Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2005-81

CSX Transportation (CSX)
Buffalo, New York
September 22, 2005

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.

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2005-81

1.Name of Railroad Operating Train #1: CSX Transportation Intermodal [CSXT]	1a. Alphabetic Code: CSXT	1b. Railroad Accident/Incident No.: 000015293
2.Name of Railroad Operating Train #2: CSX Transportation Intermodal [CSXT]	2a. Alphabetic Code: CSXT	2b. Railroad Accident/Incident: 000015293
3.Name of Railroad Responsible for Track Maintenance: CSX Transportation Intermodal [CSXT]	3a. Alphabetic Code: CSXT	3b. Railroad Accident/Incident No.: N/A
4. U.S. DOT_AAR Grade Crossing Identification Number	5. Date of Accident/Incident: Month 09 / Day 22 / Year 2005	6. Time of Accident/Incident: 01:06: ☑ AM ☐ PM

7. Type of Accident/Indicent *(single entry in code box)*: 1. Derailment; 2. Head on collision; 3. Rear end collision; 4. Side collision; 5. Raking collision; 6. Broken Train collision; 7. Hwy-rail crossing; 8. RR grade crossing; 9. Obstruction; 10. Explosion-detonation; 11. Fire/violent rupture; 12. Other impacts; 13. Other *(describe in narrative)*: 04

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Division
1	1	N/A	0	Albany

13. Nearest City/Town	14. Milepost *(to nearest tenth)*	15. State Abbr	15. State Code	16. County
Buffalo	434	N/A	NY	ERIE

17. Temperature (F) *(specify if minus)*	18. Visibility *(single entry)* 1. Dawn 2. Day 3.Dusk 4.Dark	Code	19. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow	Code	20. Type of Track 1. Main 2. Yard 3. Siding 4. Industry	Code
55 F		4		1		2

21. Track Name/Number	22. FRA Track Class (1-9, X)	Code	23. Annual Track Density *(gross tons in millions)*	24. Time Table Direction 1. North 3. East	Code
Track No 61		1	100		4

OPERATING TRAIN #1

25. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car A. Spec. MoW Equip.	Code	26. Was Equipment Attended? 1. Yes 2. No	Code	27. Train Number/Symbol
	7	1	1	Y390 21

28. Speed *(recorded speed, if available)* R - Recorded E - Estimated			Code
	4	MPH	E

29. Trailing Tons *(gross tonnage, excluding power units)*: 3500

30. Method(s) of Operation *(enter code(s) that apply)*: a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other *(Specify in narrative)*

Code(s)				
n	N/A	N/A	N/A	N/A

30a. 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: 1

31. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	N/A	1	no
(2) Causing *(if mechanical cause reported)*	0	0	N/A

32. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
0	0

33. Was this consist transporting passengers? (Y/N): N

34. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	2	0	0	0	0
(2) Total Derailed	0	0	0	0	0

35. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	24	0	23	0	0
(2) Total Derailed	0	0	1	0	0

36. Equipment Damage This Consist	37. Track, Signal, Way, & Structure Damage	38. Primary Cause Code	39. Contributing Cause Code
8016	700	H307	N/A

Number of Crew Members

40. Engineer/ Operators	41. Firemen	42. Conductors	43. Brakemen
1	0	0	0

Length of Time on Duty

44. Engineer/Operator	45. Conductor
Hrs 2 Mi 36	Hrs 1 Mi 7

Casualties to:	46. Railroad Employees	47. Train Passengers	48. Other
Fatal	0	0	0
Nonfatal	N/A	0	0

49. EOT Device? 1. Yes 2. No: 2

50. Was EOT Device Properly Armed? 1. Yes 2. No: N/A

51. Caboose Occupied by Crew? 1. Yes 2. No: N/A

OPERATING TRAIN #2

52. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car A. Spec. MoW Equip.	Code	53. Was Equipment Attended? 1. Yes 2. No	Code	54. Train Number/Symbol
	7	1	1	Y319 21

55. Speed *(recorded speed, if available)* R - Recorded E - Estimated			Code
	4	MPH	E

57. Method(s) of Operation *(enter code(s) that apply)*: a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track

57a. Remotely Controlled Locomotive? 0 = Not a remotely controlled; 1 = Remote control portable

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56. Trailing Tons *(gross tonnage, excluding power units)*	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
10000			n N/A N/A N/A N/A	0

58. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*	59. 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)*	CHVX889167	54	yes		N/A	N/A
(2) Causing *(if mechanical cause reported)*	0	0	N/A	60. Was this consist transporting passengers? (Y/N)		N

61. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote	62. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	1	0	0	0	0	(1) Total in Equipment Consist	55	0	28	0	0
(2) Total Derailed	0	0	0	0	0	(2) Total Derailed	0	0	0	0	0

63. Equipment Damage This Consist	64. Track, Signal, Way, & Structure Damage	65. Primary Cause Code	66. Contributing Cause Code
38271	0	H307	N/A

Number of Crew Members				Length of Time on Duty	
67. Engineer/ Operators	68. Firemen	69. Conductors	70. Brakemen	71. Engineer/Operator	72. Conductor
1	0	1	0	Hrs 1 Mi 7	Hrs 1 Mi 7

Casualties to:	73. Railroad Employees	74. Train Passengers	75. Other
Fatal	0	0	0
Nonfatal	0	0	0

76. EOT Device? (1. Yes 2. No)	77. Was EOT Device Properly Armed? (1. Yes 2. No)	78. Caboose Occupied by Crew? (1. Yes 2. No)
2	N/A	N/A

Highway User Involved

79. Type A. Auto B. Truck C. Truck-Trailer. D. Pick-Up Truck E. Van F. Bus G. School Bus H. Motorcycle J. Other Motor Vehicle K. Pedestrian M. Other *(spec. in narrative)*	Code
	N/A

80. Vehicle Speed *(est. MPH at impact)*	81. Direction *(geographical)* 1.North 2.South 3.East 4.West	Code
N/A		N/A

82. Position 1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped	Code
	N/A

86a. 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

Rail Equipment Involved

83. Equipment 1.Train *(units pulling)* 2.Train *(units pushing)* 3.Train *(standing)* 4.Car(s) *(moving)* 5.Car(s) *(standing)* 6.Light Loco(s) *(moving)* 7.Light(s) *(standing)* 8.Other *(specify in narrative)*	Code
	N/A

84. Position of Car Unit in Train
N/A

85. Circumstance 1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User	Code
	N/A

86b. Was there a hazardous materials release by 1. Highway User 2. Rail Equipment 3. Both 4. Neither	Code
	N/A

86c. State here the name and quantity of the hazardous materials released, if any.
N/A

87. Type of Crossing Warning 1.Gates 2.Cantilever FLS 3.Standard FLS 4.Wig Wags 5.Hwy. traffic signals 6.Audible 7.Crossbucks 8.Stop signs 9.Watchman 10.Flagged by crew 11.Other *(spec. in narr.)* 12.None	88. Signaled Crossing Warning Code *(See instructions for codes)*	89. Whistle Ban Code 1. Yes 2. No 3. Unknown
Code(s) N/A N/A N/A N/A N/A N/A N/A	N/A	N/A

90. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach	Code	91. Crossing Warning Interconnected with Highway Signals 1. Yes 2. No 3. Unknown	Code	92. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown	Code
	N/A		N/A		N/A

93. Driver's Age	94. Driver's Gender 1. Male 2. Female	Code	95. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	96. 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		N/A		N/A		N/A

97. Driver Passed Standing Highway Vehicle 1. Yes 2. No 3. Unknown	Code	98. 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		N/A

101. Casulties to Highway-Rail Crossing Users	Killed	Injured
	N/A	N/A

99. Driver Was 1. Killed 2.Injured 3. Uninjured	Code
	N/A

102. Highway Vehicle Property Damage *(est. dollar damage)*
N/A

100. Was Driver in the Vehicle? 1. Yes 2. No	Code
	N/A

103. Total Number of Highway-Rail Crossing Users *(include driver)*
N/A

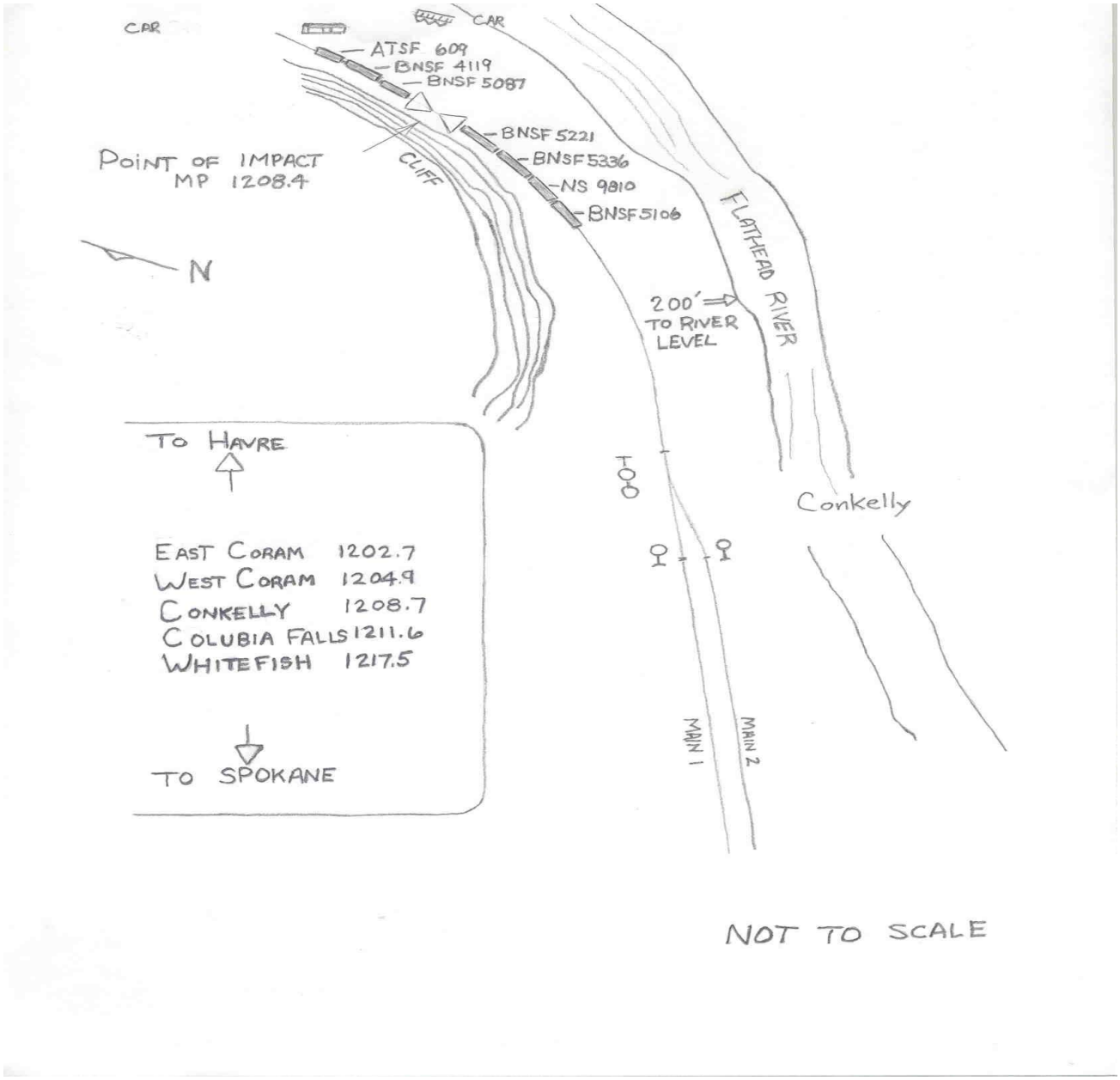
104. Locomotive Auxiliary Lights? 1. Yes 2. No	Code
	N/A

105. Locomotive Auxiliary Lights Operational? 1. Yes 2. No	Code
	N/A

106. Locomotive Headlight Illuminated? 1. Yes 2. No	Code
	N/A

107. Locomotive Audible Warning Sounded? 1. Yes 2. No	Code
	N/A

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



109. SYNOPSIS OF THE ACCIDENT

While shoving west on Track No. 61 in Frontier Yard, CSXT remote control locomotive (RCL) operation Y390-21 side swiped a westbound pull-down job (Y319-21) operating on 7 Lead Track, on September 22,2005, at approximately 1:06 a.m., EST. The remote control operator (RCO) ofY390¬21 was instructed by the hump yardmaster to shove Track No. 61, which contained 46 cars, west to the clearance point. Point protection for this shoving movement was to be provided by a utility conductor.
The westward movement of the 46 cars on Track No. 61 coupled into two cars (CSXT 124784 and DODX 38875) that had been previously spotted, by the second shift pull-down job, just in the clear of 7 Lead, on the most westward end of Track No. 61. Westbound Y319-21 was pulling 102 cars down 7 Lead, when the side collision occurred. The collision caused the lead car (DODX 38875) on Track 61 to derail and turn over the cask positioned on this car. The accident occurred in Buffalo, New York, at CSX Milepost 434, on the Albany Division.
There were no injuries to the train crew. The DODX 38875, which was designed to move radioactive waste, was empty at the time of the accident. There was no release of hazardous materials, however, it sustained damage of approximately $6,600. There were 12 other cars from Y319-21 involved in the collision that did not derail, but sustained damages of approximately $38,000.
At the time of the incident it was dark and clear. The temperature was 55° F.
The accident was caused by failure of the utility conductor to protect the leading end of the shoving movement. It was determined that the utility conductor could not see the movement as he was giving car counts to the remote control operator (RCO).

110. NARRATIVE

The following information was obtained from an investigation that was conducted by the Federal Railroad Administration.
Circumstances Prior to the Accident
The Y390-21 RCO went on duty at 10:30 p.m., EST, September 21,2005, at the CSX Frontier Yard in Buffalo, NY. This was his regular assignment and home terminal. He had received more than the statutory off duty period prior to reporting for duty.
The RCO conducted a face-to-face exchange with the second shift RCO as he was handing off the operator control unit (OCD), as required by CSX RCO Operating Rule R28. The RCO then conducted a walk-around inspection of the remote control locomotives (CSXT 8258 and 8061) and took no exceptions.
The accident occurred in the classification yard tracks of Frontier Yard. The tracks extend west to east, per CSX Timetable No.4, effective November 1, 2004. The method of operation is CSX Rule 46, other than main tracks, not to exceed 10 mph.
At Frontier Yard, the utility conductor's primary responsibility is to follow the instructions of the Bailey Avenue yardmaster. These instructions include, but are not limited to, yarding trains, making up trains for departure, and protecting shoving movements. On September 22, the utility conductor was working his regular assignment at his home terminal. He went on duty on September 21, 2005 at
11 :59 p.m., EST, and received more than the statutory off duty period prior to reporting for duty.
The Y390-21 RCO was instructed by the hump yardmaster to work with the Bailey Avenue utility conductor to shove class Track No. 61 west to the clearance point in order to create room for more cars to be humped into the track. Track No. 61 contained 46 cars of mixed freight; 23 empties and 23 loads. There were also two cars, CSXT 124784 and DODX 38875, standing alone on the most westward end of Track No. 61. These two cars had been spotted at this location by a second shift pull¬down job, as instructed by the west end yardmaster.
Radio communication was established between the utility conductor and the Y390-21 RCO, which included a job briefing on what moves were to be made. Prior to positioning himself, the utility conductor asked the Y390-21 RCO the number of cars to be shoved; however, the RCO did not know. The RCO stated that he would ask the hump yard master, but after no response from the hump yardmaster, the RCO estimated that there were approximately 30 cars to shove.

The utility conductor positioned himself near the clearance point of Track Nos. 61, 62, 63 and 7 Lead, which, according to the utility conductor, was next to the crossing. There is a street light on the access road that provides some light to the area near the crossing. The utility conductor stated that this was the location he normally selected because he could see the cars coming toward him. On Track No. 61, the inert retarders are approximately 800 feet from the clearance point. The utility conductor then radioed the RCO to let him know that he was in position and informed him that he could not see the end of the cut of cars being shoved.

The Y319-21 crew went on duty at 11:59 p.m., EST, on September 21,2005. They had picked up cars on two separate tracks; 53 loads and 30 empties from one track and 18 loads and one empty from another track. They were pulling west on 7 Lead with a total of 102 cars; 71 loads and 31 empties.

The Accident

The utility conductor radioed the RCO and instructed him to start the shoving movement and informed him that he was clear for 50 cars. The RCO acknowledged the car count and began to shove west. As he was shoving west, the utility conductor informed him that he still could not see the end of the cut of cars and gave the RCO another car count of 30 cars. The RCO acknowledged the 30-car count.

Approximately five seconds later, the utility conductor called on the radio for the RCO to stop the movement. The RCO fully applied the independent brake and stopped the movement within approximately one car length. At the time, the RCO did not know that the cars being shoved had coupled into the two cars that were previously spotted on the west end and the entire cut of 48 cars had shoved into the side ofY319-21, which was pulling west on 7 Lead with 102 cars.

Because it was dark, the utility conductor was unable to find the radio channel to inform the yardmaster of the incident. As a result, he used his cell phone to call the yardmaster to have him call the Y319- 21 to have them stop their movement.

The side collision caused the lead car (DODX 38875) positioned on Track No.61 to derail. The derailed car then sideswiped the 83rd car (CHVX889167) and 12 other cars ofY319-21.

DODX 38875 is a car that is specifically designed to move radioactive waste. The configuration of the car allows for a large stainless steel cask to be positioned in the center of the car. In this particular case, when the car derailed, the cask turned over. However, the car was an empty residue and there was no breech; therefore, no evacuation was necessary.

Analysis and Conclusions

Analysis

The RCO had over five years of railroad experience and his RCO training exceeded minimum CSX standards. The utility conductor had over five years of experience as a road conductor and had been working in Frontier Yard as a utility conductor for approximately one and a half years.

The RCO was given instructions by the hump yardmaster to work with the utility conductor to spot cars on Track No. 61. The RCO followed these instructions and the instructions given by the utility conductor regarding the shoving movement. He was in full compliance with CSX rules and standards and all applicable Federal standards.

Audio tapes of the radio communications between the RCO and utility conductor revealed that the crew was in compliance with the radio communication procedures contained in 49 CFR Part 220.

Although the total damages fell well below the threshold for Post Accident Toxicological Testing requirements contained in 49 CFR Part 219, Subpart C, CSX supervision made a good faith determination at the time of the collision that damages were going to exceed $150,000, which meets the criteria for testing. This determination was based on a reasonable inquiry into the facts. Therefore, CSX collected samples from the RCO and utility conductor and the results of these tests were negative.

Our investigation revealed that CSX conducted efficiency tests under their Program of Operational Tests and Inspections on the RCO and utility conductor during the previous three years as follows:

RCO

	Year	No. of Tests	Pass	Fail	Switchin Related Rules	Switchin Test ;Eailures
	2005	11	9	2	7	1
	2004	21	18	3	1	0
	2003	25	24	1	2	Q
Total		57	51	6	10	1
Utility Conductor						
	2005	64	63	1	28	1
	2004	48	46	2	1	1

2003	23	23	Q	-.l	Q
Total	135	132	3	31	2

The investigation determined that the utility conductor asked the RCO how many cars were to be shoved; however, the RCO did not know and estimated that there were 30 cars. The utility conductor stated that it was important for him to know the number of cars being shoved so that he could compare that to the number he thought the track would hold.

Although the utility conductor stated that he positioned himself at a location that would allow him to see the last cars on Track No. 61, our investigation determined that he did not actually see the cars. This was due to either poor positioning or a lack of attention. He stated that he never physically counted the cars on the west end of Track No. 61, but that he felt comfortable giving the RCO a shoving distance of30 cars. He further stated that he was listening for the sound of the inert retarders so that he would have an idea of where the cars were located. However, he did not hear the cars moving through the retarders and stated that he thought the cars had come down to him rather quickly.

CSX Operating Rules, effective October 1, 2004, specifically requires a trainman to take a conspicuous position at the leading end of a shoving movement. Rule 103 states the following:

"When cars are shoved and conditions require, a trainman must take a conspicuous position on the leading car. At night, the trainman must display a white light."

The collision occurred because the utility conductor did not protect the shoving movement as required by esx Operating Rule 103. He was relying on the sound made by the cars passing through the inert retarders to determine what distance the cars were ftom the clearance point, which is not a policy accepted by esx.

Conclusions

The collision occurred because the utility conductor did not protect the shoving movement as required by esx Operating Rule 103.

Probable Cause & Contributing Factors

The FRA determined that the probable cause of the accident was the failure of the utility conductor to protect the leading end of the shoving movement. It was determined that the utility conductor could not see the movement as he was giving car counts to the remote control operator.