

***** *New Meeting Location* (Page 3) *****

Section Web Site: www.saearizona.org - Sign up for your newsletter on our website.

HIGHLIGHTS...

- Sea Launch Vehicles
- Message from the Chair

- Recap of September Meeting
- Biodiesel by DaimlerChrysler
- Las Vegas/November Meeting

- A World In Motion
- Maps for New Meeting Location

Dinner Presentation...

Sea Launch Vehicles by Dale Ambrose

Sea-Launch is a consortium of 4 international corporations who work together to launch Satellites into a Geostationary transfer orbit above the earth using an ocean-going rocket launch platform. Sea-Launch is based in Long Beach, California and is one of the most unique Corporations in the World.



Launch of JCSAT-9, courtesy of Sea Launch

They launch to all inclinations from a single launch pad and their equatorial launch site provides the most direct route to orbit, offering maximum lift capacity for increased payload mass or extended spacecraft life.

On April 12, 2006 they launched the JCSAT-9. They successfully delivered the 4401 kg (9,703 lb) spacecraft to GTO, on its way to a final orbital position of 132 degrees East Longitude. Built by Lockheed Martin, the A2100AX satellite joins JSAT's nine orbiting satellites, providing communications and broadcasting

services to businesses throughout Asia.

Sea Launch is now preparing for their next mission, the launch of the XM-4 broadcast satellite, planned for October. XM-4 is the 4th Boeing 702 spacecraft manufactured at the Boeing Satellite Development Center in El Segundo, California - and orbited by Sea Launch - for XM Satellite Radio. The high-power S-band satellites have Digital Audio Radio Service (DARS) payloads built by Alcatel Alenia Space, in France, to broadcast state-of-the-art digital radio programming directly to cars, homes and portable radios throughout the continental United States and Canada. Designed for a 15-year lifespan, the XM-4 satellite will have 18 kilowatts of total power at the beginning of life on orbit. Sea Launch's previous XM missions were successfully completed in March 2001, May 2001 and February 2005. Sea Launch will carry live coverage of the mission via satellite, as well as streaming video on their website, <http://www.sea-launch.com>.

DALE AMBROSE

Dale Ambrose graduated from the University of Arizona in 1986 with a BS in Mechanical Engineering. His first engineering position was with Hughes Aerospace where he did design work on the AMRAAM guided missile launcher. He then went on to work for Space Data Corporation (Orbital Sciences Corp) developing sub-orbital launch vehicles. In 1992 Mr. Ambrose joined Motorola as one of the lead Mechanical Engineers in the development of the Iridium Communication Satellites. In addition to his design work on Iridium, Dale spent 2 years traveling the globe (incl China and Russia) supporting launches of 66+ Iridium satellites into orbit above the earth. Mr. Ambrose joined Sea Launch in 2005 as a Senior Launch Processing Engineer.

DATE	TIME	LOCATION	COST	With Dinner	Presentation Only	
Oct. 19	Social	- 6:00 pm	Hilton Phoenix Airport	Members	- \$22	\$10
	Dinner	- 6:30 pm	2435 S. 47th St, Phoenix-85034	Guests	- \$27	\$10
	Presentation	- 7:30 pm	480.894.1600	Students	- \$10	no charge
RSVP by 2:00 pm Monday October 16.			Call Donna Miranda: 602.364.7456			

Message from the Chair

The section had its first dinner meeting at the Hilton Phoenix Airport and it went off without a hitch. The hotel staff was very helpful and friendly in accommodating our special needs. It's been awhile since I've heard so many positive comments regarding the food served at our meetings. We enjoyed roast beef with mashed potatoes and a side of vegetables.



Dave Vasquez, Section Chair

Of course, my favorite part was the cheesecake for dessert!

Before our presentation began, we took a few moments to recognize the outgoing Chairman, Allan Watts. Allan was presented with two items in recognition and appreciation for his work as Chair. The first was a framed certificate from SAE Headquarters signed by the current and outgoing SAE International President. The second was a plaque from the Arizona Section, adorned with our fantastic new logo and a few words of thanks. The board wishes Allan all the best and hope he's able to stay involved in the Arizona section.



Dave Vasquez (left) and Allan Watts (right).

We're glad so many members and students were able to join us for Wulf Grote's presentation on Light Rail. Wulf has been working in the transportation area for more than 20 years and had a good insight into the inner workings of our rail system. In particular, Wulf's been very involved in the building of the new light rail bridge across Tempe Town Lake and we were treated to a few glimpses of what's to come. I'd like to thank all the board members who helped coordinate and make this dinner a success, in particular Bill Gest, Cathleen Gary, Josh Rudin, Howard Daudet, Derek Logan, John Lester, Allan Watts, Kevin Willson and Bob Riley. Most importantly, I'd like to thank our members and students for attending and providing us feedback. We've got some excit-

ing topics planned for future dinner meetings and I hope you'll be able to attend!

Dave Vasquez
Section Chair

Recap of September Meeting by Dave Vasquez

September's presentation was given by Wulf Grote from Valley Metro Rail. Wulf has worked in the transportation industry for over 20 years and provided the group with an excellent presentation on the new 20 mile Light Rail system being constructed in Phoenix.

The 20 mile route will start in downtown Phoenix and go past the airport on Washington Ave. Initially, it will not connect directly to the airport, but will have a connection point at 44th St. and Washington. This connection point will allow passengers to catch a bus service to the airport, until a tentatively planned people mover is installed in and around the airport. The project is currently 80% complete relocating utilities along the track and a one mile test track is scheduled to open in December 2006.

Just south east of the test track is the new light rail bridge across Tempe Town Lake. The attendees were treated to a few special pictures, including a look at the first train to be made in Japan and the to-be illumination planned for the new Tempe Town Lake light-rail bridge. The pictures were followed by animations and videos, giving us a glimpse at the to-be operation of the system.

One interesting discussion centered around the light rail stations - specifically, how the facility was designed and planned. Arizona State University contributed to a study showing how certain types of materials can increase the temperature at the station by 40-50 degrees. Additionally, positioning the roof structure in a certain pattern allowed for maximum shade and ventilation, while minimizing materials. It was impressive to see so much effort went into something as a light rail station stop.

A train can consist of three cars linked together, holding up to 600 people. It includes features such as air conditioning, low floors for easier access and each vehicle can hold up to four wheel chairs and four bikes. Instead of a side mirrors, the buss will be equipped with exterior video cameras for incident recording and safety. The light rail track has been equipped with a new traffic control system that will help give priority to the train, when possible.

With 20 miles installed in just a few years and an additional 57 miles planned by 2026, how will these cars be maintained? A new facility has been built just east of the airport and will be the central point for repairs and installation of the light rail vehicles. There are currently no light rail vehicle manufactures in the U.S. and the vendor for the Phoenix



Wulf Grote (left) and Dave Vasquez (right).

line is located in Japan. Each train car is built with a certain number of U.S. components and then shipped in three parts to the US for installation.

I'd like to thank Wulf for taking time out of his busy schedule to help us learn more about the light rail system. I'd also like to thank his staff for helping iron out all the wrinkles. We hope to see Wulf again in the future....

Biodiesel by DaimlerChrysler

Modern, clean diesel engines will be a cornerstone of America's energy solutions, and clean, renewable biodiesel fuel will be critical to the success of diesel-powered vehicles in the U.S. market, a DaimlerChrysler executive says.

DaimlerChrysler will continue to expand its lineup of diesel-powered vehicles in the coming months, at the same time it broadens its programs to educate the American public on the benefits of home-grown biodiesel fuel.

Loren Beard, Senior Manager of Fuels for DaimlerChrysler in Auburn Hills, Michigan, addressed a conference on the fuel savings, air quality, and health benefits of biodiesel in Washington, D.C. (hosted by capital-area chapters of the American Lung Association and the National Biodiesel Board). Beard reported that B20 (20 percent biodiesel blend in conventional diesel fuel) can reduce particulate matter emissions by up to 15 percent.

Technology advances in the past two decades have improved the power, performance, efficiency and emissions of diesel engines. As a result, today's modern, clean diesel engines produce 80 percent reduction in particulate emissions and 70 percent reduction in NOx emissions at the same providing 50 percent more power and 30 percent more torque – which we experience as "pickup" time or performance.

DaimlerChrysler will market five diesel-powered passenger vehicles in the U.S. in 2007: Jeep Grand Cherokee CRD sport-utility vehicle with 3.0-liter diesel engine;

Mercedes-Benz E320 luxury sedan with 3.0-liter engine and BlueTec emissions technology; and three new Mercedes-Benz utility vehicles, R320 CDI, ML320 CDI, and GL320 CDI. In addition, the Dodge Ram pickup and Dodge Sprinter van are also equipped with diesel engines for the U.S. market.

Section Meeting in Las Vegas Wednesday: November 1, 2006

Are you going to the SEMA convention in Las Vegas this year? Join the Arizona-Nevada SAE section in a dinner meeting (6:30 pm to 9:30 pm). Our meeting is planned to be at the Greek Isles Hotel and Casino which is just two blocks away from the Specialty Equipment Manufacturers Association (SEMA) convention. Menu includes Rosemary chicken.

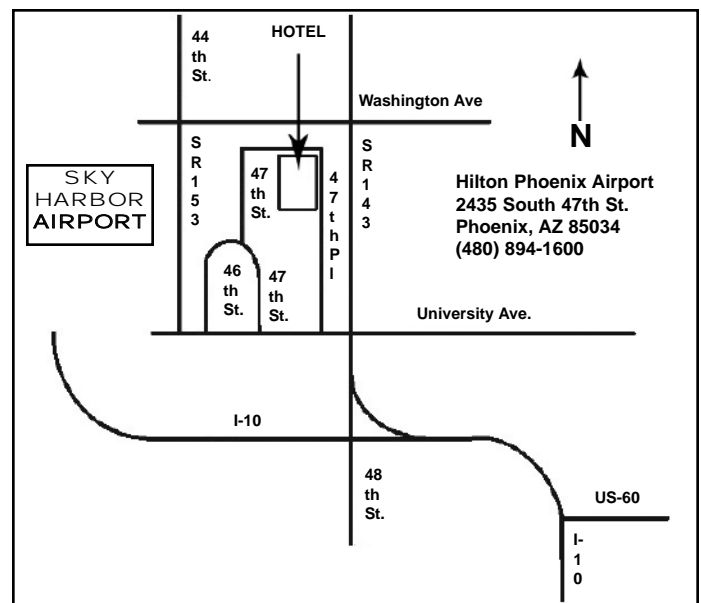
This is a great opportunity to meet with SAE members from Nevada and across the world who are attending the SEMA. We are finalizing our speaker plans, but plan on a great presentation.

Please make your reservations by 10-15-06 by contacting Bill Gest via his e-mail at Bgest@Esgeng.com or by calling Donna Miranda at 602-364-7456.

A World In Motion

A World in Motion has been set up to enlighten youngsters about careers in science and engineering. Demand has been high--engineers are needed to go to local schools for a one-hour presentation. Please contact Joshua Rudin at 602.369.6487 for more information.

**** New Meeting Location ****



*Meeting will be on the 2nd Floor, in the room named ****Palo Verde*****

THE UNIVERSITY OF ARIZONA ANNOUNCES:

The 44th Annual Applied Reliability Engineering and Management Institute provides all engineers, and particularly Reliability Managers and Engineers, and Product Assurance Managers and Engineers in government and Industry 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 Techniques; Maintainability; Customer Satisfaction, Strategies to provide the tools required to design, test and manufacture products which are highly reliable with minimum if any product recalls, easy to maintain, safe and less costly to operate, and sold at globally competitive prices, plus many more! Numerous practical applications of these methodologies are presented. This Institute will also prepare and help participants pass their ASQ Certified Reliability Engineer (CRE) Examination.

THE 44th ANNUAL APPLIED RELIABILITY ENGINEERING AND MANAGEMENT INSTITUTE
November 13-16, 2006

Clarion Hotel, Tucson Airport
6801 S. Tucson Blvd.
Tucson, Arizona 85706
520-746-3932 or 800-526-0550

Registration Fee: \$1500 Proceedings Cost: \$50

For Details and Technical Information, please write to:
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Please pursue his website at: <http://www.u.arizona.edu/~dimitri>



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ARIZONA-NEVADA SECTION: Meeting Schedule

October 19	- Sea Launch Vehicles
November 1	- Special Event, Las Vegas, Nevada
November 16	- Alternative Fuels, E85
December	- NO MEETING
January 25	- Infinity G35 Sedan

Dave Vasquez Chair 602-616-8180	Bill Gest Vice Chair bgest@esgng.com	Josh Rudin Secretary 602-369-6487	John Lester Treasurer 480-733-6532	Robert Riley Newsletter Editor 623-872-8010
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