



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: May 24, 2002

In reply refer to: H-02-02 and -03

Honorable Mary E. Peters
Administrator
Federal Highway Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

About 8 a.m. on July 26, 2000, a work zone project began near milepost 85.6 on eastbound Interstate Highway 40 (I-40) in Jackson, Tennessee. This was the third day of an operation that consisted of milling rumble strips into the shoulder pavement. The three construction vehicles that were involved were positioned along the outside shoulder of the interstate. Two Tennessee Highway Patrol (THP) vehicles, with their emergency lights flashing, were also present to assist with enforcement and traffic control. The THP vehicles were stopped 450 feet and 950 feet, respectively, behind the construction vehicles along the right lane.

About 8:52 a.m., 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 I-40. The State trooper in the THP vehicle was killed, and the Chevrolet driver was seriously injured.¹

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.

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).

Law enforcement personnel are typically trained to perform short-term traffic control functions for specific events. These functions include providing enforcement and traffic control support at accident scenes, at intersections with malfunctioning or missing traffic control devices, in work zones, when escorting permitted (oversize) vehicles, and during special events that generate heavy traffic. However, the Safety Board found that the THP officers lacked the guidance and training necessary to provide safe and effective traffic control for the unique situations found in long-term work zone environments. Work zone operations are not covered in THP General Order 405, which governs traffic direction and control.

As part of its investigation, the Safety Board conducted a limited survey of the police work zone training practices in Maryland, Delaware, Connecticut, and New Jersey. Among those surveyed, only New Jersey had officers who are trained in Part VI of the *Manual on Uniform Traffic Control Devices* (MUTCD) and other traffic control safety standards. New Jersey State Police assigned to the construction unit are authorized to enforce the rules and regulations governing traffic control and safety in highway work areas. The officers may even inspect construction sites to ensure that contractors comply with the traffic control plans established for their projects. According to the supervising engineer of the New Jersey Department of Transportation Office of Capitol Project Safety, having trained officers patrolling New Jersey work zones has resulted in more uniform implementation of traffic control plans, better control of construction projects, and increased safety for workers and the traveling public.

Instruction and training similar to that given to the New Jersey construction unit would have benefited the THP officers assigned to the milling operation in Jackson. Prior to the milling operation, the Dement Construction Company foreman advised the THP officers that the operation would involve a “mobile lane closure.” By this, he meant that all of the construction vehicles would be positioned on the shoulder of the highway and that traffic control efforts would be directed toward informing motorists ahead of time of the operation and keeping them away from the shoulder and a safe distance from the milling operation. Although the construction foreman indicated that he did not intend that the THP close the right lane, the phrase “mobile lane closure” could easily be construed to mean “close the lane.” “Mobile lane closure” is not a term used in the MUTCD, nor was a mobile operation mentioned in the Jackson traffic control plan. Yet, the THP did not ask for clarification and proceeded to position their vehicles behind the construction vehicles in an unsafe manner. The Safety Board concludes that had the THP officers received work zone traffic control training, they may have asked the construction foreman for clarification on the traffic control strategy to be used that day. The Safety Board further concludes had the THP officers received work zone traffic control training, they would have realized the hazards of positioning their vehicles in the lane behind the highway construction vehicles.

Since the Jackson accident, the THP has worked with the Federal Highway Administration (FHWA) to develop training programs on MUTCD traffic control strategies for its supervisors and officers. The Safety Board supports the efforts of the THP and the FHWA to reduce work zone-related accidents through training. This effort places Tennessee in the forefront on the work zone training issue because, as the FHWA’s survey, *Use of Uniformed Police Officers on Federal-Aid Highway Construction Projects*, indicates, three-fourths of responding State agencies do not have a program in place or under development to train police officers on work zone safety standards. New Jersey has adopted such a training program and

believes that it has contributed to the implementation of more uniform traffic control plans and better controlled construction projects and has also led to a significant reduction in work zone-related fatalities.

However, trained officers are of little use if not properly utilized. According to the FHWA's survey, a majority of the States use uniformed police officers in at least some work zones, most often where particular traffic safety concerns exist, such as in work zones with high speed and high traffic volume and in work zones with lane closure or nighttime operations unprotected by a concrete barrier. Part VI of the MUTCD encourages the use of police officers in work zone operations, stating that the "use of police in vulnerable work situations, particularly those of relatively short duration, heightens the awareness of passing traffic and will likely cause a reduction in travel speed."

Although the use of police officers is promoted as a way to increase work zone safety, no specific guidance exists that addresses the need to coordinate traffic control and enforcement activities with the officers. The MUTCD, which codifies the principles and procedures used by all States when designing and implementing work zones, does not provide guidance on this issue. The accident in Jackson illustrates the importance of a coordinated effort in creating a safe work zone environment for workers and the traveling public. The Safety Board concludes that the widespread use of police officers at highway work zones underscores the need for standard guidance to assist construction and maintenance workers in coordinating traffic control, enforcement, and other safety-related tasks with police officers assigned to work zones.

Therefore, the National Transportation Safety Board recommends that the Federal Highway Administration:

Review and revise the *Manual on Uniform Traffic Control Devices* to provide guidance on coordination with law enforcement personnel used in traffic control strategies at highway work zones. (H-02-02)

In cooperation and consultation with the National Highway Traffic Safety Administration, the International Association of Chiefs of Police, the National Sheriffs' Association, and the American Association of State Highway and Transportation Officials, develop a model training program for law enforcement personnel that addresses traffic control strategies at highway work zones, and encourage the States to adopt it. At a minimum, the training program should incorporate material from Part VI of the *Manual on Uniform Traffic Control Devices* and information concerning procedures and terminology typically used by highway engineers in establishing and evaluating work zone operations. (H-02-03)

The Safety Board also issued safety recommendations to the National Highway Traffic Safety Administration, the Tennessee Department of Transportation, the National Sheriffs' Association, the International Association of Chiefs of Police, and the American Association of State Highway and Transportation Officials.

Please refer to Safety Recommendations H-02-02 and -03 in your reply. If you need additional information, you may call (202) 314-6607.

Chairman BLAKEY, Vice Chairman CARMODY, and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred in these recommendations.

By: Marion C. Blakey
Chairman