

Log R-191A

NATIONAL TRANSPORTATION SAFETY BOARD WASHINGTON, D.C.

ISSUED: June 28, 1978

Forwarded to:

Honorable John M. Sullivan
Administrator
Federal Railroad Administration
400 7th Street, S.W.
Washington, D.C. 20590

SAFETY RECOMMENDATION(S)
R-78-26 and R-78-27

About 2:15 p.m., December 28, 1977, Louisiana & Arkansas freight train Extra 4102 North collided with a log-laden tractor-semitrailer at the Vine Street crossing in Goldonna, Louisiana. A "jumbo" tank car loaded with liquefied petroleum gas (LPG) ruptured and the gas ignited. The resultant fireball enveloped the train's locomotive units and parts of Goldonna's business and residential districts. Two train crewmembers were killed; the truckdriver, a train crewmember, and eight bystanders were injured. Property damage was estimated to be \$1,256,000. 1/

The investigation disclosed that most of the collision impact was absorbed by the lead locomotive unit's forward hood compartment and cab face. The Model GP30 unit had two T-type collision posts inside the hood compartment which were butt-welded to the frame. The welds failed to withstand the impact and, as a result, the hood was driven back displacing 90 percent of the cab area. The cab roof was partially collapsed and the engineer's control stand moved back to within 7 inches of the back cabinet wall. Because of this deformation of the operator compartment, the engineer and head brakeman were trapped inside and could not make a timely escape.

The cab of the trailing locomotive unit was within a few feet of the ruptured LPG tank car when the gas ignited. The force blew the windows in on the south side, passed through the cab, blew the windows out on the north side, and scattered parts of the locomotive unit as far as 300 feet away. The flagman inside the cab was killed instantly.

1/ For more detailed information about this accident read: "Railroad/Highway Accident Report--Collision of a Louisiana & Arkansas Railway Freight Train and a L. V. Rhymes Tractor-Semitrailer at Goldonna, Louisiana, December 28, 1977." (NTSB-RHR-78-1.)

At the time of the accident, the LPG tank car which ruptured and two other loaded LPG tank cars were the 4th, 5th, and 6th cars behind the locomotive units. There were a total of 79 cars in the train, 19 of which were loaded placarded tank cars. The close proximity of the ruptured LPG car to the locomotive units caused fuel leaking from the ruptured tank of the lead locomotive unit to be ignited. The resulting fire killed the engineer and seriously injured the brakeman, both of whom were trapped inside the deformed cab.

Federal regulations (49 CFR 174.91) required that a loaded tank car placarded other than "combustible" cannot be placed closer than the 6th car from the engine or occupied caboose when the train's length permits. L&A General Order No. 2 dated January 1, 1977, embodies this regulation. The conductor of the train stated that he understood the meaning of the general order and was aware of the location of the LPG tank cars. He also stated he took no action to assure that the cars were placed properly.

The inability of locomotive cabs to withstand collision impacts was originally pointed out by the Safety Board in its report on an accident at Sound View, Connecticut, in 1970. 2/ The Safety Board recommended in 1971 that FRA: "...continue to a conclusion its initiated efforts in the matter of the improvement of the design of locomotive operator compartments to resist crash damage..." The recommendation was reiterated in 1972 following an accident at Sheridan, Wyoming. 3/ In response, FRA advised that an industrywide committee had been formed to make an all-inclusive study of cab crashworthiness. Since that time, this committee has not produced any significant improvement in cab design.

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

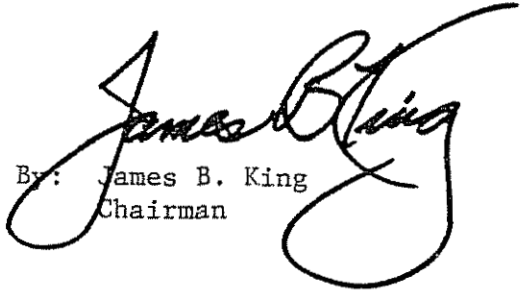
Assure that the Louisiana & Arkansas Railway Company complies with the requirements of 49 CFR 174, Transportation of Hazardous Materials. (Class II, Priority Action)(R-78-26)

2/ "Railroad Accident Report: Penn Central Transportation Company Freight Train Derailment and Passenger Train Collision with Hazardous Material Car, Sound View, Connecticut, October 8, 1970." (NTSB-RAR-72-1)

3/ "Railroad Accident Report: Burlington Northern Inc., Derailment of Extra 5701 East at Sheridan, Wyoming, March 28, 1971." (NTSB-RAR-72-4.)

Quickly conclude its study of improvements to the design of locomotive operator compartments to minimize crash damage, and promulgate necessary regulations to assure the adoption of appropriate findings. (Class II, Priority Action)(R-78-27)

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


By: James B. King
Chairman