

## **USDOT ANNOUNCED NHTSA'S NEW DYNAMIC ROLLOVER TEST PROGRAM AT TRANSPORTATION RESEARCH CENTER INC.**

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On Tuesday, October 7, 2003, Transportation Research Center was proud to host a press conference for Jeffrey W. Runge, M.D. as he announced the National Highway Traffic Safety Administration's (NHTSA's) new dynamic rollover test program for passenger vehicles. Dr. Runge is the administrator for the National Highway Traffic Safety Administration (NHTSA).

After considering a number of alternatives, NHTSA has decided that the dynamic test will use the "fishhook" maneuver - a series of abrupt turns at varying speeds. A computerized steering system will be used in each test vehicle to maintain objectivity. NHTSA's current consumer program rates rollover risk based on a vehicle's "static stability factor" (SSF), which is an engineering calculation based on the track width and the height of the center of gravity above the road. Starting with the 2004 model year, the rollover risk predictions will be based both on the vehicle's static stability

factor and its performance in the fishhook test.

Dr. Runge stated, "Consumers need to consider rollover risk when they shop for a new vehicle, and our rating system will give them the information they need to make a wise choice." The rollover resistance test program will rate 23 passenger cars, 24 sport utility vehicles, three vans, and six pickups.

The rollover rating system - one to five stars - remains unchanged. One star is for rollover risk greater than 40 percent; five stars represent 10 percent or less.

TRC Inc. is currently acquiring the instrumentation and equipment to perform this testing for manufacturers and component suppliers. Additionally, information on the enhanced rating system can be found at: <http://www.nhtsa.dot.gov/cars/rules/rulings/RollFinal/3rdTREAD-for-WebSite.pdf>.



## WE'RE HELPING TO MAKE HIGHWAYS SAFER TOO!

When you feel like your car is going in as many directions as a festival's Tilt-A-Whirl, chances are no cotton candy will be there at the end of the trip because you have lost control, with an accident likely to follow.

While it still won't be fun, it may be easier on you and your car than in years past. Fortunately, the Federal Highway Administration (FHWA) policy requires that roadside appurtenances such as traffic barriers, barrier terminals and crash cushions, bridge railings, breakaway sign and light pole supports, and work zone hardware used on the National Highway System meet safety performance criteria. This means they must meet a minimum level of crashworthiness intended to provide additional protection to motorists.

FHWA policy requires such devices to have been successfully tested in

accordance with the guidelines contained in the National Cooperative Highway Research Program (NCHRP) Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features."

For several years TRC Inc. has provided impact testing services for surface-mounted attenuators to engineering firms and government agencies. TRC Inc. is now undergoing the final construction of a new test course that will enable us to test ground-mounted devices as well. This addition will allow us to perform nearly all NCHRP 350 tests on roadside appurtenances.

TRC's Impact Laboratory Multi-Vehicle Crash Pad test speed capability far exceeds the 100-kph pick-up truck speed required in NCHRP 350 for Portable Concrete Barriers (PCBs). For research programs, TRC Inc. can conduct tests with two

vehicles moving at different speeds and angles into a variety of earth-mounted and concrete-set obstructions for surface-mounted barriers. High-speed motion picture and video photography, along with up to 300 channels of data, completes the crash test deliverables.

Named as a preferred laboratory by Battelle Memorial Institute, TRC Inc. can support Battelle in its role as one of the handful of independent FHWA-designated Centers of Excellence for Finite Element Crash Analysis. The FHWA's research develops Finite Element Analysis (FEA) models, which help manufacturers, and vendors of roadside safety equipment reduce the overall development time for new Portable Concrete Barriers and other roadside safety hardware designs.



## SAFETY RESEARCH PRESENTATIONS AND EVENTS

This fall has been a very busy travel time for our staff, with many colleagues attending conferences, engineering organization meetings and expositions. We view our participation in industry events as both a responsibility to share our knowledge and as an opportunity to meet directly with our customers and suppliers.

"In-Depth Analysis of the Influence of High-Torque Brakes on the Jackknife Stability of Heavy Trucks," was a paper co-authored by TRC Inc. Research Scientist Dr. Ashley L. Dunn. He presented the paper at the 2003 SAE Bus & Truck Conference that was recently held in Ft. Worth, Texas. His co-authors were Drs. Giorgio Rizzoni, Dennis Guenther and Gary Heydinger. TRC Inc. employees also participating in that conference were committee chairpersons and technical session organizers George DeShetler, Dennis Grisez, and Teri Elliot.

At the 31st International Biomechanics Workshop held in San Diego, California, in October, TRC Inc. Research Engineer Kelli Esselman presented a paper co-authored with Heather Rhule, Bruce Donnelly, and TRC Inc. Research Engineer John Bolte titled, "Application of the NHTSA Biofidelity Ranking System for Child ATDS." At the 47th Stapp Conference, John Bolte presented "Shoulder Impact Response and Injury Due to Lateral and Oblique Loading," a paper he co-authored with Dr. Margaret H. Hines, Joe D. McFadden, Bruce Donnelly, and TRC Inc.'s Rodney G. Herriott.

We also displayed our trade show booth at the Testing Expo 2003 that was held in Novi, Michigan on October 29 - 31, 2003, and provided sponsorship for the SAE Powertrain & Fluid Conference that was held in Pittsburgh, Pennsylvania, in late October.

Also criss-crossing the country was Jeff Sprague, who visited the Automotive News' PACE awards finalists. The annual Automotive News PACE™ (Premier Automotive Suppliers' and OEMs' Contributions to Excellence) Awards program recognizes outstanding automotive suppliers that have excelled in adapting and reinventing their companies or their products and processes to meet the growing service and quality demands of their customers—the world's major automotive manufacturers.

Winners of the award will be announced at a ceremony on March 8, 2004 at the Detroit Opera house coinciding with the start of the SAE International show. If you would like information on how to enter the PACE awards for the 2005 contest, please contact Jeff Sprague at 937-666-2011, extension 349.

