



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: June 13, 2003

In reply refer to: H-03-10

Mr. Kal Kelliher
President
American Driver and Traffic Safety Education Association
1460 Juniper Springs Trail
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The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge your organization to take action on the safety recommendation in this letter. The Safety Board is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

This recommendation addresses the need for a module for driver education curriculums that emphasizes the risks of engaging in distracting behavior, particularly using an interactive wireless communication device, while driving. The recommendation is derived from the Safety Board's investigation of the February 1, 2002, Ford Explorer Sport collision with a Ford Windstar minivan and a Jeep Grand Cherokee on Interstate 95/495 near Largo, Maryland,¹ and is consistent with the evidence we found and the analysis we performed. As a result of this investigation, the Safety Board has issued nine safety recommendations, one of which is addressed to the American Driver and Traffic Safety Education Association. Information supporting this recommendation is discussed below. The Safety Board would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

On February 1, 2002, about 8:00 p.m., on the outer lanes of Interstate 95/495 near Largo, Maryland, a 1998 two-door Ford Explorer Sport, traveling northbound at an estimated speed of 70 to 75 mph, veered off the left side of the roadway, crossed over the median, climbed up a guardrail, flipped over, and landed on top of a southbound 2001 four-door Ford Windstar minivan. Subsequently, a 1998 four-door Jeep Grand Cherokee ran into the minivan. Of the eight people involved in the accident, five adults were fatally injured, one adult sustained minor injuries, and two children were uninjured.

¹ For additional information, read National Transportation Safety Board, *Ford Explorer Sport Collision With Ford Windstar Minivan and Jeep Grand Cherokee on Interstate 94/495 Near Largo, Maryland, on February 1, 2002*, Highway Accident Report NTSB/HAR-03/02 (Washington, DC: NTSB, 2003).

The National Transportation Safety Board determined that the probable cause of the February 1, 2002, collision of the Ford Explorer Sport with the Ford Windstar minivan and Jeep Grand Cherokee was the Explorer driver's failure to maintain directional control of her high-profile, short-wheelbase vehicle in the windy conditions due to a combination of inexperience, unfamiliarity with the vehicle, speed, and distraction caused by use of a handheld wireless telephone. Contributing to the severity of the accident was the lack of an effective median barrier at the accident site.

This accident involved multiple risk factors, some of which are associated with young drivers. The accident driver, who was 20 years old, inexperienced, and unbelted, was operating a high-profile, short-wheelbase, sport utility vehicle, with which she was unfamiliar, 15 to 20 miles over the speed limit, while talking on a handheld wireless telephone.

Although the accident driver was 20 years old, she had limited driving experience. She had been licensed for 3 years; however, she did not own an automobile until purchasing the Explorer. Her mother, with whom she resided, also did not own an automobile. The driver had occasionally borrowed a vehicle, and her driving experience apparently did not extend beyond that. She was, in effect, a novice driver.

The accident driver was also unfamiliar with the Explorer. The night of the accident was the first time she had driven this vehicle, and during the approximately 2 hours before the collision, she drove the car less than 50 miles. In the Largo accident, the driver traveled at a high rate of speed, oversteered, and failed to maintain directional control. A landmark study of accident causation² found that "unfamiliarity with the vehicle was associated with accidents where maintaining adequate directional control could have prevented the crash" and unfamiliarity was "also associated with excessive speed and improper evasive action." The Safety Board concludes that due to her unfamiliarity with the vehicle, operating inexperience, and distraction, the accident driver exercised poor judgment in maintaining a speed too fast for the existing, windy conditions and was unable to maintain directional control of her vehicle.

At the time of the collision, the accident driver was engaged in a handheld wireless telephone conversation. Her friend stated that "she suddenly yelled twice, and the call disconnected." Wireless telephone records confirm that the accident driver placed a call moments before the accident. She was following her friend and lost sight of him. The cognitive effect of this conversation may have been greater than that of a casual conversation. Additionally, she was probably scanning the traffic ahead, looking for her friend, and her attention to the task of driving was probably diverted.

Research has shown that the cognitive effects of conducting a conversation on a wireless telephone can decrease situational awareness and that wireless telephone use can increase reaction time. In their 2001 study,³ Parkes and Hooijmeijer reported that drivers engaged in wireless telephone conversations were unaware of traffic movements around them. Safety Board

² J.R. Treat and others, "Tri-Level Study of the Causes of Traffic Accidents: Final Report," Institute for Research in Public Safety, Indiana University, NHTSA Contract DOT-HS-034-3-535, May 1979.

³ A.M Parkes and V. Hooijmeijer, "Driver Situation Awareness and Carphone Use," First Human-Centered Transportation Simulation Conference, 2001, University of Iowa, Iowa City, Iowa, November 4-7, 2001.

accident investigations⁴ in several transportation modes have documented the relationship between poor situational awareness and poor performance. These investigations found that when airline pilots, railroad engineers, and ship crews lose situational awareness, they sometimes make operational errors that lead to accidents. In the case of the Largo accident driver, the potential decrease in situational awareness is likely to have delayed her awareness of the effects of the wind on her vehicle. This delayed recognition of and reaction to the effects of wind probably precipitated her steering overreaction. Therefore, the Safety Board concludes that the accident driver's distraction due to the wireless telephone conversation with her friend contributed to her loss of control of the vehicle.

This accident involved multiple risk factors, and the Safety Board could not determine the exact extent of the role of distraction due to wireless telephone use. However, use of a wireless telephone while driving is inherently dangerous, as is any distraction that diverts one's attention from the driving task. Young, inexperienced drivers are particularly vulnerable to accidents, are easily distracted, and are known to engage in risk-taking behavior. In 2002, the Safety Board investigated two accidents, Largo, Maryland, and Korona, Florida,⁵ in which young drivers were following another vehicle, lost control, and ran off the road. The Largo and Korona accident drivers were 20 and 16 years old, respectively; both were unbelted and engaged in wireless telephone conversations when they lost control of their vehicles. Young drivers continue to be overrepresented in traffic crashes and deaths. In 2001, according to the National Highway Traffic Safety Administration, drivers under age 20 constituted only 6.8 percent of the driving population but were involved in 14.3 percent of fatal accidents and 18 percent of the total societal accident costs. While the Board recognizes that having access to communication in one's vehicle can be valuable, drivers in this age group, in particular, should attend only to the task of driving.

The use of wireless communication devices is becoming increasingly prevalent. In May 2003, according to the Cellular Telecommunications & Internet Association, the number of U.S. wireless telephone subscribers was approximately 145 million. The 2003 Gallup Organization study⁶ and the 2002 North Carolina study,⁷ which indicated that 25 percent and 58 percent of

⁴ (a) National Transportation Safety Board, *Derailment of Amtrak Train No. 2 on the CSXT Big Bayou Canot Bridge Near Mobile, Alabama, September 22, 1993*, Railroad-Marine Accident Report NTSB/RAR-94/01 (Washington, DC: NTSB, 1994). (b) National Transportation Safety Board, *Aircraft Accident in Guantanamo Bay, Cuba, August 18, 1993*, Aviation Accident Report NTSB/AAR-94/04 (Washington, DC: NTSB, 1994). (c) National Transportation Safety Board, *Controlled Flight Into Terrain, Korean Air Flight 801, Boeing 747-300, HL7468, Nimitz Hill, Guam, August 6, 1997*, Aviation Accident Report NTSB/AAR-00/01 (Washington, DC: NTSB, 2000). (d) Aeronautica Civil of the Government of Colombia, *Controlled Flight Into Terrain, American Airlines Flight 965, Boeing 757-223, N651AA, Near Cali, Colombia, December 20, 1995*, Aircraft Accident Report. (e) National Transportation Safety Board, *Ramming of the Spanish Bulk Carrier URDULIZ by the USS DWIGHT D. EISENHOWER (CVN 69), Hampton Roads, Virginia, August 29, 1988*, Marine Accident Report NTSB/MAR-90/01 (Washington, DC: NTSB, 1990). (f) National Transportation Safety Board, *Grounding of the U.S. Tank Ship STAR CONNECTICUT, Pacific Ocean, Near Barbers Point, Hawaii, November 6, 1990*, Marine Accident Report NTSB/MAR-92/01 (Washington, DC: NTSB, 1992). (g) National Transportation Safety Board, *Grounding of the Panamanian Passenger Ship ROYAL MAJESTY on Rose and Crown Shoal Near Nantucket, Massachusetts, June 10, 1995*, Marine Accident Report NTSB/MAR-97/01 (Washington, DC: NTSB, 1992). (h) National Transportation Safety Board, *Head-on Collision of Two Burlington Northern Santa Fe Freight Trains Near Clarendon, Texas, on May 28, 2002*, Railroad Accident Report NTSB/RAR-03/01 (Washington, DC: NTSB, 2003).

⁵ Docket Number HWY-02-IH-016.

⁶ Dawn Royal, *National Survey of Distracted and Drowsy Driving Attitudes and Behaviors: 2002*, Volume 1-Findings Report, The Gallup Organization, DOT NHTSA 809566, March 2003.

drivers interviewed, respectively, had used a wireless telephone while driving, suggest that the public may not be aware of the dangers associated with using a wireless telephone while driving. Considering the widespread use of wireless communication devices in vehicles today and the associated risks of an accident, the Safety Board concludes that all drivers should be educated about the cognitive demands of wireless telephone use and the resulting risks of use while driving.

The States' driver education course materials discuss the risks of distractions while driving, but the material is general in nature and does not stress the cognitive demands of using a wireless telephone, whether handheld or hands-free. The Largo accident underscores the vulnerability of young, inexperienced drivers and involves many risk factors commonly present in accidents involving 16- to 20-year-old drivers. The importance of not engaging in distracting behavior is critical, especially for this age group, given its low experience level. Therefore, the Safety Board concludes that driver education materials should emphasize the risks of distracted driving, including the cognitive demands associated with use of interactive communication devices. The American Driver and Traffic Safety Education Association is compiling a new driver's education curriculum, and the National Highway Traffic Safety Administration is developing a generic driver's manual for the States' use. The Safety Board believes that they should jointly develop a module for driver education curriculums that emphasizes the risks of engaging in distracting behavior.

Therefore, the National Transportation Safety Board recommends that the American Driver and Traffic Safety Education Association:

Develop, in conjunction with the National Highway Traffic Safety Administration, a module for driver education curriculums that emphasizes the risks of engaging in distracting behavior. (H-03-10)

The Safety Board also issued safety recommendations to the National Highway Traffic Safety Administration, 49 States (exclusion—New Jersey), and The Advertising Council, Inc. In addition, the Board reiterated safety recommendations to the Federal Highway Administration and the American Association of State Highway and Transportation Officials. In your response to the recommendation in this letter, please refer to H-03-10. If you need additional information, you may call (202) 314-6177.

Chairman ENGLEMAN, Vice Chairman ROSENKER, and Members GOGLIA, CARMODY, and HEALING concurred in this recommendation.

By: Ellen G. Engleman
Chairman

⁷ Jane C. Stutts, Herman F. Huang, and William W. Hunter, "Cell Phone Use While Driving in North Carolina: 2002 Update Report," University of North Carolina, Highway Safety Research Center, December 2002.