

6. Are there other changes or modifications that could be made to school buses, such as changes in the number, location, and size of emergency exits, that would affect the fire resistance requirements of school buses? Should there be a correlation between the fire resistance of materials and the amount of available emergency egress area?

7. What would the costs of upgrading the fire resistance of school bus interiors be? Would the costs affect the ability of school districts to replace older, less safe school buses or to order school buses with other safety features that could have potentially higher benefits?

E. Comments on the 1991 Notice

In response to the 1991 Notice, NHTSA received comments from State and local governments, school bus and seat manufacturers, trade associations, a test laboratory, and the NTSB.

1. The Need To Upgrade Standard No. 302

The commenters expressed differing views about the need to improve the fire resistance of school bus interiors. Several commenters, including the NTSB, American Medical Association (AMA), the Connecticut Department of Motor Vehicles (Connecticut), and the Delaware Department of Pupil Instruction (Delaware), believed that the flammability test in Standard No. 302 needed to be upgraded. Other commenters, including the National School Transportation Association (NSTA), Maryland Department of Education (Maryland), West Virginia Department of Education (West Virginia), Marysville Washington School District (Marysville), Blue Bird Corporation and Thomas Built Buses, Inc. (bus manufacturers), and Lichter Rubber Products Company (a manufacturer of school bus seats and seat backs) questioned the need for upgrading the flammability resistance requirements in Standard No. 302.

Marysville stated that NHTSA should direct its resources to other school bus safety matters because the Carrollton crash represented an extremely rare situation and because seat flammability was a very low causal factor to the occupant deaths and injuries in that crash. Thomas Built and Lichter Rubber believed that it was not realistic to require seating to withstand fuel-fed fires like the Carrollton fire, which Lichter Rubber characterized as an "explosion." Maryland stated that during the past 30 years, its public school buses have transported students without a single student fatality related to fire.

2. Test Protocol

The commenters also expressed differing views about the form of an upgraded test protocol. Some commenters favored small-scale laboratory tests. Other commenters favored large-scale tests. Delaware recommended having both a small-scale and a large-scale test. The commenters did not provide any convincing information that would allow NHTSA to compare the desirability of requiring either small-scale or large-scale tests, or both. Similarly, while several commenters expressed concern about toxicity, no generally accepted protocol to establish acceptable toxicity levels was apparent from the comments.

3. Costs

Most commenters indicated that upgrading Standard No. 302 would result in significant costs. SFT, a foam manufacturer, stated that the cost of flame retardant foam cushioning for a 66-passenger bus could be \$275 more than the cost of current foam cushioning. SFT also stated that equipping a bus with seat covers made of Kevlar-backed barrier fabric could increase the cost of a bus by \$460, if this upgraded material were required. Thomas Built estimated that using fire block upholstery would increase the total seating cost for a bus by about \$1,000, and requiring fire resistant seat foam and fire block seat covers could add \$1,500 to \$2,000 to the cost of bus. The Oregon Department of Education (Oregon) estimated that if NHTSA upgraded the fire resistance requirements in Standard No. 302 as well as the emergency exit requirements in Standard No. 217, the cost of a school bus could increase by \$1,300 to \$1,500.

4. Cost-Effectiveness

Several commenters, including NSTA and Blue Bird, stated that the costs of upgrading Standard No. 302 would be unjustified. Other commenters, including Arizona and Delaware, believed upgrading Standard No. 302 would be justified, notwithstanding the significant costs.

TAM-USA, a bus manufacturer, Blue Bird, and the Nebraska Department of Education (Nebraska) commented that even though increased flammability resistance was a desirable goal, other efforts, such as improving the emergency exit capacity requirements in Standard No. 217, would be more cost-effective. Similarly, NSTA recommended that the agency pursue requiring additional emergency exits rather than upgrading the flammability resistance requirements.

Maryland and TAM-USA stated that along with flammability, many other factors are involved in determining the risk from school bus fires. These factors include the type of fuel used, location and construction of the fuel tank, type of fire barriers between the engine and occupant compartments, and number and location of emergency exits.

III. Agency Decision

After reviewing the available information and public comments, NHTSA has decided to terminate the rulemaking to upgrade Standard No. 302's flammability requirements for school bus interiors for the following reasons: (1) The risks presented by school bus fires pose a minimal safety problem for current designs of school buses; (2) the agency's upgrade of Standard No. 217's emergency exit requirements to allow faster evacuation from school buses reduced further the risks posed by fire; (3) the bus involved in the Carrollton fire did not meet then current Federal standards; (4) upgrading Standard No. 302 would result in significant costs that would be disproportionate to minimal benefits; and (5) further research would be necessary before the agency could propose a test protocol, utilizing scarce agency resources.

A. Minimal Safety Problem

The agency notes that school bus fires are extremely rare. Most school bus fires are small-scale, non-crash engine fires that pose a low risk of injury because ample time is available to evacuate the bus. Large-scale, fuel-fed fires, like the Carrollton fire, are even more rare.

Other than the Carrollton fire, from 1975 through 2002, there were no school bus crashes in which fatalities were attributed to fire as the most harmful event. During this period, there were ten school bus-related fatalities in crashes in which fire was present. However, these fatalities were caused by the crash forces and were not attributed to fire.⁹ The 1988 Carrollton crash resulted in 27 fatalities. Since that crash, there have been no fire-related fatalities in school buses.

B. Upgrade of Standard No. 217 Reduced Risks Associated With Fires

NHTSA believes that the limited risk posed by school bus fires was further reduced by the agency's issuance of the November 2, 1991 final rule upgrading Standard No. 217's emergency exit

⁹Nine of the ten fatalities resulted from a 1984 crash in Essex, Montana, in which a pre-1977 school bus was struck head-on by a tractor-semi trailer carrying jet fuel, which leaked from the trailer and caused the post-crash fire.