



PACKARD ELECTRIC

Cablegram

Volume 43, Number 9

September, 1981

The 'new kid on the block'

Packard shows muscles overseas

by Joe Tori

Packard is "the new kid on the block" in overseas sales, according to Ron Brooks, international sales manager.

Three years ago, Brooks noted, Packard had only one overseas customer. He pointed out, however, that there are presently more than 70 non-allied customers in 22 countries.

Since 1978, overseas sales have increased 1,133 percent, Brooks said. In fact, he noted, sales have doubled each year for the past three years. 1981 was no exception.

Europe alone accounted for 36 percent of all overseas sales, making it Packard's largest overseas customer.

Mexico was the second largest customer with 35 percent of total overseas sales in 1981. GM de Mexico, Packard's largest allied customer, accounted for 70 percent of this total.

The Asia-Pacific area — Japan's arena — comprised 18 percent of overseas sales. Japan alone was responsible for 50 percent of this total,

more than double sales to that country in 1980.

Brooks pointed out that Japan was not even a customer two years ago; It now accounts for more than half the total sales in Asia-Pacific region.

In volume, by piece, Autofuse terminals are by far the biggest seller, according to Brooks. Japan alone purchased 23 million in 1981.

Other popular Packard products include Weather Pack, the low-profile lamp socket, bulk ignition cable, crosslink polyethylene cable, and PVC cable.

Brooks offered an overview of Packard's success in the overseas marketplace. "Customers are coming to us because our reputation for quality is universally recognized," he said.

"The representative from Fiat said, 'my boss told me to go to the best in the world'. A Japanese firm sent samples of components they were using from local suppliers and asked if Packard had any substitutes, because they were dissatisfied with local quality. 'We are seeing substantial gains in

international sales, but we are beginning to experience severe competitive pressures from worldwide manufacturers," he explained.

"The markets in which we compete will continue to require innovative sales and marketing techniques, because our customers must pay the penalties of duty and freight which a local manufacturer would not have. They are beginning to buy from Packard, although they must pay these costs.

"We have the added competitive pressure of having to deliver our products to locations halfway around the world.

"On top of competitive pressures, cultural and language differences make this an extremely challenging and exciting assignment."

Brooks pointed to Packard's selective open door policy as "instrumental in building sales and instilling confidence in customers in these markets. Prior to this policy, all overseas sales were conducted through GM Overseas Operations (GMOO), based in New York. But, three years ago the

corporation transferred overseas direct sales responsibility to all component divisions.

"Most of our customers are of the 'I'm from Missouri' approach. 'I've heard you're good, now show me'. They have been here and seen what we do. If they weren't impressed, sales wouldn't have increased as rapidly as they did. Our production processes have convinced many potential customers that our reputation is well deserved," he said.

He stressed, however, that with Packard's conversion to high technology and more complex components, attention to quality will be more important than ever before.

Brooks closed by noting that in three years the number of Packard customers overseas has increased from one to more than 70. And in that same period, sales have jumped more than 1,000 percent. "Showing people our muscle has proven the point," he said.

With muscle like that, Packard may well be the toughest new kid on the block.

Power is key in 1982

It might be said that Detroit is making a powerplay.

New and refined powerplants and drivetrain combinations dominate the 1982 offering of cars and trucks from Buick, Oldsmobile, Chevrolet, Pontiac, Cadillac and GMC.

1982 will see expanded use of diesel power in both cars and trucks from the nation's largest automaker, and more widespread use of V-6 power, both gasoline and diesel.

The corporation will offer a broader array of manual transmissions and automatic transmissions with overdrive to complete the drivetrain packages.

These drivetrain offerings, coupled with the most aerodynamic styling, result in greater performance and fuel economy than ever before.

Because of the early J-Car introduction and the proposed mid-year introduction of many Chevrolet and Pontiac 1982 models, these manufacturers are presenting only their carryover models at this time. In addition Chevrolet is presenting its truck line at this time. The small, domestic S-Truck will be introduced later this year.

Without further ado, the 1982s.

Buick

An expanded Regal lineup, exciting V-6 turbo improvements, a host of engineering and styling refinements, and new standard and optional features

highlight the carryover 1982 Buick models.

Regal, Buick's hottest selling model as a coupe in 1981, gets new sedan models and an estate wagon for 1982. The sedan, available in base and Limited versions, features the formal roof line which proved popular on last

year's Century series.

The entire Regal line has been upgraded, with several new standard equipment features including body side moldings, multi-function control lever, whitewall tires, custom color-coordinated seat belts, and voltmeter and temperature gauges on the Regal



CHEVROLET TRUCKS — go diesel in a big way in 1982 with as many as 25 percent of all pickups, Blazers and Suburbans coming equipped with a new 6.2-liter, 130-horsepower V8 powerplant. The four-wheel-drive diesel pickup model shown here delivers an EPA-estimated 22 miles per gallon in the city; 29 miles per gallon on the highway. Five gasoline engines and two four-speed overdrive transmissions — one a manual the other an automatic — round out the powertrain lineup.

Sport Coupe.

The Regal series gets the popular 4.1 liter V-6 engine as an option for 1982, replacing the 4.3 liter V-8. The base Regal engine still is the 3.8 liter V-6. Available in coupes, sedans and wagons, the 4.1 liter, which comes with a four-barrel carburetor, offers an estimated 11 percent improvement in EPA city fuel economy and a seven percent improvement in highway fuel economy over the V-8 it replaces, while providing comparable performance.

Regal coupes and sedans get two optional diesels for 1982 — the 5.7 liter V-8 which became available during the 1981 model year, and a new 4.3 liter V-6 diesel.

The Regal Sport Coupe continues, but with some improvements to the standard turbocharged 3.8 liter V-6.

The exciting Gran Touring suspension, introduced as standard equipment on the Sport Coupe in 1981, continues in 1982.

The Buick Riviera retains its classic elegance for 1982, with only minor changes.

Addition of the automatic transmission with overdrive as standard equipment provides an estimated fuel economy improvement of 10 to 25 percent on the highway depending on the engine selected. Low-drag brakes also become standard.

(Continued on page 3)

News - - briefs

Diesel Chevette makes EPA's top ten

The diesel-powered Chevrolet Chevette broke into the top 10 cars on the Environmental Protection Agency's fuel economy performance list . . . placing seventh. Two Japanese-built Chrysler cars also were among the top 10. Heading the list for the fifth year in a row was the Volkswagen Rabbit with a diesel engine and four-speed manual transmission. According to the EPA, the diesel Rabbit achieves a city driving estimate of 45 mpg. The diesel Chevette is listed at 40 mpg.

Japan's G.N.P. to grow

Japan will exceed the United States in per-capita gross national product by 1990. The Research Institute of National Economy predicts in its latest long-range report. It says Japan's per-capita G.N.P., a measure of the total goods and services produced for each person, will be \$29,100 in 1990, while the U.S. figure will be \$27,730. The institute said it was also possible Japan could move ahead of the United States sooner.

Hot Hondas

A five-day supply of Hondas went up in smoke recently about 600 miles off the coast from San Francisco, and the loss "couldn't have happened at a worse time," says a Honda executive in the Wall Street Journal. According to Clifford Schmillen, sales vice president for Honda U.S., the \$30 million loss of 5,100 cars comes at a time when the automaker's stocks in this country are below a 25-day supply. Reportedly, no one was hurt in the fire and the ship is under tow to San Francisco.

Factory orders on rise

Factory orders for new durable goods increased 1.3 percent in July, the biggest jump this year, the Commerce Department reports. Factory inventories also rose substantially during the month as shipments fell for the first time in more than a year.

Orders for durable goods — cars, furniture, and other items expected to last at least three years — accounted for the entire orders gain, rising 2.5 percent. Orders for nondurable goods, however, remained unchanged.

Packard Electric Cablegram

Published for employees and retirees of Packard Electric Division of General Motors, P.O. Box 431, Warren, Ohio 44486

An equal opportunity employer
Joe Tori, editor

Michael Hissam, associate editor
Allan Csiky, general supervisor,
communications & graphic arts
Phone: 373-2348 PBX 2348
GM Network 8-531-2348

Idea wins big in Rootstown

SWAT members share in award

Three members of the Skilled Work Assignment Team (SWAT) recently shared in the maximum \$10,000 suggestion award under Packard's suggestion award program.

Frank DeWeese, Mike Benedict and George Ray, all of Dept. 4051 in Rootstown, recently shared the award for their suggestion to utilize a power-strut overhead support system to support utility runs and drops in the high bay areas of Plants 41 and 43. The idea resulted in significant savings in material and labor costs.

According to award winner DeWeese, "The day we walked into the building we knew we had to do something. It was a problem for us to install, but it solved the problem and turned out to be a money saver."

The problem was the extremely high ceilings — 40 to 50 feet — at the Rootstown facility.

Benedict noted, "It had to be done. It was next to impossible to do the job the way it was."

Terry Tenney, department production supervisor, added the conventional way would have been "an all summer job."

"In the middle of branch expansion,"



SUGGESTION AWARD WINNERS Frank DeWeese (standing, left), Mike Benedict (standing second from right) and George Ray (seated, right) go over their \$10,000 idea with Tom Tomko, manager, Plants 3, 8, 43, (seated, left), Terry Tenney, production supervisor (standing second from left) and Lew Humble, Plant 43 superintendent (standing, right).

the team members said, "we didn't have time to take the time."

Tenney noted that the advantages of the system are standardization, reusability, and safety. In addition, he said, "the installation is very good from a housekeeping standpoint; neat and tidy."

The members noted that the installation took a month. "After the first bay, we saw how neat it worked out and decided to get approval to do the rest of it. We submitted the suggestion at that time." Benedict added that the real savings occurred after the installation.

Draft horses of a different color

by Michael Hissam

Packard employee Dave McCafferty does not particularly enjoy playing blacksmith and putting shoes on horses. After all, 13 horses at four shoes apiece is quite a task for any one person. But for McCafferty, that is the only drawback to owning his stable of horses in Southington.

McCafferty, a forklift operator in Dept. 949, owns two registered Belgian work horses and 11 other equines, mostly cross-bred descendants of the first two.

Many may not realize that they have seen or have enjoyed a ride compliments of McCafferty and his stable. His teams pull haywagons, carriages, various carts and even an antique hook and ladder during parades and other special events around the Mahoning Valley area.

"I have been working with horses most of my life," said McCafferty, 43, who has 25 years service with Packard. "As a boy, I worked with Belgians and

draft horses in the logging camps in Geauga County. Later, when my family lived in Phoenix, I rode racehorses for training and breaking purposes."

It is the opportunity to display his horses and let others enjoy them that appeals most to McCafferty. "I make about seven or eight parades a year. I look forward to the 'Millionaires Row' walk in Warren where my teams pull a haywagon. I really enjoy seeing the young people having such a good time."

McCafferty said he prefers working with the Belgians because of their temperament. "They are gentle and a bit lazy. They are great for kids because they are very easy to train and handle and are not as high spirited as other breeds."

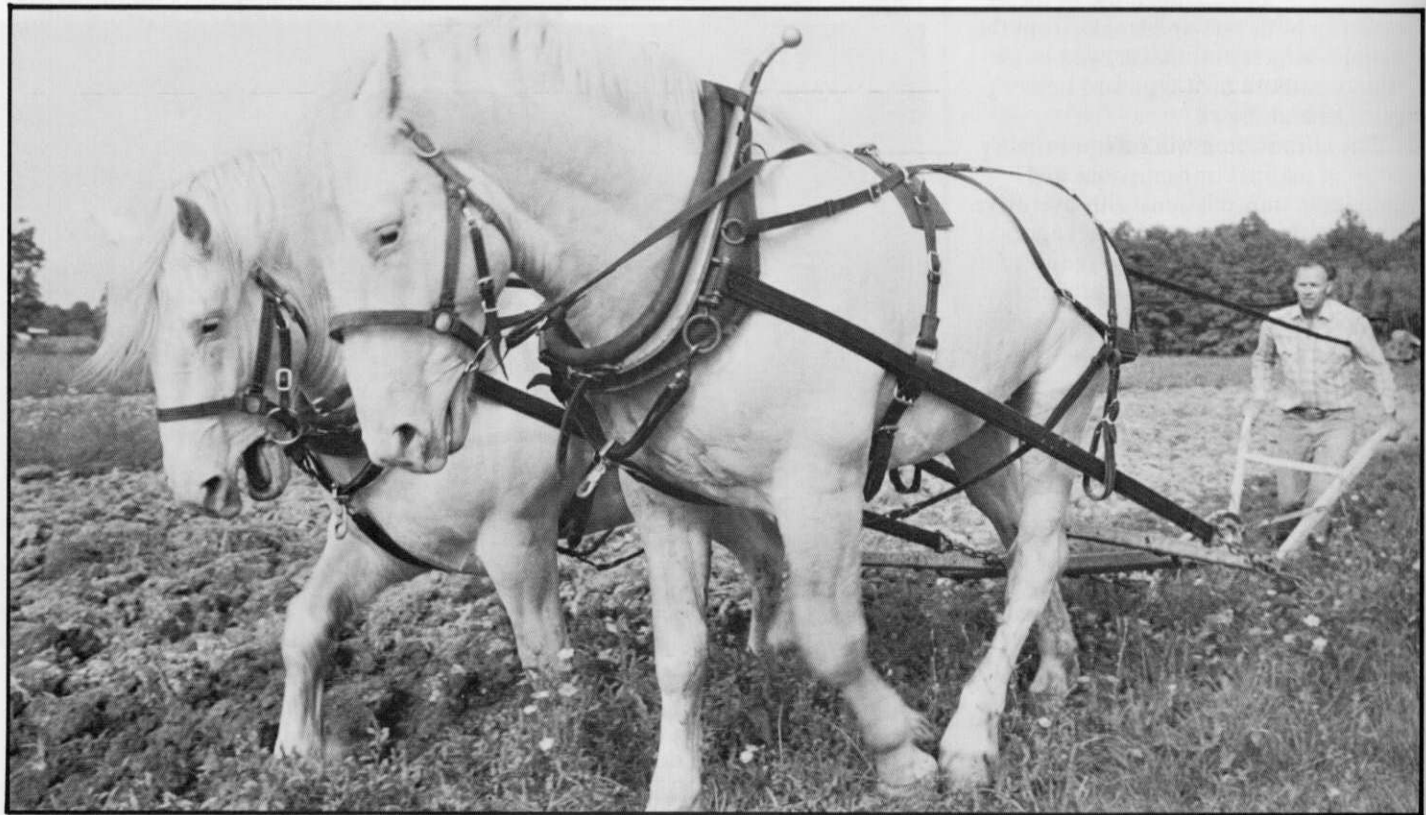
Despite the cross-breeding, most of his horses have retained the gentleness identified with their Belgian ancestry. "The others are a bit more active but not as much as other breeds. They also

are excellent workhorses.

He added that one commonly asked question concerning his stable deals with the coloring of the animals. "There is always that chance of surprise with genetics, but prior to breeding, I can predict quite accurately what the coloring of the horse will be. One horse is white with pink skin, but not an albino."

McCafferty stated that it takes about one year to train a young horse to the level of complete trust in the animal's performance. "They need the work and the repetition to learn their tasks properly. After learning, it is necessary to work the horse from time to time to keep him sharp."

Although the level of work involved with the horses may vary from week to week, there is one factor that remains at a fairly constant level throughout the year — the food bill for the horses, he confided. "Oh, it's about \$400 a month . . . maybe a bit less in summer."



WALKIN' MAN — Dept. 949 employee Dave McCafferty handles a walking plow drawn by two of his unique, white, Belgian draft horses.

What's new for '82 . . .

(Continued from page 1)

Standard engine on the Riviera continues to be the 4.1 liter V-6 with four-barrel carburetor. Optional are a 5.0 liter V-8 and a 5.7 liter diesel V-8.

The Riviera T-type, which will debut after January 1, will feature the turbocharged 3.8 liter V-6 as standard, with the 4.1 liter V-6 and the 5.0 liter V-8 optional.

Black bumper rub strips are added to the Riviera for a subtle appearance change. The interior continues to feature the 45/45 seat arrangement with center arm rest and cloth or leather trim available. In addition, the memory seat, which remembers the driving positions of two drivers, is available.

The 1982 LeSabre receives only minor exterior changes, including a new grille design with more prominent vertical lines. The base model in the series is redesignated a LeSabre Custom, with additional interior and exterior trim items added as standard equipment.

The LeSabre Limited interior has been upgraded to share the same instrument panel and upper door woodgrain as the Electra models.

Base engine for LeSabre continues to be the fuel-stingy 3.8 liter V-6, with the 4.1 liter V-6, the 5.0 liter V-8 and 5.7 liter diesel V-8 available.

While the appearance of the Electra is unchanged for 1982, this luxurious model gets some new convenience features.

The new "memory seat" and sail panel reading lamp options will be available. Additional equipment made standard includes multi-function control lever, whitewall tires, tinted glass and convenience lights.

The Electra Park Avenue has been upgraded even further, to include as standard equipment: tilt steering column, remote trunk release, power door locks, six-way power seat on the driver's side and resume cruise control.

The overdrive transmission introduced as standard last year has been refined to provide a smoother shift into the overdrive gear.

Base engine on the Electra continues to be the 4.1 liter V-6, with the 5.0 liter V-8 and 5.7 liter diesel V-8 available.

The 1982 Skylark gets electronic fuel injection, a new available High Output (H.O.) 2.8 liter V-6 engine, a new front end panel with vertical patterned grille, refined interiors, and a host of other improvements.

The base engine remains the 2.5 liter L-4, but with an important difference: Instead of the two-barrel carburetor used in 1981, the 1982 version has electronically controlled throttle body fuel injection, which helps provide a seven percent horsepower increase.

The 1982 Skylark retains the 2.8 liter V-6 from last year, but a new H.O.

version of this engine, geared for the performance-minded customer, provides a 20 percent increase in horsepower, compared to the regular 2.8 liter, and a 50 percent increase over the base four cylinder powerplant.

The H.O. engine is available with either four-speed manual or automatic transmission. For Skylarks equipped

with either V-6 engine, the available automatic transmission has a converter clutch, designed to improve fuel economy.

Skylark's front suspension has been refined and its engine cradle redesigned for better serviceability. The popular Gran Touring suspension package is also available on the 1982 Skylark.

The fuse block has been relocated to the glove box, for easier accessibility. Cruise control, previously available only with automatic transmission, now is available on the Skylark with the four-speed manual transmission.

Low rolling resistance tires continue to be available, but with tire pressure increased to 35 PSI for improved fuel economy.

New standard equipment on Skylark for 1982 includes power steering, power brakes, custom color-coordinated seat belts, and convenience and underhood lights.

Oldsmobile

Contemporary, aerodynamic appearance highlights the styling of Oldsmobile's 20 new 1982 models. Ranging from the compact Omega to the personal luxury of the Toronado, the new models represent state-of-the-art design.

Six entirely new front-wheel-drive Cutlass Ciera models will join the division's lineup later this fall.

A new sloping front end gives the 1982 Oldsmobile Omega a new look and improved aerodynamic styling.

New features include fluidic windshield wipers for better coverage and cleaning action, increased fuel tank capacity, match-mounted tires for better ride quality, fuse block placement in the glovebox and increased tire pressure to 35 pounds per square inch for improved fuel economy.

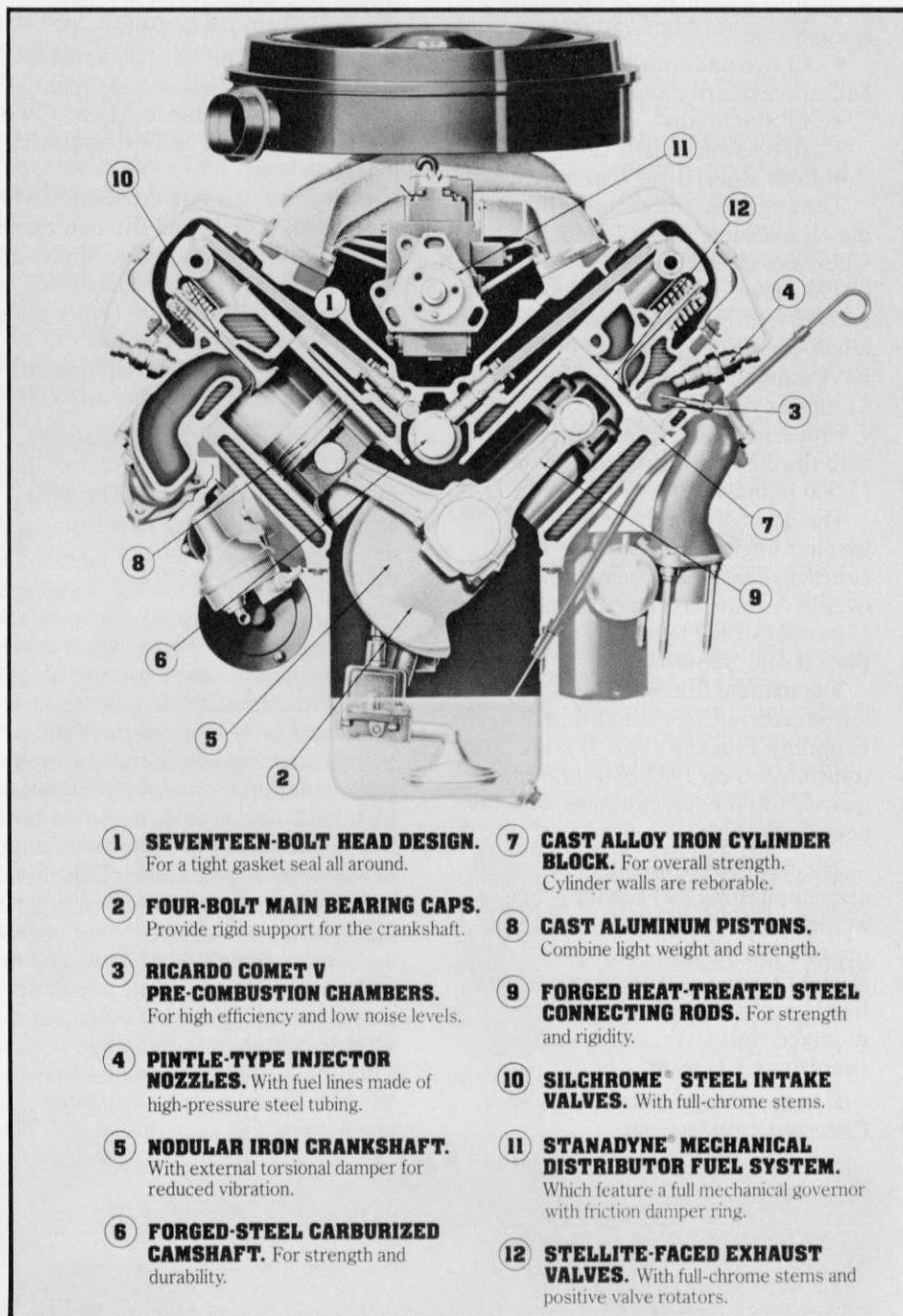
A new optional engine, the 2.8-liter V-6 high output, is available in the Omega ES. This engine features a free flow exhaust system, improved cylinder head port design and a high output camshaft.

Four models, the Omega Brougham coupes and sedans, are available for 1982.

The 1982 rear-wheel-drive Cutlass series includes Cutlass Supreme coupe and sedan, Cutlass Supreme Brougham coupe and sedan, Cutlass Calais coupe and Cutlass Cruiser wagon.

The sedans and wagons share a new square eggcrate grille.

(Continued on page 4)



1 SEVENTEEN-BOLT HEAD DESIGN. For a tight gasket seal all around.

2 FOUR-BOLT MAIN BEARING CAPS. Provide rigid support for the crankshaft.

3 RICARDO COMET V PRE-COMBUSTION CHAMBERS. For high efficiency and low noise levels.

4 PINTLE-TYPE INJECTOR NOZZLES. With fuel lines made of high-pressure steel tubing.

5 NODULAR IRON CRANKSHAFT. With external torsional damper for reduced vibration.

6 FORGED-STEEL CARBURIZED CAMSHAFT. For strength and durability.

7 CAST ALLOY IRON CYLINDER BLOCK. For overall strength. Cylinder walls are reborable.

8 CAST ALUMINUM PISTONS. Combine light weight and strength.

9 FORGED HEAT-TREATED STEEL CONNECTING RODS. For strength and rigidity.

10 SILCHROME® STEEL INTAKE VALVES. With full-chrome stems.

11 STANADYNE® MECHANICAL DISTRIBUTOR FUEL SYSTEM. Which feature a full mechanical governor with friction damper ring.

12 STELLITE-FACED EXHAUST VALVES. With full-chrome stems and positive valve rotators.

INNER WORKINGS — of Chevrolet's new 6.2-liter V8 diesel engine reflect its rugged design. Rated at 130 horsepower and 240 pounds/foot torque, the engine has the pulling power typically associated with comparable-size gasoline engines and the fuel economy and service life inherent in the diesel concept. It's the world's first diesel factory-timed by microwave to assure precision and consistency of the combustion process. The engine is available nationwide in most 1982 Chevrolet pickups, Blazers, Suburbans and forward-control vehicles.

Smith warns of high labor costs

Excessive labor costs could be "catastrophic" to jobs in the auto industry and could throttle the nation's economic recovery, the Chairman of General Motors declared recently in Saginaw.

Roger B. Smith, speaking at a civic luncheon in honor of the 75th anniversary of GM's Saginaw Steering Gear Division, said, "Our labor costs at General Motors are about 80 percent higher than those in the rest of American manufacturing, and about 80 percent higher than those of our Japanese competitors. This gives the Japanese auto manufacturer an \$8-per-hour cost advantage."

In recent years, he said, GM's labor costs have been rising at double-digit rates. Over the 1975-1980 period, for example, these costs rose at an average annual rate of 11.7 percent.

Looking ahead, Smith warned

that if labor costs should rise at a 10 percent average rate between now and 1985, they would approach \$30 per hour. And if the Japanese also experience a 10 percent growth rate by 1985, their advantage would grow to nearly \$12 per hour.

"We cannot compete against any manufacturer who enjoys that kind of advantage over us. It is as simple as that. We are talking about saving jobs — American jobs. We're talking about this nation's principal industry," the GM chairman stressed. "If this upward spiral is allowed to continue, the effect on jobs could be catastrophic — here in Saginaw, here in Michigan, everywhere that General Motors operates in this country."

"Our General Motors employees, hourly and salaried both, are the equal of any group of employees in the world. We're proud of them and we're betting

the corporation's future on their abilities."

Smith pointed out, however, that if General Motors is to continue to have viable operations in North America, and if GM is to continue to maintain a high level of employment in the United States, then there is an urgent need for GM and the UAW to sit down as soon as possible to discuss mutual problems.

"Any agreement (between GM and UAW) that would help correct this labor cost disparity — particularly if reached at this critical time — could send positive signals throughout the economy," Smith said. "It could have a beneficial influence on negotiations in other American industries and it would represent an enormously important contribution to the welfare of the entire country."

Looking at the national economy,

Smith said rarely has the nation seen more uncertainty about where the economy is going to move next — up, down, or on a straight line.

"With its supply-side economics, the administration has adopted a new and untried approach to our long-standing inflation problem, and no one seems sure of the results," Smith said. "More than anything else, I think our money markets are waiting to see what happens in two areas: first, what effect the administration's new policies will have on budget deficits; and second what kind of wage and benefit settlements will be reached next year in the rubber, trucking and automobile industries."

If both areas show non-inflationary trends, he said, interest rates could come down and the economic traffic lights will turn from amber to green and automobile sales will go up.

What's new for '82 . . .

(Continued from page 3)

The standard engine in rear-drive Cutlasses, including Cutlass Cruiser wagon, is the 3.8-liter V-6. Optional engines include the 4.3-liter V-8 and 5.7-liter V-8 diesel. Coupes and sedans may be ordered with the division's new 4.3-liter V-6 diesel and the wagon is offered with an optional 5.0-liter V-8.

There are five 88 models for 1982—the Delta 88 sedan, Delta 88 Royale coupe and sedan and Delta 88 Royale Brougham coupe and sedan.

In the Ninety-Eight series there are three models, a 98 Regency coupe and sedan and the new 98 Regency Brougham sedan.

Content for the Regency Brougham, the highest level 98 model, includes lower body and body side moldings, sail panel emblem, vinyl padded roof, wire wheel covers with locks, convenience group, halogen headlamps, cornering lamps and a deluxe interior.

Both 88 and 98 models have a multi-function turn signal lever incorporating the windshield wiper, turn signal, head lamp dimmer switch and optional cruise control with a resume feature.

The 3.8-liter V-6 is the standard engine in 1982 "88s". Optional power teams are the 4.3-liter V-8, 5.0-liter V-8 and 5.7-liter V-8 diesel. Custom Cruiser wagons have the 5.0-liter V-8 as standard power and 5.7-liter V-8 diesel as an option.

Oldsmobile's 1982 Ninety-Eight models have the 4.1-liter V-6 engine as standard equipment. Optional engines include 5.0-liter V-8 and 5.7-liter V-8 diesel.

The 1982 Toronado is offered in one model—the Brougham coupe. A new chrome and argent grille turns the look for 1982 and a single piece nameplate emblem replaces individual letters used last year.

A new option, offered on only Toronado in the 1982 Oldsmobile lineup, is the memory seat. The six-way power seat features two memory positions.

Toronado models have the 4.1-liter V-6 engine as standard equipment. Optional engines include 5.0-liter V-8 and 5.7-liter V-8 diesel.

Chevrolet

A new 6.2-liter V-8 diesel engine for Chevrolet light-duty Pickups, Suburbans, Blazers and forward-control chassis will be offered in 1982 models.

"The new engine—developed by Chevrolet specifically for GM truck use—is designed to deliver the pulling power typically associated with comparable-size gasoline engines and the fuel economy and service life inherent in the diesel concept," said

Robert D. Lund, Chevrolet general manager.

EPA estimates—in different applications—rate the engine from 18 miles per gallon city to 31 highway.

Compression ratio is 21.5:1.

A fast-action glow plug and a block heater are standard equipment.

The bright red engine with its distinctive barrel-shaped air intake is available in:

- All two and four-wheel drive one-half, three-quarter and one-ton pickups
- All Suburbans
- All one-ton chassis cabs
- Four-wheel drive Blazers

The engine is one of four different diesels available in 1982 model Chevrolet trucks.

The diesel engine teamed with a four-speed overdrive manual transmission in a half-ton Chevy pickup delivers an EPA estimated 23 miles per gallon city; 31 highway.

Properly rigged, trucks equipped with the 6.2-liter diesel can tow up to 13,500 pounds.

The new 6.2-liter diesel and five gasoline engines are available with either manual or automatic four-speed overdrive transmissions in almost all of Chevrolet's 1982 light-duty pickups, Blazers and Suburbans.

The manual four-speed was introduced in Chevy's half-ton Special Economy Truck in 1981. It is the base transmission on 1982 half- and three-quarter ton models equipped with the new diesel engine.

The optional automatic four-speed also emphasizes fuel economy and is available on selected half- and three-quarter-ton models. It features a three-element torque converter, mechanical locking converter clutch, column-mounted shift lever, and fourth gear overdrive (.7:1) ratio.

Here are thumbnail sketches of Chevrolet's 1982 trucks:

Series 11 LUV trucks are also available with diesel power everywhere except California.

The four-cylinder diesel LUV engine develops 58 horsepower and 93 net torque lb-ft. The standard LUV gasoline engine remains the 1.8-liter, four-cylinder.

The LUV two-wheel-drive diesel model uses a five-speed manual overdrive with full synchromesh transmission. The four-wheel drive LUV diesel has a four-speed manual, full-synchromesh transmission; a two-speed transfer case and driving axles front and rear.

El Camino has new front-end styling, new luxury seating and five new exterior colors. Low-drag front disc brakes are standard, as are fluidic windshield washers, a multi-function turn signal—Smart Switch. An automatic transmission is standard equipment. Engines include a V-6 and two V-8s.

Pickup sheet metal is unchanged. There are six new exterior colors, and new standard vinyl seats. The 1982 gasoline engine lineup remains unchanged, except for elimination of the 5-liter two-barrel V-8.

Blazer features include the new 6.2-liter diesel engine in four-wheel-drive models, the four-speed automatic overdrive transmission, automatic speed and cruise control for both manual and automatic transmission and six new exterior colors. Standard high-back bucket seats have new two-tone leather-grained vinyl material and new woven stripe custom cloth.

Suburban models have new exterior colors and new standard vinyl seats in addition to the optional diesel engine and four-speed automatic overdrive transmission. The diesel is available in all half- and three-quarter-ton Suburbans, in both two- and four-wheel-drive models. V-8 gasoline engines are also available in 305, 350

and 454 cubic-inch displacements.

Sportvan and Chevy Van have seven new exterior colors. Corrosion protection has been improved with the addition of hot-dipped galvanized steel for the rear floor panel extension, front and rear painted bumpers fabricated of zinc-plated steel, and use of Zincroterne coating for all brake and power steering pressure lines. Powertrains remain the same, except for cancellation of the 5-liter two-barrel V-8.

Pontiac

The world-famous Bonneville nameplate adorns a more fuel efficient luxury car and Grand Prix Brougham models are recontented to be more competitive in Pontiac Motor Division's 1982 fall product introductions.

Targeted at full-size car owners who are looking for a smaller, more fuel efficient car, the 1982 Bonneville Model G is a six-passenger car built on a 108.1-inch wheelbase. It is available in two trim levels as a four-door sedan with formal roof line or a station wagon.

Standard on all Bonneville models is a 3.8-liter V-6 engine with a three-speed automatic transmission that has a torque converter clutch to help improve highway fuel economy. This powertrain combination on all Bonneville models offers an estimated EPA fuel economy rating of 20 miles per gallon in the city and 30 on the highway. Engine options are a 4.1-liter V-6 or a 5.7 liter V-8 diesel (requires air conditioning).

Carrying on its heritage, the 1982 Bonneville Model G features the traditional vertical standup grille and body-colored front fascia bumper panel. Dual rectangular headlamps and parking lamps on each side of the grille compliment the contemporary front end look.

(Continued on page 5)



BUICK REGAL SPORT COUPE for 1982 comes standard with turbocharged V-6 engine, low-restriction dual exhaust, and beefed up new automatic transmission.

SLEEK STYLING FROM OLDS — Oldsmobile's 1982 Ninety-Eight has a lowered front end for improved aerodynamics. Three models are available . . . 98 Regency sedan and 98 Regency Brougham coupe and sedan . . . with a standard 4.1-liter V-6 gasoline engine. Optional engines include the 5.0-liter and 5.7-liter V-8 diesel.

Power heads '82 lineup

(Continued from page 4)

First level trims on base Bonneville Model G's feature Durand cloth notchback front seats with center armrest and pillow cushion backs. Second level trims on Brougham models include Prima knit cloth, 60/40 front seats in a luxurious pillow design. A first level vinyl trim is available as a delete option.

With more than 72 cubic feet of cargo space when the rear seat is folded down, Bonneville wagon is the largest Pontiac cargo handler in 1982. In addition, Bonneville wagons have storage bins on both sides of the rear cargo area.

Standard equipment on all Bonneville Model G's includes a new multifunctional turn signal lever switch, featuring windshield washers, wipers and dimmer switch.

Other standard equipment includes a wide chrome rocker panel molding, clock, power steering and power brakes.

Grand Prix retains its aerodynamic wedge-shape appearance in 1982. Drag coefficient was reduced approximately 18 percent in 1981 and is maintained in 1982 with a sleek low front and raised deck in the rear. Grand Prix offers four specific trim levels including two new levels for the Brougham edition.

The new base level Grand Prix Brougham offers a similar level of luxury trim as in 1981, including a loose pillow notchback 60/40 seat and specific door trim panels. Items such as padded landau top and power windows are optional. A new Brougham Landau option offers the ultimate Grand Prix and features a padded landau top with opera lamps and formal rear window, luxurious Tampico carpet, power windows and other luxury level trim appointments.

Standard powerplant for all grand Prix models is a 3.8-liter V-6 two-barrel with an automatic torque converter clutch transmission. A 2.41 axle is standard on all Grand Prix models. Optional engines are a 4.1-liter V-6 and 5.7-liter V-8 diesel.

Frame design for both Bonneville Model G and Grand Prix helps provide strength and torsional rigidity. Fourteen strategically located rubber-cushion body mounts help isolate passenger area from road noise and vibration.

Cadillac

A new 4.1-liter iron/aluminum V-8 engine and four-speed automatic transmission (HT 4100 Power System), innovative electronic features and subtle styling refinements highlight the 1982 Cadillac lineup.

Cadillac offers five fuel-efficient engines for 1982.

This new 4.1-liter V-8, standard on all 1982 Cadillacs except Fleetwood Limousines and Cimarron, uses a die-

cast aluminum block with free-standing, cast iron cylinders and separate die-cast aluminum valve lifter carrier. The construction of the cast iron cylinder head reduces significantly the amount of iron used by carrying the aluminum intake manifold deep into the head and using a separate aluminum rocker arm support structure. Additional components such as oil and water pumps also are aluminum die-castings.

The 4.1-liter engine uses a closed loop digital fuel injection (DFI) induction system. DFI is a speed density system that incorporates a throttle body injection assembly with two electronically pulsed fuel injectors metering fuel to the engine.

The brain of the DFI system is the Electronic Control Module (ECM), a digital microprocessor that provides the computation capability for the engine controls, including electronic spark timing, fuel metering and idle speed controls.

DFI's built-in compensation capability for variations in altitude, temperature and accessory load is designed to provide for consistent smooth engine operation.

A significant feature of DFI is its ability to perform certain diagnostic functions. The ECM continuously monitors the engine control system, engine sensors and actuators. It memorizes various malfunctions, even if temporary, and alerts the driver by way of a "check engine" light on the instrument panel. The system also substitutes backup system values for malfunctioning sensors to keep the car running until needed repairs can be made.

Once at the dealership, a service technician can interrogate the ECM and receive diagnostic information on an instrument panel digital display. In

addition to identifying a malfunction, the system also can verify the accuracy of the repair.

A 5.7-liter diesel V-8 engine is available on all Cadillac models except Fleetwood Limousines and Cimarron.

For 1982, the 5.7-liter diesel engine is teamed with a four-speed automatic transmission that includes a clutched torque converter and fourth gear overdrive.

A 4.1-liter V-6 also is available on all Cadillacs except Fleetwood Limousines and Cimarron. This engine offers the inherent fuel economy advantages of a V-6 and good performance.

The V-6 uses GM's Computer Command Control and closed loop control to reduce emissions and provide good fuel economy and performance. It also includes a knock sensor to control spark advance and limited diagnostics to detect certain malfunctions in the control system. New for 1982 is a warm engine idle speed control that automatically compensates for accessory load variations.

Standard on 1982 Cadillac Fleetwood Limousine models is a 6.0-liter modulated displacement V-8-6-4 engine with digital fuel injection.

First offered during the 1981 model year, the V-8-6-4 features an electromechanical system, controlled by a microprocessor, that actuates only the number of cylinders needed to satisfy driving requirements at any given moment.

Standard on Cimarron, the transverse mounted, 1.8-liter L-4 engine is designed to provide spirited, dependable and economic service. Its pushrod design delivers 88 horsepower at 5100 rpm. The fast-burn combustion chamber, vertical valves and centrally located spark plug provide for a 9:1 compression ratio.

EPA estimates for the 1.8-liter L-4

equipped Cimarron are 26 mpg-city, 42 mpg-highway with the standard manual transmission, and 25 mpg-city, 41 mpg-highway with the optional automatic.

Coupe and Sedan DeVilles, Fleetwood Brougham Coupes and Sedans and Limousines feature a newly designed, vertically accented grille.

Exclusive touches for Fleetwood Broughams include a more closed-in rear window on the sedan, bright belt moldings, large rocker moldings, specific wheel covers (also used on Fleetwood Limousines) and electroluminescent opera lamps.

The Fleetwood Brougham Coupe is highlighted by a stylish roof treatment featuring a custom Cabriolet vinyl top that encloses a distinctive rear quarter window.

For 1982, DeVilles and Fleetwood Broughams are available in a choice of five standard interior color selections and eight optional leather trim combinations.

The front-wheel-drive Eldorado features a new vertically accented grille.

The exclusive Eldorado Biarritz sports a custom Cabriolet vinyl roof, stainless steel roof cap, wide bright moldings and opera lamps as standard equipment.

A distinctive new special edition Eldorado, the Touring Coupe, is available for the first time in 1982.

Offered only with the 4.1-liter V-8 HT 4100 DFI Power System and featuring Cadillac's "Touring Suspension" package as standard equipment, the Eldorado Touring Coupe sports many exterior and interior styling features that distinguish it from other Eldorados.

The Eldorado Touring Coupe is available only in Sterling Silver metallic paint.

Base Eldorado and Biarritz interiors feature new 45/50 split front seating. Base Eldorado fabric interiors are trimmed in a ribbed knit cloth with contrasting cloth bolsters and are available in five colors. Eight optional leather/vinyl trim color selections also are available for the base model.

The Eldorado Touring Coupe features body-contoured leather-trimmed front bucket seats that offer lumbar and lateral support.

An optional digital instrument panel cluster featuring digital display of vehicle speed, fuel level and fuel range is available on Eldorados equipped with the 4.1-liter V-8 HT 4100 DFI Power System or the 5.7-liter diesel engine.

Seville for 1982 carries on the classic design theme established by its 1980 and 1981 forerunners.

The rear quarter panel and rear deck lid treatment combine a classic and contemporary form.

For 1982, the Seville features new 45/50 split front seats. The Elegante continues to use a 40/40 split front seat arrangement.

Base Seville cloth trim is a knit fabric available in five colors. Eight optional leather/vinyl interior colors also are offered.

Elegante interiors are highlighted by individual front seats, separated by a center console with an integrated fold-down armrest, two individual, removable storage compartments, coin holder, and courtesy lights. The exclusive Elegante interior features a standard leather seating area in a choice of three colors.

A digital instrument panel cluster featuring digital display of vehicle

(Continued on page 6)



BONNEVILLE — Targeted at full-size car owners who are looking for a smaller, more fuel efficient car, the 1982 Bonneville Model G four-door sedan is a six-passenger car with estimated EPA fuel economy ratings 20 mpg city and 30 highway.

GMC CABALLERO for 1982 features new front end styling. A "smart switch" lever on the steering column.

ELDORADO TOURING COUPE is a new addition to the Cadillac line with special touring suspension, blackwall tires and contoured bucket leather seats.

1982 cars...

(Continued from page 5)
speed, fuel level and fuel range is available on Seattles equipped with the 4.1-liter V-8 HT 4100 DFI Power System or the 5.7-liter diesel engine.

Cimarron front end styling is highlighted by a cross-hatch grille flanked by dual rectangular headlamps.

Front and rear bumpers feature unique body-colored end caps, thick black rub strips with a white accent stripe and vertical bumper guards.

Large rectangular tail lamps are adorned with winged Cadillac crests, and are flanked by amber-colored turn indicators.

The Cimarron interior carries through the quality and attention to detail exhibited by the exterior. It features body-contoured, perforated leather-trimmed seats.

The front bucket seats are specially designed to provide lumbar and lateral support and include adjustable contoured headrests and mechanical seat back recliners. A floor-mounted shift lever is contained within a center console that also includes a removable storage bin, ash tray and convenient, spring-loaded coin holder. Front door map pockets provide additional storage space.

A new full-width rear seat features a fold-down center arm rest and front seat back pockets.

Cimarron's easy-to-read instrument panel features a cluster and gauge package.

A unique three-spoke custom steering wheel featuring a leather-wrapped rim is standard.

Five interior color selections, including two exclusive to Cimarron are available.

GMC

GMC light, medium and heavy-duty trucks for 1982 represent the most comprehensive and fuel efficient model lineup ever offered by GMC Truck & Coach Division, according to Robert W. Truxell, division general manager.

Most light-duty trucks and the full line of medium and heavy-duty trucks go on sale, September 24. An entirely new domestic truck, the S-15 compact pickup, which combines economy, utility and performance, will be introduced in November.

In the conventional light truck segment, a completely new V-8 diesel is offered in two-wheel and four-wheel drive one-half, three-quarter and one-ton models, except the two-wheel drive Jimmy and S-15, for improved fuel efficiency. An optional diesel equipment package is required.

The 6.2-liter (379 c.i.d.) diesel engine is new from the block up and designed specifically for truck applications. It is not based on any existing GM truck or passenger car gasoline engine.

For RV enthusiasts, trailering is possible with the 6.2-liter diesel in all available light-truck models. Maximum gross combination weight rating (GCWR) ranges up to 13,500 pounds for two-wheel drive one-ton models.

With today's emphasis on fuel economy, GMC is also offering both a manual and automatic overdrive transmission in selected two-wheel drive and four-wheel drive models.

The four-speed manual transmission with overdrive is required on all half-ton and 3/4-ton pickups with GVW ratings of under 8,500 pounds when equipped with the 6.2-liter diesel. The transmission includes an aluminum case and extensions for lighter weight synchronizers in all forward gears for easier shifting, and a floor-mounted shift lever. It has a fourth-speed

overdrive 0.73 ratio for highway economy.

The four-speed automatic transmission with overdrive is standard on two-wheel drive Suburban and offered in Jimmy, four-wheel-drive Suburban and pickup models under 8,500 pounds GVWR. This transmission features a torque converter, mechanical locking clutch and fourth-speed overdrive 0.70 ratio for fuel efficiency. The mechanical locking converter clutch is a fuel-saving device that may engage as early as in second gear. It allows the transmission to drive direct and eliminates the normal slip that occurs in an automatic transmission torque converter.

The fourth-speed overdrive ratio allows the engine to run at a lower speed but still maintain the horsepower required to move the vehicle.

The fuel-efficient 4.1-liter (250 c.i.d.) L6 or 4.8-liter (292 c.i.d.) six-cylinder engine is standard again in many GMC light-duty trucks for 1982.

New LT-metric steel-belted radial tires, using 16-inch wheels, are offered for the first time on 3/4-ton and one-ton two-wheel drive and four-wheel drive conventional models and P-model chassis to reduce rolling resistance and help improve fuel efficiency.

The optional automatic speed control with resume feature is now available with both manual and automatic transmissions for Jimmys, Suburbans, pickups, cab-chassis and vans.

Use of automatic locking front hubs is extended to one-ton four-wheel drive models, making this feature standard on all GMC four-wheel drive models for 1982. The transfer case used on these models is synchronized for 1982 for easier shifting below 25 mph and allows shifting from two-wheel drive to four-wheel drive without stopping.

The 1982 GMC Caballero features new front end styling with miniature rectangular grille openings, dual rectangular headlamps and parking/turn signal lamps. New standard bench seat includes armrest and the instrument panel includes new woodgrain accents.

A "smart switch" lever on the steering column controls turn signals, headlamp beam and windshield washer/wipers. Low-drag front disc brakes are standard in 1982.

GMC pickups, Jimmys, Suburbans and cab-chassis for 1982 offer new interior colors and seat trims, exterior colors and two-tone paint schemes. There's a new optional rear compartment heater in the 1982 Suburban for passenger comfort and new grid-type rear defogger when ordered with the power tailgate window.

The 1982 one-ton four-wheel drive GMC pickups and cab-chassis models feature standard 63-amp generator, roof marker lamps and heavy-duty 32mm shock absorbers. New height sensing brake system using a dual split point sensing brake valve is standard on two-wheel drive and four-wheel drive one-ton models. The valve provides optimum brake balance and efficiency to the front and rear wheels based on light or heavy payload conditions.

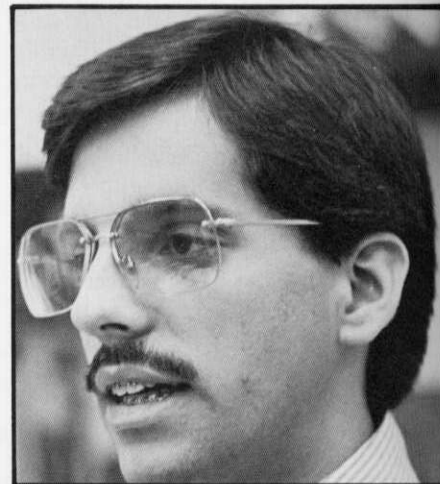
The 1982 Vandura and Rally van models feature a new energy-absorbing steering column. The new column incorporates a new ignition switch and "smart switch" which operates turn signals, headlamp beam and washer/wiper controls. Optional swing-out left hand side window glass is available for the short wheelbase Vandura, and all models have new exterior colors and two-tone schemes.

Packard probe

QUESTION: What do you view as the greatest challenge facing Packard in the 1982 model year?

Greg Prucey
Dept. 69

"The emphasis on quality and the positive attitude of people working on J-Car startup I thought was really great. I think we need to continue this positive attitude and emphasis on quality to maintain our competitive edge and present a more favorable picture of the automobile industry to the public."



Prucey

Deborah Britton
Dept. 4174

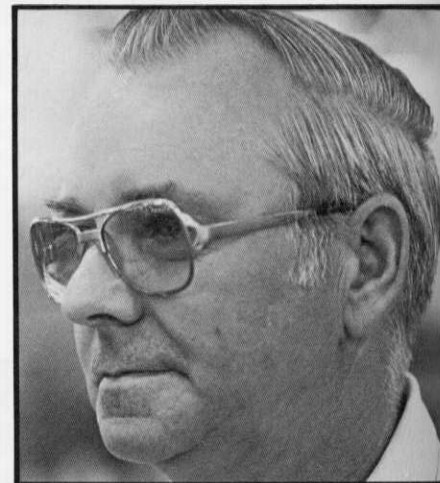
"I think the greatest challenge is going to be Packard selling their product, because the economy is down. And, if the economy is down and cars aren't selling, no one is going to need our product."



Britton

Chuck Straub
Dept. 4161

"I think the union and management are going to have to realize that some changes need to be made if we are going to keep our jobs and be competitive."



Straub

Patti Luoma
Dept. 4107

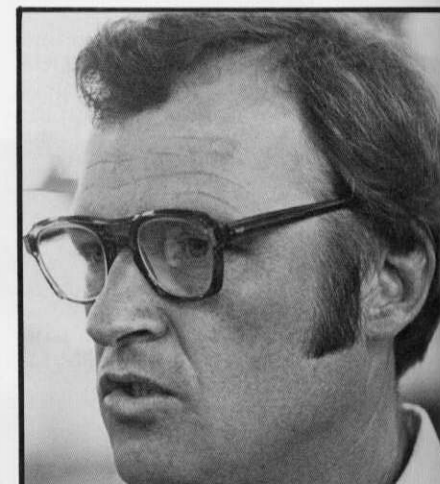
"I would say trying to keep the cost of cars down by keeping labor and scrap costs down and trying to save wherever we can."



Luoma

Chuck Gentry
Dept. 4151

"I would say overcoming the high interest rates and foreign competition."



Gentry