TRC® TRACKS

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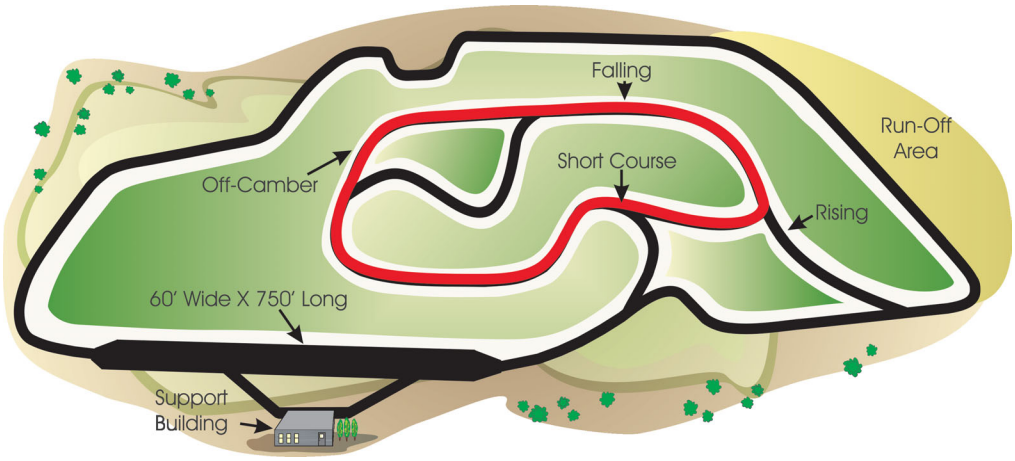
WE'VE WAITED A LONG TIME FOR THIS BABY!



The ribbon has been cut and TRC's new Dynamic Handling Course (DHC) is now open for business. Once the asphalt covering the 1.6 mile course was in place we had to wait, and wait some more, and wait a while longer for the asphalt to attain the exact curing it needed.

The course was designed by Alan Wilson who is responsible for some of the best and safest tracks in the world. The DHC was built with vehicle development in mind and consists of exacting slow, medium, and high-speed corners through slight elevation changes and turns of varying camber. The track features both long and short course sections which can be combined or run independently. Motorcycles and passenger vehicles can run a number of course configurations in either direction for a wide range of testing including:

- Suspension performance
- Tire performance
- Brake system performance
- Drivetrain and suspension component deflection
- Strain and stress of suspension and wheel components
- Handling and stability of towed vehicle combinations
- Steering systems

The course will also be used in many of TRC Inc's. advanced driver training programs. An adjacent customer viewing tower support building provides convenient logistics for vehicle inspections, modifications and data review. It was a painful wait, but we have to agree it was well worth the anticipation.

CELEBRATING THE 12th ANNUAL *AUTOMOTIVE NEWS* PACE AWARD

Twenty-two Finalists will be on hand April 3, 2006, at the Max M. Fisher Music Center in Detroit, Michigan to celebrate the 12th Annual Automotive News Pace Awards during the SAE's World Congress. The PACE™ Award (Premier Automotive Suppliers' Contributions to Excellence) honors automotive suppliers who have embraced innovation or adapted and reinvented themselves to meet the demands of the original equipment manufacturers. This prestigious award sets the standard for innovation and excellence and has become a significant industry credential. Annually, hundreds of automotive suppliers around the globe submit their innovation to win this distinguished award.

The 22 finalists for the 2006 PACE Award winners – by category – are:

Product:
- Delphi Corporation – Active Energy Absorption Steering Column
- Delphi Corporation – Delphi Adaptive Dual-Depth Passenger Airbag
- Federal-Mogul Corporation – Monosteel
- ITW Shakeproof – BosScrew
- Magneti Marelli Controle Motor Software – Flexfuel Sensor
- Microheat, Inc. – Hot Shot
- Osram Opto Semiconductor Inc. – Color on Demand
- SKF Automotive Division – X-Tracker Asymmetric Hub Bearing Unit
- Trico Products – Direct Drive Windshield Wiper Motor

Product – Europe
- Avon Automotive — Active Engine Mount
- Preh Automotive — Windshield Defogging Sensor
- Robert Bosch GmbH – Predictive Safety system
- Tenneco Automotive Inc. – Low Cost, Low Weight Muffler
- Valeo Electrical Systems – STARS Micro-Hybrid

Manufacturing Process & Capital Eqiupment:
- DOW Automotive – BATAMATE LESA
- Johnson Controls, Inc. – CrafTec PMB (Partial Mold-Behind)
- PosiCharge—PosiCharge
- PPG Industries Inc., Automotive Coatings – Color Specific, Powder Primer
- Visteon Corporation & Automotive Components Holdings LLC – Two-Color One-Shot – Mold Flow Control Process.

Information Technology & Services:
- CogniTens, Inc. – Opticell
- Factory Logic – Factory Logic Lean Operations Suite
- Plexus Systems – Plexus Online

Additionally, two OEMs will be receiving PACE Innovative OEM Collaborator Awards, with the winners selected from the finalists by the 2006 PACE Award judges.

The Automotive News PACE Awards are co-sponsored by Microsoft, SAP and Transportation Research Center Inc.

An independent panel of judges reviews applications, selects finalists, and conducts comprehensive site visits of finalist companies to evaluate both their innovations and management teams.

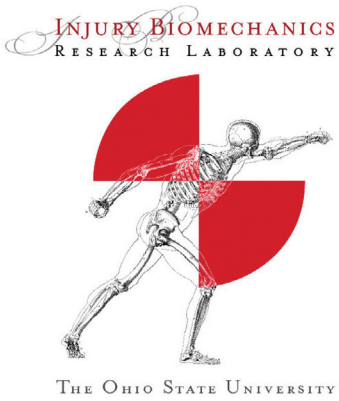
SAE ALL-WHEEL DRIVE SYMPOSIUM at TRC

SAE is holding its 2006 All-Wheel Drive (AWD) Vehicle Symposium at Transportation Research Center this summer. An exciting schedule of presentations and demonstrations is planned for the four-day networking and knowledge-sharing event provided for the all-wheel drive technical community. It will explore emerging technologies and focus on the state-of-the art industry knowledge of all-wheel drive systems and their integration into passenger vehicles. Presentations include: transfer cases; steering; controls; fuel economy measurement; and four-wheel drive and AWD in conventional and hybrid vehicles.

This symposium and related events will be hosted by TRC Inc. and The Ohio State University's Center for Automotive Research. It will be held August 22 - 23, 2006, immediately followed by the Ride & Drive Event on August 24, 2006. Prior to the symposium, SAE will conduct a seminar "Fundamentals of Automotive All-Wheel Drive Systems" on August 21, 2006 at TRC.

The organizing committee of General Motors, Dana, Ford and TRC Inc. invites you and your organization to participate in this international event as a speaker, demonstrator, exhibitor and/or sponsor. If you are interested in presenting a paper, participating in this year's event, or require more information about the symposium, contact Christopher Durante of SAE International at cdurante@sae.org.

REGISTRATION IS OPEN FOR SECOND ANNUAL INJURY BIOMECHANICS SYMPOSIUM



Registration is now open for the Second Annual Injury Biomechanics Symposium to be held May 17 - 19, 2006, at The Ohio State University. This conference is intended to stimulate and reward strong injury biomechanics research among students and recent graduates. Attendees can expect original biomechanics research in a forum intended to foster communication between developing and established researchers.

Submissions from students and recent graduates in all areas of injury biomechanics research, such as human subject testing, sports injury studies, crash safety evaluation, and anthropomorphic dummy research will be presented. Ten oral presentations will be followed by a discussion period to allow open and constructive dialogue on the content of the presentation as well as current research challenges. A poster session of up to twenty current research topics will complement the oral presentations.

The First Symposium brought together students and academia from over 15 universities along with a full complement of attendees from various industries. A welcome networking reception, along with an evening awards banquet, will round out the symposium and provide time for presenters and attendees to mingle with academia and industry. Symposium and registration information can be found at http://medicine.osu.edu/ibrl/ or by contacting Dr. John Bolte by phone at (614) 688-4015 or email at biotraum@osu.edu.

Symposium organizers include: The Ohio State University – Injury Biomechanics Research Laboratory; Center for Automotive Research; Transportation Research Center Inc.; Honda R&D Americas, Inc.; NHTSA Vehicle Research and Test Center; Nationwide Insurance; Columbus Children's Hospital's Center for Injury Research and Policy.

Additional sponsorship is provided by: Denton, Inc.; First Technology Safety Systems, Inc.; Nissan Technical Center North America; and Toyota Motor Company North America, Inc.

MUTUAL RESPECT

We appreciate saving time and money, and we're all for it. Simulation testing certainly has an important role to play in reducing product development cycles, and computer simulation capability can be a perfect compliment to physical testing. TRC's Hyge Crash Simulator is used to gather preliminary injury and crash data on child seats, aircraft cargo, fighter pilot ejection seats, airbag, seat belts and anchorages, ambulance gurneys, and anthropomorphic test dummies. We definitely respect the advantages of computer simulation testing whether it is for crash testing or for road input. Simulation will help get your best product faster to the market.

However, simulation alone prevents the understanding of hands-on and human-interaction feedback. To complement simulation testing, TRC Inc. provides dynamic testing to validate models and designs by actually producing a crashed vehicle, creating dynamic dummy injury data, or filming an actual highway barrier holding back a truck. Equally important is feeling the road under your seat, determining if an interior is user-friendly, and ensuring that intelligent transportation devices function as planned. A recent test at TRC highlighted the importance of using physical testing to supplement simulation testing. After performing a mileage accumulation chassis durability test, TRC Inc. drivers provided personal insights from a user's perspective. Because of this real-world feedback, our customer changed the seating system and door system in the vehicle. Had the manufacturer relied solely on the results of the simulation testing, these tangible results would have never have led to this improvement of their product. That is what TRC Inc. is all about – helping our customers create a safe and reliable product.

Operating the proving grounds around-the-clock for 360 days each year, we are known for producing fast and reliable testing results. In just three days the impact laboratory can prepare your vehicle for a precisely controlled and measured crash test. Our emissions laboratory can help you evaluate your vehicle's emission and fuel savings devices or dyno-test your engines. Twelve months of corrosion can be produced in just two weeks. Using rough-road events, we can provide a 10:1 ratio for accelerated durability testing. Once you are comfortable with your design, bring your products to TRC Inc. for real proof testing. You may be surprised to find out a little more than you bargained for.

SENSORY OVERLOAD ALERT!

So what makes a good noise vs a bad noise? It doesn't matter how loud the engine roars as long as it is rumbling in a rich baritone. If the woofers don't blow, neighbor-complaining music can soothe your soul. And nothing sounds finer than a motorcycle cutting through the countryside. On the other hand, you can't be without your on-board screwdriver to tighten whatever is vibrating inside your own car, and there are plenty of laws against excessive noise emissions. If you need to perform testing in either of these two areas, TRC Inc. can help. We have excellent noise measurement equipment and test surfaces, plus we have a large quantity of teeth-jarring and finger-twitching noise, vibration and ride harshness courses. We also have both EPA and ISO noise pads.

Noise can be measured with our digital HMS III Aachen Head acoustics package that simultaneously listens, filters, and analyzes noises and their attributes. RPM and speed-based analyses are also possible to determine rotational speed and order-related noise problems. The database can include product type, operating condition and causal information to help with trouble-shooting. Whether its powertrain or electro-mechanical sub-systems, or even tire- or wind-generated noises, we can help you find their sources.

TRC's ride quality and accelerated bump courses can help you evaluate ride, vibration, noise, and suspension control management systems like vibration control components, springs, shock absorbers, struts, chassis, powertrain, and other load-assist products. Several miles of courses are available for passenger vehicles, and others have been specifically designed for pick-up trucks and four wheel drive vehicles. In addition to bumps, chuckholes, sine waves, unsprung mass vibration strips, Belgian blocks, cobblestones, boulders, drains, road joints, undulations, positive and negative shocks, and a rail bed crossing, many of the courses have varying surfaces that include tiny stones, rumble strips, and smooth glass. For trucks and buses we have cobblestones, large camelback bumps, sine waves, and a couple of miles of impact and chatter bumps.

TRC Inc. can help evaluate your vehicle's noise problems.

TRC INC. IS ALL ABOUT DRIVING INNOVATION!

We endorse SAE's theme for the April 3- 6, 2006, International Congress, "Driving Innovation Through Partnerships," to be held in Detroit, Michigan's COBO Center. In addition to staffing our booth in space 307, TRC Inc.'s personnel will be involved in other activities of the event.

One research paper that will be presented, Measurement and Modeling of Tire Forces on a Low Coefficient Surface, is co-authored by TRC Inc's. Mohamed Kamel Salaani; Gary J. Heydinger, The Ohio State University; and Paul A. Grygier, National Highway Traffic Safety Administration.

Several of the technical sessions are being chaired and organized by TRC Inc. staff members including Milton J. Dunlop, Kenneth W. Webster, Mohamed Kamel Salaani, Mark Heitz, Janice K. Cooper, and Scott B. Zagorski.

TRACKS is a publication of Transportation Research Center Incorporated. For more information, contact Teri Elliot (ext. 354) or Jeff Sprague (ext. 349), Marketing, Transportation Research Center Inc., East Liberty, Ohio 43319-0367; phone (937) 666-2011; fax (937) 666-5066; www.trcpg.com.