TESTIMONY OF JOAN CLAYBROOK

BOARD MEMBER & PROGRAM COMMITTEE CO-CHAIR
ADVOCATES FOR HIGHWAY AND AUTO SAFETY

BEFORE THE

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"Auto Safety: Existing Mandates and Emerging Issues"

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750 First Street, NE, Suite 901, Washington, DC 20002 ~ 202-408-1711

Mr. Chairman and members of the Subcommittee, I am Joan Claybrook. During the Carter Administration I served as the Administrator of the National Highway Traffic Safety Administration. I recently stepped down as President of Public Citizen after more than 27 years of serving in that capacity. Currently, I am a board member and the Program Co-Chair for Advocates for Highway and Auto Safety (Advocates). Advocates is a coalition of consumer, health, safety, and medical organizations and insurers and agents working together to advance federal and state programs and policies that prevent deaths and injuries on our neighborhood streets and highways. I commend the Subcommittee on Commerce, Trade, and Consumer Protection for holding this hearing, "Auto Safety: Existing Mandates and Emerging Issues".

Introduction

I am very pleased to be here today to assist the subcommittee in its oversight and deliberations on safety provisions that need to be addressed in the reauthorization of the National Highway Traffic Safety Administration (NHTSA). The NHTSA has jurisdiction for the safety of new motor vehicles and equipment. The agency is responsible for ensuring that the tens of millions of Americans traveling each day operate vehicles that are safe and equipped with the necessary technology needed to prevent a crash from occurring and ensure that the risk of death or serious injury is substantially reduced when a crash does occur.

Motor vehicle crashes kill over 40,000 Americans every year on our nation's highways, injure more than 2.5 million more, and are the leading cause of fatalities for all persons in the United States, ages four to 34. Motor vehicle crashes exact a huge personal toll in terms of deaths, injuries and disruption to family life, as well as imposing a heavy financial burden on society, estimated at $230.6 billion (in 2000 dollars) annually, or a "crash tax" of about $800 for every man, woman and child.[1]

Motor vehicle crashes are the leading cause of occupational fatalities in the U.S. The most dangerous part of the work day for any employee is the time they spend in their vehicle, with a crash occurring every 5 seconds, property damage occurring every 7 seconds, an injury occurring every 10 seconds and a motor vehicle fatality occurring every 12 minutes. In 2000, the economic cost of crashes to employers was $60 billion resulting in 3 million lost workdays. Although the federal motor vehicle safety standards issued by the NHTSA have historically been responsible for saving hundreds of thousands of lives,[2] there has been little progress in recent years in reducing the annual number of highway traffic fatalities.[3]

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[1] *The Economic Impact of Motor Vehicle Crashes 2000*, NHTSA Technical Report, DOT HS 809 446, NHTSA (May 2002).

[2] NHTSA study estimated cumulative number of lives saved from 1960 through 2002 at 328,551, *Lives Saved by the Federal Motor Vehicle Safety Standards and other Vehicle Safety technologies, 1960-2002*, NHTSA Technical Report, DOT HS 809 833, NHTSA (Oct. 2004).

[3] Decline in motor vehicle traffic fatalities to an estimated 37,313, reported for 2008, *Early Estimate of Motor Vehicle Traffic Fatalities in 2008*, Traffic Safety Facts Research Note, DOT HS 811 124 , NHTSA (Mar. 2009), reflects not only efforts to improve safety but also the effects of an estimated decline in vehicle miles of

Advancing a strong national highway traffic safety agenda is critical for many reasons. First, prevention is the key to saving lives and reducing injuries. General, fleet-wide improvements in vehicle safety through design, technology and behavioral responses reap benefits in reducing fatalities and serious, traumatic physical injuries. Second, progress toward crash prevention and vehicle crashworthiness provides economic benefits by reducing public health care costs for medical response to crash scenes, emergency room visits, hospital and rehabilitation stays, long-term care, physical and occupational therapy, reduced time away from work, and other medical treatments. Since motor vehicle crash injuries and costs are a major contributing factor to health care and employment costs, crash avoidance and injury prevention should be part of any well-developed policy initiative to bring national health care costs under control.

In fact, just this week, President Obama met at the White House with corporate executives, labor leaders and government officials to discuss innovative and effective strategies that employers are using to hold down the cost of health care for workers and their families. The foundation of all of the successful strategies, programs and cost-saving measures was repeatedly framed as "prevention". The highway and auto safety programs of the U.S. Department of Transportation (DOT) will be an essential element of the Obama Administration's health care and economic stimulus proposals to assist families and employers. Preventing motor vehicle crashes, deaths and injuries is a cost-effective, prudent, and successful investment of government resources.

This year, Congress will draft a new surface transportation reauthorization bill that will, in all likelihood, advance a balanced transportation system and expand consumer choices for transportation alternatives. This is a positive approach that will result not just in expanded public transportation options, but will encourage more pedestrian and bicycle traffic as well as a greater variety of different types of fuel efficient vehicles. While these changes provide opportunities to alter energy-use patterns, they also could lead to more interactions and safety conflicts between vehicles and non-occupants and between large and small vehicles. In drafting the reauthorization bill, we urge the subcommittee to consider the safety needs that all of these future transportation choices will require in order to improve the level of safety provided to the public in a highly mobile society.

Improving Occupant Protection

SAFETEA-LU Rules

There are many areas of safety that need to be addressed in the reauthorization of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Pub. L. 109-59 (2005). SAFETEA-LU included a number of major safety initiatives that were passed with bipartisan support in Congress. Legislative action was needed because many important vehicle safety standards had languished for decades

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travel (VMT) and likely changes in discretionary driving patterns resulting from the steep increase in oil and gasoline prices during much of the year, as well as the precipitous economic decline in the last third of the year.

without aggressive agency action to improve safety. The law directed NHTSA to upgrade regulations to save more lives then ever before while also reducing both the number and the severity of injuries to occupants in motor vehicle crashes. These included standards for reducing rollover crashes and their severity, reducing full and partial occupant ejection in crashes, improving passenger vehicle roof crush resistance to prevent lethal injuries to occupants in rollover crashes, and to complete rulemaking on enhancing occupant protection in side impact crashes. Congress intended and the public expected these rules to make significant contributions to vehicle and occupant safety.

Unfortunately, the agency rules fall short of what was expected, and what could have been accomplished by the agency. The safety community believes that these rules do not fulfill Congressional expectations and are unnecessarily weak in ways that will save fewer lives and avert fewer serious injuries than would be the case had the agency adopted stronger standards. In looking at some of the flaws in the rules issued in response to SAFETEA-LU, the Committee can evaluate how to better direct agency activities in the next reauthorization bill in order to ensure that Congress and the American people are well served by the agency in carrying out its legislative mandate.

Comprehensive Rollover Crash Testing

More than 10,000 people a year die in rollover crashes according to the earliest information from the Fatality Analysis Reporting System (FARS) for 2007, and many times that number are severely injured. A large percentage of those deaths and injuries are due to partial and complete ejection because NHTSA has not addressed rollover and roof crush occupant protection in a comprehensive manner, despite the fact that SAFETEA-LU addresses rollover protection and crash mitigation by linking the reduction of rollover crashes with occupant ejection prevention and improved passenger vehicle roof crush resistance in a single provision. The National Transportation Safety Board (NTSB) has emphasized that, "[r]esearch into rollover crashes shows that a systems approach to occupant protection, involving seat belts, seats, the roof, and interior structures, is necessary to minimize occupant exposure to injury-causing mechanisms."[4] NHTSA was clearly directed by Congress to conduct several rulemaking actions to comprehensively address the particularly devastating, chronic problem of thousands of annual rollover deaths and tens of thousands of injuries. Congress placed these rulemaking mandates in a single provision because it understood that the solution to the festering issue of rollovers required a systems-engineering approach and regulations that are complementary and interactive.

Yet, NHTSA opted for a piecemeal approach that artificially isolates aspects of rollover, ejection, roof crush, and restraint performance safety into separate, unrelated regulations. For example, on April 30, 2009, NHTSA issued the final rule to amend the roof crush resistance standard (Federal Motor Vehicle Safety Standard (FMVSS) No. 216), 74 FR 22348 (May 12, 2009), a crucially important safety standard that targets the reduction of deaths and severe injuries when passenger vehicle roofs collapse and crush into the occupants. In determining the safety benefits of the rule, the number of lives saved and injuries prevented, however, the agency makes no claims of ejection prevention as a key

[4] *Fifteen Passenger Van Single-Vehicle Rollover, Henrietta, Texas, May 8, 2001 and Randleman, North Carolina, July 1, 2001*, HAR-03-03, July 15, 2003, at 52.

benefit of the rule. This allows the agency to limit potential safety benefits by explicitly excluding the 6,496 people who died from complete ejection in rollover crashes in 2007 as irrelevant. *Id.* at 22351. Rather than treating the rollover problem holistically, the agency has artificially compartmentalized rollover crashes into a series of separate, disparate occupant responses.

Dynamic Rollover Testing

Addressing rollover protection in a comprehensive way requires the agency to use a dynamic test that can simultaneously demonstrate rollover roof crush resistance and ejection prevention using multiple countermeasures for keeping occupants inside the passenger compartment and protected in their seats. A realistic dynamic test would simultaneously evaluate the interactive effects of active restraints with pre-tensioners and load limiters; passive protection such as air bags, door latch and retention component integrity; and the benefits of advanced glazing to reduce occupant excursion inside the passenger compartment and prevent ejection outside the compartment. In SAFETEA-LU Congress instructed the Secretary to consider dynamic tests because they more realistically duplicate the actual forces transmitted during a rollover crash, but NHTSA has not actually conducted any recent dynamic tests that would show how the roofs of passenger vehicles actually deform and fail in full rollovers.

This is startling in light of the agency's admission in the final rule that it regards a dynamic rollover test as crucially important. NHTSA decided years ago that major safety regulations such as side and front impact occupant protection must be based on a dynamic vehicle test. *Id*. at 22355. Eighteen years ago, Section 210 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) directed the Secretary to complete rulemaking consideration of a standard to protect against unreasonable risk of rollover. NHTSA's rulemaking ultimately rejected establishing a stability standard based on a dynamic rollover test. Eighteen years later, there are still passenger vehicles on the road that have a high risk of rollover crashes. Yet, the agency refrains from testing available dynamic test devices and refuses to set a timetable to produce a realistic dynamic vehicle test of rollover and roof crush.

Roof Crush Resistance Rule

The recent final rule on roof crush sets a standard of three times strength-to-weight ratio (3.0 SWR) for vehicles less than 6,000 pounds gross vehicle weight rating (GVWR), and, most outrageously, only 1.5 SWR for vehicles between 6,001 and 10,000 pounds GVWR. The new regulation tests no injury responses from occupants in rollover crashes with roof crush – in fact, it does not even use a crash dummy – and it continues to allow manufacturers to game the compliance test using a platen or plate on the roof to exert pressure that transfers much of the test load to the vehicle's B-pillars. Yet in real-world rollovers much of the force is exerted on the A pillar. NHTSA's argument that large, heavy passenger vehicles do not have many rollover crashes with roof crush, and that higher static strength requirements, such as 3.5 or 4.0 SWR that safety organizations supported as an alternative to a dynamic test, would cost too much and add weight up high in certain vehicles, simply do not withstand close examination.

NTSB has emphasized that heavier vehicles such as 12- and 15-passenger vans, not previously subject to the standard, experience serious patterns of roof intrusion. NTSB cited two investigations it conducted concerning the safety need for vehicles between 6,000 and 10,000 pounds gross vehicle weight rating (GVWR) to meet stronger roof crush resistance requirements. The NTSB report stated that, "[e]ven though these vans are used in a manner similar to passenger cars, the occupants are not afforded the same level of safety as those occupants riding in passenger cars." NTSB's Recommendations H-03-12 through H-03-17, issued in 2003, included findings stating that NHTSA's own research report showed that no passenger vehicles on the road today have a higher rollover propensity, especially when fully laden, than 12- and 15-passenger vans. The NHTSA roof crush final rule relegates the passengers of these vehicles to second-class safety protection and simply discards NTSB's findings and recommendations.

The roof crush final rule by the NHTSA's own admission is projected to save only about 130 lives a year, with only a handful of fatalities prevented for occupants of large SUVs, vans, and pickup trucks. A comprehensive approach to rollover protection that includes dynamic testing for roof crush resistance would save many more lives. The agency should develop a more comprehensive approach to rollover that, in addition to strong roof crush resistance, simultaneously produces requirements for air bags that stay inflated throughout the length of a rollover crash with many rollover turns, belt pretensioners that stay engaged throughout the length of a long rollover crash, belt load limiters that function repeatedly to mitigate excessive loads on an occupant's torso, seat systems that improve occupant retention in their seats, and advanced glazing to ensure that there is no partial or complete ejection from a vehicle in a rollover crash. The agency's rule on roof crush resistance graphically demonstrates its reluctance to use a systems-engineering approach to testing that would permit setting a comprehensive standard for rollover occupant safety as it has for frontal and side impact protection.

Electronic Stability Control (ESC)

SAFETEA-LU also directed the issuance of a rule to require electronic stability control (ESC) systems be installed on all passenger vehicles to reduce the occurrence of rollover crashes. ESC is a technology grafted onto basic anti-lock braking systems (ABS) that reduces loss-of-control incidents leading to vehicle instability. By automatically modulating the braking on each wheel independently, ESC helps the driver maintain steering control and, in turn, the stability of the vehicle and thereby helps to prevent rollover crashes.

The safety community regards ESC as an important safety advance and fully supported requiring ESC systems on all new passenger vehicles. However, even NHTSA admitted that despite the great potential for ESC to prevent a large portion of rollover crashes, ESC will not prevent all rollover crashes. The agency expects about a 30 percent reduction of passenger car fatal single-vehicle crashes and a 63 percent reduction of SUV fatal single-vehicle crashes with ESC onboard. Thus, a majority of fatal car rollover crashes will not be prevented and, at the very least, a large percentage of fatal SUV rollovers will not be avoided. Nevertheless, no action to prevent rollover is required aside from the installation of ESC systems.

NHTSA's final rule on ESC, issued in 2007, was flawed in several respects. 72 FR 17236 (Apr. 6, 2007). First, as mentioned, the final rule relied entirely on ESC as the only countermeasure to prevent rollover crashes, even for vehicles with high rollover rates. Second, the final rule basically accommodated every type of ESC system that was already in production, regardless of whether one system was more effective or less effective than another in assisting the driver in maintaining steering control to ensure vehicle stability. Not all ESC systems perform equally; but instead of setting rigorous performance requirements to ensure that the state-of-the-art technology is required going forward, the rule essentially "grandfathered" the available but less capable ESC systems. Third, the final rule failed to set a performance requirement for understeer, a crucial feature of ESC systems. In order to maintain control of a vehicle trying to follow a tightly curved road or negotiating a turn at an intersection, it is essential that the ESC system provide proper understeer control. Yet, the agency rule included no minimum requirement for ESC understeer control. Finally, the NHTSA rule permits the driver to simply turn off the ESC system by pushing a button. In many circumstances drivers who turn off the ESC system in their vehicle thinking they won't need it will not have the safety protection afforded by ESC to help prevent loss of tire traction and vehicle stability when the need arises.

The only way to further reduce rollover crashes is a strategy with multiple, interactive goals. First, require passenger vehicles, especially those that have higher rollover tendencies, to be designed with a lower center of gravity and other systems to make them more stable. Second, adopt a comprehensive regulatory response to occupant protection when rollovers nevertheless occur even with ESC. Third, amend the ESC standard to strengthen it by increasing the stringency of its requirements to eliminate less effective ESC systems, add a provision controlling understeer, and require that the ESC systems are automatically re-enabled a short time after they have been manually turned off.

Side Impact Protection

SAFETEA-LU also required an upgrade of the side impact standard (FMVSS No. 214). NHTSA issued the final rule in 2007. 72 FR 50900 (Sept. 5, 2007). Although the separate side impact standard for head protection, upper interior side impact (FMVSS No. 201) was subsequently modified to promote the use of upper interior air bags and curtains, neither standard prior to the 2007 final rule required passive protection to mitigate the severity of head impacts, and neither standard addressed the serious problem of occupant partial and complete ejection through side windows. Both standards could both be met simply through the use of such static materials as non-reboundable foam placed inside the roof perimeter and other static methods of reducing the severity of head impacts on vehicle support pillars.

In the final rule, NHTSA did effectively require side impact air bags for front seat occupants, but the rule is not demanding enough since, as the agency has admitted, small children and very short statured adults could still miss the inflated air bags and suffer partial or complete ejection. In addition, the final rule retained a less safe alternative test procedure for rear seat occupant safety. By using a low moveable deformable barrier, or MDB, test for rear seated occupants, the agency is permitting the continuation of less

effective static protection for rear seat passengers who are frequently children. This decision also effectively undercut the required use of upper interior side impact air bags in rear seating areas that could have helped to reduce occupant head injuries and ejections. Since NHTSA has not required advanced glazing in passenger motor vehicle side windows, this decision means that rear seat occupants have no real protection against being ejected through side windows or out of rear side doors.

The NHTSA rule also did not set lower head injury test scores for lateral impacts than for front impacts. Advocates recommended a lower head injury criterion (HIC) score for measuring lateral head trauma in its comments to the rulemaking docket. Since human heads suffer more severe trauma when the side of the head is struck, the side impact rule should have taken this fact into account. In addition, the final rule does not require that doors remain closed when they are struck in the pole test, a serious setback for increasing occupant ejection protection in side impacts. NHTSA has recognized this drawback in several public documents.

Ejection Prevention

Turning now to the remaining SAFETEA-LU rule that has not yet been issued, Congress directed NHTSA to reduce both complete and partial ejections of vehicle occupants in outboard seating positions. The agency has yet to issue a proposed rule even though the statutory date for issuing a final rule, October 1, 2009, is less than six months from now.

Although what specific actions NHTSA is contemplating in establishing an ejection prevention standard are not known as yet, SAFETEA-LU links the issuance of an ejection standard to the concurrent need for door lock and retention component rulemaking. NHTSA estimates that about 54,000 people are ejected from passenger motor vehicles each year, with about 15 percent of the ejections occurring through open doors, resulting in more than 2,500 fatalities each year.[5] NHTSA has expressed concern about door latch integrity, proposed upgrading the requirements in the past, and has even admitted that its major standards using dynamic compliance tests paradoxically allow doors to open so that occupant ejection is permitted.[6] Yet, NHTSA has done nothing to address the thousands upon thousands of deaths that have occurred over the years because the agency has delayed in addressing the crucial issue of failed door latches and hinges.

Similarly, NHTSA has done nothing as yet to propose other, interacting countermeasures to prevent ejection, especially the use of advanced glazing. Many people are not aware that occupant retention glazing was actually used on a regular basis in passenger motor vehicle side windows from the late 1930s until the early 1960s. Then, as an apparent cost saving measure, vehicle manufacturers phased out laminated side window glass in favor of using cheaper tempered glass. Advanced glazing was shown to prevent occupant ejection as long ago as tests conducted by Ford in 1960.[7] Moreover,

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[5] file:///G:/DOCS/Door%20Latch%20Integrity_2,513EjectionDeathsEachYear1988-1996.htm.

[6] *Evaluation Program Plan*, DOT HS 810 903, NHTSA, Aug. 2008, at 26.

[7] *See*, comments of Syson-Hille and Associates, Nov. 7, 2000, to Docket No. NHTSA-2000-7066.

NHTSA's Experimental Safety Vehicle (ESV) program had an occupant retention requirement for rollovers. The ESVs had fixed laminated side glass to prevent ejections.

In the past, NHTSA has been very positive regarding the use of advanced glazing as an anti-ejection safety countermeasure. In 2000, the agency emphasized that tens of thousands of passenger vehicle occupants were ejected through glazed portals each year resulting in an average of 7,300 deaths annually. 65 FR 44710-11 (July 19, 2000). About 60 percent of rollover crash deaths each year occur in just 10 percent of rollover fatal crashes that result in partial or complete occupant ejection. NHTSA estimated that anti-penetration glazing could save between 500 and 1,300 lives a year in both rollovers and other types of crashes. *Id.* at 44711.

Advocates filed comments with the agency and stressed that advanced glazing should be integrated with a comprehensive, systems engineering approach to occupant ejection prevention:

> NHTSA needs to coordinate the development of advanced glazing with the contribution of seat belt use rates, the advantages of various types of advanced glazing, and the deployment of inflatable upper interior side-impact safety devices in both side-impact and rollover crashes. In addition, as the agency indicates earlier in this notice, it needs simultaneously to integrate the lifesaving benefits of these anti-ejection strategies with the safety performance of improved door latches.[8]

Congress directed the agency to complete its investigations and issue a final report on the advantages of advanced glazing.[9] *See*, 67 FR 41365, 41369 (June 18, 2002). NHTSA subsequently filed a report with Congress in November 2001 touting the benefits of advanced glazing that were enhanced by mating anti-ejection glazing with side impact air bags.

But not only has NHTSA still not embraced a systems approach to preventing ejection that would apply multiple countermeasures to ensure a fail-safe anti-ejection regulation, the agency did a complete turnabout in its support for the widespread use of advanced glazing to prevent ejections. NHTSA withdrew its advance notice of proposed rulemaking (ANPRM) in June 2002 that would have set advanced glazing regulatory requirements (67 FR 41365, June 18, 2002). The reasons given by the agency were conclusory and vague, with references to "the advent of other ejection mitigation systems, such as side air curtains" – which the agency already had investigated earlier in their performance relationship to advanced glazing for occupant ejection prevention. The agency also asserted that window frames on vehicles would have to be made smaller and result in smaller side windows. *Id.* at 41367. This does not appear to be a problem for Volvo, Mercedes Benz, Peugeot, Audi, Chrysler, and BMW, which are phasing in laminated side glass in side and rear windows for multiple reasons, including occupant ejection prevention.

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[8] Comments of Advocates for Highway and Auto Safety, Docket No. NHTSA-2000-7066, at 4 (footnote omitted).

[9] House of Representatives Conference Report on H.R. 4475, Department of Transportation and Related Agencies Appropriations Act of 2001.

None of NHTSA's claims rejecting advanced glazing bear close examination, and there is really no support for these generalizations.[10] In addition, as discussed below in our testimony, NHTSA's interest in advanced glazing has again done a turnaround, with renewed enthusiasm for the use of advanced glazing in motorcoach side windows to prevent passenger ejections in rollover, a leading reason for the annual toll of motorcoach occupant deaths and serious injuries.

It must be stressed that roof strength and the resistance of window portals to deformation is affected by how well side window and windshield glazing helps prevent roof distortion, collapse, and intrusion so that survival space is increased for occupants in rollover crashes while, simultaneously, the use of advanced glazing can prevent a shattered side window that leads to occupant ejection from the vehicle. Strangely enough, NHTSA recognizes this because in the final rule on roof crush resistance, the agency specifies that side windows are to be rolled up, an action that, even with tempered glass, provides some measure of additional resistance to roof crush and intrusion. The only problem, of course, is that people often have windows rolled down so that roofs in full rollovers with lowered side window glazing may have poorer resistance to roof failures leading to massive head trauma for occupants.

We hope that the upcoming rule on ejection prevention and mitigation will include a performance requirement that will encourage a combination of airbag and advanced glazing technologies that will afford maximum safety benefits to occupants.

Needed Safety Initiatives for Reauthorization

Walking and Bicycling Safety

Pedestrians and bicyclists are the forgotten victims of motor vehicle crashes, with more than 5,300 deaths each year and many thousands of injuries that are often permanently debilitating.[11] Pedestrians struck by motor vehicles is a rapidly growing safety and health problem that is outstripping population growth because, with each succeeding year, a greater proportion and number of U.S. pedestrians are older citizens whose vulnerability to lethal and crippling injuries is much higher than that of younger people.[12] Seniors on foot are more at risk than ever before when attempting to cross a street.[13] As age increases above approximately 65 years, pedestrians struck by motor vehicles often suffer lethal or severe and disabling injuries in collisions that result in only moderate and recoverable

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[10] *See, e.g.*, S. Batzer, *Automotive Side Glazing for Occupant Containment in Rollovers*, The Engineering Institute, Washington, DC, July 20, 2007.

[11] *Traffic Safety Facts 2007, Early Edition*, DOT HS 811 002, NHTSA (2008); *Motor Vehicle Traffic Crash Fatality Counts And Estimates of People Injured for 2007*, NHTSA (Aug. 2007); *Pedestrian Roadway Fatalities*, DOT HS 809 456, NHTSA (April 2003).

[12] *See, e.g.*, M. Bradley *et al.*, "Injury Profiles in Pedestrian Motor Vehicle Trauma," *Annals of Emergency Medicine* 18:8 (1989, rev. 2005).

[13] In 2000 there were more than 35 million people in the U.S. age 65 or more, but this number is projected to rise to more than 71 million by 2030. U.S. Census Comparison Projected Growth Older Population 1970/2030.

trauma for younger people. Encouraging adults to leave their cars at home and children to walk more should not increase their risk of death and injury from being struck by a vehicle. NHTSA needs to take actions that improve the chances of survival when pedestrians and bicyclists are struck by motor vehicles.

NHTSA conducted research on pedestrian protection as part of the Research Safety Vehicle program in the 1970s, and persuaded vehicle manufacturers to install flexible hood ornaments if they insisted on using them. Today few use them.

The agency began formal consideration of modifying the front ends of passenger motor vehicles to accommodate pedestrian safety in 1991. The agency considered adopting countermeasures to reduce the severity of injuries when pedestrians are struck in the lower extremities and suffer head trauma when impacting rigid areas of vehicle. This effort was dropped a few years later. As a consequence, there is currently no specific pedestrian safety standard that addresses reduction of trauma severity for passenger motor vehicle frontal impacts with pedestrians. In addition, there is no anthropomorphic test device, or crash test dummy, in NHTSA's safety regulations or in the agency's New Car Assessment Program (NCAP) that is used to accurately model and measure the injury response to blunt trauma inflicted by motor vehicles when impacting pedestrians.

In recent years, NHTSA has participated in the development of a Global Technical Regulation (GTR) addressing pedestrian impact safety. In November, 2008, NHTSA supported the adoption of a exceptionally weak regulation that uses an abbreviated approach to testing pedestrian injury responses, does not use a full anthropomorphic test device developed for pedestrian impact testing, and does not protect pedestrians from injuries inflicted by the upper portion of passenger vehicle front ends, particularly the part of fenders near the windshield, the cowl, A-pillars, and windshield framing.[14] Although there was some earlier consideration of the need to ensure that pedestrian impact safety countermeasures also provide protection to cyclists when struck by passenger vehicles, this important safety action was discarded and was not part of the final GTR. This Economic Commission for Europe (ECE) approach has been heavily criticized as an incomplete safety initiative that falls short of what is needed, including adverse critiques in peer review journals authored by members of the GTR Working Group.[15]

In contrast, Japanese carmakers have advanced the state of the art in pedestrian safety for the past several years, especially Honda, which has several models with sophisticated pedestrian front-end safety features. Honda has also produced several iterations of pedestrian full crash dummies to reproduce actual injury responses of people struck by light vehicles. Also, the Japan New Car Assessment Program (JNCAP) has

[14] ECE/TRANS/WP.29/107018, December 2008.

[15] *See*, *e.g.*, J. Crandall, K. Bhalla, M. Madeley, "Designing Road Vehicles for Pedestrian Protection," British Medical Journal 324:1145-1148 (May 11, 2002); J. Breen, "Protecting Pedestrians," British Medical Journal 324;1109-1110 (March 30, 2005). Also, *see*, Comments of Advocates for Highway and Auto Safety, October 22, 2008, Docket No. NHTSA-2008-0145, N01, 73 FR 55201 (Sept. 24, 2008).

already introduced pedestrian head injury measures as part of its test regime to show how well Japanese cars protect pedestrians from serious injury and death.[16]

It is clear that the U.S. is lagging far behind in enhancing pedestrian protection in motor vehicle collisions. In light of future trends toward more pedestrian traffic and bicycle use, the U.S. can no longer await action on pedestrian safety from NHTSA. Congress should instruct the agency in no uncertain terms that pedestrian impact safety improvements are necessary and that the agency must act decisively to issue pedestrian safety regulations that will create more "forgiving" light vehicle front ends. Regulations that foster gentler impacts with passenger motor vehicle front ends will substantially reduce pedestrian – and cyclist – deaths while also lowering the severity of injuries, especially for our rapidly growing older population.

Vehicle Crash Compatibility

As our nation comes to grips with environmental concerns, energy costs and fuel conservation, there will be an inevitable impact on how and what we drive. Fuel efficiency and the need to reduce emissions of greenhouse gases by motor vehicles will reshape the vehicle fleet as lighter, alternatively-fueled vehicles are produced to meet these challenges and consumer demand. The economic viability of our own domestic auto industry may well depend on producing fuel efficient vehicles that are lighter than most makes and models in the current vehicle fleet. This trend will underscore an already troubling safety problem – the lack of crash compatibility between larger and lighter motor vehicles. As consumers choose more fuel efficient vehicles, we need to ensure that safety measures are in place to protect occupants of every vehicle size and that the choice of a more environmentally friendly passenger vehicle is not accompanied by a major safety penalty for the buyers.

It is inevitable that if we are to seriously address global warming and fuel economy concerns, newer fuel efficient vehicles will be produced. Even if U.S. manufacturers maintain old production patterns of larger vehicles for the near future, European, Japanese and other imports will most likely include smaller, fuel efficient models. Consumers want to purchase more fuel efficient cars and requiring safety standards that address crash compatibility will level the playing field for domestic and foreign manufacturers.

The fact is that occupants in some lighter vehicles are generally at a safety disadvantage when struck by a larger vehicle. This mismatch has everything to do with the design of vehicles, because the problem results from differences in design between different size passenger vehicles, including vehicle geometry, height (clearance above the roadway), front-end design features, energy absorption features, and gross vehicle weight. We experienced an explosion of this safety problem as the population of light trucks (sport utility vehicles or SUVs and pickup trucks) increased as a percentage of the vehicle fleet in the late 1980s and 1990s. As more, larger and lighter vehicles were produced the mismatch became pronounced and took its toll on occupants in lighter vehicles. By 1993 the number

[16] *See, e.g.*, K. Takeucki, T. Ikari, "The Correlation Between JNCAP Pedestrian Head Protection Performance Test and Real-World Accidents," Paper No. 07-0203-O, 20th International Technical Conference on Enhance Safety of Vehicles, Lyon, France, June 2007.

of fatalities in crashes between light trucks and cars (5,751) exceeded the total of fatalities in car-to-car collisions, with the occupants of the cars suffering 4 out of 5 – 80 percent – of those fatalities.[17]

To date, NHTSA has not conducted rulemaking to propose effective countermeasures that can substantially reduce the lethal force imparted by larger vehicles when they impact lower and lighter vehicles. Unless the NHTSA takes measures to address the crash compatibility safety problem, we will suffer the same problem of unnecessary deaths and injuries again, as more fuel efficient vehicles become popular. It is indefensible that consumers who want to do the right thing – reduce their carbon footprint and travel in fuel efficient vehicles – should have to place their lives and the lives of their families at increased risk because there is no federal crash compatibility safety standard.

Motorcoach Safety

Motorcoaches are the over-the-road regional passenger airliners of America's highways, carrying up to 59 occupants on board for a given trip. In 2006, there were more than 630 million passengers taking trips in motorcoaches, according to the American Bus Association, almost as many passenger trips as U.S. commercial airlines carried that year. FMCSA reports that 3,700 interstate motorcoach companies are registered with the agency and are operating more than 34,000 motorcoaches.[18] Many thousands of other motorcoaches operate wholly in intrastate commerce. Passenger ridership is projected to substantially expand in the near future given expected increases in the cost of commercial airline travel and increasing flight delays. In fact, each year the number of new interstate-registered motorcoach companies increases by about 900.

Motorcoach crashes can easily result in many deaths and severe injuries, such as the Bluffton University crash in Atlanta, Georgia, on March 2, 2007, where a motorcoach plunged over a bridge deck to the road below, ejecting many of the university baseball team players and coaching staff on board and resulting in the deaths of the driver, his wife, and five students. Twenty-one other occupants were injured.[19]

Despite these harrowing losses, the U.S. Department of Transportation (DOT) does not require that motorcoaches have the same basic occupant protection safety features that are routinely designed into passenger motor vehicles. There are fewer NHTSA safety standards for motorcoaches than for any other motor vehicles regulated by the agency.[20] Motorcoaches lack critical safety features such as; seat belts; passenger seat strength standards; occupant interior impact protection; anti-ejection measures such as advanced glazing; adequate roof strength standard; rollover prevention requirements; automatic fire suppression systems; adequate on-board firefighting equipment; and interior emergency

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[17] *Relationship of Vehicle Weight to Fatality and Injury Risk in Model Year 1985-93 Passenger Cars and Light Trucks, NHTSA Summary Report*, DOT HS 808 569, NHTSA (April 1997).

[18] http://www.fmcsa.dot.gov/facts-research.

[19] *Motorcoach Override of Elevated Exit Ramp Interstate 75 Atlanta, Georgia, March 2, 2007*, HAR-08/01, July 8, 2008.

[20] George Mouchahoir, *Review of Motorcoach Regulations*, NHTSA, April 2002.

illumination of safe evacuation paths. Yet, seat belts are now required on European, Japanese, and Australian motorcoaches.[21] Australia responded to the need to restrain motorcoach occupants and keep them in their seats and prevent their ejection by mandating seat belts 15 years ago. Since that mandate was issued, not a single death or disabling injury has occurred in an Australian motorcoach crash for any belted occupant.[22] Australia also produced a much safer and less expensive motorcoach seat design despite the protests of the industry that it was impossible to improve the safety of motorcoach seats without adding lots of extra weight that would cost the industry fuel and payload penalties.[23]

Rollovers are the most common type of severe motorcoach crash and produce the most severe occupant trauma. These crashes are often catastrophic, with roof failures that can even involve complete roof separation, as occurred in a crash and rollover in which nine passengers were killed near Mexican Hat, Utah, on January 7, 2008, and 51 of the 53 passengers ejected. According to a recent research report from NHTSA, more than half the deaths in motorcoach crashes are the result of occupant ejection from the vehicle, and ejection is the reason for 70 percent of occupant deaths in motorcoach rollovers.[24]

Motorcoach fires have grown both in numbers and severity in recent years. There are daily media reports of motorcoach fires occurring somewhere in the U.S. Fires on motorcoaches, especially in wheelwells, engine compartments, and heating/cooling systems are an especially severe and prevalent safety problem whose proportions just became known as the result of a Volpe Transportation Center study[25] whose findings were presented at the Commercial Vehicle Safety Alliance (CVSA) Safety Summit, in March 2009. CVSA convened the safety summit because of the rapidly growing concern over the ongoing deterioration of motorcoach safety in the U.S. The Volpe study found that there was an average of more than one fire every day on a motorcoach in the U.S. On September 23, 2005, near Wilmer, Texas, a fire on board a motorcoach transporting retirement home residents evacuated due to Hurricane Rita, resulted in 23 fatalities.[26]
Current standards for combating the ignition and spread of fires on motorcoaches are wholly inadequate.

The deplorable state of motorcoach safety standards has been documented by the National Transportation Safety Board (NTSB) in nearly 70 motorcoach investigations over a span of 40 years that resulted in hundreds of deaths and thousands of injuries and numerous recommendations to U.S. DOT that have been ignored. In some of these incidents more than 20 people on board

[21] European Union (EU) Directive 2003/20/EU, May 2006; Japanese seat belt policy implemented June 2008; Australian Design Rule 68, July 1994.

[22] M. Griffiths, M. Paine, R. Moore, "Three-Point Seat Belts on Coaches – The First Decade in Australia," Abstract ID 05-0017, n.d.

[23] *Id.*

[24] *NHTSA's Approach to Motorcoach Safety*, Docket No. 2007-28793, Aug. 6, 2007.

[25] *Bus Fire Causation Study*, Volpe National Transportation Systems Center, 2009.

[26] *Motorcoach Fire on Interstate 45 During Hurricane Rita Evacuation Near Wilmer, Texas, September 23, 2005*, NTSB HAR-01-01, Feb. 21, 2007.

were killed in a single crash or fire. NTSB has issued dozens of recommendations over the years addressing all aspects of motorcoach safety, including crash protection of occupants, crash avoidance capability especially regarding catastrophic single-vehicle events involving rollovers, resistance to fire propagation and spread, and many other issues touching on motorcoach safety design, performance, and operation. NTSB's recommendations have either been closed out because of unsatisfactory responses, incomplete responses, or no responses from U.S. DOT agencies.

In recent years, Congress has held a series of hearings on motorcoach safety issues and the lack of action by DOT to improve motorcoach safety because of its rapidly growing concern that motorcoach safety in the U.S. was adrift and that the agencies of jurisdiction were not doing their job to dramatically improve occupant safety. In the House, the Transportation and Infrastructure Committee hearings were held on *Curbside Operator's Bus Safety*, by the Subcommittee on Highways, Transit and Pipelines on March 2, 2006, and on *Motorcoach Safety*, by the Subcommittee on Highways and Transit on March 20, 2007. In the Senate, the Commerce, Science and Transportation Committee, Subcommittee on Surface Transportation and Merchant Marine Infrastructure, Safety, and Security held an *Oversight Hearing on Bus Safety*, on September 18, 2008. Testimony at those hearings presented many of the safety issues already cited by NTSB, safety groups and crash survivors.

Recently, on April 21, 2009, NTSB took action in response to the catastrophic rollover crash in Mexican Hat, Utah, which resulted in nine deaths, and 51 of 53 occupants ejected from the coach. NTSB took the unprecedented action of revising its Most Wanted list of safety improvements before the traditional annual revision date in October. Moreover, the NTSB unanimously found that NHTSA's inaction on improving motorcoach safety contributed to the deaths and injuries suffered by the occupants of the Mexican Hat rollover crash. The Board stated at the public hearing that NHTSA had failed to provide adequate occupant protection systems for passenger in motorcoach crashes, especially rollover crashes.[27] In addition, NTSB reclassified NHTSA's action on four previous recommendations, H-99-47 through H-99-51, as unacceptable and revised its recommendations on its Most Wanted list from yellow, meaning slow but acceptable progress, to red, indicating that the agency's responses and actions are unacceptable.

NHTSA has embarked on a program of research and testing to respond to the sense of urgency about dramatically improving motorcoach safety that NTSB has emphasized in its recommendations to the agency.[28] To date, the agency has filed in its motorcoach safety research docket several reports on how well motorcoaches respond to a rollover test, a roof crush test, and a frontal barrier test.

Advocates strongly supports the test and findings of NHTSA's frontal crash test, which is quite stringent, because it definitively shows that traditional motorcoach industry claims that passengers are safe because they are "compartmentalized" and protected like eggs in an egg crate, are just not true. Unbelted test dummies were thrown from their seats in the frontal crash test and ended up either in a jumbled pile in the central motorcoach aisle, or were propelled into or over the seatbacks in front of them. Dummies with two-point seat belts suffered what were recorded as severe injuries. But dummies with three-

[27] HAR 09/01 Synopsis, NTSB, April 2009.

[28] "NHTSA's Approach to Motorcoach Safety," *op cit.*

point belts (including shoulder straps) were properly restrained in their seats and suffered low injury forces.

The other two tests conducted by NHTSA, however, are weak and not acceptable. One of the tests is how a motorcoach suffers structural damage in a rollover. The test is an adaptation of the current EU test that simply topples a motorcoach from a one-meter high platform onto the ground. The test results show levels of damage that are far milder than those often suffered by motorcoaches in real-world catastrophic rollover crashes. As indicated above, the Mexican Hat motorcoach crash resulted in the entire coach roof ripped from the chassis. In addition, none of the windows broke in NHTSA's rollover test, in contrast to most actual motorcoach rollover crashes in which some or all of the windows shatter and unbelted passengers are then ejected through large side window openings. NHTSA says that it will separately test how glazing performs with a component test using a lateral impactor, but this is not a real-world demonstration of how a motorcoach roof and sides distort to facilitate glazing failure that results in large, open portals allowing passengers to be ejected. Once again, as with passenger vehicle rollover, NHTSA chooses to artificially separate the tests of crucially important safety features that in the real world perform in a complex, interactive manner in actual rollover crashes. This rollover test approach, and the agency's use of a component test for motorcoach side window glazing, can lead to weak safety standards that will not adequately protect motorcoach occupants in rollover crashes.

Since the rollover test used so far by NHTSA does not really demonstrate roof crush resistance, the agency has adapted a decades-old school bus roof crush test (FMVSS No. 220) that is too outdated and much too weak for use in testing motorcoach roof strength. Standard No. 220 only requires a 1.5 SWR for compliance, the same inadequate strength level of the standard that NHTSA has just changed for passenger motor vehicles less than 6,000 pounds GVWR, but will now be required for heavier passenger vehicles above 6,000 pounds GVWR. The school bus roof strength test is just as weak as the agency's chosen rollover test – it again does not show how motorcoach roofs resist crush and intrusion in real-world, on-roof rollover crashes.[29]

Congress needs to direct NHTSA to address real-world motorcoach safety needs across the board – both crashworthiness and crash avoidance – and respond vigorously to outstanding NTSB safety recommendations on motorcoach safety. A legislative vehicle already exists that, if enacted, will accomplish these goals. Motorcoach safety bills containing detailed, comprehensive occupant protection and motorcoach crash avoidance reforms have been introduced in both houses of Congress. H.R. 1396 and S. 554, the Motorcoach Enhanced Safety Act of 2009, sponsored by Rep. John Lewis (D-GA) and Sen. Sherrod Brown (D-OH) and Sen. Kay Bailey Hutchison (R-TX), direct NHTSA and the Federal Motor Carrier Safety Administration (FMCSA) to adopt several regulations addressing major safety improvements for occupant and operating safety that are long overdue and critically important. These two bills reflect a growing consensus among the NTSB, safety advocates, families that have suffered terrible losses of loved ones in

[29] In fact, NHTSA did not complete the weak roof crush test that it used on motorcoaches even to the 1.5 SWR level because the test device the agency used was inadequate.

disastrous motorcoach crashes and members of Congress that U.S. DOT has failed to advance motorcoach safety in a timely fashion. Enactment of this legislation is crucial to ensure that DOT does not delay any longer. The lives of our children and other family members are at stake.

Electronic On-Board Recorders (EOBRs)

The recent Mexican Hat, Utah motorcoach crash represented another, catastrophic example of commercial driver hours of service violations that occur every day in the U.S. because motorcoach and truck drivers are pushed to fulfill unrealistic schedules that result in chronic fatigue and sleep deprivation. Motorcoach and truck drivers are a danger to themselves and everyone sharing the road with them when they push themselves beyond acceptable limits to keep driving hour after hour. Their records of duty status are allowed by the U.S. DOT to be compiled in handwritten logbooks, usually referred to by drivers themselves as "comic books" because they are so regularly falsified to conceal violations of maximum on-duty driving and working hours, and of minimum off-duty rest time.

Without EOBRs, drivers can continue to manipulate their logbooks to conceal excessive driving time and inadequate off-duty rest time. It is often difficult for law enforcement officers and truck inspectors to determine hours of service violations using only driver logbooks and receipts.

NTSB has called for EOBRs to be placed on-board commercial motor vehicles for many years. In fact, NTSB has the need for EOBRs on its Most Wanted list of necessary safety improvements for commercial motor vehicles, and it has listed the federal response to this recommendation as Code Red – Unacceptable.[30]

EOBRs are crucially needed to monitor and record how many hours commercial drivers, including motorcoach drivers, are operating their vehicles. This is especially important for truck drivers whose hours of service have been dramatically increased by final rules issued by FMCSA since 2003 that the agency has refused to modify despite being overruled and remanded twice in unanimous decisions by the U.S. Court of Appeals. To date, DOT has taken no action to require EOBRs on board commercial motor vehicles. NHTSA is the agency with jurisdiction to issue equipment standards for all new motor vehicles including motorcoaches and trucks. In addition, for nearly a decade, NHTSA has also had jurisdiction to issue a retrofit requirement for safety equipment when it issues a similar standard for new vehicles.[31]

Event Data Recorders (EDRs)

Event Data Recorders (EDRs) are another safety technology, distinct from but complementary with EOBRs that capture and store critical data about pre-crash vehicle

[30] http://www.ntsb.gov/Recs/mostwanted/highwayissues.htm.

[31] 65 FR 41014 (July 3, 2000) ("This rule . . . reflect[] the Secretary's decision to now delegate to the National Highway Traffic Safety Administrator the authority to promulgate safety standards for commercial motor vehicles and equipment already in use when the standards are based upon and similar to an FMVSS [federal motor vehicle safety standard] promulgated under chapter 301 of title 49, U.S.C.").

maneuvers and other engine and vehicle dynamics in the event of a crash. Like the "black boxes" on airliners, EDRs store information vital to investigators who want to identify the causes of crashes and to researchers attempting to determine how to improve motor vehicle crash avoidance and crashworthiness.

NTSB has repeatedly voiced its support for EDRs in motor vehicles and held a symposium a decade ago devoted entirely to EDRs and their benefits.[32] NTSB crash investigations conducted in subsequent years also contained findings that confirmed the need for EDRs to capture crucially important pre-crash data to aid crash investigation and reconstruction. NTSB has been especially interested in EDR data on seat belt use.

NHTSA has already issued a rule for passenger vehicles and light trucks that specifies a uniform minimum data set, at least 5 seconds of pre-crash recordation of the required data set and data survivability requirements. However, the agency did not mandate installation of EDRs in all light vehicles, but merely required that the rule apply to all EDRs voluntarily installed by manufacturers. 71 FR 50998 (Aug. 28, 2009).

In the rule, NHTSA rejected many ideas that would have improved the safety value of EDRs. The agency pared down to the bare minimum the categories of data that must be captured rejecting the recommendations of safety organizations for a much more comprehensive, richer data set that would feed back into agency research and rulemaking to improve both the crash performance and the crash avoidance of motor vehicles. Some of the data parameters recommended by Advocates addressed major vehicle safety performance areas, such as information on the prospective use of side impact air bags, for example.

The agency further reduced the benefits of EDRs in the regulation by limiting the required data categories for EDRs only in motor vehicles less than 8,500 pounds GVWR, essentially exempting 15-passenger vans, one of the most rollover-prone vehicles on the road today, from being subject to the voluntary EDR rule. Finally, NHTSA did not even contemplate extending requirements for EDR data categories to commercial motor vehicles. If EDRs were required on all motor vehicles, NHTSA would have far more relevant and objective vehicle crash data available, at a far lower cost, on which to base decisions about rulemaking and distribution of agency resources.

Both EOBRs and EDRs are crucially important safety technologies that Congress should require NHTSA to specify, EOBRs for commercial motor vehicles and EDRs for all motor vehicles. NHTSA should be directed to require EOBRs not only in newly manufactured commercial motor vehicles, but also to require their installation in existing commercial motor vehicles already in operation.

Inadequate Resources for NHTSA's Vehicle Safety Program

Safety program activities at NHTSA have been chronically under funded for many years. Although motor vehicle crashes account for 95 percent of all surface transportation

[32] *International Symposium on Transportation Data Recorders*, NTSB, May 3-5, 1999.

fatalities, and 99 percent of all surface transportation injuries, the agency receives just over one percent of the overall DOT budget. However, the lion's share of NHTSA's budget, nearly 75 percent, is directed for State Highway Safety Grants and cannot be used by the agency to fund its operations and research and motor vehicle standards-setting. Key agency activities that are essential to develop the basis for future policies and rules, such as data collection for FARS and the National Automobile Sampling System/Crashworthiness Data System (NASS/CDS) – the preeminent U.S. databases for fatalities and crash and injury information, crash investigations and biomechanics research – survive on a shoestring budget and have been starved of adequate funds for the past two decades. Areas of increasing concern, such as the oversight of importation of equipment built overseas, requires expanded resources to ensure that safe practices are followed and unsafe products are weeded out. The safety performance or rulemaking office gets by with a minimal budget, below $20 million, even though it is responsible for all major safety rulemakings and the corporate average fuel economy (CAFÉ) rules, as well. Last year, $3.3 million in agency funds had to be reprogrammed, with the permission of Congress, to meet realistic safety performance program needs.

As a result, NHTSA is unable to be proactive and solve safety problems before a crisis develops. Lack of personnel and resources all too often leaves NHTSA in the position of being caught off guard by a crisis and being relegated to playing catch-up. This occurred when the failure of Firestone tires on Ford Explorer SUVs resulted in severe rollovers, events that resulted in the enactment of the Tire Recall, Enhancement, Accountability and Documentation (TREAD) Act, Pub. L. 106-414 (Nov. 1, 2000). Just as the nation expects the Consumer Product Safety Commission (CPSC) to be well funded in order to look after and protect consumers, and that the Food and Drug Administration (FDA) has the resources it needs to protect the nation's food supply from contamination, a well-funded federal vehicle safety administration is essential to ensure that we can bring the annual highway traffic death toll below the 40,000 fatality mark on a permanent basis. Even small investments in NHTSA's operations and research budget, especially the vehicle safety activities, will reap gigantic rewards in saving lives and health care dollars.

Conclusion

For over 20 years the surface transportation authorization bills have advanced and accelerated adoption of important safety programs, policies and standards that have prevented thousands of highway deaths and injuries. This bill is no exception. There is still an unfinished highway and auto safety agenda that needs to move forward to complement and complete our other important national goals on health care, the environment, a sound economy, and mobility. The House Energy and Commerce Committee, with jurisdiction in all of these areas, has a unique opportunity in this authorization bill to significantly advance essential safety protections for the public whether the travel mode is a car, a motorcoach, a truck, a bike or on foot. We look forward to working with you and your staff in developing that safety roadmap and providing adequate resources to NHTSA so that we can achieve significant reductions in deaths and injuries and health care costs. Thank you for the opportunity to testify today.

Motorcoach Enhanced Safety Act

S. 554 and H.R. 1396

Requires DOT Action to Implement NTSB Safety Recommendations-Recommendations That Have Languished for Decades

Occupant Protection:

- Advanced window glazing to prevent passenger ejection
- Lap/shoulder seat belts at all seating positions to keep passengers in their seats and in the motorcoach
- Better passenger compartmentalization to protect in a crash
- Improved occupant protection to reduce injuries from impacts with surfaces inside the motorcoach
- Stronger roof standard to prevent crush and intrusion in a crash

Motor Carrier Oversight:

- Systematic safety reviews, ratings, and audits of motorcoach companies

Safe Drivers :

- Physical fitness oversight and medical certification of motorcoach drivers
- Stricter CDL testing requirement
- Driver training standard

Fire Safety :

- Built-in automatic fire suppression systems to limit spread of fires
- Improvements to suppress fuel-system fires
- Better equipment to fight fires effectively
- Updated emergency exit designs and interior lighting to expedite passenger evacuation

Safety Technology:

- Added stability technology to prevent motorcoach rollover
- Enhanced conspicuity to make motorcoaches more visible to other highway users
- On-board recorders to enforce federal driving limits and reduce driver fatigue
- Event data recorders to monitor and record vehicle operations, events and incidents
- Adaptive cruise control to provide collision warning and braking

Tire Safety:

- Tire pressure monitoring that performs at all speeds, on all surfaces, and during all weather conditions
- Performance standards for retreaded tires

DATE	LOCATION	DESCRIPTION
5-03-09	**Winona County, MN**	2 motorcoaches carrying Winona County DARE students from a Minnesota Twins game collide – 2 hospitalized and dozens injured.
5-03-09	**Montgomery, AL**	Motorcoach carrying 29 passengers, mostly children, catches fire after brake defect.
5-02-09	**Perris, CA**	Motorcoach carrying 28 people aboard crashes returning from Cinco de Mayo activity sponsored by city of Colton- all 28 injured.
4-27-09	**Lincoln, AL**	Motorcoach crashes after tire blows out – 21 injured.
4-07-09	**Near Franksville, WI**	Motorcoach catches fire and causes major back-up along I-94.
4-03-09	**Round Rock, TX**	Motorcoach carrying 42 high school band students crashes - 2 injured.
3-30-09	**Millard County, UT**	Motorcoach carrying 52 high school choir students crashes - 4 injured.
3-27-09	**Franklin County, GA**	Motorcoach carrying 40 University of New Hampshire college students catches fire after tire blows out.
3-05-09	**Maysville, NC**	3 Motorcoaches carrying 59 U.S. Marines in chain-reaction crash - 14 injured.
2-19-09	**Beckett, MA**	Motorcoach carrying minor league hockey team crashes - 5 injured.
2-15-09	**West Haven, CT**	Motorcoach rear-ends another motorcoach - 128 minor injuries.
2-07-09	**Honolulu, HI**	Motorcoach strikes and kills pedestrian standing at a marked crosswalk.
2-04-09	**Belleplain, NJ**	Motorcoach rear-ends box truck.
1-30-09	**Dolan Spring, AZ**	Motorcoach carrying Chinese tourists crashes near Hoover Dam - 7 killed/10 injured.
1-23-09	**Near Donegal, PA**	Motorcoach carrying tourists catches fire after tire blows out along PA turnpike.
12-26-08	**Corona, NM**	Motorcoach crashes in inclement weather - 2 killed/others injured.
12-19-08	**Seattle, WA**	Motorcoach carrying 80 young adults crashes through guardrail - minor injuries.
10-05-08	**Williams, CA**	Motorcoach traveling to casino resort crashes - 9 killed/35 injured.
8-10-08	**Primm, NV**	Motorcoach crashes after tire failure - 29 injured.
8-10-08	**Tunica, MS**	Motorcoach crashes and roof collapses during rollover - 3 killed.
8-08-08	**Sherman, TX**	Motorcoach carrying 55 Vietnamese-American pilgrims crashes after blowing a tire, skidding off of highway, and hitting guardrail - 17 killed/40 injured.
5-11-08	**Mount Vernon, MO**	Motorcoach tour bus carrying gospel singer crashes – gospel singer killed/7 injured.
1-17-08	**Primm, NV**	Motorcoach crashes and catches fire - 25 injured.
1-07-08	**Mexican Hat, UT**	Motorcoach carrying 51 passengers ran off curvy road, rolled several times, and the roof was split open. The tires were stripped off. Passengers were thrown from the bus. The contributing factor was the driver's negotiation of the turn - 9 killed.
1-02-08	**Victoria, TX**	Motorcoach crashes probably due to driver fatigue - 1 killed.
1-02-08	**Henderson, NC**	Motorcoach crashes into tractor-trailer - 50 injured.
11-25-07	**Forrest City, AR**	Motorcoach crashes – 3 killed/15 injured.
6-25-07	**Bowling Green, KY**	Motorcoach crashes probably do to driver fatigue - 2 killed/66 injured.
3-02-07	**Atlanta, GA**	Motorcoach carrying Bluffton University baseball team crashes through an overpass bridge wall and fell onto Interstate 75 landing on its side – 7 killed/21 injured.
5-20-07	**Clearfield, PA**	Motorcoach crashes - 2 killed/25 injured.
9-06-06	**Auburn, MA**	Rollover crashes - 34 injured.
8-28-06	**Westport, NY**	Rollover crashes - 4 killed/48 injured.
3-30-06	**Houston, TX**	Motorcoach carrying girls' soccer team crashes and overturns - 2 killed/more injured.
10-25-05	**San Antonio, TX**	Motorcoach crashes into two 18-wheelers after tire failure - 1 killed/3 injured.
10-16-05	**Osseo, WI**	Motorcoach crashes - 4 killed/35 injured.
9-23-05	**Wilmer, TX**	Motorcoach carrying 44 assisted living facility residents and nursing staff as part of the evacuation in anticipation of Hurricane Rita caught fire. 23 killed/of 21 injured
7-25-05	**Baltimore, MD**	Motorcoach crashes - 33 killed.

DATE	LOCATION	DESCRIPTION
1-29-05	**Geneseo, NY**	Motorcoach crashes - 3 killed/20 injured.
11-14-04	**Alexandria, VA**	Motorcoach carrying 27 high school students crashes - 11 injured
10-09-04	**Turrell, AR**	Motorcoach crashes - 14 killed/15 injured.
8-06-04	**Jackson, TN**	Motorcoach crashes - 2 killed/18 injured.
6-24-04	**Phoenix, AZ**	Motorcoach crashes - 1 killed/38 injured.
5-24-04	**Anahuac, TX**	Motorcoach crashes - 1 killed.
2-22-04	**North Hudson, NY**	Motorcoach crashes - 47 injured.
11-12-03	**Apache Co., AZ**	Motorcoach crashes - 44 injured.
10-13-03	**Tallulah, LA**	Motorcoach crashes into tractor-trailer - 8 killed/7 injured.
2-14-03	**Hewitt, TX**	Motorcoach crashes - 5 killed/others injured.
10-01-02	**Nephi, UT**	Motorcoach crashes - 6 killed/20 injured.
6-23-02	**Victor, NY**	Motorcoach crashes - 5 killed/41 injured.
6-09-02	**Loraine, TX**	Motorcoach crashes into tractor-trailer - 3 killed/29 injured.
4-24-02	**Kinder, LA**	Motorcoach crashes - 4 killed and driver medically incapacitated.
10-03-01	**Manchester, TN**	Motorcoach crashes - 6 passengers killed/unknown injuries.
8-19-01	**Pleasant View, TN**	Motorcoach crashes - 1 killed/38 injured.
5-28-01	**Bay St. Louis, MS**	Motorcoach crashes - 16 injured.
1-20-01	**Allamuchy, NJ**	Motorcoach crashes - 39 injured.
1-02-01	**San Miguel, CA**	Motorcoach crashes - 2 killed/3 injured
6-30-01	**Fairplay, CO**	Motorcoach crashes - 45 injured.
8-27-00	**Eureka, MO**	Motorcoach crashes - 25 injured.
12-21-99	**Canon City, CO**	Motorcoach crashes - 3 killed/57 injured.
5-09-99	**New Orleans, LA**	Motorcoach crashes - 22 killed/21 injured.
4-30-99	**Braidwood, IL**	Motorcoach crashes - 1 killed/23 injured.
3-02-99	**Santa Fe, NM**	Motorcoach carrying 34 middle school children crashes - 2 killed/35 injured.
12-24-98	**Old Bridge, NJ**	Motorcoach crashes - 8 killed/14 injured.
6-20-98	**Burnt Cabins, PA**	Motorcoach crashes - 7 killed/16 injured.
9-12-97	**Jonesboro, AR**	Motorcoach crashes - 1 killed/6 injured.
7-29-97	**Stony Creek, VA**	Motorcoach crashes - 1 killed/32 injured.
6-11-97	**Normandy, MO**	Motorcoach crashes into pedestrians - 4 killed/3 injured.
6-06-97	**Albuquerque, NM**	Motorcoach crashes - 1 killed/35 injured.
8-02-96	**Roanoke Rapids, NC**	Motorcoach crashes, driver was fatigued - 19 injured.
10-14-95	**Indianapolis, IN**	Motorcoach crashes - 2 killed/38 injured.
7-23-95	**Bolton Landing, NY**	Motorcoach crashes - 1 killed/30 injured.
4-24-94	**Chestertown, NY**	Motorcoach crashes and rolls over - 1 killed/20 injured.
1-29-94	**Pueblo, CO**	Motorcoach crashes and rolls over - 1 killed/8 injured.
9-17-93	**WinslowTownship,NJ**	Motorcoach crashes because truck drifted into lane - 6 killed/8 injured.
9-10-93	**Phoenix, AZ**	Motorcoach crashes and rolls over because of driver fatigue - 33 injured.
6-26-93	**Springfield, MO**	Motorcoach crashes - 1 killed/46 injured.
7-26-92	**Vernon, NJ**	Motorcoach crashes - 12 passengers ejected/ 6 killed.
1-24-92	**South Bend, IN**	Motorcoach crashes - 2 killed/34 injured.
6-26-91	**Donegal, PA**	Motorcoach crashes - 1 killed/14 injured.
8-03-91	**Caroline, NY**	Motorcoach crashes - 33 injured
2-02-91	**Joliett, PA**	Motorcoach crashes - 2 killed/44 injured.
5-18-90	**Big Pine, CA**	Motorcoach crashes - 2 killed/43 injured.