



Inside **THE** RAIL

From NASA's Confidential Close Call Reporting System



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Based on a True Story

We have all seen hit movies with the tagline “Based on a True Story”. It seems like every popular movie with a great story line is ripped from the headlines of the newspapers and the evening news. While many movies embellish events to dramatize the plot, real and serious events occur on railroads every day, particularly at railroad crossings at grade. Unfortunately, unlike the famous hit movie "Unstoppable," Denzel Washington is not always there to save the day.

We do have real life heroes who go to work every day with safety as their number one mission, and have provided detailed and informative C³RS reports related to railway crossings at grade in this issue of *Inside the Rail*. This newsletter will highlight what led up to and may have contributed to the events, all from first-hand accounts of C³RS reporters.



Setting up the Scene

Accurate and complete delivery of mandatory directives is vital to safety, as seen in this narrative, where a dispatcher reports a close call related to a crossing warning system malfunction notification.

■ *During a very stressful and borderline overwhelming shift, when taking crossings Out of Service in protected working limits, a crossing was missed in the multiple crossings that were taken out. The mistake was discovered and rectified. During the morning shift on a new permanent weekly shift for myself, the railroad was in a terrible state due to slippery rail conditions, and trains were frequently running between 30-45 minutes late. During these operations, working limits were established on Track X between two interlockings. The limits were properly protected with both blocking devices applied and Positive Train Control (PTC) protection. After the paperwork was issued, the Signal Department called to inform me that the crossings were also pulled out of service in the working limits. While copying that information, one crossing was left off the paperwork and PTC system but was still overall protected by the working limits and its protection. Once the issue was discovered, the crossing was properly protected, and its outage recorded on the paperwork.*

Sound Check

Distractions and human factors play critical roles in many close call events. Below, an engineer describes how a distraction while operating a train led to missing a whistle sequence at a grade crossing.

■ *I missed the horn at the Crossing. I had just left the previous station, where three crossings were quiet zones. As I approached the Crossing, there was a man at the crossing*

gate on a bike riding in circles. He was behind the crossing gates, but I wasn't sure if he was going to go for it or not. I became distracted watching him with a hand on the brake that I missed the proper horn sequence. After I noticed I missed, I blew one long at the end of the crossing. Going forward, I will blow earlier, just past the Station, and at least once I see anyone moving by the crossing gates.

Lights, Camera, Action!

Actors have cues they follow while performing to ensure a scene looks as realistic as possible. This is similar to engineers developing a routine prior to departure to make sure the train is ready to go. This next example explains how being in a rush caused the engineer to miss a step in the predeparture procedure.

■ *After changing ends leaving the yard, I failed to turn on the headlight; however, I did check the headlight in the yard before departing the yard. I was on the Train in the Engine headed southbound on the Track. I ran from Station X to Station Y with my markers on and not my headlight. I also crossed over a highway grade crossing at passenger Station Y. I turned on the lights at Station Y and continued south as normal.*

C³RS Expert Analyst's Callback Summary:

The reporter, an Engineer, stated the train was released late by the Mechanical Department. When the Engineer boarded the train, the Engineer encountered problems with the Positive Train Control system. Once resolved, the train was moved out of the yard, and in a haste, the Engineer forgot to turn on the headlight. The reporter contributed the event to troubleshooting, being in a rush, and a late train. By rushing, the Engineer forgot to stick to the Engineer's procedures.

Set Props

Train crews are not the only part of the scene at road crossings. Safety equipment and the general public also play a critical role in these scenes. All safety devices need to work as intended to avoid the scenario below.

■ *On the Train, as I was coming up to Crossing X, expecting a cab signal drop for the Interlocking, I took a Pneumatic Control Switch (PCS) penalty due to the train not suppressing enough air. It took around 10-15 seconds to recover and get on the move again. Crossing Y was within my vision, and I thought that the gates were still down. I continued to gain speed when I noticed two cars going through the crossing at Crossing Y. I blew the whistle a few times and took a chunk of air to slow down. I thought the gates were still down and the lights flashing when, as I came up to the crossing, the gates were still up. At that point, I should have placed the train into emergency, but I was already through the crossing and going at a really slow speed. I don't exactly know my speed because I was more focused on making sure the crossing was clear. As I passed the crossing into the Station, I noticed the gates come up. I reported this immediately to the Train Dispatcher.*

C³RS Expert Analyst's Callback Summary:

The reporter, an Engineer, advised cab signals were recently put into place on the route. The Engineer said the cab signal speed suddenly dropped to Restricted Speed and triggered a penalty brake application, which stopped the train on the prior road crossing. As the Engineer got a view of the next crossing, it appeared the gates were down, but the reporter could not be sure due to sun glare. Traffic was observed in both directions, but the reporter thought the cars were going around the gates. When the reporter realized the gates were not down, the train was not placed into emergency, and the train did not stop before occupying the crossing. The headlight and ditch lights were displayed, and the correct whistle sequence was sounded.

Hit Your Mark

All railroad employees know the dangers around crossings at grade and have been taught the safest way to traverse a crossing; however, that does not mean they are immune from experiencing close call events at roadway crossings. The following excerpt describes a close call event at a grade crossing from a driver's perspective.

■ *I was on the highway preparing to turn my truck around to head back to the office. I checked both directions on the railroad tracks and listened out the window for a train*


whistle. When I didn't see or hear anything, I proceeded to back across the crossing to turn into a side road and turn the truck around. I had just cleared the crossing by about 10 feet. I heard a train whistle blowing for the first time about 100 yards from the crossing. I believe this close call could have been avoided if there were lights and bells at this crossing.

C³RS Expert Analyst's Callback Summary:

The reporter, a Laborer, stated all procedures were followed when crossing the road crossing. The Laborer conveyed that the crossing was close to a curve on the railroad and being so close may have contributed to the event. The Laborer believes following the proper procedures kept the Laborer safe.

C³RS has a New Website!

- Our new website is mobile friendly and easy to use from your phone or tablet!
- All three C³RS report forms feature a new layout with 5 tabs: ID Strip, Reporter Information, Environment, Train Information, and Description tab to type your event description and allow you to submit securely to NASA C³RS.
- All our past *Inside the Rail* newsletters can now be found on our website so you can download and share past issues.
- Discover the new site and its full range of products at the same website address: <https://c3rs.arc.nasa.gov>



Did You Know? – If you submit a C³RS report, a NASA C³RS Expert Analyst may call you if you do not include enough information or to better understand the safety issues you are sharing. All Expert Analysts have over 10 years of rail industry experience and look forward to learning more about your safety concerns. It is very important that you return our call within three days so that your identification (ID) strip (sent by the U.S. Mail) can be returned to you quickly.

The more information you include in your report, the faster the ID strip can be returned to you!

Report Intake By Craft January through March 2023	C ³ RS <i>Inside The Rail</i> Issue 20 April 2023 https://c3rs.arc.nasa.gov	Monthly Report Intake Previous 3 Months
Transportation 678		January 230
Engineering 37		February 224
Mechanical 20		March 306