

BNSF Collision, Kingman, AZ

SUMMARY

On June 5, 2018, at about 2:50 p.m., mountain standard time, a westbound BNSF intermodal train, S MEMSCO1 02L, was operating in multiple main track Centralized Traffic Control (CTC) territory when it collided with a Rail Unloading Machine (RUM) vehicle at the rear of an eastbound continuous welded rail (CWR) work train, W NEESGM1 05.^{1 2} The accident occurred in Crozier Canyon, about 33 miles east of Kingman, Arizona. The collision resulted in the fatality of one contract (Herzog) employee. Another Herzog employee was life-flighted to a hospital in Las Vegas.

The eastbound work train W NEESGM1 05 consisted of two forward facing locomotives. The loaded 29 car work train was 1,800 feet long including the two locomotives. The work train was occupying a centralized traffic control (CTC) block while unloading rail on main track 1.³ The work train's last move was eastbound to drop off an employee at his vehicle that was parked adjacent to the tracks. The work train was operating in reverse (shoving) up an ascending 1.5 percent grade at about 9 mph. The train was operating in an east direction on main track 1, approaching an 8-degree curve in Crozier Canyon. The RUM vehicle was attached to the rear of the train. The train's operating crew consisted of an engineer, conductor, and brakeman. The brakeman was positioned in the driver's seat in the cab of the RUM vehicle at the rear of the train to protect the point of the shoving move.⁴ There were two Herzog employees in a separate unloading cab of the RUM vehicle. There were three other BNSF employees occupying the rail cars on tie-down platforms that are walkways used to cross from one side of the rail cars to the other while unloading rail.

¹ Continuous welded rail (CWR) means rail that has been welded together into lengths exceeding 400 feet.

² A continuous welded rail or CWR train is a train equipped with specialized coupled flatcars used to transport long lengths of rail to locations along the railroad for unloading and installation.

³ A CTC system is a signaling system used to control rail traffic.

⁴ Rail Unloading Machine (RUM) This unit can be self-propelled and powered as a single unit or coupled to and powered by a freight train via a normal railroad coupler. BNSF contracts out the Herzog RUM unit for their continuous welded rail (CWR) unloading operations.

The westbound loaded intermodal train S MEMSCO1 02L consisted of one forward facing locomotive and two rear facing locomotives at the front of the train. The loaded 72 car train was 6,574 feet long and weighed 8,186 tons including the locomotives. The dispatcher had requested a route to allow the westbound intermodal train on main track 1 to proceed behind the work train. According to interviews, the dispatcher understood that because transportation had been ordered to pick up the work train crew at Walapai siding, which was west of the work location, that the work train was traveling west to exit the main track at the completion of their work. The westbound intermodal train had stopped at an intermediate signal displaying a stop and proceed indication on main track one waiting for a more favorable indication.⁵ While waiting, 2 westbound trains had passed the intermodal train on main track two. At some point, the crew of the westbound intermodal train heard on the radio that the work train would clear the block in 45 minutes; this indicated to them that the work train was traveling westbound. The westbound intermodal train crew decided to proceed past the red intermediate signal at restricted speed. The westbound intermodal train traversed the descending 1.5 percent grade using only dynamic braking and reaching a top speed of 15 mph prior to reaching the 8-degree curve in Crozier Canyon. Although the maximum authorized restricted speed can be up to 20 mph, restricted speed requires the train crew to be able to stop the train in one half the range of vision. The train crew felt that 15 mph was an appropriate speed. Sight distance in the location of the accident is restricted by tall trees on the inside (north) of the curve.

According to event recorder data, the westbound intermodal train applied the emergency brake at 14 mph and came to a stop in 24 seconds, after traveling about 363 feet. At 9 mph, the eastbound work train proceeded 77 feet in 9 seconds after the emergency brake was applied and came to a stop. The brakeman protecting the point of the eastbound work train exited the RUM vehicle seconds before the collision.

-End of Summary-

⁵ An intermediate signal is a signal controlled automatically by rail traffic location, not by a dispatcher.