National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: October 4, 2011

In reply refer to: H-11-28

The Honorable David L. Strickland
Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
West Building
Washington, DC 20590

On Friday, March 26, 2010, about 5:14 a.m. central daylight time, near Munfordville, Kentucky, a 1999 Freightliner truck-tractor in combination with a 1998 Strick Corporation 53-foot-long van semitrailer, owned by the motor carrier Hester, Inc., and being driven by a 45-year-old male, was traveling south on Interstate 65 (I-65) near milepost 61.5. The truck departed the left lane of southbound I-65 at a shallow angle and entered the 60-foot-wide depressed earthen median between the southbound and northbound roadways. The truck traveled across the median and struck and overrode the high-tension, four-cable, alternating-post median barrier adjacent to the left shoulder of northbound I-65. It then crossed the left shoulder and entered the travel lanes of northbound I-65.

At that time, a 2000 Dodge 15-passenger van, driven by a 41-year-old male and occupied by 11 passengers, was traveling northbound in the left lane. As the truck crossed in front of the van, its tractor was struck by the van. The van rotated clockwise and became engaged with the truck's trailer; the two vehicles continued across both travel lanes and the right shoulder of northbound I-65. As the truck and van traveled across the right shoulder, the van separated from the truck, struck the cut rock wall beyond the shoulder, and rebounded back into the travel lanes, coming to rest in the left lane of northbound I-65, facing south. The truck's tractor struck the cut rock wall, and the vehicle rolled onto its right side. As the truck came to rest across both northbound lanes, a fire ensued that destroyed the tractor and the sides and roof of the semitrailer.

As a result of the accident and subsequent truck fire, the truck driver, the van driver, and nine van passengers died. Two child passengers in the van, who were using child restraints, sustained minor injuries.[1]

The National Transportation Safety Board (NTSB) determined that the probable cause of this accident was the truck driver's failure to maintain control of the truck-tractor combination vehicle because he was distracted by use of his cellular telephone. Contributing to the severity of the accident were a median barrier that was not designed to safely contain or redirect the heavy vehicle and the lack of adequate guidance to the states in the form of high-performance median barrier warrants.

One issue that the NTSB identified during its investigation of concern to the National Highway Traffic Safety Administration (NHTSA) was the need to improve the data describing cross-median crashes.

There is no official, broadly accepted definition of the term "cross-median crash," and the absence of such a definition has implications for understanding the accident history of any particular segment of highway. In addition, existing definitions of this term are not always clear and comprehensive. The following definition, taken from a recent Federal Highway Administration (FHWA)/Texas report,[2] may illustrate the point:

> For the purposes of this project, the research team developed the following definition of a cross median crash: 'A crash where a vehicle departs from its traveled way to the left, traverses the median separation between the highway's directional lanes, and collides with a vehicle traveling in the opposite direction.'

The absence of a standard definition leaves many accident situations in doubt with regard to characterizing them as cross-median crashes. Questionable examples include the following: vehicles departing the roadway, crossing the median, and colliding with a tree; vehicles crossing the median and, while not hitting another vehicle, causing another vehicle to lose control; and vehicles prevented from crossing because they were contained by a median barrier. Moreover, because of this lack of a clear and comprehensive definition, Fatality Analysis Reporting System (FARS) data, which rely on sequence-of-event coding, have difficulty characterizing an accident as a cross-median crash. Currently, there is no specified code in FARS to identify cross-median crashes; instead, the terminology "Motor Vehicle In-Transport on Different Roadway" is used,

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[1] For additional information, see *Truck-Tractor Semitrailer Median Crossover Collision With 15-Passenger Van, Munfordville, Kentucky, March 26, 2010*, Highway Accident Report NTSB/HAR-11/02 (Washington, DC: National Transportation Safety Board, 2011), which is available on the NTSB website at <Hhttp://www.ntsb.gov/H>.

[2] S. Cooner and others, *The Development of Guidelines for Cable Median Barrier Systems in Texas*, Report FHWA/TX-10/0-5609-2 (College Station, Texas: Texas Transportation Institute and the Federal Highway Administration, February 2009), p. 2–1.

and this code may also include a vehicle falling from a bridge overpass onto a different road.[3] FARS data are crucial to understanding the extent of the cross-median crash problem and to developing solutions to address it—and no alternative comprehensive data sources are available in this area. The NTSB concluded that NHTSA data concerning cross-median crashes would be improved by a standard definition describing what constitutes a "cross-median crash."

Following its investigation of an accident that occurred in 1997 in Slinger, Wisconsin,[4] the NTSB issued Safety Recommendation H-98-13 to the FHWA, asking it to revise the coding in the guidelines for the *Model Minimum Uniform Crash Criteria* to facilitate identification of cross-median crash events. That recommendation was "Closed—Acceptable Action" in February 1999, based on the FHWA's explanation of a combination of coding parameters (sequence-of-event coding and trafficway descriptions) that could be used to identify cross-median crashes.[5] The NTSB's difficulty in distinguishing cross-median crashes in FARS data analyses for this report illustrates the analytical complexity associated with trying to identify one of the most serious accident types. State transportation agencies regularly conduct cross-median crash analyses in support of barrier application decisions and, depending on how they use the FARS data, their results vary.

In light of the need for better accident analysis in this area, the NTSB recommends that NHTSA and Governors Highway Safety Association work together to add a standard definition for "cross-median crash" and a data element for cross-median crash accidents to the *Model Minimum Uniform Crash Criteria*. Adding "crossed median" to each of the three attributes of crash data element C6—*First Harmful Event* could be an appropriate approach because those attributes (noncollision; collision with person, motor vehicle, or nonfixed object; and collision with fixed object) add meaning to further characterize the outcome of the median crossing. Providing a more direct characterization of cross-median crashes in the vehicle data element V20–*Sequence of Events* offers another possible solution.

As a result of the investigation, the National Transportation Safety Board makes the following safety recommendation to the National Highway Traffic Safety Administration:

> Work with the Governors Highway Safety Association to add a standard definition for "cross-median crash" and a data element for cross-median crash accidents to the *Model Minimum Uniform Crash Criteria*. (H-11-28)

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[3] The terminology "Motor Vehicle In-Transport on Different Roadway" differs from "Motor Vehicle In-Transport on Same Roadway" in that it applies when the motor vehicle in transport leaves one roadway, enters a different roadway, and then has a collision with a motor vehicle in transport on that roadway. For example, the coding "Motor Vehicle In-Transport on Different Roadway" is used when one motor vehicle in transport travels across the median of a divided highway, enters oncoming traffic, and is struck, or when a motor vehicle in transport traveling on an overpass falls from the overpass to the roadway below and strikes or is struck by a motor vehicle moving on that roadway. This code is only used for the motor vehicle crossing over onto the other traffic way.

[4] *Multiple Vehicle Crossover Accident, Slinger, Wisconsin, February 12, 1997*, Highway Accident Report NTSB/HAR-98/01 (Washington, DC: National Transportation Safety Board, 1998).

[5] No coding change to the *Model Minimum Uniform Crash Criteria* was associated with the FHWA explanation.

The NTSB also issued safety recommendations to the Federal Highway Administration, the Federal Motor Carrier Safety Administration, the 50 states and the District of Columbia, the Commonwealth of Kentucky, the American Association of State Highway and Transportation Officials, and the Governors Highway Safety Association.

In response to the recommendation in this letter, please refer to Safety Recommendation H-11-28. If you would like to submit your response electronically rather than in hard copy, you may send it to the following e-mail address: correspondence@ntsb.gov. If your response includes attachments that exceed 5 megabytes, please e-mail us asking for instructions on how to use our secure mailbox. To avoid confusion, please use only one method of submission (that is, do not submit both an electronic copy and a hard copy of the same response letter).

Chairman HERSMAN, Vice Chairman HART, and Members SUMWALT, ROSEKIND, and WEENER concurred in this recommendation.

[Original Signed]

By: Deborah A.P. Hersman
Chairman