

# **SAE** CHICAGO SECTION **NEWS**

**VOL. 53**

**NO. 6**

**OCTOBER, 1985**



**CATERPILLAR WHEEL LOADERS — 916, 926  
(CHICAGO SECTION)**



**CATERPILLAR INTEGRATED TOOL CARRIERS  
(FOX VALLEY DIVISION)**



**We steer everything on wheels.  
(Almost.)**

With a few small exceptions, a company called TRW builds steering systems for everything on wheels. From garden tractors to mammoth earth movers, we can supply your needs.

We were a pioneer in power steering. We introduced the first passenger car rack and pinion system in North America. In truck gears, we've achieved the highest output torque-to-weight ratio in the industry.

And we're gearing up for our future advances: in lighter steering components, more cost-effective products, better ways to make our quality work for you.

For innovation in steering. Turn to us. Worldwide.



**Automotive  
Worldwide Sector**

# SAE CHICAGO SECTION NEWS

Published by CHICAGO SECTION, SOCIETY OF AUTOMOTIVE ENGINEERS

**VOL.53**

**OCTOBER, 1985**

**NO. 6**

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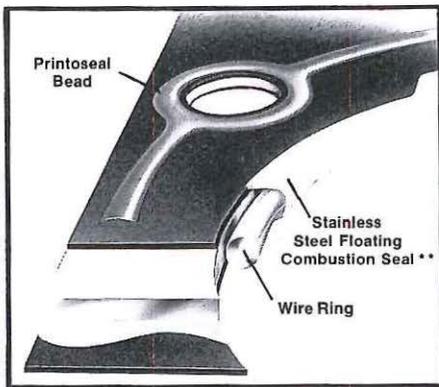
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#### Designing and Testing Cylinder Head Gaskets for High Performance Sealing

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®.\*

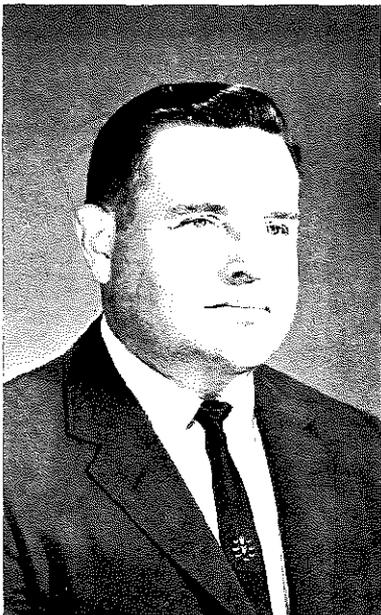
**Write FEL-PRO For Complete Technical  
Information On All Your Gasketing Requirements  
and A Number of SAE Papers By FEL-PRO's  
Product Engineering Group.**

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

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



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Skokie, Illinois 60076



## CHICAGO SECTION Chairman's Message



Planning for the 1985-86 Section and Division meetings was started early in the year and will continue into the season.

In addition to our regular meetings, the Chicago Section will host the SAE National Truck and Bus Meeting December 9 thru 12, 1985. Your Section officers and governing board members have been participating on the National general committee in areas for which the Chicago Section is responsible.

As the meeting date approaches, the committee chairmen will need your assistance. Your help will be greatly appreciated for whatever time you can give. For additional information, call Rey Barkstrom at the SAE office in Lombard, Illinois (629-6363).

CHICAGO SECTION CHAIRMAN

*C. F. Cervenka*

C. F. CERVENKA

**Find a way to meet diesel engine designers' needs for more efficient, smaller fuel injection nozzles.**

**STANADYNE INNOVATED THE WAY:**

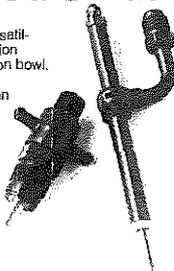
Typical nozzle spray pattern.

## **A Revolutionary 9.5mm Nozzle Plus Our Unconventional Conventionals.**

Only 9.5mm in diameter, our unique Pencil Nozzle™ is smaller and provides more engine design versatility than conventional types. This small size affords better engine cooling; variable inlet configurations and body lengths make it adaptable to numerous engine configurations. It has been proved on over 50 different engine models.

Now, a new 5.4mm diameter Slim Tip model designed especially for small, high speed D.I. engines is available. Benefits to engine designers include:

- Improved versatility in tip location vs. combustion bowl.
- Allows more metal between valves, or larger valves.
- Compression seal at tip shoulder aids air-cooled installations.



- Small frontal area reduces heat input.

We also offer conventional nozzles and holders in 21mm and 17mm sizes; hole or pintle type. Whatever your diesel injection system requirements, we welcome the opportunity to help optimize your engine designs. Stanadyne Diesel Systems Group, P.O. Box 1440, Hartford, CT 06143 U.S.A. Phone: (203) 525-0821.

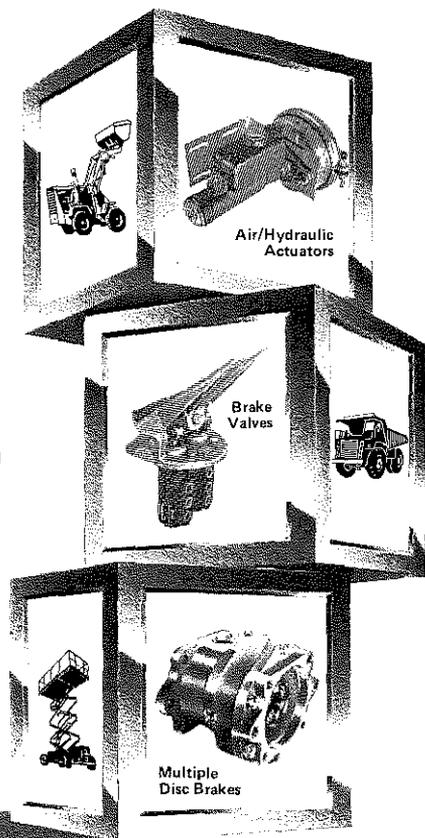
**Stanadyne diesel systems**

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**FOX VALLEY DIVISION**  
**SAE Chicago Section**  
**TUESDAY, OCTOBER 15, 1985**  
**CATERPILLAR IT28 AND IT18**  
**INTEGRATED TOOL CARRIERS**  
**BY**  
**BOB BRIGGS**

The small wheel type loader has seen its application range extended such that it is now one of the most versatile machines in our industry. However, its effectiveness in tasks other than bucket loading is limited.

BOB BRIGGS graduated from Newcastle Upon Tyne Polytechnic, England, in 1972 with a BSc(Hons) in Mechanical Engineering. He began his employment with Caterpillar Tractor Company Ltd. at Newcastle in 1966 as a co-op student and was appointed Design Engineer upon graduation. In 1974, he obtained an MBA from Newcastle Polytechnic Management Center. He is currently Project Engineer for the IT28 and IT18 Integrated Tool Carriers.

DOUGLAS W. TOYNTON is a Hydraulic Design Specialist at Elgin Sweeper Company. Prior to joining Sweeper in November 1984, he was a Senior Engineering Technician for Fluid Power Systems. Doug received an Associate of Science Degree in Fluid Power from Gateway Technical Institute, Kenosha, Wisconsin, in 1979.

**SARATOGA HOTEL**  
**Route 31 & I-5**  
**North Aurora, IL**

**5:30 P.M. Social Half Hour**  
**6:00 P.M. Dinner**  
**7:00 P.M. Tech. Session**

**MEETING SPONSORS**

**FEL-PRO**  
**MICO, INC.**

**STUDENT SUPPORT:**  
**Hydro-Components R & D Inc.**

**RESERVATIONS REQUIRED**

**For reservations call JoAnn at 859-5116**  
**Deadline: Noon Monday, Oct. 11, 1985**  
**Give Name and Company**

**MEAL PRICE**

Member	\$11.00
Non-Member	\$13.00
College Student	\$ 6.00

**SPEAKER**



**BOB BRIGGS**

**CHAIRMAN**



**DOUGLAS TOYNTON**

**SPEAKER**



**ROBERT E. MOSS**

**SPEAKER**



**O. ALBERT SCHEFFLER**

**NEW CATERPILLAR WHEEL LOADERS — 916**

**BY**

**ROBERT E. MOSS**

**AND**

**O. ALBERT SCHEFFLER**

Two new Caterpillar Wheel Loaders have been developed in the 1.5 and 2 categories. The 916 and 926 wheel loader introduction is a continuation to lar Wheel Loader line. These machines were designed to provide higher bucket control linkage, and to meet worldwide manufacturing and marketing

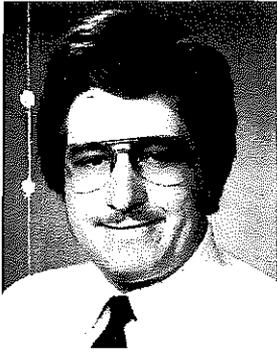
**ROBERT E. MOSS** graduated in 1966 with a Bachelor of Science in Engineering Master of Engineering (Agricultural) from Cornell University. In June of Caterpillar Tractor Co. in the technical training program. In July of 1968, engineering Department to work on various projects on track-type loaders, ers. He is presently a Project Engineer on Wheel Loaders. He is a registered Illinois.

**O. ALBERT SCHEFFLER** is a graduate of the State University of New York of Science in Mechanical Engineering. He joined Caterpillar Tractor Co. in ed primarily on wheel loader chassis design. Currently he is Project Engineer and 926 Wheel Loaders and is a registered professional engineer in Illinois.

**DAVID B. LOHBAUER** is a design engineer at Motorola—Centralized Group. He holds a BSME degree from the University of Illinois.

**ELMHURST COUNTRY CLUB**  
WOOD DALE ROAD  
BETWEEN LAKE STREET (ROUTE #20)

**CHAIRMAN**



DAVID B. LOHBAUER

, 926

0 cubic yard bucket capacity  
the updating of the Caterpil-  
breakout force, simplified  
g requirements.

engineering, and in 1967, with a  
1967, he began working at  
he moved to the Aurora En-  
compactors, and wheel load-  
ed professional engineer in

k at Buffalo, with a Bachelor  
May of 1957, and has work-  
eev, responsible for the 916

Fixed Network Equipment

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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**I T W FASTEX**  
**STANADYNE**  
**SOUTHCO FASTENERS, INC.**

PRICES

\$11.00 - Members  
13.00 - Non-Members  
6.00 - College Students

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

OR  
Chicago Section Office  
(312) 629-6363

**MICHIANA DIVISION**  
**SAE Chicago Section**  
**TUESDAY, OCTOBER 15, 1985**

**ETHANOL FUEL**  
**AND**  
**THE SOUTH BEND ETHANOL PLANT**  
**BY**

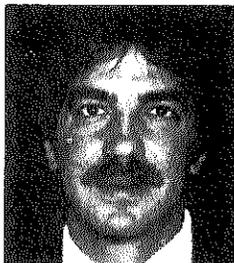
**LAWRENCE J. RUSSO, JR.**

The New Energy Co. Ethanol Plant has been producing ethanol for a year now. The reasons for producing fuel alcohol along with a description of the ethanol process and a discussion of the construction of the plant and its performance will be presented.

LAWRENCE RUSSO is Production Superintendent at the New Energy Co. Ethanol Plant and is responsible for the day to day operations of the Distillation, Drying, Cooling, De-watering, Evaporation and Utility areas of the plant. He has previously been involved with start-up of 5 Fermentation/Purification Biotechnology plants. Lawrence has a BChE from the University of Dayton and an MSBA from IUSB.

KEITH FULMER is a Staff Engineer in Advanced Engineering at Allied Automotive in South Bend. He has a BSME from Purdue and has been with Allied/Bendix for 26 years. Keith has 26 patents in the brake actuation field and is a 26 year SAE member.

**SPEAKER**



**LAWRENCE J. RUSSO, JR.**

**CHAIRMAN**



**KEITH H. FULMER**

**Meeting Location**

**HANS HAUS**  
**2803 S. Michigan**  
**South Bend, IN**

**Tour at New Energy Co.**  
**Ethanol Plant**  
**3201 W. Calvert**

**5:00 P.M.—Tour**  
**6:15 P.M.—Social Period**  
**6:45 P.M.—Dinner**  
**7:45 P.M.—Technical Presentation**

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

**Reservations:**  
**Anthony Metoyer**  
**Clark Equipment**  
**(616)697-4221 or (616)697-4021**

**Deadline: 4:00 P.M. EST**  
**Thursday, October 10, 1985**

**Prices**

<b>\$8.00</b>	<b>Member</b>
<b>\$8.50</b>	<b>Non-Member</b>

# HERE'S HOW NEW PLEATLOC\* ELEMENTS CAN CUT COSTS

\*Patent Pending



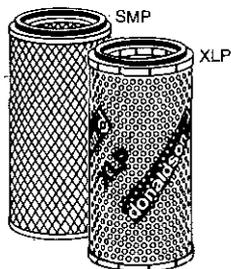
## NO other air cleaner element comes close

Donaldson's new **1** XLP element has unsurpassed efficiency and dust-holding capacity. With Pleatloc, **2** Donaldson's new pleat-support and positive-spacing feature, XLP media won't bunch-up. It will outlive any conventional filter, providing up to 50% more dust-holding capacity. This means improved engine efficiency and fuel economy.

Pleatloc media life is so improved that we had to beef up everything else in the element. A new **3** urethane gasket material won't harden or crack. Heavy gauge end caps **4** are corrosion resistant. The **5** outer metal liner is completely galvanized and epoxy-coated for added corrosion resistance. The new XLP gives you better engine protection and lowest filter costs per mile or hour, when you use its full life by measuring intake restriction. Come in and see the Donaldson Pleatloc breakthrough.

## For scheduled maintenance, use Donaldson's new SMP<sup>™</sup> element

The same superior Pleatloc protection of the XLP, in lower-cost unit for scheduled maintenance.



# donaldson

**ANNOUNCING THE FIRST EVER SAE CHICAGO SECTION  
MINI-TRUCK PULL COMPETITION**

**Wednesday, December 11, 1985 at noon.**

**Main lobby of the O'Hare Hyatt Regency Hotel**

**This competition is open only to student members of SAE**

**Advance registration is required.**

**Please mail coupon below, postmark no later than Nov. 16, 1985.**

**A \$5.00 fee must be included with the registration.**

**This fee will be refunded at the competition on proof of SAE student membership. If contestant is not a member then the \$5.00 fee will be used to pay the first year's membership. Note: Membership is open to any college student enrolled full or part-time.**

**A mini-truck pull is a competition among stomper 4 x 4 (TM) and stomper semi 10WD (TM) toy trucks. A weighted sled will be provided to be pulled by the trucks.**

**Trophies and cash prizes of \$50.00 - First — \$25.00 Second — \$10.00 Third, will be awarded in each of six classes. Each class winner will also receive a ticket to the banquet on Wednesday, December 11, 1985, at 7:00 p.m.**

**For complete details contact section office — (312)-629-6363**

**SAE Chicago Section Mini-Truck Pull Competition Registration Form**

**Please Include \$5.00 Entry Fee**

**Name: \_\_\_\_\_**

**Address: \_\_\_\_\_**

**Phone: \_\_\_\_\_**

**School: \_\_\_\_\_**

**Mail To: Pull**

**SAE Chicago Section Office  
330 E. Roosevelt Road  
Lombard, IL 60148  
Phone (312)-629-6363**



## CHICAGO TO HOST TRUCK & BUS MEETING

For the first time ever Chicago will have the opportunity to host SAE's Truck & Bus Meeting this year. The meeting will be held December 9-12 in the Hyatt Regency O'Hare. The Rosemont-O'Hare Exposition Center adjacent to the hotel will be the site of the accompanying exposition—a show that is expected to equal or surpass last year's record event in Dearborn.

Meeting General Chairman Donald D. Lennox, Chairman and Chief Executive Officer, International Harvester Co., declared that this year's theme, "Highway to Excellence," recognizes "the effort of designers and engineers involved in all aspects of the truck industry to develop and maintain quality vehicles."

As always the Truck & Bus Banquet on Wednesday evening, December 11, will be a highlight of the meeting. This year the featured speaker will be General Motors' President and Chief Operating Officer F. James McDonald.

The meeting will also feature an opening keynote address, a top management "blue ribbon" panel, a Chief Engineers' panel, and tours to Chicago-area facilities, all in addition to a full schedule of technical sessions.

For more information on the 1985 SAE Truck & Bus Meeting, contact Laura Feix-Baker at 412/776-4841.

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# UNITED AIR CLEANER AND THE U.S. HUMMER



The U. S. Military's newest vehicle, known as the HUMMER, is intended to replace the Jeep.

United Air Cleaner Company supplies the air cleaner used on the HUMMER vehicle which is made by the AM General Division of LTV Aerospace and Defense Company.

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.

Contact United Air Cleaner for your needs.

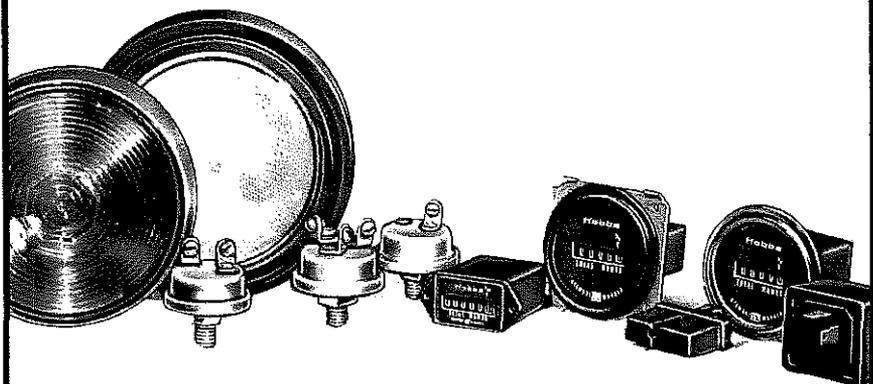
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Chicago, Illinois 60628  
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Over 50 years in the air cleaner business.

# 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
11-19	Michiana	U.S. Military Vehicle - Hummer
<hr/>		
12-9 to 12-12	Chicago	SAE - National Truck & Bus Meeting
<hr/>		
1986		
1-14	Chicago	Manufacturing & Materials
<hr/>		
2-11	Chicago	Parts & Accessories
2-18	Fox Valley	Harley-Davidson V-2 Engine
2-18	Michiana	Anti-Lock
<hr/>		
3-11	Chicago	Transportation Equipment
3-18	Fox Valley	Lubricants (Gear Oils)
3-18	Michiana	LECO
<hr/>		
4-15	Chicago	Fuels and Lubricants
4-22	Fox Valley	Engine Vibration Dampening
4-22	Michiana	East Race
<hr/>		
5-13	Chicago	Advanced Technology



## 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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