



July 5, 2016

The Honorable Mark Rosekind  
Administrator  
National Highway Traffic Safety Administration  
U.S. Department of Transportation  
West Building, Ground Floor Room W12140  
1200 New Jersey Avenue, SE  
Washington, DC 20590

**RE: Docket No. NHTSA-2016-0052, Notice of Proposed Rulemaking Requiring  
Advanced Glazing for Motorcoaches**

Dear Administrator Rosekind:

The American Bus Association (ABA) appreciates the opportunity to provide comments on the Notice of Proposed Rule Making (NPRM) Requiring Advanced Glazing for Motorcoaches, published by the National Highway Traffic Safety Administration (NHTSA or Agency).

From a general standpoint, ABA is supportive of the comments submitted by motorcoach industry experts on safe motorcoach design, as original equipment manufacturers (OEMs). As well, ABA strongly supports the U.S. Department of Transportation's (Department or USDOT) efforts to enhance motorcoach safety by implementing various elements of the Motorcoach Safety Action Plan. In particular, ABA and its members appreciate the Department's continued research and oversight activities to ensure bus operations remain the safest form of surface transportation for the traveling public, and look forward to continuing to work with the Department on these efforts

The ABA is the leading trade association for private and over-the-road passenger motor carrier operators who transport the public and serve the motorcoach industry. ABA has been in operation for 90 years and has over 800 bus operating company members, including both large and small; rural and urban; and intercity, charter and tour operators. Our members provide all manner of passenger transportation services, including intercity scheduled service, charter and tour operations, airport and employee shuttle services, and commuter operations. In addition, ABA membership includes hotels, convention and visitors' bureaus, attractions, restaurants, motorcoach manufacturers and companies providing services to the motorcoach industry. Motorcoach companies carry out more than 600 million passenger trips per year, moving passengers a total of 65 billion miles annually.

ABA's members pride themselves on their commitment to safety. They are active participants in groups such as the Bus Industry Safety Council, the Bus Maintenance and Repair Council, the Commercial Vehicle Safety Alliance (CVSA), the Transportation Research Board's Bus and Truck Safety Committee and other groups committed to safety and compliance in fleet operations. In support of this commitment to safety, the ABA submits these comments as the established representative of the private motorcoach industry and its affiliates.

As a national trade association, ABA has a limited ability to provide specific, technical comments or recommendations regarding alternative approaches to the testing proposals posed by NHTSA in this notice. However, we support the comments made by our OEM members, and specifically Prevost's comments and request for NHTSA to consider developing a separate definition and exempting "entertainer" motorcoaches from this rule, as the Agency has done with prison buses and school buses. (ABA made a similar request under NHTSA-2014-0085.)

We also request NHTSA consider the following concerns as they proceed with this rulemaking: 1) acceptance of computer modeling in contrast to crash testing, as a means to establish compliance; 2) ensure concurrent engineering and considerations, to complement other Agency rulemakings that will impact motorcoach structure and design; 3) undertaking additional research to evaluate the thermal effects of laminated glass; and 4) undertaking additional research to study the impacts to egress from increased weight of laminated glass windows.

## **1. Accept Computer Modeling**

Per the NPRM, impactor testing is proposed to best simulate "the damage the glazing could experience in a rollover prior to impact by an occupant." While this test may appear sound for evaluating one aspect of a rollover crash, we believe it is limited in nature and does not properly account for all relevant forces involved in such a crash, forces which will also impact and effect the frame retaining the window as part of the collision event. Further, the NPRM seems unclear as to whether computer modeling, which could address some of the dynamic and "real world" shortcomings from the impactor testing procedures, can be used for compliance testing.

The Agency relied on computer testing in the Martec study to establish the baselines for the dynamic test procedure using the impactor. As referenced in the NPRM, computer simulation was used for the ECE R. 66 rollover test. In like manner, ABA believes such computer modeling should also be acceptable and seen as equivalent to actual crash/impactor testing for OEMs seeking to certify compliance with the new FMVSS 217a. The use of computer modeling will not only keep the costs of this rule proposal down, along with compliance costs, it will also provide sufficient flexibility and repeatability in evaluating the performance of the entire motorcoach safety system in a unified fashion. The ABA requests NHTSA consider allowing computer modeling for compliance testing as a permissible substitute to impactor or rollover testing.

## **2. Concurrent Engineering**

Pursuant to the Motorcoach Safety Action Plan, NHTSA has a number of rulemakings currently underway that will impact motorcoach design. Several of these rulemakings are intended to

improve the structure or operating technology to help mitigate motorcoach crashes, such as: Electronic Stability Control (NHTSA-2012-0065), Lane Departure Warnings (mentioned in RIN: 2127-AL55), Forward Collision Avoidance Systems (NHTSA-2013-0067), Motorcoach Passenger Seat Belts (NHTSA-2013-0121), and Motorcoach Structural Integrity (NHTSA-2014-0085). These rulemaking efforts are all occurring in conjunction with this NPRM, and thus should be coordinated to the maximum extent possible.

Pursuant to Section 32706 of the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21), from which this NPRM derives its directive, NHTSA, by way of delegation from the Secretary of USDOT, is directed to “ensure research programs are carried out concurrently, and in a manner that concurrently assesses results, potential counter-measures, costs and benefits.”<sup>1</sup> Further, NHTSA is to consider, and is provided explicit authority, to combine rulemaking proceedings encompassing more than one aspect of occupant protection, collision avoidance and other concerns, if appropriate.<sup>2</sup>

This section of law was enacted for the explicit purpose of protecting against the Agency taking a piece-meal approach to implementation of the safety enhancements listed in the Motorcoach Safety Action Plan. Instead, Congress recognized the importance and need of considering changes in the design and function of motorcoaches and their respective safety systems in an integrated manner, for the benefit of the manufacturers, customers and the traveling public.

Based on this directive, ABA requests NHTSA consider this regulatory proposal in conjunction with the other previously listed regulatory undertakings. For the benefit of our motorcoach manufacturers and the traveling public, if the safety enhancements are implemented holistically, the engineering evaluation can be conducted more efficiently thus reducing cost, time and the production and implementation schedules. It does not make sense, from ABA’s and the industry’s standpoint, to mandate changes to windows at one point in time only to require redesign of the same windows and their retaining frames at a later date, due to new regulations relating to roof structures; or, to require changes to the dynamics of the frame structure only to require redesign of the same structure to add an additional egress point (e.g. door) a few years later.

Further, ABA believes it would inform the Agency’s safety research efforts and benefit the traveling public, for NHTSA to evaluate the performance of currently mandated motorcoach safety requirements, prior to issuing new ones. For example, evaluating the effectiveness of mandated safety enhancements such as motorcoach passenger seatbelts and electronic stability control, could assist the Agency in prioritizing its limited resources and ensure safety initiatives are targeted appropriately. Electronic stability control is starting to become a standard feature on motorcoaches now in the market and is specifically intended to mitigate motorcoach rollovers. Similarly, motorcoach passenger seatbelts will begin to be phased into the market on all new motorcoaches starting in November 2016. Seatbelts are specifically intended to mitigate passenger ejection. These mandates, combined with the broader use of passenger safety briefings, should lead to a decrease in motorcoach occupant fatalities, and in particular fatalities

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<sup>1</sup> P.L. 112-141, Section 32706(a).

<sup>2</sup> P.L. 112-141, Sections 32705 and 32706.

due to ejections<sup>3</sup>. For these reasons, in terms of true safety management, the Agency should evaluate these mandates prior to proffering additional mandates, with additional costs, that may yield very little additional benefit or instead result in unintended consequences.

Additionally, at a minimum, ABA believes any rulemaking evaluating motorcoach safety performance should be based on testing vehicles that incorporate current technology in use. The vehicles identified in the Agency's proposal are outdated relative to equipment currently in use on the road today. The Agency's data sampling does not take fully into account the crash mitigating technologies currently deployed, which may skew the Agency's findings. This approach undermines the credibility of the Agency's proposal and does not serve the safety of traveling public.

### **3. Research into Thermal Effects of Laminated Glass**

ABA would also like to echo the comments raised by our OEM members regarding the thermal properties of laminated glass. As noted in the OEM comments, the thermal transmittance rate of laminated glass is nearly double the rate of glass commonly used today.

As a passenger-carrying commercial vehicle, motorcoaches need to maintain a comfortable ambient temperature within the passenger compartment for the health and comfort of our passengers. Mandating a glass solution, without further research into how to address this change in thermal dynamics, will likely lead to unintended consequences and introduce additional costs not considered in the NPRM. For example, based on the thermal transmittance rate, use of laminated glass may require motorcoaches to expand use of air conditioning (or heating) systems, and thus adding exponentially higher fuel costs to fleet operations. These costs were not considered as part of this NPRM. As a possible alternative, some OEMs have consulted with glass experts and investigated reflective coating options to reduce heat absorption, but this solution, too, will increase costs. Regardless of the options, this proposal will result in an unfunded mandate, increasing the purchase price as well as operational costs. Based on this outcome, ABA believes the proposal may be premature, requiring more in-depth study before proceeding

### **4. Research Egress Effects from Laminated Windows**

The ABA notes NHTSA has been investigating emergency motorcoach passenger egress options in recent years.<sup>4</sup> As mentioned in the Volpe research report as well as the National Transportation Safety Board's Orland (California) bus crash report,<sup>5</sup> there is concern over the ability for passengers to effectively hold motorcoach windows open to facilitate rapid escape.

By mandating double-paned glass, laminated windows, or a hybrid in response to this

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<sup>3</sup> <https://www.fmcsa.dot.gov/safety/data-and-statistics/large-truck-and-bus-crash-facts>

<sup>4</sup> "Human Factors Issues in Motorcoach Emergency Egress": Pollard, John K and Markos, Stephanie H; Volpe National Transportation Systems Center, Cambridge, MA

<sup>5</sup> [http://www.nts.gov/news/events/Documents/2015\\_orland\\_BMG\\_HWY14MH009\\_Abstract.pdf](http://www.nts.gov/news/events/Documents/2015_orland_BMG_HWY14MH009_Abstract.pdf)

rulemaking, the weight of motorcoach windows will increase. As well, the shard remnants from broken laminated glass are retained within the window frame, and these shards may pose an additional hazard impeding egress, which should also be considered in a study. As these issues do not appear to be addressed in the NPRM, ABA requests NHTSA consider additional research to understand the effects of this proposal on passenger egress during an emergency.

Finally, ABA wishes to raise a larger, more global concern regarding motorcoach weight. The increasing aggregate weight of a motorcoach, in response to new NHTSA regulatory proposals such as this NPRM and new regulations from the Environmental Protection Agency, threatens to exceed currently mandated federal axle-weight limits. Bearing this in mind, ABA requests NHTSA consider aggregate motorcoach weight, before continuing to move forward with this rulemaking.

In closing, ABA supports NHTSA's efforts to improve motorcoach crash worthiness and mitigate motorcoach accidents. However, in order for this initiative regarding FMVSS 217a to be successful, ABA believes several concerns must be addressed: 1) acceptance of computer modeling in contrast to crash testing to prove compliance; 2) ensure concurrent engineering with rulemakings that impact motorcoach structure and design; 3) conduct additional research to evaluate the thermal effects of laminated glass; and 4) conduct additional research to study the impacts to egress from increased weight of laminated glass windows. These concerns, along with the added weight to the vehicle and identification of potential additional costs not included in the regulatory analysis, pose a significant challenge to the industry. We would like to work with NHTSA to balance the importance safety initiatives it is undertaking, with the realities of the consequences of added vehicle weight and costs. ABA would be pleased to respond to any questions the Agency may have regarding this submission.

Sincerely,

A handwritten signature in black ink, appearing to read "Brandon Buchanan". The signature is fluid and cursive, with a long horizontal flourish at the end.

Brandon Buchanan  
Director of Regulatory Affairs  
American Bus Association