

Transportation Research Center Inc.

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EPA Proposes Rule for Emissions Standards



The Art of Crushing Cars



TRC Inc. to Sponsor PACE™ Awards in 2010



TRACKS *newsletter*

Celebrating **35** Years of Testing!

When Transportation Research Center of Ohio (TRCO) opened for business in July 1974, the future of our company was yet undefined. But let's face it-- who could then predict, that by 2009, we would have intelligent car systems that take control from drivers to avoid accidents, burn corn fuel in our engines, and have crash test dummies capable of simulating impact injuries to human beings?

Conceptualized in 1962 (see timeline on page 2 and 3, or visit our website at <http://www.trcpg.com/aboutannualreport.asp>), the State of Ohio began plans to build an unprecedented commercially available automotive proving grounds; in fact it was the largest in the world. The initial concept was for a center that would coordinate and encourage controlled

transportation, academic and research programs. An outgrowth of that vision was the suggestion to build a physical facility that could be used by manufacturers and governments to develop and test their vehicles and components, along with vehicular research. In 1969, the State of Ohio earmarked thirty million dollars for the acquisition of more than 8,500 acres of farm land to establish TRCO. The facility began operations with approximately 100 miles of pavement and two buildings, which has now turned into approximately 140 miles of pavement and 16 buildings.

They envisioned that such a facility could draw more automotive jobs into Ohio.

Today, according to the Ohio Department of Development, over 16,000 direct automotive manufacturing jobs exist in our locale. Approximately 56,000 more jobs are filled by the additional tradespersons

A history of design, development and realization for the world's leader in independent automotive testing

and professionals who provide services to all those families, plus provide support services to our 1,500 customers. As an economic magnet, today's Transportation Research Center (the Center) has been very successful. But more than providing jobs, the daily operations at the Center have contributed to the design and manufacturing of safer transportation vehicles and products, while also providing services that will help lead us to a healthier, more sustainable environment.

continued next page

35 years continued...

In 1979, to help improve TRCO operations, the Transportation Research Board entered into an agreement with the College of Engineering at The Ohio State University (Ohio State) to provide management services. The College of Engineering continues to provide today's Transportation Research Center Inc. (TRC Inc.) president. TRC Inc. is the not-for-profit corporation controlled by Ohio State, which manages the day-to-day TRC operations.

In 1978, Honda of America Manufacturing, Inc. (HAM) established their first manufacturing facility adjacent to TRC. In 1988, the land and assets of TRCO were sold to HAM as an economic inducement to build additional manufacturing and research facilities. HAM contracted with TRC Inc. to continue to provide management of the on going operations of the business of TRC Inc.

TRC Inc. has earned the reputation as the world's leading provider of independent vehicular testing services. Customers can be licensed to perform their own testing or engage the services of TRC Inc.'s professional staff to conduct unbiased testing. Challenges are viewed as exciting opportunities for growth. Since the Center began, new programs have been developed for customers in the areas of collision avoidance, energy absorption, fuel economy, emissions, durability, performance, noise, crash simulation, and crashworthiness. Test programs evaluate the performance of passenger cars, trucks, airplanes, tracked vehicles, off-road vehicles, recreational vehicles, buses, motorcycles, electric vehicles, and automotive components. Less visible programs include research for highway architecture, security barriers, driver social behaviors, and natural resources.

TRC Inc. schedules and monitors all facilities with primary importance placed on the safety and security of each customer. TRC Inc. is ISO 9001 and 14001 registered, and some testing procedures have ISO 17025 accreditation. We will continue to measure and improve the quality of the services we provide. The success of TRC Inc. can be measured by our satisfied customers, our 500 valued employees, and the impact upon our local community and the worldwide automotive industry.

TRC Inc. to Sponsor PACE™ Awards in 2010



TRC Inc. is proud to announce that we have renewed our PACE™ Awards sponsorship for an eighth consecutive year. The Automotive News

PACE™ Awards honors superior innovation, technological advancement and business performance among automotive suppliers. This prestigious award, now in its sixteenth year, is recognized around the world as the industry symbol of innovation. PACE™ Award finalists have come from the U.S., Canada, Mexico, Brazil, Italy, Spain, France, Belgium, Luxembourg, Switzerland, Germany, Australia, the UK, Korea and Japan. While the automotive industry continues to struggle, we realize that innovation is the key to success and we look forward to our continued relationship with Automotive News and the companies that compete for the PACE™ Award. Additional information and applications for the 2010 PACE™ Awards can be found at <http://www.trcpg.com/aboutpaceawards.asp> or by contacting the Marketing Department at (937) 666-2011.



Injury Biomechanics Symposium

The Ohio State University (Ohio State), in conjunction with TRC Inc., hosted the Fifth Annual Injury Biomechanics Symposium from May 17-19, 2009. The symposium is intended to stimulate and reward strong injury biomechanics research among students and recent graduates.

The symposium kicked off with a welcome reception held at The Varsity Club on Ohio State's campus, then moved to an off-campus hotel for the research presentations, followed by a dinner banquet at the Buckeye Hall of Fame Café, and the event concluded with the Hines Awards for best research presentations and closing remarks at lunch on Tuesday.

An inspiring keynote address was delivered by Guy Nusholtz, Executive Consultant and Senior Manager in the Experimental and Computational Mechanics Department at Chrysler. Several guest speakers attended including: Mary Roach, New York Times Bestselling Author of *Stiff: The Curious Lives of Human Cadavers*; Valerie K. Bergdall, Ohio State University Laboratory Animal Resources; Kathy Smiler, Veterinary Consultant, Laboratory Animal Medicine; and Karla Zadnik, Chair of the Biomedical Sciences IRB and IRB Policy Committee for Ohio State.

The Symposium is an extension of Ohio State's collaboration with TRC Inc. to create a nationally recognized center for trauma research. The new initiative is comprised of faculty of Ohio State's Injury Biomechanics Research Laboratory and their Center for Automotive Research, along with Nationwide Children's Hospital, and TRC Inc. Dr. John Bolte IV, assistant professor of anatomy, is leading this effort for Ohio State's state-of-the-art laboratories. This research is complemented by TRC Inc. laboratories, which include calibration for measurement instrumentation and test dummies, along with full-scale crash testing, and the HYGE impact simulator facilities.

The Symposium Partnership includes: The Ohio State University's Center for Automotive Research, Transportation Research Center Inc., Honda R&D Americas, Inc.; National Highway Traffic Safety Administration's Vehicle Research and Test Center, Nationwide Insurance, the Center for Injury Research and Policy, Nationwide Children's Hospital, and Ford Driving Skills for Life. Additional sponsorship was provided by Denton ATD, Inc., Nissan Technical Center North America, and Toyota. Additional information can be found at: <http://trc.osu.edu>.

Pictured above: Poster and paper presenters, along with two of the guest speakers, and Janet M. Weisenberger, PhD, Senior Associate Vice President for Research, Office of Research, The Ohio State University

EPA Proposes Rule for Emissions Standards

In March 2009, the Environmental Protection Agency (EPA) issued a proposed rule for National Emissions Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines. These proposed rules will impact engines that are either located at area sources of hazardous air pollution (HAP) emissions or that are rated at or less than 500 horsepower and are located at major sources of HAP. Potential industries affected by this proposed rule include medical and surgical hospitals; electric power generation, transmission, or distribution; natural gas producers; and national security. EPA has proposed to limit emissions of HAP through emissions standards for formaldehyde for non-emergency four-stroke rich burn, emergency spark ignition engines, engines less than 50 horsepower, and through emissions standards for carbon monoxide for all other engines.

TRC Inc.'s Emissions Laboratory is uniquely positioned to provide testing services for these new regulations. TRC Inc. has multiple dynamometers capable of testing engines from <1 HP to 320 HP maximum all equipped with CO collection, measurement, and analysis capabilities. TRC Inc. also performs onsite formaldehyde sample collection and analysis. With TRC Inc.'s trained emissions engineers and technicians, a customer's engine can be delivered, installed on the dynamometer, and tested, with final results provided in a matter of days.



Feature Facility

Crash Test Facility Upgrades

Over \$500,000 was invested in the Center's Crash Test Facility (CTF) over the last 12 months. Work included installation of a new, improved electrical power supply and distribution system, a new concrete runway for the main towing and guiderail system, and a new concrete surface over the main drive stand pit bridge. The CTF has three separate towing and guiderail systems that converge to one point at the main drive stand pit. Each towing system is powered by its own 1,000 HP electric motor. The three



towing and guiderail systems allow the CTF to conduct a wide range on vehicle to vehicle crash tests at head-on and various angles up to 90 degrees. The towing system can pull vehicles or carts in either direction into other vehicles, obstacles, the barrier wall, roadside safety features, perimeter barriers, etc. The CTF's main towing and guiderail system runs between the main drive stand pit to the barrier wall. The new concrete surface replaced an asphalt surface to create a smooth, longer lasting surface. Each guiderail system is approximately 500 feet long and the main runway is covered for most of its length. For more information about our Impact Laboratory visit: <http://www.trcpg.com/services/impact.asp>.



Follow TRC Inc. from 1962 to 2009 – a history of design, development and realization for the world's leader in independent automotive testing.

The Art of Crushing Cars



Printed here with permission from Friedrich Petzel Galleries.

Finally, there is fine art that gear-heads can admire! It was only a matter of time that an artist, with his inimitable abstract vision and audacity, drew upon the unique resources available at TRC Inc's Impact Laboratory for the creation of his artistry. Those of you in the crashworthiness industry will recognize the works as very different from any of the current Federal Motor Vehicle Safety Standards (FMVSS) or industry standards.

The German artist's works are riveting for his exploitation of tragic natural events like fires and floods, and many of them include automotive components.

Each vehicle has been violently wrapped around a pole, as though these two warped metal beasts, speeding headlong at many miles per hour, have suddenly

You have all been there... caught between the emotions of interest and horror when witnessing something potentially catastrophic. Stow away your guilt and explore in depth. We have just performed two very severe impact-into-pole crash tests for international artist and sculptor, Dirk Skreber, and you can see them on display May 9 - June 27, 2009, at the Friedrich Petzel Gallery in New York City, along with other examples of his absorbing fine art. You can view his artwork by visiting: <http://www.trcpg.com/whatsnewdetail.asp> and clicking on the provided link.

found themselves curtailed stubbornly embracing the very obstacle that stopped it. Like the artist's paintings of catastrophes, these sculptures beg ambivalence. Are we to be fascinated or repulsed? Horrified or excited? Further, upon closer inspection, the viewer finds the crashed cars highly polished and clean. No traces of the messy event remain but for the once-sleek, now mangled machines themselves. We are no longer craning our necks to see the accident we're passing, to catch a glimpse of the unsightly wreckage, to have us told by the authorities to "move along." Dirk Skreber brings the wreck to us and demands that we look at the familiar up-ended transformed to the frozen grotesque.

TRC Inc's Impact lab can conduct crash testing in accordance most of the FMVSS standards. Capabilities include crash-testing of motorcycles to large transit buses that are routinely performed by TRC Inc. for manufacturers and government agencies worldwide.

Let's hope that the gallery visitors are also inspired to fasten up their seatbelts when they leave there.

Trucks Newsletter is a publication of Transportation Research Center Incorporated. For more information contact Teri Elliot (ext 354), Keili Simon (ext 309), or Jeff Sprague (ext. 349), Marketing, Transportation Research Center Inc., East Liberty, Ohio 43119-0367; phone (937) 666-2011; fax (937) 666-5066; www.trcpg.com.

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