



# National Transportation Safety Board

## Railroad Accident Brief

### Canadian National Railway Employee Fatality

#### Homewood, Illinois

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## The Accident

On July 25, 2015, at 8:36 a.m. central daylight time, a Canadian National Railway Company (CN) yard conductor died after he tripped, slipped, or fell while trying to board a train.<sup>1</sup> He was working at the CN Markham Yard in Homewood, Illinois. The crew included a locomotive engineer, a conductor (the deceased), a brakeman, and a utility man; train R96991-25 consisted of two locomotives and 12 cars. The weather was clear and sunny with a temperature of 76°F.

The crew went on duty July 25, 2015, at 7:00 a.m. The locomotive engineer inspected the locomotives and released the locomotive brakes. The conductor, brakeman, and utility man conducted an initial job briefing. There was a second job briefing when the conductor, brakeman, and utility man met at the locomotive to discuss the day's work with the engineer.

After completing some initial moves, the crew rode the locomotives to track 19. While the conductor oversaw the movement, the crew went to track 19 and coupled 11 standing cars. The coupled cars were stretched to ensure the coupling was successful. The conductor radioed the locomotive engineer that he was between the cars, and the locomotive engineer responded that the brakes had been applied. Both the conductor on the east side of the train and utility man on the west side walked north, releasing the hand brakes on the coupled cars. The conductor crossed over to the west side of the train where he and utility man had a job briefing; they discussed their plan to "shove" (push) the train to the south end of track 19 so they could couple to an additional 20 cars. To help with the shoving and subsequent coupling, the utility man instructed the engineer to pull north five or six car lengths so he could board and then ride the last car being coupled to the south end of track 19. From there, the utility man planned to control the shoving movement and to couple to the remaining cars.

Before making the final coupling in track 19, the conductor radioed the locomotive engineer that he was clear of the cars and instructed the engineer to proceed north. This was the last radio transmission from the conductor. The utility man saw the conductor riding on the fifth car as the cars moved north; this was the last time the utility man saw the conductor before the accident.

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<sup>1</sup> According to the Cook County Medical Examiner, the cause of death was multiple injuries, and the manner of death was accident.

At this time, the utility man took control of the train movement, telling the engineer how many car lengths there were until the train met the rear of the cars being coupled in track 19. At some point during the movement, the conductor got off the train between tracks 18 and 19. The utility man gave the engineer instructions to shove 20 car lengths south to where the cars would be coupled. When the cars began to move south, the brakeman was sitting in the engineer's seat on the second locomotive of the train facing south. The brakeman told investigators that he saw the conductor standing clear of the train, facing the equipment, on the ballast between tracks 18 and 19, as the train moved south past him. According to the event recorder, the train was moving at 12.5 miles per hour (mph). Soon after passing the conductor, the engineer looked to the north and saw the conductor on the ground outside the gage of the track beside the rail between tracks 18 and 19.<sup>2</sup>

## Site Description

CN Markham Yard is within the CN Chicago Subdivision.<sup>3</sup> The yard has a north/south orientation consisting of a classification yard (referred to as the A yard) and an arrival/departure yard (known as the F yard). The F yard consists of 11 tracks on the west side of the yard. The A yard consists of 24 tracks on the east side of the yard.

## Method of Operation

Train movements were governed by operating rules, general orders, and timetable instructions.<sup>4</sup> The R96991-25 crew was working within the Markham yard, but not on the main track. Rule 520 from the US Operating Rules applies to movements on tracks other than the main track. It states:

Except when moving on a track where CTC [Centralized Train Control] is in effect, trains, engines and on-track equipment must move on Non-Main Track, at a speed that allows them to stop with one-half the range of vision short of:

- Train
- Engine
- Railroad car
- Roadway Workers or equipment fouling the track
- Stop signal
- Derail or switch lined improperly

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<sup>2</sup> After the brakes were applied, 23 seconds elapsed before the locomotive came to a complete stop.

<sup>3</sup> Markham Yard is large with a portion of it extending into East Hazel Crest, Illinois.

<sup>4</sup> US Operating Rules (USOR), Seventh Edition, effective 1200 Wednesday, January 1, 2014, central continental time; CN's Chicago Subdivision Timetable, effective (effective Wednesday, January 1, 2014, central continental time; and CN RULES from the CN US Region L.I.F.E. (Live Injury-Free Everyday), *Safety Rules and Recommended Practices for Transportation Employees*, 2nd Edition, effective date: March 2005, govern yard and train movements within the limits of CN's Markham Yard. Train movements within Markham Yard are basically movements on other than main tracks. This requires the train crews to control their own movements in accordance with USOR Rule 520 – Movement on Non-Main Track. Move prepared to stop half the range of vision short of train, engine, railroad car, roadway workers or equipment fouling the track, stop signal or derail or switch lined improperly.

## CN Rules for Getting on and Off Moving Equipment

Rules for getting on and off moving equipment can be found in CN rules from the CN US Region L.I.F.E. (Live Injury-Free Everyday), *Safety Rules and Recommended Practices for Transportation Employees*. Section T-6 Getting On/Off and Riding Equipment states:

Confirm that the area is clear of obstructions and debris and that equipment is free of visible defects before getting on or off equipment. When getting on or off moving equipment the **maximum allowable speed is 4 mph** - not to exceed walking speed. **[Emphasis added.]**<sup>5</sup>

- Use only steps, ladders, and handholds provided when getting on or off equipment or riding on equipment.
- Maintain firm hold and stance when riding equipment.
- Do not ride on crossover or brake platform except to operate a hand brake.
- Riding tank car platform within 1 foot of platform corner is permitted.
- Do not ride a flat car or intermodal car not equipped with vertical handhold that allows an upright position.
- Face equipment when descending or ascending steps and ladders
- Do not step or jump from one freight car to another.
- Look in the direction that equipment is moving, and get off with trailing foot first.
- Do not get off at the instant the equipment couples to other equipment.
- To cross between standing cars that are coupled together:
  - Confirm that cars will not be moved,
  - Cross car using only end sill platform,
  - Keep feet clear of coupler and drawbar.

## Personnel Information – Conductor

### Employment and Training

The conductor was 27 years old. He was hired by CN on May 13, 2013. He completed training on September 8, 2013, and was qualified as a conductor the following day. Before that, he was a conductor at CSX Transportation for about 2 years when he voluntarily resigned. During that time, he received training on 108 topics and completed all satisfactorily.

A review of CN records showed that the conductor was current on his employee qualifications. His October 15, 2013, performance appraisal contained the comment, “too soon to assess;” there were no other comments. His records contained no disciplinary action or reported injuries.

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<sup>5</sup> Added after 2005 publication of book.

From September 17, 2013, through July 25, 2015, CN supervisory personnel observed the conductor 63 times for rules compliance while he performed his duties. Of those 63 observations, four were categorized as non-compliant and with the following notations:

- December 5, 2013: getting on/off and riding equipment
- January 14, 2015: categorized as “special” without any further explanation
- May 5, 2015: peer-to-peer communication
- July 10, 2015: inspection of trains

Of the 59 observations where he was in compliance, nine were for “shoving” cars; five were for working between equipment; and two were for getting on/off and riding equipment. A review of his training records showed that he had passed all of the required written and performance examinations related to the proper performance of his duties.

## Medical Information

Investigators reviewed the CN occupational medical record, autopsy report, and toxicology findings for the conductor. According to the pre-employment physical examination history dated April 10, 2013, the 27-year-old conductor reported a history of asthma treated with fluticasone/salmeterol oral inhaler and albuterol. Fluticasone/salmeterol inhaler is a combination, long-acting medication used to treat chronic asthma and marketed as Advair. Albuterol is a shorter acting medication used to prevent and treat wheezing and shortness of breath in asthmatic patients. The examiner found him medically qualified for work as a conductor.

CN records show the conductor was approved for intermittent family/medical leave absences to allow ongoing medical evaluation and treatment of his asthma from April 29-October 29, 2015. Following approval, the only recorded, intermittent family medical leave of absence in his record was a 2-day absence on May 15-16, 2015.

## Toxicological Testing

### *Conductor*

Specimens from the conductor underwent independent, toxicological testing at the Federal Aviation Administration’s (FAA) Bioaeronautical Science Research Laboratory at the Civil Aerospace Medical Institute (CAMI). No ethanol was detected in the urine. Testing detected cetirizine in cavity blood but did not detect drugs of abuse in the blood.<sup>6</sup> Cetirizine is a sedating antihistamine marketed as Zyrtec.<sup>7</sup> According to the CAMI toxicologist, the cetirizine blood level was below the testing calibration curve and well below the therapeutic range of this medication. Therefore, it is unlikely the conductor was impaired by cetirizine or any other drug

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<sup>6</sup> Specimens are analyzed using immunoassay, chromatography, GC/MS, HPLC/MS, or GC/FTIR. Concentrations (ug/mL) at or above those in parentheses ( ) can be determined for, but not limited to, the following drugs: amphetamines (0.010), opiates (0.010), marijuana (0.001), cocaine (0.020), phencyclidine (0.002), benzodiazepines (0.030), barbiturates (0.060), antidepressants (0.100), and antihistamines (0.020). Drugs and/or their metabolites, that are not impairing or abused, may be reported from the initial tests. See the CAMI Drug Information website for additional information (<http://jag.cami.jccbi.gov/toxicology/>).

<sup>7</sup> FAA Forensic Toxicology Web Drugs, Cetirizine. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=131>

or medication at or around the time of accident. The cetirizine detected by the FAA toxicology laboratory did not play a role in the death of the conductor. Impairment by drugs or alcohol by the conductor was not a factor in this accident.

### *Locomotive Engineer, Brakeman, Utility Man*

Postaccident toxicological testing was conducted on the remaining crew members. The results were negative.

## **Probable Cause**

The National Transportation Safety Board determines that the probable cause of the accident was that the conductor slipped, tripped, or fell during his attempt to board locomotive GTW 4927 as it passed at 12.5 mph, which is three times the maximum authorized speed to board moving equipment.

For more details about this accident, visit [www.nts.gov/investigations/dms.html](http://www.nts.gov/investigations/dms.html) and search for NTSB accident ID DCA15FR012.

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The NTSB has authority to investigate and establish the facts, circumstances, and cause or probable cause of a railroad accident in which there is a fatality or substantial property damage, or that involves a passenger train. (49 U.S. Code § 1131 - *General authority*)

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties . . . and are not conducted for the purpose of determining the rights or liabilities of any person.” 49 *Code of Federal Regulations*, Section 831.4. Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report. 49 *United States Code*, Section 1154(b).

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