National Transportation Safety Board

Railroad Accident Brief

Union Pacific Railroad Employee Fatality

Northlake, Illinois

April 23, 2020

The Accident

On April 23, 2020, at 10:02 a.m. local time, Union Pacific Railroad (UP) train YPR6423, consisting of two locomotives and four rail cars, collided with a truck tractor in combination with a semi-trailer (combination vehicle) as the train entered a public highway-rail grade crossing outside of the Proviso Yard in Northlake, Illinois. The train was traveling at a speed of 10 mph while shoving rail cars into an industry track.[1] The remote-control locomotive (RCL) operator was controlling the movement of the train from the end rail car and died as a result of the collision as the train entered the grade crossing at Railroad Avenue. (See figure 1.)[2]

Figure 1. Aerial view with illustration of the accident scene.

[1] Additional information can be found in the public docket for this National Transportation Safety Board (NTSB) accident investigation RRD20LR003 by accessing the Accident Dockets link at www.ntsb.gov. (b) All times in this document are local time unless otherwise noted. (c) A *shoving movement* is the process of pushing a cut of railroad cars with a locomotive.

[2] A *remote-control locomotive* is a locomotive that uses a radio link operated by a person not physically within the confines of the locomotive cab as defined in Title 49 *Code of Federal Regulations* 229.5.

The industry track, track 719, is classified as Federal Railroad Administration (FRA) Class 1 track, with a maximum authorized speed of 10 mph. The track parallels the yard tracks until the point where it crosses a public road, Railroad Avenue, adjacent to the industry being serviced. The public highway-rail grade crossing where the accident occurred was equipped with only passive warning (crossbucks) signs.[3]

The yard crew was assigned to deliver the train to the customer, The American Bottling Company.[4] The train's configuration required the crew to make a shoving movement into track 719. When the yard crew started the shoving movement, the switchman sat in the cab of the controlling locomotive, the trainee sat in the second locomotive, and the RCL operator operated the train from the rear tank car. The RCL operator rode on the north end of the tank car as the train moved toward the public highway-rail grade crossing into track 719. (See figure 2.)

Figure 2. Photo of end platform on an exemplar tank car that the RCL operator was riding. (Source: FRA)

[3] A *crossbuck* is a warning sign for vehicular traffic placed at public highway-rail grade crossings. It is composed of two slats of wood or metal of equal length, fastened together on a pole in a saltire formation (resembling the letter X).

[4] The employee operating the train will be referred to as the RCL operator, and the other employee will be referred to as the switchman. The third employee on the yard crew will be referred to as the trainee.

As the train approached the public highway-rail grade crossing, the RCL operator had three primary responsibilities: operate the RCL safely; protect the shoving movement; and provide protection for the public highway-rail grade crossing as required by UP General Code of Operating Rules (GCOR) 6.32.1. The RCL operator blew the horn to provide warning that the train was approaching the crossing, but he did not stop the movement.[5]

The switchman in the cab of the locomotive told investigators that shortly after hearing the train horn, he noticed the combination vehicle traveling northbound on Railroad Avenue. NTSB investigators reviewed a recording from a video surveillance camera that monitors the rail yard. The video camera footage shows that the train (traveling an estimated speed of 10 mph) and combination vehicle (traveling at an estimated speed of 25 mph) entered the public highway-rail grade crossing at approximately the same time. (See figure 3.)

Figure 3. Final resting position of combination vehicle and the train. (Source: UP)

The video camera footage indicates that upon noticing the combination vehicle, the RCL operator twice gestured, using hand signals, for the combination vehicle driver to stop. The time between the first hand signal and impact was about 7 seconds. The time between the second hand signal and impact was 4 seconds. Prior to the collision, the RCL operator initiated an emergency brake application and attempted to move away from the combination vehicle. The train and the RCL operator collided with the front of the combination vehicle. The switchman announced over the yard radio channel that the RCL operator was down and rendered aid until paramedics arrived.

UP GCOR Rule 6.32.1 allows employees to make a judgment call for protection from the ground based on their observation of traffic at a public highway-rail grade crossing.[6] In this

[5] UP GCOR Rule 6.32. Providing Warning Over Road Crossings

[6] *Ground protection* is defined as a railroad employee who warns vehicular traffic of approaching trains while on the ground at a public highway-rail grade crossing.

accident, based on the RCL operator's attempts to signal the driver of the combination vehicle to stop, the combination vehicle was visible to the RCL operator as it approached the crossing. The train proceeded into the public highway-rail grade crossing without the RCL operator providing ground protection. Taking into consideration the number of responsibilities that the RCL operator had at the time of the accident, several things may have affected his decision to proceed without stopping. The investigation did not determine why the RCL operator did not provide ground protection for the public highway-rail grade crossing.

Before the Accident

The yard crew reported for duty at the Proviso Yard at 6:30 a.m. for yard job YPR6423. The yard crew included two switchmen who were also qualified as RCL operators and a trainee. This was the home terminal for the yard crew, and each crew member received more than the statutory off-duty period prior to reporting for duty.[7] The RCL Operator UP employment records showed that the 53-year-old RCL operator was hired by UP on November 30, 1998, certified as a RCL operator on March 24, 2009, and certified as a conductor on July 11, 2012. His last RCL certification ride was on January 29, 2020. UP training records for the RCL operator showed that he had successfully completed all training courses on railroad operations.

UP efficiency testing records for the RCL operator showed that the RCL operator was observed by 11 supervisors on 29 separate days in the 12 months prior to the accident. During those observations, he was tested a total of 199 times on 56 different operating rules. He received coaching by supervisors for one instance of noncompliance of GCOR Rule 6.32.1: Providing Warning Over Road Crossings.

UP Railroad Operating Rule

The RCL operator was governed by UP GCOR Rule 6.32.1 while operating over the road crossing. UP GCOR Rule 6.32.1 (January 23, 2020): Providing Warning Over Road Crossings states:

> When cars are shoved, kicked or a gravity switch move is made over road crossings at grade, an employee must be on the ground at the crossing to provide warning until crossing is occupied. Make any movement over the crossing only on the employee's signal.
>
> Warning is not required when crossing is equipped with:
>
> Gates that are in the fully lowered position.
>
> or

[7] *Statutory off-duty period* means the period of 8 or 10 consecutive hours or more time, that is the minimum off-duty period required under the Hours-of-Service laws for a train employee or a signal employee to begin a new 24-hour period for the purposes of calculating his or her total time on duty.

Flashing lights or passive warning devices when it is clearly seen that no traffic is stopped at the crossing or is approaching the crossing. Leading end of shoving movements must not exceed 15 mph over crossings.

Combination Vehicle Driver

The 58-year-old combination vehicle driver held a valid Indiana Class A Commercial Driver's License with an issue date of November 2019 and an expiration date of July 2022. The combination vehicle driver also held a valid US Department of Transportation medical certificate with an issue date of November 2019 and an expiration date of November 2021.

In the 12 months before the accident, the Indiana State Police found the driver of the combination vehicle in violation of 26 state trucking laws. Of the 26 trucking laws, the following seven were for unsafe driving: speeding 11-14 mph over the speed limit, speeding 6-10 mph over the speed limit, failing to use a seat belt while operating a commercial motor vehicle, using a hand-held mobile telephone while operating a commercial motor vehicle, lane restriction violation, improper lane change, and failure to yield to emergency vehicles.

Postaccident Toxicological Testing

In accordance with Title 49 *Code of Federal Regulations* Part 219 Subpart C, UP conducted postaccident toxicological testing for the RCL operator. The results were negative for alcohol and other impairing drugs.[8]

Postaccident Actions

As a result of the accident, UP distributed an Incident Alert systemwide to all employees and briefed employees in the Chicago area. The incident alert included rules to review including shoving movements, providing warning over road crossings, job briefings, and riding equipment. Additionally, UP made modifications to the public highway-rail grade crossing on April 23, 2020. Specifically, an additional crossbuck and an emergency notification sign was installed. The Illinois Department of Transportation updated pavement markings to include railroad crossing symbols and stop lines and installed a yield sign at the crossing.[9]

Probable Cause

The National Transportation Safety Board determines that the probable cause of this accident was Union Pacific Railroad's allowance of train movement through a grade crossing without first stopping the train to provide warning. Also contributing to the accident was the combination vehicle driver's failure to yield to the train as he approached the public highway-rail grade crossing.

[8] Authorities were unable to administer toxicology tests to the combination vehicle driver. For more information, see the highway factual report in the public docket by accessing the Accident Dockets link at www.ntsb.gov and searching for NTSB accident investigation RRD20LR003.

[9] UP's letter to NTSB dated July 28, 2021.

Report Date: August 30, 2021

The NTSB has authority to investigate and establish the facts, circumstances, and cause or probable cause of a pipeline accident in which there is a fatality or substantial property damage, or significant injury to the environment. (49 U.S. Code, Section 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." Title 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 U.S. Code, Section 1154(b).
