



National Transportation Safety Board
Washington, D.C. 20594
Railroad Accident Brief

Accident: DCA-02-FR-009
Location: Aurora, Illinois
Date of Accident: June 12, 2002
Time: 3:21 p.m., central daylight time
Railroad: Northeast Illinois Regional Commuter Railroad Corporation
Fatalities: None
Injuries: 47
Type of Accident: Head-on collision

Synopsis

About 3:21 p.m., central daylight time, on June 12, 2002, eastbound commuter train 1270 operating in the “push” mode collided head on with westbound commuter train 1235 operating in the “pull” mode,¹ near milepost 36.7 near Aurora, Illinois. The collision resulted in the derailment of the cab car and four passenger cars of train 1270 and the locomotive and three passenger cars of train 1235. Two crewmembers and 3 passengers on train 1270 and 3 crewmembers and 39 passengers on train 1235 were injured.

The commuter trains were operating on the Aurora Subdivision of the Burlington Northern Santa Fe Railway (BNSF) and were owned by the Northeast Illinois Regional Commuter Railroad Corporation (Metra). Total damages estimated by the railroads exceeded \$292,000.

The Accident

Shortly after 3:00 p.m., passengers began boarding eastbound train 1270 from the north platform area of the Aurora Transportation Center. Train 1270, which was on the north lead track, comprised six double-deck commuter passenger cars and was configured to operate in the “push” mode from the lead commuter passenger car, a cab control car, with a locomotive at the rear of the train. The crew consisted of an engineer, a conductor, and two collectors. There were 11 passengers, including 2 off-duty BNSF employees, 1 riding in the first and another in the second car.

¹ In the *push mode*, the motive power is at the rear of the train, which is operated from a control cab car on the head end. A train in the *pull mode* is operating conventionally. This “push-pull” configuration eliminates the need to turn or switch equipment at the end of each run, thus allowing quicker turnarounds at terminals.

Meanwhile, westbound train 1235, comprising six double-deck commuter passenger cars and a locomotive operating in the “pull” mode, was approaching the Aurora Transportation Center on the north lead track from the east. The train was operating on an *approach* indication on the north lead track. The train carried an engineer, a conductor, 2 collectors, and 62 passengers.

Because the south lead track east of the station was out of service for maintenance, train 1270 had to enter the station from the west on the north lead track instead of the south lead track it normally would have used. As a result, train 1235 was routed onto the north lead track, the same track that train 1270 was to later use after leaving the station, and was to cross over to the south lead track east of the station to enter the station on the south lead track. To avoid a conflicting train move, the dispatcher set the traffic control signal system to hold train 1270 at the station until train 1235 had used the crossover switch to cross from the north lead track to the south lead track. To hold train 1270, signal 5E, which was the signal governing the movement of train 1270 out of the station, was set to *stop*. Postaccident measurements showed that signal 5E, a mast-mounted signal, was on the north side of the track about 18 feet west of the point where train 1270 was stopped in the station.

At 3:20 p.m., the train 1270 conductor notified the engineer that the train was ready to leave the station (passengers were on board and the doors were locked) by initiating two signal buzzers and using the intercom. Because signal 5E was on the north side of the track and was thus difficult to see from the engineer’s position in the control cab, BNSF operating rules required that the conductor verify the signal aspect before the train could proceed. The engineer and conductor, as well as an off-duty BNSF employee riding in the first car, stated that they had observed that signal 5E was *clear* before the train left the station. The engineer stated that as he prepared to depart the station, he was engaged in a casual conversation with the off-duty employee seated in the lower level of the cab car and that when in the vicinity of the crossover switch to the north lead track, his cab door swung open and he turned slightly to close it. Train 1270 departed the station and proceeded about 322 feet and through the trailing point switch of the crossover, which was lined for the movement of train 1235 and thus was lined against the movement of train 1270. This movement damaged the switch throw mechanism.

As train 1235 traversed a left-hand 1-degree, 30-minute curve, the engineer observed that the next signal was displaying *stop*. The engineer of train 1235 stated that about this same time, he saw the approaching eastbound train. He made an emergency brake application and stopped his train, simultaneously broadcasting on his radio for the engineer on the eastbound train to “stop your train.”

According to the event recorder on train 1270, the train continued about 664 feet past the crossover switch and attained a speed of 27.5 mph before the train began to reduce speed. The engineer said that he made an emergency brake application when he heard “stop your train” over his radio. The event recorder could not confirm an emergency brake application because the engineer may also have lifted his foot off the “dead-man” pedal when he turned to close the cab compartment door, which would have

resulted in a penalty brake application. However, the train traveled another 219 feet before striking train 1235 at about 12 mph. Event recorder data from train 1235 indicated that it had been stopped for about 1 second before impact. The cab car and the third through the sixth passenger cars of train 1270 derailed, as did the locomotive and first three cars of train 1235.

Tests did not replicate a *clear* signal indication for signal 5E under the conditions that existed on the day of the accident. In all postaccident tests, signal 5E operated as intended. A re-enactment demonstrated that the engineer's view of signal 5E was obstructed by the cab car configuration and control stand.²

Probable Cause

The National Transportation Safety Board determines that the probable cause of the head-on collision of Northeast Illinois Regional Commuter Railroad Corporation trains 1270 and 1235 was the failure of the engineer and the conductor of train 1270 to comply with the *stop* signal at the Aurora Transportation Center Station.

Adopted: November 24, 2003

² The cab car would have needed to be at least 26 feet from the signal for the signal to have been observed from this position.