



National Transportation Safety Board

Washington, DC 20594

Safety Recommendation

Date: October 4, 2013

In reply refer to: R-13-034 (Urgent) and
R-13-035 (Urgent)

Mr. Forrest Claypool
President
Chicago Transit Authority
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The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—railroad, highway, marine, and pipeline. The NTSB determines the probable cause of the accidents and issues safety recommendations aimed at preventing future accidents. In addition, the NTSB carries out special studies concerning transportation safety and coordinates the resources of the federal government and other organizations to provide assistance to victims and their family members affected by major transportation disasters. We are providing the following information to urge the Chicago Transit Authority (CTA) to take action on the urgent safety recommendations issued in this letter.

The recommendations address the need for redundant protection to prevent unintended train movements on the CTA system. The recommendations are derived from the NTSB's ongoing investigation of the collision between two CTA trains that occurred on September 30, 2013, in Forest Park, Illinois. As a result of our investigation to date, the NTSB is issuing two urgent safety recommendations to CTA and one urgent safety recommendation to the Federal Transit Administration.

Background

On September 30, 2013, at 7:42 a.m. central daylight time, an unoccupied CTA train consisting of four cars collided with a CTA train in revenue service that was stopped at the Harlem Station on the Blue Line. There were about 40 passengers on the in-service CTA train. CTA reported that 33 passengers were transported to three local hospitals. All were treated and released. There were no fatalities.

The unoccupied train had been stored at Forest Park Repair Terminal awaiting repairs when it began moving under power and departed the terminal entering main line track. The train

traveled almost one mile downhill through five mechanical train stop mechanisms¹ before reaching the Harlem Station. The emergency brakes were applied and the train was momentarily stopped several times by the mechanical train stop mechanisms as it proceeded to the Harlem Station. Following each stop, train movement resumed because the master lever on the operator console had been left in a setting that allowed the train car brakes to recover and reset from the emergency brake application and proceed through a mechanical train stop mechanism after a momentary stop. The investigation into the cause of unintended movement continues.² The investigation has raised concerns about the need for improved protection against unintended movement.

Protection for Unintended Movements

Unoccupied CTA trains are routinely left powered-up while stored and with the brake setting that would allow movement through a mechanical train stop mechanism after a momentary stop. De-energizing propulsion power and using an alternate brake setting could prevent unintended movement and ensure that a train that does move unintentionally would remain stopped at a mechanical train stop mechanism.

In addition, there are several effective redundant means to stop the unintended movement of a train. Rail car repair shops often use wheel chocks to prevent movement of rail cars. Wheel chocks are placed on the rail immediately in front of a wheel to prevent the wheel from rolling in the direction of the chock.

Federal Railroad Administration regulated railroads throughout the country commonly use derails to stop unintended train movements. A derail is a mechanical device placed on the track that forces the wheels of a moving train off the rail, derailing the train, causing it to stop. Derails are commonly placed in locations to prevent rail cars from entering main tracks where they could collide with other trains.

The NTSB believes that had a wheel chock and/or a derail been in use at the Forest Park Terminal, the train could have been stopped before it entered mainline track and the accident could have been prevented. Therefore, the NTSB makes the following two urgent safety recommendations to CTA:

Review your operating and maintenance procedures for stored unoccupied cars to ensure the propulsion and brake systems are left in a condition that would not facilitate unintended movement. (R-13-034) (Urgent)

Immediately implement redundant means of stopping unintended rail car movements, such as wheel chocks or a derail. (R-13-035) (Urgent)

¹ A mechanical train stop mechanism is a device that is affixed to the track structure near the running rail. The train stop is in the raised position when the signal displays a “stop” aspect and in the lowered position when the signal displays a “proceed” aspect. If a train passes the train stop in the raised position, the train stop will strike a brake trip arm lever on the side of the rail car and place the train in an emergency brake application.

² Upon inspection one of the cars of the unoccupied train was found to have thermally damaged wiring and water in electrical connection boxes on the car. CTA has begun inspecting its fleet of similar cars to determine if similar conditions exist on other cars.

NTSB investigators are still examining issues related to the Forest Park, Illinois, accident. At this time, the NTSB has not yet determined the probable cause of this accident. Nonetheless, the NTSB has identified the safety issue described above, which needs to be addressed expeditiously to prevent a recurrence.

The NTSB is vitally interested in this recommendation because it is designed to prevent accidents and save lives. We would appreciate receiving a response from you within 30 days detailing the actions you have taken or intend to take to implement it. When replying, please refer to Safety Recommendations by number. We encourage you to submit your response electronically to correspondence@ntsb.gov. If your response exceeds 10 megabytes, including attachments, please e-mail us at the same address for instructions. Please do not submit both an electronic copy and a hard copy of the same response.

Acting Chairman HERSMAN, and Members HART, SUMWALT, ROSEKIND, and WEENER concurred in these recommendations.

[Original Signed]

By: Deborah A. P. Hersman
Acting Chairman