



TRACKS

WHERE THE GOVERNMENT TESTS

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The National Highway Traffic Safety Administration (NHTSA) just released crash test results for selected model year 2005 vehicles. The agency also released rollover resistance ratings for several 2005 pickups. While many people see the results of these ratings, they may not know the history and purpose of the program, or the companies who perform the testing. The National Highway Traffic Safety Administration (NHTSA) was authorized in 1966 to issue Federal Motor Vehicle Safety Standards (FMVSS) and Regulations, written in terms of minimum safety performance requirements for motor vehicles or items of motor vehicle equipment, requiring manufacturers to conform and certify compliance. Since then, there have been a number of new standards added and existing standards revised to keep pace with emerging technologies and consumer safety concerns. The standards are published in the Federal Register.

NHTSA initiated the New Car Assessment Program (NCAP) program in 1978 to provide consumers with a measure of the relative safety potential of vehicles in frontal crashes. Side crash test results

were added to the program beginning with model year 1997 vehicles, and more recently, rollover resistance ratings were added beginning with model year 2001 vehicles. The test results are relayed to consumers via an easily recognizable star rating system - from one to five stars, with five being the highest. The ratings are published at www.nhtsa.dot.gov/cars/testing.

NHTSA contracts for vehicle testing at several locations throughout the country, with Transportation Research Center Inc. (TRC Inc.) being one of the largest, and one of the few, with the capabilities to perform all of the NCAP Procedures.

While the NCAP ratings have been given a lot of press this past year with the new dynamic rollover ratings, NCAP has actually been around for a while. The rollover resistance testing is performed on TRC Inc.'s unparalleled 50-Acre Vehicle Dynamics Area (VDA). This facility, with acceleration loops at either end for high-speed entry and exit from the facility, provides the ideal facility to perfect a vehicles' handling characteristics.
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(Where the Government . . .continued)

Various radii and handling courses are laid out on the VDA, and additional courses can be developed or duplicated upon request. Adjacent to the facility is a 1,000-ft long by 59-foot wide basalt course and a 330-foot-long by 16.5-foot-wide ceramic course for braking and low-speed handling maneuvers on low-coefficient surfaces. An additional 550-foot by 301-foot Jennite pad allows for low-coefficient and split-coefficient testing. The VDA is also supported with a classroom facility for presentations, seminars, and driver training. A workroom with vehicle hoists for repairs and tuning, along with privacy fencing to allow full utilization of uncamouflaged vehicles during daylight hours, completes this facility. Adjacent to this facility we perform FMVSS Brake Testing for cars, trucks, buses, and motorcycles on our 9,000-foot-long Skid Pad with five smooth concrete lanes.

You can see an actual rollover test performed by TRC Inc. on the website: www.safercar.gov

Our Impact Laboratory, which is one of the most comprehensive independent vehicle safety development facilities in the world, supports the majority of this testing activity. Vehicle crashes, impact simulation, highway appurtenance testing, and automotive component static testing are performed in this secure area along with dummy and instrumentation calibration.

The Crash Test Facility includes the fixed barrier and vehicle-to-vehicle impact test areas to provide for crash testing well in excess of government requirements. Three separate towing tracks may be operated independently, or simultaneously, to control the velocity of multiple vehicles. The barrier crash area includes the barrier building with an enclosed asphalt roadway leading into the building. Aside from performing FMVSS and NCAP testing for the Government, our Impact Laboratory has provided the Government with compliance testing, research testing, and Office of Defects Investigation support. We are also certified to perform and act as expert witness for the Japanese Ministry of Land Infrastructure and Transport for frontal and side impact testing.

The employees of TRC Inc. take pride in the fact that we help not only manufacturers, but the Government, to assure that consumers are aware of and have the ability to choose the safest vehicles for their families and themselves. When you want to make certain your testing meets NHTSA's precise procedures, please contact Transportation Research Center Inc.



INJURY BIOMECHANICS RESEARCH INITIATIVE

We are proud to announce that The Ohio State University is collaborating with Transportation Research Center Inc. (TRC Inc.) to create a nationally recognized center for trauma research. The new initiative is comprised of faculty of The Ohio State's Injury Biomechanics Research Laboratory, Center for Automotive Research and Intelligent Transportation, Children's Hospital of Columbus and TRC Inc.

- Ohio State's history of study of injury biomechanics includes:
- Validation of the Translational Head Injury Model (THIM)
- Lumbar Spine Loading Due to Lateral Pelvic Impacts
- Development of a Hepatic Injury Prediction Methodology
- Assessment of Human Contour and Injury Response Due to Side Impact Loading
- Arm/Airbag Interaction Trauma
- Eye Trauma Related to Impact

Ohio State's faculty and scientists have expertise in injury biomechanics, biomaterials, instrumentation, human body modeling, anatomy, histology, pathology and radiology.

Current trauma research that the new partnership is working on includes:

- Lateral and Oblique Impact to the Shoulder Complex
- Anterior-Posterior Tibial to Knee Displacement Due to Tibial Impact
- Lateral Abdominal Impacts

Dr. John Bolte IV, assistant professor of anatomy, is leading this effort for Ohio State's laboratories that are equipped with state of the art anatomy, biomaterials, and biomedical-imaging

equipment. Providing complementary support are TRC Inc's. laboratories, including calibration for measurement instrumentation and test dummies, along with full-scale crash testing, and the HYGE impact simulator facilities. Please call us for more information.



SPEEDING BULLET SHATTERS OWN RECORD!

Dateline: Bonneville Salt Flats, Utah
October 15, 2004

The Buckeye Bullet set new land speed records! In the summer edition of TRACKS, we told you about the Buckeye Bullet, an enclosed-wheel streamliner. The electric racecar, built by a student project of The Ohio State University's Center for Automotive Research, had just set a U.S. Electric Land Speed Record (USELSR) of 308.317 MPH in August, 2004.

The team returned to the Bonneville Salt Flats in October and the Buckeye Bullet hit a new top speed of 321.8, setting an official USELSR record speed of 314.958 MPH surpassing the previous 256.894 record the Bullet set one year earlier. It also set an official World ELSR of 271.737 beating the previous record of 245 mph. The Buckeye Bullet may now hold the record for the fastest measured speed of any electric vehicle. On May 18, 1990, the French TGV-A Bullet Train ran 513.3 km/h = 320.2 MPH. TRC Inc.'s Roger Schroer was simultaneously inducted both in the prestigious Bonneville 200 MPH Club and as only the 60th All-Time Bonneville 300 MPH Club Member. He joins such other famous racers on the exclusive short list like Craig Breedlove, Donald & Malcolm Campbell, Gary Gabelich and Mickey Thompson.

Are they done? Not yet! They plan for a return trip next summer to the Flats. You can follow the action at www.buckeyebullet.com, and www.roadtobonneville.com. You can also catch more information about the Bullet in *Popular Science* magazine, and Driver & American Speed Kings television series.

