

Log H-366

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

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Forwarded to:

Governors of the 50 States
and 4 Territories and the
Mayor of the District of Columbia

SAFETY RECOMMENDATION(S)

H-83-39 through -41

Although the overall safety record of schoolbus transportation in this country has been good, the protection of schoolbus passengers in crashes remains a matter of continuing and intense concern to the National Transportation Safety Board and others involved in schoolbus safety. Parents have little direct control over the crash protection features of the school vehicles their children must ride; furthermore, children's bodies are more vulnerable to certain types of crash injuries than those of adults. Therefore, it is important that crash protection to the maximum practical extent be built into school vehicles.

Between 1967 and 1983, the Safety Board has investigated and issued recommendations concerning 18 major accidents involving schoolbuses or multipurpose passenger vehicles used to transport school children. These vehicles carried a total of 620 students, ranging in age from pre-kindergarten through high school. Seventeen of the 18 accidents were fatal; 115 students were killed. Another 383 students were injured in the 18 accidents. Six schoolbus drivers were killed, and nine were injured.

Based on data collected through the National Highway Traffic Safety Administration's (NHTSA) Fatal Accident Reporting System (FARS), there are, on average (based on 1975 through 1978 data), about 15 fatal schoolbus accidents annually, resulting in a total of 27 student passenger fatalities and 146 student passengers. In addition, National Safety Council (NSC) statistics for 1975, 1976, and 1977 show that about 40 students are killed each year while waiting for or getting off or on schoolbuses. For the same years, NSC data show that about 2,800 nonfatal but injury-producing schoolbus accidents occur each year, resulting in about 3,900 student passengers injured. In 97 percent of these accidents, there are no more than three passengers injured; in 74 percent, only one passenger is injured. About 90 percent of the injuries in these accidents are minor to moderate. Fatal schoolbus accidents represent less than 1 percent of all injury-producing schoolbus accidents. Based on FARS data, 78 percent of the fatal accidents result in no more than three passenger deaths; in 58 percent, only one passenger is killed.

There are estimated to be between 300,000 and 400,000 schoolbuses in use in this country, and about 90 percent of them are of the large, conventional type (greater than 10,000 pounds gross vehicle weight rating (GVWR)). The remaining 10 percent are small vehicles weighing less than 10,000 pounds GVWR, either passenger vans, designed to carry 10 to 16 passengers, or smaller versions of the conventional schoolbus ("minibuses"). Based on a review of 60 fatal schoolbus accidents included in the FARS data system, 15 percent of both deaths and injuries in fatal schoolbus accidents occur in these small school transportation vehicles.

Certain aspects of schoolbus 1/ design have been regulated by Federal Motor Vehicle Safety Standards (FMVSS') since the early 1970's. In 1974, the U.S. Congress mandated significant improvements in Federal schoolbus regulations 2/ and, as a result, the NHTSA amended several safety standards and issued several additional standards. Now, 30 of the 50 FMVSS' apply to schoolbuses; 6 of these 30 are of particular importance in schoolbus crashes. These set performance requirements for schoolbus windows and emergency exits, rollover protection, body joint strength, fuel system crash integrity, flammability of materials, and seats and occupant restraints.

In addition to these vehicle performance standards, the NHTSA issued, in the early 1970's, guidelines to the States for school transportation safety in general. Highway Safety Program Standard (HSPS) 17 — Pupil Transportation Safety addresses such aspects as color and markings for easy discernment of schoolbuses; effective lights and mirrors; driver and pupil safety training; safe procedures for loading and unloading; seating accommodations for each passenger; and use of driver and passenger seatbelts.

In the important area of occupant restraint for crash protection, the Federal standards require that all large schoolbuses manufactured since April 1977 provide:

- A forward-facing seat for each passenger;
- Seats (or, for front seat passengers, restraining barriers) designed to meet specific minimum dimensions, strength and deflection characteristics, effective padding, and seat-to-seat spacing requirements; and
- A seatbelt for the driver.

The seat strength requirements are adequate to support the after-market installation and effective use of passenger seatbelts, at the purchaser's option.

In 1978, the Safety Board recommended that the NHTSA review available accident statistics to determine the effectiveness of the post-1977 vehicle seating standards in reducing fatalities and injuries to schoolbus passengers. In 1980, the NHTSA released the results of such an analysis. 3/ Because at that time only a small percentage of the

1/ For the purpose of applying Federal safety standards, a "schoolbus" is defined as a vehicle, designed for carrying more than 10 persons, that is sold or introduced in interstate commerce for purposes that include carrying students to and from school or related events.

2/ Motor Vehicle and Schoolbus Safety Amendments of 1974, P.L. 93-492.

3/ Statistical Evaluation of the Effectiveness of Federal Motor Vehicle Safety Standard 222: School Bus Seating and Crash Protection (Center for the Environment and Man, Inc. for the National Highway Traffic Safety Administration, U.S. Department of Transportation), Final Report (October 1980).

nation's schoolbuses had been manufactured after 1977, and because fatal and injury-producing schoolbus accidents are in any case relatively infrequent, the conclusions of the study were based on inferences drawn from analysis of accidents involving pre-1977 schoolbuses. The study concluded that:

[The post-1977 schoolbus seating and restraint standards] are probably very effective (about 60 percent injury reduction) in the vast majority of schoolbus accidents, which usually involve minor damage to the bus, with at most a few passengers injured at the [minor to moderate injury] level. In the few violent schoolbus accidents that produce fatalities, [the standards have] lower effectiveness—about 29 percent injury reduction. The [standards have] only limited effectiveness in the extremely small subset of very violent accidents involving rollover, crashes with trains, etc.

The Safety Board has reviewed this analysis and believes that the inferences drawn in it are sound. The Board estimates that within about 4 to 5 years, most large schoolbuses on the road will meet the Federal seating standards. Because preliminary analysis indicates that these standards appear to be effective in eliminating or substantially reducing the majority of schoolbus passenger injuries (those which are minor to moderate), the Safety Board does not believe there is sufficient justification at this time to recommend extending the mandatory passenger restraint system requirements to large schoolbuses.

Nevertheless, the Safety Board would strongly support decisions by parents and State and local school authorities to install occupant restraint systems in their large schoolbuses on an after-market basis. The passenger seats in all post-1977 large schoolbuses are required to be designed in such a way that they will support the installation and use of seatbelts. Many pre-1977 schoolbuses can be modified to support seatbelt installation also.

The Board stresses that a decision to install seatbelts in large schoolbuses must be accompanied by a strong and continuing commitment to educate students in the importance of using the seatbelts and using them properly. Such instruction needs to be complemented, in the case of younger children especially, by adequate adult supervision to ensure that seatbelts are properly positioned on each child's body and snugly secured.

Small schoolbuses and vans, manufactured since April 1977 and sold for school transportation and related events, are required to provide essentially the same enlarged, strengthened, and padded seats required in large schoolbuses. In addition, they are required to provide an installed restraint system at each seating location, in recognition of the fact that the smaller and lighter construction of these vehicles offers less protection in a crash than the bodies of large conventional schoolbuses. As in all buses, the driver's seat must have a restraint system, and both passengers and driver must be required to wear the restraints whenever the vehicle is in motion.

Because of the lesser degree of crash protection provided by the body structure of small schoolbuses and vans, the Safety Board believes that it is important that student passengers in small buses and vans be provided the additional crash protection offered by occupant restraints. As a result of a crash involving a 16-passenger Head Start van in Mississippi in 1981, 4/ the Board recommended that all Head Start programs be explicitly

4/ Highway Accident Report--"Pattison Head Start Center School Van, Run-Off-Bridge and Fire, Near Hermanville, Mississippi, December 17, 1981" (NTSB-HAR-82-5).

brought under the DOT standards for safe student transportation, and has worked with the U. S. Department of Health and Human Services since that time to assist in completing that task. But many public and private schools, day care centers, camps, and other enterprises continue to transport children in small schoolbuses and vans without ensuring that the children are properly restrained, either with lap belts alone or (in the case of preschoolers) with child safety seats properly attached to the vehicle seat by means of the lap belt.

Reportedly, some States are permitting the use of conventional vans to transport school children, vans that do not meet any of the Federal safety standards applicable to schoolbuses weighing less than 10,000 pounds GVWR. ^{5/} The Safety Board strongly believes that all vehicles used for school or school-related transportation of children should conform to all applicable Federal safety standards, and urges the parties responsible for such vehicles to ensure conformance.

It is also important that every schoolbus driver wear the seatbelt that is provided, whenever the schoolbus is moving. Not only is the life of the driver endangered by nonuse of the available restraint, but also the ability to maintain control of the schoolbus in an emergency or crash is seriously jeopardized if the driver is thrown from his or her seat. In a 1972 crash in Virginia, ^{6/} a car ran a stop sign and hit a large schoolbus. The bus ran off the road and partially overturned. All the bus occupants were injured. The Board found that "the second collision of the bus, into the embankment, was caused by loss of driver control; the nonuse of available seatbelts by the driver prevented the regaining of control."

As a result of this accident, the Safety Board recommended to each State that they enact appropriate requirements for the provision of seatbelts at the driver's position in all schoolbuses and require their use at all times when persons are being transported. One State responded, saying that its Board of Education would require schoolbus drivers to wear their seatbelts. A county in another State responded similarly. Since that time, the Board has investigated 16 major schoolbus accidents in 10 States; in many of these, the drivers were not wearing their seatbelts. In all of them, the driver was either injured or killed. The Safety Board has been unable to ascertain, with any degree of certainty, the extent to which States have enacted and enforced requirements for schoolbus driver use of seatbelts. We believe, however, that these accidents are not isolated examples of schoolbus drivers not wearing their seatbelts, but are an indication that many drivers do not regularly wear their seatbelts, whether or not they are "required" to do so. To the degree that this is true, the risk of injury to schoolbus drivers, their child passengers, and other motorists is unnecessarily increased.

Therefore, the National Transportation Safety Board recommends that the Governors of the 50 States and the Mayor of the District of Columbia:

Review State laws and regulations, and take any necessary legislative action, to ensure that passengers in small (more than 10 passengers and less than 10,000 GVWR) schoolbuses and school vans are required to use available restraint systems whenever the vehicle is in motion; ensure that all users of such vehicles are aware of and comply with these provisions. (Class II, Priority Action) (H-83-39)

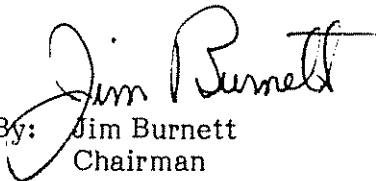
^{5/} The NHTSA has informed one such State that the users of such vans might be held privately liable if a child is injured in such a noncomplying vehicle, regardless of the State regulations.

^{6/} Highway Accident Report--"Schoolbus-Automobile Collision and Fire Near Reston, Virginia, February 29, 1972" (NTSB-HAR-72-2).

Review State laws and regulations, and take any necessary legislative action, to ensure that vehicles designed to carry more than 10 passengers and weighing less than 10,000 pounds GVWR, used to transport children to and from school, school-related events, camp, day care center, or similar purposes meet all Federal Motor Vehicle Safety Standards applicable to small schoolbuses. (Class II, Priority Action) (H-83-40)

Review State laws and regulations, and take any necessary legislative action, to ensure that drivers of schoolbuses are required to wear their seatbelts whenever the vehicle is in motion, that all schoolbus drivers are made aware of this requirement, and that periodic monitoring of schoolbus driver seatbelt use is conducted. (Class II, Priority Action) (H-83-41)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and ENGEN, Member, concurred in these recommendations. McADAMS and BURSLEY, Members, did not participate.


By: Jim Burnett
Chairman

