

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: June 7, 1979

Forwarded to:

Commissioner Gene Roberts  
Tennessee State Department of Safety  
Andrew Jackson State Office Building  
Nashville, Tennessee 37219

SAFETY RECOMMENDATION(S)

H-79-33 through -35

On November 5, 1978, at 8:45 a.m., e.d.t., the first of a series of multiple-vehicle collisions occurred on Interstate 75 (I-75) near Charleston, Tennessee. The collisions occurred under reduced visibility conditions, primarily due to fog. State police reported 61 vehicles were involved in the series of accidents; 3 of the vehicles were tractor-semitrailer units. It has been estimated that at least 15 other vehicles were involved but left the scene before being recorded by investigating personnel. Forty-six persons were injured in the accidents, but no one was killed.

On the morning of this accident, the ambient temperature was 45° F, the air was calm, and it was clear and sunny. According to a local resident, the fog began to form at about 8:00 a.m. By 8:45 a.m. the fog had intensified and visibility was effectively reduced to zero. The fog covered a 2-mile section of I-75 immediately south of the Hiwassee River. Other sections of I-75 were clear and visibility was good.

Just before the first accident, a Tennessee Highway Patrol trooper was patrolling northbound on I-75 in the vicinity of milemarker 28. As the trooper entered the fog area, he heard the sounds of the first accident in the southbound lane. He crossed to the southbound lanes to the site of the first collision. Upon arrival he heard sounds of other collisions as they occurred in both the northbound and southbound lanes. He immediately radioed for assistance and recommended that the interstate be closed. He then set flares and administered first aid to the injured.

There were 16 accidents in all, 12 in the southbound lanes and 4 in the northbound lane. The first accident occurred at about 8:45 a.m. and the last at about 9:30 a.m. I-75 was closed to southbound traffic at about 9:15 and closed to northbound traffic sometime later. All traffic was detoured to U.S. Route 11 which had clear visibility. When the fog cleared at 2:30 p.m., I-75 was reopened.

On Sunday, April 15, 1979, at 7:45 a.m., another fog-related accident occurred at the same location. Eighteen vehicles were involved, 4 in the northbound lanes and 14 in the southbound lanes. Three persons were killed and 14 persons were injured. This accident is still being investigated.

I-75 in the area is a four-lane, divided, limited-access, asphalt-surfaced highway. Pavement markings were in good condition and roadway delineators were spaced at intervals of 200 feet on the right side of the road. The speed limit was posted at 55 mph with a minimum speed limit of 40 mph. Permanent fog warning signs were posted at milemarker 28 northbound and at milemarker 42 southbound. Both signs read "Extreme Dense Fog Area Next 5 Miles." At milemarker 29 northbound and 41 southbound additional warning signs were posted which read "Fog Area Next 4 Miles."

Four previous multiple-vehicle accidents in reduced visibility conditions have occurred at this location, two in 1974, one in 1976, and one in 1977. All four accidents happened between 7:20 a.m. and 11:00 a.m. on a Friday or Saturday.

The number and severity of the accidents on November 5, 1978, were low mainly because the State patrol vehicle happened to be there when the first accident occurred. The sooner the State Highway Patrol is aware of the formation of fog, the more efficiently that organization will be able to respond to the emergency. The Safety Board has been told that the Federal Highway Administration soon will release two research reports on fog detection devices that are able to sense the formation of fog based on environmental conditions and to communicate this information to authorities. These devices are most effective for coverage of short lengths of roadway with a known recurring fog problem. Because of the accident history at this site and the fact that it has been identified as a fog area, the Safety Board believes that the feasibility of installing fog sensing and warning devices at this location should be studied. In order to give the earliest practical warning of a reduced visibility situation during the period of time until an automatic system can be installed, patrols of this section of Interstate 75 should be increased during times of potentially hazardous visibility conditions. We suggest that these increased patrols should take priority, if necessary, over routine police matters.

There was no evidence to suggest that the highway patrol had a contingency plan or standard procedure that would assure the notification of local patrol stations of the probability of reduced visibility conditions, provide for the deployment of additional patrols into the affected areas, or provide for a coordinated effort with local governments to reroute traffic and assist in postcrash activities. It is important that adequate manpower and equipment be available during reduced visibility highway operations. The Safety Board recognizes that adequate response to reduced-visibility conditions on major limited-access highways could require resources beyond those available to the highway patrol alone.

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

Develop and implement a standing adverse weather and road condition plan that will include:

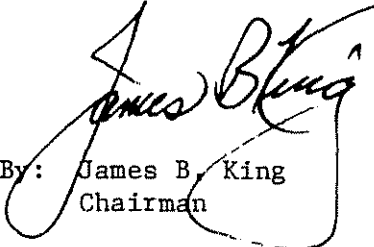
1. A procedure for alerting public safety officials and the driving public of fog conditions through hazardous driving advisories on radio and television.
2. A procedure for the strategic and timely deployment of patrol units to affected areas.
3. Criteria for the rapid closing of affected sections of highway and the rerouting of traffic.
4. Mutual assistance compacts with local government entities for emergency aid.
5. Methods for the safe evacuation of vehicles trapped on affected sections of the highway.

(Class I, Urgent Action) (H-79-33)

Determine the feasibility of installing an available fog detection and warning system at the Interstate 75 crossing of the Hiwassee River near Charleston, Tennessee. (Class I, Urgent Action) (H-79-34)

Until such time as an automatic fog detection and warning device is installed, provide more frequent patrols on the affected section of Interstate 75 when fog is forecast so that the earliest practical warning may be available. (Class I, Urgent Action) (H-79-35)

KING, Chairman, DRIVER, Vice Chairman, McADAMS and HOGUE, Members, concurred in these recommendations.

  
By: James B. King  
Chairman