



# SKIDEMARKS



STONE AGE PILE-UP

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THE BOARD BEAT

Courtesy of Kent E. Boots

**2010 Conference:**

It seems like we were just in the planning stages for the 2010 Conference, but now it is time to start thinking about 2011. This year's conference was held October 14<sup>th</sup>-16<sup>th</sup> at the Embassy Suites Lake Tahoe Resort. This was our location for the 2006 Conference. In 2006, the hotel was under renovation so it was nice to see the completed renovations. Interestingly enough, our 2006 conference set the record as our highest attended conference with 121 registrations while this year's conference was our lowest with 64 registrations. For more information on the conference presentations, please see the conference review located on Page 5.

**2010 General Membership Meeting:**

The meeting was held on Friday morning. The first order of business was the Board of Directors elections. In the past, we have always extended an offer to members to request absentee ballots; usually with little or no results. This year, for the first time, we included an absentee ballot in the newsletter prior to the election. Of the 64 registrations, 53 were active members and eligible to attend the general membership meeting. There were 19 absentee ballots received and 42 ballots were received during the meeting for a total of 61 ballots. We currently have approximately 250 active members. Chris Kauderer ran unopposed and was elected to the position of Chairperson. Sean Shimada and David Heinbaugh were both elected to another two year term as directors-at-



Kent E. Boots  
Chair

Chris Kauderer  
Vice-Chair

Jahna Beard  
Director

David Heinbaugh  
Director

Sean Shimada  
Director

David Cameron  
Director

John Crews  
Director

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large. Conference finances were discussed during the meeting and, although the final numbers are not complete, it appears the conference did not cost the organization any money.

It is with some level of disappointment that this is the last "Board Beat" I will be writing to you. The end of 2010 marks the end of my service on the CAARS Board of Directors. I volunteered (I think there was some "arm twisting" involved) to be on the Board of Directors nine years ago. I have served as Director-at-large, Vice-Chairperson, and for the last four years as Chairperson. It is hard to believe how much the organization has grown during this time. I encourage each of you to become involved in the association. It is easy to sit back and simply enjoy the training that is offered. But is also very rewarding to be part of the process.

I owe a special debt of gratitude to the board members and administrative staff I have served with both past and present. I wish the best of luck to Chris Kauderer and the future Board of Directors as they "steer" the CAARS organization in the future.

**The Future:**

I wish everyone a Merry Christmas (or whatever holiday you celebrate) and a Happy New Year.

That's all,

*Kent*

## NEW TECHNOLOGY IN THE NEWS

### New Sensor from Continental Increases Pedestrians' Chances of Survival in an Accident

Pressure sensors in the bumper reliably detect accidents involving pedestrians and activate the safety systems in the vehicle's body

Embedded hose sensor developed by Continental Automotive.



Press Release Source: Continental, Tuesday October 12, 2010, 9:00 am EDT; Auburn Hills, Michigan, Oct. 12 /PRNewswire/ — In 2009, more than 4,000 people lost their lives in pedestrian/motor vehicle accidents across the United States. Another 59,000 pedestrians were injured. International automotive supplier Continental today introduced a unique pedestrian protection system that fundamentally enhances the protection of pedestrians on the roads. The system features a novel type of air hose connected to two pressure sensors which builds flexibly into the bumper.

"The sensor reliably recognizes collisions with pedestrians and supplies the safety systems with the information they need to trigger protective measures," said Scott Morell, passive safety engineering director for Continental's North American region. Within 10-15 milliseconds of an impact, the active hood of the vehicle is triggered and raised by special actuators. This prevents the pedestrian who has been hit from being severely injured or killed by the impact with the hood and underlying engine

block. The extra space provided between the hood and engine can considerably mitigate the consequences of the accident.

**In a collision, sensors detect the change in pressure in the plastic hose**

Until now, fiber optics or acceleration sensors have been used as the sensors for detecting collisions with pedestrians. The pressure hose sensor, which Continental has developed in partnership with Daimler, is a new system offering a range of advantages. For example, it is easy to integrate into any vehicle because it can be flexibly adapted to the shape of the chassis. "This means that there are no restrictions on vehicle developers if they alter a vehicle's design – as part of a facelift, for example," said Morell. "What's more, the system's technology is extremely robust and offers high resolution and strong signal quality, which boosts the reliability of crash detection."

The crash sensor consists of a hose that is laid across the entire width of the car in its front bumper. The hose is situated directly behind the foam block that is fitted at the front of the vehicle to absorb energy. Standardized pressure sensors are installed at either end of the air-filled pressure hose. The same type of sensor is used to activate side-impact airbags. When a vehicle collides with an obstacle, the resulting pressure exerted on the hose through the front bumper and foam block creates a typical waveform that is detected by the two sensors at the ends of the hose and forwarded to an airbag control unit. Crash algorithms in the analysis software and speed information from the vehicle's information network enable the type of collision to be identified in a hundredth of a second. The signal relay time even allows conclusions to be drawn about the location of the impact, for example the front right-hand corner or the middle of the

(This article is continued  on the next page...keep on reading.)

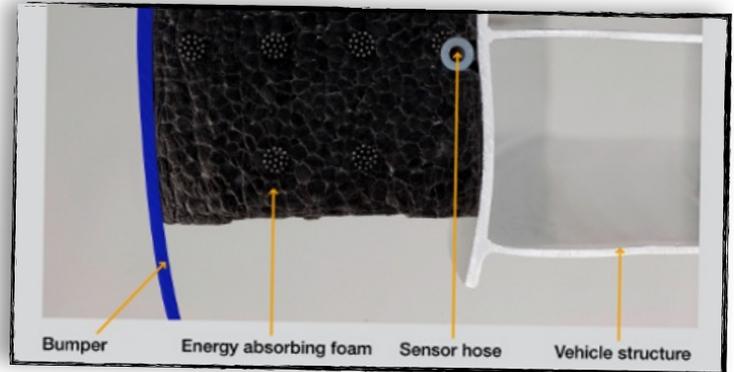
NEW TECHNOLOGY IN THE NEWS

*New Continental Sensor — Increased Pedestrian Survival*  
(continued from previous page)

vehicle. This enables the rapid activation of protection systems, which are most effective in accidents in urban traffic with a pre-crash speed of no more than 34 mph and a crash speed of between 12 and 18 mph.

Particular challenges for the sensor system include reliability and the ability to detect a collision between the vehicle and a pedestrian – regardless of whether the person is a small child or a grown man. The sensors must, with the highest degree of reliability, ascertain 'no-fire' situations in which the protection systems must not be activated under any circumstances. Such situations include bumping the curb with the front spoiler or hitting a small animal.

With sales of approximately 20 billion Euro in 2009, Continental is among the leading automotive suppliers worldwide. As a supplier of brake systems, systems and components for power trains and chassis, instrumentation, infotainment solutions, vehicle electronics, tires and technical elastomers, Continental contributes to enhanced driving safety and global climate protection. Continental is also a competent partner in networked automobile communication. Continental currently employs approximately 143,000 in 46 countries.



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## CONFERENCE REVIEW

*Courtesy of Chris Kauderer*

The 12<sup>th</sup> Annual CAARS Conference was held October 14-16, 2010, at the Embassy Suites in South Lake Tahoe, California. The general theme of the conference was “Fundamentals of Energy and Crush Analysis.” The keynote speakers were John Daily of Jackson Hole Scientific in Wyoming, Nathan Shigemura of Traffic Safety Group in Illinois, and Dan Vomhof III of 4N6XPRT Systems in Southern California. All three speakers have given presentations on the subject matter multiple times throughout the United States.

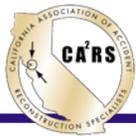
The opening day of the conference started with John Daily and Nate Shigemura discussing the basics of an energy based analysis. In addition to reviewing some fundamental concepts: Principle of Conservation of Energy; Kinetic Energy; Potential Energy, Hooke’s Law, they both discussed in detail when it was appropriate to use an Energy based approach rather than a Momentum based approach and when it was appropriate to use a combination of both approaches in order to arrive at a higher confidence level in your final solution and conclusions. The afternoon session started with a presentation by John Daily entitled “Adjusting Drag Factors for Special Circumstances.” This presentation was very informative and included a detailed example of a spin analysis.

The approach presented by Daily was a little different than I had seen before in that instead of determining the average resultant drag factor of the entire spin by analyzing the slip angle of each segment and then subsequently making one speed calculation based on the resultant drag factor, this approach calculated the speed of each segment based on the slip angle of each segment and then used the combined speed formula to calculate the speed at the start of the spin. Nate Shigemura finished the day discussing crush measurement techniques and protocols. He reviewed measuring techniques for frontal, rear and side crush. He talked about the different nuances and common pitfalls of each. He also discussed hand measuring crush with tape measures versus measuring the crush with a total station or scanner.

The morning of the second day Daily and Shigemura discussed how to calculate Delta-V and impact speed using crush and energy approach. Each of the variables used in the respective equations were explained as were the different pros and cons in executing the calculations (by hand, calculator, AR program, etc). The uncertainty and confidence level of the respective equations was also discussed. The afternoon of the second day, Dan Vomhof III took the stage. He shared with the attendees his vast experience and expertise on the subject matter of “Researching and Calculating Vehicle Stiffness Values.” Vomhof talked about methodologies in “mining data” from the NHTSA crash tests and subsequently using accepted formulae to calculate your own stiffness values. He also talked about the value of other sources to obtain stiffness values rather than calculating them yourself. Vomhof shared with the attendees a wealth of data and reference resources.

The final day of the conference brought two more interesting presentations. Nate Shigemura gave a presentation on “Balancing Collision Forces” Shigemura discussed Newton’s Third Law of Motion — Equal and Opposite Forces — and how that fundamental law of physics can be applied to collisions where the reconstructionist has reliable stiffness values for one vehicle but not the other. A good example being a T-bone accident where the front of one vehicle strikes the side and axle area of the other vehicle. Daily gave the final presentation of the conference “Tires and Tire Forces.” Though the presentation was off topic from the rest of the presentations offered during the conference, it was very well received by the attendees. Daily shared a multitude of photos of different skid marks and tire marks and offered explanations of how each were generated.

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# CALIFORNIA ASSOCIATION OF ACCIDENT RECONSTRUCTION SPECIALISTS

## CAARS WELCOMES NEW MEMBERS!!!

Richard Lee Buss, Jr.  
San Bernardino County Sheriff

Mark L. Foster  
Private Reconstructionist

David Penkava  
Jackson County Sheriff

Demetrick Caballero  
Morgan Hill Police Department

Robert Hill  
Los Angeles County Sheriff

James Pinkston  
Biomechanical Analysis

Rich Celli  
Santa Rosa Police Department

Shawn Holzberger  
Ventura County Sheriff

H. Ronald Sawl  
Fresno County Sheriff

Daniel Dail  
Los Angeles County Sheriff

Jeff Klinzing  
Elk Grove Police Department

Matt Tomlin  
Santa Rosa Police Department

William Dawson  
California Traffic Specialists

Loren M. Machado  
Ventura County Sheriff

Michael Tuttle  
Salt Lake City Police Department

Scott Dickerson  
Danville Police Department

Daniel McLain  
Orange County Sheriff

Gary J. Vencill  
Oregon Department of Justice

Chris Dyrby  
Stanford University Research Engineer

John Weaver  
Clovis Police Department

NEW MEMBERS SINCE JULY 1, 2010

## CONFERENCE REVIEW

*Continued from Previous Page*

The reviews of the conference submitted by the attendees revealed they believed the speakers were very knowledgeable in the subject matter and wished the time they spent with us could have been longer. The Embassy Suites proved once again to be a popular venue. Overall, the reviews were very positive with the attendees reporting they thought the technical content and the conference venue ranged from above average to great.

In addition to the speakers, the vendors who were present, and to the companies and individuals who donated prizes to the raffle, I would also like to thank the Conference Committee for their hard work — especially Jahna Beard, for her efforts with registration; Dave Heinbaugh for coordinating the vendors; and Kent Boots for handling not only the contract with the hotel, but also preparing the Conference binders and CDs.

The planning for the 2011 Annual CAARS Conference in Southern California is already underway. If you have any suggestions for location or speakers please contact us.

Regards,

*Chris Kauderer*



## NEW TECHNOLOGY IN THE NEWS

### *Continental's Emergency Steer Assist helps drivers when there's no time left for braking*

6/14/2010 — The system supports obstacle-avoidance maneuvers. Interaction between radar sensors, chassis systems and electric steering. Initial development stage expected to reach production readiness in two to three years.

Frankfurt am Main, Germany. With the development of Emergency Steer Assist, Continental, the international automotive supplier, is pursuing an entirely new approach to accident-prevention driver assistance systems. "Many of the systems in use today are restricted to intervening in the longitudinal dynamics, Emergency Steer Assist is the lateral dynamics complement to Emergency Brake Assist," said Dr. Peter Laier, Vice President of the Chassis Components business unit of the Chassis & Safety Division. "If the driver of a vehicle traveling at high speed has gone beyond the last possible point where braking would have an effect, it may still be possible to avoid an accident through steering, or by taking evasive action. This possibility is not yet being actively incorporated into driving safety." Emergency Steer Assist can now help drivers to steer past an obstacle. It does this by accessing the technologies which are already integrated into many vehicles. The lower the road surface friction coefficient, due to rain or snow for example, the greater the gap between the 'braking' or the 'evasion' options. This means that evasive action is still a possibility long after there is no more hope of avoiding the accident by emergency braking alone.

[Sensors help the chassis "to see"](#) — Before Emergency Steer Assist can be performed, it is essential that the vehicle is fitted with sensors for monitoring the road as far ahead as possible. "The more reliable and detailed a picture of other road users and of the road itself can be gained, the more effectively Emergency Steer Assist can assist the driver to decide, for example, whether to take evasive action by steering to the left or the right when suddenly coming up against the tail of a motorway traffic jam," said Bernd Hartmann, Chassis Systems Advanced Engineering manager in the Chassis & Safety Division. The first stage will employ radar sensors similar to those currently in production for Adaptive Cruise Control (ACC). The advanced engineering department is also working on combining the video images from camera systems, like those already in series production for Intelligent Headlamp Control, with the radar signals. In this way, the chassis will learn to 'see' so that the vehicle's safety systems are given early warning of an imminent hazard situation.

[This will place the vehicle in a "safety" mode.](#) "From this instant, the objective is to avoid an accident; comfort considerations are of secondary importance," said Hartmann. In preparation for the obstacle-avoidance maneuver, the aim is to maximize the vehicle's road-holding ability. In those decisive seconds, the ESC is prepared to keep the vehicle on the road during the rapid avoidance maneuver and to stabilize it by the selective and early application of initial braking pressure to individual wheels.



*If the driver of a vehicle has gone beyond the last possible point of braking, it may still be possible to avoid an accident through steering, or by taking evasive action.*

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NEW TECHNOLOGY IN THE NEWS

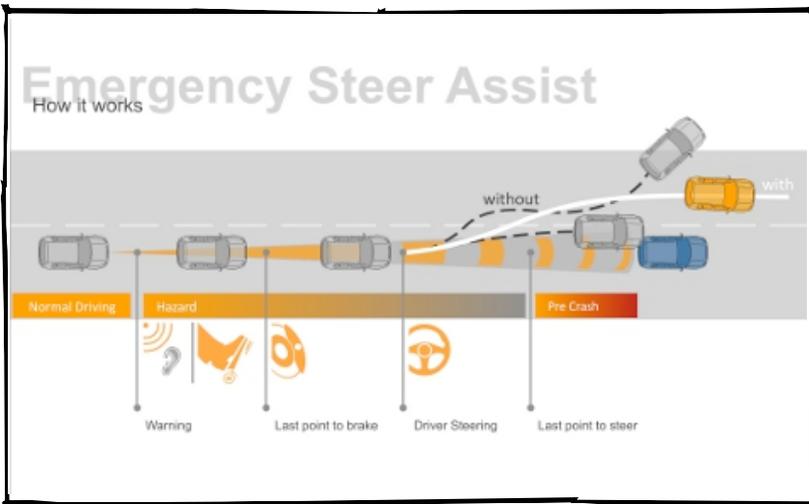
*Continental's Emergency Steer Assist*

A further conceivable option for the future for vehicles equipped with active roll stabilization or adaptive chassis systems is to adjust the suspension and damper characteristics to the 'hard' mode.

**Evasive Action or Emergency Stop: The Driver Always Has the Last Word**

The decision as to whether to brake before reaching the obstacle or to steer past it will always remain one for the driver to take. The assistance system will warn the driver that he is about to come across a dangerous situation. The warning could be issued as an acoustical or it could even take the form of a haptical warning signal, the perceptible application of initial braking pressure, for example, or counter-force exerted by Continental's active Accelerator Force Feedback Pedal (AFFP®).

If the driver decides to take evasive action, the system calculates in milliseconds what line the optimum evasive maneuver, the so-called vehicle movement trajectory, could follow. Any turn to avoid an obstacle should be carried out with a smooth steering movement so that the vehicle remains stable. By comparing the intended steering angle with the one actually chosen, Emergency Steer Assist determines whether the driver has steered sharply enough or possibly too sharply and can assist him by applying a light force in the steering wheel. "However, in this situation too, the ultimate decision always lies with the driver; if the situation demands it, he can disregard Emergency Steer Assist's offer of help," said Dr. Laier.



**The Integration of Vehicle Systems Makes Emergency Steer Assist a Possibility**

All the systems which are necessary to make Emergency Steer Assist a reality are already installed in series production vehicles. Radar and video sensors work reliably in driver assistance systems. More than 80 percent of all new vehicles registered in Germany are now equipped with Electronic Stability Control (ESC) and this will be made mandatory for all new vehicle models from 2011 and for all new vehicles from the end of 2014. A federal rule will require ESC in all cars, SUVs, pickups, and minivans by the 2012 model year for the US. Under the final rule NHTSA issued in April 2007, 55 percent of 2009 models, 75 percent of 2010 models, 95 percent of 2011 models, and 100 percent of 2012 models must have ESC. There is no government mandate for ESC in large trucks or buses. Electric servo-assisted steering systems are being installed in increasing numbers of vehicles. Actively steered rear axles are also becoming more common. Because the rear wheels are also steered and can support the emergency maneuver, they permit avoidance action to be carried out rapidly and stably. Emergency Steer Assist links together all the useful data from the existing systems. Because the necessary components are already present in many vehicles, manufacturers can implement Emergency Steer Assist relatively inexpensively.

**Evasive Action or Emergency Braking...**

In certain hazardous situations, a precisely executed steering maneuver offers the chance of preventing an accident even if the driver has missed the last moment for deciding to

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next page...*



## NEW TECHNOLOGY IN THE NEWS

Continental's Emergency Steer Assist

carry out emergency braking. For example, calculations based on simulations show that the distance at which the driver of a typical medium vehicle, driving at 100 kph (62 mph) on a dry road surface needs to initiate an emergency stop to avoid a stationary obstacle is approximately 40 meters (131 feet). By comparison, evasive action not involving braking can be successfully initiated if the distance from the obstacle is approximately 30 percent less. If the friction coefficient is halved due to a wet road surface, then the last opportunity for taking evasive action is as much as 50 percent of the figure needed to avoid a collision through braking alone. The result is a longer time gap between the 'last point to steer' and 'last point to brake' decision. These calculations are based on the assumption that a complete lane width is available for carrying out the avoidance maneuver as would be required to avoid a stationary obstacle in the middle of the lane.

Braking is the means of choice in inner city areas. Here, because of lower vehicle speeds, an emergency stop is more effective than evasive action. Continental's Emergency Brake Assist City, in series production since two years, prevents collisions at inner city speeds or mitigates the consequences if the driver fails to react.

### Emergency Steer Assist is an Additional ContiGuard® Module

Emergency Steer Assist adds to Continental's portfolio of sophisticated driver assistance systems. These include advanced driver comfort assistance systems which relieve the driver of routine tasks and allow him to react with greater assurance and more concentration even in critical traffic conditions. In contrast, it is precisely in dangerous situations that advanced driver safety assistance systems, such as Emergency Brake Assist, intervene to avoid a rear-end collision for example.

Emergency Steer Assist is an additional module in Continental's ContiGuard® safety concept. This opens up a new dimension of driving safety because ContiGuard® integrates both active and passive safety systems which are more effective and comprehensive due to the utilization of surrounding sensors and their coordinated interaction. By embracing ContiGuard® on the path towards Vision Zero, i.e. road traffic with zero fatalities, vehicle manufacturers can effectively help avoid accidents or at least minimize their consequences and the risk of injuries for all road users.



Article and photos <http://www.conti-online.com>



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SPECIAL NOTES: \_\_\_\_\_  
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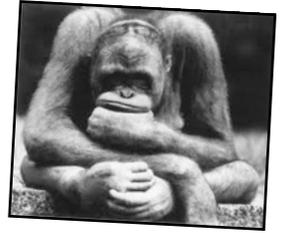
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## FOOD FOR THOUGHT

### The Curving “Ergo Crosswalk”

One of the shortlisted entries in the Seoul International Design Competition 2010 that stood out was the ‘Ergo Crosswalk’ by Korean designer Jae Min Lim. In his project, Jae tweaks the traditional shapes of Zebra crossing into curves to reflect how people jaywalk on roads. He believes that by carving out a wider road area, there will be fewer accidents involving pedestrians. Moreover, the Zebra stripes will have built-in LEDs that glow red or green to indicate when it is safe for people to cross. The designer says:

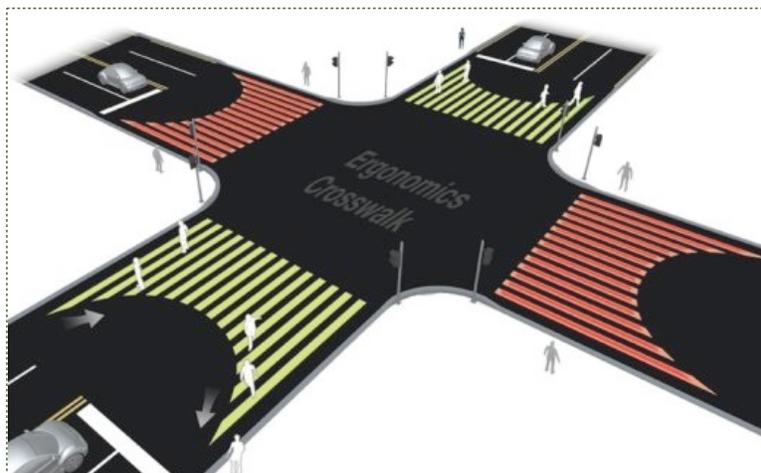


Article and photos [www.psifk.com](http://www.psifk.com)



“When people cross roads, they tend to take the fastest shortcut. They sometimes do it intentionally, but mostly it is an unconscious act. This kind of action violates the traffic regulations and sometimes threatens the safety of the pedestrians. The ‘ergo crosswalk’ is a design that makes people follow the law, as well as consider their habits or unconscious actions. It will encourage pedestrians to follow the lines of the crosswalk and protect them from any potential danger. If regulations cannot force people to follow the law, wouldn’t it be more reasonable to change the law and fulfill the main purpose of keeping the safety and convenience of the pedestrian?”

*What do you think?*





## *Upcoming ACTAR Examination Dates and Locations*

A P R I L 2 0 1 1

**Wednesday, April 27:** Willoughby Hills, Ohio, at the Willoughby Hills Community Center. Sponsored by ACTAR. New Applications must be received by February 27, 2011. **Exam Registration Cutoff Date: March 27, 2011**

**Saturday, April 30:** San Jose, California, at the San Jose Police Department Training Center, 1302 North 4th Street, San Jose, CA 95112. Sponsored by CAARS. New Applications must be received by February 28, 2011. **Exam Registration Cutoff Date: March 30, 2011** ***This is the VERY last opportunity to use a computer while taking the ACTAR exam. Starting May 1, 2011, only approved calculators will be allowed in the test (Please refer to the ACTAR website for details).***

J U N E 2 0 1 1

**Thursday, June 16:** Cedar Rapids, Iowa, held after MwATAI 25th Anniversary Conference. Sponsored by MwATAI. New Applications must be received by April 16, 2011. **Exam Registration Cutoff Date: May 16, 2011**

Go to [www.ACTAR.org](http://www.ACTAR.org) for additional information regarding the testing process.

## *Updated ACTAR Information*

Jincy Pace, the CAARS Liaison to ACTAR, was recently informed by the ACTAR Continuing Education Credit (CEU) Committee of the following ACTAR-approved CEUs for CAARS-provided training:

Accident Reconstruction & Biomechanical  
Analysis of Auto-Pedestrian Collisions (Second Quarter) — 6 CEUs

Collision Fraud Investigation (Third Quarter) — 6 CEUs

2010 Annual Conference — 15 CEUs



### O N T H E C O V E R . . .

Carhenge, which replicates Stonehenge, consists of the circle of cars, three standing trilithons within the circle, the heel stone, slaughter stone, and two station stones, and the Aubrey circle, named after Sir John Aubrey who first recognized the earthworks and great stones as a prehistoric temple in 1648. Not until excavations undertaken in the 1920's they were found to be holes cut to hold timber uprights. A total of 56 holes were discovered and named the Aubrey Holes in honor of John Aubrey's observation.

(Information and photo to left, [www.carhenge.com](http://www.carhenge.com))



SAFETY DEVELOPMENT

TRW's Dynamic Locking Tongue Helps to Enhance Seat Belt System Performance

Press Release Source: TRW Automotive Holdings Corp. On Tuesday September 7, 2010, 10:00 am EDT LIVONIA, Mich., Sept. 7 /PRNewswire-FirstCall/ -- TRW Automotive Holdings Corp. (NYSE:TRW - News), the global leader in active and passive safety, is beginning to equip seat belt systems with its new Dynamic Locking Tongue (DLT) technology. The DLT is an elegant, lightweight and compact design consisting of a seat belt tongue (the plate which fastens into the buckle) with a rotating cam and a concealed spring. The DLT allows webbing to pass freely through the tongue when buckling and in normal seat belt use to ensure comfort and convenience for everyday use. However, in the event of hard braking or a crash resulting in greater than about 45 Newtons (10 lbs.) of force on the belt, the DLT clamps the webbing and works with other seat belt technologies helping to reduce loads on the occupant's chest.



"The Dynamic Locking Tongue is a simple and effective way to help manage the energy of an occupant in a crash," said Norbert Kagerer, vice president, engineering, TRW Occupant Safety Systems. "It works in concert with other seat belt technologies such as pretensioners and load limiters, and its ability to reduce chest compression loads is of benefit in complying with the more stringent test criteria now in place for the Euro NCAP and USNCAP ratings systems." TRW testing

has shown that the DLT is very effective in preventing the webbing from slipping through the tongue when in the locked mode. By using the DLT to better couple the occupant to the seat in the pelvic region, improvements in chest deflection and load have been shown across a range of vehicle types and sizes. The DLT has been launched into production in North America, and vehicle manufacturer interest is high in this technology globally. <http://finance.yahoo.com/news/TRWs-Dynamic-Locking-Tongue-prnews-1487492129.html?x=0>

READ SOMETHING INTERESTING...

This book contains 28 landmark papers, providing a comprehensive look at event data recorder (EDR) technology for cars, light trucks, and heavy vehicles. By collecting EDR data, vehicle safety trends can be established, providing car companies, researchers, and regulators with science-based methods to better understand vehicle crashes. In addition to classic and cutting-edge papers, the book features insightful materials on the new National Highway Traffic Safety Administration (NHTSA) Final Rule on Event Data Recorders (49 CFR, Part 563), including the rule itself, a summary, and the response to petitions for reconsideration. ISBN-978-7680-2066-3 Hardcover: 488 pages SAE International (2008)



On the

lighter side...



OLD OR NEW...STAY INFORMED

As of January 21, 2010, the California Department of Transportation has revised the California Manual on Uniform Traffic Control Devices, also called the California MUTCD 2010, to include FHWA's 2003 MUTCD Revision 2 dated December 21, 2007, to prescribe uniform standards and specifications for all official traffic control devices in California. This action was taken pursuant to the provisions of the California Vehicle Code Section 21400 and the recommendation of the California Traffic Control Devices Committee (CTCDC).

The California MUTCD 2010 includes FHWA's 2003 MUTCD with Revision 1 dated November 20, 2004, and Revision 2 dated December 21, 2007. Also, the California MUTCD 2010 includes all policies on traffic control devices issued by the Department since September 26, 2006, and other editorial, errata and format changes that were necessary to update the previous documents.

The California MUTCD 2010 supersedes and replaces the previously California MUTCD 2006 (adopted on September 26, 2006) as well as the May 20, 2004, adopted MUTCD 2003 Edition and the MUTCD 2003 California Supplement and Chapters 4, 5, 6, 8, 10, 11, 12 and the traffic signals portion of chapter 9 of the 1996 Caltrans Traffic Manual, as

amended, and all previous editions thereof. It does not supersede the Department's Standard Plans, Standard Specifications or the Special Provisions publications.

The non-traffic control device topics of the 1996 Caltrans Traffic Manual (Chapters 1, 2, 3, 7 and the lighting portion of chapter 9) are being retained in their current form until they are assimilated into other manuals or guidelines not yet determined. Chapters 1, 2, 3, 7 and the lighting portion of chapter 9 of the Caltrans.

**California  
Manual on Uniform  
Traffic Control Devices**

for Streets and Highways  
(FHWA's MUTCD 2003 Edition,  
including Revisions 1 and 2,  
as amended for use in California)

January 21, 2010



STATE OF CALIFORNIA  
BUSINESS, TRANSPORTATION AND HOUSING AGENCY  
DEPARTMENT OF TRANSPORTATION

**DID YOU KNOW? — Follow-up from Issue 50**

(clarification) On December 16, 2009, a final rule adopting the 2009 Edition of the MUTCD was published in the Federal Register. States must adopt the 2009 National MUTCD as their legal State standard for traffic control devices within two years. The Federal Register notice, which provides detailed discussion of the FHWA's decisions on major changes from the 2003 edition, can be viewed at <http://edocket.access.gpo.gov/2009/pdf/E9-28322.pdf> (PDF, 716KB). To view the 2009 MUTCD and other related information, please go to the following address: [http://mutcd.fhwa.dot.gov/kno\\_2009.htm](http://mutcd.fhwa.dot.gov/kno_2009.htm).

FEATURED QUOTE

"A GREAT DEAL OF MISCHIEF OCCURS WHEN PEOPLE ARE IN A RUSH."

DR. DONALD A. REDELMEIER





BRIEFED MINUTES  
CAARS GENERAL MEMBERSHIP MEETING – OCTOBER 15, 2010

☑ Meeting called to Order at 8:06 am

★ **Present:** Board Members – Kent E. Boots, Chris Kauderer, Jahna Beard, David Cameron, David Heinbaugh, and Sean Shimada. Administrative Staff – Jincy Pace (ACTAR Liaison)

\* **Absent:** Board Member – John Crews. Administrative Staff – Monica Franksen (Treasurer), Tim Neumann (Newsletter Editor), Kevin Cassidy (Membership Chair)

☑ Old Business

● *Board of Directors Election - nominations*

● Chairperson, Chris Kauderer: *running unopposed*

● Directors-at-Large: Mike Allison (*present*), David Heinbaugh (*present*), Sean Shimada (*present*), and Bob Snook (*not present*). *There were two Director-at-Large vacancies*

● Those candidates present were given an opportunity to address the members

● Ballots were passed out to members and were then collected and counted by Kent E. Boots

● Discussions about membership trends, conference planning and expenses, low attendance, and future conferences

● Financial report by Chris (from Monica) –

● Current balance as of 10/12/2010: **\$23,786.59** (*includes conference fees*)

☑ New Business

● Discussion about 2011 quarterly training topics (see below for further)

● Discussion about Skidmarks; the newsletter

● Discussion about online directory and updating CAARS membership information

● Results of the election announced

● 61 Ballots Received (19 absentee, 42 during the meeting) of which one was invalid.

★ *Chairperson: Chris Kauderer – 57 votes*

★ *Director-at-Large: Sean Shimada – 48 votes*

★ *Director-at-Large: David Heinbaugh – 34 votes*

★ *Director-at-Large: Michael Allison – 21 votes*

★ *Director-at-Large: Bob Snook – 12 votes*

☑ Meeting adjourned at 9:05 am



PHOTO CREDITS

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## DOWN THE ROAD —2011 TENTATIVE TRAINING TOPICS



First Quarter — Railroad Grade Crossing Collision Investigation

Second Quarter — Basic Motor Vehicle Inspections

Third Quarter — Crash Reconstruction Case Studies



CAARS - California Association of Accident Reconstruction Specialists



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