Our New Name

During 2009 the Transportation Research Institute was reorganized to better address current and future issues in transportation. As a result, the former Transportation Safety and Analysis Division is now the Vehicle Safety Analytics Group. VSA is focused on safety analysis based on the real-world crash experience of vehicles, which complements the experimental and lab-based work of other UMTRI groups.

Events and Outreach Activities

Members of VSA attended the Transportation Research Board’s 89th Annual Meeting on January 10-14. Mr. John Woodrooffe organized a session titled “OECD-JTRC International Study on Truck Transport Safety, Productivity, and Sustainability: Final Results.” The session contained nine presentations from international experts who participated in the study. Mr. Woodrooffe’s presentation was titled “Comparing Truck Productivity and Efficiency.” In another session, “Current Research on Commercial Vehicle Productivity, Pricing, and Enforcement,” he presented a paper titled “Comparing Truck Productivity and Efficiency – International Performance Benchmarking.”

Dr. Daniel Blower also attended the meeting, presenting two posters in the Truck and Bus Safety Poster Session. The first was titled “Vehicle Condition and Truck Crash Involvement: Evidence from the LTCCS.” This study examined the relationship of heavy truck mechanical condition and crash involvement, using the Large Truck Crash Causation Study (LTCCS). The second poster was titled “Motor Carrier Type and Driver History in Fatal Bus Crashes.” It focused on factors associated with driver errors in fatal bus crashes involving different bus operator types.

Current Projects

TIFA/BIFA Surveys: TIFA is an FMCSA-sponsored survey of medium and heavy trucks involved in fatal accidents, and BIFA is the equivalent for buses.

CSA 2010: CSA 2010 is the FMCSA initiative currently being tested in selected states to improve large truck and bus safety with the goal of reducing CMV-related crashes, injuries, and fatalities. Within the CSA 2010 Operational Model, the Safety Measurement System (SMS) has been designed to replace the current SafeStat method used to measure the relative safety fitness of CMV operators. VSA is performing the evaluation of the SMS.

Michelin: A project to examine associations between vehicle tire properties, such as tread depth, and certain crash outcomes that involve control/traction loss, braking, or avoidance maneuvers (see detailed description below).
**Straight Truck and Bus Rollover:** A NHTSA-sponsored project to evaluate the potential benefits of electronic stability control (ESC) in single unit trucks and motor coach buses.

**Forward Collision:** We will initiate a NHTSA-sponsored project to estimate the safety benefits of a Collision Mitigation Braking system for heavy trucks. The system will activate the brakes if it detects an imminent forward collision.

**MCMIS Evaluations:** These studies evaluate how well states are reporting truck and bus crashes to FMCSA’s Motor Carrier Management Information System (MCMIS) crash file program.

**TIFA and BIFA Update**

The 2007 Trucks Involved in Fatal Accidents (TIFA) data file has been produced, and codebooks and factbooks are now available.

These publications, as well as previous years, may be viewed on the CNTBS website: [http://www.umtri.umich.edu/cntbs/](http://www.umtri.umich.edu/cntbs/)

**Michelin Research Project**

Dr. Paul E. Green is involved in a project with Michelin America Research Center (MARC) to examine associations between vehicle tire properties, such as tread depth, and certain crash outcomes that involve control/traction loss, braking, or avoidance maneuvers. The main hypothesis being tested is whether vehicles with tire properties below some well-defined threshold levels are more likely to be in crashes with control/traction loss than vehicles with tread depth above the defined threshold levels.

The design is similar to a case-control study in which case vehicles are compared to control vehicles with respect to existing tire conditions. For example, cases may be defined as vehicles involved in loss of control or rear-end striking crashes. Controls may be defined as vehicles in crashes that did not involve loss of control, braking, or avoidance maneuvers. Cases and controls are then compared based on tire properties. Statistical models are being developed to assess these associations while controlling for other important confounders known to be related to tire road grip such as roadway surface condition, roadway alignment, speed limit, driver age, driver gender, vehicle model year, and light condition. Important interaction terms between these variables can also be included in the models.

The source of data for this study is the National Motor Vehicle Crash Causation Survey (NMVCCS). The NMVCCS is a nationwide survey of crashes involving light passenger vehicles, with a focus on the factors related to pre-crash events. One of the data files is specific to tire properties and contains variables describing tread depth, tire pressure, tire width, tire manufacturer, and tire defects at each of the four tire locations.