



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: November 30, 2006

In reply refer to: H-06-27

Honorable John H. Hill
Administrator
Federal Motor Carrier Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

On November 14, 2004, about 9:30 a.m., eastern standard time, a 44-year-old bus driver departed the Baltimore/Washington International Thurgood Marshall Airport, operating a 2000 Prevost, 58-passenger motorcoach for an approximately 60-mile trip to Mount Vernon, Virginia. Vehicle occupants were the bus driver, an adult chaperone, and 27 high school students. This vehicle was the second one of a two-bus team traveling to Mount Vernon. The motor carrier, Eyre Bus Service, Inc., (Eyre) operates this route frequently, and the accident bus driver had driven this route on one previous occasion 9 days earlier (November 5, 2004).

About 10:40 a.m., the bus was traveling southbound in the right lane of the George Washington Memorial Parkway in Alexandria, Virginia, at an electronic control module-recorded speed of approximately 46 mph. As the bus approached the Alexandria Avenue bridge, the bus driver passed warning signs indicating that the bridge had a 10-foot, 2-inch clearance in the right lane. Nonetheless, the driver remained in the right lane and drove the 12-foot-high bus under the bridge, colliding with the underside and side of the overpass.¹ At the time of the accident, the 13-foot, 4-inch-high left lane was available to the bus, and the lead Eyre bus was in the left lane ahead of the accident bus. The accident bus came to a final stop in the right lane about 470 feet beyond the bridge. Witnesses and the bus driver himself reported that the bus driver was talking on a hands-free cellular telephone at the time of the accident.

Of the 27 student passengers, 10 received minor injuries and 1 sustained serious injuries. The bus driver and chaperone were uninjured. The bus's roof was destroyed.

The National Transportation Safety Board determines that the probable cause of this accident was the bus driver's failure to notice and respond to posted low-clearance warning signs and to the bridge itself due to cognitive distraction resulting from conversing on a hands-free cellular telephone while driving. Contributing to the accident was the low vertical clearance of the bridge, which does not meet current National Park Service road standards or American Association of State Highway and Transportation Officials guidelines.

¹ For more information, read National Transportation Safety Board, *Motorcoach Collision With the Alexandria Avenue Bridge Overpass, George Washington Memorial Parkway, Alexandria, Virginia, November 14, 2004*, Highway Accident Report NTSB/HAR-06/04 (Washington, DC: NTSB, 2006).

The recommendation being issued to the Federal Motor Carrier Safety Administration (FMCSA) addresses cellular telephone use while driving. Witnesses to the accident stated, the driver admitted, and cellular telephone records verify that the driver was talking on a hands-free cellular telephone about the time of the accident. The driver reported that he was talking to his sister and that he was upset because he believed the lead bus driver had mistreated him during the trip. The accident bus driver stated that he saw neither the warning signs nor the bridge until after the accident occurred. Furthermore, the data recovered postaccident from the accident bus's Detroit Diesel Electronic Control Module indicated that the driver did not attempt to stop the bus until after the vehicle struck the bridge.² The Safety Board concludes that the bus driver's cellular telephone conversation at the time of the accident diverted his attention from driving, and, as a result, he failed to notice the low-clearance warning signs for the bridge and the low vertical clearance of the bridge itself.

As was shown by this accident, researchers have found that drivers conversing on a cellular telephone are cognitively distracted from the driving task;³ that is, drivers' mental resources are diverted from the driving task, consequently impairing driving performance. Furthermore, complex cellular telephone conversations are more distracting than simple conversations. In addition, research has demonstrated that using a cellular telephone while driving degrades several aspects of driving performance, resulting in slower reaction times, slower driving speeds, and increased instances of attention lapses.⁴ Research has also shown that conversing on a hands-free cellular telephone, like the one the accident driver was using, while driving impairs performance.⁵ Epidemiological studies indicate that the risk of being involved in a crash when using a cellular telephone is almost four times higher than when a cellular telephone is not used and that using a hands-free cellular telephone is no safer than using a hand-held cellular telephone.⁶ The Safety Board concludes that the use of either a hand-held or hands-free cellular telephone while driving can impair the performance of even a commercial driver's license (CDL) holder, such as the driver of the accident vehicle. As a result of its 2003 investigation of an accident involving cellular telephone use,⁷ the Safety Board further

² For more detailed information, see the *Vehicle and Wreckage Information* and *Accident Discussion* sections of the accident investigation report (NTSB/HAR-06/04).

³ (a) J.L. Harbluk, Y.I. Noy, and M. Eizenman, *The Impact of Cognitive Distraction on Driver Visual Behaviour and Vehicle Control*, TP# 13889 E (Ottawa, Canada: Transport Canada, 2002). (b) D.L. Strayer, F.A. Drews, and W.A. Johnston, "Cell Phone-Induced Failures of Visual Attention During Simulated Driving," *Journal of Experimental Psychology–Applied*, Vol. 9, No. 1 (2003) 23-32.

⁴ (a) D.L. Strayer and F.A. Drews, "Profiles in Driver Distraction: Effects of Cell Phone Conversations on Younger and Older Drivers," *Human Factors*, Vol. 46, No. 4 (2004) 640-649. (b) K.E. Beede and S.J. Kass, "Engrossed in Conversation: The Impact of Cell Phones on Simulated Driving Performance," *Accident Analysis and Prevention*, Vol. 38, No. 2 (2006) 415-421. (c) D.L. Strayer and W.A. Johnston, "Driven to Distraction: Dual-Task Studies of Simulated Driving and Conversing on a Cellular Phone," *Psychological Science*, Vol. 12 (2001) 462-466.

⁵ (a) C.J.D. Patten, A. Kircher, J. Östlund, and L. Nilsson, "Using Mobile Telephones: Cognitive Workload and Attention Resource Allocation," *Accident Analysis and Prevention*, Vol. 36, No. 3 (2004) 341-350. (b) J.E.B. Törnros and A.K. Bolling, "Mobile Phone Use—Effects of Handheld and Handsfree Phones on Driving Performance," *Accident Analysis and Prevention*, Vol. 37, No. 5 (2005) 902-909.

⁶ (a) D.A. Redelmeier and R.J. Tibshirani, "Association Between Cellular-Telephone Calls and Motor Vehicle Collisions," *The New England Journal of Medicine*, Vol. 336, No. 7 (1997). (b) S. McEvoy and others, "Role of Mobile Phones in Motor Vehicle Crashes Resulting in Hospital Attendance: A Case-Crossover Study," *BMJ* (July 2005).

⁷ National Transportation Safety Board, *Ford Explorer Sport Collision with Ford Windstar Minivan and Jeep Grand Cherokee on Interstate 95/495 Near Largo, Maryland, February 1, 2002*, Highway Accident Report NTSB/HAR-03/02 (Washington, DC: NTSB, 2003).

concluded that all drivers should be educated about the risks of distracted driving, including the cognitive demands associated with the use of wireless interactive communication devices, which include cellular telephones.⁸

More than 204 million people subscribe to U.S. wireless communications services,⁹ which include devices such as cellular telephones. Cellular telephone use by drivers continues to increase, as evidenced by the National Highway Traffic Safety Administration's 2005 observational survey in which 6 percent of drivers were observed to be using a hand-held cellular telephone, compared to 5 percent of drivers in 2004. Surveys of self-reported use of cellular telephones while driving show that about 30 percent of all drivers use a cellular telephone while driving.¹⁰

Commercial drivers, such as the accident bus driver, who spend their workday on the road and use cellular telephones for maintaining contact with their companies, are likely to be heavy cellular telephone users.¹¹ The American Association of Motor Vehicle Administrators's CDL manual recognizes that cellular telephone use by commercial drivers can also be hazardous.¹² The manual recommends pulling off the road in a safe, legal place when making or receiving a call on communications equipment, stating "Do not place a call while driving." The manual also recognizes that hands-free cellular devices are unsafe to use while driving. Connecticut, New Jersey, New York, and the District of Columbia prohibit the use of hand-held cellular telephones while driving by all drivers, including commercial drivers.

Industry is also beginning to recognize the need for cellular telephone policies; in addition to Eyre, other motor carriers, including Greyhound Lines, Inc., have instituted policies on restricting cellular telephone use or are in the process of doing so. However, the primary motorcoach industry associations (the American Bus Association and the United Motorcoach Association), public bus transportation associations (the Community Transportation Association of America and the American Public Transportation Association), school bus industry associations (the National Association for Pupil Transportation, the National School Transportation Association, and the National Association of State Directors of Pupil Transportation Services), and bus driver unions (the International Brotherhood of Teamsters and the Amalgamated Transit Union) have not yet developed such policies for their members. Furthermore, the FMCSA has not published a policy regarding cellular telephone use while driving.

⁸ NTSB/HAR-03/02.

⁹ CTIA—The Wireless Association. *Wireless Industry Indices: 1985-2005. Annualized Wireless Industry Service Results—June 1985 to June 2005* <www.ctia.org/research_statistics/index.cfm/AID/10030>. Data reflect domestic cellular, enhanced specialized mobile radio, and personal communication service providers.

¹⁰ U.S. Department of Transportation, National Highway Traffic Safety Administration, *National Survey of Distracted and Drowsy Driving Attitudes and Behavior: 2002, Volume I: Findings*, DOT HS 809 566 (Washington, DC: NHTSA, 2003).

¹¹ T. Troglauer, T. Hels, and P.F. Christens, "Extent and Variations in Mobile Phone Use Among Drivers of Heavy Vehicles in Denmark," *Accident Analysis and Prevention*, Vol. 38, No. 5 (2006) 105-111.

¹² American Association of Motor Vehicle Administrators, "Section 2—Driving Safely," *Model Commercial Driver License Manual* (December 2005) 2-22.

Payment for transportation services creates an implicit contract between the passenger and the carrier that the carrier will transport the passenger safely and not allow the vehicle operator to take unnecessary risks. Motorcoaches, such as the accident bus, typically transport 40 to 50 passengers per trip, creating the potential for significant injury or death to a large number of people in the event of an accident. In addition, like school buses, such vehicles frequently transport children (27 high school students in this accident) and other vulnerable groups, including the elderly. Transit buses also transport large numbers of passengers, often in urban areas. Consequently, these drivers have a special obligation to provide the safest driving environment possible for the passengers in their care. The Safety Board therefore recommends that the States and the District of Columbia enact legislation to prohibit cellular telephone use by CDL holders with a passenger-carrying or school bus endorsement, while driving under the authority of that endorsement, except in emergencies. Furthermore, because the FMCSA is the primary oversight agency for buses, the National Transportation Safety Board makes the following recommendation to the Federal Motor Carrier Safety Administration:

Publish regulations prohibiting cellular telephone use by commercial driver's license holders with a passenger-carrying or school bus endorsement, while driving under the authority of that endorsement, except in emergencies. (H-06-27)

The Safety Board recognizes that regulatory change takes time and considers it imperative to alert motor carriers and drivers without delay about the dangers of using cellular telephones while driving; therefore, the Safety Board also recommends that motorcoach industry, public bus, and school bus associations and unions develop formal policies prohibiting cellular telephone use by CDL holders with a passenger-carrying or school bus endorsement, while driving under the authority of that endorsement, except in emergencies.

In addition to the recommendations noted above, the Safety Board reiterates Safety Recommendation H-03-09 to the 20 States that do not yet have driver distraction codes on their traffic accident investigation forms.

Please refer to Safety Recommendation H-06-27 in your reply. If you need additional information, you may call (202) 314-6177.

Chairman ROSENKER, Vice Chairman SUMWALT, and Members HERSMAN and HIGGINS concurred in this recommendation.

[Original Signed]

By: Mark V. Rosenker
Chairman