



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: May 24, 2002

In reply refer to: H-02-05

Mr. J. Bruce Saltsman, Sr.
Commissioner
Tennessee Department of Transportation
James K. Polk Building
505 Deaderick Street, Suite 700
Nashville, Tennessee 37243

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 preconstruction conferences for work zone projects. The recommendation is derived from the Safety Board's investigation of the work zone collision between a tractor-semitrailer and a Tennessee Highway Patrol (THP) vehicle in Jackson, Tennessee, on July 26, 2000,¹ and is consistent with the evidence it found and the analysis it performed. As a result of this investigation, the Safety Board has issued five safety recommendations, one of which is addressed to the Tennessee Department of Transportation (TDOT). 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 this recommendation.

About 8:52 a.m. on July 26, 2000, an eastbound 1999 International truck tractor pulling a loaded semitrailer, and traveling at a driver-estimated speed of 65 mph in a 55-mph work zone, collided with the trailing THP vehicle. Witnesses reported that the patrol car exploded and caught fire at impact. The patrol car was pushed approximately 192 feet before it came to rest in the median. The tractor-semitrailer continued through a 61-foot depressed earthen median and into the westbound lanes, where it collided with a 1997 Chevrolet Blazer. The tractor-semitrailer then continued across the travel lanes and came to rest in a wooded area on the north side of Interstate Highway 40. The State trooper in the THP vehicle was killed, and the Chevrolet driver was seriously injured.

¹ For more information, read: National Transportation Safety Board, *Work Zone Collision Between a Tractor-Semitrailer and a Tennessee Highway Patrol Vehicle, Jackson, Tennessee, July 26, 2000*, Highway Accident Report NTSB/HAR-02/01 (Washington, DC: NTSB, 2001).

The National Transportation Safety Board determines that the probable cause of this accident was the driver's incapacitation, owing to the failure of the medical certification process to detect and remove a medically unfit driver from service. Contributing to this accident were the lack of planning and coordination between the Tennessee Department of Transportation, its contractors, and the Tennessee Highway Patrol regarding work zone projects; the lack of traffic control training, specific to highway work zone operations, provided to Tennessee Highway Patrol officers; and the failure of the Tennessee Department of Transportation and its contractors to protect all work zone personnel and road users.

The accident occurred on the third day of an operation that consisted of milling rumble strips into the shoulder pavement. About 8 a.m. on July 26, 2000, two THP officers positioned their vehicles, with their emergency lights flashing, within the right eastbound lane of a high-speed roadway in order to warn motorists away from the milling machine and the sweeper on the roadway shoulder. Although variable message signs warned motorists of the roadwork ahead and of a lane closure, the signs failed to specify which lane was closed. No channeling devices were positioned behind the officers to direct motorists to the left lane. In addition, the protection vehicle towing the flashing arrow board was positioned behind the sweeping machine, 950 feet ahead of the trailing police vehicle.

On the previous day, the vague messages displayed on the variable message signs had prompted motorists to complain to TDOT that they could not tell which lane was closed. The unprotected positions of the THP vehicles had generated sufficient complaints by TDOT personnel to the Regional Safety Coordinator to merit an inspection of the work zone operation. The accident occurred before this inspection could take place.

At the time of the accident, TDOT was employing a traffic control plan that was not covered in the construction contract. In fact, the contract did not contain a traffic control plan that was applicable to mobile operations such as milling rumble strips or performing pavement striping and other lane marking operations. Furthermore, the contract did not specify the THP's duties with regard to traffic control within the work zone.

The failure to define a specific traffic control plan for the milling operation suggests that too little planning had been devoted to that operation, which may have led to the ambiguous information displayed on variable message signs and to other questionable safety practices discussed below. The lack of a specific traffic control plan, in conjunction with the absence of the THP in the preconstruction conferences, quite likely added to the contractor's uncertainty with regard to the THP's role in the milling project. These circumstances may have fostered the misconception that the THP officers did not need additional guidance on work zone operations. The Safety Board concludes that the traffic control and safety aspects of the work zone operation would have been improved had the construction contract incorporated traffic control plans for all aspects of the work zone operation and assigned specific responsibilities to each party.

The Construction Accident Reduction Project (Project CAR) is a mechanism for TDOT to contract with the THP to provide enforcement and traffic control assistance on this construction project. Despite the THP's role in the project, it was not invited to attend the TDOT preconstruction conference meetings. Typically, participants in a preconstruction conference discuss the scope of a construction project; the time, resources, and procedures needed to

complete it; and the traffic control plan that best suits each phase of the project. Large projects, such as the one in Jackson, usually involve the State's Department of Transportation and several contractors and subcontractors. Because of the number of parties involved, communication and coordination are vital in establishing a work zone strategy that is both effective and safe.

Not seeking THP representation resulted in a lost opportunity for Dement Construction Company and THP representatives to coordinate traffic control duties. It also meant that TDOT could not clarify to all involved who was in charge of traffic control in the work zone. This clarification would have been helpful, given the natural assumption that police officers are in charge of traffic control. The end result was a disjointed traffic control effort between the TDOT contractor and the THP that was inherently unsafe. The Safety Board concludes that had TDOT invited the THP to the preconstruction conferences, lines of communication may have been established, enabling the parties to agree upon traffic control responsibilities and clarify the manner in which they should be performed.

Therefore, the National Transportation Safety Board recommends that the Tennessee Department of Transportation:

Conduct preconstruction conferences with all parties involved in a work zone project. As a result of such conferences, produce a written traffic control plan or project plan agreed to by all parties that defines the lines of authority and how traffic control and enforcement will be performed for all types of work zone configurations to be utilized. (H-02-05)

The Safety Board also issued safety recommendations to the Federal Highway Administration, the National Highway Traffic Safety Administration, the National Sheriffs' Association, the International Association of Chiefs of Police, and the American Association of State Highway and Transportation Officials. In your response to the recommendation in this letter, please refer to H-02-05. If you need additional information, you may call (202) 314-6607.

Chairman BLAKEY, Vice Chairman CARMODY, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in this recommendation.

By: Marion C. Blakey
Chairman