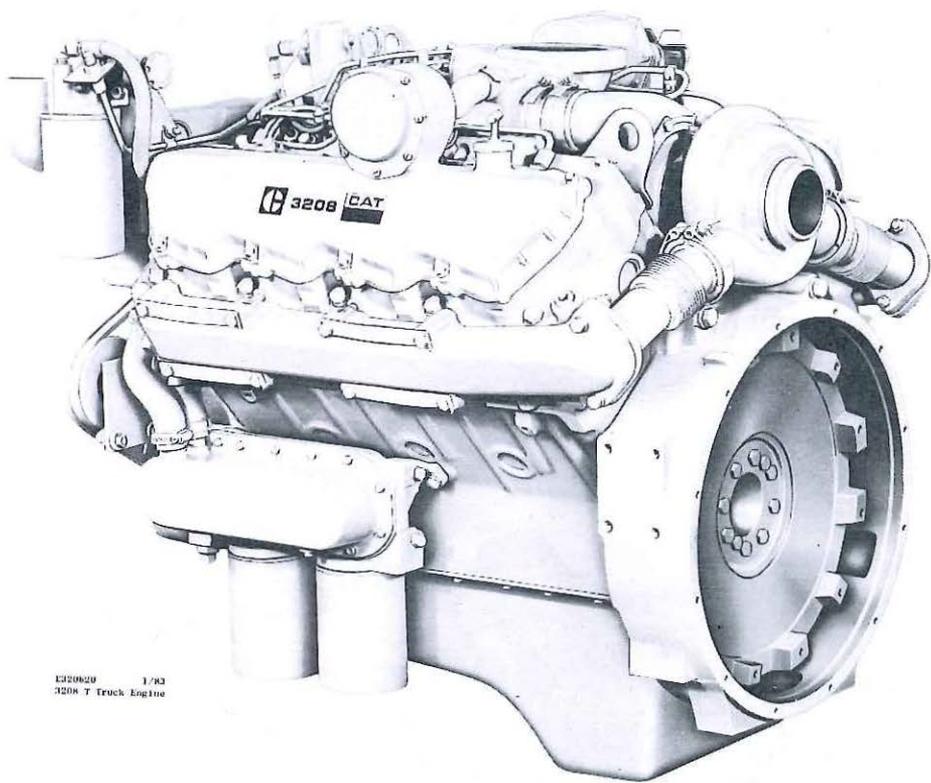


# SAE CHICAGO SECTION NEWS

VOL. 54

MARCH, 1986

NO. 3

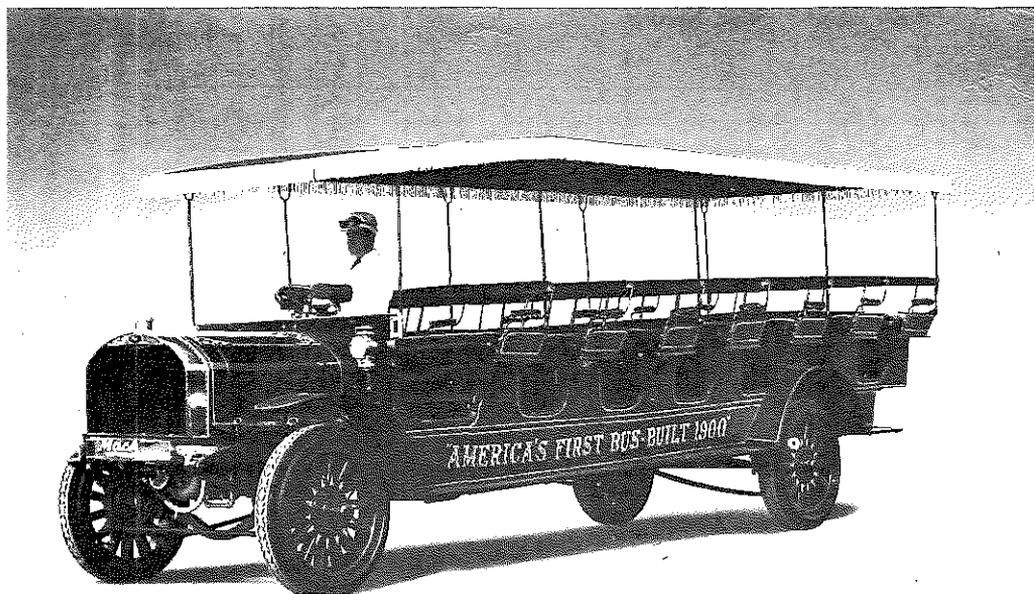


E320828 1/83  
3208 T Truck Engine

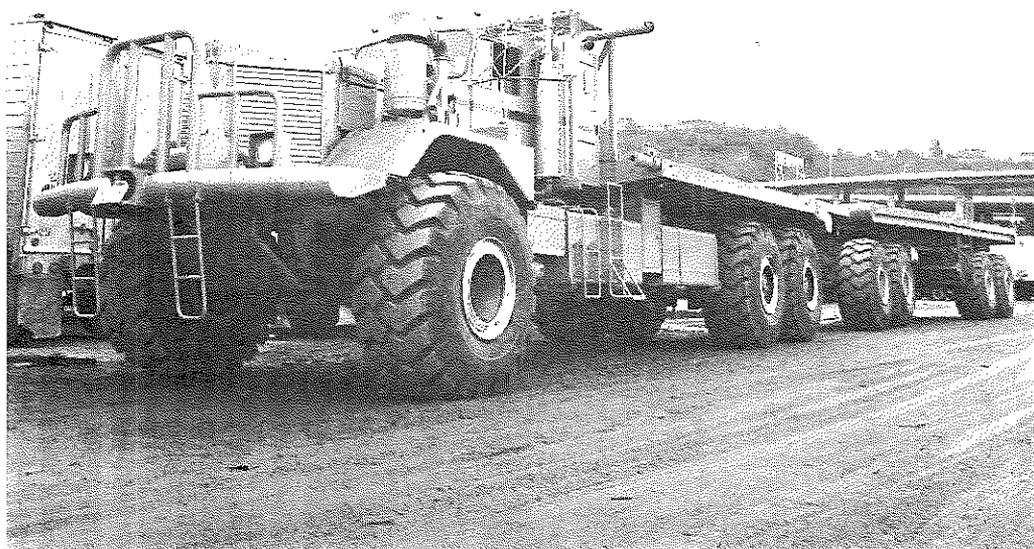
**CATERPILLAR 3208 DIESEL ENGINE  
FOR AGRICULTURAL EQUIPMENT.**

On the "HIGHWAY TO EXCELLENCE"

We do make progress!



Aren't you glad they put windows in the buses these days?



We stand in awe of the Leviathins of the highways.



## If your filter application isn't among the 1,700 filters Fram makes, we'll make one just for you.

Fram now makes more than 1,700 filters for oil, gasoline, air and diesel fuel, plus fuel filter/water separators, transmission filters and modulators. In short, a filter for just about any application.

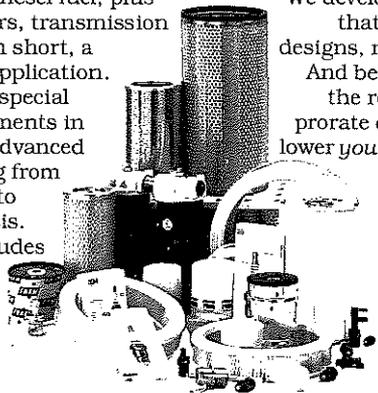
Fram can handle your special heavy-duty filter requirements in one of the world's most advanced facilities, with everything from radioactive wear testing to spectrographic oil analysis. Our equipment even includes an environmental test chamber that can compress a full year's

road service into days.

We develop custom air cleaner units that are integral to your overall designs, not adopted "hang ons."

And because Fram is the leader in the replacement market, we can prorate costs over higher volume to lower your costs.

For complete catalog and information on how we can solve your filter design problem, contact:  
Fram Division,  
Providence, RI 02916



 **ALLIED** Automotive

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A company with a wealth of technology, ideas and skills that we're ready to put to work for your company right now.

When you sit down at the drawing board, pick our brains. We may be able to show you ways to trim some unneeded weight from your newest designs. When you're going to order, challenge us. We'll share ideas for streamlining the way you buy from us.

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The Timken Company. The knowledge company. Put us to the test. We think we'll pass with flying colors.

The Timken Company, Canton, Ohio 44706.

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**SAE** The Engineering Resource For Advancing Mobility  
400 COMMONWEALTH DRIVE WARRENDALE, PA 15090

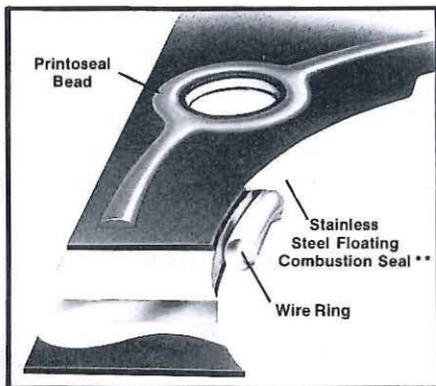
### SAE Technical Paper Series

840188

#### Designing and Testing Cylinder Head Gaskets for High Performance Sealing

Daniel E. Czernik  
Fel — Pro Inc./Felt Products Mfg. Co.

International Congress  
& Exposition  
Detroit, Michigan  
February 27-March 2, 1984



Felcopy technology forms the basis for two heavy-duty, problem-solving gaskets: PermaTorque/Blue® and Printoseal®.\*

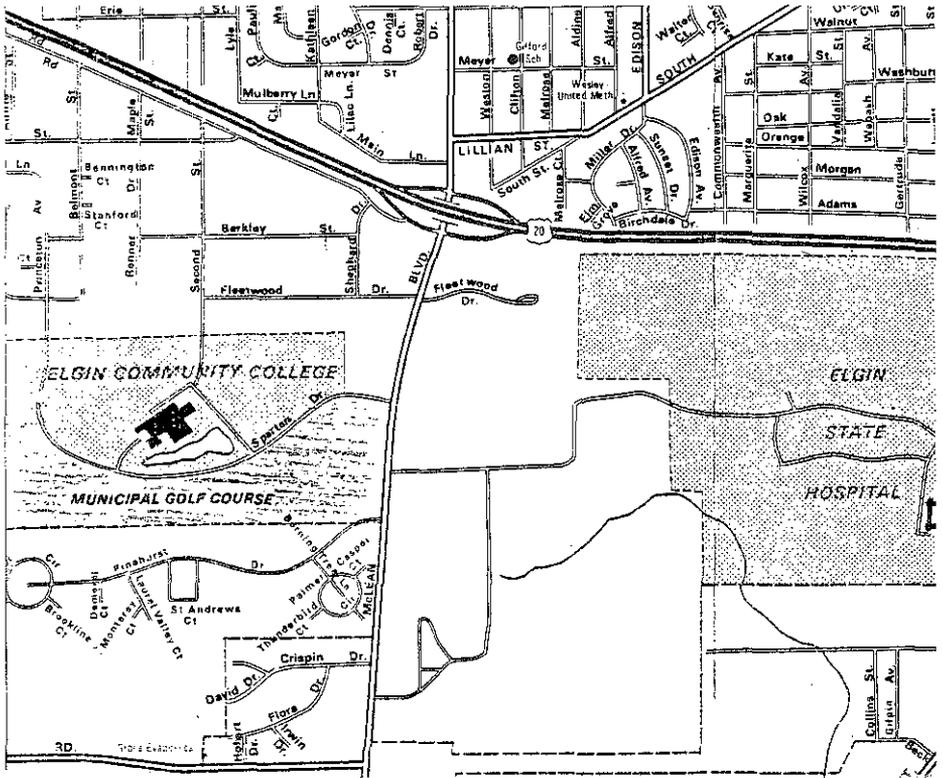
**Write FEL-PRO For Complete Technical Information On All Your Gasketing Requirements and A Number of SAE Papers By FEL-PRO's Product Engineering Group.**

\*\*U.S. Patent No. 3,565,449

\*Printoseal process under license from Dowty Seals, Ltd. Great Britain U.S. Patent No. 3477867.



Fel-Pro Incorporated  
7450 N. McCormick Blvd.  
Box C 1103, Dept. CSAE-386  
Skokie, Illinois 60076



**WE APOLOGIZE**

**TRW — Valve Division and TRW — Steering & Suspension** were omitted from the list of prize donors for SAE-Chicago Section Play Day, held September 5, 1985, published in the February, 1986 issue of the News. Sorry for the omission. Our apologies.

**MICO Pedal Operated Reverse Brake Valve:**

**How it Works:**

When pedal is not applied, the valve maintains a preset pressure to a spring apply/hydraulic release type of brake or device. Application of the pedal decreases pressure to the braking unit allowing the spring force to develop braking torque.

**Typical Application:**

Brake system on street sweeper.

**For sales and technical information contact:**

Rich Bergemann

**MICO, INC.**

1911 Lee Boulevard / P.O. Box 2074  
 North Mankato, Minnesota 56002-2074  
 Phone: (507) 625-6426  
 TWX 910-565-2444

**FOX VALLEY DIVISION**  
**SAE Chicago Section**

**TUESDAY, MARCH 18, 1986**

Elgin Community College  
1700 Spartan Drive  
Elgin, Ill.

See map on opposite page

**SPEAKER**



**DR. PHILIP ON**

**CHAIRMAN**



**WILSON D. DYSART**

**TRENDS IN AUTOMOTIVE AND  
INDUSTRIAL GEAR OILS**

by  
**PHILIP ON**

Increases in power and loading require modern lubricants to cope with severe thermal stressing while protecting equipment being lubricated. Lubricant technology must progress in quality to satisfy these requirements. A review will be made of trends in automotive and industrial gear oils.

**PHILIP ON** received his BS and PhD degrees in Chemistry from the University of California at Davis in 1977 and 1981, respectively. He began his employment with Unocal (formerly Union Oil) Science and Technology Division at Brea in 1981. He had worked in the Engine Oil, ATF and Wax group until being reassigned to the Industrial Lubricants and Greases group in 1985. His present assignments are gear oils, AW hydraulic oils and paper machine oils.

**WILSON D. DYSART** is Manager of Technical Services for Unocal Refining and Marketing Division. Bill has a M.S.M.E. degree from Purdue University and has been with Unocal for the past twenty-eight years in various Research and Marketing positions.

5:30 P.M. Social Half Hour  
6:00 P.M. Dinner  
7:00 P.M. Slide Presentation

**MEETING SPONSORS**

**The Timken Company**  
**Unocal Refining and**  
**Marketing Division**  
**Amoco Oil Company**

**Student Support**  
**Elgin Sweeper Company**  
**Hydro-Components R & D**

This will be a Gourmet Dinner  
**Chateaubriand.**

**RESERVATIONS REQUIRED**

For reservations call JoAnn at 859-5116  
Deadline: Noon Monday, Mar. 14, 1986  
Give Name and Company.

**MEAL PRICE**

<b>Member</b>	<b>\$11.00</b>
<b>Non-Member</b>	<b>\$13.00</b>
<b>Students</b>	<b>\$ 6.00</b>

**SPEAKER**



**W.L. SPRICK**

**CHAIRMAN**



**GEORGE F. RAAB**

**THE APPLICATION AND INSTALLATION  
OF  
DIESEL ENGINES IN AGRICULTURAL EQUIPMENT**  
by  
**W. L. SPRICK**

Agricultural equipment manufacturers design and produce many types of machines that are powered by diesel engines. They must be reliable, durable, easy to maintain, and efficient. The engine must be integrated into the equipment to be compatible with its existing systems. It has water, fuel, air, lubrication and structural systems that must interface with the equipment.

**MR. SPRICK** is a Supervising Engineer in the Engine Division Engineering Department of the John Deere Company. He is currently responsible for design, development and application of diesel engines used in agricultural, railroad, marine, electric power generation, earthmoving, and construction equipment. Sprick is a Registered Professional Engineer in Illinois. He received a BS in Mechanical Engineering from the University of Nebraska.

**DR. RAYMOND M. BRACH** is an Associate Professor in the Department of Mechanical Engineering at the University of Notre Dame. He has been the Director of the Summer Institute for Minority Students for 5 years.

**ELMHURST COUNTRY CLUB**

WOOD DALE ROAD

BETWEEN LAKE STREET (ROUTE #20)

AND

IRVING PARK ROAD (ROUTE #19)

**5:30 P.M. Social Half-Hour**

"ATTITUDE ADJUSTMENT HOUR"

**6:00 P.M. Dinner**

**7:00 P.M. Technical Session**

**MEETING SPONSORS:**

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n, safe, and cost effective.  
particular application, and  
h the machine.

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of diesel and natural gas  
ving, petroleum, etc. equip-  
degree from the University

erospace and Mechanical  
nmer Program in Engineer-

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**Dinner Reservations Required**  
**Single Table Reservations Restricted to 8 people.**  
Contact your plant representative.

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Chicago Section Office  
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**MICHIANA DIVISION**  
**SAE Chicago Section**

**TUESDAY, MARCH 18, 1986**

**PLANT TOUR**  
**AM General Hummer Plant**

**Abstract of Tour:** The LTV — AM General Div. HMMWV (Hummer) military vehicle is replacing the venerable M-151 Jeep that has served for many years as the armed services general purpose vehicle. This new vehicle was designed by AM General to U.S. Government specifications and is being manufactured in LTV's AM General plant in Mishawaka, IN. The Hummer is a 4-wheel drive vehicle with an 8 cylinder diesel engine, geared hubs for ground clearance, 4 wheel power disc brakes and power steering. It is made in numerous configurations for special uses such as a cargo troop carrier, an ambulance, a communications vehicle, a missile carrier and an armament carrier.

**The Tour** will begin at the McKinley Hwy. Guard Station at LTV — AM General Div.'s Mishawaka plant. It will consist of items of special interest such as: a.) robotics in the body assembly area and paint areas (for applying the camouflage), and b.) CNC equipment in the body area, in addition to the assembly line and subassembly areas.

5:15 p.m. — Tour  
LTV — AM General Div.  
13200 McKinley Hwy.  
Mishawaka, IN  
7:00 p.m. — Social Period  
7:30 p.m. — Dinner  
Tony's Restaurant  
1213 E. Jefferson Blvd.  
Mishawaka, IN  
8:30 p.m. — Question and  
Answer Period

**Student Support:**  
Hydro-Components R & D Inc.

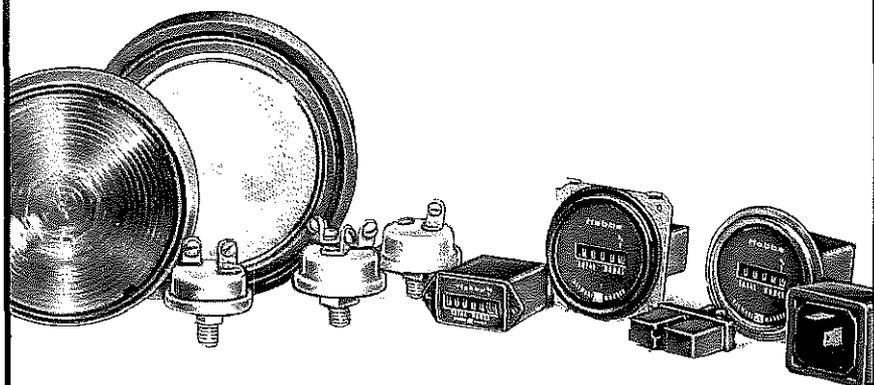
**Reservations:**  
Rodger Miller  
Allied Automotive  
(219) 237-2953

**Deadline: 4:00 P.M. EST**

**Wednesday, March 12, 1986**

**Prices**

<b>\$ 9.50</b>	<b>Members</b>
<b>\$10.00</b>	<b>Non-Members</b>



## When machines talk, the language they use is Hobbs.

Hour meters. Pressure and vacuum switches. Snap-action switches. Cold weather starting devices. Buzzers. Flashers. Halogen headlamps. Shock-resistant headlamps. Warning lights. Whatever machines need to call for help or perform more efficiently. Hobbs makes them better than anyone.

Hobbs is a prime supplier to the powered equipment industry. Anywhere something turns, spins or moves, Hobbs has a product to help it run better. Call or write today for our complete line of products. Hobbs Division, Stewart-Warner Corporation, Yale Blvd. and Ash St., Springfield, Illinois 62705. Call 217/753-7600.

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*Hobbs, Communication between machine and man.*

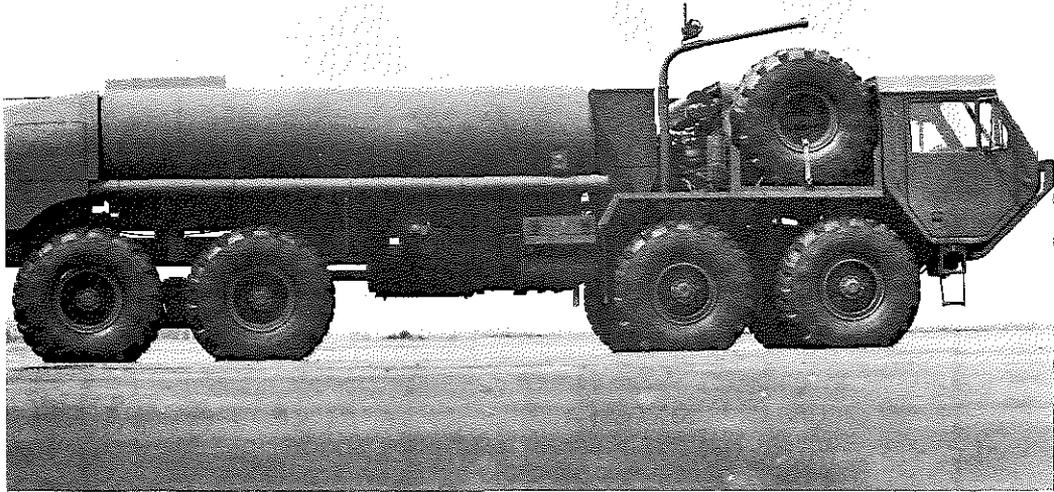
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The vehicle demands quality and performance. With confidence, you can count on **United Air Cleaner** to furnish you with a product that will meet your quality and design requirements.

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**Jeff Green**  
Account Manager

# SAE CHICAGO SECTION NEWS

Published by CHICAGO SECTION, SOCIETY OF AUTOMOTIVE ENGINEERS

**VOL. 54**

**MARCH, 1986**

**NO. 3**

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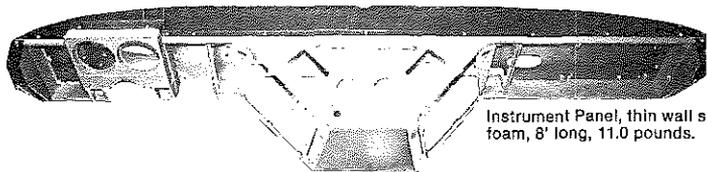
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25 South Cass Avenue, Westmont, IL 60559 • Phone: (312) 629-6363

# SAE - CHICAGO SECTION

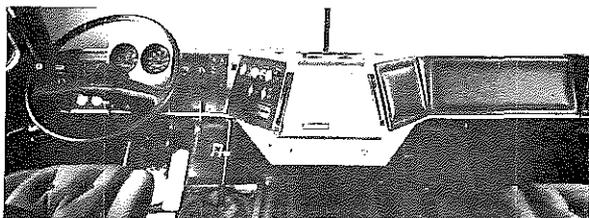
## 1985-1986 Meeting Dates

Date	Group	Subject
1985		
10-8	Chicago	Caterpillar Wheel Loader
10-15	Fox Valley	Caterpillar Integrated Tool Carrier
10-15	Michiana	New Energy Ethanol Plant
<hr/>		
11-12	Chicago	Power Plants
11-19	Fox Valley	Epcot Center
<hr/>		
12-9 to 12-12	Chicago	SAE - National Truck & Bus Meeting
<hr/>		
1986		
1-14	Chicago	Manufacturing & Materials
1-21	Michiana	Aristotle Of Airfoils
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2-11	Chicago	Parts & Accessories
2-18	Fox Valley	Harley-Davidson V-2 Engine
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3-11	Chicago	Transportation Equipment
3-18	Fox Valley	Lubricants (Gear Oils)
3-18	Michiana	U.S. Military Vehicle - Hummer
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4-15	Chicago	Fuels and Lubricants
4-22	Fox Valley	Engine Vibration Dampening
4-22	Michiana	East Race
<hr/>		
5-13	Chicago	Advanced Technology

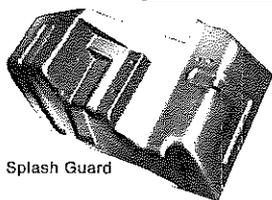
# High Performance Engineered Plastic



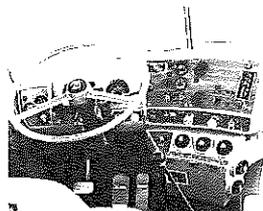
Instrument Panel, thin wall structural foam, 8' long, 11.0 pounds.



Mack Trucks M.H.

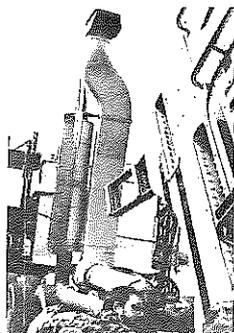


Splash Guard

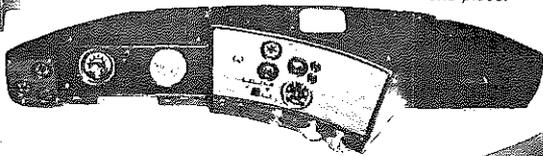


Padded Instrument Panels

32100 Groesbeck Hwy.  
Fraser, Michigan 48026  
(313) 296-6020

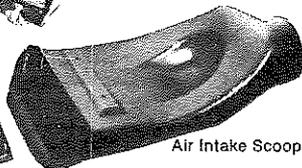


Peterbilt Snorkel 8'.0 long  
—one piece.



Headliner

Surge Tank



Air Intake Scoop

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