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Railroad Investigation Report: RIR-22/05

# Alabama Export Railroad Fatal Collision with Maintenance-of-Way Equipment

Prichard, Alabama  
November 17, 2020

## 1 Factual Information

### 1.1 Accident Description

On November 17, 2020, about 2:26 p.m. local time, Canadian National (CN) train A-48871-16 operated by an Alabama Export Railroad (ALE) engineer collided with on-track maintenance equipment belonging to a Continental Rail Incorporated (CR) maintenance-of-way work group near milepost (MP) 3.7 on the Beauregard track in Prichard, Alabama.<sup>1</sup> ALE had contracted CR to install railroad ties for ALE. The on-track maintenance equipment included a full-sized, heavy-duty flatbed truck (boom truck) equipped with a telescopic crane and a backhoe designed to operate on the rails. (See figure.) As a result of the collision, one contractor was killed and three were injured. Material damages were estimated to be \$52,000. The weather at the time of the collision was clear, 71°F, with winds at 13 mph.

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<sup>1</sup> (a) Visit [ntsb.gov](https://www.ntsb.gov) to find additional information in the [public docket](#) for this NTSB investigation (case number RRD21R005). Use the [CAROL Query](#) to search safety recommendations and investigations. (b) All times in this report are local time unless otherwise noted.



**Figure.** On-track maintenance equipment and striking train after the collision.

On the day of the collision, the striking train crew consisted of an ALE engineer assigned to operate the train from the Belt Junction near Prichard, Alabama, to the ALE Mobile Yard, a section of track that lies within yard limits.<sup>2</sup> The engineer took control of the train at about 1:50 p.m. and started the train movement at 2:13 p.m. The engineer operated the train for about 3 miles, reaching a top speed of 19 mph between the Belt Junction and MP 3.7. During this movement, the train was governed by General Code of

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<sup>2</sup> (a) *Yard limits* are boundaries containing a portion of main track designated by special instructions. Yard limits are identified by signs. (b) Within yard limits, trains and engines are authorized to use the main track without protecting against other trains or engines; that is, their movements are not centrally controlled or coordinated by a dispatcher. Engines must give way as soon as possible to trains as they approach. Engines must keep posted as to the arrival of passenger trains and must not delay them. All movements entering or occurring within yard limits must be made at restricted speed unless operating under a block signal indication that is more favorable than approach. (b) A CN train crew operated the train to Belt Junction from Memphis, Tennessee, earlier that day.

Operating Rules (GCOR) 6.13, Yard Limits, which required the engineer to operate at restricted speed.<sup>3</sup>

About 2:26 p.m., while traveling at a recorded speed of 19 mph through a right-hand curve, the train struck the boom truck. The collision shoved the truck, causing it to strike the backhoe, and the displaced equipment struck a group of contractors performing track maintenance at MP 3.7, killing one contractor and injuring three others. The engineer did not apply brakes before the collision and the throttle was in position 2 (low power). The contractors told National Transportation Safety Board (NTSB) investigators that they did not hear a train horn before the collision.

## 1.2 Before the Accident

### 1.2.1 Roadway Work Group

The roadway work group consisted of an ALE roadway worker-in-charge (RWIC) and six railroad contractors from CR. On November 17, 2020, the CR contractors met with the ALE RWIC near the ALE Mobile Yard in Prichard, Alabama, about 7:00 a.m. The RWIC conducted a job briefing to discuss the work planned for the day and the method of on-track safety protection (derails and track authority) for two work locations within the yard limits.<sup>4</sup> The contractors told NTSB investigators that they believed they were protected by track authority, meaning that the movement of trains through the work limits would have been controlled by the RWIC. However, because the track undergoing maintenance was non-controlled track, train movements were governed by GCOR yard limit rules rather than centrally coordinated by a dispatcher or other controller, and the contractors were not protected by track authority.<sup>5</sup>

The roadway work group completed their job at the first work location and, about 10:00 a.m., began traveling by highway to the second work location at MP 3.7 on the

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<sup>3</sup> The Federal Railroad Administration (FRA) defines *restricted speed* as a speed that will permit a train or other equipment to stop within one-half the range of vision of the person operating the train or other equipment but not to exceed 20 mph, unless further restricted by the operating rules of the railroad (Title 49 Code of Federal Regulations [CFR] 236.812).

<sup>4</sup> (a) *Derails* are track-mounted devices that render sections of track physically inaccessible, a requirement for work being performed on non-controlled track under 49 CFR 214.327. (b) *Track authority* is control over which trains, if any, are permitted to operate on a section of track. Under 49 CFR 214.319, a qualified roadway worker in charge shall control train movements through designated work limits by communicating with the train crew.

<sup>5</sup> Track authority applies only to controlled track. On non-controlled track, trains are permitted to move without receiving authorization from a train dispatcher or control operator. See 49 CFR 214.7.

Beauregard track. The CR backhoe operator and boom truck operator positioned their vehicles on the tracks at the Wilson Avenue highway-rail grade crossing (U.S. Department of Transportation Crossing Inventory Number 303631P) at MP 3.24 Wilson Avenue, about 0.5 miles south of the second work location. The backhoe operator then proceeded north to begin tie renewal work, and the material handling truck operator proceeded north to MP 5 to load previously removed crossties onto the truck. The remaining four track workers and the ALE RWIC traveled to MP 3.7 by pickup truck. Once the backhoe joined them, the work group installed portable derails about 100–150 yards north and south of the work location and began installing new crossties. The ALE RWIC left the work zone before all the new crossties were installed.

After completing work near MP 5, the boom truck operator traveled on rail to the MP 3.7 work location. When he arrived at the derail on the north end of the working limits, he sounded the truck horn. The CR lead man (the point of contact between CR and ALE personnel) instructed one of the track workers to remove the derail to allow the material handling truck into the working limits. The CR lead man also instructed the track worker to remove both derails because the work at MP 3.7 was almost completed.

### 1.2.2 Train Crew

On November 17, 2020, the train crew went on duty at 7:00 a.m. in the ALE Mobile yard. Their assignment included operating manifest freight trains that arrive at the Belt Junction and switching freight cars. The crew consisted of an engineer, conductor, and a brakeman. The conductor, an ALE transportation employee who would later operate the striking train as its engineer, was qualified as both an engineer and a conductor.<sup>6</sup>

About 7:11 a.m., the crew verified Daily Operation Bulletin 322 with the Nebraska Central Railroad Corporation (NCRC) Dispatcher.<sup>7</sup> After completing a job briefing, the crew began their duties of switching railcars. Investigators reviewed the operations bulletin and found that the track work being conducted at MP 3.7 was not listed on the

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<sup>6</sup> (a) Hereafter, the ALE transportation employee who operated the striking train is referred to as “the engineer” when working in that role. (b) Engineers and conductors are required to be certified in accordance with 49 *CFR* Parts 240 and 242, Qualification and Certification of Locomotive Engineers and Qualification and Certification of Conductors.

<sup>7</sup> The Nebraska Central Railroad Corporation (NCRC) Dispatching Center in Fort Worth, Texas, handles ALE’s dispatching functions. All daily operation bulletins, emergency responses, and signal malfunction notification are issued through the NCRC facility. All transportation employees are required to notify NCRC dispatchers when going on and off duty to enable the dispatchers to maintain accurate crew records. All maintenance-of-way and signal personnel are required to report any adjustments pertaining to the daily operation bulletin to the NCRC.

bulletin. Investigators learned from an interview with the engineer that he was not aware of track work along his route.

Later that day, the crew was assigned to operate CN train A-48871-16 consisting of 2 locomotives, 27 loads, and 27 empty railcars, which originated in Memphis, Tennessee, and was scheduled to arrive at Belt Junction, which was about 5 miles northwest of Mobile, Alabama.

About 1:30 p.m., the crew was notified that CN train A-48871-16 had arrived at the Belt Junction. The conductor of the assigned work crew agreed to operate train A-48871-16 from Belt Junction to the ALE Mobile Yard. The locomotive engineer and brakeman continued to switch railcars in the ALE Mobile yard. About 1:50 p.m., the conductor arrived at Belt Junction to assume the role of engineer for train A-48871-16. At 2:13 p.m., he departed Belt Junction and headed for the ALE Mobile yard.

### **1.3 Personal Electronic Device Usage**

Cell phone records and locomotive inward-facing image recordings reviewed by investigators showed that the engineer of CN train A-48871-16 was using a personal electronic device when he entered the cab of the locomotive. The engineer also partially covered the inward-facing in-cab camera with his hat while he engaged in a video conversation on his personal electronic device. Because the engineer's hat did not fully obstruct the camera's view, investigators were able to see that the engineer continued to be engaged in a video conversation on his personal electronic device throughout the train movement up to the point of impact.

### **1.4 Regulations on Use of Personal Electronic Devices by Train Crews**

In response to a head-on train collision that occurred on September 12, 2008, in Chatsworth, California, the Federal Railroad Administration (FRA) issued Emergency Order No. 26, restricting use of personal electronic devices, including cell phones, by railroad personnel. Shortly following Emergency Order No. 26, the FRA codified transportation statutes and regulations that prohibit the use of personal electronic devices by locomotive engineers operating trains. These rules are well-known, and for over a decade, the railroad industry has trained and tested its employees on the rules pertaining to personal electronic devices. The NTSB reviewed training records and found that the engineer of CN train A-48871-16 had been trained and tested on these rules.

## 1.5 Postaccident Actions

In response to this collision, ALE implemented over 25 managerial and operational changes, including updating and implementing safety plans that corrected issues related to on-track safety, operational communication, and internal oversight for electronic device usage and train operations. Additionally, ALE will no longer use contractors for track maintenance. The ALE employee who was operating the train was decertified as an engineer and terminated.

## 2 Analysis

FRA regulations prohibit train engineers operating trains from using personal electronic devices. The NTSB confirmed that the engineer was distracted by a video conversation on his personal electronic device throughout the train movement until the collision. The investigation also confirmed that he had been trained and tested on FRA rules regarding personal electronic device use. The engineer's purposeful obstruction of the inward-facing in-cab camera while using his device suggests an attempt to conceal his activity, indicating that he was aware of the prohibition on use of personal electronic devices. ALE's postaccident actions addressed personal electronic device usage through quarterly testing of employees.

In the moments before the collision, the engineer did not apply brakes, sound the train's horn, or take other actions to mitigate or prevent the collision. This lack of response indicates that the engineer was distracted from the safe operation of the train and unaware of the work group's presence before impact. Had the engineer operated his train at restricted speed and been fully engaged in the safe movement of his train, this collision would have been avoided.

In this collision there was confusion within the work group regarding whether the track was controlled or non-controlled and the proper method to establish on-track safety at the work location. This confusion resulted in track protection that did not meet the minimum safety standards in Title 49 *Code of Federal Regulations* Part 214. When the portable derails were removed before all workers and equipment were clear of the tracks, the work zone was no longer protected. Had on-track safety been properly established, and the portable derails remained in place, the severity of the collision may have been reduced. ALE's postaccident actions addressed problems with track protection through an improved on-track safety manual covering control of train movements, communication, and physical protection.

## 3 Probable Cause

The National Transportation Safety Board determines that the probable cause of the Prichard, Alabama, collision of an Alabama Export Railroad freight train and on-track

maintenance equipment was the failure of the engineer to operate his train in accordance with restricted speed requirements and stop before colliding with the equipment because he was engaged in the prohibited use of a personal electronic device. Contributing to the collision was Alabama Export Railroad track protection which did not meet the minimum safety standards in Title 49 *Code of Federal Regulations* Part 214. Also contributing to the collision was the Continental Rail Incorporated roadway work group's removal of portable derails used for on-track safety protection before they cleared the track.

The National Transportation Safety Board (NTSB) is an independent federal agency dedicated to promoting aviation, railroad, highway, marine, and pipeline safety. Established in 1967, the agency is mandated by Congress through the Independent Safety Board Act of 1974, to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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 (Title 49 *United States Code* section 1154(b)).

For more detailed background information on this report, visit the NTSB investigations website and search for NTSB accident ID RRD21LR005. 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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