

NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: April 13, 1981

Forwarded to:

Honorable Robert W. Blanchette
Administrator
Federal Railroad Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

R-81-39 and -40

The National Transportation Safety Board has conducted an evaluation of the hazard presented to motorists when a train is occupying a railroad-highway grade crossing at night and closes the road to highway traffic. Annually, about 140 persons have been killed and 800 injured in 1,800 accidents in which a motor vehicle struck a train at night. In cases in which the train was in the crossing before the motorist approached, there have been approximately nine times as many accidents at night as during the day. The Safety Board's report reviews available statistics, Safety Board accident investigations, and actions taken by government and industry. In particular, the study analyzes the potential benefits and costs of adding reflectorized material to railroad cars and locomotives to make them more conspicuous to motorists at night. 1/

Passive warning devices such as crossbucks and active warning devices such as flashing lights have been only partially effective in reducing accidents where a vehicle runs into the side of a train. In spite of warning systems, certain weather conditions make it difficult for motorists to detect trains because of a train's dark color and the lack of lighting or reflective materials on a train's sides.

The nighttime visibility of trains can be improved by using reflective materials on the sides of train cars and locomotives. Greater train nighttime conspicuity not only will improve safety at the 217,000 public crossings but also at the 141,000 private crossings which have little chance for improvement through application of active devices. Improving train conspicuity is different from other countermeasures, since it emphasizes improving the warning on the rolling stock rather than attempting to improve the warning on the roadway.

The Federal Railroad Administration has not adopted countermeasures to make trains more visible at nighttime, although its own research results, when compared to other approaches suggested by the U. S. Department of Transportation, show substantial cost benefits in reducing accidents.

Canada has had a government-funded national train car reflectorization program for nearly 20 years. The Canadian grade crossing safety program would benefit if United States train cars, which constitute about 50 percent of the cars used in Canada, were reflectorized.

1/ For more detailed information read "Safety Effectiveness Evaluation--The Improvement of Nighttime Conspicuity of Railroad Trains" (NTSB-SEE-81-3).

Rulemaking action is needed to elicit public comment on the improvement of nighttime conspicuity of trains and the advisability of reflectorization of the train car fleet and to collect further information on potential safety effectiveness; costs; evaluation plans; measures of effectiveness; funding sources, including grant or tax benefit programs; and technical discussions as to colors, pattern, sizes, configurations, and placement of the reflectorized material.

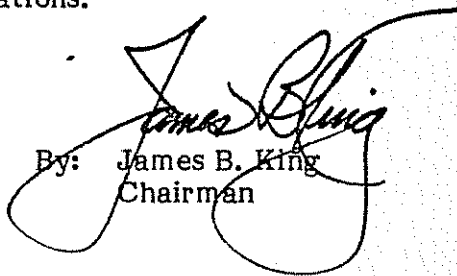
Also, further research is needed to establish criteria for using reflective material on the sides of train cars and locomotives that can be used in voluntary or mandatory programs. The Board also believes that the Federal Railroad Administration should publish the latest research report on train conspicuity, "The Benefits and Costs of a Program to Reflectorize the U. S. Fleet of Railroad Rolling Stock," which was completed in 1979.

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

Develop and issue an advance notice of proposed rulemaking within 6 months inviting comments on the improvement of nighttime train car and locomotive visibility at grade crossings to aid in preventing accidents in which motor vehicles run into the sides of trains at night. Comments regarding the potential benefits of applying reflective devices or materials to the sides of train cars and locomotives should be particularly solicited. (Class II, Priority Action) (R-81-39)

In cooperation with the Federal Highway Administration, the National Committee on Uniform Traffic Control Devices, and the Association of American Railroads, plan and institute a research program to establish criteria for reflectorization devices and materials for installation on the sides of train cars and locomotives. Such criteria should be designed for use in either voluntary or mandatory programs. Such research should include size, colors, placement, symbol or message, brightness, expected life, maintenance, and relationship to other reflectorized materials used on trains for commercial purposes. (Class II, Priority Action) (R-81-40)

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


By: James B. King
Chairman