CAN SCHOOL BUS SAFETY BE IMPROVED?

TRB committee makes recommendations for the protection of the nation's 25 million children who ride school buses each year

Special Report 222: Improving School Bus Safety **is available from the Transportation Research Board, 2101 Constitution Avenue, N.W., Washington, D.C. 20418 ($20.00).**

October 27, 1982: a 5-year-old student was killed as she exited a school bus and ran into the side of a vehicle that was passing the bus.

July 12, 1984: an 85-year-old driver was killed when her vehicle skidded across the roadway and into the path of an oncoming school bus.

May 31, 1985: a 1982, Type I school bus was struck by a tractor semitrailer truck. Six passengers were killed and 22 were injured.

These and similar narratives from various state agencies illustrate the severity and variety of fatal school bus accidents. However, a committee that studied measures to improve school bus safety, headed by Charley V. Wootan, Director of the Texas Transportation Institute, found that compared with other modes, school buses have a good safety record considering the amount of travel involved. For example, even though school buses transport more passengers per trip, the rate of occupant fatalities per mile driven for school buses is about one-fourth that for passenger cars. At a news conference held in May 1989 at the National Academy of Sciences, Wootan and other members of the 13-member committee announced their findings and fielded questions on which measures would be most effective to enhance the safety of school buses and which would not. The results of the study were published by TRB in *Special Report 222—Improving School Bus Safety*.

Perhaps the most controversial issue the committee confronted was seat belts. It concluded that the overall potential benefit of requiring seat belts in large, Type I buses is insufficient to justify a federal standard mandating installation. If all school buses were equipped with seat belts, and if one-half of the students used them, one life might be saved and several dozen serious injuries avoided each year. The committee estimated that it would cost more than $40 million per year to equip and maintain all buses with seat belts. By comparison, raising seat back heights to 24 inches in new school buses may save two to three lives and up to 95 injuries a year at a cost of $6 million annually. However, the higher seat backs are only effective if children are seated; thus the committee also recommended that all states prohibit standing on school buses.

The study, requested by Congress in the Surface Transportation and Uniform Relocation Assistance Act of 1987, found that children are at a greater risk of being killed at school bus stops, after leaving or while trying to board their buses, than they are on board. Nearly 40 children are killed each year at bus stops; of this number, about two-thirds are struck by a school bus, usually their

Committee members participating in the news conference on TRB's school bus study held at the National Academy of Sciences building in Washington, D.C. *(from left)*: Kyle Martin, Chairman Charley Wootan, Kathleen Weber, and B. J. Campbell.

own. To reduce loading-zone accidents, the committee recommended more careful selection of and training for school bus drivers, educating student pedestrians, requiring stop signal arms on all new buses, and considering the use of loud speakers, barriers, and sensors to prevent pedestrian accidents.

The nations's 390,000 school buses travel nearly 4 billion miles annually. Eighty percent of them are large, with gross-vehicle-weight ratings of more than 10,000 pounds. They typically carry more than 16 passengers and are not required by the National Highway Traffic Safety Administration to be equipped with seat belts.

Since 1977 buses have been designed with extra padding on the seats, reduced knee room, and 20-inch-high seat backs, which compartmentalize the seating area to protect passengers during crashes. In addition, improvements have been made on the overall bus body and the fuel tank.

New buses must meet safety requirements set by NHTSA in 1977. These standards have substantially improved the crashworthiness of school buses. The committee strongly recommended that states, local school districts, and private contractors that are still operating pre-1977 school buses replace them with more recent models as rapidly as possible.

A post-crash fire in a *church* bus in Carrollton, Kentucky, in 1988 catalyzed the move toward quick replacement of pre-1977 school buses. In the wake of the crash, which killed 27 people, industry and government are now investigating improved fuel systems. The committee recommended that NHTSA monitor the development of fire-resistant, energy-absorbing seating materials; reconsider the minimum required number of emergency exits; and prohibit obstruction of emergency doors by seats.

In his closing statement during the press conference, Wootan said that although the level of safety of school bus transportation is high, it can be improved: "With this modest reform effort we can help to ensure that our students' bus rides are as uneventful as possible—that their memories of childhood will focus on milestones achieved at school, not on the tragedy that happened on the school bus."

Committee To Identify Measures That May Improve the Safety of School Bus Transportation

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