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Railroad Investigation Report: RIR-23/04

W.T. Byler Company Equipment Operator Fatality

Castroville, Texas
September 22, 2021

1 Factual Information

1.1 Accident Description

On September 22, 2021, about 2:40 p.m. local time, a W.T. Byler Company (W.T. Byler) contract equipment operator was struck and killed by a suspended load of steel grating material that he was transporting with the boom and stick of a roadway maintenance machine (RMM) on the Union Pacific Railroad (UP) Del Rio Subdivision near Castroville, Texas.¹ The equipment operator was part of a contract W.T. Byler crew assisting UP workers with a timber replacement project on the Chacon Creek railroad bridge. The accident occurred near milepost 240.65 while the operator was transporting a 2,200-pound load of three steel grating panels, each 20 feet long by 3 feet wide, from the bridge structure at milepost 240.37 to a staging location west of the bridge at milepost 240.74. (See figure 1.) No employees witnessed the accident. Visibility conditions at the time of the accident were daylight with clear skies, and the temperature was 84°F. W.T. Byler estimated damage to equipment to be about \$32,000.

¹ (a) Visit [ntsb.gov](https://www.ntsb.gov) to find additional information in the [public docket](#) for this NTSB accident investigation (case number RRD21LR016). Use the [CAROL Query](#) to search safety recommendations and investigations. (b) All times in this report are local time unless otherwise noted.



Figure 1. Overhead of accident location with a postaccident inset of the RMM. (Source: Google Earth.)

In a postaccident interview with National Transportation Safety Board (NTSB) investigators, the UP bridge supervisor stated that sometime before 3:00 p.m., he radioed the equipment operator but did not receive a response. He and two other UP workers then approached the scene of the accident, observed the RMM stopped on the tracks, and notified another UP worker to call 9-1-1. Emergency responders from the Lacoste Volunteer Fire Department, Allegiance EMS Castroville, and the Medina County Sheriff's Office arrived at the scene of the accident around 3:38 p.m., and the equipment operator was pronounced deceased.

1.2 Before the Accident

The equipment operator reported to the worksite at 7:30 a.m. on the day of the accident. In an interview with NTSB investigators, the UP bridge foreman stated he instructed the equipment operator to use the RMM to remove steel grating panels from the bridge structure and stack the materials along the ballast shoulder at milepost 240.37. From there, the operator was instructed to transport the panels westward to the material staging location.

1.3 Accident Equipment

1.3.1 Roadway Maintenance Machine

The accident RMM was a Caterpillar mini hydraulic excavator that had been outfitted with retractable railroad wheels by Ballast Tools Equipment (BTE) so that it could operate as a rail-mounted RMM.² The machine was equipped with a standard boom and stick for lifting materials over the front of the machine and had a lifting capacity rating of 6,549 pounds. Various work heads could be attached to the stick, such as grapples, digging buckets, and clamping attachments; a clamping work head attachment was selected for this job. (See figure 2.)

² (a) BTE designs, builds, sells, and leases specialty equipment for railroad track maintenance and construction. (b) The accident roadway maintenance machine met FRA standards as specified in Title 49 *Code of Federal Regulations* (CFR) Part 214 Subpart D, On-track roadway maintenance machines and hi-rail vehicles.



Figure 2. Accident RMM with clamping work head attachment. (Source: UP.)

1.3.2 Clamping Work Head Attachment

To lift and transport the steel grating panels to the material staging location, the equipment operator used a clamping work head attachment manufactured by BTE called the Tie Talon.³ NTSB investigators reviewed BTE's specifications for the work

³ The BTE Tie Talon work head attachment is a heavy-duty clamping attachment for backhoes and excavators.

head, which state that the attachment is designed for use with single crossties. The specification does not discuss other uses of this attachment.

In a postaccident interview with NTSB investigators, the UP bridge supervisor stated that he had observed the equipment operator using the clamping work head attachment to grip the steel grating panels and transport the load suspended in front of the RMM with the panels oriented lengthwise above the centerline of the track.

1.4 Equipment Operator

1.4.1 Training

The equipment operator began working for W.T. Byler on September 6, 2016. In a postaccident interview with NTSB investigators, the W.T. Byler director of safety stated that all W.T. Byler workers receive safety training during new hire orientation and must follow UP safety procedures. A review of training records showed that the equipment operator had completed contractor safety orientation on January 17, 2020. He also received training from BTE on the mini excavator RMM on January 7, 2021.⁴

1.4.2 Autopsy and Toxicological Testing

Central Texas Autopsy conducted an autopsy of the equipment operator. According to the autopsy report, the cause of death was hemorrhagic shock.

In accordance with Title 49 *Code of Federal Regulations* Part 219, the equipment operator underwent postaccident toxicology tests for alcohol and other drugs. The results were negative for all tested-for substances.⁵

1.4.3 Cellular Phone Use

The NTSB reviewed records for the equipment operator's cellular phone, which was on his person at the time of the accident. The review showed that an 11-minute

⁴ Training was conducted in accordance with FRA regulations as defined in 49 *CFR* 214.355: Training and qualification in on-track safety for operators of roadway maintenance machines.

⁵ FRA-required postaccident toxicology testing includes testing for amphetamines, barbiturates, benzodiazepines, cannabinoids, cocaine, MDMA/MDA, methadone, opiates/opioids, phencyclidine, tramadol, ethyl alcohol, brompheniramine, chlorpheniramine, diphenhydramine, doxylamine, and pheniramine.

incoming call was answered about 2:38 p.m. on September 22, 2 minutes before the accident occurred.

1.5 W.T. Byler Policies

At the time of the accident, W.T. Byler had a safety training and inspection program, but RMM operator training was conducted by BTE. W.T. Byler did not have policies or rules related to transporting suspended loads with RMMs.

W.T. Byler's cellular phone use policy states that employees must not operate any equipment while using a cellular phone.⁶ An operator must stop, turn off, and dismount the equipment and must stay at least 50 feet away from the track to use a cellular phone. Each employee must learn and sign this policy during initial training; the signed policy is included in their employment records.

1.6 Postaccident Examinations

On September 24, 2021, NTSB investigators examined impact markings in the center of the track gauge. Gouges and scrapes in the crossties and ballast in front of the accident RMM indicated where the steel grating panels had fallen from the clamping work head attachment.

The final resting position of the RMM on the track was such that the steel grating panel, still gripped by the clamping work head attachment, was positioned with one end of the panel stuck in the ground directly in front of the RMM, in the center of the track gauge, and the other end extending through the broken front windshield of the RMM. (See figure 3.)

⁶ W.T. Byler Company, Chapter 54: Cellphone and Personal Electronic Device Policy. September 6, 2016.



Figure 3. Postaccident position of steel grating panels and RMM. (Photo: UP.)

1.7 Postaccident Actions

As a result of this accident, W.T. Byler prohibited the use of the clamping work head attachment to move steel grating panels. Employees must use a grapple truck to move these panels.⁷ W.T. Byler also added rules to their safety program that prohibit workers from transporting materials suspended in front of RMM equipment above the

⁷ W.T. Byler Company. Postaccident action—grapple truck, April 11, 2023.

centerline of the track. These rules specify that operators using RMMs to transport suspended loads must position the loads over the field side of the track and must use tag lines (ropes attached to the lifted load) to stabilize the loads. Rail carts must be used when railroad clearance issues obstruct the movement of materials.

W.T. Byler implemented initial and refresher safety training in roadway worker protection regulations for employees. The company contracted with a third-party vendor to provide Occupational Safety and Health Administration fall protection and bridge worker safety training programs and hired two safety professionals dedicated to railroad projects.⁸ The company is also conducting audits of proper employee credentials and safe working habits.

W.T. Byler reiterated its cellular phone use policy to its employees in a safety standdown with all employees after the accident.

2 Analysis

In this accident, a W.T. Byler equipment operator working on a UP project was struck and killed by a suspended load of steel grating panels that he was transporting using the boom and stick of a mini excavator RMM. Postaccident interviews with UP workers indicated that the equipment operator had used the clamping work head attachment to grip three steel grating panels and had lifted the panels using the boom and stick of the RMM, suspending the load in front of the RMM and orienting it lengthwise above the centerline of the track. NTSB investigators examined the evidence and center-of-track impact markings, which were consistent with the equipment operator moving the RMM with the suspended load along the track. The steel grating panels came loose from the RMM work head attachment and a panel fell so that one end stuck in the ground and the other end was directly in the operator's path of travel. As the RMM moved forward, the panel broke through the front windshield of the RMM and struck the equipment operator. After the accident, W.T. Byler implemented rules requiring that RMM operators position suspended loads over the field side of the track during transport and use tag lines to stabilize them or, if this is impossible, use rail carts to transport loads along track.

Equipment specifications for the clamping work head attachment indicated that the attachment was specifically designed for use with single crossties, not steel grating panels. By using the clamping work head to move steel grating panels, the operator was not performing the work in accordance with equipment specifications. W.T. Byler now

⁸ W.T. Byler Company. Response to the NTSB regarding postaccident actions, October 5, 2022.

prohibits the use of the clamping work head attachment to move the panels and has hired two safety professionals dedicated to railroad projects.

NTSB investigators examined call records for the equipment operator's cellular phone, which indicate the operator likely was using the phone at the time of the accident. Although the investigation did not determine whether the equipment operator's cellular phone use contributed to the accident, use of a personal electronic device while operating an RMM is a violation of W.T. Byler's operating rules. W.T. Byler reiterated this rule to employees.

3 Probable Cause

The National Transportation Safety Board determines that the probable cause of the September 22, 2021, equipment operator fatality was the use of a roadway maintenance machine to move a load of steel grating panels suspended in front of the machine with a clamping work head attachment that was not designed for use with such a load.

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable cause of the accidents and events we investigate and issue safety recommendations aimed at preventing future occurrences. We also conduct safety research studies and offer information and other assistance to family members and survivors for any accident investigated by the agency. Additionally, we serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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 RRD21LR016. 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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