

H-179

**NATIONAL TRANSPORTATION SAFETY BOARD**  
**WASHINGTON, D.C.**

ISSUED: February 11, 1980

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Forwarded to:

Honorable Karl S. Bowers  
Administrator  
Federal Highway Administration  
400 Seventh Street, S.W.  
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

H-80-9 through -11

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On September 17, 1979, the Federal Highway Administration (FHWA) issued emergency final rulemaking, "Traffic Safety in Highway and Street Work Zones; Separation of Opposing Traffic" (23 CFR 630.1010), to "require more stringent control measures to reduce . . . accidents on highway construction projects funded by FHWA." The rulemaking permits two-way traffic on normally divided highways only when other methods of traffic control are not feasible. Where two-way traffic is unavoidable, approved concrete barriers, drums, cones, or vertical panels throughout the length of the two-way operation must be used. The Safety Board strongly supports these more stringent control measures. However, we believe that these constraints should apply to all work on divided Federal-aid roads and not just to construction projects funded by the FHWA as is provided by the recent rules. The Safety Board's position is reinforced by its investigation of a recent multiple-vehicle collision.

About 6:25 a.m., m.d.t., on August 22, 1979, a westbound tractor-semitrailer sideswiped an eastbound tractor-semitrailer and then struck an eastbound motor home on Interstate 80 about 30 miles northwest of Laramie, Wyoming. Interstate 80 was under construction and both eastbound and westbound traffic was traveling on the two undivided westbound lanes. The two persons in the westbound truck and six of the seven persons in the motor home were killed. <sup>1/</sup>

Between June 17, 1979, and September 3, 1979, 9 accidents occurred on the 9-mile section of I-80 containing the construction zone; these accidents resulted in 13 fatalities, 4 injuries, and 14 damaged vehicles. On June 26, 1979, the FHWA Division Office discussed the June 17 accident and recommendations for positive traffic separation measures with Wyoming's State Highway Department. None

<sup>1/</sup> For more detailed information read "Highway Accident Report—Multiple-Vehicle Collision in a Construction Zone, U.S. Interstate 80, near Laramie, Wyoming, August 22, 1979" (NTSB-HAR-80-1).

of the recommended positive separation measures were in use in the construction zone on August 22, 1979. Furthermore, a positive separation measure would not have been required even under the FHWA's recent emergency rulemaking requirements because the construction project was financed exclusively with non-FHWA funds. The Safety Board believes that the FHWA should expand the scope of the recent rulemaking to include all construction on Federal-aid highways to insure the use of approved traffic control devices regardless of the funding source of the specific project.

Additionally, although the FHWA's emergency rulemaking requires separation and appropriate traffic control devices, it does not provide practical guidelines for implementation in the field. The impact of the lack of guidelines was highlighted by an informal telephone survey conducted by the Safety Board to determine the current traffic separation practices at locations similar to the accident site. The survey included all FHWA regions and many State highway offices. It revealed a wide variation in practices and the following practical concerns:

- (1) The operational problems with portable concrete median barriers. (The operational problems include management, placement, end treatment, the increase in accidents due to a continuous barrier, and other factors);
- (2) The high loss of cones, barrels, and flexible posts--as high as 20 to 30 percent daily;
- (3) The need for limitations on the maximum safe length of construction zones which should be used for two-way operation;
- (4) The need for speed limit restrictions and enforcement;
- (5) The need for limitations on the number of days a two-way operation should be permitted;
- (6) The lack of guidance on end treatments for barriers;
- (7) The problems associated with accommodating wide vehicles, especially near narrow bridges where concrete median barriers are used; and
- (8) The problem associated with maintaining traffic where usable shoulders are not available.

The Safety Board is aware that the FHWA is sponsoring research which will address some of the previously listed concerns, and that there is operational experience in the States which the FHWA could use to develop effective solutions for some of the other concerns. These research findings and operational experiences should be compiled into a concise manual of effective practical guidelines which could be disseminated to those responsible for developing traffic control plans.

Finally, the Safety Board is not aware of any research in the major area of operational problems associated with the use of portable median barriers, barrels, cones, and panels. Apparently, there is a significant gap in available traffic control devices between the massive concrete median barriers, with their inherent operational problems, and the flimsy cones and tubes, which are often damaged or removed from a site and have to be replaced. Contractors nationwide have reported a heavy loss of cones and barrels. Additionally, cones and barrels have the potential for becoming lodged in mechanical parts of a vehicle, which could pose further safety hazards. Although the FHWA is crash-testing different barrier systems and industry has introduced plastic type-III barricades, there still appears to be a need for a device that could function as a visual channelizing device where two-way operation is unavoidable and use of the concrete barrier is impractical.

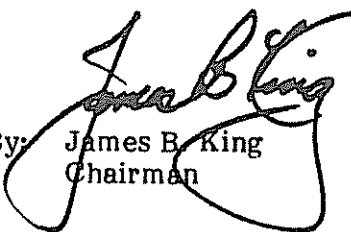
Therefore, the National Transportation Safety Board recommends that the Federal Highway Administration:

Expand the Emergency Final Rule, 23 CFR 630.1010 to apply to all construction and maintenance zones on divided Federal-aid roads. (Class I, Urgent Action) (H-80-9)

Develop and disseminate a manual which will compile operational experience and current research findings related to channelizing traffic which is rerouted in work areas. (Class II, Priority Action) (H-80-10)

Promote the development of a traffic control device to fill the gap between the shaped concrete barrier and traffic cones to serve as a continuous visual barrier to separate traffic in work zones. (Class III, Longer Term Action) (H-80-11)

KING, Chairman, DRIVER, Vice Chairman, McADAMS and BURSLEY, Members, concurred in these recommendations. GOLDMAN, Member, did not participate.

  
By: James B. King  
Chairman

