

National Transportation Safety Board

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**Testimony of the Honorable Deborah A.P. Hersman
Chairman
National Transportation Safety Board
Before the
U.S. Senate
Committee on Commerce, Science, and Transportation
Subcommittee on Surface Transportation and Merchant Marine
Infrastructure, Safety, and Security
Hearing on
Ensuring the Safety of Our Nation's Motorcoach Passengers
March 30, 2011**

Good morning, Chairman Lautenberg and Members of the Subcommittee. Thank you for the opportunity to appear before you today on behalf of the National Transportation Safety Board (NTSB) regarding oversight of motorcoach safety. The NTSB is charged with investigating major transportation accidents, including highway accidents, determining their probable cause, and making recommendations to prevent similar accidents from happening again. Every day, there are thousands of accidents on our nation's highways, resulting in tens of thousands of fatalities each year. Unfortunately, three very recent highway accidents have drawn our attention once again to the safety of motorcoaches.

Recent Accidents

At about 5:37am on March 12, a motorcoach operated by World Wide Travel of Greater New York LTD was traveling south on I-95 toward New York City from the Mohegan Sun Casinos in Uncasville, CT. There were 33 passengers on board. The 40-year-old driver on that trip was one of the company's 40 full-time drivers, and he regularly drives this route. The company provides 14 daily roundtrips between the casino and New York.

The driver failed to maintain his lane, drifted to the right and impacted the highway guardrail. The motorcoach then slid along the guardrail close to 500 feet before coming to rest. During the collision sequence, the motorcoach rolled clockwise along its longitudinal axis about 90 degrees on its right side before it impacted the support pole for an overhead sign located about six feet from the edge of the pavement. The pole penetrated the bus through its windshield and continued almost the entire length of the bus, killing 15 passengers.

Then on March 14, at about 9:00 p.m., a motorcoach carrying 45 passengers was traveling southbound on the New Jersey Turnpike near East Brunswick, NJ when it departed the left edge of the roadway and struck a concrete headwall of an exit ramp. After striking the headwall, the bus re-entered and crossed the roadway, and came to final rest upright after striking an embankment. The driver was reportedly ejected and killed in the accident sequence. One passenger was killed, and almost all the other passengers received injuries ranging from minor to serious. The bus was on a scheduled run from New York City to Philadelphia, operated

by Super Luxury Tours, Inc., which has about 16 motorcoaches and 16 drivers. The Federal Motor Carrier Safety Administration (FMCSA) is currently conducting a post-crash compliance review of this company.

Finally, on March 21, at about 8:15 p.m., on southbound Interstate 93 near Littleton, NH, a motorcoach departed the roadway, traveled down an embankment, and rolled onto its left side before coming to rest. This motorcoach was transporting approximately 25 Korean nationals from Quebec to Boston, MA. Weather reports included snow and intermittent fog in the area. There were no fatalities in the accident, but most of the occupants were injured to varying degrees.

The NTSB launched a team of investigators to conduct a full investigation of the accident in New York to eventually make findings and determine probable cause. We are investigating the New Jersey and New Hampshire accidents in a limited capacity, looking for information from those accidents that may shed additional light on the bus companies' safety performance. All three investigations are in the early stages, and many details have not yet been determined. In the coming months, the NTSB will analyze the information from all three accidents to possibly issue recommendations aimed at improving motorcoach safety and preventing additional tragic accidents like these.

Safety Oversight

Motorcoach operations transport 750 million passengers per year – almost as many as the 800 million passengers in commercial aviation. They are one of the safest modes of transportation, averaging less than 20 fatalities per year (vs. about 100 in aviation) or 0.006 percent of the total 34,000 annual fatalities on our nation's highways.

Unlike when travelers get in their own automobiles, passengers boarding a motorcoach place their lives in the hands of the motorcoach operator and its driver. They expect, and they deserve, the highest reasonable level of safety. For that reason, NTSB investigations focus on identifying the underlying causes of accidents and the safety improvements necessary to prevent their reoccurrence. Although the NTSB can investigate only a fraction of highway accidents, we have investigated a number of motorcoach accidents over the years and have made recommendations to improve the safety of motorcoach transportation. We currently have a total of 166 open safety recommendations issued to the U.S. Department of Transportation (DOT), National Highway Traffic Safety Administration (NHTSA), FMCSA, Federal Highway Administration (FHWA), and Pipeline and Hazardous Material Safety Administration (PHMSA) combined, 100 of which relate to motorcoach safety.

The two most important factors related to safe motorcoach operations are the condition of the vehicles and the performance of the drivers. The NTSB believes that the FMCSA should emphasize both of these critical elements in its compliance reviews, and that an unsatisfactory rating in *either* vehicle or driver areas should disqualify the operator. Currently, operators must be found to be unsatisfactory in at least two of the six rating factors to be disqualified. In other words, they can be unsatisfactory in either the vehicle or driver areas and still be allowed to operate.

The NTSB's original recommendation regarding this issue was made in 1999 in response to a motorcoach rollover accident in Indianapolis, IN that killed two passengers and injured 13. The accident motorcoach had only 50-percent braking efficiency, and a postaccident compliance review of the operator by the FMCSA resulted in 10 out of 10 of the carrier's vehicles being placed out of service. The company had been inspected nine times between 1987 and 1995, so it should have been obvious that it had issues with its vehicle maintenance prior to the accident. In 1994, even though 63 percent of the vehicles met the out-of-service criteria, the operator received a "conditional" rating for the vehicle factors and, because all the other factors were rated "satisfactory," it was given an overall rating of "satisfactory." Thus, the operator was able to continue to operate with unsafe vehicles.

The NTSB recommended that the FMCSA change the safety fitness rating methodology so that an adverse rating on either the vehicle or the driver alone would be sufficient to result in an overall "unsatisfactory" rating for a carrier.¹ Because of inaction on the part of the FMCSA, the NTSB added this recommendation to our Most Wanted List in 2000. We later investigated additional motorcoach accidents that involved this same issue, including a five-fatal motorcoach accident in Victor, NY in 2002; a 23-fatal motorcoach fire near Wilmer, TX in 2005; a 17-fatal motorcoach accident in Atlanta, GA in 2007; and a motorcoach rollover accident in Victoria, TX in 2008. To date, the FMCSA has not acted on this recommendation.

The NTSB has also taken issue with the FMCSA's oversight of vehicle inspections, including inspections of commercial motorcoaches. Following the eight-fatal Tallulah, LA² motorcoach accident and the 17-fatal Sherman, TX³ motorcoach accident, we made recommendations that the FMCSA provide adequate oversight of private inspection garages.

In accidents involving a school bus in Mountainburg, AR and a dump truck in Glen Rock, PA, the NTSB found that the FMCSA lacked adequate oversight of pre-trip brake inspections, the qualifications of brake inspectors, training in brake maintenance, and training of drivers about the dangers of adjusting automatic slack adjusters. The same safety oversight issues that we have found in motor carrier and truck accidents also apply to motorcoaches.

The NTSB has also found problems with commercial vehicle tires. For example, some tires have a speed restriction because they are not meant for highway speeds. If a speed-restricted tire is used in service at speeds above 55 mph for extended periods, a catastrophic failure can result. Although it did not cause the motorcoach accident in Tallulah, LA, the inspection process never identified the speed-restricted tires on this vehicle, even though it was being operated on major highways. The NTSB made recommendations to correct this deficiency.⁴

The science of passenger vehicle dynamics has evolved to where we now recognize that the better tires should go on the rear axle where they provide better stability if the vehicle loses traction with the roadway. However, for motorcoaches, current regulations call for deeper tread depths on the front axle tires than on the rear. Therefore, in 2005, following a five-fatal accident in Hewitt, TX where the motorcoach lost control on a rain-soaked highway, the NTSB asked NHTSA to study this issue and the FMCSA to implement the results.⁵ These recommendations have not been implemented by either agency.

Following the motorcoach accident in Sherman, TX that was caused by low air pressure on one of the front tires, the NTSB found that even small reductions in air pressure can cause commercial tires to be overloaded, overheat, and fail. This potential overloading problem is especially true for the front tires of motorcoaches where, even with proper air pressure, the tires are close to their maximum load rating. Therefore, the NTSB made recommendations to NHTSA and the FMCSA to require tire pressure monitoring systems⁶ and to require commercial drivers to check their tire pressure with a gauge.⁷

Finally, the NTSB discovered another oversight issue as a result of the motorcoach accident in Victoria, TX. This motorcoach was imported from Mexico and repeatedly crossed the border into Texas, although it should never have been allowed in the United States. It was not built to meet NHTSA's Federal Motor Vehicle Safety Standards (FMVSS) that are required of all vehicles. Therefore, the NTSB made several recommendations to the FMCSA and NHTSA to develop a database of FMVSS-compliant buses⁸ and verify that operators are using FMVSS-compliant vehicles⁹. The NTSB also recommended that the FMCSA train law enforcement to detect non-FMVSS-compliant vehicles¹⁰, and to obtain the authority to put operators out of service if they use such illegal vehicles.¹¹

The NTSB has made recommendations to improve the FMCSA's new entrant program to prevent reincarnated motor carrier motorcoach operators from entering the industry. In 2002, the NTSB investigated an accident involving a tractor-semitrailer collision with a Greyhound bus in Loraine, TX which resulted in three deaths. At the time, the FMCSA had essentially no review or follow-up of new entrant motor carriers. To become a motor carrier, the owner of a truck or bus company merely had to fill out an online form and pay a small fee to receive operating authority from the FMCSA. In this case, our investigation revealed that when the trucking company owner submitted his application, he lied about his knowledge of the regulations, about having systems in place to comply with the regulations, and about a drug conviction for possession of large amounts of marijuana the year prior to his application. He also failed to maintain any records on his drivers or vehicles, he did not have a drug and alcohol program, and he did not conduct background checks of his drivers. Further, he knowingly dispatched the accident driver, who did not have a commercial driver's license or medical certificate.

As a result, the NTSB recommended that the FMCSA require new motor carriers to demonstrate their safety fitness *prior to* obtaining new entrant operating authority.¹² In response to this recommendation, the FMCSA developed the New Applicant Screening Program under which a new motor carrier operating in interstate commerce is subject to an 18-month safety monitoring period and receives a safety audit sometime after its first three months of operation but before it completes 18 months of operation.

In 2008, the FMCSA began its New Entrant Safety Assurance Program, under which the agency identified 16 regulations that are essential elements of basic safety management controls necessary to operate in interstate commerce and made a carrier's failure to comply with any of the 16 regulations an automatic failure of the safety audit. Additionally, if certain violations are discovered during a roadside inspection, the new entrant is subject to expedited actions to correct these deficiencies.

Unfortunately, unscrupulous motor carriers still use the new entrant program to evade an enforcement action or an out-of-service order by going out of business and then reincarnating themselves, as if they are a brand new motor carrier. The NTSB found that this had occurred with the motorcoach operator involved in the Sherman, TX accident. After losing its authority to operate because of an unsatisfactory compliance review rating, the operator successfully applied for operating authority under a new name as a new entrant. The NTSB concluded that the FMCSA processes were inadequate to identify the operator as a company that was simply evading enforcement action. The NTSB issued a recommendation to the FMCSA to evaluate the effectiveness of its New Applicant Screening Program.¹³

The NTSB found additional deficiencies with the FMCSA's new entrant program during its investigation of a 2008 accident in which the driver fell asleep and the motorcoach overturned in Victoria, Texas, killing one person. The FMCSA failed to notice that the operator reincarnated into a new operator shortly after the accident. As a result, the NTSB issued recommendations to the FMCSA that ask the agency to develop methods to identify reincarnated carriers and seek authority to deny or revoke their operating authority.¹⁴ In September, 2009, the FMCSA's Motor Carrier Safety Advisory Committee echoed the NTSB's position that new entrants should be evaluated *before* being allowed to operate.

Motorcoach Passenger Protection

In the 12 years since the NTSB issued the recommendations addressing occupant protection for motorcoach passengers, we have investigated more than 30 motorcoach accidents that have caused 140 fatalities, 1,070 injuries, and 259 ejections. The structural integrity of a motorcoach is critical to maintaining a survivable occupant space for passengers, because intrusion into the occupant area and inadequate window glazing can have dire consequences. Following our 1999 study of motorcoach passenger protection, we issued recommendations to NHTSA regarding roof strength and window glazing standards.^{15 16} We reiterated these recommendations following the investigation of the motorcoach accident in New Orleans, LA, and after the nine-fatal 2008 motorcoach accident in Mexican Hat, UT. In the 2010 Dolan Springs, AZ mid-size bus rollover accident, the NTSB expanded its recommendations about roof crush, occupant protection, and window glazing to apply to all buses greater than 10,000 pounds.¹⁷ We also made a recommendation to NHTSA to ensure that overhead luggage racks on all buses remain anchored during an accident sequence.¹⁸

Since 1999, the NTSB also has made recommendations to improve passenger egress in the event of a crash or other emergency. One recommendation asks NHTSA to require that window exits and other emergency exits be designed so that they are easy to open and stay open during an emergency evacuation, whether the motorcoach is upright or at an unusual attitude.¹⁹ We also asked NHTSA to require that motorcoaches be equipped with an independent power source for emergency lighting, as well as interior luminescent or exterior retroreflective material or both to mark all emergency exits.²⁰ Finally, we asked NHTSA to require motorcoach operators to provide passengers with pre-trip safety information.²¹ The FMCSA has developed safety materials for the motorcoach operators to use, but is allowing each motorcoach company to develop an appropriate passenger safety awareness program for their own operations, rather than developing a Federal requirement.

Following the 2005 motorcoach fire near Wilmer, TX, the NTSB asked NHTSA to evaluate current emergency evacuation designs of motorcoaches and buses,²² to develop early warning detection systems to monitor the temperature of wheel well compartments in motorcoaches and buses,²³ and to evaluate the need for a Federal vehicle standard to require fire detection and suppression systems on motorcoaches.²⁴ NHTSA has been conducting research and testing to address these issues, but no formal rulemaking has yet been published.

On April 30, 2009, following the NTSB board meeting on the Mexican Hat, UT motorcoach rollover accident, Secretary LaHood ordered a full departmental review of motorcoach safety by NHTSA, the FMCSA, the FHWA, and PHMSA. The review's findings and consideration of outstanding NTSB recommendations to the DOT agencies became the basis for the DOT Motorcoach Safety Action Plan, publicly released on November 16, 2009. The action plan outlines the additional steps needed to improve motorcoach safety for the millions of Americans who rely on these vehicles for safe transportation. The plan provides timelines for rulemaking activities addressing the installation of seat belts on motorcoaches and enhanced emergency egress requirements focused on children, aging persons, and people with disabilities. NHTSA had planned to make a decision on regulatory action regarding roof strength requirements late in 2009, however, no updates have yet been released.

In 2010, NHTSA issued an NPRM proposing that lap/shoulder belts be required for each passenger seating position in new motorcoaches, which would partially meet the NTSB's recommendations on occupant protection. Unfortunately, this proposed rule would not apply to smaller or medium-size specialty buses such as the 29-passenger vehicle involved in the accident at Dolan Springs, AZ, or the 32-passenger vehicle involved in the accident in Lake Placid, FL. The proposed rule would not apply to either of these vehicles because they are below the 26,000-pound definition upon which this NPRM is focused. However, the rule would apply to the very similar 29-passenger medium-size bus involved in the Bethesda, MD accident last September because it meets the 26,000-pound definition. It is not reasonable to expect that the average motorcoach passenger understands the difference between a 29-passenger bus that weighs 26,000 pounds and a 29-passenger bus that is lighter. The average passenger expects the same level of safety no matter the size or the weight of the bus. That is why we have urged NHTSA to expand the rule to all buses and thereby lead to meaningful improvements in the safety of all motorcoach passengers.

Crash Avoidance Technologies

Since 1995, the NTSB has advocated collision warning systems and adaptive cruise control to prevent bus and truck accidents. In 2001, as part of a study on *Technology for the Prevention of Rear-End Collisions*, the NTSB investigated nine commercial vehicle rear-end collisions in which 20 people died and 181 were injured. Common to all nine accidents was the degraded perception of traffic conditions ahead by the driver. The NTSB recommended that NHTSA issue performance standards for adaptive cruise control and collision warning systems for new commercial vehicles.²⁵

In 2003, the NTSB investigated a multivehicle accident near Hampshire, IL, in which a tractor-trailer failed to slow for the stopped or slow-moving traffic on the approach to the Interstate 90 toll plaza. The tractor-trailer driver failed to detect the slowing traffic ahead of his vehicle and the tractor-trailer struck the rear of a specialty bus, killing eight passengers and injuring 12. As a result, the NTSB reiterated the above recommendations. In 2007, these important safety recommendations were added to our Most Wanted List. They were reiterated in 2008, in the NTSB's report on a five-fatality motorcoach and tractor-trailer accident in Osseo, WI, and a 15-fatality motorcoach rollover accident in Turrell, AR. We also reiterated these recommendations following the 10-fatality Miami, OK accident where a tractor-trailer ran into the rear of six passenger vehicles that were slowing or stopped on the highway. All of these accidents demonstrate how crash avoidance technologies such as collision warning systems and adaptive cruise control can help prevent rear end collisions.

Finally, electronic stability control is standard equipment on many automobiles today and lane departure warning systems are becoming increasingly common. Both systems help drivers, who may be distracted or encounter challenging driving conditions, to maintain control of their vehicles and remain on the roadway. Therefore, in 2008, as a result of the Osseo, WI accident investigation, the NTSB recommended that NHTSA determine whether equipping commercial vehicles with electronic stability control systems would reduce commercial vehicle accidents, and if so, require their use on commercial vehicles.²⁶ Just last year, following our investigation into the Dolan Springs, AZ bus rollover accident, the NTSB issued two new recommendations for stability control systems on all newly manufactured buses greater than 10,000 pounds.²⁷ This report also included a recommendation for lane departure warning systems on new commercial vehicles greater than 10,000 pounds.²⁸ These technologies help counteract basic human frailties of inattention and distraction that are major undocumented causes of highway accidents.

Other Safety Issues

Fatigue

In the 1990s, the NTSB conducted two safety studies of commercial accidents²⁹ and found that fatigue was the most frequently cited probable cause or factor in the fatal-to-the-driver crashes that were investigated. Based on these studies, the NTSB recommended that the FMCSA use science-based principles to revise the hours-of-service regulations for commercial drivers, ensure that the rule would enable drivers to obtain at least eight hours of continuous sleep, and eliminate sleeper berth provisions that allow for the splitting of sleep periods.

In December, 2010, the FMCSA issued an NPRM proposing to change the hours-of-service rule. The NTSB supports those provisions that are scientifically based and would reduce continuous duty or driving time, encourage break-taking, promote nighttime sleep, and foster scheduling patterns that are predictable and consistent with the normal human diurnal circadian rhythm. However, we strongly oppose providing exemptions for buses and motorcoaches, and other groups because of the potential increased risk to the passengers and the driving public.

Of course, no hours-of-service rule is adequate unless it is enforceable. Since 1977, the NTSB has advocated the use of tamperproof electronic on-board recorders (EOBRs) to allow

better monitoring of hours of service and driver fatigue. The NTSB believed that the FMCSA's April 2010 final rule on EOBRS did not adequately address this safety issue, so we are encouraged that the FMCSA's new NPRM issued in January 2011 corrects many of the inadequacies and expands the scope of the new rule to cover most carriers, as originally recommended by the NTSB.

Hours-of-service regulations are important, and EOBRS will help enforce those rules, but fatigue management is the third leg of this critical safety stool. In 2008, following three fatigue-related bus accidents that occurred in Osseo, WI, Lake Butler, FL, and Turrell, AR, the NTSB asked the FMCSA to develop a plan to deploy technologies in commercial vehicles to reduce fatigue-related accidents,³⁰ and to develop a methodology to assess the effectiveness of the fatigue management plans implemented by operators. Then last year, a 10-fatal accident in Miami, OK involving a fatigued truck driver prompted the NTSB to reiterate these recommendations and make an additional recommendation to require all motor carriers, including motorcoach operators, to adopt a fatigue management program³¹.

Citing many of the accidents the NTSB has investigated on the highway and in other modes of transportation, in which drivers, mariners, and train engineers had undiagnosed obstructive sleep apnea, the NTSB issued recommendations to the FMCSA in October 2009 addressing this safety problem. In particular, the NTSB recommended that the FMCSA: (1) require drivers with a high risk for obstructive sleep apnea to obtain medical certification that they have been appropriately evaluated and, if necessary, effectively treated for that disorder,³² and (2) provide guidance for commercial drivers, employers, and physicians about identifying and treating individuals at high risk of obstructive sleep apnea.³³

Medically Unqualified Commercial Drivers

The NTSB has investigated many accidents involving commercial drivers with serious preexisting medical conditions that had not been detected or adequately evaluated. The most tragic example of this issue was the 1999 Mother's Day motorcoach accident in New Orleans, LA, in which a motorcoach driver lost consciousness while driving on an interstate highway and crashed into an embankment, killing 22 passengers and injuring 21. The driver had multiple previously known serious medical conditions, including kidney failure and congestive heart failure, and was receiving intravenous therapy for three to four hours a day, six days a week. The issue of medically unqualified commercial drivers has been on the NTSB's Most Wanted List since 2003.

Although the FMCSA continues to work to address medical issues, the actions are piecemeal, including a final rule on merging the commercial driver's license with the medical certificate and an NPRM on a national registry of certified medical examiners. Yet, much remains to be done. For example, the FMCSA needs to ensure that medical certification regulations are updated periodically³⁴ and that examiners are qualified and know what to look for.³⁵ In addition, the national registry of certified medical examiners should include a tracking mechanism for driver medical examinations.³⁶ This step would reduce the current practice of drivers "doctor shopping" to find one who will sign their medical forms. Likewise, a second level of review is necessary to identify and correct the inappropriate issuance of medical

certification.³⁷ The FMCSA should establish a system for reporting medical conditions that develop between examinations.³⁸ Finally, the FMCSA needs to develop a system that records all positive drug and alcohol test results and refusal determinations, and require prospective employers and certifying authorities to query the system before making hiring decisions.³⁹

Cell Phone Use

Driver distraction is a much-discussed issue these days, but the NTSB issued its first recommendation about cell phones in 2004 following an accident in Alexandria, Virginia, in which an experienced motorcoach driver, who was having a heated conversation on his hands-free cell phone, failed to move to the center lane and struck the underside of an arched stone bridge on the George Washington Parkway. Our investigation found that the driver had numerous cues to change lanes at the appropriate time to have enough clearance for the height of the bus. In fact, not only was the driver familiar with the road, he also was following another bus that had appropriately moved to the center lane. Yet, this driver did not notice the well-marked signage or any of the other cues as he approached the arched stone bridge. The accident was clearly caused by this driver's cognitive distraction, due to the conversation on his hands-free cell phone. The NTSB recommended that the FMCSA⁴⁰ and the 50 states⁴¹ enact laws to prohibit cell phone use by commercial drivers while driving passenger-carrying commercial vehicles or school buses. We also recommended that motorcoach associations, school bus organizations, and unions develop formal policies to prohibit cell phone use by commercial drivers, except in emergencies.⁴² A current FMCSA NPRM, issued in December 2010, proposes to limit cell phone restrictions to just hand-held devices, but the NTSB recommendation also includes hands-free devices.

Event Data Recorders

Event data recorders are a proven technology that the NTSB has recommended since 1999.⁴³ We reiterated these recommendations in 2008, following the motorcoach accident involving Bluffton University students in Atlanta, Georgia and reiterated them again in our *Pedal Misapplication Special Investigation Report* in 2009.⁴⁴ In 2009, following the Dolan Springs, AZ investigation, we closed these recommendations "Unacceptable" and replaced them with a similar recommendation that applied to all buses above 10,000 pounds.⁴⁵

Closing

Many of the issues discussed today have been known for a number of years, yet they continue to cause or contribute to accidents involving motorcoaches. The NTSB remains hopeful that these issues will be addressed to bring about the necessary changes that will keep motorcoach operations one of the safest modes of transportation for the American people.

Mr. Chairman, this completes my statement, and I will be happy to respond to any questions you may have.

¹ **H-99-6** to FMCSA: "Change the safety fitness rating methodology so that adverse vehicle or driver performance-based data alone are sufficient to result in an overall unsatisfactory rating for a carrier."

² **H-05-04** To FMCSA: Conduct a study on the safety effectiveness of the self-inspection and certification process used by motor carriers to comply with annual vehicle inspection requirements and take corrective action, as necessary.

³ **H-09-20** To FMCSA: Require those states that allow private garages to conduct Federal Motor Carrier Safety Administration inspections of commercial motor vehicles, to have a quality assurance and oversight program that evaluates the effectiveness and thoroughness of those inspections.

⁴ **H-05-03** To FMCSA: Revise the Federal Motor Carrier Safety Regulations Appendix G to Subchapter B, Minimum Periodic Inspection Standards, Part 10: Tires, Sections A(5) and B(7), to include inspection criteria and specific language to address a tire's speed rating to ensure that it is appropriate for a vehicle's intended use.

⁵ **H-05-18** To NHTSA: Conduct testing on the effects of differing tread depths for the steer and drive axle tires.

H-05-17 To FMCSA: Once the testing in Safety Recommendation H-05-17 is complete, modify the tread depth requirements for each axle to reflect the results of the research.

⁶ **H-09-22** To NHTSA: Require all new motor vehicles weighing over 10,000 pounds to be equipped with direct tire pressure monitoring systems to inform drivers of the actual tire pressures on their vehicles.

⁷ **H-09-19** To FMCSA: Require that tire pressure be checked with a tire pressure gauge during pretrip inspections, vehicle inspections, and roadside inspections of motor vehicles.

⁸ **H-09-37& H-09-30** To FMCSA and NHTSA: Assist the National Highway Traffic Safety Administration in developing a Web-based database of FMVSS-compliant passenger-carrying commercial motor vehicles that can be utilized by federal, state, and local enforcement inspection personnel to identify non-FMVSS-compliant passenger-carrying commercial motor vehicles so that these vehicles (other than exempted vehicles) are placed out of service and cease operating in the United States. Implement a process to periodically update this database.

H-09-38 To FMCSA: Require that federal and state inspectors utilize the database requested in Safety Recommendation H-09-37 during both roadside and compliance review inspections of passenger-carrying commercial motor vehicles to identify and place out of service non-FMVSS-compliant vehicles.

H-09-31 To NHTSA: When the database requested in Safety Recommendation H-09-30 is completed, make the database known and accessible to state vehicle registration agencies and to Federal, state, and local enforcement inspection personnel for their use during roadside inspections and compliance reviews to identify non-FMVSS-compliant passenger-carrying commercial motor vehicles. (H-09-31)

⁹ **H-09-40** To FMCSA: Require that passenger motor carriers certify on their OP-1(P) forms (Application for Motor Passenger Carrier Authority) and initial MCS-150 form (Motor Carrier Identification Report [Application for USDOT Number]) and subsequent required biennial submissions that all vehicles operated, owned, or leased per trip or per term met the FMVSSs in effect at the time of manufacture.

¹⁰ **H-09-039** To FMCSA: Institute a requirement for federal and state enforcement officials to obtain training on a procedure to physically inspect passenger-carrying commercial motor vehicles for an FMVSS compliance label, and work with the Commercial Vehicle Safety Alliance to develop and provide this training.

¹¹ **H-09-41** To FMCSA: Seek statutory authority to suspend, revoke, or withdraw a motor carrier's operating authority upon discovering the carrier is operating any non-FMVSS-compliant passenger-

carrying commercial motor vehicles, a violation of the FMVSS-compliant certification requested in Safety Recommendation H-09-40.

¹² **H-03-2.** To FMCSA: Require all new motor carriers seeking operating authority to demonstrate their safety fitness prior to obtaining new entrant operating authority by, at a minimum: (1) passing an examination demonstrating their knowledge of the Federal Motor Carrier Safety Regulations; (2) submitting a comprehensive plan documenting that the motor carrier has management systems in place to ensure compliance with the Federal Motor Carrier Safety Regulations; and (3) passing a Federal Motor Carrier Safety Administration safety audit, including vehicle inspections.

¹³ **H-09-21.** To FMCSA: To Develop an evaluation component to determine the effectiveness of its New Applicant Screening Program

¹⁴ **H-09-34.** To FMCSA: Seek statutory authority to deny or revoke operating authority for commercial interstate motor carriers found to have applications for operating authority in which the applicant failed to disclose any prior operating relationship with another motor carrier, operating as another motor carrier, or being previously assigned a U.S. Department of Transportation number.

H-09-35 To FMCSA: Apply the evasion detection algorithm process against all interstate passenger carriers that obtained Federal Motor Carrier Safety Administration operating authority, after the New Entrant Safety Assurance Program began in 2003 but before the program began vetting those carriers, to verify that those new entrant carriers do not have a concealed history of poor safety management controls because they were able to reenter interstate commerce undetected as reincarnated carriers.

H-09-36 To FMCSA: Establish a requirement to review all passenger carrier lease agreements during new entrant safety audits and compliance reviews to identify and take action against carriers that have lease agreements that result in a loss of operational control by the certificate holder.

¹⁵ **H-99-50** To NHTSA: Develop performance standards for motorcoach roof strength that provide maximum survival space for all seating positions and that take into account current typical motorcoach window dimensions.

H-99-51 To NHTSA: Once performance standards have been developed for motorcoach roof strength, require newly manufactured motorcoaches to meet those standards.

¹⁶ **H-99-49** To NHTSA: Expand your research on current advanced glazing to include its applicability to motorcoach occupant ejection prevention, and revise window glazing requirements for newly manufactured motorcoaches based on the results of this research.

¹⁷ **H-10-3** To NHTSA: In your rulemaking to improve motorcoach roof strength, occupant protection, and window glazing standards, include all buses with a gross vehicle weight rating above 10,000 pounds, other than school buses.

¹⁸ **H-10-4** To NHTSA: Develop performance standards for all newly manufactured buses with a gross vehicle weight rating above 10,000 pounds to require that overhead luggage racks are constructed and installed to prevent head and neck injuries and remain anchored during an accident sequence.

¹⁹ **H-99-9** To NHTSA: Require that other than floor-level emergency exits (i.e. windows) can be easily opened and remain open during an emergency evacuation when a motorcoach is upright or at unusual attitudes.

²⁰ **H-00-01:** to NHTSA: revise the federal motor vehicle safety standards to require that all motorcoaches be equipped with emergency lighting fixtures that are outfitted with a self-contained independent power source.

²¹ **H-99-8** to US DOT: require motorcoach operators to provide passengers with pre-trip safety information.

²² **H-07-8**. To NHTSA Evaluate current emergency evacuation designs of motorcoaches and buses by conducting simulation studies and evacuation drills that take into account, at a minimum, acceptable egress times for various postaccident environments, including fire and smoke; unavailable exit situations; and the current above-ground height and design of window exits to be used in emergencies by all potential vehicle occupants.

²³ **H-07-6** to NHTSA: Develop detection systems to monitor the temperature of wheel well compartments in motorcoaches and buses to provide early warning of malfunctions that could lead to fires.

²⁴ **H-07-07**. to NHTSA Evaluate the need for a Federal Motor Vehicle Safety Standard that would require installation of fire detection and suppression systems on motorcoaches.

²⁵ **H-01-6** To DOT: Complete rulemaking on adaptive cruise control and collision warning system performance standards for new commercial vehicles. at a minimum, these standards should address obstacle detection distance, timing of alerts, and human factors guidelines, such as the mode and type of warning.

H-01-7 to DOT: After promulgating performance standards for collision warning systems for commercial vehicles, require that all new commercial vehicles be equipped with a collision warning system.

²⁶ **H-08-15**. To NHTSA: Determine whether equipping commercial vehicles with collision warning systems with active braking and electronic stability control systems will reduce commercial vehicle accidents. If these technologies are determined to be effective in reducing accidents, require their use on commercial vehicles.

²⁷ **H-10-5** To NHTSA: Develop stability control system performance standards applicable to newly manufactured buses with a gross vehicle weight rating above 10,000 pounds.

H-10-6 To NHTSA: Once the performance standards from Safety Recommendation H-10-5 have been developed, require the installation of stability control systems in all newly manufactured buses in which this technology could have a safety benefit.

²⁸ **H-10-1** To NHTSA: Require new commercial motor vehicles with a gross vehicle weight rating above 10,000 pounds to be equipped with lane departure warning systems.

²⁹ (a) *Fatigue, Alcohol, Drugs, and Medical Factors in Fatal-to-the-Driver Heavy Truck Crashes*, Safety Study NTSB/SS-90/01 (Washington, DC: NTSB, 1990); (b) *Factors that Affect Fatigue in Heavy Truck Accidents*, Safety Study NTSB/SS-95-01 (Washington, DC: NTSB, 1995).

³⁰ **H-08-13** to FMCSA: to develop and implement a plan to deploy technologies in commercial vehicles to reduce the occurrence of fatigue-related accidents.

³¹ **H-10-9** To FMCSA: Require all motor carriers to adopt a fatigue management program based on the North American Fatigue Management Program guidelines for the management of fatigue in a motor carrier operating environment.

³² **H-09-15**. To FMCSA: Implement a program to identify commercial drivers at high risk for obstructive sleep apnea and require that those drivers provide evidence through the medical certification process of

having been appropriately evaluated and, if treatment is needed, effectively treated for that disorder before being granted unrestricted medical certification

³³ **H-09-16.** To FMCSA: Develop and disseminate guidance for commercial drivers, employers, and physicians regarding the identification and treatment of individuals at high risk of obstructive sleep apnea (OSA), emphasizing that drivers who have OSA that is effectively treated are routinely approved for continued medical certification.

³⁴ **H-01-19** To FMCSA: Ensure that medical certification regulations are updated periodically to permit trained examiners to clearly determine whether drivers with common medical conditions should be issued a medical certificate.

³⁵ **H-01-17** To FMCSA: Ensure that individuals performing medical examinations for drivers are qualified to do so and are educated about occupational issues for drivers.

H-01-20 To FMCSA: Ensure that individuals performing examinations have specific guidance and a readily identifiable source of information for questions on such examinations.

³⁶ **H-01-18** To FMCSA: Develop a tracking mechanism be established that ensures that every prior application by an individual for medical certification is recorded and reviewed.

³⁷ **H-01-21** To FMCSA: Develop a review process prevents, or identifies and corrects, the inappropriate issuance of medical certification.

³⁸ **H-01-24** To FMCSA: Develop mechanisms for reporting medical conditions to the medical certification and reviewing authority and for evaluating these conditions between medical certification exams; individuals, health care providers, and employers are aware of these mechanisms.

³⁹ **H-01-25** To FMCSA: Develop a system that records all positive drug and alcohol test results and refusal determinations that are conducted under the U.S. Department of Transportation testing requirements, require prospective employers to query the system before making a hiring decision, and require certifying authorities to query the system before making a certification decision.

⁴⁰ **H-06-27** To FMCSA: Publish regulations prohibiting cellular telephone use by commercial driver's license holders with a passenger-carrying or school bus endorsement, while driving under the authority of that endorsement, except in emergencies.

⁴¹ **H-06-28** The National Transportation Safety Board makes the following recommendation to the 50 States and the District of Columbia: Enact legislation to prohibit cellular telephone use by commercial driver's license holders with a passenger-carrying or school bus endorsement, while driving under the authority of that endorsement, except in emergencies.

⁴² **H-06-29.** The National Transportation Safety Board makes the following recommendation to motorcoach industry, public bus, and school bus associations and unions: Develop formal policies prohibiting cellular telephone use by commercial driver's license holders with a passenger-carrying or school bus endorsement, while driving under the authority of that endorsement, except in emergencies.

⁴³ Safety Recommendations H-99-53 and -54 to NHTSA Closed Unacceptable Action.

⁴⁴ <http://www3.nts.gov/publictn/2009/SIR0902.pdf>

⁴⁵ **H-10-07** to NHTSA: Require that all buses above 10,000 pounds gross vehicle weight rating be equipped with on-board recording systems that: (1) record vehicle parameters, including, at minimum, lateral acceleration, longitudinal acceleration, vertical acceleration, heading, vehicle speed, engine speed,

driver's seat belt status, braking input, steering input, gear selection, turn signal status (left/right), brake light status (on/off), head/tail light status (on/off), passenger door status (open/closed), emergency door status (open/closed), hazard light status (on/off), brake system status (normal/warning), and flashing red light status (on/off; school buses only); (2) record status of additional seat belts, airbag deployment criteria, airbag deployment time, and airbag deployment energy; (3) record data at a sampling rate sufficient to define vehicle dynamics and be capable of preserving data in the event of a vehicle crash or an electrical power loss; and (4) are mounted to the bus body, not the chassis, to ensure recording of the necessary data to define bus body motion. (H-10-07) (This recommendation supersedes Safety Recommendation.