we will be able to be competitive in the plastic compounding business. An extensive resource planning effort indicates significant growth potential in this area."

Reese confirmed at a recent news conference, that planned investments for the new business will cost millions of dollars. "This is a brand-new business—a totally different business with a different market. Packard plans to produce about 52 million pounds a year by 1987 of the highest quality (plastic pellet) materials. About half the output would be for Packard, with the remainder for other GM and 'outside' customers."

Jack Sill, project manager, and Rootstown superintendent, said there will be four processing sys-

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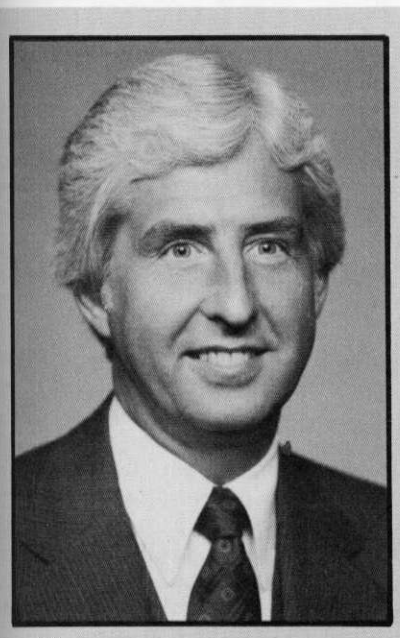

Kenneth E. Olthoff

Olthoff to head Personnel at Packard Electric Division

Packard Electric Division General Manager Elmer E. Reese has announced the appointment of Kenneth E. Olthoff to the position of Director, Personnel, effective April 1.

Olthoff, who had been general director, Worldwide Employe Benefits, General Motors, replaces Richard L. Huber who was promoted recently to Group Director of Personnel—Chevrolet, Pontiac and General Motors of Canada.

Olthoff graduated from Calvin College with a B.A. degree in economics, and from the University of Michigan with a master's degree in management. He also has attended Dartmouth College's Executive Program.

He joined General Motors in 1954 as a college graduate in training with the Delco Radio Division where he advanced to the position of supervisor, Labor Relations, in 1960.

In 1962, he was promoted to the General Motors' Personnel Administration and Development (PAD) Staff as a staff assistant in Personnel Research.

Olthoff joined GM's Industrial Relations staff in 1971 and held several positions before being named director, Employe Benefits. He returned to the PAD staff in 1981 as director, Personnel Administration, General Motors Technical Center, Warren, Mich., the position he held until later that year when he was named General Director, Worldwide Employe Benefits.

In his Packard assignment, Olthoff will be responsible for all personnel and employe benefit functions. He will be a member of Packard Electric's Executive Committee and will report to Reese.

Newsbriefs

Project Saturn: Innovation

When GM recently unveiled its Project Saturn, a subcompact car with no firm introduction date, the goal presented by the corporation was to build small cars in the U.S. The goal, as addressed by GM, was not only to make the new vehicles cost-competitive with small foreign cars, but to make them a leap ahead in safety, quality and performance.

The corporation is relying on innovations in design, engineering, manufacturing, assembly, materials management and workforce participation to make the Project Saturn vehicle a success.

The UAW and GM have created a Study Center aimed at union-management partnership in the development and manufacture of the car. The Center is established on the principle of complete union and worker involvement in all aspects of manufacturing and assembly plans and processes.

EPA reduces ratings

The Environmental Protection Agency will reduce its mileage ratings for 1985 model autos, to put the estimates closer to real-life mileage, the EPA said recently.

When 1985 models are sold this fall, the EPA "city" rating will be cut by 10 percent and the "highway" rating will be cut 22 percent.

The agency also will return to its pre-1979 practice of listing both annual rating figures on new-car window stickers, instead of just the city figure.

Economic confidence dips

The Confidence Board's latest quarterly survey among business leaders to assess their confidence in the economy declined slightly in the first quarter. The indicator, measured on a scale of 0 to 100, registered 70 in the new survey, compared with 74 in the fourth quarter of 1983. The board said the level remains at "very high levels," and that "as an economic recovery matures, a decline is expected in the number of respondents reporting that conditions have improved or are expected to improve."

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New business prospects

'just the beginning'

Packard makes allied gains

The Packard Electric allied business picture for model year 1985 looks bright, according to Bill Turner, director of Sales Engineering located in Detroit. He recently listed five areas of new allied business for the division.

ARC radio

Turner noted that the ARC radio, which stands for Advanced Radio Concepts, will be new on the Buick N car for 1985. Delco Electronics, he explained, will be the customer for the Packard Electric connectors for the ARC radio.

Turner added that this radio business will result in four new Packard Electric connections on each Buick N car equipped with the ARC radio. Packard will supply about 5,000 parts (i.e. components and terminals) for each of the four connections.

"Eventually we're going to have about 30 different connections associated with the ARC radio program on through 1986 and beyond," Turner explained. "This is just the beginning of this business for Packard."

He added that Packard production for the ARC radio will begin soon in Plant 11. "We will be producing (connectors) to put on harnesses in the May/June time frame," explained Turner.

Insulation Displacement Terminal

Turner revealed that Packard Electric has displaced business from an outside supplier to produce about six million insulation displacement terminals for Delco Remy for 1985. The terminal, according to Turner, will be used in Delco Remy's new high efficiency coil. The coil, Turner explained, will be used primarily on GM products.

He added that this terminal business will go to Plant 11. "George Kralovich (Plant 11 plant manager) and his people were very instrumental in working to get Packard's cost down so that we could get the business.

"The insulation displacement terminal is attached to the magnet wire within the high efficiency Delco Remy coil and displaces the insulation on the wire in order to make electrical contact with the copper," explained Turner.

"With the superior design by our component engineering, which as far as Remy is concerned is a better quality terminal, we have the opportunity to supply Remy with

(Continued on Page 5)

WHEN CHEVROLET'S NEW ASTRO (M van) goes into production this summer Packard Electric will play a major role in providing the vehicle's wiring assemblies and components.

Combined Packard effort

Packard on schedule with M van

All of the 89 wiring assemblies found on the new GM small van, currently designated the M van, will be built and supplied by Packard Electric, according to Bob Dettinger, senior coordinator, Business Planning. He added that most of the Packard wiring assemblies for the M van fall into three main harness areas—instrument panel/-forward lamps combination harnesses, engine/engine control combination harnesses and body harnesses.

New M van wiring assemblies

Dettinger explained that for the M van Packard will produce about 12 instrument panel/forward lamp combination assemblies in the Mississippi Operations, about 8 engine/engine control combination assemblies at Packard's Warren Operations in the branch plants and about 8 body assemblies in Packard's Mexican Operations. He explained that the body assemblies will be prepared in Packard's Warren Operations (Plant 16) and then assembled in Packard's Mexican Operations.

The balance of the M van's wiring assemblies include an assortment of lighting, transmission, cruise control and power harnesses.

New M van components

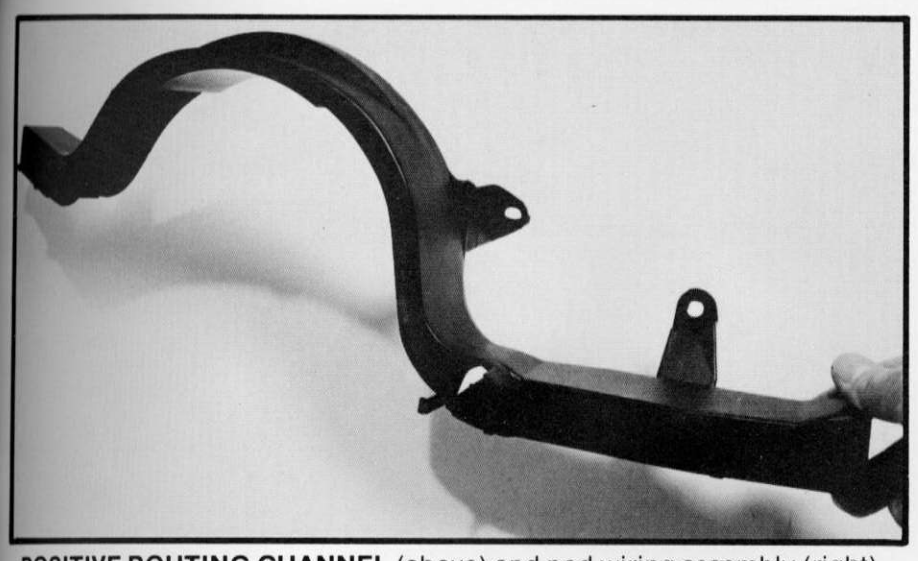
According to Dettinger, Packard will also produce about 80 components such as connectors, fuseblocks, vacuum hose assemblies, clips and clamps for the M van. He added that many of the components Packard will produce for the M van are carryover parts. "We'll have increased concentration of the newer style terminals with terminal position assurance (TPA) which is a secondary lock on the terminals to keep the terminals from backing out," explained Dettinger. "It's a more reliable connection system."

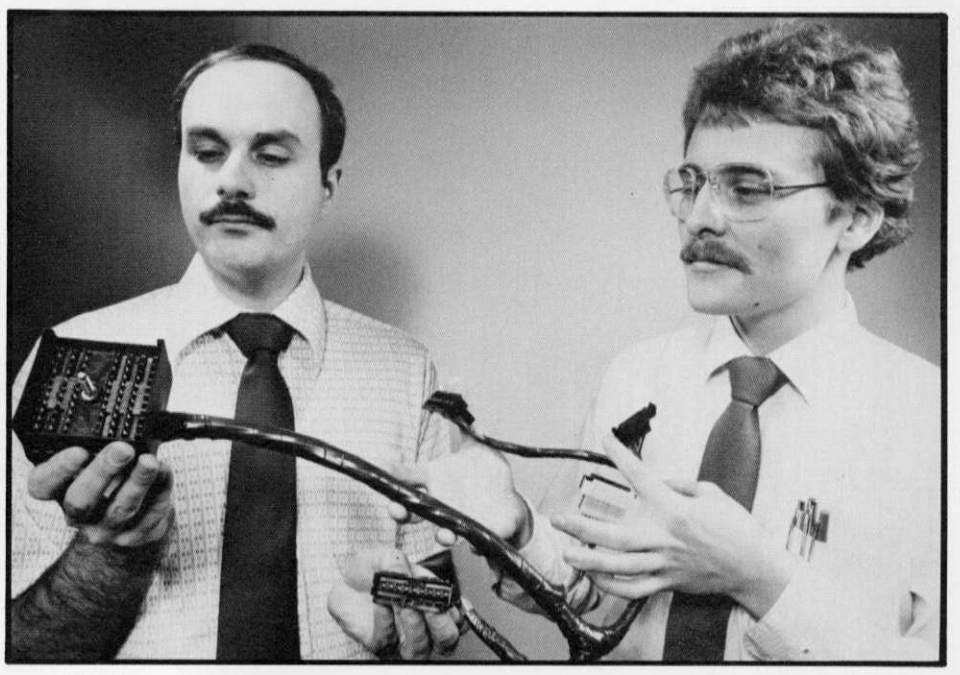
Dettinger noted that Packard wiring harness production will begin the last week in May. "New components cycle one month ahead of start of production," added John Zuppo, supervisor of Applications Engineering for GM's Truck & Bus Group.

Dettinger further noted that the M van schedule is tight for Packard. "It's a later than normal pilot with an earlier than normal vehicle start of production," he explained. "That compresses Packard's manufacturing plan and timing." Dettinger added that the division is on target with the current build schedule.

The rear-wheel-drive van of which, he added, 150,000 will be produced in GM's Baltimore assembly plant, will begin production the last week of July for introduction during the first week of September. He noted that the van, available in passenger and panel versions, can accommodate up to eight people and is available with a four-cylinder 2.5-liter engine or a six-cylinder 4.3-liter engine.

ook bright for Packard Electric





POSITIVE ROUTING CHANNEL (above) and pod wiring assembly (right) will be supplied by Packard Electric for GM's 1985 N car. Nick Pappoda (right), electrical engineer, and Mark Heacox (far right) mechanical engineer, hold pod wiring assembly.

Packard provides new development and design for GM N car parts

by Mark Rollinson

Of the nearly 150 new Packard Electric components developed for the N car, three stand out as being unique either in design or in development or both.

Positive Routing Channel

One of the new Packard N car components is a Positive Routing Channel for the engine compartment. "This channel is contoured to the HVAC (heater, ventilation and air conditioning) unit and it allows the wires to be positively routed along the front of the dash for quality and appearance," explained Joseph Ross, senior project engineer - Oldsmobile.

Nick Di Nardo, tool engineer, further explained that the Positive Routing Channel is not a new development for Packard but the size of the injection molded N car channel makes it unique because it is molded as one unit.

"This is a very large channel for Packard and we are near the limit of our largest press (300 ton) to mold these," he explained. He noted that the channel is attached to the bulkhead in the engine compartment and routes the engine control harness over the blower motor.

The fixed piece of channel, according to Di Nardo, will be molded in Plant 3 of Packard's Warren Operations with production set to begin this month.

The Buick channel, Di Nardo noted, is constructed of glass-filled nylon and the Pontiac channel is made of talc-filled polypropylene. He explained that the channel serves as part of GM's engine beautification program designed to conceal all underhood wiring. He added that the channel also routes wires away from maintenance areas (i.e. spark plugs, oil filters) in order to make them more accessible.

Packard mold production, according to Di Nardo, will be 1152 positive routing channels molded per two-shift day. He added that 666 harnesses will be built for the Buick channel per day and 744 harnesses for the Pontiac channel per day based on a three shift operation on one line. Both routing channels will be assembled at Packard's Austintown plant.

Pod wiring assembly

One new assembly which involves a new process is a pod wiring assembly developed specifically for the Buick N car by Packard Electric.

"It's been designed for mechanization," explained Roland Hill, assistant staff engineer in Applications Engineering. "The design concept here was to create a pod wiring which is a small instrument panel wiring with a lot of point-to-point wiring with no splices," he further explained.

The pod assembly, according to Hill, is built up on a new Packard developed multi-lead processor where wires are cut, terminated and plugged into connectors mechanically. "The idea is to provide

(Continued on Page 8)

New assemblies, conveyors and tools

New technology on N car

When the new GM N car is introduced on September 20 Packard Electric input both in wiring assemblies and component parts will be substantial. For example, Packard will supply nearly 150 new component parts and more than 120 new wiring assemblies for the new front-wheel-drive vehicle which will be larger than the current J car (Chevrolet Cavalier), and smaller than the A body (Chevrolet Celebrity).

New N car wiring assemblies

"All wiring assemblies will be new," said Roland Hill, assistant staff engineer in Applications Engineering. "They will be unique and will represent additional new assemblies, conveyors and tools," he added.

Of the 123 wiring assemblies for the N car, 20 will be instrument panel (IP) harnesses which will be built in Packard's Mississippi Operations. Eight will be engine and engine control harnesses which will be built in Packard's Warren Operations' branch plants. The 11 forward lamp harness assemblies for the N car will be built in Packard's Mexican Operations.

Included in the nine major Fisher Body wiring assemblies are four rear body assemblies to be built in Mexico. Also included, noted Hill, are five stranded copper front body assemblies to be built in Packard's Mississippi Operation. "It's a different design because of the way it's routed," explained Hill. "It's a combination of the front body wiring with some of the lighting such as the dome lamp and side interior lights and the new high level stop lamp."

Tom Sosnowchik, supervisor of Application Engineering, explained that the average N car will contain 20-25 Packard Electric wiring assemblies depending on options and engine selection. "The Buick engine will be a 3-liter six-cylinder multi-point fuel injection (MPFI) and the Pontiac will be the four-cylinder 2.5-liter throttle-body injection (TBI)," explained Sosnowchik. The Oldsmobile N car, he added, will share the Buick and Pontiac engines.

New N car components

Sosnowchik noted that there are nearly 150 new component parts scheduled for the N car which include more than 30 component assemblies such as printed fuseblocks and clip and strap assemblies. Packard Electric will also supply six different wire routing channels.

Hill explained that the new components will all be built in Packard's Warren and Mississippi Operations.

Pull-to-seat Connections

"There are a number of new applications on this car for sealed pull-to-seat connectors," noted Hill. "This has required a new manufacturing process in Plant 14." Hill added that an index line will make the pull-to-seat sub assemblies which will be sent to Packard's Warren branch plants to be built into engine control assemblies.

"We're using the pull-to-seat technology from Plant 14 in the engine compartment," noted Joseph Ross, senior project engineer - Oldsmobile. He added that while the new 150 pull-to-seat connections will not be found solely on N cars, the N car will be one of the first production vehicles to use this new Packard Electric technology.

Ahead of schedule

Hill mentioned that the N car project is slightly ahead of the typical model year time frame. "We started building vehicle pilots in January," he explained. He added that the vehicle pilot building continued for two months through March. "The plan is to begin vehicle volume production on June 18," he noted.

Hill explained that Packard's production release date for N car wiring assemblies and components was the week of March 19 with line starts scheduled for the period between April 2 through April 14 for Warren Operations, Mississippi Operations and Mexico.

Sosnowchik noted that the start of N car production will be slow and staggered. "Oldsmobile Assembly (due to GM reorganization) will start building the Pontiac N car in August," said Sosnowchik. He indicated that the Buick and Oldsmobile models will precede the Pontiac model and will start in June in Lansing, MI. He added that the 1985 N car models will be introduced only as a two-door coupe with a four-door sedan being added for 1986.

"We're seeing the beginning of a new approach to the way we build cars," stressed Hill. He explained that this new approach is typified through earlier pilot building and then a slow, extended start up to volume production with high emphasis on quality. "This is the format that the corporation will utilize for new car programs."

Packard means business!

Packard makes non-allied gains

Bob Van Wingerden, Packard general sales manager, reported agressive non-allied sales goals for the division at the March 19 management conference. Van Wingerden noted that 1983 non-allied sales represented four percent of total divisional sales. He noted, however, that Packard's sales forecast reflects outside sales to grow to 11 percent of total sales by 1989.

The sales picture for Packard Electric for 1985 reflects the division's new Packard business with Chrysler and the TVX joint vehicle project involving GM and Toyota, and increased business at VW.

New Chrysler business

The sales story at Chrysler is one of totally new business for Packard Electric. "Beginning in mid-1984 model year, we began supplying main harnesses for the Chrysler K car," explained Jim Christopher, manager of International sales and National Markets. "In the 1985 model year we will pick up all the major harnesses with the exception of the instrument panel on the Chrysler H car, a new vehicle."

Christopher claimed that it was Packard's quality and technical capabilities that helped win the Chrysler business for the division. "Primarily what they were looking for was a high quality, high tech supplier," he explained. "They are looking for our technical support for the future."

Packard Electric will build thirteen separate wiring harnesses in the 1985 model year for Chrysler including the two current model year wiring harnesses. They include one instrument panel harness, four body harnesses, two engine harnesses, four headlamp and dash harnesses and two battery cable harnesses.

He estimated the percent in sales dollars increase at Chrysler for Packard Electric to be more than 500 percent from the 1984 to 1985 model year. Christopher noted that Packard Electric had limited component sales and no harness business with Chrysler in 1983.

"With the exception of cable, we have a minimum number of Packard components on both the VW and Chrysler programs," Christopher explained. "Our objective in both cases is to increase our component penetration." He added, "We want Packard components on the harnesses that we build and ship to VW, TVX and Chrysler."

New TVX business

The TVX Toyota-GM joint venture will build a totally new vehicle with 100 percent Packard wiring content. "That includes all the wiring harness assemblies," emphasized Christopher. He noted that the cable to be used in the TVX vehicle will be supplied from Packard's U.S. operations, while almost all of the components will be purchased.

Packard will supply nearly 30 different wiring harnesses for the TVX which will include one engine-main/forward lamp harness, two jumper harnesses, a forward lamp harness, an engine harness, a negative battery cable and an instrument panel harness.

Other Packard harnesses which will be supplied to the TVX vehicle include two front door harnesses, eight floor harnesses, a roof harness, a luggage door harness, four back door harnesses, two right rear door harnesses and a license lamp harness.

New VW business

"For 1985 we've been awarded 100 percent of VW's harness business," said Al Fisher, Packard's sales manager — Volkswagen of America. He contrasted the total 1985 VW harness business with the 40 percent which Packard has today.

"Our objective is to also produce the cable and components for VW," added Fisher. "In 1985 we will assemble harnesses using Packard cable, conduit, weatherpack connector systems, fuseblocks and relay centers."

He explained that Packard won the additional VW business by successfully bidding against Automotive Products Division of United Technology (Essex). He added that U.T. previously had the other 60 percent of the VW business.

Fisher noted that VW had other criteria besides low bid for awarding 100 percent of their harness business to Packard. "They recognized our engineering expertise and our quality," he explained. "Our price was competitive, but it was our engineering/technical expertise and quality that won the business."

Fifty-five separate wiring harnesses will be built by Packard Electric for the 1985 model year VW Rabbit, VW's only domestically produced vehicle. They include 22 engine harnesses, four

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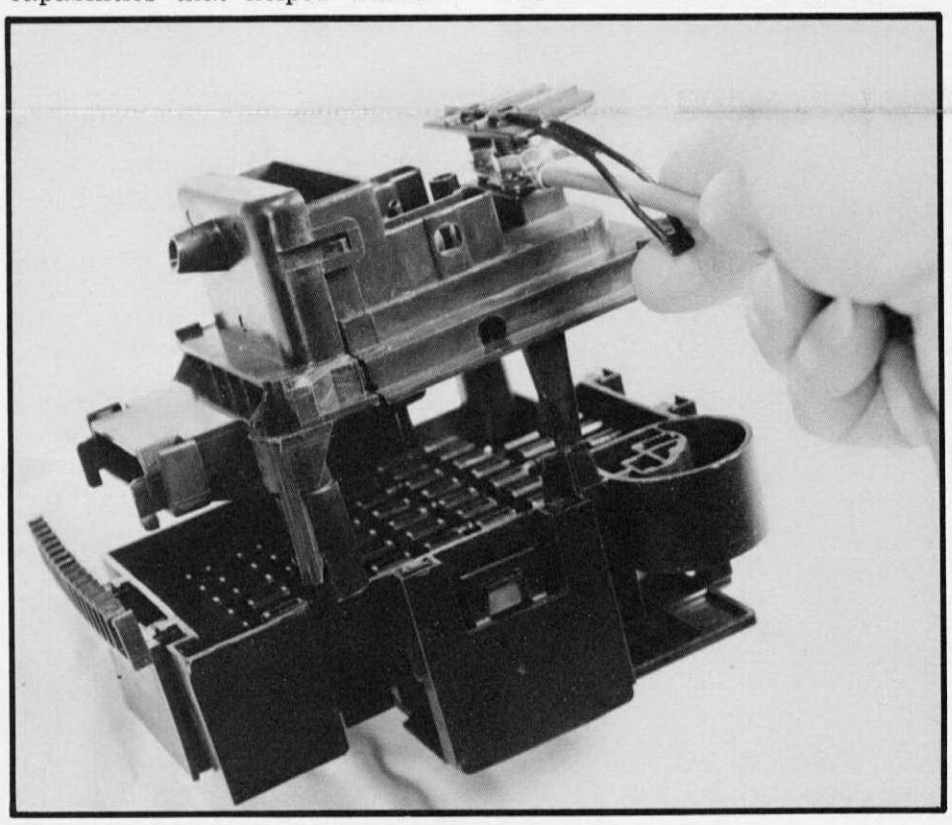
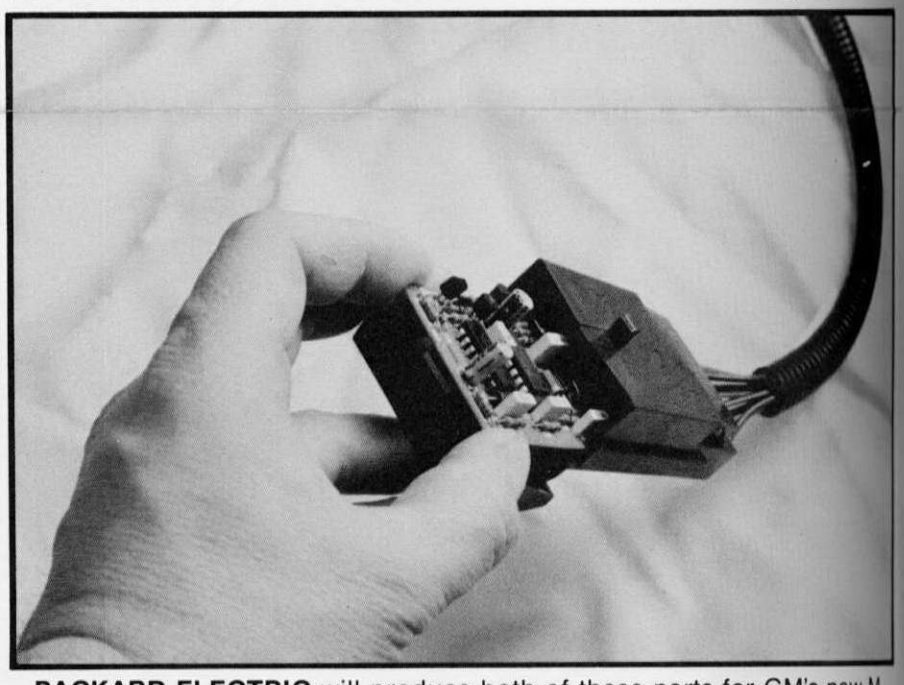




PACKARD ELECTRIC will produce both of these parts for GM's new M van. Injectable hard-shell grommet (left) mounts on the dash panel of the M van and eliminates the need for cutting wires at the bulkhead as in the past. The power sliding door lock module (above) provides a time delay for locking the M van's sliding door.

M van has Packard innovations

by Mark Rollinson

Two new components developed by Packard Electric will be featured on the GM M van, the first all-new Chevrolet van design in 20 years. An injectable hard-shell grommet and a power sliding door lock module will be two of about 80 Packard Electric components to be used on the M van. The Chevrolet Astro, as it is called, will debut late this fall.

Injectable hard-shell grommet

John Zuppo, supervisor of Applications Engineering for GM's Truck & Bus Group, explained the function of the injectable hard-shell grommet or "pass through" which was designed by Packard Electric's Component Engineering specifically for the M van. "This is a brand-new type of injectable hard-shell grommet for Packard," he explained. "What makes this unique for the M van is we've added the area needed to the hard-shell grommet itself through which we can pass wiring and vacuum (lines)," Zuppo added.

"There is no electrical interconnect," he noted. "Usually we use a bulkhead connector which interconnects the engine and forward lamp with the instrument panel."

Bob Dettinger, senior coordiator, Business Planning, noted that the new grommet, which mounts on the front of the dash panel, eliminates the need for severing the wires at the bulkhead. "The wires pass completely through eliminating the breaks," said Dettinger.

"We're passing our option harnesses through (the grommet)," explained Zuppo. "This helps when adding option wiring so there is no need to design an entire new harness which requires individual grommets."

"This way we get all the wiring to go through (the dash panel) in one area and minimize the holes in the sheet metal," said Dettinger.

Power sliding door lock

Bob Bucklin, assistant staff engineer in Advanced Electronics, explained the operation of the new GM M van power sliding door lock designed by Packard Electric.

"The sliding door lock module provides for automatic locking of the sliding door," said Bucklin. "If the sliding door is open at the time the power door lock switch is activated, our module stores that information. When the sliding door is then closed, the module pulses the lock actuator which locks the sliding door," he explained.

"Packard Electric's approach to electronics in the automotive system is to integrate the electronics with the wiring assembly," explained Bucklin. "Our electronic control modules are packaged in the wiring harness in a combination connector/housing assembly." He explained that one of the advantages of the Packard Electric system is that the electronic door lock module can be tested as part of the wiring assembly prior to shipment to the customer.

"Our timing couldn't be better!"

Lund optimistic about buying trends

Robert D. Lund, vice president of General Motors' Sales and Marketing Staff, was recently interviewed for the **Cablegram** on the subject of the increased current buying trends of the U.S. car-buying public.

Cablegram: What message is the car-buying public giving General Motors in terms of what the public wants to buy?

Lund: At the moment, it would appear that the public wants to buy everything we're making. There's a great demand for the full-size cars. There's a great demand for the smaller cars. There's a demand for the performance-type cars: Corvettes, Camaros, Firebirds. You name it; people want these cars today.

Those who have been reluctant to buy the past few years find it is a good time to buy. They're buying the car of their choice, including, in many cases, trucks and vans. They're buying all of the cars we're making.

Cablegram: How is the timing for GM's newer product lines? How well are they fitting into current consumer demand?

Lund: Our timing couldn't be better! As a matter of fact, cars such as the front-drive A and the front-drive J are particularly desireable today and the marketplace is telling us that. We're building them just as fast as we can.

Cablegram: What is happening with the public's perception of the quality of the General Motors' vehicle?

Lund: I think that the American public now realizes that General Motors is building better quality than we've ever built. I think our employes are very much aware of quality, and are building better cars. There's absolutely no question about it!

I think there is dedication on the part of all our people to insure that the cars are the finest we can build. I think that is also recognizable to the average individual.

Cablegram: What is the sales outlook for the balance of the '84 model year, and any early indications as to '85's prospects?

Lund: I think that 1984 is going to be an outstanding year. We'll probably be up about 15 percent over 1983. We're estimating that we'll sell somewhere in the vicinity of 10.5 million cars as an industry and 3.5 million trucks for a total of about 14 million. As far as 1985, we don't have a crystal ball. If things continue as they are at the moment, if we continue to see an improvement in the economy, if the interest rates don't get out of hand, if the employment picture continues to improve, if the unemployment continues to go down, I don't think there's any question that in 1985 we'll see a better year than we saw in 1984!

Cablegram: GM is bringing out the front-wheel-drive C-car, a car that the corporation says will be of very high quality. Where do you see the market for that vehicle?

Lund: The market for that car will be outstandingly good because the people who want larger-size cars are looking for the same thing that people in smaller-size cars are looking for: quality, good comfort, good handling, good performance and economy. I think they get all those things in the new C-cars. Also they get front-wheel-drive performance, which I think is outstanding. I think once those cars are on the street and people have the opportunity to see them, to drive them and to enjoy them, I don't think there's any question about their success. I think they're going to be a smashing success!

Cablegram: How do you account for the success of the J-cars built at Lordstown?

Lund: The J-car is of a fine size and it's right for an awful lot of people. The J-car got off to a slow start primarily because at the outset it was slightly underpowered. The reason for that was when the car was conceived, the dominant feature that America wanted more than anything was fuel economy. By the time the car got to market, the fuel economy situation had so much subsided and people were looking for performance.

We went to a 2.0-liter engine and that was the difference! Today, that car is the right size and right performance. It has good handling, is priced right and appeals to a vast number of Americans.

Cablegram: Lordstown has had good marks for the quality of its cars. How is that helping the J-car sales?

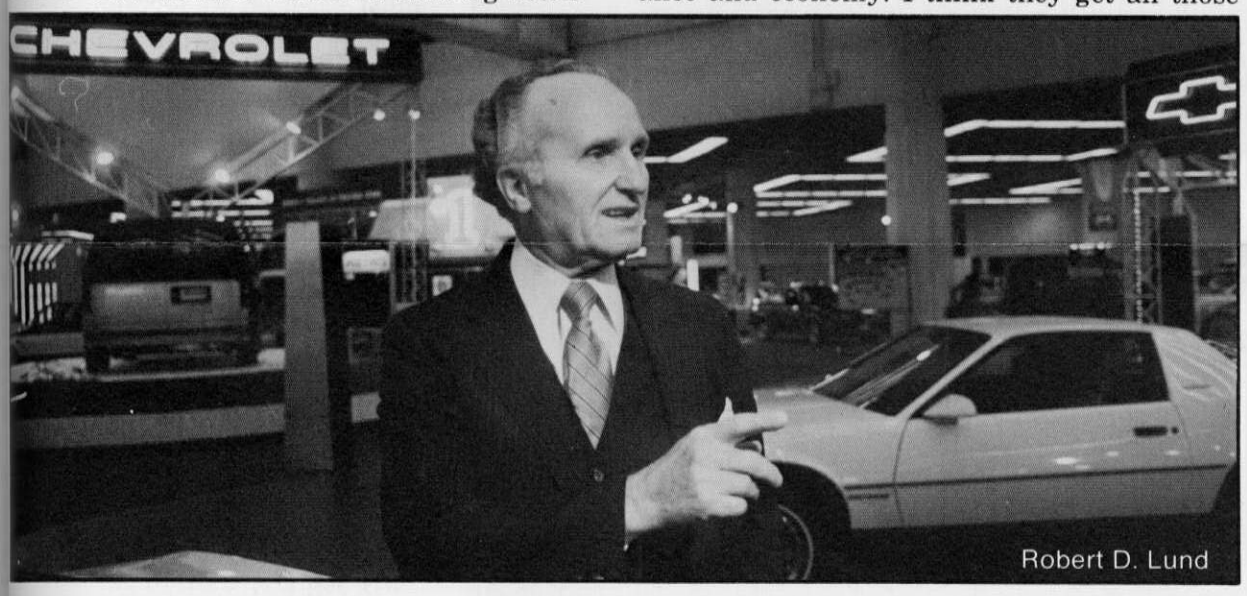
Lund: As far as quality is concerned, it plays a vital role in the sale of our products or any products. People are looking for the greatest value for their dollar—more bang for the buck. I think that down there at Lordstown the cars they are producing are giving the consumer value, and when he sees that quality he recognizes it and that's causing the sales to improve.

Cablegram: What are your thoughts about the surge in van sales and the trend toward the conversion of vans?

Lund: Vans—particularly converted vans—are in great demand at the moment. There's a good reason. Vans give people an opportunity to go out with their family and enjoy life a little more as a family group. The van market slumped a few years ago not because people didn't like vans. The fact was the buyers felt they didn't have the dollars to put into that kind of equipment. When inflation and unemployment went down, people went right back to them because it was something they had in the back of their minds.

Cablegram: What is your message to the employes of Packard Electric?

Lund: My message is a very simple one: Keep on building quality products to the best of your ability.



Robert D. Lund

Packard allied business increases

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many more millions of terminals of a similar nature but different designs," noted Turner. "This is work we may not have gotten without engineering."

He predicted that Packard annual production for Delco Remy for 1986 will double to 12 million insulation displacement terminals.

"On the air management solenoid for 1985 and 1986 we have the potential to go up to 30 million terminals annually," Turner predicted. "There is unlimited potential to go over 50 million terminals on insulation displacement for various other applications at Delco Remy for 1986-87-88."

Although Turner is optimistic about additional Packard Electric business with Delco Remy, he cautioned that any new business would have to be earned. "It's not going to be handed to us. We've got to be competitive because we are displacing a competitor which is already there."

Insert molded connections

Turner added that Packard Electric will also gain business for model year 1985 from AC Spark Plug for two new insert molded connections. "One is the coolant temperature sensor, and the other is the manifold absolute temperature sensor," he noted. Turner explained that the manifold absolute sensor feeds back through the automobile's computer information regarding fuel/air ratio mixture conditions within the manifold. He added that the coolant temperature sensor performed similar duties relating to the automobile's coolant temperature. "They are part of the engine control system," said Turner.

He revealed that Packard will produce about five million of each sensor for model year 1985. Turner indicated that Packard had yet to determine where the sensors would be built. "These (sensors) are new for '85 and we bid competitively and got the business," he explained.

Convoluted conduit applications

Turner noted that the division will gain two new applications for convoluted conduit for model year 1985. "One application is the ventilation hose for both the Buick N and C bodied cars," said Turner. He added that the convoluted conduit will replace the ventilation hose which had been produced by an outsider supplier. He added that 100 percent of the Buick N and C car ventilation hose business for model year 1985 will belong to Packard Electric.

He added that projected volume for Buick's N car is 750,000 and Buick's C car is 470,000. Turner noted that this conduit business will be located in Plant 12.

Turner revealed another new application of convoluted conduit for Packard Electric. "We're selling (conduit) to Saginaw Steering Gear for protection on their power steering hose," he said. "We sell it to them in bulk and they cut it to length."

Diesel glow controller

Turner explained that Packard Electric will also gain the light-duty truck diesel glow controller business for GM Truck & Bus Group for model year 1985. This business, according to Turner, was taken from an outside supplier to GM Truck & Bus Group and awarded to Packard.

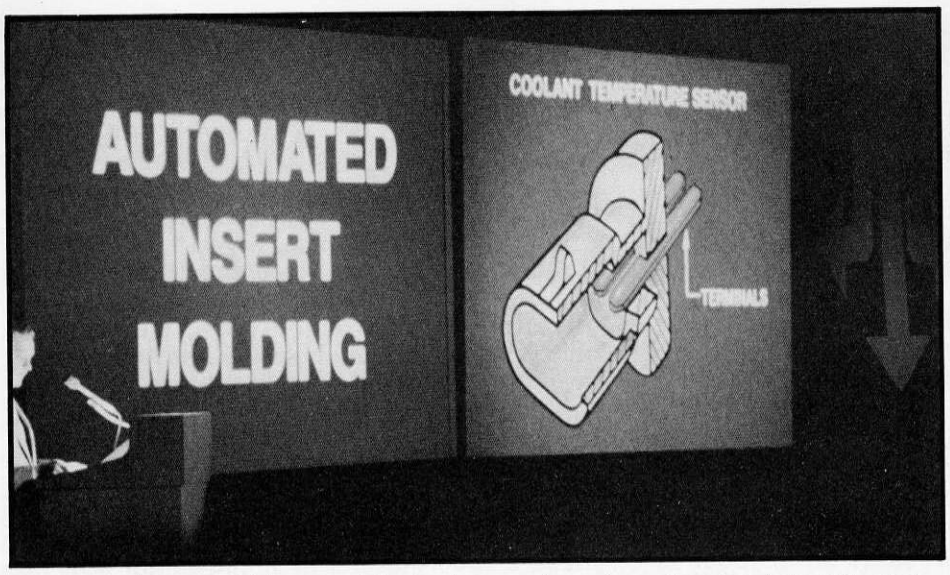
Turner attributed this new business to the Packard design of the part and the fact that the electronics provided by the Packard part are a lot more precise than the electrical/mechanical device formerly provided by the outside supplier. "Our design was one that enabled us to get the business as well as being competitively priced," said Turner.

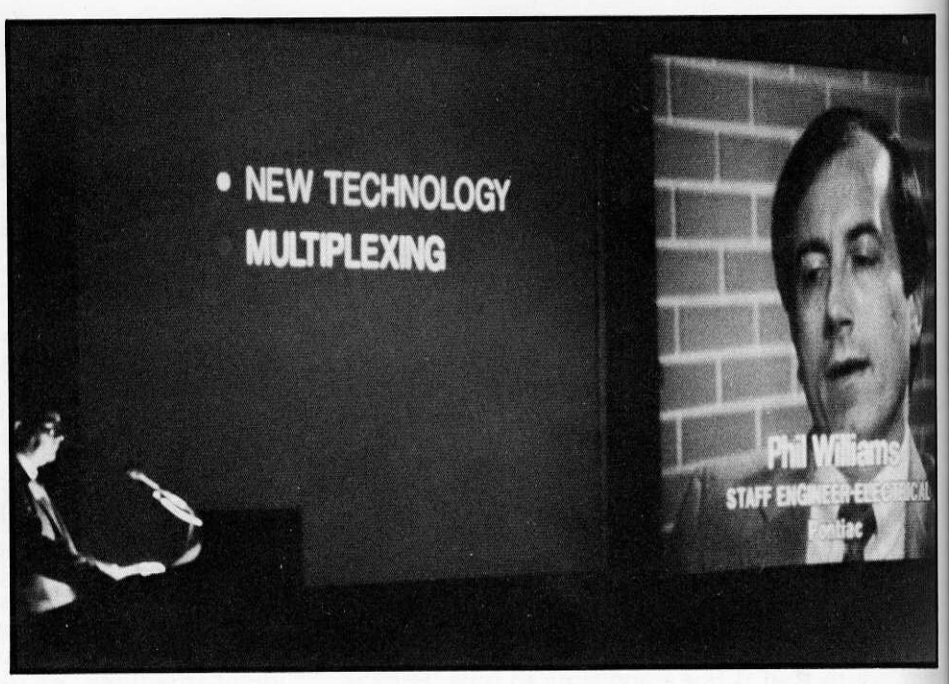
"We engineered and developed the electronic diesel glow controller for diesel engines and the electronics are incorporated as a part of the wiring harness system and then shipped as a tested unit to our customer," Turner explained. He added that the projected volume for this business will be about 125,000 units for model year 1985.

"Also, we have a variation of that (diesel glow controller) for passenger cars for Oldsmobile," added Turner. "If everything works right we'll be going into that business at the end of the year during the model year." He noted that volume would be about 200,000 for the passenger car diesel glow controller business.

Allied sales projection

Turner reported allied projected sales for 1985 will increase based on additional Packard Electric vehicle wiring and component content and increased corporate volume. The increases, according to Turner, will be on all GM vehicles including trucks as well as parts supplied to all GM supplier divisions.





TONY ANDREATTA, manufacturing engineering director (above), and Rudy Schlais, engineering director (right), use illustrations and videotaped interviews to support their points at Packard's March Management Conference.

Working to SPEC

Packard addresses customer satisfaction

The 160 Packard Electric managers who attended the management conference held Mar. 12 at Champion High School heard some of Packard's allied and non-allied customers present their perception of the division, and their evaluation of how well Packard has been performing against their standards.

"They define, quite clearly, I believe, the areas in which we must improve in order to satisfy their very demanding expectations," said Elmer E. Reese, Packard Electric general manager as he addressed the Packard management group.

"Our customer"

Reese explained that the theme for the conference—"Our Customer"—was selected because "we believe we need to increase our market orientation—our customer sensitivity."

The three-hour conference also featured both favorable and unfavorable videotaped comments from many of Packard Electric's allied and non-allied customers as well as Packard Electric representatives who addressed topics such as their impressions of Packard quality, pricing and delivery.

Challenge

Pat McCart, Packard's director of Warren Operations - Cable and Components, responded to questions regarding his impression of Packard's quality. "If I had to rate our quality now on a scale of zero to 10," said McCart, "I would probably be generous and say we are at a seven, with an obvious obligation to go to defect-free status in the next year or so."

Bob Stempel, group executive of the newly formed Buick-Cadillac-Oldsmobile group, noted that at Packard Electric quality is first. "And then comes that dimension of competitiveness," added the group executive. "And I'm not talking just base price or low, low cost. But competitiveness in a broader dimension. The innovation that you can bring to the products—the on-time delivery schedule—the experience of your total organization."

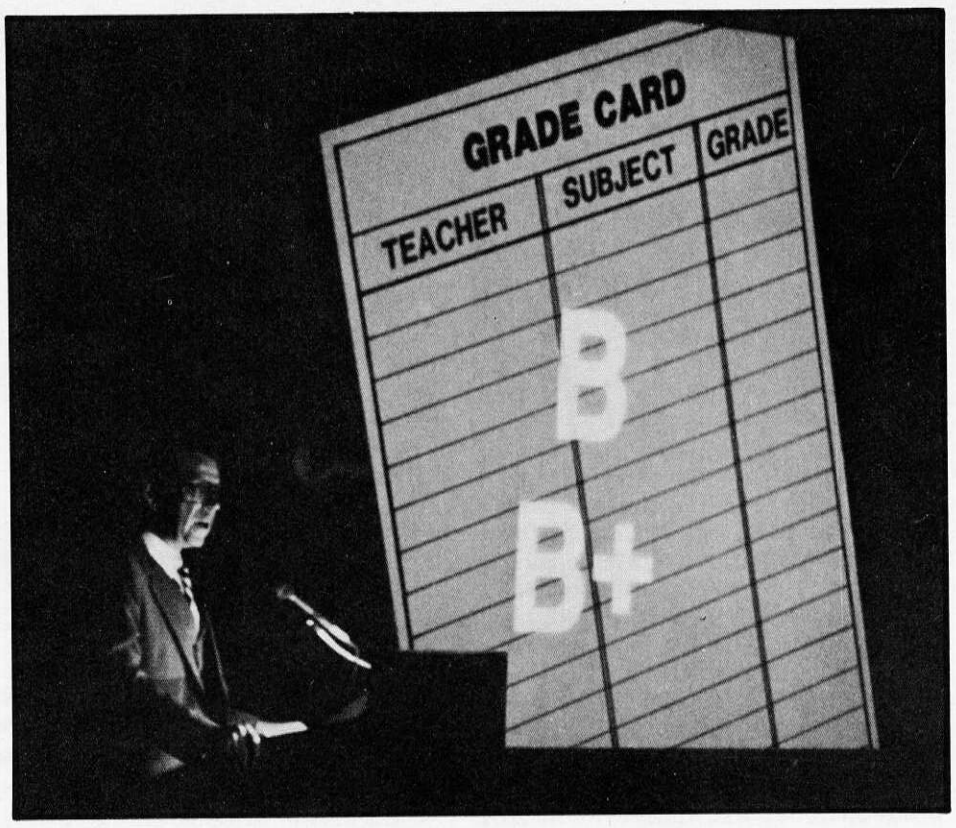
Jim Freebury, senior supervisor at Pontiac's Fiero plant, gave his personal opinion of Packard Electric. "Packard has been one of our biggest headaches in the business, as far as electrical wiring and tracing down the shorts."

Bob Wilson, group vice president of Anixter Brothers, Inc., presented his impressions of working with Packard Electric. "Your quality control on your long haul support of your customers—I think those are all basic advantages that Packard has and I don't say that lightly," he explained.

F. Robert Joseph, director of Production Purchasing at Volkswagen of America, directed his comments to price. "Whether or not we feel the high technicals of what we get from Packard Electric would justify a high selling price, our answer to that would be no."

Joseph added that Packard "must find a way to somehow give us (Volkswagen) more rapid responses to our engineering changes."

He also said, however, "As a source for engineering input for Volkswagen, we think Packard does a very fine job."



BOB VAN WINGERDEN, general sales manager, displays a grade card for the division based on comments from Packard's customers.

"Packard has to reduce their prices," said Richard "Skip" LeFauve, director of Operations for GM's newly created large car group and former Packard Electric general manufacturing manager. "They have to meet the market and then work out the cost problems at home."

LeFauve noted, however, "Occasionally there is a problem, but Packard Electric so quickly reacts to the problem and gets it fixed." He added, "It's always 'we'll fix it,' 'we'll get it done.' "

Michael Williams, Purchasing manager at Delco Remy, reflected on his impressions of Packard's provement," stressed Van Wingerden, "to earn that privileged title 'World Class.' "

He added that he felt the overall responses from Packard's representatives and suppliers were generally good. "Reflecting on what they said," he noted, "I think that we can take some pride in our image."

Technology plans

Packard Engineering Director Rudy Schlais addressed his presentation to the expectations of Packard's allied and non-allied customers. "The major expectation is that we must become world class competitive in all areas of our business, or we will lose the privilege to serve our customers," Schlais emphasized.

He added, "Packard Electric must build on its technology base to meet the ever-increasing requirements of the products of the future." Schlais explained that change to the product is only part of the changing environment facing Packard Electric. "Our customers are changing, and they are also asking for change in the way that General Motors' product programs are managed."

Schlais pointed out that Packard Electric is in the implementation phase of a ten year product plan. "When this plan is finished, we will be able to not only predict what the customers' product expectations are, but we will be able to manage the required development and manpower resources on a project basis."

Technology challenges

Tony Andreatta, manufacturing engineering director, reflected on what his department is doing to meet the needs of Packard Electric's customers. He began by explaining that his department's largest customer is the division's manufacturing organization. "We must provide them with cost effective processes that will enable them to build every product to spec."

He added that design integration with Product Engineering is critical for smooth integration of new products into manufacturing.

Andreatta explained several manufacturing innovations which Packard is providing for its customers (**editor's note:** Some of the components produced by these new Packard manufacturing processes are highlighted in the M van and N car articles in this issue.)

"We are also pursuing CAD-CAM, or computer-aided design-computer-aided manufacturing," added Andreatta. He added that the CAD/CAM process will aid in making Packard Electric components for plastic injection molds, rubber and insert molds, terminal make and assembly dies, assembly machines and plastic prototypes.

Need for perfection

Don Dedow, general manufacturing manager, said, "The bottom

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Security reps visit Warren

Packard security supervisors from all North American operations convened in Warren last week.

Harold Pittman, chief of Security, Packard Electric, reported the objective was "to set up a coordinated training effort for Packard's nearly 140 security officers at its Warren, Mississippi and Mexican operations."

Pittman noted that the three-day session—the first such meeting of all security supervisors in one location—also dealt with fire and security measures. "We looked at what can be done with the latest in security technology. In addition, we met with a representative from GM Central Office Security, and we discussed security of the future.

"Included in the presentations was a demonstration of the new Water Jel Fire Blanket which is available at Warren Main security locations. This blanket is not only capable of containing a small fire, but is also effective as a first-aid and burn prevention device. At the moment of use, it is soaked in a special solution which absorbs heat from burns and acts as skin for the victim. It may also be worn by a person surrounded by flames in order to allow that person to try to escape."

CHUCK YOUNG, (right) of Packard's Warren Operation Fire Section, demonstrates a Fire Jel Fire Blanket to Packard Electric security representatives. Seated left to right are S. Q. Bryant, Jr. from Brookhaven, Javier Giner G. from Cableados and Lonnie Jenkins from Clinton. Standing left to right are Harold Pittman, chief of Security for Packard - Warren, Salvador Rodulfo O. from Rio Bravo, Gamaliel Dominguez Ch. from Conductores and Lt. Jim Priddy, Warren Operations Security.

GM realigns assembly and stamping plants

General Motors President F. James McDonald last week announced the future alignment of assembly and stamping plants that will be reporting to the two new integrated car groups under North American Automotive Operations.

McDonald said that the dates that the plants will officially begin reporting to the Chevrolet, Pontiac, GM of Canada Group (C-P-C Group) and the Buick, Oldsmobile, Cadillac Group (B-O-C Group) have not been set, but will be announced as the new organization's implementation teams continue their planning. The plants that eventually will report to the C—P—C Group, headed by Lloyd E. Reuss, are:

C-P-C Group Assembly Plants
GMAD Arlington (Texas)
GMAD Bowling Green (Kentucky)
GMAD Doraville (Georgia)
GMAD Framingham (Mass.)
GMAD Lakewood (Georgia)
GMAD Linden (New Jersey)
GMAD Norwood (Ohio)
GMAD Oklahoma City (Okla.)
GMAD Tarrytown (New York)
GMAD Van Nuys (California)
GMAD Wilmington (Delaware)
Oshawa #1 (Ontario)
Oshawa #2 (Ontario)
Pontiac Assembly (Michigan)
Ste. Therese (Quebec)

C-P-C Group Stamping Plants
Chevrolet Flint Pressed Metal (Mich.)
Chevrolet Parma Sheet Metal (Ohio)
Fisher Body Grand Rapids (Michigan)
Fisher Body Hamilton (Ohio)
Fisher Body Mansfield (Ohio)
Fisher Body Marion (Indiana)
Oshawa (Ontario)
Pontiac Pressed Metal (Michigan)

Plants that eventually will report to the B-O-C Group, headed by Robert C. Stempel, are:

B-O-C Group Assembly Plants
Buick Assembly Flint (Michigan)
Cadillac Assembly Detroit (Mich.)
Fisher Body Fleetwood Detroit (Mich.)
*Fisher Body Flint Plt. #1 (Mich.)
Fisher Body Lansing (Michigan)
GMAD Detroit/Hamtramck (Mich.)
GMAD Fairfax (Kansas)
GMAD Janesville (Wisconsin)
GMAD Leeds (Missouri)
GMAD Lordstown (Ohio)
GMAD Orion (Michigan)
GMAD Wentzville (Missouri)
GMAD Willow Run (Michigan)
Oldsmobile Assembly Lansing (Mich.)

B-O-C Group Stamping Plants
Buick Stamping Flint (Mich.)
Cadillac Stamping Detroit (Mich.)
Chevrolet Plant #38 - Tool & Die Flint (Mich.)
Fisher Body Grand Blanc (Mich.)
Fisher Body Kalamazoo (Michigan)
Fisher Body Lordstown (Ohio)
Fisher Body Pittsburgh (Penn.)
Fisher Body Willow Springs, (Ill.)
Oldsmobile #1 Lansing (Michigan)
Oldsmobile #3 Lansing (Michigan)

*(Will close, as previously announced, at the end of 1985 model year production.)

McDonald also said that the Chevrolet Flint Metal Fabricating plants will be aligned with the Truck & Bus Group, headed by Donald J. Atwood, executive vice president, at a date to be announced. Implementation teams will continue to study alignment of the North American car group plant facilities not included in today's announcement.

Managers listen to customers

(Continued from Page 6)

line is expectations of price, delivery, quality and responsiveness—whatever we must do to build a perfect product and meet our customers' expectations."

He informed the Packard managers that in order "to meet this challenge statistical process control (SPC) must become a way of life." Dedow noted that "SPC studies have shown that 85 percent of the solutions to problems our employes find will require action from someone in this room."

Dedow noted that Packard Electric manufacturing is both a supplier and a customer. "The product we deliver will be no better than the product we get from our suppliers," he said. Dedow explained that the suppliers to manufacturing he referred to are the various Packard Electric support departments. "Our quality can be no better than your quality," he emphasized.

Dedow stressed to the Packard management group, "Our challenge for the mid part of this decade is clear: satisfy the customer."

Delivery

John Martin, director of Materials Management, noted that Packard's spec for delivery is filling a customer's order on time, with a quality product, in the requested quantity and transportation mode. "Delivery **is** and will continue **to be** one of the key elements to customer satisfaction," emphasized Martin.

He added that quality is equally important to delivery. "Timely delivery without the quality that meets customer expectations," he noted, "is a waste!"

"Working to SPEC"

Elmer Reese, general manager, told the management group that he was pleased with the new corporate direction which will reduce the "captive supplier mentality" concerning allied business. He explained that the car divisions now have the freedom to purchase from the supplier which he feels will provide them with the best overall value—"whether it is a GM component division or an outside business.

"I think it's about time," challenged Reese. "Very honestly I get little personal satisfaction out of providing products for a captive market," he said. "On the other hand, I get tremendous satisfaction out of winning in the free, competitive marketplace."

Reese explained to the Packard managers that, especially with regard to allied business, the division was going to get business "the old fashioned way—we're going to earn it." He added that this meant, "giving our customers more **total value** than they can get anywhere else."

Reese noted that Packard Electric exists to serve the customer. "What we have been suggesting throughout this session is that our primary function—is working to SPEC—working to **S**atisfy **P**ackard **E**lectric **C**ustomers."

Packard to provide N car components

(Continued from Page 3)

more competitive jobs in the Warren Operations."

John Bakker, a supervisor in Manufacturing Development, described the multi-lead processor as a machine which is capable of producing the six point-to-point subassemblies in the pod wiring every 3-5 seconds.

The pod assembly will be for the Buick N car and will contain the guages, cluster and switches mounted above the steering column.

In terms of construction Bakker revealed that the wire contained in the six point-to-point pod subassemblies range from 12-gauge standard cable to 18-guage solid core. The pod, he added, also features 22-gauge top coated thin wall insulated cable which is dipped into a tin/solder bath and then insulated. "This is a new material to GM," he emphasized. "It's never before been used in a Packard wiring harness."

Bakker views the combination of the new multi-lead processor equipment and the new N car pod assembly as a classic product/process development. "Together they will provide a more competitive product with high quality."

"The product (pod wiring) didn't have to be designed that way," noted Tom Sosnowchik, supervisor of Application Engineering. "It was done specifically to offer our customer advanced product technology and to help keep jobs in Warren.

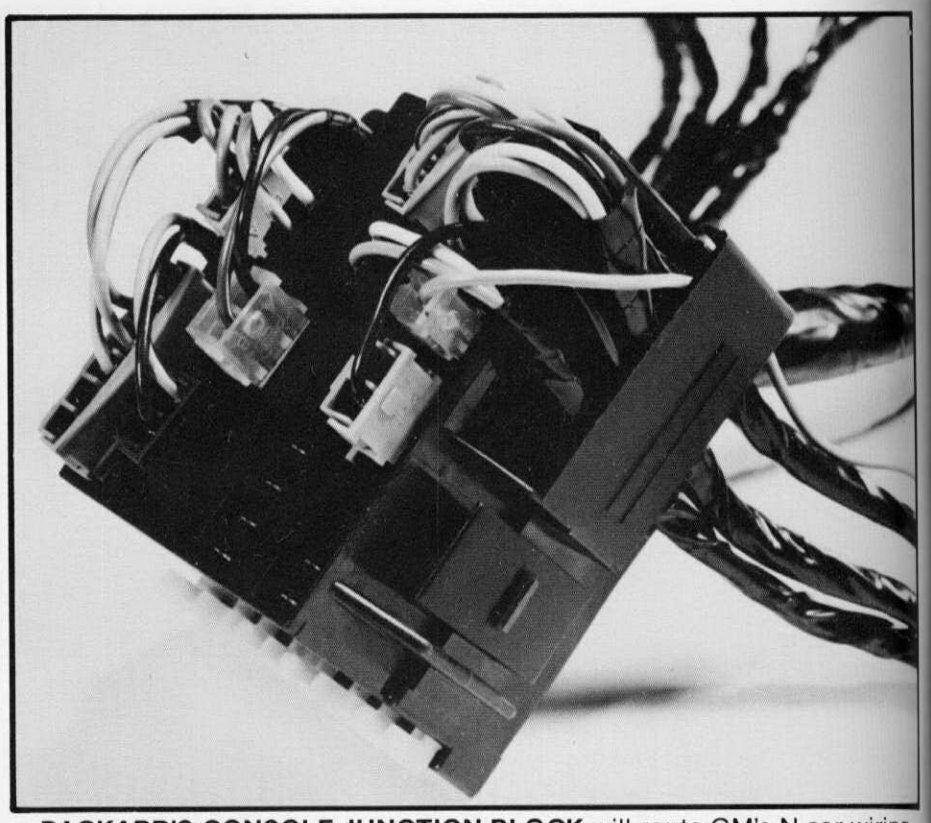
"A close working relationship was formed between the Product Engineering group and the Manufacturing Engineering group to accomplish this joint product/process compatibility."

Bakker noted that production for the new N car pod harness on the multi-lead processor will begin this spring in Plant 13.

Console junction block

Another new component developed by Packard Electric for the N car is a junction block which will be located at the rear of the console. "The Fisher wiring is routed through the console," explained Hill, "and the interconnects are made at the rear of the console which is a new and different approach to wiring a vehicle." He added that Fisher Body connections are usually made at the door pillar areas.

According to Hill, the new console junction block will be molded in Packard's Mississippi Operations.



PACKARD'S CONSOLE JUNCTION BLOCK will route GM's N car wiring through the console.

Rootstown reopens

(Continued from Page 1)

tems in the facility. "One of the production processes will utilize nylon fiber scrap from the textile industry as the base material. Grinding and feeding the materials along with minor additions of other materials will take place in the extruders. The melted plastic will then be continuously extruded as strands and pelletized. The pellet products or compounds will then be used as feedstock for the plastic parts molding and cable extrusion processes at Packard and elsewhere."

Nichols, in discussing the significance of the agreement, pointed out, "We are in a problem-solving mode at Packard Electric and Local 717. We will deal with the problems that face the marketplace in the world marketing of today. We will continue to deal in a cooperative effort."

HAROLD "NICK" NICHOLS, (left to right) IUE Local 717 shop chairman, Elmer E. Reese, Packard Electric general manager, Greg Whitman, Local 717 president, and Jack Sill, plant superintendent for Rootstown, announce a tentative agreement on contract language relative to the reopening of Packard Electric's Rootstown plant. the announcement was made at an April 9 news conference at Packard's divisional offices.

Non-allied business increases

(Continued from Page 4)

body harnesses, six instrument panel harnesses and 23 miscellaneous harnesses for applications such as air conditioning and the electric fuel pump.

Non-allied benefits

Christopher explained that the added non-allied business for the 1985 model year and beyond will directly benefit Packard's North American operations. "Generally, all the cable and some components will be manufactured by Packard people in Warren and Mississippi," he noted. He added that the TVX and Chrysler samples and pilot harnesses were built in Packard's Plant 11.

Status report

Christopher updated the status of Packard's business with TVX, VW and Chrysler. "TVX has been through prototypes and first-phase pilots," he explained. "VW has gone through prototypes and is in the second phase of pilots. Chrysler has had initial sample submission."

He added that the start of production on Packard's new Chrysler and VW 1985 model year harness business will begin in June or July with TVX business to begin in December.

"It is very important to understand how unique each of our non-allied customers is," explained Christopher. "They are each very different from GM and also very different from each other. Their design approaches," he elaborated, "are different and their systems are different. We are learning our customers' systems very quickly and adapting our method of operation to accommodate the individual needs of each customer."

Non-allied projections

What future non-allied business does Christopher see for Packard in the next couple of years? "By 1986-87 we plan to double our 1985 business with Chrysler," he predicted. He anticipates Packard will gain some business from Nissan's Smyrna, Tennessee truck plant and Honda's Marysville, Ohio plant.

A POSITIVE ROUTING CHANNEL is examined by Nichols (left) and Sill (right) as one of many of the plastic parts (foreground) which the division produces. Packard Electric plans to produce about 52 million pounds of plastic pellet material (three bins on right) for plastic part production.