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National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

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In reply refer to: H-95-31

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In 1994, the National Transportation Safety Board initiated a safety study to evaluate the performance of occupant restraint systems (child safety seats and safety belts) for children under the age of 11.¹ During the data collection phase of the study,² the Safety Board has investigated four accidents in which an infant was killed or severely injured as a result of an air bag deployment.

On November 14, 1994, in Banning, California, a 3-month-old child who was seated in the right front passenger seat was severely injured when the passenger-side air bag of a 1994 Toyota Corolla deployed in a low-speed collision. The child was seated in a rear-facing, improperly installed infant safety seat; the harness straps were not properly threaded to securely hold the child in the seat, and the two-part seat was not properly secured in its base. The child sustained skull fractures as a result of the impact of the air bag compartment cover flap to the back of the infant safety seat at the location of the child's head. The Toyota had a label on the right front sun visor warning against using a child safety seat in the right front passenger seat.³

¹ The notification criteria for the study included accidents involving at least one vehicle in which there was a child passenger under the age of 11 and in which at least one occupant was transported to the hospital. Accidents were selected from States within close proximity to the Safety Board's highway regional offices located in California, Georgia, New Jersey, and Texas.

² The data collection phase of the study is ongoing.

³ National Transportation Safety Board. Accident Number WRH-95-F-HCO2.

On July 18, 1995, in Gilbertsville, Pennsylvania, a 20-day-old child who was seated in the right front passenger seat was killed when the passenger-side air bag of a 1995 Ford Escort deployed. The child was in a convertible child safety seat that was facing rearward. The child sustained multiple skull fractures and crushing injuries to the brain as a result of the impact of the air bag compartment cover flap with the back of the child safety seat at the location of the child's head. The investigation determined that the collision occurred at a speed of about 23 mph. The Ford had a label on the right front sun visor warning against using a rear-facing child safety seat in the right front passenger seat. The child safety seat also had a warning label that read, "when used in a rear facing mode do not place in the front seat of a vehicle that has a passenger air bag."⁴

On September 20, 1995, in Long Beach, California, a 5-month-old child who was seated in the right front passenger seat was killed when the passenger-side air bag of a 1994 Toyota Camry deployed. The child was in an infant safety seat that was facing rearward. The child sustained fatal head injuries as a result of the impact of the air bag compartment cover flap with the back of the child safety seat at the location of the child's head. The Toyota had a label on the right front sun visor warning against using a rear-facing child safety seat in the right front passenger seat. The child safety seat also had a warning label regarding use in a vehicle that has a passenger air bag.⁵

On October 3, 1995, in Irvine, California, a 6-month-old child who was seated in the right front passenger seat was severely injured when the passenger-side air bag of a 1995 Ford Escort deployed. The child was in a convertible child safety seat that was facing rearward. The child sustained skull fractures as a result of the accident. Preliminary information indicates that the skull fractures were a result of the impact of the air bag compartment cover flap to the back of the safety seat at the location of the child's head.⁶

In a fifth accident on May 6, 1994, in Arlington, Texas, an unoccupied rear-facing infant safety seat located in the right front passenger seat of a 1995 Ford Windstar minivan was cracked in the area where the child's head would have been when the air bag deployed.⁷

Based on the low impact speeds of some of these accidents, such as the Gilbertsville, Pennsylvania accident, and the lack of intrusion into the passenger compartment where these children were seated, the Safety Board believes that in

⁴ National Transportation Safety Board. Accident Number NRH-95-F-HC11.

⁵ National Transportation Safety Board. Accident Number WRH-95-F-HC29.

⁶ National Transportation Safety Board. Accident Number WRH-96-F-HCO2.

⁷ National Transportation Safety Board. Accident Number CRH-94-F-HC16.

each of the accidents the child would have survived the accident with minor or no injuries had the air bag not deployed.

In its final regulatory analysis of warning labels on rear-facing child restraints for vehicles with air bags, the National Highway Traffic Safety Administration (NHTSA) stated, "approximately 36 percent of all infants currently travelling in motor vehicles are in the rear-facing mode in the front seat and would be in potential danger from a deploying passenger-side air bag."⁸ The NHTSA estimates that about 10.7 million passenger cars and 1.2 million light trucks with passenger-side air bags are on the road as of July 1, 1995. As more passenger cars and light trucks enter the market with passenger side air bags,⁹ the likelihood increases that more infants will be killed as the result of air bag deployments.

The NHTSA is aware of the dangers of placing a rear-facing child safety seat in the front seat of a vehicle with a passenger-side air bag and has addressed the problem from both a regulatory and public information perspective. In 1991 before any fatalities of this nature had occurred, the NHTSA issued a consumer advisory that warned the public not to use a rearward facing child safety seat in a seating position equipped with an air bag. The NHTSA advised that "rear facing infant seats used in the front seat of a vehicle extend forward to a point near the dashboard where they can be struck by a deploying air bag. The force of an air bag is powerful enough to severely injure an infant." In 1993, the NHTSA issued a regulation that required manufacturers to put notices on sun visors and to provide information in the vehicle owner's manual regarding the dangers of using a rear-facing child safety seat in the front seat of a vehicle with a passenger-side air bag.¹⁰ In 1994, the NHTSA issued similar rules to label child safety seats about the danger and to include information in the child safety seat owner's manual.¹¹ In May 1995,¹² the NHTSA issued regulations that would allow manufacturers of vehicles without a back seat and vehicles with a back seat that is too small to accommodate a rear-facing child safety seat to install a manual switch that would deactivate the passenger-side air bag on passenger cars manufactured before September 1, 1997, and on light trucks

⁸ National Highway Traffic Safety Administration, Office of Regulatory Analysis, Plans, and Policy. Final Regulatory Analysis, "Warning Labels on Rear Facing Child Restraints for Vehicles with Air Bags." January 1994.

⁹ All passenger cars are required to have passenger-side air bags by model year 1998. All light trucks and multipurpose vehicles (e.g., minivans) with a gross vehicle weight rating of 8,500 pounds or less and an unloaded vehicle weight of 5,500 pounds or less are required to have passenger-side air bags by model year 1999. (49 CFR Section 571.208)

¹⁰ Federal Register Notice Volume 58, Number 169, September 2, 1993.

¹¹ Federal Register Notice Volume 59, Number 32, February 16, 1994.

¹² Federal Register Notice Volume 60, Number 99, May 23, 1995.

manufactured before September 1, 1998,¹³ to allow for the safe use of a rearward facing child safety seat in the front seat of those vehicles.

The NHTSA has also made efforts to inform the public about the dangers of using a rearward facing child safety seat in the front seat of a passenger car or light truck with an air bag through its child passenger safety training programs, national conferences, and distribution of public information brochures. The NHTSA has trained thousands of State and local advocates, fire and rescue personnel, and law enforcement officers who work within their local communities to educate parents about proper use of child safety seats. Air bag/child safety seat compatibility is a component of each training program. To support and supplement these efforts, the NHTSA has produced thousands of public information brochures aimed at proper use of child safety seats that includes information on the dangers of using a rearward facing child safety seat in the front seat of a passenger car or light truck with an air bag for distribution through a nationwide network of child passenger safety advocacy groups, child safety seat loan programs, and the auto safety hotline.¹⁴ In addition, numerous similar brochures with warnings about air bag/child safety seat compatibility are distributed by the child safety seat manufacturers and child passenger safety advocacy groups that warn against the use of rear-facing child safety seats in the front seat of vehicles with passenger-side air bags.

The Safety Board commends the NHTSA, the manufacturers, and the advocacy groups on their proactive efforts to inform the public about this problem. However, the recent accidents described above raise some concerns about the effectiveness of the approach that has been taken. Although four of the vehicles involved in the accidents described above had (1) warnings on the passenger side sun visors advising against using a rear-facing child safety seat in the front passenger seat, (2) information in the vehicle owner's manual, and (3) in two cases, warnings on the child safety seat, none of the parents had seen the warnings. In addition, the investigations revealed that the public information and education efforts had reached the parents of only one of these children. In that specific case, the information received did not discuss the dangers of using rear-facing child safety seats in the front seat of vehicles with passenger-side air bags. These accidents strongly indicate that a more effective approach is needed to inform a larger segment of the population about this important safety issue.

To accomplish this, the Safety Board believes that an immediate, nationwide campaign should be conducted to advise the public of the dangers of placing a rear-facing child safety seat in the front seat of a vehicle equipped with a passenger-side

¹³ Other technologies are expected to be available after these dates to deactivate the passenger-side air bag.

¹⁴ The NHTSA is currently printing 100,000 new public information brochures with this warning for distribution.

air bag. Accordingly, recommendations have been sent to the agencies, organizations, and associations that are best able to accomplish this.

The fatally injured child in the Gilbertsville, Pennsylvania accident was born at the Reading Hospital and Medical Center, West Reading, Pennsylvania. During the mother's stay at the hospital, an instructional video on the use of infant safety seats was shown via closed circuit television to maternity patients and their families. The video was shown three times a day in both English and Spanish and could be seen in patients' rooms and hospital community areas.

This video, copyrighted in 1990, was titled "Getting It Right" and was produced by Shinn and Associates, Inc., located at 2853 W. Jolly, Okemos, Michigan. According to the video, it was "designed to show parents, step by step, how easy it can be to use an infant car seat correctly." The video stressed the importance of always facing an infant, up to 20 pounds, in a rear-facing safety seat and always placing the infant next to an adult for supervision and "never put an infant in the back seat alone."

The father of the fatally injured child stated to the Safety Board's investigator that he viewed this video tape on more than one occasion during his wife's stay at the hospital. He stated that because of the vivid instructional information aired on the video, he and his wife decided to place their child in the rear-facing child safety seat in the right front seat of their dual air bag-equipped car.

The Safety Board believes that Lamaze Communications, Inc., can assist in providing important information about the incompatibility of rear-facing child safety seats and air bags on a repeated basis to the public through its Newborn Channel, which will be shown in 418 hospitals in 1996, and in its Lamaze magazine, which reaches thousands of parents.

Therefore, the National Transportation Safety Board recommends that Lamaze Publishing Company, Inc.:

Advise parents, through your Newborn Channel and Lamaze magazine, of the dangers of placing a rear-facing child safety seat in the front seat of a vehicle equipped with a passenger-side air bag. (Class I, Urgent Action) (H-95-31)

The Safety Board also issued safety recommendations to the National Highway Traffic Safety Administration; the National Association of Broadcasters; the Advertising Council, Inc.; the domestic and foreign automobile manufacturers; the child safety seat manufacturers; the Department of Health and Human Services; the Association of State and Territorial Health Officers; the American Hospital Association; the American Academy of Nurse Midwives; the American College of Obstetricians and Gynecologists; the American Academy of Family Physicians; the

American Academy of Pediatrics; the International Childbirth Education Association; the Academy of Certified Birth Educators; Shinn and Associates; and the Reading Hospital and Medical Center.

The National Transportation Safety Board is an independent Federal agency with the statutory responsibility ". . .to promote transportation safety by conducting independent accident investigations and by formulating safety improvement recommendations" (Public Law 93-633). The Safety Board is vitally interested in any actions taken as a result of its safety recommendations and would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter. Please refer to Safety Recommendation(s) H-95-31 in your reply.

Chairman HALL, Vice Chairman FRANCIS, and Members HAMMERSCHMIDT and GOGLIA concurred in this recommendation.

By:


Jim Hall
Chairman

cc:

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