

H-198

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: February 11, 1980

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Forwarded to:  
  
Honorable Ed Herschler  
Governor of Wyoming  
Capitol Building  
Cheyenne, Wyoming 82002  
  
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SAFETY RECOMMENDATION(S)  
  
H-80-12 and -13

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. Between June 17, 1979, and September 3, 1979, 9 accidents occurred on the 9-mile segment of I-80 containing the construction zone; these accidents resulted in 13 fatalities, 4 injuries, and 14 damaged vehicles. 1/

The temporary westbound lane of the two-way, two-lane highway was 12 feet 10 inches wide and the temporary eastbound lane was 12 feet 8 inches wide. The shoulder for eastbound traffic was 8 feet 1 inch wide and the westbound shoulder was about 12 feet 11 inches wide. Only 3 feet of the eastbound shoulder was usable because the slope changed abruptly from about 30:1 (0.035 ft/ft) to slightly less than 4:1 (0.236 ft/ft). The driver of the eastbound truck said she did not move any farther to the right than she thought necessary to avoid frontal contact because she did not want to risk overturning her vehicle. Since 1975, more than 75 percent of the fatalities and nearly 38 percent of the accidents on I-80 between mileposts 263 and 312, which includes the accident site, involved overturning vehicles.

The American Association of State Highway and Transportation Officials' "A Policy on Geometric Design of Rural Highways - 1965," (AASHTO Blue Book) states:

1/ 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).

Bituminous surfaced shoulders should be sloped from 3/8 to 5/8 inch per foot [0.03 to 0.05 ft/ft].... A preferred section has a downward slope of about 3:1 or 4:1 [0.33 to 0.25 ft/ft] from the shoulder break point to the drainage channel, with all changes in slope well rounded....

\* \* \*

Shoulder slopes that drain away from the paved surface on the outside of well superelevated sections should be designed to avoid too great a cross-slope break. For example, use of a 1 inch per foot shoulder cross-slope in a section with pavement superelevation of 0.08 foot per foot results in a 0.16 foot per foot algebraic difference in the pavement and shoulder grades at the high edge of pavement. Grade breaks of this order are hazardous and should not be permitted.

Although the shoulder at the site of the August 22, 1979, accident has since been regraded, the Safety Board concludes that based on the accident history of this section of highway, there may be other shoulder segments which do not meet AASHTO standards.

The Safety Board is also concerned about the high speed of the westbound truck. A recent Federal Highway Administration (FHWA) report <sup>2/</sup> indicated that a reduced speed limit in a construction zone did not reduce the accident rate, but did increase conflicts in the transition area. Further, vehicle speed was not reduced unless enforcement units were visible within a few miles of the site. Field studies have demonstrated that enforcement not only controls speed but also reduces erratic maneuvers and traffic conflicts. Accordingly, the FHWA report recommended, ". . . use enforcement as a speed control method at short sections where speed reductions are absolutely necessary."

Speed studies at the accident site indicated that most vehicles were operating well in excess of the national 55-mph speed limit. Although the Wyoming Highway Patrol issued more citations per officer than any other State police in the FHWA's Region No. 8 in 1978, the inordinately high accident rate in Wyoming and the results of the FHWA report strongly support the need for more effective enforcement of speed limits.

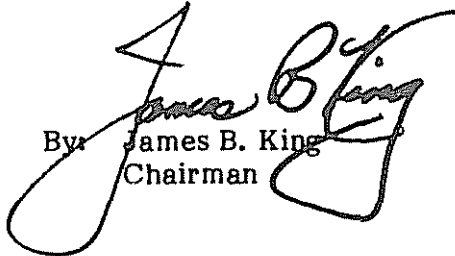
Therefore, the National Transportation Safety Board recommends that the State of Wyoming:

Conduct an engineering study to determine where regrading of the shoulders is necessary and correct those locations to reduce the number of overturning accidents on Interstate 80 between mileposts 263 and 312. (Class II, Priority Action) (H-80-12)

<sup>2/</sup> "Accident and Speed Studies in Construction Zones," June 1977 (FHWA-RD-77-80).

Take necessary steps to increase the effectiveness of its enforcement of speed limits, especially within and adjacent to construction zones. (Class II, Priority Action) (H-80-13)

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

By:  James B. King  
Chairman

