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## **Federal Railroad Administration, Office of Railroad Safety**

### **Accident Investigation Preliminary Report FE-2023-10**

**CSX Transportation (CSX) – Conductor Trainee Fatality  
Baltimore, Maryland  
June 26, 2023**

#### **1. EXECUTIVE SUMMARY**

On Monday, June 26, 2023, a CSX Conductor Trainee (CSX) was fatally injured at Seagirt Marine Terminal in the Port of Baltimore, Baltimore, Maryland. The crew, made up of an engineer, a conductor, and a conductor trainee, started their shift at 3:59 p.m., EST, after completing the required rest periods. They received instructions from the yardmaster, performed a detailed job briefing, and then headed to their locomotive, but they experienced<sup>1</sup> delays due to heavy traffic and other priority operations.

At 7:02 p.m., EST, the crew began their switching work. Around 8:04 p.m., EST, while moving cars on track No. 5, the conductor and trainee climbed onto the lead car. The trainee was responsible for controlling the movement and guiding the engineer. During the operation, a change in the throttle and brake caused a change in the slack action, leading to the trainee losing his grip on the safety appliances and falling onto the tracks in front of the cut of cars. The trainee was fatally injured on the scene.

The Federal Railroad Administration (FRA) issued Safety Bulletin 2023-04 in the weeks following this fatal accident involving a conductor trainee (CT). The bulletin emphasizes the importance of reviewing training programs to prepare employees for handling slack action forces, maintaining optimal stability when riding equipment, and conducting thorough job briefings on safe riding practices. It also recommends mentoring less experienced employees and adhering to Switching Operations Fatality Analysis (SOFA) recommendations to enhance workplace safety.

#### **2. ACCIDENT SEQUENCE OF EVENTS**

On the afternoon of June 26, 2023, the crew of CSX yard train Y231-26, began their shift at Seagirt Marine Terminal in the Port of Baltimore. The crew, consisting of an engineer, a conductor, and a conductor trainee, reported for duty at 3:59 p.m., EST. They were scheduled to perform yard switching operations, a task that involves moving rail cars within the yard to prepare them for further transportation.

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The crew was compliant with the required rest periods as outlined in Title 49 USC Chapter 211. This adherence to rest regulations was crucial to ensure that all members were fully alert and ready for the tasks ahead. After checking in, the crew received their switching instructions from the yardmaster around 4:15 p.m., EST. They then held a detailed job briefing to discuss the specifics of the operations they were about to undertake.

By 5:00 p.m., EST, the crew made their way on foot to their assigned locomotive, which was located at the northern end of the No. 5 track in the terminal. However, they soon encountered a delay. Significant traffic congestion in the Bayview area, coupled with priority operations involving another crew (Q137-26), forced the yardmaster to instruct Y231-26 to stand by. They were directed to wait until Q137-26 completed its tasks and cleared the area.

At approximately 6:30 p.m., EST, the Q137-26 crew finished building their train and departed, allowing Y231-26 to begin their assigned work. By 7:02 p.m., EST, Y231-26 started their switching operations.

Around 8:04 p.m., EST, the conductor and conductor trainee mounted the lead car (DTTX 475890) to oversee the shoving movement of the train on track No. 5. The conductor trainee was positioned on the east side of the car, while the conductor was on the west side. The conductor trainee was responsible for controlling the movement and providing car counts to the engineer as the train moved southward.

During this operation, the conductor trainee stood with one foot on the second rung of a ladder on the car, and the other on the car's platform. He leaned back against a vertical grab iron, using one hand to hold on and the other to operate the radio. As the train moved, the engineer adjusted the throttle and brake, which caused the cars to jolt as the slack in the train ran out. This sudden change in momentum caused the conductor trainee to lose his balance and grip. He was thrown off the car and landed on the tracks.

The conductor, witnessing the fall, immediately radioed the engineer to stop the train and then jumped off the car to apply the emergency brake. The conductor trainee was fatally injured as the moving equipment struck him.



Figure 1: Accident Location

### 3. INVESTIGATION AND ANALYSIS

On June 26, 2023, FRA and the National Transportation Safety Board (NTSB) began investigating the rail accident. FRA's investigation focused on examining the accident site, equipment, and train crew to ensure compliance with safety rules and federal regulations. The investigation included reviewing video footage, documents, and conducting interviews with various crew members. FRA found no evidence of deficiencies, irregularities, or non-compliance for the track structure around the accident location, or the mechanical condition of the equipment in use.

Fatigue analysis confirmed fatigue was not present, and toxicological testing was negative for the presence of drugs or alcohol.

#### *Certification and Training of the Conductor Trainee*

FRA's regulations in Title 49 CFR Part 242 govern the certification and training of conductors and conductor trainees, setting minimum federal safety standards. CSX's conductor training program has two phases:

1. **Phase I:** A four-week program at the CSX REDI center in Atlanta, combining classroom and field instruction. Trainees learn railroad operations, signal systems, safety procedures, and complete practical exercises using mockups. They are tested through written exams and field evaluations.
2. **Phase II:** On-the-job training (OJT) where trainees apply their knowledge under supervision. They work with certified conductors and transportation managers, undergo regular evaluations, and receive feedback. Performance is recorded in the Railroad Qualification System, and any deficiencies are corrected with additional training.

The conductor trainee had been observed and tested in various operational scenarios, including those involving mounting and dismounting moving equipment. These observations confirmed compliance with CSX operating rules during evaluations. Interviews with the conductor trainee's mentor, supervisor, and fellow trainees indicated that the conductor trainee was knowledgeable, engaged, and competent in performing assigned tasks. No concerns were raised regarding the conductor trainee's understanding of safety protocols or operational rules.

#### *Video Evidence*

The video footage from the Seagirt Marine Terminal provided a clear view of the events leading up to the accident.

#### *Timeline of Events*

- **8:06:05 p.m.:** The security camera recording starts.
- **8:06:12 p.m.:** Slack action is observed; both the conductor and trainee's positions shift forward in the direction of the movement. This indicates the equipment stopped or slowed suddenly.
- **8:06:13 p.m.:** The conductor trainee is seen facing the direction of movement and

bending over the leading grab iron.

- **8:06:13 p.m.:** The trainee's right foot leaves the railcar platform and contacts the ground outside the east side gauge of track No. 5, while his left foot remains on the railcar ladder steps.
- **8:06:13 p.m.:** The trainee's body is seen perpendicular to the track and facing away from the coupler, with his left foot on the railcar platform and right foot on the ground.
- **8:06:14 p.m.:** The trainee's upper torso falls within the gauge of the track, and the leading east side wheel of the intermodal railcar strikes the trainee's mid-section, pinning him against the rail.

The video evidence from the Seagirt Marine Terminal provided a clear and detailed account of the accident. The footage corroborated other findings from the investigation, including witness statements and event recorder data, and was instrumental in establishing the sequence of events and identifying the key contributing factors.

### ***Interaction with Other Employees***

The crew consisted of an engineer, conductor, and conductor trainee. The engineer operated the locomotive, the conductor supervised, and the conductor trainee was involved in training activities. The crew conducted a detailed job briefing, covering tasks, hazards, and safety procedures. This briefing ensured all members understood their roles and responsibilities. The conductor served as the conductor trainee's trainer, maintaining close communication, and providing guidance throughout the operations. The conductor trainee was responsible for tasks like communicating car counts to the engineer. The conductor trainee used a handheld radio to communicate with the engineer, while the conductor ensured these communications were accurate. The yardmaster provided switching instructions, which were followed without issue. Post-accident interviews with the crew confirmed that the conductor trainee was neither distracted nor fatigued and was competently performing his duties. No concerns were raised about the conductor trainee's performance or safety knowledge.

FRA determined that there was no indication of interpersonal issues or communication breakdowns that contributed to the accident. The crew maintained effective communication and coordination throughout their operations. However, while the crew communicated effectively during the operation, the conductor trainee's focus on providing car counts and using the radio may have distracted him from maintaining proper riding posture.

### ***Operating Practices and Rules Compliance***

All crew members were current with required training and certifications. The conductor trainee had completed conductor training and passed relevant operational tests. The rules mandate specific safety practices for riding on equipment, such as maintaining three points of contact. The investigation found that the conductor trainee failed to comply with the rules at the time of the accident by not maintaining three points of contact, leading to improper riding that compromised safety. Interviews with crew members indicated familiarity and regular practice of safety rules. No evidence suggested willful noncompliance or habitual disregard for safety protocols by the crew. A review of operational testing showed no history of noncompliance with operating

practices among the crew members. Overall, the crew had a good track record of following rules and safety practices.

### ***Slack Action***

The train was moving at 1 mph, with normal throttle and brake usage. No excessive forces were generated. Both data and a reenactment confirmed the forces were typical for yard switching operations. Crew members, including the conductor, reported no unusual slack action. All train components were in serviceable condition, with no mechanical issues contributing to slack action. A reenactment showed the slack action was predictable and manageable, with no excessive forces.

FRA determined that the forces generated during the throttle movement and brake release were within normal operating limits and did not exceed what is typically encountered during yard switching operations. The event recorder data, mechanical inspections, and crew statements all supported the finding that slack action was a routine aspect of the train's movement and did not pose any additional risk beyond what should have been anticipated and managed by the crew.

## **4. POST-ACCIDENT ACTIONS**

In response to this accident, CSX has undertaken several key corrective actions to enhance training and the safety of its operations. According to CSX, it has:

1. **Extended Training Period:** Recognizing the need for more comprehensive preparation, CSX has extended its training program at the REDI Center from four weeks to five weeks. This additional week includes second-shift training, which exposes trainees to a broader range of operational scenarios and challenges.
2. **Enhanced Equipment Training:** Trainees now receive hands-on experience with every type of equipment they may encounter, including intermodal cars, tank cars, and hopper cars. This training specifically addresses the equipment involved in past fatal accidents, helping to ensure that trainees are well-prepared for all operational contexts.
3. **Revised Conductor Training Program:** The conductor training program has been completely overhauled to provide a more logical and progressive learning structure. The new program starts with basic tasks and gradually advances to more complex mainline operations, aiming to create a more cohesive and effective training experience.
4. **Smaller Class Sizes:** To improve the quality of instruction, class sizes have been reduced from approximately 60 students to 25-30 students. This change helps allow for a better student-to-instructor ratio, facilitating more individualized attention and improving overall learning outcomes.
5. **Improved Success Rates:** The modifications in the training program and reduced class sizes have resulted in higher graduation and success rates among trainees, reflecting the effectiveness of these new measures.

6. **Mentor Program:** An enhanced mentor program has been introduced, where experienced conductors provide ongoing support to trainees both during and after their initial training phase. This program includes regular rules training and additional field support, with 67 new mentors added to strengthen the program.
7. **Policy on Trainees with New Conductors:** A new policy prohibits conductors with less than one year of experience from training new hires. This helps ensure that only seasoned conductors are responsible for guiding new trainees, improving the quality of training and oversight.
8. **Enhanced Hiring Process:** CSX has taken control of the hiring process from third-party companies. Managers and assistant superintendents now conduct face-to-face interviews to help ensure that only the highest quality candidates are selected.
9. **Slack Action Training:** Trainees now receive practical experience with slack action, including riding equipment and experiencing sudden stops. This hands-on approach helps them understand and respond to slack in real operational contexts.

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<sup>i</sup> FRA's final summary report will be published upon the completion of the NTSB investigation of this accident, per the agreement between FRA and NTSB.