SAE International®

NOVEMBER 2003

ARIZONA-NEVADA SECTION NEWSLETTER

NEXT MEETING NOVEMBER 20

HIGHLIGHTS...

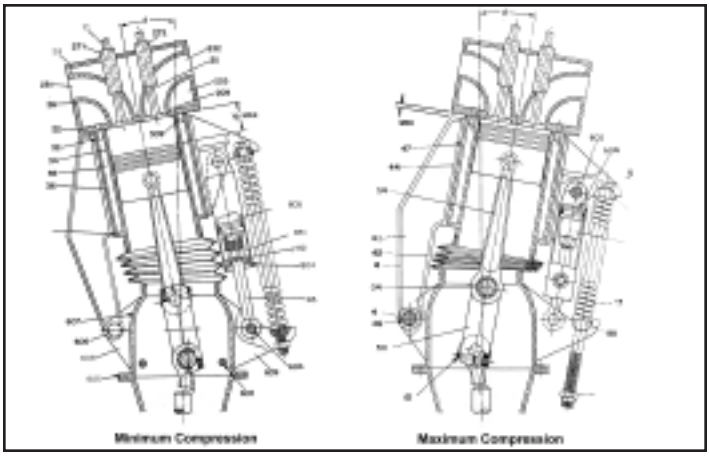
Dinner Presentation...

Intellectual Property

Presented by
Allan W. Watts

Engineers and designers are often confronted with intellectual property issues, yet most of us know little about this complex and interesting field. Our program for November should help clear up some of the confusion and misinformation; and much has changed since the General Agreement on Tariffs and Trade (GATT).

Allan Watts, an Intellectual Property attorney, will be addressing members on the protection of ideas, including patents, copyrights, trademarks, and trade secrets. He will address the type of ideas that can be protected, how to assure that your ideas are protected, and how to avoid infringing the rights of others. Mr. Watts will also discuss how to use intellectual property to generate business and attract investors, and how to use available resources to take full advantage of ideas generated by others.



Larson patent drawings for a variable compression ratio engine.

Allan W. Watts

Mr. Watts is an Intellectual Property attorney with Snell & Wilmer, and his practice includes counseling clients in intellectual property management and strategic planning, preparing and prosecuting US and foreign patent applications, preparing licensing agreements, and litigating or otherwise resolving disputes involving patents, trademarks, trade secrets, copyrights, and technology.

Mr. Watts has worked with a variety of technologies including automotive, medical devices, aerospace applications, power generation, alternative energy, hydraulics, pneumatics, materials, controls, software, Internet systems, and business methods.

Mr. Watts is a registered Professional Engineer, and before attending law school at ASU, Mr. Watts was a mechanical engineer and Chief of the Power Generation Branch with the US Bureau of Reclamation. Mr. Watts has a BSME degree from ASU, and was the Vice President of the student section of SAE during his undergraduate studies.

DATE	TIME		LOCATION	COST	
Thursday	Social	- 6:00 pm	Holiday Inn (Phoenix Airport)	Students	- $10
November 20	Dinner	- 7:00 pm	44th St. & Washington	Members	- $18
	Presentation	- 8:00 pm	602-273-7778	Guests	- $19

***RSVP by 2:00 pm Monday November 17. Call Robert Q. Riley: 623-872-3475**

Message From the Chair.....


Todd Zuercher

Warmer than expected October temperatures didn't deter a great group of attendees from making the trip to the Holiday Inn for another fabulous dinner meeting held on Thursday, October 16th.

Our own Max Rumbaugh gave a well-illustrated review of a recent trip to the Intelligent Vehicle Conference held in San Diego, CA. The participants at this conference went on a tour of San Diego freeways in passenger buses that traveled without driver intervention. Rumbaugh's talk, laced with humorous anecdotes, gave many of us our first look at what promises to be a very viable technology in the future.

Our main presentation, "Engineering Simulation Tools", could have by most accounts been considered an educational session. Martin Martinez and Carl Poplawsky from the ESA Corporation are experts in the field of structural, thermal, and dynamic analysis. Martinez and Poplawsky gave an excellent review of the capabilities of various tools, along with some computer simulations of the tools at work. These guys definitely know their stuff! A special thanks to board member Paul Curry for arranging the presentation.

November brings a much anticipated duet of presentations. Our newsletter editor, Bob Riley, recently completed a model of the 1902 Wright Brothers glider and delivered it to a California museum for display. Bob's coffee talk will give us an overview of how and why he built this model.

Following this presentation, Allan Watts of Snell & Wilmer will be giving a presentation on patents. This is a topic of great interest to nearly every engineer that I know! Allan is a member of our local section and is a registered Professional Engineer in addition to being an attorney.

Our dinner meeting schedule for the year is nearly firmed up at this time. We are also working on scheduling some tours that should prove to be interesting and informative for our membership.

I look forward to seeing you all at our November meeting.

Todd Zuercher

Recap of October's Meeting

by Paul Curry

Carl Poplawsky and Martín Martínez, both of Engineering Science Analysis Corporation (ESA), gave attending SAE members insight into the capabilities of the latest in computer aided engineering (CAE) software. Carl's part of the presentation showed how new thermal simulation software enables the engineer to treat even very complex systems with all forms of heat transfer modes. One notable item was the convenience of some codes that have tabulated fan curves for electronics packaging analysis. Carl discussed the break-through of new desktop (personal computer) software that combines computational fluid dynamics and heat transfer. This is a remarkable feat of software and hardware engineering, something that many of us wouldn't have dreamed of ten years ago.


Carl Poplawsky and Todd Zuercher


Martin Martinez and Todd Zuercher.

Martín discussed some of the exotic analyses that can be done with the latest in structural/dynamic finite element packages. Demonstrations were shown of air bag inflations, turbine rotor burst, blade-out and containment, large dynamic deformations of structures, and interaction of a test dummy with a vehicle air bag. The model involving the dummy and the vehicle structure was notable in that it was well correlated to test data and was then used to predict occupant responses with variations in the vehicle airbag design. That work was done under a grant from NASA.

Both Carl and Martín made the case that the tools that engineers now have available are best used to reduce time to market and increase profitability. Here is a poignant reminder that for the United States to remain competitive in the global marketplace, we need to continue to strive for improvements in our business processes. Use of the right CAE tools by well-trained engineers is part of how we can succeed in this endeavor.

For more information on CAE tools, training, engineering and design services, Carl and Martín can be reached at 480-460-3727 in Tempe Arizona, or visit the ESA website at www.esacorp.com.

Special thanks to Max Rumbaugh who gave us a

Coffee Talk update on autonomous vehicle control work done in California. Max showed us how transit busses have been instrumented for autonomous operation with a driver supervising the testing. Advantages touted for the technology are:

Max Rumbaugh, October's Coffee Talk speaker

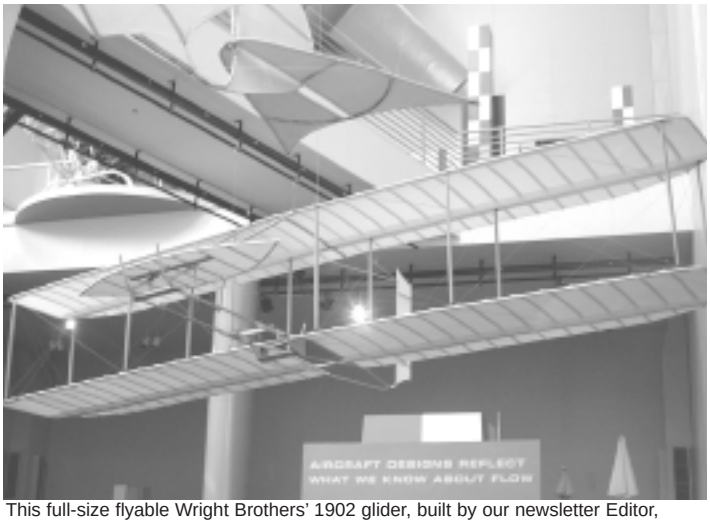
- Higher traffic density with controlled and safe following distances
- Less lane width required for dedicated high occupancy vehicle (HOV) lanes due to excellent vehicle directional control. This can markedly reduce cost of new roadways, especially overpasses.
- Improved accessibility with docking at raised transit platforms. The vehicle controller enables repeatable and highly accurate docking (eliminates vehicle damage due to impacting curbs) and also eliminates the need for wheelchair lifts on the busses. Also improved is loading/unloading cycle time, especially with people who use wheelchairs.
- The technology can enable flexible mass-transit solutions by grouping a number busses in series to provide the functionality of light rail, but with markedly less infrastructure costs. The key to this solution is dedicated HOV lanes.
- Autonomous vehicle control has been implemented to aid in snow removal on roadways. The advantage is proper vehicle guidance to avoid unseen hazards, such as guardrails.

Sign up to Receive Your Newsletter by Email

Beginning this month, we will make a gradual transition to an electronic Newsletter. Members who subscribe will receive a monthly email containing a link to the newsletter. Simply click on it to receive your newsletter. To subscribe, go to: http://www.saearizona.org/newsletter/ and click on the appropriate link.

In the September newsletter, the cost to provide printed newsletters by mail was listed as $3,000 per year. Since then, we received notification that our printing costs will nearly double this year due to an increase in paper prices.

November Coffee-Talk... The 1902 Wright Glider



This full-size flyable Wright Brothers' 1902 glider, built by our newsletter Editor, Robert Q. Riley, recently went on permanent display at the California Science Center in Los Angeles.

This year is the 100-year anniversary of powered flight. By transcending human limitations, the Wright Brothers opened the door to new capabilities and ushered in new ways of thinking and new ways of being for all the world's inhabitants. When their powered Flyer took to the air on December 17, 1903, it also gave flight to human possibilities that had never existed before. Only 66 years later, Neil Armstrong and Buz Aldrin touched down on the surface of the moon.

Our newsletter Editor, Bob Riley, recentlly completed a full-size flyable replica of the Wright 1902 glider for the California Science Center in Los Angeles. Some 30 years ago, when he flew a previous replica, he was the first to actually fly a 1902 Wright glider since the Wright Brothers experiments. Bob will give us an overview, along with photos, of the experience of building and flying a Wright glider.

The Wrights built two other gliders, one in 1900 and one in 1901, and neither of them worked very well. The design of the 1902 glider was based on their wind tunnel discoveries. So when they returned to Kitty Hawk in 1903, after successful gliding experiments in 1902, they were confident that they would fly. They had already made over 1,000 successful gliding flights the year before with their 1902 glider - "all under perfect control of the operator" wrote Wilbur.

Ad Section to Appear in Newsletter

A special advertising section will appear in our newsletter from now on. Ads will be accepted on the basis of their relevance to SAE members. For more information and advertising rates, please go to:
http://www.saearizona.org/newsletter/

THE UNIVERSITY OF ARIZONA

Announces

THE 41ST ANNUAL
RELIABILITY ENGINEERING AND
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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 15 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 20	- Patent Law: Protecting Your Ideas
December	- NO MEETING
January 15	- Advances in Road Surfaces Technology
February 10	- Retractable Hardtop Technology
March 18	- Aerospace Professionals Rountable (tentative)
April 15	- Program to be determined
May 20	- Program to be determined

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