

## Questions & Answers: Seat Belts on School Buses

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**Question:** Who is responsible for school bus safety in Canada and Alberta?

**Answer:** In Canada, the Federal Government under the department of Transport Canada determines national manufacturing requirements and safety standards for school buses, including seat belts. The Federal Government is responsible for Canada's Motor Vehicle Safety Standards (CMVSS) which are designed to create a minimum safety standard for all motor vehicles. A number of standards have been developed to enhance the safety of school bus occupants including: roof strength, fuel system integrity, bus window retention and school bus joint strength and crash avoidance standards to name just a few. (See Transport Canada at <http://www.tc.gc.ca/en/menu.htm> for a comprehensive list of Canada's school bus safety standards.)

School buses are a Transport Canada priority for collision investigation. They develop comprehensive reports on significant school bus crashes as well as provide ongoing research, reviews and reports on school bus safety issues. Transport Canada defect investigators and standards engineers examine every individual school bus safety question for possible solutions.

In Alberta, the Provincial Government is responsible for legislation and regulations. In Alberta, the law requires all passengers to use seat belts on any vehicle that is equipped with seat belt assemblies.

**Question:** Why don't school buses have seat belts when they are required in personal vehicles?

**Answer:** In Canada school buses are not equipped with seat belts because passengers are considered safe and protected by a passive safety system which has been specifically designed and tested for children on buses. This protection system is known as "compartmentalization" and currently provides the best protection for passengers on buses.

**Question:** What is "Compartmentalization"?

**Answer:** "Compartmentalization" refers to the safety "compartment" or "space" that passenger are seated in, which has the ability to absorb the forces of a crash while at the same time, protecting the passenger. In a passenger car, the seat belt absorbs the forces of a crash. In a school bus, the "compartment" is designed to absorb

the forces of the crash. The compartment does this by having specific design features such as;

- Added seat height
- Seat padding in front and rear
- Seats anchored to floor
- Flexible seat frames.
- Limited spacing between seats

**Question:** I've seen some school buses with seat belts. Why not all school buses?

**Answer:** Transport Canada does not recommend the use of lap belts on mid to large size school buses due to greater risk of head and upper body injury. Seat belts may be installed on smaller (mini) buses. In cases where the seat belts are in place, passengers are required to be buckled in.

**Question:** Why doesn't Alberta require seat belts to be installed and used on school buses?

**Answer:** School buses in Alberta must meet the engineering and design standards established by Transport Canada. Transport Canada's research indicates there would be few instances where seat belts would prevent injuries in school bus collisions. Collision research indicates that the use of lap belts may in some circumstances put children at greater risk of injury, increasing the possibility of neck and facial injuries.

**Question:** Is cost the reason school buses don't have seat belts in Alberta?

**Answer:** No, first and foremost is the safety of the passengers and right now, school buses are as safe as we know how to make them. School bus standards employ a concept known as compartmentalization to keep children safe which includes using closely-spaced seats having energy-absorbing seat backs to protect the children in the event of a crash.

**Question:** How could lap belts increase children's risk of injury on a school bus?

**Answer:** There are two types of seat belts:

- Lap Belt: Lap belt holds the lower body back in place during a collision.

- Lap/shoulder belt): Lap belt holds the lower body back in place and shoulder belt holds the upper body back in place during a collision.

Transport Canada testing with lap belts installed on school buses showed children have an increased risk of neck and facial injuries caused when their upper body and head moved forward and contacted the seat in front of them. This is due in part to the close seat spacing, and the way the lap belt holds their lower body. Unbelted children move forward and contact the seat in front of them with their entire body, spreading the force of impact over a larger area and reducing over-all injury. Researchers generally agree that lap belts are not a solution.

**Question:** **Would using the lap/shoulder belt reduce the possibility of neck and facial injuries?**

**Answer:** The effectiveness of lap/shoulder belts is recognized, however there are significant concerns with ensuring their proper fit and use by passengers who range in size from Kindergarten to High School, during an emergency evacuation and whether there would be actual reductions in injuries.

**Question:** **Why shouldn't seat belts be retro-installed into existing school buses?**

**Answer:** Existing school bus seating arrangements may not be designed for the installation of seat belts, therefore the retro-installation of seat belts in a school bus is strongly not recommended. Currently manufacturers design the school bus using passive compartmentalization. In this system, the floor and seating assemblies are designed to absorb some of the forces of a collision without the use of seat belts. Retro-installing seat belts may require the entire body structure of the school bus to be reinforced differently. Retro-installed seat belts cannot be certified as meeting the engineering standards required for seat belts after a school bus leaves the factory.

**Question:** **Would the use of seat belts on school buses reduce children's injuries in collisions?**

**Answer:** In many instances the use of seat belts would not reduce serious injuries on school buses involved in vehicle collisions. Seat belts may be effective in reducing injuries in some instances, for example ejection from the bus or roll-over.

**Question:** Would three point seat belts reduce the possibility of neck and facial injuries?

**Answer:** Perhaps, but three-point seat belts are more complex and difficult to use. In order to be effective, three-point seat belts must be properly adjusted. The variation in size and shape of school children makes proper adjustment problematic.

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Transport Canada, *Review of Bus Safety Issues – School Bus Passenger Protection*, 2005.  
Accessed June 23, 2008 from:  
[http://www.tc.gc.ca/roadsafety/tp/tp13330/bussch\\_e.htm#approach](http://www.tc.gc.ca/roadsafety/tp/tp13330/bussch_e.htm#approach)

Source: Government of Alberta: Transportation;