

The School Bus

- Facts and Stats
 - Background Information
 - FMVSS and Design
 - Three Point Seat Belt Cost

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Facts & Stats About School Buses

provided by ASBC



The American School Bus Council is a coalition of the school transportation community -- including public and private transportation providers, school bus manufacturers and state officials responsible for pupil transportation. Council members are committed to providing safe, effective, and efficient transportation for the more than 25 million schoolchildren who ride more than 480,000 school buses each day.

The Council's members include NAPT (National Association for Pupil Transportation), NASDPTS (National Association of State Directors of Pupil Transportation Services), NSTA (National School Transportation Association), Blue Bird Corp. of Fort Valley, Ga., IC Bus Corporation of Lisle, Ill., and Thomas Built Buses of High Point, N.C.

The American School Bus Council was formed in 2006 to educate parents, school officials, lawmakers, and the public as a whole about the essential safety, environmental, and equal-access to education benefits of the iconic yellow school bus.

See more at: <http://www.americanschoolbuscouncil.org>

ASBC FACT: School buses are designed to be safer than passenger vehicles in avoiding crashes and preventing injury.



**CRUSH STANDARDS,
SIZE AND HEIGHT**

Trained in student behavior management

**FLASHING
RED LIGHTS**

Participate in pre-employment and random drug/alcohol testing

**WELL-TRAINED AND
SCREENED DRIVERS**

Frequent driving record checks

**CROSS-VIEW
MIRRORS**

Trained in loading and unloading

**REINFORCED
SIDES**

Trained in security procedures

**BRIGHT
COLOR**

Trained in emergency medical procedures

**STOP SIGN
ARMS**

ASBC FACT: School buses are the safest mode of transportation for getting children back and forth to school.

STUDENT FATALITIES

ANNUAL AVERAGE DURING NORMAL SCHOOL TRAVEL HOURS

TRAVELING BY TEEN DRIVER (58%) (23%) TRAVELING BY ADULT DRIVER



TRAVELING BY SCHOOL BUS (1%)

ABSC FACT: School buses keep an annual estimated 17.3 million cars off roads surrounding schools each morning.

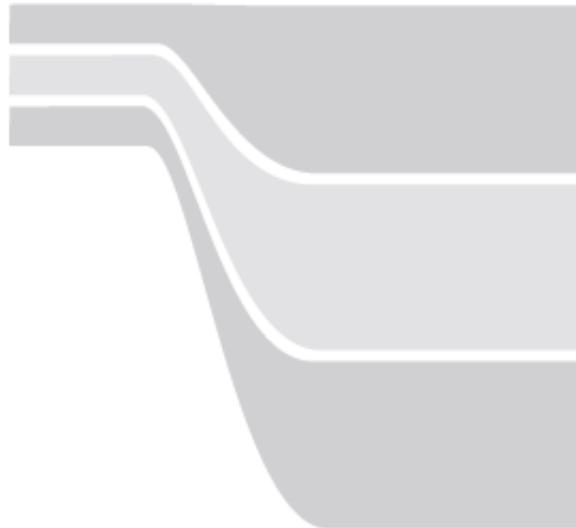


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36
CARS

FOR A NATIONAL SAVINGS OF



2.3 **BILLION**
GALLONS OF FUEL

6.0 **BILLION**
DOLLARS

44.6 **BILLION**
POUNDS OF CO₂

Other Facts & Stats From ASBC Website

School buses represent 25 percent of the miles traveled by students but account for less than 4 percent of the injuries.

Source: Transportation Research Board, "The Relative Risks of School Travel, Accessed 9/20/11.

A 20-mile round-trip school commute saves an approximate \$420 annually for each student who rides the bus and an approximate \$10.9 billion nationwide.

Source: [American School Bus Council](#)

Large school buses are heavier and distribute crash forces differently than do passenger cars and light trucks. Because of these differences, the crash forces experienced by occupants of buses are much less than that experienced by occupants of passenger cars, light trucks or vans.

Source: National Highway Traffic Safety Administration, "Seat Belts on School Buses — May 2006,"

The safety record for school bus transportation exceeds that of all other modes of travel.

McCray, Linda B. and John Brewer, "Child Safety Research in School Buses."

Background Information

Why don't school buses have seat belts?

School buses are the safest way to transport your children to and from school.

The color and size of school buses make them easily visible and identifiable, their height provides good driver visibility and raises the bus passenger compartment above car impact height; and emergency vehicles are the only other vehicle on the road that can stop traffic like a school bus can.

School buses are carefully designed on a different transportation and protection model than the average passenger car. The children are protected like eggs in an egg carton - compartmentalized, and surrounded with padding and structural integrity to secure the entire container. The seat backs are raised and the shell is reinforced for protection against impact.

Source: <http://www.americanschoolbuscouncil.org/school-bus-information-and-statistics/faq#why-don't-school-buses-have-seat-belts>

Background Information

How safe are school buses compared to all other motor vehicles?

School buses are one of the safest forms of transportation in the United States. ***More than 42,000 people are killed in traffic crashes on U.S. roads every year.*** Every year, approximately 450,000 public school buses travel about 4.3 billion miles to transport 23.5 million children to and from school and school-related activities. ***Yet, on average, every year, six school age children (throughout the U.S.) die in school bus crashes as passengers.*** NHTSA strives to ensure that there are no fatalities in school buses.

Source: <http://www.nhtsa.gov/Vehicle+Safety/Seat+Belts/Seat+Belts+on+School+Buses+---+May+2006>

What is the cause of most school bus-related fatalities?

Pedestrian fatalities account for the highest number of school bus-related fatalities. There are about 17 such fatalities per year, two-thirds of which involve the school bus itself and the rest involving motorists illegally passing the stopped school bus. In its 1989 report, the NAS stated that since children are at “greater risk of being killed in school bus loading zones (i.e., boarding and leaving the bus) than in the bus, a larger share of the school bus safety effort should be directed to improving the safety of school bus loading zones.” ***NHTSA agrees with the NAS that States and localities should focus their efforts toward improving school bus loading zones.***

Source: <http://www.nhtsa.gov/Vehicle+Safety/Seat+Belts/Seat+Belts+on+School+Buses+---+May+2006>

Background Information

We have seat belts in passenger cars. Why don't we have them on school buses?

- *NHTSA decided that the best way to provide crash protection to passengers of large school buses is through a concept called “compartmentalization.” This requires that the interior of large buses provide occupant protection such that children are protected without the need to buckle-up. Through compartmentalization, occupant crash protection is provided by a protective envelope consisting of strong, closely-spaced seats that have energy-absorbing seat backs.*
- *The NTSB concluded in a 1987 study of school bus crashes that most fatalities and injuries occurred because the occupant seating positions were in direct line with the crash forces. NTSB stated that seat belts would not have prevented most of the serious injuries and fatalities from occurring in school bus crashes.*
- *NAS also stated that the funds used to purchase and maintain seat belts might be better spent on other school bus safety programs and devices that could save more lives and reduce more injuries.*

Source : <http://www.nhtsa.gov/Vehicle+Safety/Seat+Belts/Seat+Belts+on+School+Buses+---+May+2006>

FMVSS

- ▶ The National Highway Traffic Safety Administration has a legislative mandate under Title 49 of the United States Code, Chapter 301, Motor Vehicle Safety, to issue Federal Motor Vehicle Safety Standards (FMVSS) and Regulations to which manufacturers of motor vehicle and equipment items must conform and certify compliance. ***FMVSS 209 was the first standard to become effective on March 1, 1967.*** A number of FMVSS became effective for vehicles manufactured on and after January 1, 1968. Subsequently, other FMVSS have been issued. New standards and amendments to existing standards are published in the Federal Register.
- ▶ ***These Federal safety standards are regulations written in terms of minimum safety performance requirements for motor vehicles or items of motor vehicle equipment.*** These requirements are specified in such a manner "that the public is protected against unreasonable risk of crashes occurring as a result of the design, construction, or performance of motor vehicles and is also protected against unreasonable risk of death or injury in the event crashes do occur."

FMVSS

Standard No. 220 - School Bus Rollover Protection

This standard establishes performance requirements for school bus rollover protection. The purpose of this standard is to reduce the number of deaths and the severity of injuries that result from failure of the school bus body structure to withstand forces encountered in rollover crashes.

Standard No. 221 - School Bus Body Joint Strength

This standard establishes requirements for the strength of the body panel joints in school bus bodies. The purpose of this standard is to reduce deaths and injuries resulting from the structural collapse of school bus bodies during crashes.

Standard No. 222 - School Bus Passenger Seating and Crash Protection

This standard establishes occupant protection requirements for school bus passenger seating and restraining barriers. The purpose of this standard is to reduce the number of deaths and the severity of injuries that result from the impact of school bus occupants against structures within the vehicle during crashes and sudden driving maneuvers.

School Buses Have...

Compartmentalization

- Seats that absorb energy as they bend in an accident. Not too stiff to cause injury but absorb energy and keep children in the seat compartment. (FMVSS 222)
- Seats are spaced to contain children in a zone of absorbing crash forces in accidents and prevent harmful impact injuries. (FMVSS 222)
- Seats that do not require children to put on seatbelts or need to adjust the seatbelts for them to function properly.
- Highly padded seats that reduce impact injuries. (FMVSS 222)
- High back seats to increase to contain children in a zone of absorbing crash forces. (FMVSS 222)

Structural Design

- Raised passenger compartment that is above car impact heights which puts children out of the crash zone.
- More than 4 times heavier weight than the average car therefore school buses have reduced crash effects than a car crash.
- High visibility by being large and yellow that is identifiable to car drivers for them to drive with caution when near.
- Roof crush strength requirements that ensure the roof holds 1 and ½ its weight. (FMVSS 220)
- Panel connection strength requirements that ensure the student compartment hold together. Passenger car panels are not required to meet this. (FMVSS 221)
- Student pickup and road routes that are typically not at highway speeds.

➤ Three Point Seat Belt Equipped School Bus

Average Cost Increase

- \$5,000 - \$8,000 (Capacity)

➤ Fleet Retrofit

- Fleet/unit age, condition, original design and content would need to be considered
- Estimating cost and fleet/unit acceptability would not be feasible without specific review and input from OEM

IC BUS. DRIVING OUR FUTURE.™



We support the findings of the National Highway Traffic Safety Association, as well as the Student Transportation Associations, that school buses are the safest mode of transportation for children traveling to and from school.

We build our school buses to meet the needs of our customers. Seat belts have and will continue to be an available option on all IC Bus school buses if a district chooses to order.

When it comes to building school buses, safety is our number one priority.