U of I - Urbana HEV Challenge Vehicle

“The Chief”
On behalf of the Section Governing Board, I welcome all of you to the 1993-1994 SAE season. The new board is in place and has already made significant progress in getting activities planned for this year.

Our season events begin with the 50th Anniversary Celebration Golf Outing, organized by the entertainment committee. It will be held on Thursday, Sept. 9, at St. Andrews Country Club in West Chicago. We hope you take advantage of this opportunity for SAE friendship and fun.

You may be surprised to receive the first issue of SAE NEWS this early. In response to member preference, the schedule for technical dinner meetings will be a little different this year. Nine Chicago meetings will be held this season, one each month, to avoid having three meetings only two weeks apart. We have a lineup of great meetings for you this year.

To get them all in, the first meeting will be held Tuesday, Sept. 21. It has been scheduled to avoid a conflict with the Off-Highway & Powerplant Conference in Milwaukee. The kickoff meeting will feature student accomplishments in the hybrid electric vehicle area. We cordially invite all area students to attend this meeting and continue to join us all year long.

Again this year, we will have a joint meeting with the Chicago Section of the American Society of Agricultural Engineers (ASAE). It will be on Tuesday, Oct 12.

The 1994 SAE President Nominee will be our guest at the Tuesday, Nov. 9, meeting. He is Randall R. Richards, Program Manager of New Products for Caterpillar, Inc. right here in Illinois. Don’t miss it.

Tuesday, Dec. 14, will be family night with an aerospace presentation. Watch these pages for details about the upcoming meetings.

We invite companies to reserve a table of eight for this season. With advance payment, you save by paying only the member rate. It’s a great way to support SAE and benefit your employees and your company.

We look forward to a superb season and invite all of you to join us for entertainment, information and fellowship.

Chuck Cornell
Chicago Section Chairman
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Mistakes I cannot sea.
I've run this poem thru it
I'm sure your pleased too no.
It's letter-perfect in it's weigh
My checker tolled me sew.
--Penny Harper
# 1993-94 SAE Chicago Section Governing Board

## Executive Committee

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<th>Name</th>
<th>Position</th>
<th>Company</th>
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<tbody>
<tr>
<td>Chuck Cornell</td>
<td>Chairman Chicago Sec</td>
<td>DAI Technologies</td>
<td>708/971-2442</td>
</tr>
<tr>
<td>Dennis Berndt</td>
<td>Chair Michiana Division</td>
<td>Sprague Devices</td>
<td>219/872-7295</td>
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<td>Gary Patterson</td>
<td>VP Michiana Div.</td>
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<tr>
<td>Jim King</td>
<td>Past Chairman Chicago</td>
<td>J I Case</td>
<td>708/887-2012</td>
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<td>Rodica Baranescu</td>
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<td>Rich Holloway</td>
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<td>Gary Novak</td>
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<td>Eugene Wallace</td>
<td>Math &amp; Science K-12</td>
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<td>Ray Heller</td>
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<td>Consultant</td>
<td>708/963-9175</td>
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<td>Margaret Bain</td>
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<td>Carson Eddy</td>
<td>Student Activity</td>
<td>Aetna Bearing</td>
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<td>Dave Robinson</td>
<td>Executive Advisor</td>
<td>Robert Bosch</td>
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<td>Allied Automotive</td>
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## Standing Committee Chairpersons

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<td>Dave Morris</td>
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<td>Chuck Cervenka</td>
<td>Magazine Editor</td>
<td>Consultant</td>
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<td>Mary Jacque</td>
<td>Assst. Publicity</td>
<td>J I Case</td>
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<td>Advanced Technologies</td>
<td>Argonne Labs</td>
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<td>Const &amp; Off-Road Mach</td>
<td>Caterpillar</td>
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<td>Matt Jenks</td>
<td>Electronics</td>
<td>Motorola</td>
<td>708/480-4703</td>
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<td>Robert Paplaski</td>
<td>Agricultural Machinery</td>
<td>J I Case</td>
<td>708/887-2399</td>
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<td>Les Asher</td>
<td>Fuels &amp; Lubricants</td>
<td>Amoco Oil</td>
<td>708/420-5944</td>
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<td>Brian Schilling</td>
<td>Light Duty Vehicles</td>
<td>ZF of No America</td>
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<td>Heavy Duty Vehicles</td>
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## International SAE Support

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<tr>
<td>John Casker</td>
<td>Manager Section Relations</td>
<td></td>
<td>412/776-4841</td>
</tr>
<tr>
<td>Becky Fadik</td>
<td>Field Services Representative</td>
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DAI TECHNOLOGIES INC.


DAI TECHNOLOGIES INC.

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DAI has provided electromechanical and electrohydraulic control system solutions to engine and vehicle OEMs since 1984. DAI's mission is to be the preferred and innovative provider of electronic products and system engineering services to control the generation and utilization of power in a manner which satisfies customer needs and requirements. Control systems designed and/or manufactured by DAI are, today, serving the truck and bus transportation and agricultural industries in North America and Europe.

The company has a diverse technical capability which includes a staff of engineers, technical writers, and technicians who provide complete support including analysis of customer requirements, computer modeling and simulation, system design, prototype fabrication, field testing, and production. The company functions in a matrix type of organization, drawing on the marketing and technical resources required to complete a project and coordinate its transfer to manufacturing.

The technical staff at DAI combines theoretical and practical hands-on experience gained in ten years of working together to leverage high-volume, high reliability components to low-volume (relative to the automotive and consumer electronics industry) markets.

DAI has performed or is in the process of performing major product developments for:

- Natural Gas Engines
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708-529-4434
The June and July issues of “Industry Week” have several memos which you might find interesting.

Blue+White = Striped:
Dunhill Personnel Systems calls employees with more technical knowledge than bluecollar workers but without college degrees like their whitecollar counterparts “striped-collar workers.” Striped-collar workers, who often do computer-related work, come from technical and vocational schools and junior colleges where they have learned additional skills.

Tightwads--And Proud of It:
Probably because Cabletron Systems Inc.’s founders had to watch expenses carefully when they started the company in a garage eight years ago, the $410 million manufacturer of computer-networking systems is still frugal. They buy only used furniture (even for executive offices), reimburse salesmen only $70 a night for hotels and $35 a day for meals, and have no chairs in their conference room so employees meet quickly and efficiently. The company emphasizes that it does not cut corners in such vital areas as R&D!

“Quality is a matter of leadership, not of techniques and programs. Companies with poor quality have leadership with poor integrity. It shows through all the time.”
--Philip B. Crosby, author and founder of Career IV Inc.

Thanks to all of you who advertise in this SECTION NEWS. Your ads are as important to us as to you. They are vital to the success of your business and they are vital to the success of this Section. You help us provide the communications links to our members here and around the planet. We hope you are pleased with our service and will continue to advertise with us. Tell other companies of our SECTION NEWS and the way we help to promote your products and services.

Sincerely,
Jack Shultz
Advertising Chairman
Over 200 students were involved in the design and construction of the University of Illinois entry to the HEV Challenge sponsored by Ford, the Department of Energy (DOE), and SAE. Named "The Chief" after an Escort station wagon took top honors for HEV design from a field of 18 competitors and finished first. Their battery tray arrangement that preserves the utility of the Escort while providing twenty KW/HRs of electric drive motor. A .6 L Kawasaki industrial engine burning E100 ethanol turning an alternator provides exceptionally well-designed and crafted hybrid and hear a team of students present the story of their new design on display for your inspection!

The Coffee Talk:
The University of Illinois - Urbana HEV Challenge
"The Chief"

IIT has been selected to receive a Saturn sedan to convert to HEV operation for a new class of power. A power-assist hybrid uses a heat engine as the prime mover and uses an electric drivetrain for propulsion. Students will present their design approach to convert a Saturn to a HEV. Don't miss this interesting presentation from student SAE Chapter as they plan on winning their class in a major new competition sponsored by DOE.

Dr. Francisco Ruiz is Associate Professor of Engineering at the Illinois Institute of Technology, Chicago. Award in 1992. The Advisor to the SAE Chapter since 1990, Dr. Ruiz's technical interests are in studies of fuel atomization, and alternative fuel utilization. He received his Master's and Ph.D. in Mechanical Engineering from M.I.T.

Robert P. Larsen is a Transportation Systems Engineer at Argonne National Laboratory's Center for Energy Research Competitions and the Alternative Fuels programs. He has competed with DOE, currently being involved in Formula SAE, SAE Supermileage, the Junior 54 Challenge. Bob received two Master's degrees from the University of Wisconsin - Madison and a Bachelor's degree in Engineering Physics from the University of Wisconsin - Madison.
Challenge Vehicle

In the 1993 Hybrid Electric Vehicle (HEV) the famous fighting Illini logo, the converted overall. The Chief features an innovative power at 336 volts to a 25 hp Magnatec AC additional motive power. Come see this award-winning vehicle. The Chief will be

Challenge Saturn

...assist hybrids in the 1994 HEV Challenge. Dr. Ruiz and his informative presentation on how a local OE, Saturn, and SAE.

Dr. Ruiz is receiving IIT's prestigious Faculty of the Year award regenerative engine cycles, fundamental mechanical Engineering from Carnegie-Mellon Engineer for Transportation Research where he been instrumental in many of SAE's student Sprint, the NGV Challenge, and the HEV bachelor's degree from Valparasio University.
TOUR OF ARGONNE NATIONAL LABORATORY

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3:00 to 5:00 p.m.

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• Non-U.S. citizen must register one week early to report Date of Birth, Place of Birth, and Current Address
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**SAE SPONSOR-A-TABLE**

The SAE Chicago Section is initiating a new program this year. “SAE Sponsor-A-Table” is aimed at the companies in the Chicago Section that have members active in SAE. These companies are invited to sponsor a table (8 tickets) for each of the nine meetings in the 1993-1994 program year, at the member cost of $1,080. These tickets can then be given to employees, customers, or contractors. The benefits to the participating company are increased company exposure and employee development. We invite all companies in the Chicago section area to participate.

At this time, the following companies have signed up for this program:

- Eaton Corporation, Controls Division
- JI Case
- Amoco Research Center

The Chicago Section thanks these companies for supporting SAE in this way.

For further information on this program, please contact your company SAE representative, any Section officer, or the Section Message Center at (708) 663-0010.
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The Navistar Engine and Foundry operation, a major business component, continued its tradition of success in 1992 by increasing the number of engines shipped to OEMs by 30 percent. The Engine operation will build on that momentum in 1993 by introducing an advanced series of diesel engines--designed with more power, durability, serviceability and environmental friendliness.

An exciting all new product, the T 444E, will be available in early 1994. The T 444E represents the latest in engine technology advances. This sophisticated direct injection V-8 diesel is fueled by Hydraulically actuated Electronically controlled Unit Injectors (HEUI). The electronic controls constantly adjust engine speed, power, and torque rise to deliver the precise amount of fuel for maximum power and efficiency.

This new engine will also interface with options that include cruise control, plus electronically controlled power take-off and diagnostic capabilities.

Contact Navistar for more information on International products.
CLAMPCO HISTORY

Clampco Products, Inc. was founded on June 24, 1971 by James R. and Linda A. Venner. From its inception the goal has been to provide a high quality clamp product at competitive pricing in a family-owned business setting. Customer service, both in terms of cooperative personal attention to product development and quick response to customers' needs has always been of high priority. Jim Venner holds an Electrical Engineering degree from Case Institute of Technology and an MBA from Northwestern University. After four years of experience as Chief Engineer at Voss Industries in Cleveland, he was eager to produce quality products in an effective manner using his own business strategies. With a Master's degree in Community Nursing, Linda has contributed a background in personnel relations and human resources. Their objective for the company has been one of planned, controlled and sustained growth.

During the early seventies, while located at 188 College Street in Wadsworth, Ohio, Clampco supplied a growing number of industrial, construction and trucking (both OEM and aftermarket) markets. By 1977, the company had outgrown its original facility and moved to 145 Rainbow Street. Three expansions occurred at this site. In the early 1980's, Clampco Products expanded to many other industrial markets and began supplying the government as well as providing personalized service to many companies needing special product development. This trend greatly enlarged the company's production capabilities and enhanced expertise in a very broad range of clamping applications. In 1981, Clampco entered the computer age and soon sales, purchasing and inventory operations were computerized in addition to the usual administrative functions. At that time employees numbered twenty and the variety of different products supplied as well as the selection of parts kept in stock was increasing monthly.

In December, 1986, Clampco purchased a competitor, Specialty Products Co. formerly of Wickliffe, Ohio. This acquisition, along with internal changes in the sales department, spurred remarkable growth and industry recognition over the next two and one-half years. In the late 80's the company turned its attention increasingly toward the continued implementation of current quality control techniques, SPC in particular, and responded to the request of major aircraft companies to venture into the aerospace market.

Currently in the industrial and commercial sector, Clampco Products is a leading manufacturer of high quality heavy-duty clamps and couplings of almost all sizes. These T-bolt band clamps and V-Band couplings are utilized in the AUTOMOTIVE/TRUCK/OFF ROAD/CONSTRUCTION EQUIPMENT/Filtration/ PUMP/PIPE and DUCT/MARINE/ AIRCRAFT industries... wherever rubber hoses, plastic tubing, or solid objects, etc. must be fastened, joined or securely connected together. Clampco is presently supplying many well-known international firms throughout the world today and is actively pursuing certification as an ISO-9000 vendor.

After twenty-two years in business the work force numbers seventy-five well-trained and highly qualified employees. Competent, responsive sales and engineering departments are supported by state-of-the-art computer technology. Office, production and warehouse are now located in a new 54,000 square foot facility at 1743 Wall Road in Wadsworth. Clampco Products, Inc. is proud to remain a family-owned business which continues to meet the original goals of quality product, competitive pricing and personal, timely response to customers' needs.
To best serve our customers, NTN devotes all resources to a single objective: production of the finest quality ball and roller bearings. All of our plants use advanced processing and high speed automated production equipment, engineered and built by NTN, to support our capacity for ultra-high quality bearings. Our Statistical Process Control programs ensure that during the production run, every bearing produced meets or exceeds AFBMA and ISO standards. Electro-mechanical quality inspection is present at every phase of manufacturing.

NTN's rigid quality standards originated with the company in 1918, and is the basis for every product innovation and corporate decision made today. Let us solve your bearing problems -- call NTN today!

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NTN Bearing Corporation
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<th>MEETING DATE</th>
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<td>3-2-94</td>
<td>Rich Barthel</td>
<td>Parts &amp; Accessories</td>
<td>Variable Valve Timing</td>
<td>Awards Night</td>
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<td>4-12-94</td>
<td>Matt Jenks</td>
<td>Electronics</td>
<td>CARB/OBD II</td>
<td>Awards Night</td>
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<td>5-10-94</td>
<td>Les Asher</td>
<td>Fuels</td>
<td>Clean Fuels</td>
<td>Summer Safety</td>
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“DAYCO: A TRADITION OF TECHNICAL EXCELLENCE”

Since its beginnings in 1905 as the Dayton Rubber Manufacturing Company, Dayco has established a tradition as a leading manufacturer of belts, hose, and related systems and components. Worldwide facilities include 27 manufacturing plants, six technical centers, and 14 distribution warehouses.

Dayco’s global markets include automotive and industrial OEM and replacement markets, including agriculture, oil field, and off-road equipment.

AUTOMOTIVE PRODUCTS: accessory drive systems • V-belts • V-ribbed belts • timing belts • tensioners • coolant hose • power steering hose • air conditioner hose • fuel line hose • fan clutch assemblies • transmission oil coolers.

AGRICULTURAL AND INDUSTRIAL PRODUCTS: hose fittings • hydraulic hose and assemblies • V-belts • garden hose • vapor recovery hose • appliance hose • food and beverage hose • plastic hose • tensioners • synchronous belts • molded rubber products.

MEMBER HIGHLIGHTS

This page in the Chicago Section News is being devoted to people in our industry who deserve recognition for their accomplishments or involvement in a special event. The person’s employers, co-workers, or peers may submit information about the individual to the Editor of the Chicago Section News. Deadline for each issue is six weeks before the meeting date (but it is definitely permitted to send in News material earlier than that).

Donald L. Powell, with BSME and MSME from Ohio State University, has over 40 years experience in research, development and testing of engines, fuels, lubricants and driveline components. Don is now consulting on mechanical testing programs since retiring as President with AutoResearch Laboratories, Inc. (ALI). He has served on and led several committees and panels for ASTM and SAE, in which he has been a member for 42 years. He has authorized several SAE, STLE, and Institute of Petroleum (UK) papers on lubrication of hypoid gears.

Don’s career started with Amoco Research prior to joining Armour Research Foundation (IIT). In 1959 Don was a co-founder of ALI when the lubricants testing was removed from Armour. During the past year, Don has completed a new ASTM Standard Test Method for thermal stability performance of heavy duty truck transmission lubricants and has developed a full scale hypoid axle test stand for measuring the fuel efficiency of light duty truck axles and lubricants.
TESTING SERVICES AVAILABLE

- ENGINE DYNAMOMETER STANDS, UP TO 500 HP
- VEHICLE CHASSIS DYNAMOMETERS
- EMISSIONS, EXHAUST AND EVAPORATIVE
- FLEET TEST MANAGEMENT
- FUEL AND LUBE OIL ANALYTICAL TESTS

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