



COLORADO DEPARTMENT OF EDUCATION

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The Issue of Lap Belts in School Buses May 2006

The following information was compiled by the School Transportation Unit at the Colorado Department of Education. It is not the intent of the School Transportation Unit to determine the manner, relative to child safety restraint systems, in which district's transport students to and from school or on school related events. Rather, this information is intended to help district's make the best transportation choices for students.

School transportation vehicles transport students of all ages, sizes and special needs. Each transportation department, working on their own or with the Individual Education Plan (IEP) team, must determine if a particular student needs additional support or restraint.

At this time, the National Highway Traffic Safety Administration (NHTSA) requires the installation of a seat belt system only on small school buses (under 10,000 lbs Gross Vehicle Weight Rating [GVWR]). Testing conducted by NHTSA has revealed serious concerns about the use of a lap belt only system, and NHTSA is considering the requirement that all small school buses (under 10,000 lbs. GVWR) be equipped with a lap/shoulder belt system.

In large school buses (over 10,000 lbs. GVWR) compartmentalization is utilized as a passive restraint system. Lap belts alone are an outdated system for a passenger restraint. Lap belts, however, are effective in these vehicles when used to secure infants, toddlers, preschool age students and some students with special needs in an appropriate child safety system such as a car seat, safety vest, etc.

The following clarifications may aid you in your decision regarding appropriate safety restraint systems when transporting students in school buses.

Lap belts – A safety belt anchored at two points for use across vehicle occupant thighs/hips. On young children the lap belt falls across the abdominal area and in a frontal crash may contribute to internal injuries. In older or taller students the lap belt restrains the student at the hips, allowing the upper body to project forward in an impact. In a severe frontal crash, the student may hit the seat in front, resulting in serious head, neck and spinal injuries.

If my bus has lap belts installed, doesn't that mean I have to use them?

The NHTSA is the federal agency that establishes requirements for the safe design and construction of all new vehicles. Beyond that NHTSA does not and can not regulate the use of any required systems. Only individual states and local districts can regulate their use in the day-to-day operation of school vehicles. NHTSA does not require the installation of a belt system on large school buses (over 10,000 lbs. GVWR). In fact, extensive research by NHTSA shows the high probability of significant injury to the occupant in a serious crash when using a "lap belt only" system in a large school bus.

<http://www.nhtsa.dot.gov/people/injury/buses/pub/seatbelt.hmp.html>

You must follow your individual district policy on the use of lap belts in your buses.

Why are many transporters installing lap belts in large school buses?

There are only a few school districts in Colorado that require the installation of seat belts on all of their school buses. Some transporters install lap belts in the first few rows of school bus seats in order to secure child safety restraint systems for infants, toddlers, preschool children and children with special needs. If a district finds the need to install lap belts in their school buses, they must make sure that the installation is done only on a school bus seat that meets Federal Motor Vehicle Safety Standard (FMVSS) 210. Contact your dealer for proper installation instruction.

“Crash tests performed by NHTSA using preschool age size dummies in school bus seats show children that weigh 40 pounds or less are safest when transported in child safety restraint systems which meet FMVSS No. 213, and are correctly attached to the seat through the use of the available belt and/or child seat anchorage systems in the vehicle. While FMVSS No. 213 applies to child safety restraint systems that are designed for children who weigh 50 pounds or less, the NHTSA crash testing has only been done on test dummies up to 40 pounds.” **Excerpt from NASDPTS Position Paper – “Safety Harnesses and School Buses” January 2002**
<http://www.nasdpts.org/paperVestHarness.html>

It is our recommendation that you follow this best practice when transporting infants, toddlers or preschool age children.

What is compartmentalization?

Large school buses use a passive restraint system known as “compartmentalization”, which combines a high padded seat back and narrow seat spacing, creating a compartment within which each occupant is confined in severe vehicle crashes. It protects the passenger by reducing the crash forces on the occupants. This passive restraint system also utilizes the reinforced steel construction of the school bus body and the large size which raises the height of the vehicle. The National Transportation Safety Board (NTSB) and the National Academy of Sciences (NAS) have confirmed the effectiveness of "compartmentalization" through independent studies they conducted. This passive system requires no action on the part of the student in order to be protected, except to stay seated.

<http://www.nhtsa.dot.gov/people/injury/buses/pub/seatbelt.hmp.html>

Based on all of the real-world facts, "compartmentalization" in today's school buses is providing an extremely high level of crash protection for student passengers considering all the types of crashes involving school buses. There are no aggregate statistical data to suggest that a safety problem exists in large school buses that the installation of lap belts would solve. In fact, there is growing concern among safety professionals around the world over the use of lap belts as a form of passenger restraint for young or small children. In August 1998, at a public hearing held by the National Transportation Safety Board, five international experts in the field of motor vehicle occupant crash protection expressed their concern about the appropriateness of lap belts in providing crash protection to small children. The unanimous opinion was that lap belts were not a good means of providing crash protection to small children because small children's bone structure, particularly their hips, is still developing through grade school. **Excerpt from NASDPTS Position Paper – “Passenger Crash Protection in School Buses” January 1999.**
<http://www.nasdpts.org/paperCrashProtect.html>

The 14th National Congress on School Transportation met in Warrensburg, Missouri in May of 2005 to revise the *National School Transportation Specifications and Procedures* manual. School transportation officials from each state participated in the five day event. A new addition to the chapter "School Bus Body Specifications" reads:

"Lap belts shall not be installed on passenger seats in large school buses (over 10,000 pounds GVWR) except in conjunction with child safety restraint systems that comply with the requirement of FMVSS 213, Child Restraint Systems."

Additionally the following resolution was introduced addressing the belt issue in small school buses:

Resolution Number 10: Lap/Shoulder Belts in School Buses Having a GVWR of 10,000 Pounds or Less

Whereas, school buses having a GVWR of 10,000 pounds or less are an integral part of the school bus fleet in the United States of America; and

Whereas, small school buses are significantly used as vehicles to transport children having special needs; and

Whereas, the standard of care for transporting children safely in this type of school bus includes the use of an active type of passenger restraint/protection system; and

Whereas, it has been determined by the National Transportation Safety Board that lap belts are not a satisfactory or sufficient type of restraint system for children; now

Therefore, be it resolved that the 14th National Congress on School Transportation encourages the National Highway Traffic Safety Administration to change the current federal regulation to allow only lap/shoulder belts for use as passenger restraints in school buses having a GVWR of 10,000 pounds or less.

These key points are supported by the student transportation industry as the safest means of transporting our children.

Additional Resources:

<http://www-nrd.nhtsa.dot.gov/departments/nrd-11/schoolbus.html>

<http://www.nhtsa.dot.gov/people/injury/buses/Guide1999/prekfinal.htm>