

## Seat Belts on School Buses

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The issue of seat belts in school buses has been under discussion for more than three decades and has been researched and debated extensively. The call for “seat belts” on school buses is typically based on the assumption that a “seat belt” would make a school bus passenger safer. “Since it is important for kids to buckle-up in a car,” the thinking goes, “it is therefore equally important for them to buckle-up in a school bus.”

Except that a school bus is not a car.

Parents advocating for the safety of their children will often attempt to draw an analogy between the crash dynamics in a passenger car and that of a school bus. In reality, they are very different. Large school buses not only have the advantage of size and weight in most crashes, they must meet more Federal Motor Vehicle Safety Standards than any other vehicle on the road. The fact that school buses have been subject to this strict Federal regulation since 1977 is the primary reason school buses are the safest motor vehicle on the Nation's highways. In fact, the National Highway Traffic Safety Administration (NHTSA) estimates that nationwide there are fewer than 400 serious school bus crash-related injuries each year. NHTSA reported in 2002 that American students are nearly eight times safer riding in a school bus than with their own parents and guardians in cars. A [2011 NHTSA safety campaign](#) includes the following statement: “Students are about 50 times more likely to arrive at school alive if they take the bus than if they drive themselves or ride with friends.”

Although most school buses do not have seat belts, they do have a built-in system of passenger protection commonly called “compartmentalization.” This system, which consists of securely anchored, closely spaced, high-backed, well-padded seats, protects a child like an egg in an egg carton. It is a “passive restraint system,” which means that it has been integrated into the design of the vehicle. In contrast to active restraint (which requires a passenger to do something to activate the vehicle’s crash protection, like buckling a seat belt), passive restraint offers automatic crash protection. This means that every child who is properly seated sits in a “compartment of safety” that has been designed to minimize the trauma of a crash.

There is no question that this system works. It has been designed, tested and highly recommended by federal regulators. The real question is – do “seat belts” make it better or worse?

The term "seat belt" means different things to different people. Some people interpret the term "seat belt" to mean a LAP BELT and others interpret it to mean a LAP/SHOULDER BELT SYSTEM, and still others think it could be either. Since

the potential benefits and costs of lap belts and lap/shoulder belt systems are different, it is important to understand the difference between the two systems.

In simplest terms, a LAP BELT is a two-point active restraint system that includes a strap (also called “webbing”) that is applied over the lower torso and is securely anchored to the seat bottom on both sides of a person’s hips. A LAP/SHOULDER BELT is a three-point active restraint system that is not only anchored like a lap belt, it also includes a strap that extends from one of the seat bottom anchors across the upper torso to another secure anchor just above the opposite shoulder.

There are significant differences in the benefits of lap belts versus lap/shoulder belt systems. A study conducted by NHTSA at the request of the United States Congress ("[School Bus Safety: Crashworthiness Research](#)," April 2002) provides strong evidence that lap belts are not a good form of crash protection for children in school buses. The laboratory tests for lap-belted test dummies resulted in "Neck Injury measurements in excess of twice the maximum desirable threshold". Additionally, the report noted that, "it is clear that the potential for abdominal injury exists especially when lap belts are used."

Most public policymakers realize that lap belts are old technology that has significant drawbacks. This is one of the reasons that, in December 2002, the United States Congress passed [Anton's Law](#), which mandated that the National Highway Traffic Safety Administration undertake Federal regulatory action to no longer allow the installation of lap belts in any motor vehicle that has a gross vehicle weight rating of 10,000 pounds or less.

Aside from lap belts, the question then becomes whether lap/shoulder belts will significantly improve school bus passenger safety. Interestingly, the NHTSA study also assessed the potential benefits of lap/shoulder belt systems in school buses, and concluded that the potential benefits were small, primarily since large school buses without any type of belt system are already the safest motor vehicles on the highways. While school bus crashes do occur, the overwhelming majority of them are minor in nature. Unfortunately, some major school bus crashes do occur and these tend to involve collisions with heavy trucks, trains, or fixed objects. In these types of collisions, even with lap/shoulder belts, some school bus passengers will still be injured.

Nevertheless, there always seems to be public interest/demand to install some type of belt system in a school bus. Given the lack of benefits and even the potential increased risks related to lap belt use, it is clear that the only viable system that should be considered in a school bus is a lap/shoulder belt system.

In debating the concept of requiring lap/shoulder belts in large school buses, the following points are important:

The National Highway Traffic Safety Administration (NHTSA) is the federal agency that establishes requirements for the safety of all motor vehicles, including school buses. NHTSA has exhaustively studied the issue of both lap belts and lap/shoulder belts on school buses -- reviewing all available research, real-world crash data and various laboratory crash tests.

On April 20, 2009, NHTSA upgraded its school seat belt requirements by (1) increasing the height of seat backs on all school buses from 20 inches to 24 inches above seat-level to better protect students in a crash from being injured by passengers seated behind them (24 inch seats have been required in Alaska for over a decade); (2) setting performance standards for voluntarily installed 3-point belts in large school buses; and (3) requiring small school buses (those under 10,000 pounds gross vehicle weight rating), to have 3-point belts, rather than lap belts. The seat belt requirements apply to buses manufactured on and after October 21, 2011. The seat back requirement applies to buses manufactured on and after October 21, 2009. NHTSA's final rule leaves the decision of whether to equip large school buses with seat belts up to individual states.

California is the only state that required lap-shoulder belts on new buses. New York, New Jersey and Florida require lap belts on new buses. Texas passed a law requiring lap/shoulder belts in school buses beginning in 2010. However, due to severe budget troubles the State cut funding that would have reimbursed districts buying new buses with seat belts on them.

The Safeguard FlexSeat is currently available on buses manufactured by Thomas Built Buses. This seat incorporates lap shoulder belts for three elementary school age students or two middle or high school age students on a standard 39 inch seat. Our local Thomas Built Bus vendor has informed the District that the cost of a safeguard seat is \$1,012.00 installed in a new school bus. The cost of a standard bus seat that meets current Federal Motor Vehicle Safety Standards is \$196.00 for a difference of \$816.00 for each seat.

Most of the buses in the ASD bus fleet are 84-passenger buses equipped with 28 seats. The installation of the FlexSeat would add \$22,848 or 18.7% to the cost of a new standard bus. The cost to equip all buses in our fleet with Safeguard FlexSeats is \$5,345,072.

Budget constraints have prevented ASD from replacing school buses in the past several years; we have replaced an average of only 4 buses a year since 2006. There are currently 20 buses in the fleet that are over 15 years old. The cost of raw materials has increased the cost of school buses approximately 3-5% per year in the last several years and the new diesel emission standards added approximately \$6,000 to the cost of buses purchased after January 1, 2010. The District must weigh the benefit of the added cost of adding lap shoulder belts to buses with the potential increase in safety. We believe that our students are safe in the buses currently operated by ASD and our Contractor.

NHTSA has indicated that one life a year might be saved if all 425,000 school buses in the US were equipped with lap shoulder belts and every student buckled up. There is currently very little data available to know if students would actually buckle up in school buses. In a pilot program that put lap shoulder belts in 13 North Carolina buses in 2005. School bus drivers and school administrators commented that 50 – 75% of elementary students used the belts but almost no middle and high school students used the belts.

University of Alabama released the results of a three year [School Bus Seat Belt Pilot Project](#) in October 2010. The study found that most school bus pupil fatalities occur outside buses in or near loading zones. If funding is to be spent on school bus safety, it appears more lives could be saved by investing in enhanced safety measures in loading/unloading zones. These treatments are likely more cost effective than seat belts and this report includes several examples.

Parents concerned about safety should know that there are approximately 49 million children that attend public schools across America every day. Just about half of them – approximately 25 million – ride yellow school buses to and from school; the other half does not.

According to the National Academies for Science, more than 800 school-aged children who do not ride a school bus are killed during normal school transportation hours each year. Contrast this number to an average of about 8 deaths per year among those 25 million school bus passengers and it becomes clear that from an overall safety perspective, the mode of school transportation is a much greater cause for concern than the fact that school buses are not required to be equipped with lap/shoulder belts.

The Anchorage School District has and will continue to monitor the experience of California and Texas as they install lap shoulder belts in their school buses.

For further reading we recommend the following:

[National Association of State Directors of Pupil Transportation - Passenger Crash Protection in School Buses](#)

[NHTSA - Child Safety Research in School Buses](#)

[Alabama School Bus Seat Belt pilot Report](#)

[NHTSA Denial of Petition for Rulemaking Requiring Seat Belts on Large School Buses](#)

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