



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Issued: February 28, 2023

Railroad Investigation Report: RIR-23-03

Employee Fatality

Amtrak Train 163-15

Westerly, Rhode Island
January 15, 2022

1. Factual Information

1.1 Accident Description

On January 15, 2022, about 2:15 p.m. local time, a National Railroad Passenger Corporation (Amtrak) conductor was killed after becoming separated from an open side passenger door of an Amfleet railcar in Amtrak train 163-15 that was traveling on track 1 at about 40 mph on its approach to the Westerly Passenger Station, in Westerly, Rhode Island.¹ The conductor was responsible for managing the side passenger door of the fourth railcar to open it for passengers upon the train's arrival at the station. At the time of the accident, visibility was clear; the temperature was 14°F, with a 14-mph wind with gusts up to 24 mph; and there was no precipitation. Figure 1 shows the accident location.

¹ (a) All times in this report are local time unless otherwise noted. (b) Visit www.nts.gov to find additional information in the public docket for this National Transportation Safety Board (NTSB) accident investigation (case RRD22LR005). Use the [CAROL Query](#) to search safety recommendations and investigations.

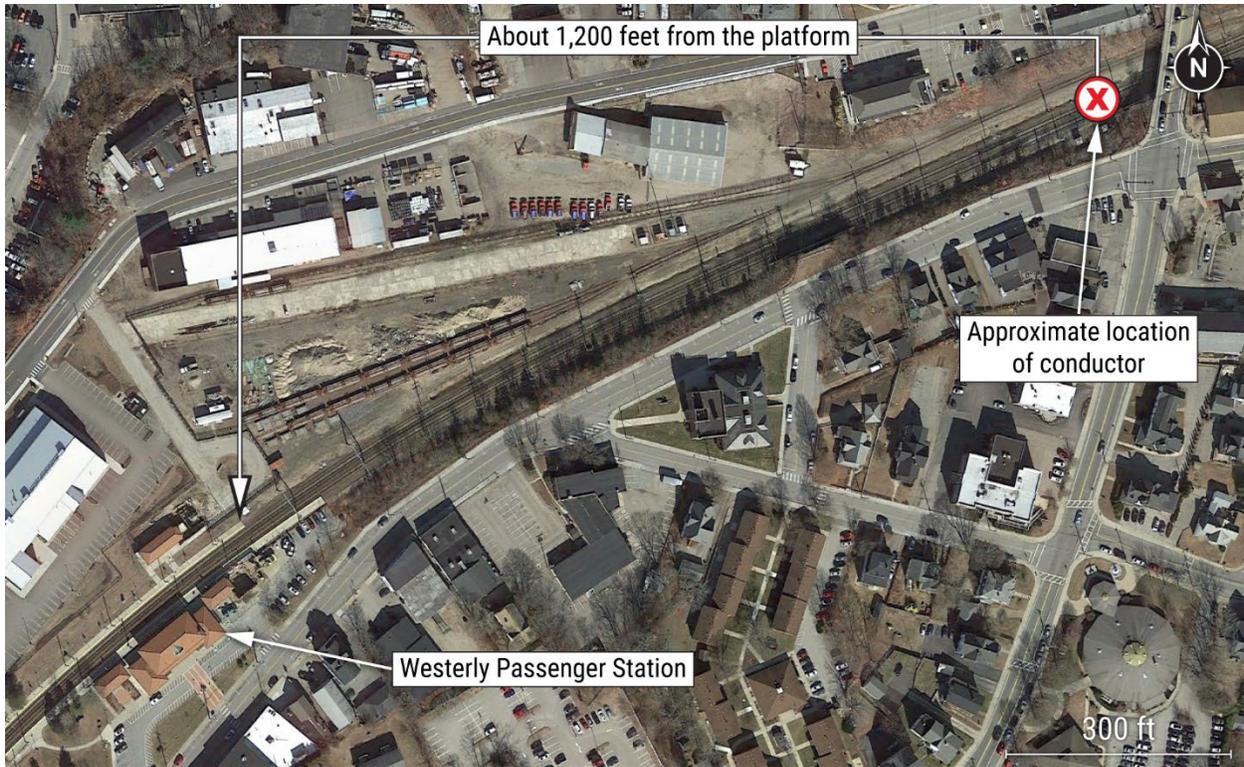


Figure 1. Aerial view of accident area near the Westerly Passenger Station. (Google Earth image.)

Surveillance video shows that two side passenger doors were open when the train arrived at the Westerly Passenger Station about 1:57 p.m. One was a north-facing exterior side door on the fourth railcar for which the conductor was responsible, and one was a north-facing exterior side door on the fifth railcar for which the assistant conductor was responsible. After helping passengers exit the train from the fifth railcar, the assistant conductor radioed the conductor in preparation for departure but did not receive a response. The assistant conductor began searching the interior of the train and discovered that the north-facing exterior side passenger door on the fourth railcar remained open, and the conductor was not there as expected. The assistant conductor and other members of the train crew searched the train and were unable to locate the conductor. The assistant conductor and train engineer then exited the train and searched the tracks east of the station platform. About 2:15 p.m., they found the conductor's body on the north side of track 1, about 1,200 feet east of the Westerly Passenger Station.

The engineer then called 911 and contacted the train dispatcher to notify emergency personnel. Westerly Ambulance Corps pronounced the conductor deceased at 2:25 p.m. When the Westerly Police Department arrived, the responding officers recovered the conductor's personal effects, including two cell phones, to the east of the conductor's body.

1.2 Before the Accident

On the day of the accident, the crew reported for work about 11:00 a.m. in Boston, Massachusetts, and conducted a job briefing. The crew consisted of the conductor, an engineer, an assistant conductor, a lead service attendant, and a lead service attendant trainee.

Amtrak train 163-15 originated in Boston on January 15, 2022, about 12:45 p.m.; consisted of one locomotive and seven passenger railcars; and was destined for Washington, D.C. The crew made three scheduled station stops and had been on duty for about 3 hours when the accident occurred. In an interview with the National Transportation Safety Board (NTSB), the assistant conductor said that the train's doors closed appropriately and were operating as intended following the train's stop at the Kingston Passenger Station, the last station stop before the accident.

1.3 Video Surveillance Footage

The NTSB reviewed locomotive event recorder data from the train and surveillance camera footage and determined that the conductor became separated from the train east of Westerly Passenger Station just before 1:57 p.m., while the train was traveling at 40 mph. Although there were no witnesses or video evidence showing the conductor's actions at the time of the separation, video evidence viewed by NTSB investigators from a business near the Westerly Passenger Station showed that two of the train's exterior side doors were open with the stairs deployed as the train arrived at the station.

1.4 Door Operation

Railcar doors are opened for passengers entering and exiting, however, at the time of the accident, Amtrak rules and operating procedures permitted transportation employees to open doors for the purpose of monitoring the arrival or departure of trains from station platforms (Amtrak 2020).²

The doors on Amfleet I railcars are designed to open two ways: (1) during normal passenger operations and (2) under emergency situations. During normal passenger operations an employee, such as a conductor, uses a coach key to activate the door control operation panel. The panel is powered by a safety interlock system (relay) that requires the train to be traveling at 3 mph or below before the door can be opened. When the train speed is at or below 3 mph, a relay is enabled that allows power to reach

² Some platforms are shorter than the train, requiring the train to stop at a predetermined location and open only those side passenger doors within the limits of the station platform. Conductors will assist the engineer with stopping at the correct locations by visually confirming the train's correct location. This is referred to as *monitoring*, or *spotting*.

the door control units, which can be opened and closed after inserting the coach key using push buttons. At speeds above 3 mph, the relay controlling power to the door controller deactivates, removing power from the door control unit, and not allowing the door to operate.

Another method, referred to as emergency opening, allows the door to be opened manually at any speed through the use of an emergency door release handle that is accessible through a hand hole in the side-door motor cover, located above the side door. When the emergency door release handle is completely down, the door mechanism will disengage, bypassing the safety interlock relay and allowing the door to be opened manually at any speed. Figure 2 shows an example of an Amfleet 1 side passenger door, such as the one in this accident.



Figure 2. Example of an Amfleet 1 exterior side door. (Photograph courtesy of Amtrak.)

1.5 Conductor Employment History

The conductor was hired by Amtrak on July 13, 2015, and received training regarding safety-critical operating rules. The NTSB's review of Amtrak employment records indicated that the conductor was current on all required training and had received no disciplinary actions.

1.6 Conductor Work Schedule and Personal Cell Phone Usage

Work records indicated that the conductor worked from 1:50 p.m. to 10:57 p.m. on the day before the accident, but did not work on the 2 days before, January 12 and 13, 2022.

The NTSB's review of the conductor's personal cell phone records from the day of the accident showed three calls totaling 5 minutes and 4 seconds while the train was in motion, along with multiple text messages.³ The closest known usage of the conductor's personal cell phone relative to the time of the accident was at 1:06 p.m., about 49 minutes before the accident, when she made an outgoing call lasting about 2 minutes and 20 seconds. Event recorder data indicates the train was traveling at speeds of up to 121 mph at the time of this call.

The conductor's personal cell phone records also indicated various amounts of data usage between about 1:26 p.m. and 1:53 p.m. However, it was not possible for the NTSB to distinguish between user-initiated data activity and automatic background data activity initiated by the device's operating system or installed applications. Police also found two cell phones near the conductor at the scene of the accident, which indicates that she had her personal cell phone in her possession at the time of the fall.

Amtrak follows operating guidance set forth by the Northeast Operating Rules Advisory Committee (NORAC).⁴ It prohibits on-duty train crewmembers from using personal electronic devices while the train is in motion; although the policy does contain provisions for acceptable use, such as in the event of an emergency (NORAC 2018).

1.7 Medical and Pathological Information

The conductor's last occupational medical evaluation on October 8, 2020, identified no significant concerns. Postaccident toxicological testing required by the Federal Railroad Administration in Title 49 *Code of Federal Regulations* Part 219

³ An examination of the train's event recorder data verifies that the train was in motion at the time of these calls.

⁴ The *Northeast Operating Rules Advisory Committee* is a body of railroads that establish a set of operating rules for railroads located mainly in the northeast United States.

detected doxylamine, an over-the-counter antihistamine, in the conductor's urine and blood. At the request of the NTSB, the Federal Aviation Administration Forensic Sciences Laboratory also performed postaccident toxicological testing, identifying doxylamine, her prescribed antidepressant medication, and other ingredients found in some over-the-counter medications in the conductor's liver and urine.

An autopsy of the conductor was performed by the Rhode Island Office of State Medical Examiners. The autopsy report stated the conductor died of blunt force injuries and manner of death was accidental.⁵

1.8 Postaccident Actions

On March 14, 2022, Amtrak, through the issuance of a bulletin order, *Rule 3.21 Amendment, Amendment to Special Instruction 34-S10 and Special Instruction 940-S1 (Northeast Corridor from New York to Washington)*, modified its employee safety rules and operational procedures to be more restrictive and prohibited the opening of side doors until after the train has stopped (Amtrak 2022, 2022a).⁶

In addition, these revised safety rules and operational procedures were communicated to Amtrak employees during job briefings, which were recorded and reviewed by management. Furthermore, Amtrak used a testing program to document employee observations associated with door operations to ensure proper implementation and compliance with these revised rules and procedures.

Also, on September 19, 2022, Amtrak issued a *Weekly Safety Focus* to employees aimed at heightening awareness on electronic device distraction and the importance of following safety rules related to the use of portable electronic devices (Amtrak 2022b).

2. Analysis

In this accident, a conductor for Amtrak train 163-15 was killed after becoming separated from an open side-passenger door of the fourth railcar on its approach to the Westerly Passenger Station in Westerly, Rhode Island. Based on NTSB's review of locomotive event recorder data from the train and surveillance camera footage that captured the arrival of the train at Westerly Passenger Station, it is likely the conductor fell from the open railcar door of the fourth railcar on the moving train east of Westerly Passenger Station just before 1:57 p.m. while the train was traveling at 40 mph.

During postaccident interviews, Amtrak indicated to the NTSB that the use of emergency door release handles, which bypassed the doors' safety interlock, was an

⁵ For additional information on medical and pathological information, including postaccident toxicological testing, please see the Medical Factual Report.

⁶ A *bulletin order* is a standardized method for updating operating rules and instructions.

accepted field practice intended for the use of monitoring the arrival or departure of trains from station platforms when necessary. Because train 163-15 was traveling at 40 mph, which is greater than the 3-mph threshold for the operation of the safety interlock relay that powers the side passenger doors, the emergency door release was most likely used by the conductor and assistant conductor to open the side passenger doors before arriving at Westerly Passenger Station. An open door on a moving train creates a fall hazard. After the accident, Amtrak issued a rule and amended special instructions to prohibit employees on the Northeast Corridor from opening side passenger doors while the train is in motion.

The conductor was carrying at least one cell phone and, according to NTSB's review of cell phone records from the phone, there were various amounts of data usage before the accident while the train was in motion, including a call lasting over 2 minutes, a violation of Amtrak and NORAC policy. It is possible that the data usage near the time of the accident was caused by the conductor actively using her cell phone; therefore, the NTSB cannot exclude the possibility that the conductor's personal cell phone usage contributed to the accident.

3. Probable Cause

The National Transportation Safety Board determines that the probable cause of the January 15, 2022, conductor fatality was the conductor's fall from an open side passenger door on Amtrak train 163-15 while moving at 40 mph. Contributing to the accident was (1) the conductor's use of the side passenger emergency door release to open a railcar door while the train was operating at a speed of 40 mph and (2) Amtrak's accepted practice of allowing side doors to be opened on approach to stations to allow crewmembers to monitor the platform.

References

- Amtrak (National Railroad Passenger Corporation). 2022. *Rule 3.21 Amendment*. Wilmington, Delaware: Amtrak.
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- Eckes, L., M. Tsokos, S. Herre, R. Gapert, and S. Hartwig. 2014. "Post-mortem evidence of doxylamine in toxicological analyses." *Science & Justice*, 54(1), 61-65.
- Levine, B., K. Klette, S. Radentz, M.L. Smith, and J.E. Smialek. 1996. "Antihistamine concentrations in postmortem blood and liver specimens." *Forensic Science International*, 81(1), 73-76.
- NORAC (Northeast Operating Rules Committee). 2018. *NORAC Operating Rules*, 11th Edition.

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For more detailed background information on this report, visit the NTSB investigations website and search for NTSB accident ID RRD22LR005. Recent publications are available in their entirety on the NTSB website. Other information about available publications also may be obtained from the website or by contacting—

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