



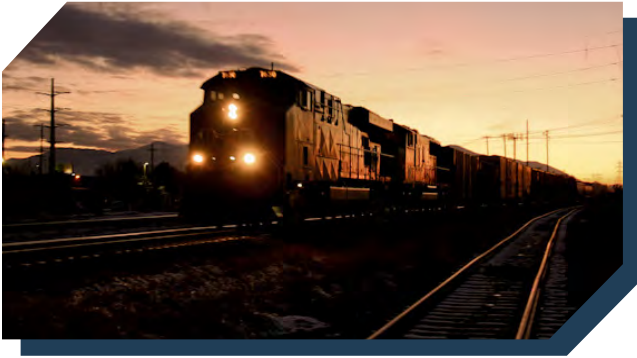
Inside THE RAIL

From NASA's Confidential Close Call Reporting System



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DOING THE BRIGHT THING

Have you ever noticed how bright the lights are in front of a train? Locomotive headlights use lightbulbs with almost six times the watts of a standard 60-watt bulb. Headlights in conjunction with auxiliary lights must be in a unique triangle pattern on the lead end of locomotives. The pattern increases conspicuity at public highway-rail crossings for pedestrians and motorists along with private crossings, pedestrians, and roadway workers.

49 CFR § 229.125 Headlights and Auxiliary Lights states, "each lead locomotive used in road service shall illuminate its headlight while the locomotive is in use. When illuminated, the headlight

shall produce a peak intensity of at least 200,000 candela ... Each lead locomotive operated at a speed greater than 20 miles per hour over one or more public highway-rail crossings shall be equipped with operative auxiliary lights, in addition to the headlight ... [train lights] shall be continuously illuminated immediately prior to and during movement of the locomotive ..."

This issue of *INSIDE THE RAIL* shares reports that explore the various issues related to headlight incidents received and analyzed by the C³RS program. Our intent is to increase awareness and promote discussion related to the type of incidents that were reported.

Switch Ends, Switch On

An Engineer operated without headlights after switching ends at a station.

■ ... I had discovered that the train's headlight and ditch lights were off after [the] crossing, ... on [an] equipment move Train. I failed to turn them on bright after changing controlling ends at the Station. We traveled over [the] crossing ... It's likely that I was distracted with something else and forgot to turn the lights on bright. It's always a challenge to see the absolute signal before departing the Station at this time of day, due to the setting sun behind us. In the act of focusing on that signal, I overlooked the headlight switch.

C³RS Expert Analyst's Callback Summary:

The reporter, an Engineer, stated the crew changed ends and conducted an air test at the station. The crew was shoving to the previous station to yard the equipment. The headlight switch was off while switching ends. The reporter was focused on blowing the whistle for the crossing and did not notice the position of the switch until the next crossing, approximately two miles away. Focus was on the signal as the train was preparing to shove and the Engineer did not notice the LED light showing that the ditch lights were off.

Gosh, It's Dark Outside

After meeting another train, an Engineer did not turn the locomotive lights on.

■ I was operating [the] Train out of [the] Station and shut off my ditch lights. [I] dimmed my headlights for the opposing train for a meet at [the] Siding. After the meet, I forgot to put my lights back on, and crossed numerous road crossings at grade without my lights on ... I was too busy focusing on where the crossings were in order to make sure I did the horn cadence right, and I forgot to put my lights back on.

C³RS Expert Analyst's Callback Summary:

The reporter, an Engineer, stated they dimmed the headlight for an oncoming train but did not turn them back to bright. The Engineer realized at the next station stop that they were still on dim and the ditch lights were off. The Engineer immediately returned to compliance for the remainder of the trip.

Lightbulb Moment

An Engineer traversed a road crossing at grade with the headlight on dim.

■ Was traveling on [the] Track and while I was looking over my paperwork for upcoming work orders, my headlight was on dim while [traversing] the Crossing ...

C³RS Expert Analyst's Callback Summary:

The reporter, an Engineer, departed the station and was contacted by the Dispatcher to void Working Limits on the paperwork. The Conductor had given the paperwork to the

Engineer shortly before departure time and the reporter didn't have enough time to go over it thoroughly. When the Dispatcher called, the Engineer was trying to find the item on the bulletins and slowed the train, but should have stopped, since no other crew members were on the head end to copy the void. The instructions for departing the station state: the headlights must be on dim until the train is out of the tunnel. Once cleared of the tunnel, the train was completely over the crossing before the reporter realized the lights were still dimmed. The train speed was approximately 10 to 17 MPH over the crossing. Preventative measures could have been a better Job Safety Briefing, having the Conductor copy the voids and not multi-tasking.

Check the Breaker

An Engineer discovered the headlight breaker was not in the correct position.

■ *I was traveling, leaving [the] Station with light engine power and noticed my headlight display was dark. I checked the switch and it was on. The switch in the cabinet for the headlights was down. I turned the switch on after passing my first railroad crossing with the lights [on] dim. I had this same equipment leaving the yard this morning operating from the engine. I am not sure that the headlight switch was down, [and] possibly dimmed over [the] crossing. Moving forward, I will assure all switches are up in my cabinet before departing.*

C³RS Expert Analyst's Callback Summary:

The reporter, an Engineer, has a pre-departure procedure but cannot account for this oversight. The reporter added that the breaker may have tripped and Mechanical performed their daily inspection before departure. The reporter plans to double check the headlights to prevent this from occurring again.

Working Lights

An Engineer dimmed the headlights in Working Limits and did not restore them.

■ *I departed on time out of [the] Station. The first road crossing is at MP X and is in the process of being replaced. The Working Limits for this work had expired ... I was looking for a late flag and stray workers in the area. Well, I forgot to turn my headlight from dim to bright. I got distracted by the crossing work. I traveled over the next seven road crossings with my headlight on dim before realizing it was on dim. I then turned it on bright. The seven road crossings were between MP X and MP Y. I got distracted by the work being done.*

An Observant Passenger

A passenger informed a Conductor the headlight was not working.

■ *Arrived at Station X and I stepped down from the vestibule onto the platform. A passenger approached me and said there were no headlights working on [the] Cab Car. We boarded, and I said thank you. I went up to the firemen side of the coach and talked with our Engineer and said, a passenger said we had no headlight on the Cab Car. We talked it over and I flagged or provided protection for several crossings. Now, the crossing gates were all working as intended, but we still had no headlight. I went down to check the cabinet to see if any breakers were down and the battery charger input breaker was down. Surprisingly, something must have tripped the breaker. Once I put the battery charger input breaker up, we had headlights.*

The Engineer further explained what caused the headlight to be off.

■ *Start of duty everything was operating on [the] Cab Car. When [the] trip started, [the] lights and speedometer [were working] ... After leaving Station X, [the] Conductor was informed about the lights on [the] train. By the time [the] Conductor came and informed me of the lights on [the] train, we had to flag several crossings. When we stopped at Station Y, I noticed other things in the cab were not operating besides speedometer; lights, markers [and] Positive Train Control were off. I asked [the] Conductor to check the switches in [the cabinet]. The Conductor [said] the battery charger input was down. When [the] Conductor pushed the switch up, everything came on again. When the alerter went off, I had to reset [the] air by going to suppression. I think the battery charger input may have been tripped.*

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. It is very important that you return our call within 3 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 December 2020	
Transportation	2,439
Mechanical	104
Engineering	73

C³RS
Inside The Rail

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

Monthly Report Intake Previous 3 Months	
October	256
November	175
December	227