Federal Railroad Administration
Office of Railroad Safety
Accident and Analysis Branch

Accident Investigation Report
HQ-2020-1405

CSX Transportation (CSX) Rear End Collision
Connersville, Indiana
December 30, 2020

Note that 49 U.S.C. §20903 provides that no part of an accident or incident report, including this one, made by the Secretary of Transportation/Federal Railroad Administration under 49 U.S.C. §20902 may be used in a civil action for damages resulting from a matter mentioned in the report.

SYNOPSIS

On December 30, 2020, at 4:55 p.m., EST, eastbound CSX hi-rail inspection truck was operating on the CSX Indianapolis Subdivision at Milepost (MP) BD 71.7, rear-ended a stopped train. The accident occurred in Connersville, Indiana, which is 54 miles east of Indianapolis, Indiana. The operator of the hi-rail vehicle sustained significant injuries and was taken to the hospital for treatment.

The hi-rail was operating at a recorded speed of 47 mph when the brakes were applied and the hi-rail impacted the rear end of stopped train Q36130. The method of train operation in this territory was Automatic Block Signal (ABS). There were no derailed train cars and the hi-rail vehicle was also not derailed.
It was dusk at the time of the derailment, and the weather was 41 °F.

The total damage is estimated at $80,277; $0.00 for track, signal and structures, and $80,277 for equipment.
The Federal Railroad Administration's (FRA) investigation determined the probable cause of this accident was H402 -- motor car or on-track equipment rules, failure to comply.

U.S. Department of Transportation Federal Railroad Administration	**FRA FACTUAL RAILROAD ACCIDENT REPORT**	FRA File # HQ-2020-1405

TRAIN SUMMARY

1. Name of Railroad Operating Train #1	1a. Alphabetic Code	1b. Railroad Accident/Incident No.
CSX Transportation	CSX	194723
2. Name of Railroad Operating Train #2	**2a. Alphabetic Code**	**2b. Railroad Accident/Incident No.**
CSX Transportation	CSX	194723

GENERAL INFORMATION

1. Name of Railroad or Other Entity Responsible for Track Maintenance	1a. Alphabetic Code	1b. Railroad Accident/Incident No.
CSX Transportation	CSX	194723
2. U.S. DOT Grade Crossing Identification Number	**3. Date of Accident/Incident**	**4. Time of Accident/Incident**
	12/30/2020	4:55 PM

5. Type of Accident/Incident
Rear End Collision

6. Cars Carrying HAZMAT	7. HAZMAT Cars Damaged/Derailed	8. Cars Releasing HAZMAT	9. People Evacuated
0	0	0	0

10. Subdivision
CSX TRANSPORTATION - INDIANAPOLIS

11. Nearest City/Town	12. Milepost *(to nearest tenth)*	13. State Abbr.	14. County
CONNERSVILLE	BD71.7	IN	FAYETTE

15. Temperature (F)	16. Visibility	17. Weather	18. Type of Track
41 ˚F	Dusk	Rain	Main

19. Track Name/Number	20. FRA Track Class	21. Annual Track Density *(gross tons in millions)*	22. Time Table Direction
Main	Freight Trains-40, Passenger Trains-60	2.5	East

23. PTC Preventable	24. Primary Cause Code	25. Contributing Cause Code(s)
No	[H402] Motor car or on-track equipme	

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FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2020-1405

OPERATING TRAIN #1

1. Type of Equipment Consist:	2. Was Equipment Attended?	3. Train Number/Symbol
Maint./Inspect. Car	Yes	Hirail

4. Speed (recorded speed, if available)	Code	5. Trailing Tons (gross excluding power units)	6a. Remotely Controlled Locomotive? 0 = Not a remotely controlled operation 1 = Remote control portable transmitter 2 = Remote control tower operation 3 = Remote control portable transmitter - more than one remote control transmitter	Code
R - Recorded E - Estimated 47.0 MPH	R			0

6. Type of Territory

Signalization:
Signaled

Method of Operation/Authority for Movement:
N/A

Supplemental/Adjunct Codes:
P

7. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)	8. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box	Alcohol	Drugs
(1) First Involved *(derailed, struck, etc.)*	CSX 094770	1	no		0	0
(2) Causing *(if mechanical, cause reported)*	CSX 094770	1	no	9. Was this consist transporting passengers?		No

10. Locomotive Units (Exclude EMU, DMU, and Cab Car Locomotives.)	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End e. Remote	11. Cars (Include EMU, DMU, and Cab Car Locomotives.)	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	0	0	0	0	0	(1) Total in Equipment Consist	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0	(2) Total Derailed	0	0	0	0	0

12. Equipment Damage This Consist	13. Track, Signal, Way & Structure Damage
80277	0

Number of Crew Members				Length of Time on Duty		
14. Engineers/Operators	15. Firemen	16. Conductors	17. Brakemen	18. Engineer/Operator	19. Conductor	
1	0	0	0	Hrs: 9 Mins: 55	Hrs: 0 Mins: 0	
Casualties to:	20. Railroad Employees	21. Train Passengers	22. Others	23. EOT Device?	24. Was EOT Device Properly Armed?	
				N/A		N/A
Fatal	0	0	0	25. Caboose Occupied by Crew?		N/A
Nonfatal	1	0	0			

26. Latitude	27. Longitude
39.654960000	-85.179180000

U.S. Department of Transportation
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FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2020-1405

OPERATING TRAIN #2

1. Type of Equipment Consist:	2. Was Equipment Attended?	3. Train Number/Symbol
Freight Train	Yes	Q36130

4. Speed (recorded speed, if available) R - Recorded E - Estimated	Code	5. Trailing Tons (gross excluding power units)	6a. Remotely Controlled Locomotive? 0 = Not a remotely controlled operation 1 = Remote control portable transmitter 2 = Remote control tower operation 3 = Remote control portable transmitter - more than one remote control transmitter	Code
0.0 MPH	E	11099		0

6. Type of Territory

Signalization: Signaled

Method of Operation/Authority for Movement: Signal Indication

Supplemental/Adjunct Codes: D

7. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)	8. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box	Alcohol	Drugs
(1) First Involved *(derailed, struck, etc.)*	TBOX675182	143	yes		0	0
(2) Causing *(if mechanical, cause reported)*	TBOX675182	143	yes	9. Was this consist transporting passengers?		No

10. Locomotive Units (Exclude EMU, DMU, and Cab Car Locomotives.)	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End e. Remote	11. Cars (Include EMU, DMU, and Cab Car Locomotives.)	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	2	0	0	0	0	(1) Total in Equipment Consist	66	0	77	0	0
(2) Total Derailed	0	0	0	0	0	(2) Total Derailed	0	0	0	0	0

12. Equipment Damage This Consist	13. Track, Signal, Way & Structure Damage
0	0

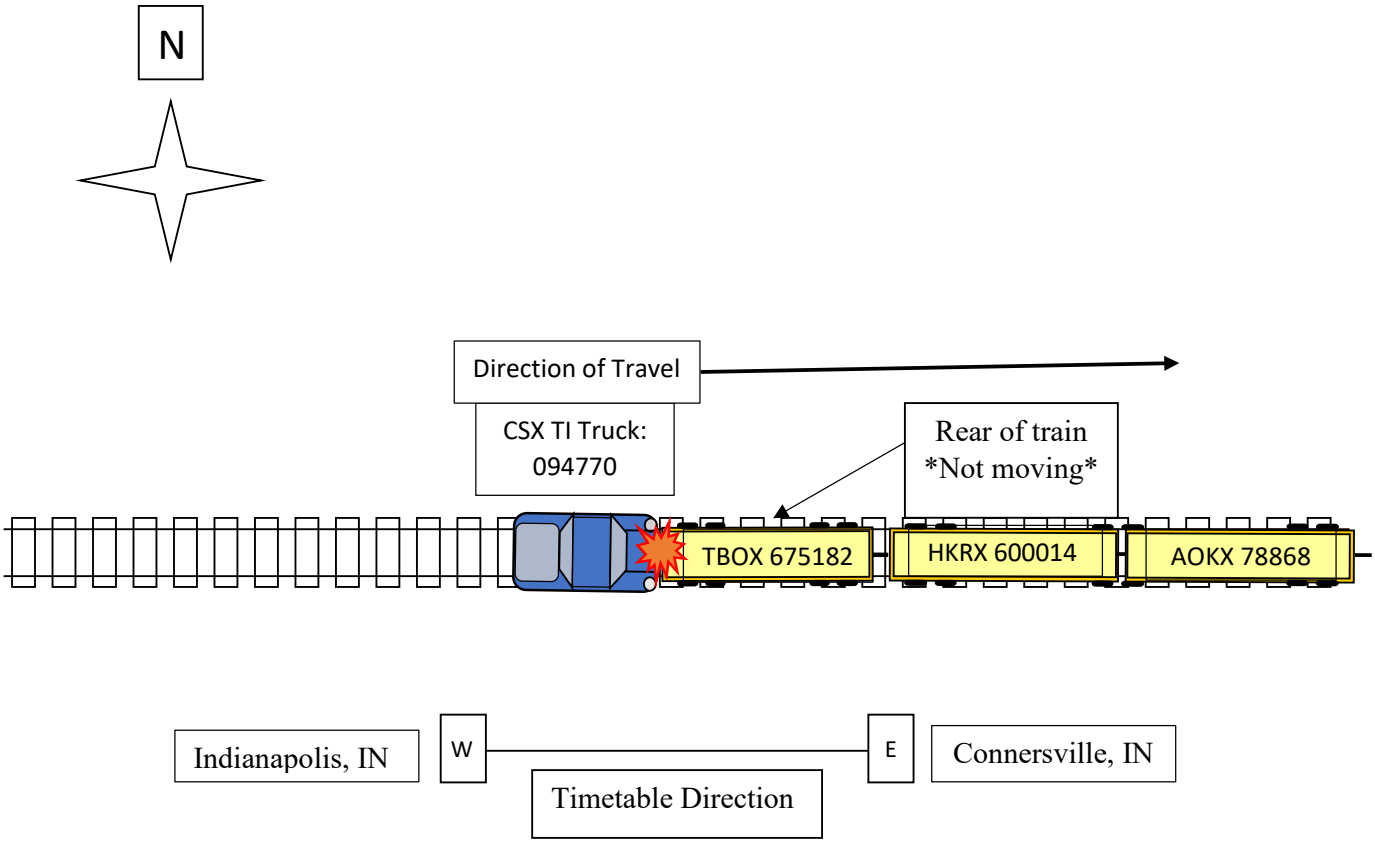
Number of Crew Members				Length of Time on Duty	
14. Engineers/Operators	15. Firemen	16. Conductors	17. Brakemen	18. Engineer/Operator	19. Conductor
1	0	1	0	Hrs: 4 Mins: 20	Hrs: 5 Mins: 25

Casualties to:	20. Railroad Employees	21. Train Passengers	22. Others	23. EOT Device?	24. Was EOT Device Properly Armed?
				Yes	Yes
Fatal	0	0	0	25. Caboose Occupied by Crew?	N/A
Nonfatal	0	0	0		

26. Latitude	27. Longitude
39.654960000	-85.179180000

SKETCHES

Sketch - CSX Connersville



HQ-2020-1405

Connersville, IN

12/30/20

4:55 p.m. EST

* Not to scale

NARRATIVE

Circumstances Prior to the Accident

The track inspector for CSX Transportation (CSX) in hi-rail vehicle 094770 (Train 1) reported for duty at 7 a.m., EST, on December 30, 2020, at the CSX Maintenance of Way office in Connersville, Indiana. Prior to reporting for this duty period, the track inspector was released from duty at 5:30 p.m., EST, on December 26, 2020. The employee received more than the statutory off-duty rest period prior to reporting. Connersville is the regular reporting location for this employee.

When the track inspector arrived at the on-duty location, he received a safety briefing and all required documentation to perform his work duties for the day. The employee performed the daily vehicle inspection prior to calling the train dispatcher to obtain a track authority at Milepost (MP) BD 67.3 that was effective at 7:33 a.m., EST.

At 7:33 a.m., EST, December 30, 2020, the track inspector, in Train 1, departed Connersville in Track Warrant Control (TWC) territory on the Indianapolis Subdivision in an eastward timetable direction. Timetable direction will be used throughout this report. Once the employee inspected the east end of his territory at the Eastbound Absolute Signal (EAS) Control Point Hamilton, he removed Train 1 from the track and released his track authority at 9:31 a.m., EST.
The inspector then drove, by road, to Indianapolis, where he received authority 80858 from the train dispatcher to hi-rail from CP IU, MP BD 123.7, in an eastward direction to MP BD 67.0 at 3:12 p.m., EST.

Line 11 of the track authority told the employee that train Q36130 (Train 2) was ahead of him at MP BD 111.5. He followed Train 2 for the next 51.7 miles before striking the rear end of the stopped Train 2 at a recorded speed of 47 mph. Maximum speed on the Indianapolis Subdivision is 60 mph for passenger trains and 40 mph for freight trains.

In this area of the railroad, the track has back-to-back curves for approximately 2 and ½ miles preceding the collision.

The Accident

On December 30, 2020, a rear-end collision occurred in Connersville at approximately 4:55 p.m., EST. Connersville is located approximately 54 miles east of Indianapolis. The incident occurred on CSX single main track at MP BD 71.7 on the Great Lakes Division, Indianapolis Subdivision.

The rear of Eastbound Train 2 was struck by a hi-rail vehicle at MP BD 71.7; Train 2 was not in motion at the time of the incident. As a result of the collision, the employee operating the hi-rail sustained serious injuries and was transported to Reid Hospital located in Connersville for treatment. The hi-rail vehicle sustained heavy damage with no damage reported to track or Train 2 equipment. There were no injuries to the train crew.

Shortly after the incident, the Fayette County local fire, police, and emergency response personnel responded along with CSX managers to the scene of the accident.

The incident occurred on tangent track. There were severe injuries to the hi-railing employee. The hi-railing employee was post-accident drug tested under FRA authority and test results were negative.

This was single main track used for passenger service operations. This accident would not have been PTC preventable.

Post-Accident Investigation
The FRA and CSX Management, along with Emergency Responders, were notified and began arriving on the scene.

Analysis and Conclusions

Analysis-Toxicological Testing-
The accident met the criteria for Title 49 Code of Federal Regulations (CFR) Part 219 Subpart C post-accident toxicological testing. The track inspector was tested under this authority at a local hospital. The test results for the track inspector were negative.

Conclusion:
Impairment of the inspector was not a causal factor in this accident.

Analysis-Fatigue analysis of train crew members:
FRA uses an overall effectiveness rate of 63 as the baseline for fatigue analysis. This is the level at which the risk of a human factors-related accident is calculated to be equal to chance. Any schedule that violates the overall effectiveness rate on the date of the accident or in the days leading up to the accident are considered to be at risk of fatigue contributing to the accident. The higher the Fatigue Audit InterDyne (FAID) score, the higher the fatigue exposure. Below this baseline, fatigue is not considered as probable for an employee. Software sleep settings vary according to information obtained from each employee. If an employee does not provide sleep information, FRA uses the default software settings.

Conclusion:
FRA obtained fatigue-related information, including work history, for all train operating employees involved in this accident.
FRA concluded that excessive fatigue was not present.
Information for the track inspector:
Finding: Fatigue was not probable for this employee.

Conclusion:
The Fatigue Avoidance Scheduling Tool (FAST) indicates that fatigue was not the probable cause for the

track inspector at the time of the accident.

Analysis-Training and Certification Records:
The track inspector was in compliance with all required training at the time of the incident.
Conclusion: Training and certification for the track inspector was current and not a causal factor in the incident.

Overall Conclusions
CSX Train 1 was traveling at a speed of 47 mph at MP BD 71.7. This location (39.65.89.25 latitude, -85.217200 longitude) was identified as the point of the collision.

Probable Cause and Contributing Factors
FRA's investigation of the derailment site, and CSX records, determined there were several factors indicating the primary cause to be over speed of Train 1, which is a violation of CSX Operating Rule 712.17.
"When operating on-track equipment, operate at a speed that permits stopping within one-half the range of vision. Do not exceed the speed authorized for trains on the same track or listed in the table below, whichever is less."
"Rail-Highway vehicle less than 10,001 GVW: Forward – 40 mph."