



NATIONAL ASSOCIATION OF
STATE DIRECTORS OF
PUPIL TRANSPORTATION SERVICES

Position Paper

History of School Bus Safety -- Why Are School Buses Built as They Are?

In the earliest days of our Nation, education was mostly provided through churches. Public education started in the mid 1600's, but pupil transportation was not provided until the late 1800's. By 1910, thirty states had pupil transportation programs in place. The first "vehicles" used to transport students were nothing more than horse-drawn carts which were borrowed from local farmers. With the development of automobiles and trucks with gasoline-powered engines, the school "wagon" was replaced with the school "truck." During the 1920's and 1930's, the Nation's roadway system was expanding, especially in rural communities. This led to a greater need for vehicles to transport school children and the formation of the school bus industry.

As the number of school buses operating on the roadways increased, there came the inevitable problems. Several serious tragedies occurred involving school buses that caused school officials to think seriously about developing safety guidelines or standards. In 1939, representatives from 48 states gathered to develop "standards" and recommendations for school buses. Since that time, there have been a total of 12 National Conferences on School Transportation where representatives from each state gather to revise existing and establish new safety guidelines for school buses and operating procedures for the safe transportation of school children, including those with disabilities.

In addition to the requirements developed by the school transportation community itself, there are Federal standards that apply to school buses. As a result of the passage of the National Traffic and Motor Vehicle Safety Act of 1966 and the School Bus Safety Amendments of 1974, the National Highway Traffic Safety Administration, an agency of the U.S. Department of Transportation, has issued 36 Federal Motor Vehicle Safety Standards (FMVSS) which apply to school buses. These standards cover a range of components and systems, e.g., brakes, steering, glazing, lights, fuel system integrity, mirrors, heaters/defrosters, compressed natural gas containers, etc., and apply to all types of motor vehicles. Many of these federal standards have unique requirements for school buses. For example:

- FMVSS No. 111, "Rearview Mirrors," requires outside mirrors that provide the seated driver with a view in front of and along both sides of the bus;
- FMVSS No. 108, "Lamps, Reflective Devices, and Associated Equipment," requires amber and red warning lights when the bus is stopped, or about to stop, to load or unload passengers;
- FMVSS No. 217, "Bus Emergency Exits and Window Retention and Release," specifies the number and operation of emergency exits; and
- FMVSS No. 301, "Fuel System Integrity," defines specific crash performance requirements for the entire fuel system.

In addition, the following four standards are unique to school buses.

- FMVSS No. 220, “School Bus Rollover Protection,” which specifies the minimum structural strength of buses in rollover-type accidents;
- FMVSS No. 221, “School Bus Body Joint Strength,” which specifies the minimum strength of the joints between panels that comprise the bus body and the body structure;
- FMVSS No. 222, “School Bus Passenger Seating and Crash Protection,” which establishes requirements for school bus seating systems for all sizes of school buses, and provides minimum performance requirements for wheelchair securement/occupant restraint devices and establishes a requirement that wheelchair locations be forward facing; and
- FMVSS No. 131, “School Bus Pedestrian Safety Devices,” which requires school buses be equipped with an automatic stop signal arm on the left side of the bus to help alert motorists that they should stop their vehicles because children are boarding or leaving a stopped school bus.

The design and construction of today’s school buses are a direct result of both the FMVSSs which apply to school buses and the guidelines adopted by the National Conferences on School Transportation, as well as some requirements that are unique to particular states or local school districts. While today’s school buses do not look much different than their predecessors of 30-40 years ago, they are dramatically different. The improvements made to school buses in the past decades, as well as improvements in driver training, school bus maintenance, and school bus operating procedures, have been responsible for the outstanding safety record of school transportation. Well-trained school bus drivers avoid many crashes.

Annual school bus transportation statistics:

- 450,000 public school buses
- 24 million students transported
- 4 billion miles traveled
- 10 billion student trips
- 20 billion times a student gets on or off

While catastrophic school bus crashes have occurred, they are rare events. Most school bus crashes are minor, and in most crashes involving passenger cars and light trucks, the school bus has the advantage of its larger size and weight. As a result, many more people are killed or injured each year in vehicles that crash into school buses than are killed or injured in the school buses. It is difficult, if not impossible, to develop ways to protect school bus occupants in catastrophic crashes, such as those involving trains and heavy trucks. The crash forces in those crashes are so great that any reasonable structural design cannot maintain the integrity of the vehicle, which is one critical component of occupant crash protection.

The safety of pupil transportation is the highest priority of the National Association of State Directors of Pupil Transportation Services. The State Directors Association is actively involved with federal, state and local governments, and industry organizations, in establishing standards, guidelines, and programs that will continue to safeguard the future generations of America.