

12. The engineer of Work Extra 523 was not told the number of cars that he was handling, and the procedures did not require that he be told.
13. The 10-second reaction time available to the crewmembers in locomotive unit 1902 was more than enough time for them to have donned restraints or to have entered a crash refuge area had either been available.

#### V. PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of the collision was the unauthorized intrusion of Work Extra 523 onto the main track, which resulted from the engineer's failure to brake the train in time to stop on the siding. Contributing to the collision were (1) the absence of protective devices to guard against the unplanned intrusion of a train from another track onto the main track and (2) operating practices and work patterns which did not adequately control switching movements. The absence of crash-injury protection in the locomotive units and caboose of Extra 1902 East contributed to the fatalities and injuries.

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#### VI. RECOMMENDATIONS

The National Transportation Safety Board recommends that:

1. The Federal Railroad Administration incorporate in the Federal Regulations on operating practices requirements which will govern the physical protection that will be provided main track to guard against unplanned and unauthorized movements onto the main track. (Recommendation No. R-73-38.)

2. The Missouri Pacific Railroad Company review critically the qualifications of the engineers who received training and experience similar to that received by the engineer of Work Extra 523, and compensate for their lack of on-the-job training and experience by a specific continuing program of supervisory monitoring and counseling. (Recommendation No. R-73-39.)

3. The Missouri Pacific Railroad Company revise its operating rules and definitions to clarify the requirements regarding the use of locomotive headlights on trains on other tracks auxiliary to the main track, as differentiated from sidings. (Recommendation No. R-73-40.)

4. The Missouri Pacific Railroad Company review its operating procedures relating to switching and provide documented guidelines to crewmembers to assist in the decision making regarding stopping distances when handling large drafts of cars without train airbrakes. (Recommendation No. R-73-41.)

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The Safety Board made the following recommendation to the Illinois Central Gulf Railroad in its report on a commuter train accident which occurred at Chicago on October 30, 1972. We believe that this recommendation is applicable to this accident and should be considered by the Missouri Pacific:

The National Transportation Safety Board recommends that:

1. The Illinois Central Gulf Railroad ensure that its employees understand and comply with its operating rules. In order to do this, the ICG should improve their training program by developing:

- (a) Books of standard interpretations of its rules in situations met both routinely and only occasionally to provide a basis for better use of the rule book in instruction; and
- (b) A system of regularly testing the ability of employees to interpret actions required in specific operating situations. (R-73-28)

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JOHN H. REED  
Chairman

/s/ FRANCIS H. McADAMS  
Member

/s/ LOUIS M. THAYER  
Member

/s/ ISABEL A. BURGESS  
Member

/s/ WILLIAM R. HALEY  
Member

October 25, 1973