Bus Occupant Protection Group
Position Paper on Safety Belts in Motorcoaches

The undersigned are manufacturers and operators of motorcoaches, and their trade associations, in the United States and Canadian markets. Collectively, these entities represent the interests of approximately 1,200 of the 3,500 motorcoach companies in the United States and Canada; these companies operate nearly 70% of the 35,000 private motorcoaches on the road today. The trade associations also represent some 250 tour operators and over 3,000 associate and travel members who are interested in attracting motorcoach and tour customers to their states, communities or businesses.

The undersigned endorse a regulation for safety belts in motorcoaches premised on NHTSA's vehicle research and support voluntary efforts to retrofit existing buses with safety belts. Our primary concern is that any proposed retrofit standard be accessible to and feasible for all motorcoach operators, the vast majority of whom are small businesses serving vital community needs.

The Motorcoach Industry

Motorcoach operators are primarily small to medium sized businesses. Some 78.8% of the carriers are small businesses operating fewer than 10 motorcoaches and with an average fleet size of 3 motorcoaches. These smaller carriers, however, provided nearly a quarter (24.4%) of the industry's passenger trips – averaging 23,000 passenger trips annually per motorcoach.[1]

Motorcoach operators provide a variety of services, including charter service, sightseeing and tours, airport and hotel shuttles, scheduled service, special operations and commuter service. Services are roughly divided between fixed route services (43.8%) and charter, tour and sightseeing services (56.2%) in terms of total mileage traveled in service, however the vast majority of operators provide charter services (96.4%) over fixed route operations (31.1%). Motorcoaches increasingly provide a safe and fuel efficient form of commuter service and regional transportation. In addition, the motorcoach industry employed 118,000 people in 2007. While larger carriers employ more, even the smallest operators employ on average 11 people.

Approximately 2,000 new motorcoaches are sold by motorcoach manufacturers to operators in the United States each year. Significantly, the motorcoach fleet is relatively new. In 2007, the average year of manufacture for motorcoaches in the U.S. and Canada was 2000, and even for the smallest carriers the average year of manufacture was 1998. As a result, the average motorcoach in the fleet is relatively new, structurally robust and incorporates many recent safety technologies.

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[1] Motorcoach Census 2008: A Benchmarking Study of the Size and Activity of the Motorcoach Industry in the United States and Canada in 2007, by Nathan Associates, Inc. (Dec. 18, 2008), and available at www.buses.org. This is a yearly review prepared on behalf of the American Bus Association to garner information generally about the motorcoach industry.

Serving the U.S. Economy and Intermodalism

The motorcoach industry is a vital component of the U.S. transportation network and the economy as a whole. According to statistics from "The Economic Impacts and Social Benefits of the U.S. Motorcoach Industry", analyzed by Nathan Associates, Inc. (2008), which studied the value of goods and services sold directly to visitors, motorcoach industry services purchased by visitors generated $55 billion in sales and supported 792,700 jobs. Several industry researchers have collaborated in producing a number of economic impact studies looking at the local and regional impacts of motorcoach travel in recent years. For example in West Virginia, $40.3 million of spending, 1,300 jobs and $4.0 million in state and local tax revenues were attributable to motorcoach charter and tour visitors in 2006. In southwestern Pennsylvania, $39.2 million of spending, 1,030 jobs, and $4.2 million in taxes were due to motorcoach charter and tour visitors in 2006. In Sevier County, Tennessee (the Pigeon Forge area), $89.2 million of spending, 2,100 jobs, and $8.9 in taxes were due to motorcoach charter and tour services in 2005.

In addition, the motorcoach industry provides regional transportation in areas other modes have reduced or eliminated. For example, when American and United Airlines cut service to Rockford, Illinois, Van Galder Bus and Rockford Peoria Lines were contracted to transport passengers between Rockford and O'Hare International Airports. C&J and Concord Coach Lines provide fixed route services transporting passengers between rural New Hampshire and Boston's Logan Airport. Greyhound Lines provides connecting services for Amtrak passengers as part of the Amtrak Thruway program for locations such as the Grand Canyon and Flagstaff, Arizona. Motorcoach operators are also able to partner with public sector rural transit providers to serve remote locations not otherwise served by other transportation modes.

With motorcoach services providing the transportation needs of much of rural America and so strongly supporting the tourism and travel industries in the United States and Canada, and with the vast majority of motorcoach services provided by smaller motorcoach operators, it is vital to many regional and local economies that motorcoach operators remain financially vibrant and capable of providing cost effective and safe transportation.

Support for a Safety Belt Standard

The undersigned entities endorse a federal motor vehicle safety standard premised on and consistent with NHTSA's vehicle research. Motorcoach manufacturers and operators, and their trade associations, have been working with NHTSA over the past 2 years by providing technical expertise about the bus industry and offering the expertise of technical staff from bus manufacturers and operators to provide comments on the test design and review of the results in addition to securing equipment for research activities.

We also recognize the benefits, as new motorcoaches enter the fleet, to equip buses with 3-point safety belts familiar to motor vehicle riders. When integrated into motorcoach design and initial manufacture, and when tested to a performance standard consistent with NHTSA's research, 3-point safety belts can provide cost-effective occupant protection. An increasing number of new motorcoaches are equipped with 3 point safety belts.

It is important to recognize that motorcoaches can and have been designed to provide effective occupant protection utilizing 2-point safety belts when incorporated into a systemic design integrating safety belts, energy absorbing seats and compartmentalization of the seating configuration. Motorcoaches built to meet the rigid European Union occupant safety requirements, for example,[2] have incorporated seats with energy absorbing deformation zones. Testing has validated the protection these seats provide, with HIC (head injury criteria) values between 350-450 (the EU maximum permitted value is 500) and de minimus distinctions in HIC scores between 3 point and 2 point systems.[3] And, with ECE R14, R16 and R80 compliant motorcoaches in use in Europe beginning in 1997 and approximately 50,000 on the European roads today, these systems have been proven effective in real world use.[4]

Indeed, NHTSA itself has recognized that 2-point belts can provide ample protection in appropriate circumstances, such as when incorporated into large passenger vehicles with compartmentalization. When promulgating the recent school bus final rule, the agency refused to ban lap belts in large school buses, leaving 2-point belts as an option for local school districts. The agency noted that lap belts are currently allowed not only in school buses, but also in the front center seat of passenger vehicles, and in medium to heavy vehicles over 10,000 pounds GVWR. NHTSA further observed that "lap belts have been shown to be almost as effective as lap/shoulder belts in rollover crashes," and that – as with motorcoaches – the large school bus environment imposes less severe crash forces in other types of collisions. 73 Fed. Reg. 62744, 62752 (October 21, 2008).

The agency also noted that its school bus test program simulated only a severe 30 mph frontal crash condition, and that because the testing did not represent the full panoply of crash conditions experienced in the real world, "the agency was not able to conclude that the higher neck injury measures associated with the lap belt in these tests would translate to an overall greater safety risk. Lap belts could retain the occupants in side impact, rollover, or lower speed

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[2] European motorcoach manufacturers have provided detailed EU motorcoach design guidelines for 2-point and 3-point safety belt systems for NHTSA and industry evaluation, as well as the historical results of the use of such systems.

[3] Significantly, the agency's motorcoach crash did not include seats built to the EU requirements and incorporating this type of advanced design. While the testing resulted in some high injury values with 2 point belts, these values are not indicative of seats currently in use and built to the European standards. Nor is the crash test indicative of other motorcoach designs in which the seating configuration depends on both the seat and that in front and that behind. Because NHTSA changed the seating configurations and used different seats that were not designed for that bus, the head and neck injury scores are likely substantially overstated since they bus was crashed without the original seating configuration.

[4] The EU has different tests for M1 (passenger cars), M2 (light bus/coach under 5 tons GVWR) and M3 (bus/coach over 5 tons GVWR). ECE R-14 is a static test of the strength of the belt anchor to the seat; ECE R-16 applies to the seat belt retractor (and is similar to FMVSS 209) and ECE R-80 can be either a dynamic or a static test of the capability of the seat back to absorb the energy of either belted or unbelted passengers. The first certificates for compliance with the updated ECE-EU regulations were awarded in 1997. The EU approach, which permits either 3 point or 2 point belts, encourages a systemic approach to improving safety that incorporates the belts, the seats and the structure of the vehicle. We believe that the EU standards for seat belts in M3 vehicles can serve as guidance for NHTSA in developing U.S. standards for motorcoaches.

frontal crashes, which occur with greater frequency." Id. at 62474. The same is true for motorcoaches.

Although motorcoaches are not included within the ambit of FMVSS 222, and are of a fundamentally different construction than school buses, like school buses they incorporate a substantial amount of compartmentalization to provide occupant protection. Motorcoaches are generally larger in mass and have a lower center of gravity than school buses. Unlike school buses, which are built with more rigid structures to prevent intrusion from striking vehicles or struck objects into the lower occupant area, motorcoaches are built to distribute crash forces across the vehicle structure. In both school buses and motorcoaches, the seating compartments include high back seats and energy absorbing materials. Motorcoaches also include overhead compartments which help limit the amount of vertical distance that occupants can travel. As with school buses, compartmentalization – especially when combined with recognized energy absorbing seat designs such as those built to comply with the EU regulations, can combine with lap belts to provide sufficient protection in rollovers and other crash modes.

Thus, while we support the application of 3-point safety belts in new buses, it is important to recognize that 2-point lap belts can and do provide significant safety benefits, especially with regard to protecting against ejections and excessive movement during a crash. The record, which is based on a crash in which the seating was reconfigured, does not support a conclusion that 2 point belts, which can protect against ejections, may result in adverse safety consequences in other crash modes.

Voluntary Retrofit of Motorcoaches

We also support the voluntary retrofitting of existing buses. A voluntary approach is necessary because the retrofit capacity of existing buses must be individually assessed and because many buses were not built to accommodate safety belts. Existing buses have provided services imposing different types of fatigue and wear. Retrofitting existing buses may entail (i) adding safety belts to existing seats; (ii) installing new seats with integrated safety belts; and (iii) potentially reworking the coach structure to enable the addition of safety belts and seats capable of meeting the requisite performance requirement(s). This would be especially true if buses were required to be retrofitted with 3-point belts.[5]

The cost of these upgrades can be sizeable and in some cases prohibitive. If required, rather than voluntary, many bus operators may be forced to invest substantially in their existing fleets, delaying considerably their ability to purchase new buses initially designed and built with safety belts. In addition, the balance sheets of thousands of bus operators would plummet overnight, as their fleet inventory values fall, and bus resale values sink. Others, without the financial capacity to rebuild their motorcoaches, may be forced out of business.

[5] As noted above, since the promulgation of the EU standards, European buses have been designed and built with advanced seating designs and to accommodate 2 point belts, and are sold with those belts throughout the rest of the world. Preexisting vehicles built to the EU standards, including the M3 level and pull test, and sold in the US can accommodate the addition of lap belts.

Other bus operators are not likely to step in to provide the services abandoned by those financially unable to comply with new regulations. The bus business is largely a regional business and operators provide particular service to their customers. As noted above, about half of the services motorcoaches provide are fixed route services, accommodating the need for commuter services and regional transportation not provided by airlines, rail and local transit. Other bus operators are not likely to be in a position to pick up these services, especially if doing so entails purchasing expensive new buses to comply with the new requirements. Especially in light of the fact that 78.8% of the bus operators in the United States are small businesses, a retrofit standard that imposes prohibitive costs on small businesses is likely to drive many of these small businesses to close, with no available replacement.

The result is likely to be to divert customers to traveling in passenger cars and light trucks, much like forcing school districts to include safety belts in large school buses could, as the agency found, divert students from school buses to passenger vehicles. Just as with school buses, this diversion would increase occupant exposure to safety risks, and increase travel congestion, fuel consumption and engine emissions. Another result is likely to be a significant reduction in tourism and sightseeing travel, negatively impacting many local economies that are dependent on motorcoach travel – such as the theatre district in New York, many restaurant and lodging businesses related to highway travel, and tourist destinations such as Branson, Missouri, Washington DC and West Virginia.

The voluntary retrofit of existing buses, potentially supported by a voluntary retrofit standard permitting the use of either 3 point or 2 point belts, serves the interests of both safety and vital local and regional economies. To the extent that (i) existing buses are structurally sound enough to support the enhancements that are necessary, (ii) the original bus manufacturer and/or other companies make viable 2 or 3 point retrofit kits available, and (iii) the cost of retrofitting the bus is within the technical and economic reach of many motorcoach operators, a voluntary retrofit standard can provide guidance with regard to requisite performance levels.

Significantly, however, any retrofit performance standard must allow for either 2 or 3 point belts because the amount of rebuilding of an existing motorcoach necessary to support a 3-point belt system in many cases will be cost prohibitive.[6] This is largely due to the ability to add belt anchors to the sides of existing seats or to install new seats with integrated lap belts without the additional need significantly to reinforce the motorcoach structure. To the extent kits are made available by the bus manufacturers, permitting a voluntary retrofit to utilize lap belts is likely result in substantially more motorcoaches being fitted with the countermeasure to protect against the risks of an off-road crash, continue to provide significant protection in other crash modes and not diminish the substantial contribution the motorcoach industry makes towards sustaining the U.S. economy and in particular the economies of many localities and regions.[7]

[6] The cost of retrofitting a motorcoach with 3-point safety belts, including the replacement of seats and remanufacture of the floor structure necessary to accommodate such belts, will approach $40,000 to $60,000 per vehicle.

[7] One approach to a retrofit standard would be to require that motorcoaches previously designed and built with anchorage points for belts, whether 2 point or 3 point, have those belts installed.

In addition, NHTSA has already established a comprehensive approach to motorcoach safety that includes safety belts as a single component. NHTSA is also analyzing and conducting research on additional measures for motorcoach occupant protection, including roof crush standards, window glazing, occupant egress, and fire detection, prevention and suppression. If developed into an integrated system of passenger protection requirements, rulemakings in each of these areas will provide a further margin of safety for motorcoach passengers, but will also add another layer of cost for manufacturers and operators. NHTSA should conduct a systemic analysis of motorcoach safety equipment and operations, as each of these areas of analysis affects the others, and keep this entire comprehensive program in mind when assessing the costs and benefits of policies for additional regulatory standards.

Moreover, on April 30, 2009 the Secretary of Transportation directed NHTSA and other administrations within the Department to develop a motorcoach safety action plan that would include a reassessment of equipment regulations and enhanced enforcement of safety regulations applicable to motorcoach drivers, vehicles and carriers. This enforcement effort should also include a systemic review of new entrant companies and ongoing enforcement of safety requirements for all motorcoach operators.

Conclusion

The undersigned manufacturers, operators and associations endorse the efforts of the Department of Transportation and NHTSA to advance motorcoach safety. In addition to focusing on the motorcoach itself, we strongly encourage the Department to engage in serious efforts to improve the process through which operators are granted operating authority, the inspection process and thorough and continuous enforcement. Providing motorcoach service consumers with access to meaningful information relating to the performance and quality standards of operators would also serve to help customers identify motorcoach operators that can provide efficient, effective and safe transportation.

We endorse the efforts to include safety belts in motorcoaches, and a requirement premised on NHTSA's vehicle research incorporating 3-point belts into new motorcoaches. Motorcoaches are very expensive and most motorcoach operators are small businesses. These small businesses provide substantial economic support for many regions and localities, and for many destination locations throughout the United States. They provide commuter services and they connect people from their homes to other forms of transportation such as airlines and railroads. We also support the voluntary retrofitting of motorcoaches. To the extent that the agency proposes a retrofit standard, it is important for the requirement to protect against rollovers, not lead to adverse consequences and protect the ability of the motorcoach industry to continue to support jobs and consumer spending in the U.S. economy. Any voluntary retrofit requirement should therefore permit the use of either 3-point or 2-point safety belts.

Respectfully submitted,

American Bus Association, Inc.
Motor Coach Canada
Trailways Transportation System, Inc.
Prevost Car (U.S.), Inc.
Setra of North America, Inc.
National Seating Company