

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: March 23, 1978

Forwarded to:Mr. W. J. Taylor
President
Illinois Central Gulf Railroad
Company
233 North Michigan Avenue
Chicago, Illinois 60601

SAFETY RECOMMENDATION(S)

R-78-14 through -16

About 4:20 p.m., c.s.t., on January 26, 1978, Illinois Central Gulf (ICG) commuter train No. 247, operating between Randolph Street Station, Chicago, Illinois, and Blue Island, Illinois, collided with the rear of ICG commuter train No. 347 at the Van Buren Street Station in Chicago. Both trains had a consist of four Highliner cars; each car was occupied by approximately 200 persons. Two cars of each train were derailed; however, damage to both trains was minimal. Two employees and 14 passengers were admitted to local hospitals and many others were treated and released.

The line on which the accident occurred is governed by yard limit rules which provide for a maximum allowable speed of 20 mph with trains being operated so that they may be stopped within one half of the sight distance. The track is not equipped with block signals or any form of train control or train stop system.

The evidence indicates that No. 247's brakes were applied in a manner that normally would have stopped the train short of a collision but that an accumulation of ice on the brake shoes substantially reduced the normal braking effort. The cars were equipped with a "snow brake" which was installed to prevent accumulation of ice and snow on the braking surfaces.

The braking system's hydropneumatic booster assembly is designed to provide hydraulic fluid volumetric changes upon the release of each brake application to compensate for an increased stroke of the brake cylinders necessitated by brake shoe wear. This feature is negated with prolonged operation of the "snow brake." Thus, the continuous brake shoe wear will result in a gradual reduction in brake effectiveness. The preliminary investigation indicates that this condition was a factor which contributed to the severity of this accident.

Although the preliminary investigation indicates that the loss of braking was a primary factor in this accident, the Safety Board believes that other operating procedures should be reviewed. It might be anticipated that normal brake degradation will occur under adverse weather conditions. If this possibility were explained to engineers when the trains are dispatched, it might be feasible to establish train separation such that the engineer can use all options to stop the train in order to avoid a collision.

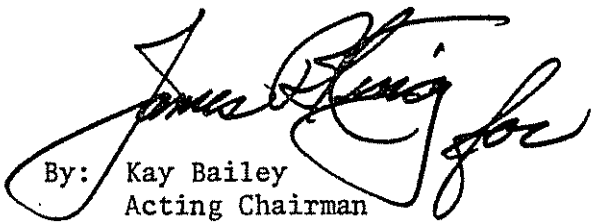
Therefore, the National Transportation Safety Board recommends that the Illinois Central Gulf Railroad:

Review the design and correct deficiencies of the brake system on the Highliner cars to ensure that prolonged operation with the "snow brake" activated will not prevent the brake shoe wear compensating feature of the hydropneumatic booster assembly from maintaining the hydraulic fluid volume needed to assure proper brake performance in all weather conditions. (Class II, Priority Action) (R-78-14)

Until a design change is implemented, establish procedures regarding "snow brake" operation to ensure that engineers are familiar with the present brake system and to preclude operations which can result in loss of braking with this system. (Class I, Urgent Action) (R-78-15)

Review dispatch procedures to ascertain whether changes should be made, particularly in adverse weather conditions, to consider braking degradation that can be experienced during operations in such conditions. (Class II, Priority Action) (R-78-16)

McADAMS, HOGUE, and KING, Members, concurred in the above recommendations. BAILEY, Acting Chairman, did not participate.


By: Kay Bailey
Acting Chairman