
# *Federal Railroad Administration*
# *Office of Safety*
# *Headquarters Assigned*
# *Accident Investigation Report*
# *HQ-2011-56*

## *BNSF Railway Company (BNSF)*
## *Joliet, IL*
## *November 17, 2011*

***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-2011-56

| | | |
|---|---|---|
| 1.Name of Railroad Operating Train #1: BNSF Rwy Co. [BNSF] | 1a. Alphabetic Code: BNSF | 1b. Railroad Accident/Incident No.: BNSF |
| 2.Name of Railroad Operating Train #2: N/A | 2a. Alphabetic Code: N/A | 2b. Railroad Accident/Incident No.: N/A |
| 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: BNSF Rwy Co. [BNSF] | 4a. Alphabetic Code: BNSF | 4b. Railroad Accident/Incident No.: BNSF |
| 5. U.S. DOT_AAR Grade Crossing Identification Number: | 6. Date of Accident/Incident: Month 11 \| Day 17 \| Year 2011 | 7. Time of Accident/Incident: 03:10:00 ☑ AM ☐ PM |

8. 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)* — Code: 09

| 9. Cars Carrying HAZMAT | 10. HAZMAT Cars Damaged/Derailed | 11. Cars Releasing HAZMAT | 12. People Evacuated | 13. Division |
|---|---|---|---|---|
| 0 | N/A | N/A | 0 | Chillicothe |

| 14. Nearest City/Town | 15. Milepost *(to nearest tenth)* | 16. State Abbr | 16. State Code | 17. County |
|---|---|---|---|---|
| Joliet | 38.3 | IL | 17 | WILL |

| 18. Temperature (F) *(specify if minus)* | 19. Visibility *(single entry)* 1. Dawn 2. Day 3.Dusk 4.Dark — Code | 20. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow — Code | 21. Type of Track 1. Main 2. Yard 3. Siding 4. Industry — Code |
|---|---|---|---|
| 27 F | 4 | 1 | 1 |

| 22. Track Name/Number | 23. FRA Track Class (1-9, X) — Code | 24. Annual Track Density *(gross tons in millions)* | 25. Time Table Direction 1. North 2. South 3. East 4. West — Code |
|---|---|---|---|
| Main track No. 2 | 4 | 4 | 3 |

## OPERATING TRAIN #1

| 26. 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 | 27. Was Equipment Attended? 1. Yes 2. No — Code | 28. Train Number/Symbol |
|---|---|---|
| 1 | 1 | YJOL201116 |

| 29. Speed *(recorded speed, if available)* R - Recorded E - Estimated — Code | 30. Trailing Tons *(gross tonnage, excluding power units)* | 31. Method(s) of Operation *(enter code(s) that apply)* | 31a. Remotely Controlled Locomotive? |
|---|---|---|---|
| 45 MPH — R | 1529 | 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): e \| N/A \| N/A \| N/A \| N/A | 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 | c. Loaded *(yes/no)* |
|---|---|---|---|
| (1) First involved *(derailed, struck, etc)* | BNSF 2262 | 1 | no |
| (2) Causing *(if mechanical cause reported)* | N/A | 0 | N/A |

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

| Alcohol | Drugs |
|---|---|
| 0 | 0 |

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

| 35. 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 |

| 36. Cars | Loaded a. Freight | Loaded b. Pass. | Empty c. Freight | Empty d. Pass. | e. Caboose |
|---|---|---|---|---|---|
| (1) Total in Equipment Consist | 2 | 0 | 31 | 0 | 0 |
| (2) Total Derailed | 0 | 0 | 0 | 0 | 0 |

| 37. Equipment Damage This Consist | 38. Track, Signal, Way, & Structure Damage | 39. Primary Cause Code | 40. Contributing Cause Code |
|---|---|---|---|
| $1,000.00 | $0.00 | M402 | M599 |

Number of Crew Members

| 41. Engineer/ Operators | 42. Firemen | 43. Conductors | 44. Brakemen |
|---|---|---|---|
| 1 | 0 | 1 | 1 |

Length of Time on Duty

| 45. Engineer/Operator | 46. Conductor |
|---|---|
| Hrs 11 Mi 12 | Hrs 11 Mi 12 |

| Casualties to: | 47. Railroad Employees | 48. Train Passengers | 49. Other |
|---|---|---|---|
| Fatal | 0 | 0 | 0 |
| Nonfatal | 0 | 0 | 2 |

50. EOT Device? 1. Yes 2. No — 1

51. Was EOT Device Properly Armed? 1. Yes 2. No — 1

52. Caboose Occupied by Crew? 1. Yes 2. No — 2

## OPERATING TRAIN #2

| 53. 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 | 54. Was Equipment Attended? 1. Yes 2. No — Code | 55. Train Number/Symbol |
|---|---|---|
| N/A | N/A | N/A |

| 56. Speed *(recorded speed, if available)* R - Recorded E - Estimated — Code | 58. Method(s) of Operation *(enter code(s) that apply)* | 58a. Remotely Controlled Locomotive? |
|---|---|---|
| N/A MPH — N/A | a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track | 0 = Not a remotely controlled; 1 = Remote control portable |

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57. Trailing Tons *(gross tonnage, excluding power units)* N/A

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) N/A N/A N/A N/A N/A

2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter N/A

| 59. Principal Car/Unit | a. Initial and Number | b. Position in Train | c. Loaded *(yes/no)* |
|---|---|---|---|
| (1) First involved *(derailed, struck, etc)* | N/A | N/A | N/A |
| (2) Causing *(if mechanical cause reported)* | N/A | N/A | N/A |

60. 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 |

61. Was this consist transporting passengers? (Y/N) N/A

| 62. 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 | N/A | N/A | N/A | N/A | N/A |
| (2) Total Derailed | N/A | N/A | N/A | N/A | N/A |

| 63. Cars | Loaded a. Freight | Loaded b. Pass. | Empty c. Freight | Empty d. Pass. | e. Caboose |
|---|---|---|---|---|---|
| (1) Total in Equipment Consist | N/A | N/A | N/A | N/A | N/A |
| (2) Total Derailed | N/A | N/A | N/A | N/A | N/A |

64. Equipment Damage This Consist N/A

65. Track, Signal, Way, & Structure Damage N/A

66. Primary Cause Code N/A

67. Contributing Cause Code N/A

Number of Crew Members

| 68. Engineer/ Operators | 69. Firemen | 70. Conductors | 71. Brakemen |
|---|---|---|---|
| N/A | N/A | N/A | N/A |

Length of Time on Duty

72. Engineer/Operator Hrs N/A Mi N/A

73. Conductor Hrs N/A Mi N/A

| Casualties to: | 74. Railroad Employees | 75. Train Passengers | 76. Other |
|---|---|---|---|
| Fatal | N/A | N/A | N/A |
| Nonfatal | N/A | N/A | N/A |

77. EOT Device? 1. Yes 2. No N/A

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

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

## OPERATING TRAIN #3

80. 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 N/A

81. Was Equipment Attended? 1. Yes 2. No Code N/A

82. Train Number/Symbol N/A

83. Speed *(recorded speed, if available)* Code
R - Recorded
E - Estimated N/A MPH N/A

84. Trailing Tons *(gross tonnage, excluding power units)* N/A

85. 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/A N/A N/A N/A N/A

85a. 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 N/A

| 86. Principal Car/Unit | a. Initial and Number | b. Position in Train | c. Loaded *(yes/no)* |
|---|---|---|---|
| (1) First involved *(derailed, struck, etc)* | N/A | N/A | N/A |
| (2) Causing *(if mechanical cause reported)* | N/A | N/A | N/A |

87. 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 |

88. Was this consist transporting passengers? (Y/N) N/A

| 89. 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 | N/A | N/A | N/A | N/A | N/A |
| (2) Total Derailed | N/A | N/A | N/A | N/A | N/A |

| 90. Cars | Loaded a. Freight | Loaded b. Pass. | Empty c. Freight | Empty d. Pass. | e. Caboose |
|---|---|---|---|---|---|
| (1) Total in Equipment Consist | N/A | N/A | N/A | N/A | N/A |
| (2) Total Derailed | N/A | N/A | 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

| 95. Engineer/ Operators | 96. Firemen | 97. Conductors | 98. Brakemen |
|---|---|---|---|
| N/A | N/A | N/A | N/A |

Length of Time on Duty

99. Engineer/Operator Hrs N/A Mi N/A

100. Conductor Hrs N/A Mi N/A

| Casualties to: | 101. Railroad Employees | 102. Train | 103. Other |
|---|---|---|---|
| Fatal | N/A | N/A | N/A |
| Nonfatal | N/A | N/A | N/A |

104. EOT 1. Yes 2. No N/A

105. Was EOT Device Properly 1. Yes 2. No N/A

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

## Highway User Involved

107. 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

108. Vehicle Speed *(est. MPH at impact)* N/A

109. *geographical)* 1.North 2.South 3.East 4.West Code N/A

## Rail Equipment Involved

111. 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

112. Position of Car Unit in N/A

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| 110. Position<br>1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing<br>4. Trapped | Code<br>N/A | 113. Circumstance<br>1. Rail Equipment Struck Highway User<br>2. Rail Equipment Struck by Highway User | Code<br>N/A |
|---|---|---|---|
| 114a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials?<br>1. Highway User 2. Rail Equipment 3. Both 4. Neither | Code<br>N/A | 114b. Was there a hazardous materials release<br>1. Highway User 2. Rail Equipment 3. Both 4. Neither | Code<br>N/A |
| 114c. State here the name and quantity of the hazardous materials released, if any.<br>N/A | | | |

| 115. Type Crossing Warning<br>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 | 116. Signaled Crossing<br>*(See instructions for codes)* | Code | 117. Whistle Ban<br>1. Yes 2. No 3. Unknown | Code |
|---|---|---|---|---|
| Code(s) N/A N/A N/A N/A N/A N/A N/A | | N/A | | N/A |

| 118. Location of Warning<br>1. Both Sides<br>2. Side of Vehicle Approach<br>3. Opposite Side of Vehicle Approach | Code<br>N/A | 119. Crossing Warning with Highway Signals<br>1. Yes 2. No 3. Unknown | Code<br>N/A | 120. Crossing Illuminated by Street Lights or Special Lights<br>1. Yes 2. No 3. Unknown | Code<br>N/A |
|---|---|---|---|---|---|

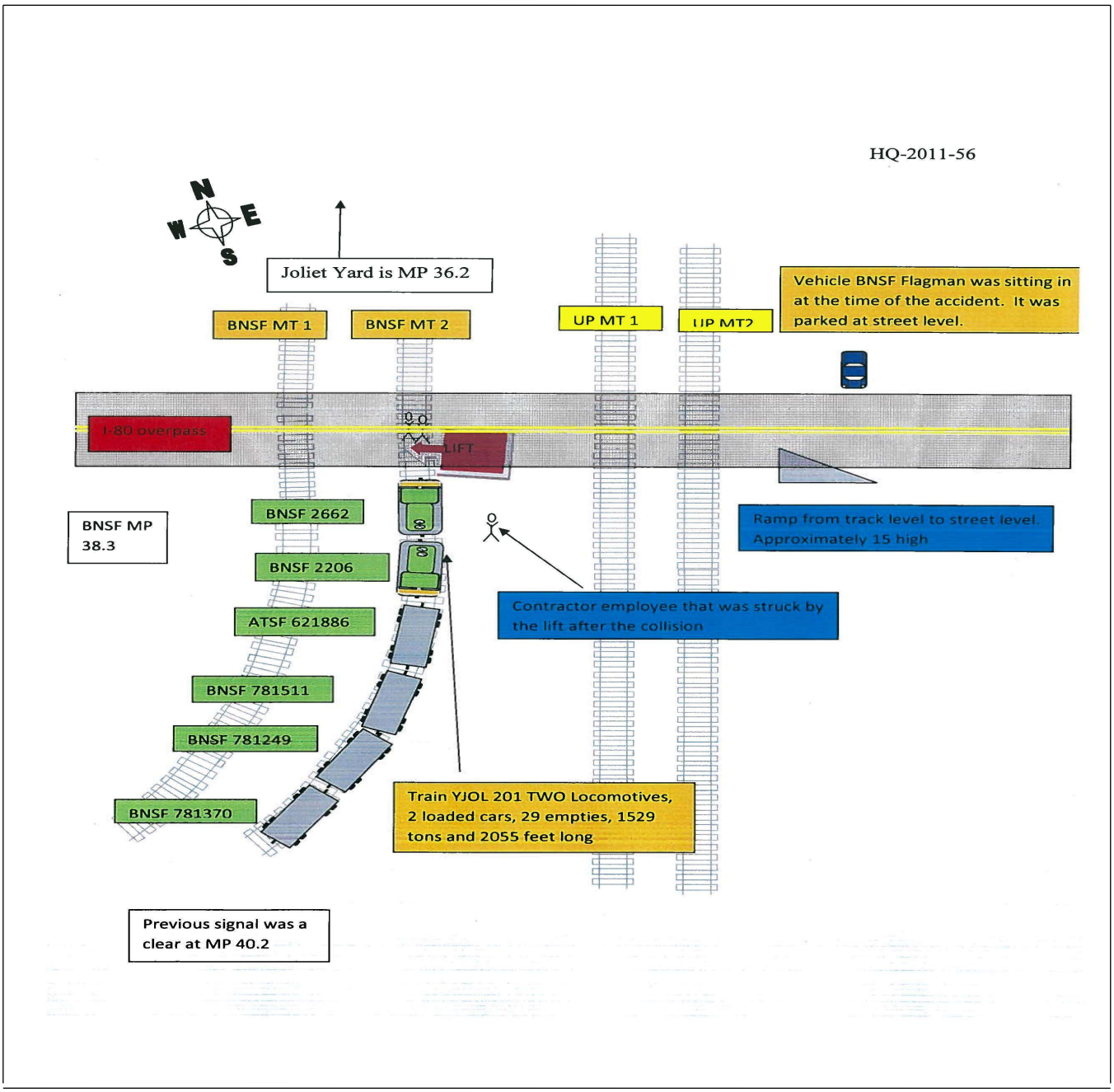
| 121. Age<br>N/A | 122. Driver's Gender<br>1. Male 2. Female | Code<br>N/A | 123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train<br>1. Yes 2. No 3. Unknown | Code<br>N/A | 124. Driver<br>1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)* | Code<br>N/A |
|---|---|---|---|---|---|---|

| 125. Driver Passed Highway Vehicle<br>1. Yes 2. No 3. Unknown | Code<br>N/A | 126. View of Track Obscured by *(primary obstruction)*<br>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<br>N/A |
|---|---|---|---|

| Casualties to: | Killed | Injured | 127. Driver<br>1. Killed 2.Injured 3. Uninjured | Code<br>N/A | 128. Was Driver in the Vehicle?<br>1. Yes 2. No | Code<br>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?<br>1. Yes 2. No | Code<br>N/A | 133. Locomotive Auxiliary Lights Operational?<br>1. Yes 2. No | Code<br>N/A |
|---|---|---|---|
| 134. Locomotive Headlight Illuminated?<br>1. Yes 2. No | Code<br>N/A | 135. Locomotive Audible Warning Sounded?<br>1. Yes 2. No | Code<br>N/A |

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



137. SYNOPSIS OF THE ACCIDENT

On November 17, 2011, at 3:10 a.m., c.s.t., eastbound Burlington Northern Santa Fe (BNSF) Train YJOL2011-16 (YJOL201) collided with an aerial lift occupied by two State of Illinois contractors. The lift was in a raised position approximately 25 feet above the BNSF main tracks. Two contractors sustained injuries when lift was struck and overturned. One of the injured employees was in the lift; the other injured employee was on the ground and was struck by the lift as it was overturned. The second employee in the lift hung from the overpass structure and was uninjured.

The accident occurred in Joliet, Illinois, at BNSF Milepost 38.3, on the BNSF's Chillicothe Subdivision's Main Track No. 2.

There were no injuries to the train crew. The aerial lift was damaged. The leading locomotive sustained damage estimated at $1,000. There was no derailment. This is not an Amtrak route.

At the time of the accident it was dark, clear, and the temperature was 27 ºF.

The probable cause of the accident was the contractors fouled Main Track No. 2 without on-track protection.

Contributing factor was: The BNSF flagman was not in a position to directly monitor contractors working in close proximity to live track.

138. NARRATIVE

Circumstances Prior to the Accident
YJOL201
The crew of YJOL201 consisted of a locomotive engineer, conductor, brakeman, and a student brakeman. The crew went on duty at 3:58 p.m., November 16, 2011, at BNSF's Joliet Yard, in Joliet. This was the home terminal for all crew members. All received more than the statutory off duty period of 10 hours, prior to reporting for duty. The locomotive engineer was off duty for 12 hours. The conductor was off duty for 36 hours. The brakeman was off duty for 12 hours. The student was off duty for 12 hours and 30 minutes.

The crew originally operated a train from Joliet to Elwood, Illinois, setting-out and picking-up cars at an industry along the way. Once the crew arrived at Elwood, they picked-up cars from the last industry. The crew conducted a Transfer Train Brake Test on the cars in their train prior to departing. YJOL201 now consisted of two locomotives (BNSF 2262 and BNSF 2206), 2 loads and 31 empty mixed freight cars, was 2,055 feet long and weighed 1,529 tons. The locomotives were positioned back to back with the lead locomotive (BNSF 2262) facing east and the trailing locomotive facing west. Their train was scheduled to be operated from Elwood to Joliet. The crew made no setouts or pickups between Elwood and the accident site.

YJOL201 departed the industrial lead track at Elwood on a clear signal. The train encountered all clear signals as it approached the accident site. The last signal was located at milepost 40.2. The engineer was seated at the control stand on the south side of the leading locomotive and the conductor was seated in the conductor's seat on the north side. The brakeman and student were riding in the second locomotive.

The timetable and geographic direction are east and west. From the west, there is a 2 degree left hand curve. The accident occurred at the east spiral of the curve. The grade in the area of the accident is practically level.

CONTRACTORS
At milepost 38.3, a BNSF Maintenance of Way employee (Flagman) went on duty at 9:30 p.m. to provide protection for a contractor. The contractor was hired by the State of Illinois to place wood decking on the

underside of the Interstate 80 overpass. There were approximately 12 employees working for the contractor the night of the incident; but only five of them were working in the foul of the tracks. There were two aerial lifts being used. The lifts had steel treads on the base and a boom that extended up with a basket. Both lifts had two contractors in the basket. The contractors would use the lifts to bring plywood and other material up to the underside of the overpass and fasten it in place. One contractor was on the ground preparing material for the contractors in the lifts.

Several times during this project, the BNSF flagman obtained Track and Time to provide protection so the contractors could foul the tracks. The BNSF flagman contacted the dispatcher via cell phone to obtain Track and Time. The Track and Time that protected the contractors prior to the incident was issued on Main Track No. 2 at 2:13 a.m. and released at 2:49 a.m. As the Track and Time was released the BNSF flagman informed the contractors that they had to stay in the clear for train traffic. The BNSF flagman then went and sat in his vehicle which was located in close proximity to, but not in direct view to the work area.

The maximum authorized speed for Main Track No. 2 is 55 mph. There were no temporary speed restrictions in effect.

The Accident
Approaching the accident area, YJOL201 was operating at a recorded speed of 45 mph. The locomotive engineer's view of the track ahead was not obstructed but he was exiting a left hand curve. The crew noticed a group of temporary light towers that were illuminated to the south side of Main Track No. 2. The engineer and conductor noticed an aerial lift positioned over their track. The engineer sounded the horn and placed the train in emergency. The lead locomotive struck the bottom of the aerial lift's basket.

One of the contractors was thrown from the lift and landed on the ballast between BNSF Main Tracks No. 1 and 2. The other employee grabbed onto the steel girder on the underside of Interstate 80 and held himself up until the train came to a stop. He then lowered himself onto the top of a box car and climbed safely to the ground. A contractor employee working on the ground was struck by the lift.

Emergency responders from Will County and Joliet reported to the location. They transported the two injured employees to Silver Cross Hospital in Joliet.

Analysis and Conclusions

Analysis Fatigue:
FRA obtained fatigue related information, including a 10-day history, for three employees involved in this accident, including the locomotive engineer, conductor, and the yard helper assigned to the involved train

Conclusion Fatigue: FRA concluded fatigue was not probable for the engineer or conductor of YJOL201. Upon analysis of the fatigue related information, FRA concluded that fatigue was probable for the brakeman. The possible fatigued condition of the brakeman is not considered as a contributing factor because he was located in a trailing locomotive at the time of the accident.

Analysis Toxicological Testing: BNSF conducted a company authorized drug and alcohol test on the crew of YJOL201 and the flagman. The tests were conducted after the crew had expired under the Hours of Service. The accident did not meet any of the criteria that allow a railroad to exceed the Hours of Service Law to conduct a Reasonable Cause test under company authority.

The contactors involved were also given a drug test.

Conclusion: BNSF told FRA the results of the company authorized drug and alcohol tests were negative. Only one of the crew members properly completed their Hours of Service Record to indicate excess service was performed.

The results for the contractors were also negative.

Analysis- YJOL201's Crew : The engineer and conductor said they had a green (clear) signal indication at milepost 40.2. The crew had no knowledge of the workers fouling their track until they came around the curve

and saw the lift positioned over their track. They were operating in compliance with signal indication and were not exceeding maximum authorized speed.

The locomotive event recorder indicated the engineer sounded the horn. It showed the train was travelling at 45 m.p.h. when the engineer initiated an emergency application of the brakes. The train traveled approximately 1160 feet after the emergency application of the brakes.

Conclusion: The crew was in compliance with railroad rules and their actions were not a contributing cause to the accident.

Analysis- BNSF Flagman: The BNSF flagman was a Maintenance of Way employee trained and qualified to be an Employee in Charge. He obtained Track and Time protection so the contractors could foul the BNSF main tracks. In addition to telling the contractors he was releasing the track and time; he also told them how many trains they had to wait for before they could go back to work. The contractors were not roadway workers and were not covered by Federal regulations in regards to Part 214, Roadway Worker Protection.

Conclusion: The BNSF flagman informed the contractors how many trains were expected to pass before work could continue. There does not appear to have been clear instructions given to the contractors acknowledging that all work should discontinue in the foul of the tracks until a job briefing is performed and Track and Time reissued. The BNSF flagman then left the work area and was not in a position to ensure the contractors did not foul the track while there was no track and time in effect. The contractors were not required to be trained for Federal regulations pertaining to on-track safety. The lack of clear communication was a contributing factor.

Analysis-Contractors: The contractors were relying on the BNSF flagman to provide protection. The flagman told them how many trains they had to stay in the clear for; and they thought they could go back to work after that number of trains went by. They did not have a clear understanding of how their on-track protection was being provided.

Conclusion: The contractors did not clearly understand the procedures being used to provide their protection. Their lack of clear communication between the BNSF flagman and the contractor personnel was a contributing factor to thier lack of understanding.

Probable Cause and Contributing Factors
The probable cause of the accident was the contractors fouled BNSF Main Track No. 2 without on-track protection.

Contributing factor was: The BNSF flagman was not in a position to directly monitor the contractors working in close proximity to live track.

#