

# Federal Railroad Administration Office of Railroad Safety

Accident Investigation Report HQ-2021-1453

Canadian National Railway (CN) Collision Convent, LA October 6, 2021

Note that 49 U.S.C. §20903 provides that no part of an accident or incident report, including this one, made by the Secretary of Transportation/Federal Railroad Administration under 49 U.S.C. §20902 may be used in a civil action for damages resulting from a matter mentioned in the report.

#### **Synopsis**

At approximately 3:31 p.m., CDT, on October 6, 2021, Train 1 requested permission to enter the working limits of a Contract Employee-in-Charge (EIC) and excavator operator contractor that were doing some work on and near the tracks around Convent, Louisiana, in St James Parish at Milepost (MP) 403.5 on the CN Baton Rouge Subdivision. Convent is located between New Orleans and Baton Rouge. The EIC gave Train 1 permission to enter his limits and reported that all men and equipment were in the clear. Train 1 proceeded into the limits and was rounding a 1 degree, 0 minute right hand curve within the limits when the EIC saw the train coming and notified the operator of the excavator that the train was coming and was going to impact the piece of equipment. The operator jumped from the machine prior to impact and was not injured. When the crew saw the excavator fouling the track, the engineer placed the train into emergency, the local was traveling approximately 16 mph at impact. This Method of Operation in this territory is Yard Limits with Automatic Block Signaling (ABS) track authority with a maximum authorized speed of 40 mph. The line of sight to where the contractor was fouling the main track for the train crew coming out of the 1-degree 0 minute right hand was approximately 200 yards when the engineer placed the train in emergency. Train 1 was operated conventional with 2 locomotives on the head end and consisted of 174 cars.

#### **Circumstances Prior to the Accident:**

L51671-06 (Train 1) is a local that runs daily from Geismar to New Orleans and back to Geismar. Train 1 consisted of two locomotives CN3010 and CN5651. Train 1 was 20,449 tons and 9,931 feet long. It consisted of 174 cars. This train was considered a Key Train due to having two Rail Security-Sensitive Material (RSSM) cars. The train was restricted to 40 mph per the timetable. An inspection of hours of service records for the crew show that the crew was called to be on duty at 12 p.m. after having the required amount of rest. The crew consisted of an engineer, an engineer trainee, and a conductor. The engineer trainee was operating the train at the time of the incident. An inspection of the brake slip shows that a brake test/inspection was completed in Geismar at 11 a.m. on October 6, 2021. An inspection of the blue cards and Daily Inspection cards show that the locomotives were current on inspections and in an acceptable working condition.

After departing southbound from Geismar the train stopped at the signal at North Helvetia, MP 399.97 to request permission through their planned work event. The route was lined up and at 3:16 p.m., the crew received permission from the EIC to enter the work limits and were told that all men and equipment were in the clear.

#### The Accident:

At approximately 3:31 p.m., CDT, on October 6, 2021, CN southbound local Train 1 requested permission to enter the working limits of the EIC. The excavator operator was doing some work on and near the tracks around Convent, Louisiana, in St James Parish at MP 403.5 on the CN Baton Rouge Subdivision. Convent is located between New Orleans and Baton Rouge. The EIC gave the train permission to enter his limits and reported that all men and equipment were in the clear. The train proceeded into the limits and was rounding a 1 degree, 0 minute right hand curve within the limits when the EIC saw the train coming and notified the operator of the excavator that the train was coming and was going to impact the piece of equipment. The operator jumped from the machine prior to impact and was not injured. The local was traveling approximately 27 mph when the crew saw the excavator fouling the track, the engineer placed the train into emergency. The impact with the excavator was at approximately

16 mph. This Method of Operation in this territory is Automatic Block Signaling (ABS) track authority with a maximum authorized speed of 40 mph. The line of sight to where the contractor was fouling the main track for the train crew coming out of the 1-degree right hand curve was approximately 200 yards when the engineer placed the train in emergency. Train 1 was operated conventional with 2 locomotives on the head end and consisted of 174 cars (151 loads and 23 empties).

### **Analysis and Conclusions**

**Analysis: D&A-** Post-Accident Tests were not conducted on the crew by the railroad. Post-Accident testing was performed on the EIC. Federal Railroad Administration Post-Accident Forensic Toxicology Result Reports indicate the one employee tested was positive for hydrocodone in both his urine and his blood. Despite repeated attempts, neither the employer's Medical Review Officer (MRO) nor the Designated Employer Representative (DER) were able to make contact with the employee to determine if a valid prescription in the employee's name was the source of the positive test. This is known as a "no-contact positive test". Hence, it was also not possible for the MRO to determine if there was a safety concern based on the employee's use of the medication or his medical condition. Without an employee interview it cannot be determined, based on the toxicology concentrations alone, if the employee's error in judgment which caused the accident could have been affected to some degree by his recent use of hydrocodone, medical or recreational.

**Conclusion**: Drug or alcohol use by the train crew was not considered a factor in this event. It is inconclusive if the use of hydrocodone played a role in the error in judgement by the ROW EIC.

**Analysis - Fatigue Analysis:** FRA uses an overall effectiveness rate of 63 as the baseline for fatigue analysis. This is the level at which the risk of a human factors-related accident is calculated to be equal to chance. Any schedule that raises the overall effectiveness rate above 63 on the date of the accident or in the days leading up to the accident is at risk of fatigue contributing to the accident. The higher the FAID score, the higher fatigue exposure. Below the effectiveness rate of 63 baseline, fatigue is not considered as probable for an employee. Software sleep settings vary according to information obtained from each employee. If an employee does not provide sleep information, FRA uses the default software settings.

FRA obtained fatigue-related information, including work history, for all train operating employees involved in this accident. The calculated FAID scores were determined to be as follows:

- Train Conductor 77
- Train Engineer 1 97
- Train Engineer 2-78

Based on the Fatigue Audit InterDyne (FAID) analysis, fatigue was present for all three crewmembers.

**Conclusion**: FRA concluded fatigue did not contribute to the cause or severity of this accident as the crew's actions did not contribute to the accident.

**Analysis-Operating Practices**: Engineer- certification was issued August 8, 2019, and is set to expire on June 5, 2022. Last check ride was conducted on July 14, 2021. FRA reviewed certification documents and exam results within the scope of this investigation. FRA reviewed all the crew statements and onboard telemetry data to determine if the actions of the engineer played a role in causing this accident.

The Engineer Trainee- student engineer card was issued on April 16, 2021, and is set to expire on April 16, 2023. FRA reviewed certification documents and exam results within the scope of this investigation. FRA reviewed all the crew statements and onboard telemetry data to determine if the actions of the engineer trainee played a role in causing this accident. Conductor- certification was issued on January 18, 2021, and is set to expire on January 7, 2024. FRA reviewed certification documents and exam results within the scope of this investigation. FRA reviewed the crew statements and onboard telemetry data to determine if the actions of the engineer trainee played a role in causing the crew statements and onboard telemetry data to determine if the actions of the conductor played a role in causing this accident.

**Conclusion**: FRA determined the actions of the train crew did not contribute to the cause or severity of this accident.

**Analysis-Track:** The point of derailment is at MP 403.5 on the CN's Baton Rouge subdivision. The track is constructed with 136# continuous welded rail (CWR) with timber crossties. The maximum speed allowed per the CN's Gulf division timetable is 40 mph. This track is designated as FRA Class 3 per the Track Safety Standards.

The location where the accident occurred is in the full body of a 1 degree, 0 minute right hand curve. A grade crossing is located approximately 1,000 feet north of the accident site.

On October 7, 2021, FRA made a track inspection of the accident site and the area immediately adjacent. As part of this inspection, cross-level measurements, gage measurements, as well as a visual inspection of the crosstie and rail condition were conducted at the POD and the area immediately adjacent to the POD. No exceptions to FRA's Track Safety Standards were taken. It should be noted that when this inspection was conducted the track had been repaired from the damage incurred as a result of the derailment.

On September 9, 2021, the CN performed an internal rail inspection at the Point of Derailment (POD) and areas adjacent. No exceptions were found. An inspection of CN's track inspection reports for 90 days prior to October 6, 2021, revealed that no defective conditions were reported in the area near the POD.

Conclusion: FRA determined track conditions did not contribute to the cause or severity of the accident.

**Analysis-** Right of Way EIC: FRA obtained statements from the crew and from the Right of Way Contractor. Statements from the crew all state that the conductor requested permission to enter the working limits of the Contractor who was in charge of men and equipment fouling the track. The statements go on to say that the EIC gave the train permission to enter the working limits and stated that all men and equipment were in the clear. The crew states that they acknowledged and began to head southbound. They rounded a small curve traveling approximately 27 mph and saw the excavator fouling the track ahead and immediately placed the train into emergency. The train impacted the excavator at approximately 16 mph. No crew members were injured during the impact. The statement was obtained from the EIC. The EIC states that he heard the train call to request permission to enter the working limits. At the same time, he was waiting on an empty hopper train to call him and make a similar request. When the EIC answered the radio call of Train 1 (CN3010) and gave him permission to enter the limits, he was thinking it was the empty hopper train which would have been entering the limits further south and not in the area of the excavator.

**Conclusion:** It was determined that the Contractor EIC not knowing which train he was giving permission to and giving the train permission to enter limits while men and equipment was still in the foul caused the accident.

**Overall Conclusion:** FRA has determined that this accident is the direct result of improper communication (H211) of the Right of Way contractor EIC. He was not aware of which train he was

talking to when he gave the train permission to enter the limits and as a result, the train impacted with a piece of equipment that was fouling the track.

Train speed at the time of Emergency was 27 mph, and speed at Impact shows to be 16 mph. Max speed on this Subdivision is 40 mph. Below is a snapshot of where the train (CN 3010), was located at 3:16 p.m., when Authority was given to train to proceed. Locations I added, are of course, approximate, but help reference the landscape. Please reach out to me if any more information is needed.



Snapshot of where equipment first came into view. Timestamp is on the upper left hand corner. It is offset by 1 hour. Actual time was 3:30 p.m.



## Snapshot of where Train was placed into Emergency.



🛗 CN 3010: OC1

ghtness Zoom: Fit - Dewarp:

