

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: January 11, 1980

Forwarded to:

Mr. David L. Gunn
General Manager
Southeastern Pennsylvania Transportation
Authority
PSFS Building, 12 South 12th Street
Philadelphia, Pennsylvania 19107

SAFETY RECOMMENDATION(S)

R-80-1

About 5:10 p.m. on November 12, 1979, a fire occurred in the passenger compartment of Southeastern Pennsylvania Transportation Authority (SEPTA) car No. 204 near the 69th Street Terminal in Upper Darby, Pennsylvania. The single-unit car had just departed the terminal in northbound service to Bryn Mawr on the former Philadelphia and Western Railroad's high-speed rapid transit line. The motorman and 72 passengers were aboard the 62-seat car. Of the 53 passengers injured, 30 were hospitalized.

Car No. 204 is one of 10 cars designated as "Bullet" cars that SEPTA is using. They are of aluminum construction and have wooden floors and were manufactured by the Brill Company in 1931. Double seats with reversible backs are located along each side. Electric car heaters are located along the bottom of each side wall near the floor. Access to the car is by folding doors located at each end of the car which are controlled by the motorman.

The cars are electrically propelled by 600-volt direct current collected from a third rail adjacent to the track by contact shoes mounted on each truck. A 25,000 circular mil copper cable covered with rubber insulation, located within the passenger compartment in the left side wall behind the electric heaters, transmits the 600-volt direct current to the controller for operation of the car. The seats and heaters must be removed from the left side to repair or inspect the cable.

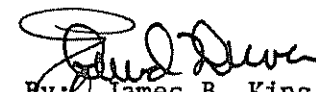
The motorman stated that when the car departed the 69th Street Terminal, smoke was detected in the passenger compartment along the left side near the front of the car. In the past, SEPTA has had problems with the heaters smoking on these cars, and the motorman assumed that a heater was causing the smoke. The motorman did not believe the problem to be serious and thought that he would be able to continue to the next station, about 1.5 miles away, for an inspection to determine the cause. However, the car filled rapidly with smoke and fire was detected, leading him to stop and discharge the passengers before reaching the next station.

An examination of the car after the fire was extinguished disclosed that the power cable was burned rearward from where it entered the car for a distance of 18 inches. The first and second seats along the left side were burned and the side of the car was damaged. An examination of the remaining portion of the cable disclosed that the insulation was deteriorated. Even though the investigation has not been completed, it is apparent that the fire started in the power cable and quickly spread to the car's interior. If this cable had been placed in a conduit and mounted on the outside of the car, as is done on other self-propelled cars, the failure of the cable most probably would not have set the interior of the car on fire.

Therefore, the National Transportation Safety Board recommends that the Southeastern Pennsylvania Transportation Authority:

Remove the 600-volt d.c. power cables from the interiors of all Brill Electric cars, mount them on the cars' exteriors, and take any necessary additional steps so that a failure of the cable will not ignite combustible materials. (Class I, Urgent Action) (R-80-1)

KING, Chairman, DRIVER, Vice Chairman, McADAMS, GOLDMAN, and BURSLEY, Members, concurred in this recommendation.


By: James B. King
Chairman