

Fig R-422

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: October 20, 1982

Forwarded to:

Honorable A. Canby
Commissioner
New Jersey Department of Transportation
Box 101
1035 Parkway Avenue
Trenton, New Jersey 08625

SAFETY RECOMMENDATION(S)

R-82-107

About 9:35 p.m., on July 7, 1982, Consolidated Rail Corporation (Conrail) eastbound commuter train No. 1164, consisting of a control car, five passenger coaches, and a remotely controlled push-locomotive, derailed at Fair Lawn, New Jersey, after entering a side track at 60 mph because of an improperly aligned switch. The entire train derailed and the control car penetrated about 60 feet through the wall of a manufacturing plant served by the siding. The operating compartment of the control car was crushed, fatally injuring the engineer and critically injuring a 14-year-old passenger who apparently was in the operating compartment with the engineer. Of the other six passengers and two crewmembers on the train, five were treated for minor injuries at the scene and released. Railroad property damage was estimated at \$4,005,000 and damage to the manufacturing plant at \$1,500,000. Five teenage boys were charged with having improperly aligned the switch. The Fair Lawn area is one in which there is a high incidence of vandalism affecting Conrail.

The movement of the eastward trains with the current of traffic on Conrail's Bergen County Line is controlled by the aspects of the wayside signals of an automatic block signal system. The siding has a facing point switch for eastward train movements on the No. 2 main track of the Bergen County Line. When the switch points of the side track switch are operated or moved about 1/4 inch away from the locked position in alignment for the main track, an automatic block signal 1,697 feet west of the switch displays a red aspect (stop and proceed).

A switch padlock was used to secure the side track switch in the desired position. The switch padlock that secured the side track switch was recovered by investigators after the accident. It consists of two shield-shaped pressed steel plates, riveted together. The hasp is fastened between the halves of the lock by a pin at one side of the padlock. The other end of the hasp is inserted through an opening between the steel plate halves where it engages the internal lock mechanism. The plate on the keyhole side of the padlock had been crushed, which caused the plates to open around the hasp, permitting the hasp to be released. This type of padlock is standard on the Conrail system.

At some locations on the Conrail system in territories where the movement of trains is controlled by the aspects of wayside signals of an automatic block signal system, hand-operated switches are protected by an electric lock, which is additionally secured by a switch padlock. When the switch padlock is removed from the switch lockkeeper, a predetermined timing cycle is started which must run its course before the switch can be operated. Additionally, the removal of the switch padlock causes the first automatic wayside block signal along the approach to the switch to display a restricted signal aspect. The time delay is generally planned so that if the cycle is started when a train is approaching the switch at normal speed, the switch cannot be operated until the train has moved past the switch. The removal of the switch padlock from the keeper when a train is in the approach to an automatic block signal ahead of a facing point switch will change the signal aspect to a restricting aspect, and an engineer probably could stop or significantly slow the train before it reached the switch.

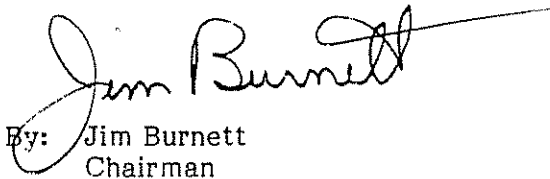
The Safety Board believes that in areas of high vandalism and where passenger train traffic is prevalent, a railroad should have electric locks and padlocks with high resistance to damage and vandalism on all its main track facing point switches.

Therefore, as a result of its continuing investigation of this accident, the National Transportation Safety Board recommends that the New Jersey Department of Transportation:

Require that all hand-operated facing point switches on main tracks over which passenger commuter trains under their jurisdiction are permitted to operate at speeds greater than 30 mph be equipped with an electric lock to prevent the switches from being operated immediately in the face of an approaching train. (Class II, Priority Action) (R-82-107)

The Safety Board is vitally interested in any actions taken as a result of its safety recommendations. We would appreciate a response from you regarding action taken or contemplated with respect to the recommendation in this letter.

BURNETT, Chairman, GOLDMAN, Vice Chairman, and McADAMS, BURSLEY, and ENGEN, Members, concurred in this recommendation.


By: Jim Burnett
Chairman