



***Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2008-04***

***CSX Transportation (CSX)
Indianapolis, IN
January 6, 2008***

Note that 49 U.S.C. §20903 provides that no part of an accident or incident report 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.

1. Name of Railroad Operating Train #1 CSX Transportation [CSX]		1a. Alphabetic Code CSX		1b. Railroad Accident/Incident No. 000041572			
2. Name of Railroad Operating Train #2 CSX Transportation [CSX]		2a. Alphabetic Code CSX		2b. Railroad Accident/Incident No. 000041572			
3. Name of Railroad Operating Train #3 N/A		3a. Alphabetic Code N/A		3b. Railroad Accident/Incident No. N/A			
4. Name of Railroad Responsible for Track Maintenance: CSX Transportation [CSX]		4a. Alphabetic Code CSX		4b. Railroad Accident/Incident No. 000041572			
5. U.S. DOT_AAR Grade Crossing Identification Number		6. Date of Accident/Incident Month 01 Day 06 Year 2008		7. Time of Accident/Incident 03:26:00 <input checked="" type="checkbox"/> AM <input type="checkbox"/> PM			
8. Type of Accident/Incident (single entry in code box)							
1. Derailment		4. Side collision		7. Hwy-rail crossing			
2. Head on collision		5. Raking collision		10. Explosion-detonation			
3. Rear end collision		6. Broken Train collision		11. Fire/violent rupture			
		9. Obstruction		12. Other impacts			
				13. Other (describe in narrative) Code 12			
9. Cars Carrying HAZMAT 21		10. HAZMAT Cars Damaged/Derailed 1		11. Cars Releasing HAZMAT 00			
				12. People Evacuated 0			
				13. Division GREAT LAKES			
14. Nearest City/Town INDIANAPOLIS		15. Milepost (to nearest tenth) 6.8		16. State Abbr Code N/A IN			
				17. County MARION			
18. Temperature (F) (specify if minus) 40 F		19. Visibility (single entry) Code 1. Dawn 3. Dusk 2. Day 4. Dark 4		20. Weather (single entry) Code 1. Clear 3. Rain 5. Sleet 2. Cloudy 4. Fog 6. Snow 4			
				21. Type of Track Code 1. Main 3. Siding 2. Yard 4. Industry 1			
22. Track Name/Number MAIN TRACK 1		23. FRA Track Code Class (1-9, X) 3		24. Annual Track Density (gross tons in millions) 60.9			
				25. Time Table Direction Code 1. North 3. East 2. South 4. West 3			
OPERATING TRAIN #1							
26. Type of Equipment Consist (single entry)		1. Freight train 4. Work train 7. Yard/switching		A. Spec. MoW Equip. Code			
2. Passenger train 5. Single car 8. Light loco(s).		3. Commuter train 6. Cut of cars 9. Maint./inspect.car		27. Was Equipment Attended? Code 1. Yes 2. No 2			
28. Train Number/Symbol N/A							
29. Speed (recorded speed, if available) Code R - Recorded E - Estimated 23 MPH R		30. Trailing Tons (gross tonnage, excluding power units) 13224			31. Method(s) of Operation (enter code(s) that apply) a. ATCS g. Automatic block m. Special instructions b. Auto train control h. Current of traffic n. Other than main track c. Auto train stop i. Time table/train orders o. Positive train control d. Cab j. Track warrant control p. Other (Specify in narrative) Code(s) e. Traffic k. Direct traffic control f. Interlocking l. Yard limits e N/A N/A N/A N/A		
					31a. Remotely Controlled Locomotive? 0 = Not a remotely controlled 1 = Remote control portable 2 = Remote control tower 3 = Remote control transmitter - more than one remote control transmitter 0		
32. Principal Car/Unit		a. Initial and Number		b. Position in Train			
(1) First involved (derailed, struck, etc)		GACX 323		1			
(2) Causing (if mechanical cause reported)		0		0			
				c. Loaded (yes/no) yes N/A			
				33. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box. Alcohol Drugs N/A N/A			
				34. Was this consist transporting passengers? (Y/N) N			
35. Locomotive Units		a. Head End		Mid Train			
		b. Manual		c. Remote			
		d. Manual		c. Remote			
(1) Total in Train		0		0			
(2) Total Derailed		0		0			
				36. Cars			
				a. Freight b. Pass. c. Freight d. Pass. e. Caboose			
				(1) Total in Equipment Consist 102 0 10 0 0			
				(2) Total Derailed 29 0 4 0 0			
37. Equipment Damage		38. Track, Signal, Way, & Structure Damage		39. Primary Cause Code			
This Consist \$115,527.00		\$50,000.00		H021			
				40. Contributing Cause Code N/A			
Number of Crew Members				Length of Time on Duty			
41. Engineer/Operators 0		42. Firemen 0		43. Conductors 0		44. Brakemen 0	
				45. Engineer/Operator Hrs 0 Mi 0		46. Conductor Hrs 0 Mi 0	
Casualties to:		47. Railroad Employees		48. Train Passengers		49. Other	
Fatal		0		0		0	
Nonfatal		0		0		0	
				50. EOT Device? 1. Yes 2. No 2		51. Was EOT Device Properly Armed? 1. Yes 2. No 2	
				52. Caboose Occupied by Crew? 1. Yes 2. No 2			
OPERATING TRAIN #2							
53. Type of Equipment Consist (single entry)		1. Freight train 4. Work train 7. Yard/switching		A. Spec. MoW Equip. Code		54. Was Equipment Attended? Code	
2. Passenger train 5. Single car 8. Light loco(s).		3. Commuter train 6. Cut of cars 9. Maint./inspect.car		1		1. Yes 2. No 1	
55. Train Number/Symbol Q263-05							
56. Speed (recorded speed, if available) Code R - Recorded E - Estimated 0 MPH R		57. Method(s) of Operation (enter code(s) that apply) a. ATCS g. Automatic block m. Special instructions b. Auto train control h. Current of traffic n. Other than main track			58a. Remotely Controlled Locomotive? 0 = Not a remotely controlled 1 = Remote control portable		

57. Trailing Tons (gross tonnage, excluding power units)	8466	c. Auto train stop d. Cab e. Traffic f. Interlocking	i. Time table/train orders j. Track warrant control k. Direct traffic control l. Yard limits	o. Positive train control p. Other (Specify in narrative) Code(s)	2 = Remote control tower 3 = Remote control transmitter - more than one remote control transmitter
				e	N/A
				N/A	N/A
				N/A	N/A
				N/A	0

59. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded(yes/no)	60. 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 7807	1	N/A		N/A	N/A
(2) Causing (if mechanical cause reported)	0	0	N/A	61. Was this consist transporting passengers? (Y/N)		N

62. Locomotive Units	a. Head End	Mid Train	Rear End	63. Cars	Loaded	Empty	e. Caboose
		b. Manual	c. Remote		a. Freight	b. Pass.	c. Freight
		d. Manual	c. Remote		d. Pass.		
(1) Total in Train	2	0	0	(1) Total in Equipment Consist	52	0	66
(2) Total Derailed	2	0	0	(2) Total Derailed	1	0	0

64. Equipment Damage This Consist	\$1,611,910.00	65. Track, Signal, Way, & Structure Damage	\$0.00	66. Primary Cause Code	H021	67. Contributing Cause Code	N/A
Number of Crew Members				Length of Time on Duty			

68. Engineer/Operators	69. Firemen	70. Conductors	71. Brakemen	72. Engineer/Operator	73. Conductor
1	0	1	0	Hrs 9 Mi 6	Hrs 9 Mi 6
Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other	77. EOT Device?	78. Was EOT Device Properly Armed?
Fatal	0	0	0	1. Yes 2. No 1	1. Yes 2. No 1
Nonfatal	2	0	0	79. Caboose Occupied by Crew?	
				1. Yes	2. No 2

OPERATING TRAIN #3

80. Type of Equipment Consist (single entry)	1. Freight train	4. Work train	7. Yard/switching	A. Spec. MoW Equip.	Code	81. Was Equipment Attended?	Code	82. Train Number/Symbol
	2. Passenger train	5. Single car	8. Light loco(s).		N/A	1. Yes 2. No	N/A	N/A
	3. Commuter train	6. Cut of cars	9. Maint./inspect.car					

83. Speed (recorded speed, if available)	Code	85. Method(s) of Operation (enter code(s) that apply)	85a. Remotely Controlled Locomotive?
R - Recorded		a. ATCS	0 = Not a remotely controlled
E - Estimated	N/A MPH	b. Auto train control	1 = Remote control portable
		c. Auto train stop	2 = Remote control tower
84. Trailing Tons (gross tonnage, excluding power units)	N/A	d. Cab	3 = Remote control transmitter - more than one remote control transmitter
		e. Traffic	
		f. Interlocking	
		l. Yard limits	
			N/A

86. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded(yes/no)	87. 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)	N/A	N/A	N/A		N/A	N/A
(2) Causing (if mechanical cause reported)	N/A	N/A	N/A	88. Was this consist transporting passengers? (Y/N)		N/A

89. Locomotive Units	a. Head End	Mid Train	Rear End	90. Cars	Loaded	Empty	e. Caboose
		b. Manual	c. Remote		a. Freight	b. Pass.	c. Freight
		d. Manual	c. Remote		d. Pass.		
(1) Total in Train	N/A	N/A	N/A	(1) Total in Equipment Consist	N/A	N/A	N/A
(2) Total Derailed	N/A	N/A	N/A	(2) Total Derailed	N/A	N/A	N/A

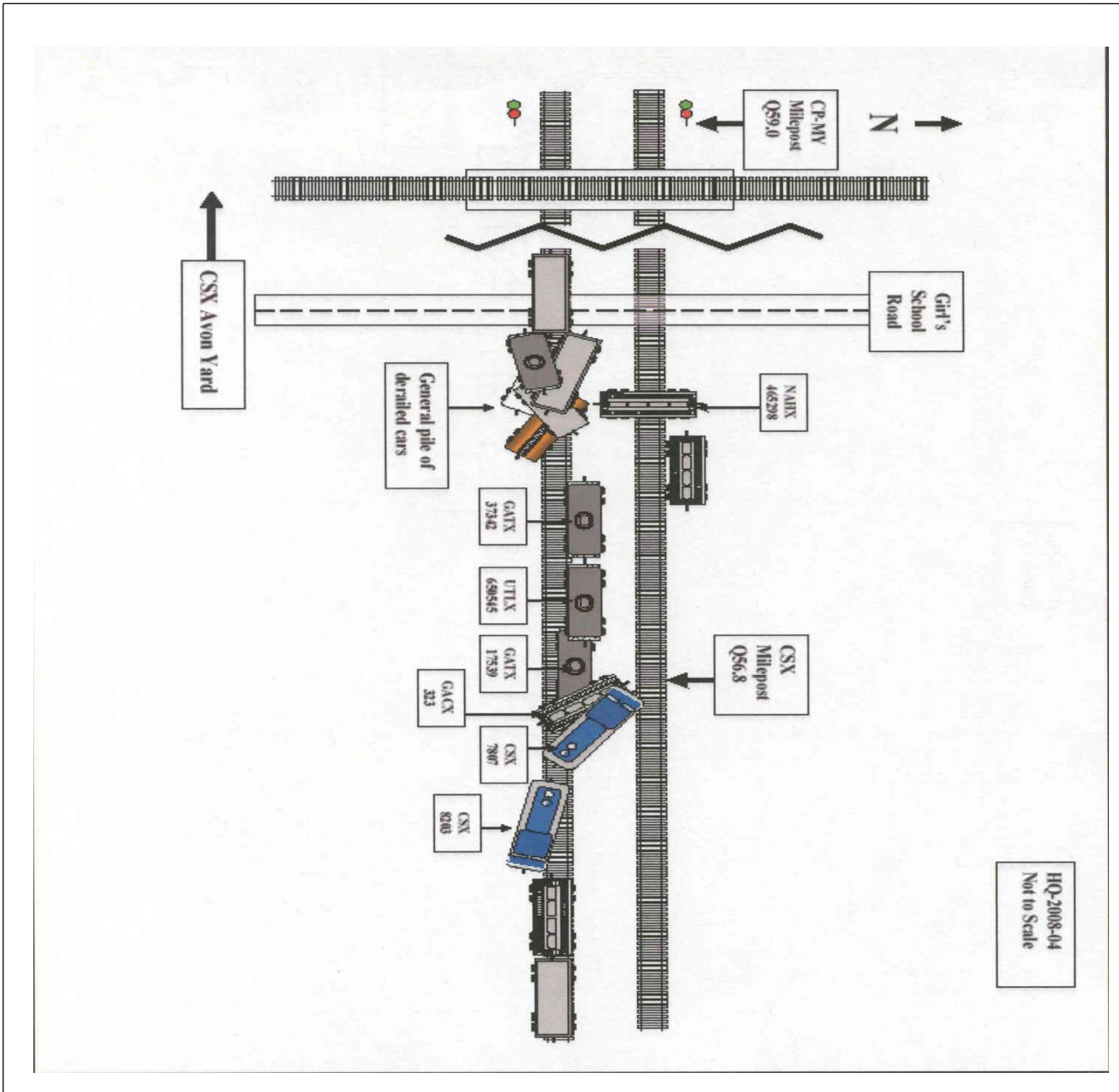
91. Equipment Damage This Consist	N/A	92. Track, Signal, Way, & Structure Damage	N/A	93. Primary Cause Code	N/A	94. Contributing Cause Code	N/A
Number of Crew Members				Length of Time on Duty			

95. Engineer/Operators	96. Firemen	97. Conductors	98. Brakemen	99. Engineer/Operator	100. Conductor
N/A	N/A	N/A	N/A	Hrs N/A Mi N/A	Hrs N/A Mi N/A
Casualties to:	101. Railroad Employees	102. Train	103. Other	104. EOT	105. Was EOT Device Properly
Fatal	N/A	N/A	N/A	1. Yes 2. No N/A	1. Yes 2. No N/A
Nonfatal	N/A	N/A	N/A	106. Caboose Occupied by Crew?	
				1. Yes	2. No N/A

Highway User Involved				Rail Equipment Involved			
107. C. Truck-Trailer	F. Bus	J. Other Motor Vehicle	Code	111. Equipment	3. Train (standing)	6. Light Loco(s) (moving)	Code
A. Auto	D. Pick-Up Truck	G. School Bus	K. Pedestrian	1. Train(units pulling)	4. Car(s) (moving)	7. Light(s) (standing)	
B. Truck	E. Van	H. Motorcycle	M. Other (spec. in narrative)	2. Train(units pushing)	5. Car(s) (standing)	8. Other (specify in narrative)	N/A
			N/A				
108. Vehicle Speed (est. MPH at impact)	N/A	109. geographical	Code	112. Position of Car Unit in	N/A		
		1. North 2. South 3. East 4. West	N/A				

110. Position 1. Stalled on Crossing 2. Stopped on Crossing 3. Moving Over Crossing 4. Trapped				Code N/A	113. Circumstance 1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User				Code N/A				
114a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither				Code N/A	114b. Was there a hazardous materials release 1. Highway User 2. Rail Equipment 3. Both 4. Neither				Code N/A				
114c. State here the name and quantity of the hazardous materials released, if any. N/A													
115. Type Crossing 1. Gates 2. Cantilever FLS 3. Standard FLS 4. Wig Wags 5. Hwy. traffic signals 6. Audible Warning 7. Crossbucks 8. Stop signs 9. Watchman 10. Flagged by crew 11. Other (spec. in narr.) 12. None				Code N/A	116. Signaled Crossing (See instructions for codes)				Code N/A	117. Whistle 1. Yes 2. No 3. Unknown		Code N/A	
Code(s)				N/A	N/A	N/A	N/A	N/A	N/A				
118. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach				Code N/A	119. Crossing Warning with Highway Signals 1. Yes 2. No 3. Unknown				Code N/A	120. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown			Code N/A
121. Age N/A		122. Driver's Gender 1. Male 2. Female		Code N/A	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown				Code N/A	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other (specify in narrative)			Code N/A
125. Driver Passed Highway Vehicle 1. Yes 2. No 3. Unknown				Code N/A	126. View of Track Obscured by (primary obstruction) 1. Permanent Structure 2. Standing Railroad Equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicle 7. Other (specify in narrative) 8. Not obstructed				Code N/A				
Casualties to:			Killed	Injured	127. Driver 1. Killed 2. Injured 3. Uninjured				Code N/A	128. Was Driver in the Vehicle? 1. Yes 2. No			Code N/A
129. Highway-Rail Crossing Users			N/A	N/A	130. Highway Vehicle Property Damage (est. dollar damage)				N/A	131. Total Number of Highway-Rail Crossing Users (include driver)			N/A
132. Locomotive Auxiliary Lights? 1. Yes 2. No				Code N/A	133. Locomotive Auxiliary Lights Operational? 1. Yes 2. No				Code N/A				
134. Locomotive Headlight Illuminated? 1. Yes 2. No				Code N/A	135. Locomotive Audible Warning Sounded? 1. Yes 2. No				Code N/A				

136. DRAW A SKETCH OF ACCIDENT AREA INCLUDING ALL TRACKS, SIGNALS, SWITCHES, STRUCTURES, OBJECTS, ETC., INVOLVED.



137. SYNOPSIS OF THE ACCIDENT

An unmanned cut of 112 rail cars, (consisting 102 loads, 10 empties, 13,224 tons) collided with a standing CSX freight train at 3:26 a.m., EST, January 6, 2008. The accident occurred near Indianapolis, Indiana, at milepost QS 6.9, on the CSX Indianapolis Terminal Subdivision.

Both crew members of the standing CSX freight train Q263-05 were injured. As a result of the collision both locomotive units of the standing train and 33 rail cars of the unmanned cut of cars derailed. Equipment damages estimated \$1,727,437, and track and structure damages were estimated at \$50,000.

At the time of the accident, it was dark and foggy. The temperature was 40 °F.

Probable cause was the failure of the unmanned cut of cars to be properly secured with handbrakes. There were no handbrakes applied to the cars to impede their movement onto the Main Track, and their subsequent uncontrolled movement to the collision site. Handbrakes that had been applied to the cars by the inbound conductor of the train had been removed by a mechanical department employee, due to his belief that his actions were sanctioned by the transportation department.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

Standing CSX Freight Train Q687-04, consisting of 102 loads and 10 empties operated from CSX's Rose Lake Yard, East St. Louis, Illinois, to CSX's Big Four Yard, Avon, Indiana, on January 5, 2008, arrived at 6:20 p.m. Upon arrival, the train was placed in receiving yard track # 9 and the conductor of the train applied handbrakes on the three cars on the east end of the train as required by CSX Operating Rule, CSX Great Lakes Division Indianapolis District Bulletin 400, January 1, 2008.

Between 8:40 p.m. and 10 p.m., CSX car department employees performed inspection of the cars and bled the air from the cars in preparation for classification operations. The carmen left air brakes applied on the four east and two west cars in the cut. The carman that performed the work on the east end of the cut of cars released the handbrakes that the inbound conductor had applied.

At approximately 3:05 a.m., the yardmaster asked the carmen working in the receiving yard to check if any handbrakes were applied on the east end of the cars in receiving track number nine. The yardmaster was preparing to send the hump yard engine to get those cars, and due to the heavy weight of the cut, was concerned about the engine's ability to pull the cut from the receiving yard. The carmen went to the east end of the track and reported no handbrakes on the cars in that track.

The yardmaster instructed the hump engine crew to proceed to receiving track number nine and bring those cars out of the receiving yard in preparation for classification operations. Shortly thereafter, the carmen called the yardmaster on the radio and asked if the hump engine had coupled to the cars. When the yardmaster replied that it had not, the carmen advised him that the cut of cars was rolling out of the receiving yard toward the east.

The yardmaster called the employee working at Tower 1, who controls the switches at the east end of the receiving yard, on the yard's communication line and asked if there was anything on the circuit of track number nine. The employee replied that there was something occupying the track number nine circuit. In the

meantime, the hump engine had entered receiving track number nine from the west end as instructed, but the crew was unable to locate the cars.

The crew of CSX Train Q263-05, consisting of an engineer and conductor, reported for duty at Crestline, Ohio, at 7:20 p.m., January 5, 2008. Both employees had received the required statutory off duty rest period prior to the assignment. Their train consisted of two locomotive units, 34 loaded rail cars and 55 empties, a total of 5,658 tons. During their trip, the train crew picked up 18 loaded cars and 11 empties weighing 2,808 tons at Anderson, Indiana, so that at the time of the accident, the train consisted of 52 loaded rail cars and 66 empties, with a total of 8,466 tons. Due to congestion in the rail yard at Avon, the yardmaster requested the CSX "IT" (Indianapolis Terminal) train dispatcher to hold CSX Train Q263-05 at Girl's School Road, milepost QS 6.9, until traffic that had previously entered the yard could clear. As instructed by the train dispatcher, the crew of CSX Q263-05 stopped the train on Main Track Number One. The crew stopped the train approximately 15-20 car lengths east of a road crossing to prevent unnecessary operation of the crossing warning devices and vehicular delays.

THE ACCIDENT:

When the yardmaster realized cars were rolling from receiving track number nine toward the main track, he immediately called the train dispatcher on a dedicated line and informed him of the situation. The train dispatcher called the crew of CSX Q263-05 and warned them that he had a report of a cut of cars coming out of the yard and they should be on alert for it. A terminal trainmaster from Avon then came on the line and told the train dispatcher to tell the crew to get off their train immediately. The dispatcher again tried to re-contact the crew, but received no response.

The conductor of CSX Train Q263-05 reported receiving the warning of the oncoming cars from the train dispatcher. He said he ended the radio conversation with the train dispatcher, then saw the crossing warning devices at Girl's School Road activate. He thought that odd since the train was stopped far enough from the crossing to preclude operation of the crossing devices. At that moment, he saw the leading car of the approaching cut of cars nearing their train. He shouted a warning to the engineer and they both dove to the floor of the engine, prior to impact. The oncoming cut of cars collided with the standing train. An Automatic Equipment Identification scanner at milepost QS 8.4 measured the speed of the cut of cars at 22.8 mph.

After the collision, the conductor made an emergency radio call on his portable radio, and then a second one on the engine radio. The engineer made a radio call to the train dispatcher requesting emergency assistance.

Upon receiving the request for emergency assistance, the train dispatcher immediately called "911" to request Emergency Medical Services (EMS) assistance. Responding to the accident scene were the Wayne Township Fire Department, the Indianapolis Fire Department Hazardous Materials Response Team, the Indianapolis Metropolitan Police Department, and Marion County Emergency Management. The crew members were removed from the locomotive by emergency responders and transported by Wayne Township paramedics to Methodist Hospital in Indianapolis for treatment of their injuries.

As a result of the accident, both locomotive units and the first car of CSX Train Q263-05 and 33 cars of the cut derailed. The wreckage fouled both main tracks at the location. The derailed locomotives leaked 2,500 gallons of diesel fuel. There was no evacuation.

ANALYSIS AND CONCLUSIONS - TOXICOLOGICAL TESTING:

Neither crew member of CSX Train Q263-05 underwent post accident testing per FRA Rules. While the event qualified for such testing under 49 CFR 219.201 (a)(2), (Impact Accident), the railroad also had the option to exclude employees from this testing if they could demonstrate that the employees had no role in the cause or severity of the accident.

CONCLUSION:

FRA takes no exception to CSX's decision to exclude the crew of CSX Train Q263-05 from D&A testing in this accident.

ANALYSIS- TRAIN CREW PERFORMWNCNE:

At the time of the accident the train was stopped. According to the locomotive event recorder, the train had been stopped approximately 10 minutes prior to impact. The throttle was in idle position, the reverser in forward position, and the independent brake was applied.

CONCLUSION:

FRA takes no exception to the train crew's performance.

ANALYSIS- FATIGUE:

FRA obtained fatigue related information, for the 10-day period preceding this incident including the 10-day work history (on duty/off duty cycles) for all employees involved.

CONCLUSION:

Upon analysis of the data information FRA concluded fatigue was not probable for any of the employees.

ANALYSIS-EQUIPMENT (CUT OF CARS):

According to records supplied by the CSX Mechanical Department, the cars that rolled out of receiving track number nine were inspected between 8:40 p.m. and 10:00 p.m. by three mechanical department employees. The employees reported no mechanical defects in any of the cars.

CONCLUSION:

Mechanical condition of equipment was not a cause of the derailment.

ANALYSIS- MECHANICAL DEPARTMENT EMPLOYEES:

The CSX Mechanical Department employees on duty at the time of the accident all reported no contact with the cut of cars that rolled out of the yard. There were employees who observed the rail cars uncontrolled movement and reported it to the yardmaster.

The carman who inspected the east end of the cut of cars between the times noted, had released the handbrakes applied by the inbound train crew members. This left no brakes applied on the cut of cars other than air brakes applied to four cars on the east end and two cars on the west end.

When asked why he released the handbrakes, the carman said he had been instructed in the past to do so by the transportation department supervisors, and thought it was company policy for carmen to do so. Other carmen, when interviewed, said they had been requested to release the hand brakes by transportation department supervisors, but had refused to do so.

CONCLUSION:

The carman that inspected the cars on the east end of the cut was under the impression that his action of releasing the hand brakes on track number nine was acceptable.

ANALYSIS- PHYSICAL CHARACTERISTICS:

CSX had no information concerning the grade of the yard track that held the cars prior to the accident. A review of the last track chart published (Conrail, 1998) reveals the grade on the main track at the location where the cars entered the main track. It was descending .68 percent to the east. The track then descends at .44 percent to the east for 1.3 miles, then ascends at .11 percent for .8 miles to the point of the collision.

CONCLUSION:

The descending grade enabled the cars to roll eastward to the point of impact.

ANALYSIS- DISPATCHER ACTIONS:

When the cars left the receiving yard, they moved east on a track commonly referred to as the "South Runner." They entered Main Track Number One at Control Point (CP) "MY", a dispatcher control point at the east end of the yard at milepost QS 9.0.

The switch leading from the South Runner Track to the Main Track at "MY" had been left lined for that movement. The dispatcher left the switch in this position due to the fact that two previous trains had entered the yard via this particular route, and CSX Train Q263-05 was to take the same route. This alignment of the switch also allowed a split point derail in the interlocking plant to be aligned in the non-derailing position. Had the switch from Main Track Number One been lined for the Main Track instead of the "South Runner," the cars would have been diverted from the Main Track.

CONCLUSION:

FRA takes no exception to the dispatcher's actions. CSX Rule 501 states, "Unless specifically stated otherwise for particular locations, controlled absolute block signals must be kept in 'Stop' position, except when displayed for movement." The rule has no requirement to return switches to normal position while awaiting movement.

ANALYSIS- SIGNALS:

When the cars left the receiving yard on the "South Runner" Track, they entered Main Track Number One at CP-MY as noted in the previous section. The "Event Log Form" produced by CSX for CP-MY indicates the cars first occupied the Control Point (CP) at 3:17:27 a.m.

An Automatic Equipment Indicator scanner at milepost QS 8.4 indicated the speed of the cut of cars was 14.7 mph as the first (east) car passed by and had risen to 22.8 mph as the last (west) car passed. At that point the leading car would have been at approximately milepost QS 7.0, or within .1 mile of the standing train.

CONCLUSION:

FRA takes no exception to the operation of the signals.

OVERALL CONCLUSION:

The probable cause was the failure of the unmanned cut of cars to be properly secured with handbrakes. There were no handbrakes applied to the cars to impede their movement onto the Main Track, and their subsequent movement to the collision site. Handbrakes that had been applied to the cars by the inbound crew members of the train had been removed by a CSX mechanical department employee, due to his belief that his actions were sanctioned by the transportation department.

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