



Inside **THE** RAIL

From NASA's Confidential Close Call Reporting System



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Trackside Troubles: *The Challenges of Railroad Communication Breakdowns*

There are many forms of communication including speech, print, signals, facial expressions, body language, and sign language, to only name a few. For communication to be successful, the receiver must not be distracted by other noises, other activities, or by preparing their response while the message is still being delivered.

Communication breakdown occurs frequently in the railroad industry and can be dangerous. Out of the 20,243 C³RS records available in NASA's DataBase Query Tool (DBQT), 20% of the reports involved communication breakdown.

Communication breakdown can be caused by many issues. Sometimes it's due to the use of jargon or non-standard phraseology. For example, in the west, if you are drilling cars, you are actually putting holes in them, in the east, you are switching them. Depending on where you are in the country, the noisy thing usually at the front of the train can be a locomotive, engine, power, or unit. In a yard, it could be a goat. If you are the person operating the locomotive, you could be a Hog Head, Engineer, Hogger, or Train Driver.

In this issue, C³RS provides excerpts of close-call events related to communication breakdown in railroad operations.



If You See or Feel Something, Say Something!

It is essential for employees to voice a challenge if they see or feel something is wrong. In this report, a Signalman reported that a Work Crew followed a Flagman assuming the Flagman took all precautions.

■ *Carrier workers and contractors protected by a transportation Flagman crossed the Interlocking from [the] north to south side. The Flagman instructed us to cross the tracks, but there was no Foul Time and poor visibility in the curve east of the tunnel. Everyone felt the particular breeze that an approaching train creates, but we all kept going as instructed. Not even 30 seconds later, the trains passed us at about 15-20 MPH from a distance of approximately 6 feet. Most of us knew the train was coming and were trying to get inside a room safe from the tracks. In the Job [Safety] Briefing, it was established that there was no Foul Time established prior to entering the tunnels and that the Flagman's duty was to contact the Dispatcher to request the time as we advanced in the different work locations in the tunnel.*

C³RS Expert Analyst's Callback Summary:

The reporter, a Signalman, stated there has been an ongoing situation where Local Dispatchers will not allow time for employees to travel into some tunnels in order to conduct required inspections. The reporter explained that the carrier has been attempting to use lookouts in lieu of issuing

formal track authority. The Local Dispatchers are not able to issue proper track protection without the authority of the Dispatchers, which takes too much time.

Correct Locations Matter (Who's on First?)

Most railroad employees enter data into computers as part of their daily duties. An incorrect keystroke could be catastrophic. In this event, a Dispatcher applied a crossing warning malfunction notification to an incorrect crossing.

■ *...I was working the Territory X operation and received a phone call from the Police reporting that crossing gates of Crossing Y were going up and down. Blocks were applied to Track X and Track Y for Crossing X and grade crossing protection was added to the Positive Train Control (PTC) safety server for Crossing X, Milepost (MP) X...After both trains had run their route, the next inbound train (Train C) called for messages and inquired if they were to protect Crossing X in Station Y or Station X. The Crossing Warning Malfunction they had, had the mileage for Station Y, but they protected both as a precaution as the verbal communication we had was Station X; however, the Crossing Warning Malfunction and PTC was set up for the Station Y crossing. At that time, it was realized that the Crossing Warning Malfunction issued to the previous two trains, along with the PTC protection, was applied to Crossing X, MP X, which is in Station Y and not Station X. The PTC safety server was updated to Crossing*

X, MP Y, and Crossing Warning Malfunction Z was issued to Train C to protect Crossing X, MP Y...

With Doors Wide Open

In this event, a train was approaching a station stop when it was stopped by a PTC application. Communication between the Engineer and the Train Crew was not possible, and the train started moving with the doors open and passengers unloading.

■ Received intermittent PTC penalty brake applications, which cleared itself entering a track at the station. Possible radio dead spot(s) and/or radio chatter as multiple radio transmissions made for a Crew to hold doors closed, as train had stopped short of normal spot within the station. [The] message apparently [was] not heard, [and] door(s) opened/re-closed as train started moving. Emergency brakes applied. After brake tests and being cleared to re-spot train, [I] had to call Dispatcher to operate stop/bypass button to clear second PTC penalty that wouldn't release.

C³RS Expert Analyst's Callback Summary:

The reporter, an Engineer, recounted that PTC stopped the train with a penalty application prior to the station stop and the Engineer was unable to communicate with the Crew. Due to the structural design of the station, communication from the train's radio to the Conductor's portable radio cuts out. Also, there are multiple tracks at the station with lots of radio traffic where Crews tend to talk over one another. The Assistant Conductor, who was new, opened the doors while the train began to pull once the penalty had cleared. The doors were closed right away...The reporter explained there is a door override feature on the locomotive, but it is sealed in the bypass position because the older cars are not compatible. The locomotive does not have the safety feature where the engine will not load with doors open.

Fact Checking is Critical

While approaching an interlocking, the Dispatcher informed the Engineer to expect a track car on an adjoining track, waiting for the train to pass. As the train approached the location, there was much more to the story.

■ While operating Maximum Authorize Speed, west on Track X through Interlocking X, I observed a track car just west of Interlocking X not moving but facing east on Track Y with its bright headlights on. Upon seeing the track car, I blew the horn, despite there being no Flagman or Watchman/Lookout present and no portable whistle post in use. When I got within a train length of the track car I blew the horn again, despite there still being no lookout or portable whistle post in use or any indication that there were men on the ground. The

track car did not dim its headlights making it very difficult to see the area surrounding it. Immediately after passing the track car, I observed two roadway workers on my track (Track X) not facing me as well as multiple other roadway workers between the tracks. I immediately put the train in emergency and held down the horn and watched the roadway workers on my track jump to safety on Track Y, missing being struck by about 3-6 feet. Once the train was stopped, I remained there for a minute and asked over the radio if everyone was okay. I was told everyone was fine, so after another minute or two I charged the air up and proceeded west.

C³RS Expert Analyst's Callback Summary:

The reporter, an Engineer, was traveling on single track westbound. Approximately one mile from an interlocking, where it turns to double track, the Local Dispatcher notified the reporter that he would encounter a track vehicle waiting for him on Track Y. The reporter explained this information was useful because, normally, westbound movements are made on Track Y and Track X is used for eastbound movements. As the interlocking came into view the reporter could see the headlights of the track vehicle. The reporter explained most likely the roadway workers had their backs turned to his train because normally train movements would be made coming towards them, in the direction they were facing. The reporter stated as he placed the train into emergency and applied the horn, he closed his eyes and was waiting to hear thumps after losing sight of the engineering employees. After verifying everyone was safe over the radio and regaining his composure, the reporter continued to his destination. The reporter was unsure if he performed the proper air brake test after placing his train into emergency. The reporter did not notify the Dispatcher or Supervisors of the close call event. The Engineer believes there was a breakdown in communication between the Roadway Worker's Foreman and the Dispatcher.

Did You Know? – 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 caller ID on your phone might 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!

Report Intake By Craft January through December 2023	
Transportation	3,087
Engineering	138
Mechanical	111

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<https://c3rs.arc.nasa.gov>

Monthly Report Intake Previous 3 Months	
October	300
November	303
December	279