

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: January 5, 1981

Forwarded to:

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

SAFETY RECOMMENDATION(S)

R-80-54

About 7:56 a.m., on July 17, 1980, Southeastern Pennsylvania Transportation Authority (SEPTA)-Consolidated Rail Corporation (Conrail) commuter train No. 472 struck the rear of SEPTA-Conrail commuter train No. 406 while it was standing on the No. 2 track east of the station at North Wales, Pennsylvania. The rear car of train No. 406 overrode and destroyed the empty lead car of train No. 472. Of the estimated 321 persons on the 2 trains, 64 passengers and 3 crewmembers received injuries. Damage to the equipment was estimated at \$1,475,000. ^{1/}

The lead car and two rear cars of train No. 472 had experienced electrical problems earlier, and in an attempt to solve the problem, the cars had been electrically isolated from the train. As a result of the isolation, the engineer was operating the train from the second car and the brakeman was assigned to ride in the operating compartment of the lead car with the responsibility to sound the whistle for road crossings and pass hand signals to the engineer to convey the track conditions and signal aspects.

After the train passed wayside signal No. 330, 4,720 feet west of the North Wales station, the brakeman saw the whistle board which required the engineer of an approaching train to sound the whistle for the Beaver Street crossing in North Wales. About the same time, he saw the lighted headlight of a train ahead. He later stated that at the time he could not distinguish on which track the train was or if it was moving toward or away from him. He said he did not see red marker lights displayed to the rear. He said he saw a green light ahead but he did not remember seeing a distinguishable signal aspect. Shortly after he saw the headlight, he turned to the rear and attempted to pass a signal through the car to the conductor to warn the engineer to reduce speed, but the signal apparently was not received.

SEPTA-Conrail commuter trains are equipped with white headlights at both the front and the rear. The rear of the trains are also equipped with small red marker lights, but they are not visible from a distance during daylight. The Federal Railroad Administration (FRA) permits Conrail to use the rear white headlight illuminated on low beam to mark the rear of selfpropelled commuter trains rather than the red or amber lights required by 49 CFR 221.15(c)3 for other trains.

^{1/} For more detailed information read "Railroad Accident Report—Rear-End Collision of Southeastern Pennsylvania Transportation Authority—Consolidated Rail Corporation Trains Nos. 406 and 472 on Conrail Track, North Wales, Pennsylvania, July 17, 1980". (NTSB-RAR-80-11)

The lighted rear headlight of train No. 406 presented a visual problem for the brakeman. Even after the brakeman could distinguish on which track the train was, it was still difficult to perceive motion. This same problem was observed by personnel on a test train used during the investigation, because when the rear headlight of a standing car ahead of the test train was first sighted, it was impossible to determine on which track the car was and if the car was standing or in motion. The Safety Board believes that the brakeman's lack of familiarity with the characteristics of the roadway and his uncertainty over the situation presented by the headlight ahead may have contributed to his failure to see signal No. 328 and to recognize its aspect. His failure to do so reduced the time available to him to relay a signal to the engineer and thus allow the engineer to stop the train. The Safety Board concludes that the use of a white light on the rear of certain trains, rather than a red or amber light which is required to be displayed on the rear of most trains, creates confusion and unsafe conditions.

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

Amend CFR 49 Part 221.15(c)3 to prohibit the use of the white rear headlight as a marking device on any train. (Class II, Priority Action)
(R-80-54)

KING, Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in this recommendation. DRIVER, Vice Chairman, did not participate.



By: James B. King
Chairman

For