

2. The absence of a suitable definition of a shoulder in 49 CFR 392.22(b)1 makes the placement of these warning devices subject to driver interpretation.
3. Control of the MPV was not affected by mechanical malfunction.
4. The INS personnel officer hired the MPV driver although the driver did not meet the medical criteria for employment, and despite the examining physician's recommendation that he be held for further high blood pressure tests.
5. The accident was not survivable for the MPV driver.
6. The seating space for the 18 passengers did not meet adequate human factors criteria and was less than that recommended by the INS.
7. The accident would probably have resulted in fewer fatalities if the passengers had been provided with adequate crash protection.
8. There is a need to conduct crash testing for sideward-sitting occupants, and to develop adequate protection for them.
9. Although the barring of windows and the securing of the MPV doors from the outside did not contribute to the fatalities or injuries in this accident, this practice does pose a possible safety hazard where rapid evacuation is critical to survival. Consideration needs to be given to operational procedures (e.g., a following escort) which will assure that immediate assistance will be available when needed.

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of this collision was that the MPV left the roadway and collided with a tractor-trailer parked approximately 15 feet off of the pavement. The MPV left the roadway because it was not under the control of the driver for reasons unknown.

RECOMMENDATIONS

The National Transportation Safety Board recommends that:

The Federal Highway Administration:

1. Clarify the wording of 40 CFR 392.22(b)1, General Rule for Placement of Warning Devices, as follows (revision underlined):

"(1) General Rule. Except as provided in subparagraph (2) of this paragraph, whenever a vehicle is stopped upon the traveled

portion of a highway or within xx feet thereof for any cause other than necessary traffic stops, the driver shall" (Recommendation H-75-23 (Class I)

2. Whenever possible, design future Motorist Aid Facilities which will comply with the requirement for 30 feet of clear roadside recovery area. (Recommendation H-75-24) (Class III)

The National Highway Traffic Safety Administration:

3. Issue a Federal Motor Vehicle Safety Standard (FMVSS) which will set guidelines, based on human-factors research, for seat installation for after-market installers. (Recommendation H-75-25) (Class III)
4. Conduct research on crash dynamics for sideward-sitting occupants, and develop and issue adequate standards for their protection. (Recommendation H-75-26) (Class III)

The Civil Service Commission:

5. Require that all Federal agencies operating motor vehicles adhere to the "Physical Standards for Motor Vehicle Operators and Incidental Operators" in the Federal Personnel Manual. (Recommendation H-75-27) (Class I)

The Immigration and Naturalization Service:

6. Review its hiring procedures to assure that only medically qualified applicants are accepted for employment as drivers. (Recommendation H-75-28) (Class I)
7. Consider revision of their operating procedures for transport of aliens in externally secured compartments to assure that help will be available in an emergency to assist in the evacuation of the vehicle. (Recommendation H-75-29) (Class I)

The U. S. Department of Justice:

8. Consider the problem of emergency evacuation of persons being transported under confinement, and develop guidelines which will insure safe evacuation under highway accident involvements. Disseminate such guidelines to all Federal, State, and local agencies that transport persons under confinement for their consideration and use. (Recommendation H-75-30) (Class I)