

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

AI-4
R-220

ISSUED: November 22, 1978

Forwarded to:

Honorable Brock Adams
Secretary
Department of Transportation
400 Seventh Street, S. W.
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)

R-78-58 and 59

About 1:55 a.m., c.s.t., on February 26, 1978, an Atlanta & Saint Andrews Bay Railway Company freight train derailed at milepost 22.3 near Youngstown, Florida. As a result, chlorine gas, released from a punctured tank car, killed 8 persons and injured 138. Property damage was estimated at \$1,089,000. 1/

At a previous stop at Cottondale, Florida, 18 cars were added to the freight train, 10 of which contained hazardous materials. The primary derailment involved only the train's five locomotive units and its first eight cars; the secondary derailment, however, involved the tank cars of hazardous materials.

During this secondary derailment, high decelerative forces caused cars to crush and penetrate other cars. The end sill of a piggyback flatcar punctured a tank car containing pressurized liquid chlorine; the tank car was ruptured, and the deadly chlorine gas was released to the atmosphere. The triangular puncture was located near the center of the car at the bottom. None of the tank cars which separated the punctured tank car and the piggyback flatcar were equipped with top and bottom shelf couplers.

The punctured tank car was designed and manufactured by the General American Transportation Company to DOT specification 105-A-300W. This pressurized, insulated tank car was not equipped with head shields or top and bottom shelf couplers, nor was it required to be so equipped by any Federal regulation.

1/ For more detailed information read "Railroad Accident Report---
Derailment of Atlanta & Saint Andrews Bay Railway Company Freight
Train, Youngstown, Florida, February 26, 1978" (NTSB-RAR-78-7).

The application of head shields on the punctured tank car would not have prevented the puncture in the center of the tank shell. In fact, it is questionable whether the metal jacket and the insulation reduced the size of the puncture. However, the Safety Board believes that had top and bottom shelf couplers been applied to the tank cars, the cars may have been kept in line with the track structure and would not have jackknifed. Had the cars been kept in line, puncture of the DOT 105 tank car could have been prevented.

Currently, the Code of Federal Regulations requires head shields, top and bottom shelf couplers, and insulation only for DOT 112A and 114A tank cars. The Safety Board believes that this derailment indicates the need for top and bottom shelf couplers for DOT specification 105 cars as well.

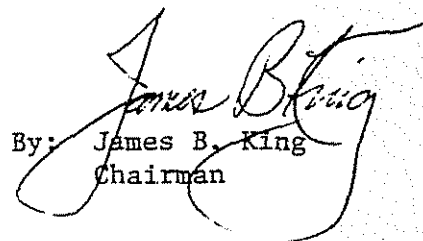
If the tank cars of hazardous materials had been placed toward the rear of the train, the kinetic energy produced by the abrupt stopping of the locomotive and the unequal braking capabilities of the cars, which was applied to the tank cars, would have been substantially less than with the tank cars placed toward the head end of the train. In this accident they would not have been derailed.

Therefore, the National Transportation Safety Board recommends that the Secretary of Transportation:

Require that top and bottom shelf couplers be installed on all DOT 105 tank cars as soon as possible. (Class I, Urgent Action) (R-78-58)

Expedite the research to determine the safest position of hazardous materials tank cars and others in freight trains as contained in recommendation R-78-33 and, as a result, promptly issue regulations for adequate braking and placement of such cars in freight trains. (Class II, Priority Action) (R-78-59)

KING, Chairman, DRIVER, Vice Chairman, McADAMS and HOGUE, Members, concurred in the above recommendations.


By: James B. King
Chairman