



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Railroad, Pipeline and Hazardous Materials Investigations

Washington, DC

CSX Freight Train Collision

Carey, Ohio

August 12, 2019

NTSB Accident No. RRD19FR010

Railroad Operations – System Safety Factual Report

Accident

NTSB Accident Number:	RRD19FR010
Date of Accident:	August 12, 2019
Time of Accident:	Approximately 0508
Type of Train and No:	H70211, W31411
Railroad Owner:	CSX
Train Operator:	CSX
Crew Members:	H70211; 1 Engineer, 1 Conductor; W31411; 1 Engineer, 1 Conductor
Location of Accident:	Carey, OH

Operations Group

Ryan Frigo
Operations Group Chairman
National Transportation Safety Board

Jordan Gibson
Operating Practices Safety Inspector
Federal Railroad Administration

Steve Ammons
Director, Train Handling Rules and Procedures
CSX

Shawn D. Lawton
Investigator-BLET Safety Task Force
Brotherhood of Locomotive Engineers and Trainmen

Jerry Gibson
Investigator
Sheet Metal, Air, Rail, and Transportation (SMART)

Accident Summary

For a summary of the accident, refer to the *Accident Summary Report* in the docket for this investigation.

Striking Train Consist & Operating Crew

- CSX Train No. H70211
 - 109 loads, 67 empty (176 cars), 16816 Tons – 10955 Feet (Leaving Parsons Yard, Columbus, OH)
 - 109 loads, 37 empty (146 cars), 15936 Tons – 9497 Feet (After Setout at Carey, OH)
 - Lead Locomotive: CSXT 736
 - DPU: CSXT 3107 (94th position)
 - Westbound Timetable Direction
 - PTC Operational
 - PTC in Restricted Mode at time of accident
- Engineer:
 - On duty 8/11/19, at 2100 Parsons Yard, Columbus, OH
- Conductor:
 - On duty 8/11/19, at 2100 Parsons Yard, Columbus, OH

Struck Train Consist & Operating Crew

- CSX Train No. W31411
 - 110 loads, 0 empty (110 cars), 15708 Tons – 4768 Feet (Leaving Garrett, Indiana)
 - Head End Consist: CSXT 477, CSXT 3005
 - Eastbound Timetable Direction
 - PTC non-operational¹
- Engineer:
 - On duty 8/12/19, at 0140 Garrett, Indiana
- Conductor:
 - On duty 8/12/19, at 0140 Garrett, Indiana

¹ This train was permitted by Federal Regulations and Operating Rules to operate with a PTC failure, this train's failure is not a contributing factor to this accident.

Method of Operation and Location

The Columbus Subdivision is a railroad territory that is 90.6 miles from Columbus, OH to Fostoria, OH. The Subdivision is single track with portions of multiple main track, the method of operation is CTC. The maximum authorized speed at the accident location is 50 MPH. The striking train's load tonnage required a speed restriction of 40 MPH per CSX Operating Rules.

Dispatching duties are controlled by the *CSX Louisville LF Dispatcher* located in Jacksonville, FL.

Operating Rules:

- CSX Operating Rules Eff. 7/1/2019
- Columbus Subdivision Timetable, Eff. 12/1/17
- PTC Bulletin, Eff. 7/19/19

Federal Oversight

Federal oversight of CSX operations and infrastructure maintenance is provided by the Federal Railroad Administration (FRA), which is part of the United States Department of Transportation. The FRA has multiple field inspectors which conduct field inspections on CSX property on a scheduled and random basis. FRA operational field inspectors monitor the railroad's compliance with Department of Transportation regulations per 49 CFR Parts 200 to 299. FRA also conducts periodic records reviews of CSX for various federal record keeping requirements.

Efficiency Testing

Federal regulations, 49 CFR Part 217 require that CSX have a program to periodically conduct operational tests and inspections to determine the extent of compliance with its code of operating rules, timetables, and timetable special instructions.

FRA Part 217 Audit

NTSB Investigators received the following summary from FRA regarding the most recent Part 217 Audit of CSX.

“The most recent FRA Part 217 audit conducted for CSX Transportation was conducted during the week of August 26, 2019. FRA’s audit revealed a lack of operational testing of operations on CSX’s main lines and areas outside of their main terminals and yards. This includes a lack of testing of foreign road crews. This is a failure of CSX to follow their own 2019 CSX Operational Testing Program. FRA recommended that CSX include mainline testing as part of their monthly testing quota to ensure tests/observations are being conducted outside of the yards. FRA will conduct a follow up audits to determine compliance with 49 CFR Part 217.”²

As of the writing of this report, NTSB Investigators have been unable to obtain a copy of this audit from the FRA.

² Email Communication from Larry Woolverton on behalf of the FRA Chief Safety Officer received on 11/7/2019.

CSX Response to FRA Part 217 Audit

NTSB Investigators received the following summary from CSX in response to FRA's audit description.

“In 2019, CSX performed 45,280 operational tests on main track operations to help drive compliance with its operating rules and federal regulations. Last year, CSX also introduced a new operational testing program which focuses on the quality of testing rather than quantity of tests. The program's goal is to concentrate on testing high-impact rules and regulatory requirements and to use data to identify and address adverse safety trends. CSX has also deployed a host of new technology to enhance our program, including the use of “drones” to allow visibility of areas and locations previously impossible to view through conventional testing methods. Additionally, CSX performed thousands of audits on crews aboard trains operating over main track using such technology as ERAD (Event Recorder Automated Download) and our Witronix inward facing camera system. These audits produced useful safety data, including hundreds of exceptions that CSX was able to address. Finally, in 2019 CSX's Road Foreman rode nearly 5,000 trains to monitor CSX locomotive engineers' rules and train handling compliance, and also rode with 26 different Amtrak engineers across CSX main track. These 2019 program enhancements helped provide more detailed information about CSX's overall compliance and enabled the Company to take proactive and targeted countermeasures that have made major, positive impacts in our Safety program. Indeed, with this focused program as well as many other safety-related initiatives, CSX reduced Train Accidents by 40% and Employee Injuries by 20% in 2019. This momentum has continued in 2020 with our sustained focus on safety engagement. So far in 2020, CSX's train accidents have

decreased by 42% and employee injuries have been reduced by 31% from our 2019 YTD numbers which were some of the best in CSX history.”³

CSX Efficiency Testing on Columbus Subdivision

The below chart represents CSX efficiency testing on the Columbus Subdivision for 2019, up to (but not including) the date of the accident.

Subdivision	Total	Pass	Fail
Columbus	3,541	3,483	58

The below chart represents a detailed breakdown of track type locations where tests on the Columbus Subdivision were conducted during the period of 2019 prior to, but not including the date of the accident.⁴

Track Type	Total	Pass	Fail
Industry	111	108	3
Main Track	230	203	27
Measured Yards	2,395	2,378	17
Other Than Main	64	63	1

³ Email Communication from Steve Ammons received on 3/26/2020.

⁴ Per CSX: location type was added to tracking program in February 2019, so there are 689 (about 20%) without a track type.

Siding	52	50	2
Unknown	689	681	8
Grand Total	3,541	3,483	58

The below chart represents the total 2019 numbers for all main track tests on the Columbus Subdivision for 2019.

Subdivision	Total	Pass	Fail
Columbus	4,553	4,438	115

PTC Restricted Mode Screens

At the time of the accident the striking locomotive was being operated in PTC Restricted Mode. Operations in PTC Restricted Mode require a manual manipulation of the on-board locomotive PTC equipment. A locomotive operator's use of PTC Restricted Mode is required by Operating Rule during switching operations as under certain conditions, the PTC system could inhibit the movement of the train consist. The on-board locomotive PTC equipment does not automatically recognize when PTC Restricted Mode is no longer required. A manual manipulation must be completed by the train crew to return the train consist to PTC Active Mode. At the time of the accident, train crews were not required to hold a safety briefing prior to activating PTC Restricted Mode or returning to PTC Active Mode.

*The following figures are a sample set of images, an activated screen would include a track layout map in the upper section of the screen, indicated by "map not available" in the sample set.

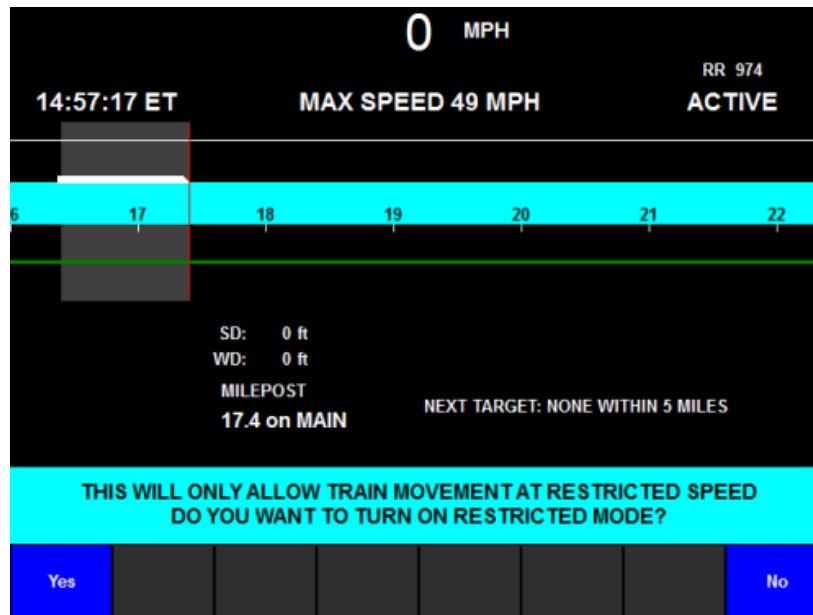


Figure 1: PTC system prompts for restricted mode.

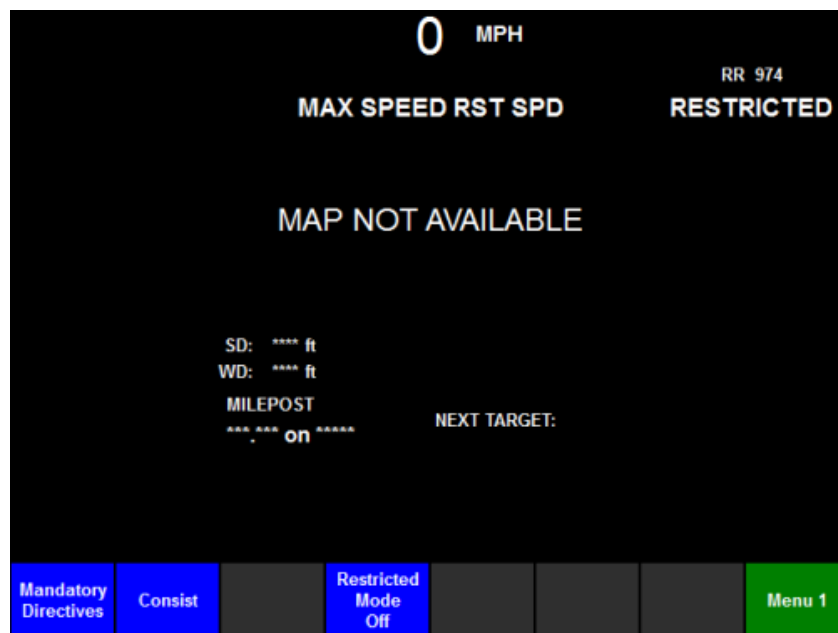


Figure 2: Restricted mode is turned on.

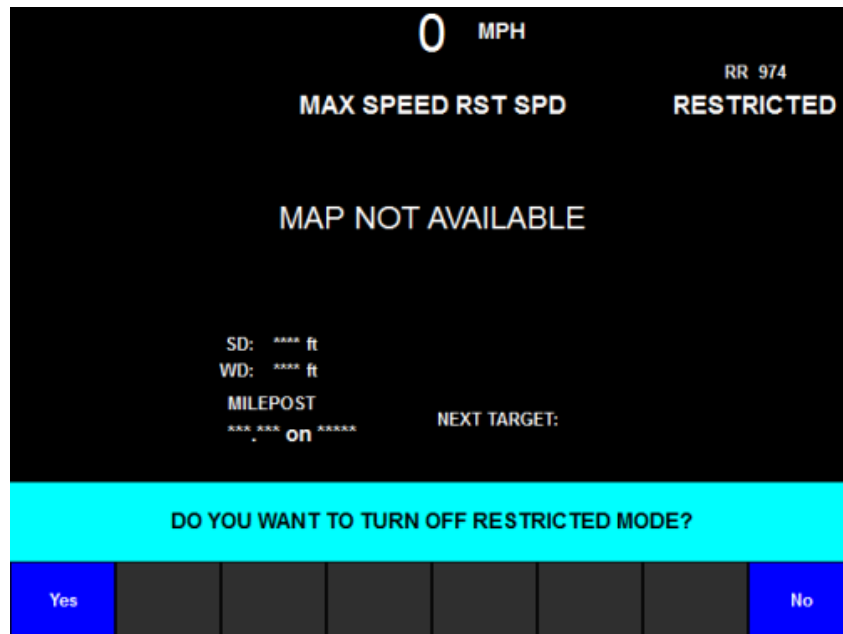


Figure 3: System prompts to turn off restricted mode.

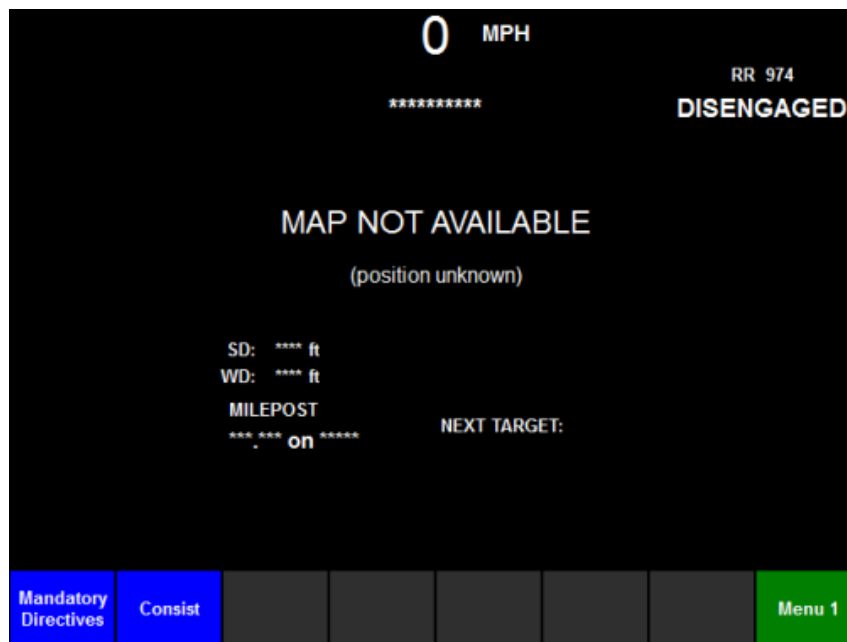


Figure 4: PTC screen display after turning off restricted mode and going back into active mode. There is a transition to disengaged until track is selected and system goes active

Post-Accident Changes

As a result of information gleaned on scene, CSX made the following immediate changes to its PTC Bulletin post-accident, crews are now required, prior to departing and after completing moves in PTC Restricted Mode, to update consist information in the PTC system and return to PTC Active Mode. Additionally, crews are now required to conduct a safety briefing when initiating any operating mode other than PTC Active Mode, such as PTC Restricted Mode.

Additionally, CSX officials informed NTSB investigators that CSX is exploring software changes to its PTC Restricted Mode. They are looking at the possibility of automated system warnings if a train crew begins to make movements outside the parameters of PTC Restricted Mode's intention including distance traveled and/ or speed.

Interviews

The Operations Group conducted 5 interviews during the on-scene phase of the investigation. The following CSX crew members were interviewed:

- H70211 Conductor (Striking Train)
- H70211 Engineer (Striking Train)
- CSX Louisville LF Dispatcher
- W31411 Conductor (Struck Train)
- W31411 Engineer (Struck Train)

Meeting with CSX Officials

On Wednesday October 30th NTSB Investigators Frigo, and Payan met with CSX Safety, Operating Practices, and Training officials at CSX Headquarters in Jacksonville, Florida. Topics of this discussion included: Operational Testing, Learning Culture and Discipline, Hazard Reduction and Elimination, CSX Safety Alignment, Operational Safety Activities, 3rd Party Contractor Review of Safety at CSX, and PTC Training. A Record of Conversation for this meeting has been placed in the Accident Docket.

Parties to the Investigation - Acknowledgment Signatures

The undersigned designated *Party to the Investigation* representatives attest that the information contained in this factual report is a factually accurate representation of the information collected during the fact-finding phase of the investigation, to the extent of their best knowledge and contribution in this investigation.

//s//

Ryan J. Frigo, NTSB

Date 3/11/20

n/a

Jordan Gibson, FRA

Date n/a

//s//

Steve Ammons, CSX

Date 3/11/20

//s//

Shawn D. Lawton, BLET

Date 3/11/20

//s//

Jerry Gibson, SMART/UTU

Date 3/11/20