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HIGHLIGHTS...

- The Hydrogen Infrastructure
- Recap of September Meeting
- Caterpillar Tour
- Coffee Talk: Nissan's X-Trail
- The New Chrysler 300C
- Electronic Newsletter
- Message from the Chair

Dinner Presentation...

The Hydrogen Infrastructure

Presented by
Ray Hobbs

APS has been operating a pilot hydrogen refueling station for 2-1/2 years now. This last quarter, it was converted from a pilot hydrogen station to a hydrogen park concept integrated with renewable energy, photovoltaics, self-service refueling with credit card dispensing, electric generation by internal combustion genset and fuel cells.



Roy Hobbs (left) stands beside a hydrogen refueling station.

- Actual results of hydrogen production
- Hydrogen enriched natural gas as a vehicle fuel
- Hydrogen enriched natural gas as electricity generation fuel
- Engine emissions with hydrogen and hydrogen enriched natural gas
- Economics of hydrogen production against the DOE targets
- Overall assessment of the practicality of a hydrogen economy from an electric utility perspective

Hydrogen is the hot topic in alternative fuels. Ray will provide an overview of the technical challenges and real-world potential of this 21st-century fuel. You will not want to miss this informative presentation by a man who has been involved in the application of relevant technologies.

Ray Hobbs

Mr. Hobbs is a senior consulting engineer in the Technology Development Department at Arizona Public Service. He received his Bachelor of Science degree from the University of West Virginia in Aerospace Engineering and Mechanical Engineering. His education continued at the University of Oklahoma and New Mexico Highlands where he received a Masters in Business Administration in 1982, writing his master's thesis on the economic impacts of power plant availability. In 1984, he joined APS in the construction of the emission abatement facilities on Four Corners Coal Fired Generating Station Units 4 & 5. Since joining APS, Ray has worked in Generation Engineering, Finance and Budgets, Palo Verde Prudency Audit, Research & Development, and most recently in Technology Development for APS.

Ray has served as a consultant to Southwest Airlines for their ground support operations and DaimlerChrysler for their hydrogen, electric and hybrid electric vehicle program. He authored and co-authored numerous papers dealing with electric vehicle refueling and batteries; and has been a member of standard setting committees for both the Society of Automotive Engineers and the Electric Power Research Institute.

October CoffeeTalk... Nissan's X-Trail FCV

Thomas Dreumont, Research Engineer at Nissan Technical Center North America, will discuss Nissan's Fuel Cell Vehicle development activities in the U.S. As noted in last month's



Nissan's X-Trail Fuel Cell Vehicle

newsletter, Nissan is currently testing an X-Trail FCV with Nissan's exclusive Super Motor. Mr. Dreumont has been working on this program since its inception and is also working with other agencies regarding various regulatory issues associated with FCV's including re-fueling.

DATE	TIME	LOCATION	COST	With Dinner	Presentation Only
October 21	Social	- 6:00 pm	Holiday Inn (Phx Airport)	Members	- \$20 \$10
	Dinner	- 7:00 pm	44th St. & Washington	Guests	- \$25 \$10
	Presentation	- 8:00 pm	602-273-7778	Students	- \$10 no charge

RSVP by 2:00 pm Monday October 18. Call Bob Riley: 623-872-3475

Message from the Chair

What a wonderful start to another season for the SAE Arizona-Nevada section. Roy Gullickson brought us his vision and prototype for the new Packard Motor Car Company. His passion for this automobile has created a solid foundation for the re-introduction of the Packard name to the world. With the help of his wife Barbara, Roy put on an enjoyable presentation for all who attended, educating us all on the history of the Packard Motor Car Company and on his wonderful prototype for the future of the company. Thank you Roy for getting our season off to a roaring start.

Our Coffee Talk featured Bill Spragins and his 1929 Packard, Model 633, 7 passenger Limousine which was on hand for all to inspect and admire. His tale of how this particular Packard came back into being from a \$200 shell pulled from a junkyard was both entertaining and so familiar to any who have tried to put a project together from a bargain found in someone's yard. I too have a Thunderbird sitting in my garage that was purchased for a bargain price, but will consume many hours and dollars to put back into drivable condition. Thankfully, the reason so many of us take on projects such as these is not about money, but about having a passion for the wonderful vehicles that are part of the heritage of the SAE. Whether it be an automobile, boat, plane or old tractor, all of us know someone (or are that someone) who takes pride in building something back to what it was originally or modifying it to our own liking.

Our October meeting brings us a look at the future of consumer automobiles or more specifically, what will be powering them. Ray Hobbs is working with APS to develop the type of infrastructure that will be needed to refuel Hydrogen powered vehicles. With many automobile manufacturers investigating Hydrogen fuel celled vehicles, a distribution system will be necessary for consumer automobiles to be viable for the general public. This presentation will give us a look at what is being planned for the future of cleaner transportation and how it will work in people's everyday lives.

I want to give a big thanks to Howard Daudet for helping so much with the arrangements for the September presentation and for working out the logistics with Holiday Inn for getting our two automobiles in the conference room. Thanks also to Roy and Bill for bringing their automobiles to us and for their presentations. I also want to thank everyone who has supported me this year with encouragement and wonderful reviews of the meeting that we had. It is a privilege to be serving this Board and the members who contribute so much to the Arizona-Nevada section.

Kevin Willson, Chair



Kevin Willson in Dodge Viper.

Recap of September Meeting by Howard Daudet & Todd Zuercher

Wow! That is the first expression that comes to mind in attempting to review our 2004-2005 section season kick-off meeting! Coupled with our excellent coffee talk, it was like two meetings in one. The main program topic was a superb presentation of the new Packard Motor Car Company by its founder, President and Arizona/Nevada Section member Roy Gullickson and his charming wife and enthusiastic co-founder, Barbara.

Longtime attendee Bill Spragins began the evening with an entertaining tale of his 1929 Packard Touring Car's road to redemption. Complete with a slide show, Bill shared how his Packard was rescued from a junkyard in the 1960s and restored to near perfection under the watchful eye of his nephew. The car came to Arizona in the late 1970s and still resides in Bill's collection today.

Fast forward to the present, and sitting beside Bill's car in the ballroom was the prototype version of the planned Packard motor car of the future. The Gullicksons began their slide presentation with a history of the founding of the original Packard Motor Car Co. by James W and William D. Packard in 1900 first in Ohio as an outgrowth of the Packard Electric Equipment Co. The first Packard Car, however, was hand built in 1899. This was a one cylinder, high wheeler with the engine under the seat. Roy showed a slide photo of this car. In 1901 the company was moved to Detroit and the 1901 model was one of the first cars to replace the steering "tiller" with a steering wheel. In 1904 they adopted the famous yoke shaped radiator shell that became the characteristic trademark of the marque throughout its life. In 1915 Packard introduced the "twin-six", a V-12 engine of superb quality which remained one of the design highlights throughout most of the company's outstanding career.

The highlight of this presentation, of course, was the magnificent current prototype 4 door Sedan which Roy and Barbara were so kind to have on display for everyone present



Bill Spragins in driver's seat of his 1929 Packard as Paul Curry admires the instrument panel.



New Packard prototype with 1929 Packard in background.

to drool over. An outstandingly beautiful car with an advanced 525-hp V-12 engine and all the very latest features, including full "roll-cage" construction using full length, longitudinal and transverse members of extruded aluminum that tie the A, B & C pillars together at the top and frame rails at the bottom. An outstandingly crash-safe concept far beyond anything available on the market today. Even the accompanying photos do not render full justice to this 3750-lb vehicle.

Several years ago, Roy and Barbara acquired full rights to the remaining assets of the former Packard Motor Car Company, including rights to the name, trademarks, manufacturing and sales rights - Thus the NEW Packard Motor Car Co.



Left to right, Roy Gullickson, Barbara Gullickson Derek Logan, and Section Chair, Kevin Willson.

Caterpillar Tour Tuesday, November 9



Caterpillar facilities in Tinaja Hills near Tucson

Caterpillar will open their Tinaja Hills facilities to us for a guided tour on November 9th. The tour is limited to 50 people, so please RSVP early.

Covering some 6,200 acres, Caterpillar's Tinaja Hills demonstration and application area typically hosts more than 12,000 visitors a year for machine demonstrations, customer/dealer programs, and equipment training courses. The nearly 50,000 sq.ft. facility contains state-of-the-art conferencing auditoriums, classrooms and service training bays. An equipment fleet of over 70 machines provides a representative sample of Caterpillar's most popular models and the center's five different industry settings assure that they are featured in a familiar work environment as well.

We will meet in the parking lot of Fry's Electronics at 9:00 am on Tuesday November 9th and carpool to Tinaja Hills. To get to Fry's go south on I-10 and take the Baseline offramp, then make a short right to Fry's parking lot (west of the freeway). Fry's Electronics is visible from the freeway. Cost is \$5 per person. Please RSVP no later than 4:00 pm, Wednesday October 29.

RSVP: Kevin Willson at 602-470-2646.

Meet: Fry's Electronics parking lot on the north side of Baseline just west of I-10 - 9:00am Nov. 9.

Updates: <http://www.sae.arizona.org>

November Program... The New Chrysler 300C

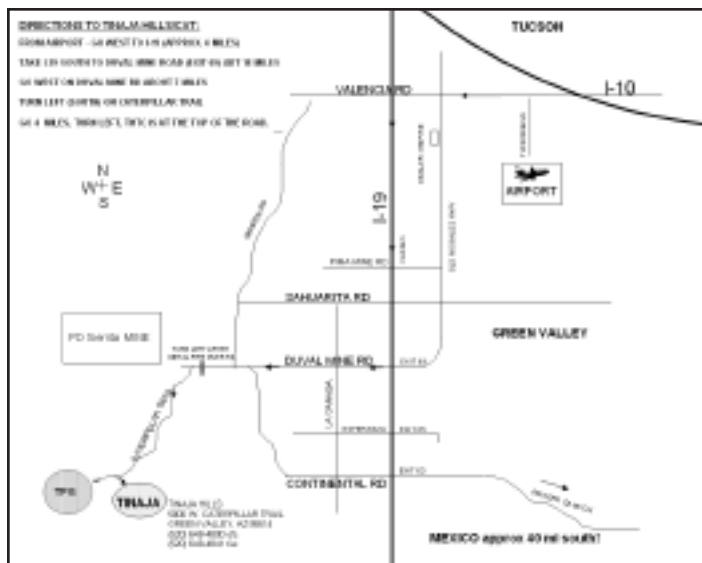
In November, Rich Powers from Chrysler will give a presentation on the new Chrysler 300C. The 300C is one of the most performance-oriented passenger cars Chrysler has ever released. With 85 more horses under the hood, the momentum continues for the Chrysler 300 and its HEMI® engine. In August, the Chrysler Group revealed the 425-horsepower 2005 Chrysler 300C SRT-8, which arrives in showrooms next spring.

"With a nearly 50 percent take rate, the HEMI is a critical ingredient to the success of the Chrysler 300," said Dan Knott, Director - Street and Racing Technology (SRT). "With the new 2005 Chrysler 300C SRT-8, we are now adding even more horsepower to the HEMI and even more performance to the Chrysler 300C"

Preliminary performance targets for the 300C SRT-8 are 0-60 mph in the low 5-second range and quarter-mile time in the high 13-second range.



The new 2005 Chrysler 300C



THE UNIVERSITY OF ARIZONA
Announces
THE 42nd ANNUAL
RELIABILITY ENGINEERING AND
MANAGEMENT INSTITUTE
November 15-18, 2004
In Tucson, Arizona

INSTITUTE OBJECTIVES

To provide all engineers, and particularly Reliability Managers and Engineers, and Product assurance Managers and Engineers in government and Industry, with a working knowledge of Reliability Engineering Theory and Practice; Mechanical Reliability Prediction; Reliability Testing and Demonstration; Accelerated Testing; Failure Analysis Techniques; Complete Industry Product Assurance; Maintainability; Quality Management; Concurrent Reliability; World Class Manufacturing Techniques; Variability Reduction; Customer Satisfaction Strategies plus many more! Numerous practical applications of these methodologies will be presented. This Institute will also prepare and help participants with their ASQ CRE Examination.

STAFF

Dr. Dimitri B. Kececioglu, Professor of Aerospace and Mechanical Engineering, Professor-In-Charge Reliability Engineering Option, The University of Arizona, Fulbright Scholar, Internationally Renowned Educator, Reliability and Maintainability Consultant, and the Director of this Institute, plus 10 speakers from 15 sponsoring industries will take part in expertly covering the subject matter of this Institute.

For Detail and Technical Information, Please Write To:

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Meeting Schedule

November 18 - The New Chrysler 300C
December - No Meeting
January 20 - Ford Escape Hybrid
February 17 - Automotive Tire Technology & Testing
March 17 - Harley Davidson Motorcycle
April 21 - The Boeing 7E7
May 19 - Product Liability Issues

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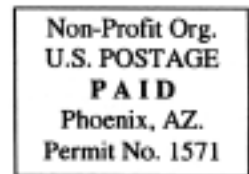
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