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FLORIDA ASSOCIATION FOR PUPIL TRANSPORTATION

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Position Paper

Passenger Restraints in Large School Buses February 2005

Section 316.6145, Florida Statutes, has required the use of seat belts (lap belts) in all large school buses (over 10,000 lbs.) purchased after December 31, 2000. Florida is one of only four states which has implemented seat belt legislation in the absence of comprehensive safety studies which indicate such use would improve the margin of safety for transported students (two other states require lap belts, and one state requires lap/shoulder belts). During the past six years, the Florida Association for Pupil Transportation (FAPT) has encouraged debate on the use of lap belts and has examined all aspects of this issue. Maximum regard for the overall safety and welfare of students is the primary responsibility of FAPT and is paramount in its views.

Overview

School buses provide the safest form of transportation in the United States. Nationwide each school year, approximately 470,000 school buses travel 4.3 billion miles transporting 25 million students to and from school and school related activities. National Highway Traffic Safety Administration (NHTSA) statistics show that the fatality rate for school buses is 0.2 fatalities per 100 million vehicle miles traveled as compared to 1.5 fatalities per 100 million vehicle miles for cars. School bus travel is approximately 8 times safer than travel in other types of vehicles. This unparalleled safety record is largely the result of the manner in which school buses are constructed. Federal Motor Vehicle Safety Standard (FMVSS) 222 has required that all school buses manufactured after April 1, 1977 be equipped with key federal safety requirements which include high backed, energy absorbing, padded seats for "automatic, passive" protection of young passengers. These features have created a "compartmentalization" for transported students which, over the years, has proven to provide an extremely safe environment for passengers. Other federal safety standards, also applicable only to school buses, have contributed to the unparalleled safety record of school buses. These standards include rollover protection, special loading/unloading lights, multiple emergency exits, fuel system protection, stop arms to warn other motorists, and special mirrors.



Analysis of Crash Protection

In 1987 the National Transportation Safety Board (NTSB), after nearly 10 years of federally mandated “compartmentalization” safety standards, conducted research which studied 44 school bus crashes. The NTSB concluded that it is unlikely that any type of belt restraint system would have improved the injury outcome. In 1999, the NTSB again stated that the use of lap belts might cause additional head injuries and deaths in some types of crashes.

Additionally, in 1989, at the request of the U.S. Congress, the U.S. Department of Transportation contracted with the National Academy of Sciences (NAS) to conduct a comprehensive study on the use of lap belts in school buses. The NAS concluded that the potential benefit of lap belts, if any, was insufficient to justify implementation in the nation’s fleet of school buses. They suggested these funds might better be spent on safety programs and other devices to save more lives and reduce more injuries.

In 2002, the National Highway Traffic Safety Administration (NHTSA) released its findings after a two-year study of school bus occupant crash protection. It concluded that requiring lap belts in large school buses would appear to have little, if any, benefit in reducing serious-to-fatal injuries in severe frontal crashes. It further stated, “On the contrary, lap belts could increase the incidence of serious neck injuries and possibly abdominal injury among young passengers in severe frontal crashes.” NHTSA further advised that combination lap/shoulder belts could provide some benefit, unless they are misused. FAPT concurs with this position.

Several other entities have recommended against the mandated installation of lap belts in school buses including Transport Canada, Canada Safety Council, The Center for Urban Transportation Research at the University of South Florida, and the National Association of State Directors of Pupil Transportation Services.

In December 2002, the United States Congress passed Anton's Law that bans the installation of lap belts in future motor vehicles with a gross vehicle weight rating of 10,000 pounds or less. In December 2004, NHTSA issued a final rule that no longer allows the installation of lap belts in motor vehicles with a gross vehicle weight rating of 10,000 pounds or less, except in a few limited situations, such as the center seating position of a passenger motor vehicle.

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Issues for Consideration

The use of lap belts is clear. Crash testing and data analysis by NHTSA and others shows that the use of lap belts on school buses does not provide for a safer environment, but rather can compromise passenger safety. Therefore, Section 316.6145, FS, must be reconsidered.

However, the use of a 3-point, lap/shoulder passenger restraint system should be considered. Research has shown that such a restraint system may provide enhanced safety performance in some types of school bus crashes. NHTSA concluded they would provide a small, incremental improvement in overall safety if all such lap/shoulder belts are used properly and transportation in school buses is not reduced due to funding constraints. In the real world the use of a lap/shoulder restraint system has a broad range of implications, which include:

- School buses currently use a 39 inch seat engineered to hold three students (3/3 seating per row). In order to accommodate this requirement within the existing width inside a school bus, a 3/2 seating configuration will be required. This reduces the seating capacity of a new school bus by at least 17%. Additional space between rows may reduce seating capacity even further.
- In a practical sense, as evidenced by a series of test buses in North Carolina with lap/shoulder restraints, at the high school level actual seating may be reduced to a 2/2 or even a 2/1 configuration. This will further reduce the number of students who can be transported.
- As individual bus capacity is reduced, more buses will be required to transport the same number of students. This escalates the cost of capital purchases, drivers, bus inspections and repairs, and housing of buses. Further, school buses equipped with lap/shoulder belts cost about ten percent more, according to pricing provided by manufacturers. This cost impact would currently be viewed as an unfunded mandate.
- Reduced seating capacity, without corresponding additional funding, may well result in fewer students being transported. Displacing even a small number of students from the buses will inevitably have a disproportionately negative effect upon student safety. As noted in a 2002 study by the National Research Council of the National Academy of Sciences:

“Each year approximately 800 school-aged children are killed in motor vehicle crashes during normal school travel hours.¹ Of these 800 deaths, about 20 (2 percent) – 5 school bus passengers and 15 pedestrians – are school bus-related. The other 98 percent of the school-aged deaths occur in other motor vehicles ... or to pedestrians, bicyclists, or motorcyclists.” [¹ The NRC defined “normal school travel

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hours” as 6:00 a.m. to 8:59 a.m. and 2:00 p.m. to 4:59 p.m. each weekday from September 1 through June 15.]

The study collected crash data for the 9-year period from 1991 through 1999. These data show the following annual average fatalities to school children during normal school travel hours:

- 5 school bus passengers
- 15 pedestrians outside school buses
- 169 occupants of passenger vehicles with an adult driver
- 448 occupants of passenger vehicles with a teenage driver
- 131 pedestrians
- 46 bicyclists

- Since students are much safer inside a school bus than in a car, on bicycles, or walking, any action which causes a displacement of students from buses must be carefully considered.

FAPT Position

FAPT strongly opposes the use of lap belts in large school buses. However, since crash testing has demonstrated that lap/shoulder belts may prove beneficial in some types of severe frontal crashes, FAPT supports the use of lap/shoulder belt restraints IF FULLY FUNDED. Since school buses remain the safest form of surface transportation, any reduction in the number of students transported as a direct or indirect result of the high cost of three point restraint systems is unacceptable.