



***Federal Railroad Administration
Office of Railroad Safety
Accident and Analysis Branch***

***Accident Investigation Report
HQ-2013-24***

***CSX Transportation (CXS)
Fontanet, IN
October 23, 2013***

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.

TRAIN SUMMARY

1. Name of Railroad Operating Train #1 CSX Transportation	1a. Alphabetic Code CSX	1b. Railroad Accident/Incident No. 000121982
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GENERAL INFORMATION

1. Name of Railroad or Other Entity Responsible for Track Maintenance CSX Transportation		1a. Alphabetic Code CSX	1b. Railroad Accident/Incident No. 000121982	
2. U.S. DOT Grade Crossing Identification Number 540206P		3. Date of Accident/Incident 10/23/2013	4. Time of Accident/Incident 1:57 AM	
5. Type of Accident/Incident Hwy-Rail Crossing				
6. Cars Carrying HAZMAT 0	7. HAZMAT Cars Damaged/Derailed 0	8. Cars Releasing HAZMAT 0	9. People Evacuated 0	10. Subdivision St. Louis Line
11. Nearest City/Town Fontanet		12. Milepost (to nearest tenth) QS61.42	13. State Abbr. IN	14. County VIGO
15. Temperature (F) 39 °F	16. Visibility Dark	17. Weather Cloudy		18. Type of Track Main
19. Track Name/Number 1	20. FRA Track Class Freight Trains-80, Passenger Trains-90		21. Annual Track Density (gross tons in millions) 28	22. Time Table Direction East

OPERATING TRAIN #1

1. Type of Equipment Consist: Freight Train		2. Was Equipment Attended? Yes		3. Train Number/Symbol Q10622							
4. Speed (recorded speed, if available) R - Recorded E - Estimated 59 MPH		Code R	5. Trailing Tons (gross excluding power units) 3789		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						
6. Type of Territory Signalization: <u>Signaled</u> Method of Operation/Authority for Movement: <u>Signal Indication</u> Supplemental/Adjunct Codes: <u>Q, N/A</u>											
7. Principal Car/Unit (1) First Involved (derailed, struck, etc.) CSX 422		a. Initial and Number 0	b. Position in Train 1	c. Loaded (yes/no) yes	8. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box. Alcohol 0 Drugs 0						
(2) Causing (if mechanical, cause reported)		0	0	no	9. Was this consist transporting passengers? No						
10. Locomotive Units (Exclude EMU, DMU, and Cab Car Locomotives.)		a. Head End	Mid Train		Rear End	11. Cars (Include EMU, DMU, and Cab Car Locomotives.)	Loaded		Empty		
			b. Manual	c. Remote	d. Manual	e. Remote	a. Freight	b. Pass.	c. Freight	d. Pass.	e. Caboose
(1) Total in Train		2	0	0	0	0	(1) Total in Equipment Consist 27	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 2500			13. Track, Signal, Way & Structure Damage 1000								
14. Primary Cause Code M308 - Highway user deliberately disregarded crossing warning devices											
15. Contributing Cause Code M301 - Highway user impairment because of drug or alcohol usage (as determined by local authorities, e.g., police)											
Number of Crew Members						Length of Time on Duty					
16. Engineers/Operators 1		17. Firemen 0		18. Conductors 1		19. Brakemen 0		20. Engineer/Operator Hrs: 5 Mins: 57		21. Conductor Hrs: 5 Mins: 57	
Casualties to:		22. Railroad Employees		23. Train Passengers		24. Others		25. EOT Device? Yes		26. Was EOT Device Properly Armed? Yes	
Fatal		0		0		3					
Nonfatal		0		0		0		27. Caboose Occupied by Crew? N/A			
28. Latitude 39.564260000				29. Longitude -87.260350000							

CROSSING INFORMATION

Highway User Involved				Rail Equipment Involved			
1. Type Pick-Up Truck				5. Equipment Train (Units Pulling)			
2. Vehicle Speed (<i>est. mph at impact</i>) 15		3. Direction (<i>geographical</i>) East		6. Position of Car Unit in Train 1			
4. Position of Involved Highway User Moved over Crossing				7. Circumstance Rail Equipment Struck Highway User			
8a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? Neither				8b. Was there a hazardous materials release by Neither			
8c. State here the name and quantity of the hazardous material released, if any. N/A							
9. Type of Crossing Warning 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other (<i>spec. in narr.</i>) 3. Standard FLS 6. Audible 9. Watchman 12. None 11, N/A, 3, 1				10. Signaled Crossing Warning 1, 1, 1, 1		11. Roadway Conditions Wet	
12. Location of Warning Both Sides			13. Crossing Warning Interconnected with Highway Signals No			14. Crossing Illuminated by Street Lights or Special Lights No	
15. Highway User's Age 30		16. Highway User's Gender Male		17. Highway User Went Behind or in Front of Train and Struck or was Struck by Second Train No		18. Highway User Went around the gate	
19. Driver Passed Standing Highway Vehicle N/A			20. View of Track Obscured by (<i>primary obstruction</i>) Not Obstructed				
Casualties to:		Killed	Injured	21. Driver was Killed		22. Was Driver in the Vehicle? Yes	
23. Highway-Rail Crossing Users 3		0	24. Highway Vehicle Property Damage (<i>est. dollar damage</i>) 10000		25. Total Number of Vehicle Occupants (<i>including driver</i>) 3		
26. Locomotive Auxiliary Lights? Yes				27. Locomotive Auxiliary Lights Operational? Yes			
28. Locomotive Headlight Illuminated? Yes				29. Locomotive Audible Warning Sounded? Yes			

10. Signaled Crossing Warning

- 1 - Provided minimum 20-second warning
- 2 - Alleged warning time greater than 60 seconds
- 3 - Alleged warning time less than 20 seconds
- 4 - Alleged no warning
- 5 - Confirmed warning time greater than 60 seconds
- 6 - Confirmed warning time less than 20 seconds
- 7 - Confirmed no warning
- N/A - N/A

Explanation Code

- A - Insulated rail vehicle
- B - Storm/lightning damage
- C - Vandalism
- D - No power/batteries dead
- E - Devices down for repair
- F - Devices out of service
- G - Warning time greater than 60 seconds attributed to accident-involved train stopping short of the crossing, but within track circuit limits, while warning devices remain continuously active with no other in-motion train present
- H - Warning time greater than 60 seconds attributed to track circuit failure (e.g., insulated rail joint or rail bonding failure, track or ballast fouled)
- J - Warning time greater than 60 seconds attributed to other train/equipment within track circuit limits
- K - Warning time less than 20 seconds attributed to signals timing out before train's arrival at the crossing/island circuit
- L - Warning time less than 20 seconds attributed to train operating counter to track circuit design direction
- M - Warning time less than 20 seconds attributed to train speed in excess of track circuit's design speed
- N - Warning time less than 20 seconds attributed to signal system's failure to detect train approach
- O - Warning time less than 20 seconds attributed to violation of special train operating instructions
- P - No warning attributed to signal systems failure to detect the train
- R - Other cause(s). Explain in Narrative Description

SYNOPSIS

On October 23, 2013, at approximately 1:57 a.m., EDT, northeast bound CSX Transportation (CSX) Freight Train Q10622 collided with a motor vehicle that was on the tracks at Rio Grande Road, Milepost (MP) QS61.4. The accident occurred near Fontanet, Indiana, in Nevins Township on the St. Louis Subdivision on double main track, Main Track 1. Movements on this part of the railroad are under current of traffic with signals in both directions and controlled by the dispatcher located at CSX's Dispatch Center in Indianapolis, Indiana.

The motor vehicle driver and two passengers were pronounced dead at the scene of the accident. The motor vehicle, which was destroyed, was a four-door pickup truck. There was no derailment, no injuries to the train crew, no release of hazardous materials, and no evacuation. This is not an Amtrak route. CSX estimates damages to the locomotive equipment to be approximately \$2,500 and \$1,000 dollars to signal and track.

The Rio Grande Road crossing is guarded with mast mounted flashers with cross bucks and sign designating two tracks, highway-grade crossing gates, and no audible warning devices. The road also has rectangular approach warning signs depicting railroad tracks in both directions and roadway markings in both directions. Visibility on either side of the right-of-way was unobstructed. Weather at the time of the accident was dark and overcast, with visibility of 10 miles, humidity at 89 percent, with wind out of the north at 15 mph, and the temperature at 39 degrees Fahrenheit.

Probable Cause: Highway user deliberately disregarded crossing warning devices.

NARRATIVE

Circumstances Prior to the Accident

The crew, engineer and conductor, of CSX northeast bound Train Q10622 went on duty at 8:00 p.m., EDT, on October 23, 2013. They went on duty at Rose Lake Yard in East St. Louis, Illinois, their away-from-home terminal. Both employees had received more than their statutory required off duty time. Their assigned freight train consisted of two locomotives, 27 loaded cars, no empties, was 4,101 feet long, and weighed 3,789 tons. The train originated at Rose Lake Yard and was to travel to Avon, Indiana, with no cars to be added or removed at locations en route. The train received an initial terminal train air brake test and departed Rose Lake Yard at approximately 8:30 p.m.. The crew described the trip as uneventful as they approached the accident area. The Engineer was seated in the engineer's seat on the east side of the lead locomotive, CSX 422, and the Conductor was seated in the conductor's seat on the west side.

According to the crew statements, the train was proceeding northeast bound operating on clear signal indications at Milepost (MP) 61.4. The train was operating at a speed of 59 mph on Main Track 1. As the train approached the grade crossing at Rio Grande Road, the Locomotive Engineer began a proper train horn signal sequence approximately 1,400 feet in advance of the grade crossing. The crew stated they observed a light colored four-door vehicle approaching the crossing in an eastward direction and thought the vehicle would stop. They stated that as the vehicle approached the crossing, the driver slowed but did not stop before going around the west crossing gate. The vehicle then proceeded over Main Track 2 and then on to Main Track 1 where the northeast bound Train Q10622 had just begun to cross Rio Grande Road.

The Accident

Train Q10622

The train was being operated at approximately 59 mph approaching the accident area. The train crew's view of the crossing was unobstructed. The Engineer and Conductor said they were aware of the vehicle traveling east on Rio Grande Road as they approached the highway-grade crossing. Both crew members felt the vehicle approaching the west side of the highway-grade crossing would stop since the gates were down and lights were flashing at the crossing. The train continued into the crossing, of Rio Grande Road at approximately 59 mph where it struck the vehicle with lead locomotive CSX 422 on Main Track 1. The speeds were recorded by the event recorder of the lead locomotive. The maximum authorized speed for this train was 60 mph, as designated in the current CSX Great Lakes Division Timetable Number 6.

Highway Vehicle

The automobile was traveling from west to east on Rio Grande Road. According to the Locomotive Engineer, the driver did not stop at the west highway-grade crossing gate, but only slowed and went around the gate on to Main Track 2 and then on to Main Track 1 where it was struck by the eastbound Train Q10622 at 59 mph at approximately 1:57 a.m., on October 23, 2013. A report filed by the Deputy Sheriff of Vigo County, Indiana, stated the crash was a result of aggressive driving by the highway vehicle driver.

The train struck midpoint of the passenger side of the highway vehicle, a four-door pickup truck. The automobile was shoved north of Rio Grande Road, along the northeast side of Main Track 1, for about 226 feet before coming to rest on the east side of Main Track 1. The train came to a stop about 3,446 feet north east of the highway-grade crossing.

While the train was coming to a stop, the Engineer and Conductor both contacted CSX's Indianapolis train dispatcher passing concerning vital information of the accident. After the train stopped, the Locomotive Engineer stayed on the locomotive and continued to pass information to the train dispatcher. The Conductor walked back to the vehicle, approximately 3,446 feet, and as he reached the vehicle, emergency response personnel had already arrived, at approximately 2:04 a.m., and were working the scene of the accident. As the Conductor walked the train, he checked the equipment for damage and derailment of cars. While on the scene of accident, towards the rear of the train, the conductor provided assistance where possible.

Vigo County's Deputy Sheriff arrived on the scene at approximately 2:04 a.m.. The Nevins Township Rescue 31 and Fire Engine 35 squads arrived at approximately 2:10 a.m.. After they coordinated the emergency response, the Rescue 31 squad members began response for the passengers of the automobile. After medical aid was given to the victims of the crossing accident all three victims were pronounced dead at the scene of the accident. One of the Rescue 31 squad members ascertained that the train crew members needed no medical attention. The Deputy Sheriff interviewed all train crew members.

A CSX Trainmaster and Road Foreman were dispatched to the scene from Avon, and a claims agent out of CSX Indianapolis, Indiana, arrived about 3:00 a.m.. CSX's managers ascertained the condition of the train and track structure. There was no hazardous materials involvement and only minor structural damage to the lead locomotive. The trainmaster discussed the situation with the Deputy Sheriff. The trainmaster called for a re-crew and told the crew to secure the train at that location. The Trainmaster had the crew relieved and the crew proceeded in a cab to Avon Yard at approximately 5:00 a.m.. After the crew arrived at Avon Yard the crew was tied up and released by the Trainmaster and the crew went off duty at approximately 8:00 a.m.

Analysis and Conclusions

Analysis - Toxicological Testing: The driver of the vehicle was a 30-year-old male, and the two passengers were a 24-year old male, and a 20-year old female. Vigo County's Coroner performed toxicological testing on the remains of the all three occupants of the vehicle and the results were that all three tested positive for alcohol consumption.

This accident did not meet the criteria for Title 49 Code of Federal Regulations Part 219, Subpart C, Post-Accident Toxicological Testing, of the crew. CSX elected not to test the crew under their post-accident toxicological testing authority, since it also failed to meet their prescribed testing criteria.

Conclusion: Alcohol was a contributing circumstance.

Analysis - Highway-Rail Grade Crossing: Rio Grande Road is a two-lane asphalt roadway extending in a west to east direction. The posted speed limit for vehicles at the location of the accident is 40 mph. Rio Grande Road's warning system consists of a double gate mechanism mounted on signal masts with back-to-back 12-inch flashing light units, cross bucks, and sign designating two tracks, flashing lights on gates, no audible warning devices, and crossing is slightly elevated approximately 2-3 feet. There is an advance warning sign posted approximately 522 feet from the crossing. The stop bar is approximately 44 feet from the crossing. There are also pavement markings approximately 502 feet from the crossing. The pavement markings are not clearly distinguishable. There is no dense vegetation near the crossing that would obstruct view of either the vehicle driver or train crew. This area of the accident is maintained by Nevins Township.

The railroad has a whistle post in place about 1,400 feet south of the crossing on Main Track 1. All crew members said the Locomotive Engineer began sounding the whistle when the train neared this post. This was later validated by analysis of the event recorder data and video tape.

The active warning devices, at MP 61.4/DOT Number 540206P, were tested by a Federal Railroad Administration (FRA) Signal and Train Control inspector and CSX signal maintainer and found to function as intended.

Conclusion: The warning devices functioned as intended.

Analysis - Locomotive Safety Devices: The leading locomotive was equipped with a headlight, the auxiliary lights, and the audible warning device required by Federal regulations. The Locomotive Engineer tested these devices at the accident site in the presence of the Deputy Sheriff and trainmaster, and they functioned as intended. The devices were retested in Avon Yard in the presence of an FRA Motive Power and Equipment inspector and they functioned as intended.

Conclusion: The locomotive safety devices were in full compliance with Federal requirements.

Analysis - Locomotive Engineer Operating Performance: The locomotive was also equipped with a speed indicator and an event recorder, as required. The relevant event recorder data was downloaded by the trainmaster at the accident site, and analyzed at CSX's Avon Yard in Avon.

recorder data was downloaded by the trainmaster at the accident site, and analyzed at CSX's Avon Yard in Avon.

Conclusion: The Locomotive Engineer was in compliance with all applicable railroad operating and train handling requirements.

Analysis - Fatigue: FRA uses an overall effectiveness rate of 77.5 percent as the baseline for fatigue analysis, which is equivalent to blood alcohol content (BAC) of 0.05. At or above this baseline, we do not consider fatigue as probable for any 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.

FRA obtained fatigue-related information, including a 10-day work history, for two employees involved in this accident, which included the Locomotive Engineer and the Conductor, assigned to the eastbound Train Q10622.

Conclusions: FRA concluded fatigue was probable for the Locomotive Engineer and the Conductor, assigned to the eastbound Train Q10622. Information for these two employees follows:

1. Locomotive Engineer assigned to Train Q10622

Sleep setting: Good

Overall effectiveness: 66.53%

Lapse Index: 5.8

Reaction Time: 148%

Chronic Sleep Debt: 8.51

Hours of Continuous Wakefulness: 6.97

Time of Day (military): 0157

BAC Equivalent: > 0.08

Conclusion: Fatigue was probable for this employee.

2. Conductor assigned to Train Q10622

Sleep setting: Good

Overall effectiveness: 69.01%

Lapse Index: 5.1

Reaction Time: 142%

Chronic Sleep Debt: 9.62

Hours of Continuous Wakefulness: 13.97

Time of Day (military): 0157

BAC Equivalent: > 0.05

Conclusion: Fatigue was probable for this employee

Overall Conclusions

The railroad was in full compliance with their Railroad Operating Rules (RORs) and all applicable Federal standards. The train crew members were the only witnesses to the accident, and they had no information that could be used to determine why the automobile failed to stop at the crossing. The Deputy Sheriff's accident report stated the driver's contributing circumstances were the vehicle disregarded the signal and alcoholic beverages. The report also said the accident was a result of aggressive driving by the driver of the vehicle.

Probable Cause and Contributing Factors

Probable Cause: Highway user deliberately disregarded crossing warning devices