

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: March 23, 1978

Forwarded to:

Mr. John M. Sullivan
Administrator
Federal Railroad Administration
400 7th Street S.W.
Washington, D.C. 20591

} SAFETY RECOMMENDATION(S)

R-78-17 and 18

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 force.

A review of the design of the brake system disclosed that the system includes a hydropneumatic booster assembly which converts the brake system pneumatic pressure to hydraulic pressure which activates the brake cylinders. This assembly provides a feature which varies the volume of hydraulic fluid available for each new brake application to compensate for brake shoe wear during the previous application. The vehicle brake system also includes a "snow brake" operating mode. In this mode, low pressure is maintained in the brake system which prevents complete brake release. The intent is to maintain brake shoe-to-wheel contact, thus keeping snow or ice from forming between the friction