



Inside THE RAIL

From NASA's Confidential Close Call Reporting System



ISSUE 24

APRIL 2024



Back to the Basics

During the past few decades, there have been incredible technologies implemented in the railroad industry. We now have Positive Train Control, computerized and remote train dispatching, distributed power locomotives, and remote-control locomotives. However, there are numerous operating activities that have not changed and are crucial to safe operations, such as operating switches, protecting roadway workers, Blue Signal Protection, and locomotive operations.

We have spent so much time implementing and learning these innovative technologies and systems that we sometimes forget about the basics. In this edition, we showcase some of the basics of railroad operations from C³RS incidents, that demonstrate periodic refreshing on the basics is always good practice.

Where Did All the Air Brakes Go?

Basic train operation includes knowing how much air brake to apply and assuring enough air is reserved for the stop. In the following, a Conductor reported that the Engineer used too much air for the initial slowdown and had insufficient air for the stop.

■ *Upon arriving..., I was inside the vestibule at the rear double set of doors (closest to the pushing locomotive). My Assistant Conductor was in the vestibule at the head double of the train. We received a Slow Approach that the Engineer called out over the radio, Slow Approach Signal X. I replied, Roger, Slow Approach Signal X, bumper ahead. He called Track X, and I replied Track X. Upon pulling into Track X, I noticed the train went into emergency. Upon meeting up in the front of the train with the Engineer, we noticed the plow knocked over the signal, but the knuckle did not make contact with the bumper. We notified the Supervisor on duty. The Dispatcher didn't say anything. The Supervisor instructed us to have the Engineer go to the locomotive and pull the train away from the bumper. The Supervisor put the signal back upright.*

C³RS Expert Analyst's Callback Summary:

The reporter, a Conductor, stated a conversation was had with the Engineer after the event. The Engineer applied too much braking effort while entering the final track and had to release the brakes to continue. The Engineer then reapplied the brakes to make the final stop, but the brakes were applied too late, and that is when the Engineer placed the train into emergency. The leading cab car's plow knocked over the signal displaying Stop.

Establishing Blue Signal Is Up to You

Blue Signals protect every person working on, under, or between rolling equipment. It is the responsibility of every worker, or the person in charge of the worker, to assure that Blue Signal Protection has been established. In the following case, an Electrician was not properly protected.

■ *I was called by the Dispatcher to make a separation cut between a locomotive and a rolling equipment car. I was told by my Foreman I had Blue Signal Protection twice. I proceeded to the track to make the separation cut, and once the cut was made, I called the Dispatcher and turned the track over to them. The Dispatcher called the Foreman and told them to drop protection. Apparently, neither me, nor the Foreman put Blue Signal Protection in the cab itself. I assumed I was working under the Foreman's. I guess it was a lack of communication between me and the Foreman of whom was the Worker in Charge. This situation happened then I was off of work. I was reached out to about the situation and was told, "Transportation Department was apparently conducting a training exercise, and didn't notice [that] Blue Signal Protection [was not provided] in the locomotive cab."*

C³RS Expert Analyst's Callback Summary:

The reporter, an Electrician, was contacted over the radio by the Foreman, letting the reporter know the track was under Blue Signal Protection. The first time, the reporter did not acknowledge the transmission but did the second time. The discrepancy arose when the reporter performed the work without placing a blue flag on the locomotive. The reporter expressed the thought that the Foreman had not only put flags on the track but also on the consist, which

did not happen. The reporter pointed out that Blue Signal Protection procedures were recently updated and are not cut and dry. Having the Foreman place flags on the equipment when placing them on the tracks was a suggested corrective action. The reporter also mentioned working the shift while not feeling well was a contributing factor.

Oh Oh...STOP!

When planning to stop a locomotive or train, many conditions must be considered such as speed, visibility, weather conditions, and moisture on rail. In this report, stopping distance was based on normal conditions and the Engineer reflects on the safety incident.

■ *When leaving the Shop and heading down Track X, across Track Y, and approaching the Blue Signal Protection. The light engine slid on the wet rail (it was foggy) with about 15-20 PSI on the independent as the track headed downhill from Track Y to the Blue Signal Protection. The engine was sliding about X MPH. I backed off the independent, hit the sand button, and applied about 15 PSI on the independent. Due to the lack of room between Track Y and Blue Signal Protection, the locomotive bumped into the Blue Signal Protection and moved it about 5 feet.*

C³RS Expert Analyst's Callback Summary:

The reporter, an Engineer, stated the correct amount of air was applied to the brakes to stop the train. The Engineer contributes the event to slick/wet rail. With the moisture on the rail, the Engineer reiterated that the sanders should have been used but did not think it was necessary. Moving forward, the Engineer conveyed that the sander would always be used when there is moisture on the rail.

Good Faith Challenge?

In this incident, Maintenance of Way workers were performing work on the Main Track within an interlocking. The Foreman was not satisfied with the protection provided by two Watchmen but felt pressured to work anyway.

■ *Myself and my men were doing routine maintenance on the Main Track in an Interlocking with two Watchmen, one east and one west. The view west was limited due to a curve, which is also elevated track with nowhere to clear as a Predetermined Position of Safety. The west Watchman was as far west as possible but restricted any further due to the track design. The speed limit was X MPH with an increase to Y MPH near us. We had a couple trains pass, and it seemed like enough time to clear within 15 seconds. I calculated incorrectly, and we only had about 12 seconds in the clear. I am not Physical Characteristics or Book of Rules*

qualified. I'm Roadway Worker in Charge trained, and the Physical Characteristics maps that are given to us do not have the proper signal designations in them; therefore, I am apprehensive to get Foul Time because I can't confirm or deny if I'm given the wrong Foul Time limits. At the same time, I do not work this area that often, once every couple of years, making it hard to remember where the dangerous areas are.

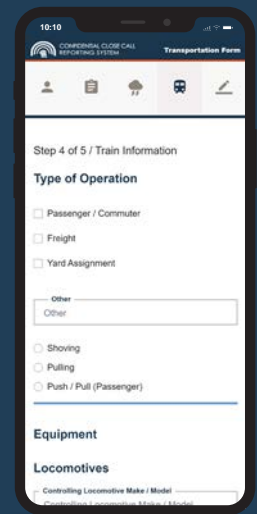
C³RS Expert Analyst's Callback Summary:

The reporter, a Maintenance of Way Foreman, stated that there is substantial pressure from Supervision to perform scheduled maintenance without adequate protection. The reporter explained that there are certain locations where working under a Watchman is safe to do and faster than having to get Foul Time; however, there are also locations where working under a Watchman is simply not safe. The reporter suggested that in the future, if the conditions do not appear safe enough to work under Watchman protection, the reporter will wait until Foul Time is available rather than risk safety for the sake of expediting maintenance.

Did You Know?

NASA C³RS has mobile friendly report forms so you can submit your report on 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. Remember, the more information you include in your report, the faster the ID strip can be returned to you!



 **MOBILE FRIENDLY REPORTING**

Report Intake By Craft January through March 2024	
Transportation	828
Engineering	33
Mechanical	32

C³RS
Inside The Rail
Issue 24 – April 2024
<https://c3rs.arc.nasa.gov>

Monthly Report Intake Previous 3 Months	
January	292
February	279
March	322