



®

# TRACKS

## GET YOUR SUSPENSIONS ATTENTION!

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***"ISO 9001 Registered"***

TRC Inc. really can help you get the attention your ride control products deserve and cause them major excitement. Why use only a shaker table, which can excite the suspension, but misses the other ride quality aspects real drivers feel and hear? When control, comfort, and safety are all key, find out first what your customers will find out later — if your ride is just right or if it still needs some work. For real-life input from people and roads, you need to get your vehicle out into the world. TRC's ride quality and accelerated bump courses provide more events for these evaluations than are available at any other proving grounds.

We can help you evaluate ride, vibration, noise, and suspension control management systems like vibration control components, springs, shock

absorbers, struts, chassis, powertrain, and load-assist products. Several miles of courses are available for passenger vehicles, and others have been specifically designed for pick-up trucks and sport-utes. 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 courses exist with varying surfaces that include tiny stones, rumble strips, and smooth glass tiles. For trucks and buses we have cobblestones, large camelback bumps, sine waves, and a couple of miles of impact and chatter bumps. Another aspect of ride quality is a vehicle's handling, so while you're here, you can take advantage of the expansive TRC's 50-

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acre Vehicle Dynamics Pad and new 1.6-mile Winding Road Course.

Since we're talking about suspensions, just about everything on a vehicle is treated to some kind of vibration control. Gauges need protection from too much bounce, glass needs contained from vibration, engine mounts need the proper amount of give and take, and sensors often need to be babied. The same courses are ideal to monitor the performance of those components and installations. While we don't claim that our courses duplicate any specific roadways, we frequently hear our customer comments like, "I drive this road to work!" "This is like driving in Cleveland...or Boston... or...LA," or "feels like a road at another proving ground." With hundreds of different vehicular suspension and handling applications, we're sure TRC Inc. has the resources to help you refine your product's competitive edge. You can find out more about the course specifications by logging onto [www.trcpg.com](http://www.trcpg.com) or by calling us to schedule a tour and to receive a brochure.



## ATTENDING INDUSTRY EVENTS

TRC Inc. will be present at the SAE International Truck & Bus Meeting & Exhibition to be held in Chicago, Illinois, from November 12 - 14, 2001, where TRC Inc. will be represented in booth # 625. Teri Elliot is the organizer of the Crashworthiness and Occupant Protection session, and Dennis Grisez and Jeffrey Sprague are the organizer and chairman of the New Concepts in Truck session.

Amsterdam, The Netherlands was the host city for the bi-annual ESV (Enhanced Safety of Vehicles) Conference, held this year from June 4-

7, 2001. Attending along with TRC Inc.'s Alena Hagedorn was Daniel A. Rhule of the National Highway Traffic Safety Administration's Vehicle Research and Test Center. They presented a paper on child air-bag-induced fatalities. Their paper, entitled Child Injury Tolerance Through Case Reconstruction is now available to the public through NHTSA's website at [www.nhtsa.dot.gov](http://www.nhtsa.dot.gov).

The research was conducted to provide a basis for verification of child dummy injury criteria performance limits (ICPLs). Presently, the ICPLs used for child dummies are derived from the Hybrid III adult dummies using scale factors for size and strength considerations. This study presents the preliminary results of an ongoing effort to verify the ICPLs through reconstructions of real world incidents which have resulted in child injuries.



## TESTING CRASHWORTHINESS OF INTERIORS

When you need to ensure your vehicle's components meet the government's minimum safety performance requirements for crashworthiness, TRC Inc.'s Impact Lab is your best testing resource. Within the impact lab complex is the Static Component Lab that is capable of performing both compliance and development testing relative to the following Federal Motor Vehicle Safety Standards (FMVSS).

- FMVSS 202 Head Restraints
- FMVSS 206 Door Locks and Door Retention Components
- FMVSS 207 Seating Systems
- FMVSS 210 Seat Belt Assembly Anchorage
- FMVSS 214 Side Door Strength (static)
- FMVSS 216 Roof Crush Resistance

The lab contains a 20,000 pound-limit load plate reaction frame with a bank of eight servohydraulic actuators mounted on four vertically adjustable crossbeams to test FMVSS 202, 207, and 210. The 32-inch stroke actuators are trunnion-mounted on the crossbeams for easy lateral adjustment, capable of applying eight simultaneous loads of up to 10,000 pounds each. The auxiliary A-frame fixture allows in-vehicle testing. Each actuator uses its own servovalve and operator input load profile to allow individualized application of the load independent of the operation of the other actuators. The 214S/215 fixture can accommodate vehicles up to approximately 90 inches in height.

Lab equipment includes a Rexroth hydraulic system, Test Measurement Systems, Inc. (TMSI) system hydraulic controls, Microstar Parallel Multitasking Processor, TMSI Digital Control Interface, TMSI Amplifier/Signal Conditioner, and an Intel Pentium III host computer with SeatTEST and CrashTEST NT software for set up and test operation. Complementing the electronic data are professional photographic film services that include still, digital high-speed video, up to 1,000 frames per second 16 mm motion picture film and digitizing, film-to-video transfers, digital film analysis, and on-site film and photo processing.

In addition to static fixture tests, TRC Inc. can test your vehicle or component to a host of the Crash Avoidance, Crashworthiness, Post-Crash Standards, as well as a number of the Other Regulations as required by the FMVSS standards and regulations. TRC Inc.'s experienced and trained professional staff are available to help you test your vehicles and components in a confidential atmosphere. With its wide range of capabilities, our lab can make a significant impact on your company's products.

