



FLYING FLOORS?

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If fish and squirrels can fly, so then why not a floor? Well, that's what our engineers' thought, so they built one. As fun as it might seem to dance upon, why would we want to build one? We built it to ease the propelling of vehicles sideways into obstacles. Side impact collisions can be devastating to vehicle occupants, causing over 20% of all fatal automobile accidents and accounting for 25% of all non-fatal automobile accidents. Occupant heads and bodies are forced from side-to-side during such an impact, and if air bags are not part of the vehicle there are only the door beams and pillars to help stop the occupants from taking the full impact of the crash. Federal Motor Vehicle Safety Standards (FMVSS) requires vehicles meet certain minimum safety standards for side impact crashes and have developed specific test protocols to evaluate vehicular performance during such events.

Protecting vehicle passengers from intrusion into the occupant compartment by narrow rigid roadside objects such as utility poles and trees is a difficult problem. Solving the problem has led to the development of energy absorbing side door beams and side airbag curtains. The development of repeatable and reproducible testing methods to propel a vehicle sideways into a fixed rigid pole has been difficult. Typically, the vehicle's tires and wheels are replaced with

dolly wheels aimed in the appropriate direction, or the vehicle is pulled sideways and forced to slide on its tires on a low-friction surface. Both methods have produced errors in impact point and/or impact speed accuracy. Additionally, test preparation can be slowed by the necessity of having to move the rigid pole for precise alignment.

TRC Inc. has developed a rolling platform, sometimes called a "flying floor," that eliminates these difficulties. The test vehicle is placed atop a sixteen foot by sixteen foot wheeled platform that is then towed to test speed. A pair of tuned hydraulic shock absorbers halts the platform allowing the vehicle to slide into the rigid pole. The vehicle is then rolled forward or backward to achieve the correct alignment. A set of traps prevents the floor from rebounding so that the surface of the floor is stable during the crash phase of the test. Testing to date has yielded impact point errors of 5 mm or less.

The flying floor is ideal for testing passenger vehicles and lightweight trucks in accordance with the EuroNew Car Assessment Procedure, FMVSS 201 (Occupant Protection in Interior Impact), and FMVSS 214 (Oblique Pole Test). We would be pleased to discuss this new test fixture with you.



TRC TO HOST SAE ALL-WHEEL DRIVE SYMPOSIUM

SAE has announced their 2006 All-Wheel Drive (AWD) Vehicle Symposium / Ride & Drive Event will take place at the Transportation Research Center proving grounds in East Liberty, Ohio. This symposium and related events will be hosted by TRC Inc. and The Ohio State University. The symposium will be held August 22 - 23, 2006, immediately followed by an optional Ride & Drive Event on August 23, 2006. A pre-symposium SAE Seminar "Fundamentals of Automotive All-Wheel Drive Systems" will be offered on August 21, 2006.

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. This symposium will explore emerging technologies and focus on state-of-the-art industry knowledge of all-wheel drive systems. Presenters will share their expe-

rience in a wide variety of current and future design approaches, contributing to a free-flowing exchange of information.

The symposium's unit format will be similar to the SAE AWD Symposium held in 2004, which included presenters from five countries. An international audience comprised of several hundred people representing much of the global AWD community attended this event. The 2006 symposium is expected to be bigger than ever, attracting as many as 400 attendees. The Ride & Drive Event will be limited to 280 attendees.

If you are interested in presenting a paper, participating in this year's event, contact Christopher Durante of SAE International at cdurante@sae.org.



TRC INC. EMPLOYEE RECEIVES SAE'S MCFARLAND AWARD

We are proud to announce that Teri H. Elliot has won the 2006 Forest R. McFarland award for her outstanding service as committee chair and technical session organizer at SAE's Commercial Vehicle Engineering Congress.

This award recognizes individuals for their exceptional contributions toward the work in the planning, development, and dissemination of technical information through meetings, conferences, and professional development programs.

Ms. Elliot is a Customer Development Manager for Transportation Research Center Inc. She has worked for over two decades in project management and in marketing. Her responsibilities include marketing, advertising, sales, development of new business opportunities, ISO quality conformance and customer liaison. She is the chair for the SAE's Com-

mercial Vehicle Congress Total Vehicle Committee which has been one of the most active in acquiring content for the Commercial Vehicle Engineering Congress. Her organization of sessions and recruitment of others has ensured the committees and event remain technically strong. She also serves as a member of the CVEO Executive Committee and as an organizer and chairperson for technical sessions. Ms. Elliot also serves on three SAE standards committees: Glazing Materials, Chassis & Powertrain, and Truck Crashworthiness sub-committee; and is a co-organizer for the 2006 SAE All-Wheel Drive Symposium.

Ms. Elliot will officially receive her award on April 4, 2006 during the SAE International Congress and Exposition in Detroit, Michigan.



LOOKING FOR CORROSION TESTING?

Can't get quite enough of Winter's salty roadways? Transportation Research Center Inc. (TRC Inc.) can etch, corrode, deteriorate, wear and decay just about any exposed materials in open or semi-open systems. Our facilities can accommodate whole vehicles or simple components such as attachments to a towed trailer. Corrosion facilities include a humidity cabinet, salt spray, salt bath, corrosion chipping road, car wash, grit and mud troughs, and gravel roads. Depending on the test cycle a vehicle can be tested to simulate one year of northern America corrosion exposure in approximately one month. SAE's J1950 "Proving Ground Vehicle Corrosion Testing," procedure provides information on various corrosion cycles. These cycles describe different manufacturer's approaches to accelerating vehicle corrosion using many similar facilities available at TRC Inc. Testing can be conducted in accordance with existing procedures or we can help you develop a test to accommodate your specific component or material. Materials such as brake rotors, exhaust components, sensors, bodies and panels and construction and materials handling equipment are good candidates for towed trailer testing of one to multiple samples.

Typical test support includes:

- manufacturing and installing corrosion coupons
- developing, assigning, and documenting a corrosion rating system
- providing documentary photography
- measuring vehicle/component delivered curb weight and dimensions
- performing component preconditioning
- conducting corrosion inspections and coupon weight loss measurements
- borescoping components to view enclosed body and chassis cavities.

TRC Inc. can help shortcut Mother Nature's effects on your products.

