Inside THE RAIL
From NASA's Confidential Close Call Reporting System
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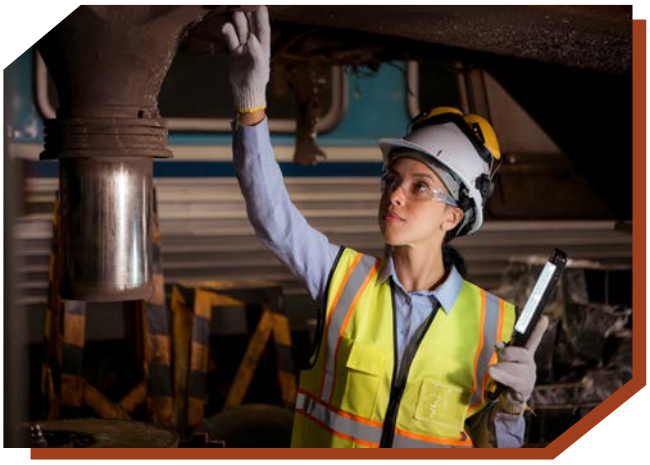
Mechanical Department Reports

Railroad employees who work in the maintenance of equipment (mechanical) department have a unique set of duties and hazards. There are rules and regulations that protect them from the unexpected movement of rolling equipment while they are working on, under, or in between the equipment. They also comply with rules and regulations that require repairs and periodic inspections. Their work includes the use of very large tools, cranes, jacks, and machines to repair and maintain rail cars and locomotives. Some mechanical employees perform duties in shops and some work outdoors in very harsh weather conditions.



A search of the 25,500+ C³RS records in our Database Query Tool (DBQT) revealed that over 880 close call records have been submitted by mechanical employees since program inception in 2011.[1] Some events can have serious consequences. According to the Federal Railroad Administration's (FRA) Office of Safety analysis statistics, during one year alone (2024) there were 757 injuries to mechanical employees reported nationwide.[2] These numbers highlight the importance of operating safely in this hazardous work environment.

In this newsletter, we will examine several C³RS reports that were submitted by mechanical employees.

Shop Door Sensors Are Not Always Dependable

In the following report, a carman was removing a car from the shop and the shop door closed on top of the car. As a bonus, the reporter also provided a corrective action during the C³RS Analyst callback.

■ *I was spotting a Car in Track X, shoving the repaired car out of the door. I needed to close the overhead door; I accidentally hit the west garage door button down instead of the east door down and the Car was already one-fourth of the way out the west door. We have sensors on the doors, but it went right under the car without sending the door right back up hitting the top of the Car. The controls for each door are located in the center of the building next to a side access service door. I inadvertently pressed the west overhead door button instead of the east overhead door button. I pressed the button and walked out the side door to be in position for my next task and when outside, I saw the overhead west door down resting on top of the rail car that was repaired and in position to be shoved the rest of the way out of the building.*

C³RS Expert Analyst's Callback Summary:

The reporter, a Carman, stated it was just an oversight when the wrong button was pushed. The reporter disclosed that the door sensor was too low and did not pick up the standing car in the doorway. The reporter understands the importance of staying focused when completing tasks. The reporter also stated, as a corrective action, the door sensors were lifted to a higher level so this type of incident would not happen again.

Trains Look the Same

This carman was retrieving tools from the truck and returned to complete the work. However, the carman mistakenly entered the incorrect train.

■ *After receiving confirmation Blue Signal Protection was being applied to Train A, I confirmed permission to work the train from the authorized Mechanical Foreman by signaling a thumbs up. As I walked the train, I exited the train to grab tools. Upon re-approaching Train A on Track X, I mistakenly entered Train B on Track Y. These two trains are extremely similar from length of cars to type of cars. As I began to adjust seats and walk through the train, two Managers walked up to ask me questions about who the Worker in Charge was. I stated the wrong Worker in Charge, revealing I was working the wrong train. Although the train I was on did have Blue Signal Protection, I did not check in with the Worker in Charge. I didn't know I was on the wrong train and track. Both tracks did have Blue Signal Protection applied.*

C³RS Expert Analyst's Callback Summary:

The reporter, a Carman, stated complacency kicked in and resources were not used. Because the trains looked alike, the Carman disclosed that the train's manifest should have been used to identify the consist. In addition, the Carman explained that this was the first time something like this had happened to him.

Vigilance is Required When Routines are Altered

This train crew had a very successful daily routine which included a Class II Air Brake Test. However, when the crew members changed for a trip, the routine was not followed.

■ *Typically, I get into the locomotive cab, cut the control stand in, set up Positive Train Control (PTC) and wait for the Carman to give me a Class II Brake Test. The Carman usually rides in the cab of the previous train, so I know if he is at work today or not. He starts work, but usually comes out early to give me my Class II Brake Test. If he is not there that day, I make sure to get the test from the Conductor or Assistant Conductor. Then, the Conductor closes the doors and we leave. My normal crew is off, and… I got an Assistant Conductor off the extra board. The Conductor closed the doors and we left before the Carman could come out and give us a Class II Brake Test. After about a mile, I thought to myself that we did not get a Class II. Upon returning, I asked the Carman if he gave us a test, he said that we were leaving when he walked up…*

C³RS Expert Analyst's Callback Summary:

The reporter, an Engineer, attributed the missed Class II Brake Test to deviating from the normal routine prior to departure. The normal crew meshes well together, and the reporter stated the expectation was the Conductor knew the Carman would perform the brake test. The Engineer said a written checklist for pre-departure activities could have prevented missing the test.

Distracted Driver While Traveling Through the Yard

In this incident, a machinist was driving a truck through the train yard. An incorrect judgement was made regarding the movement of a train which resulted in a close call.

■ *I was driving northbound alongside Track X and came to a crossing in the middle of the yard. After looking, it seemed that the moving train was going on the adjacent Track Y. I proceeded to cross and at about three fourths of a car length, I realized the train was on Track X. I sped up to clear Track X, which I did. The train stopped but immediately started to move again, indicating it did not apply emergency braking. I talked to the Conductor and Engineer explaining my view. They understood and I apologized for the incident. I reported it to my Mechanical Foreman.*

C³RS Expert Analyst's Callback Summary:

The reporter, a Machinist, stated this event took place after completing work on another train. While traveling through the yard, the reporter was conversing with another Machinist in the vehicle and both individuals became distracted as they looked at each other while conversing. At this particular crossing, a large power distribution box obstructs the view of the tracks, further limiting visibility. As the train approached, no bells or horns were used to signal its arrival. The reporter added that the combination of the distraction in the vehicle and the lack of audible warning from the train caused the near miss. To prevent similar incidents in the future, the reporter will pause conversations at crossings and ensure the route is clear before proceeding.

1. *C³RS DBQT (Select Person-Craft-Mechanical, then click Search) https://c3rs.arc.nasa.gov/dbqt.html*
2. *2.04 - Employee on duty casualty Trends (Select Job Code Categories, Maintenance of Equipment and Stores, Calendar year Jan 2024 to Dec 2024) https://safetydata.fra.dot.gov/officeofsafety/publicsite/Query/castally1.aspx*

Did You Know?

MOBILE FRIENDLY REPORTING

NASA C³RS has mobile friendly report forms so you can submit your report from your mobile device! Also, when you submit a C³RS report, a NASA C³RS Expert Analyst may call you to get more information or to better understand the safety issues you are sharing. It is very important that you return our call as soon as possible so that your identification (ID) strip (sent by the U.S. Mail) can be returned to you quickly.

The incoming call on your phone will not say NASA, but will be from **area code 650 or 217**. Remember, the more information you include in your report, the faster the ID strip can be returned to you!

Report Intake By Craft January through June 2025	
Transportation	2,334
Engineering	109
Mechanical	99
Signal	2

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https://c3rs.arc.nasa.gov

Monthly Report Intake Previous 3 Months	
April	403
May	391
June	451