Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2008-54

Burlington Northern Santa Fe (BNSF)
Melrose, IA
June 12, 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.

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2008-54

1.Name of Railroad Operating Train #1: BNSF Rwy Co. [BNSF]	1a. Alphabetic Code: BNSF	1b. Railroad Accident/Incident No.: NE0608105
2.Name of Railroad Operating Train #2: BNSF Rwy Co. [BNSF]	2a. Alphabetic Code: BNSF	2b. Railroad Accident/Incident No.: NE0608105
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.: NE0608105
5. U.S. DOT_AAR Grade Crossing Identification Number:	6. Date of Accident/Incident: Month 06 | Day 12 | Year 2008	7. Time of Accident/Incident: 04:10: ☐ 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: 03

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

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr / Code	17. County
Melrose	321.1	N/A / IA	MONROE

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
76 F	2	2	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	57.96	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
A	1	N/A

29. Speed *(recorded speed, if available)* R - Recorded E - Estimated — Code	31. Method(s) of Operation *(enter code(s) that apply)*	31a. Remotely Controlled Locomotive?
30 MPH — E	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)*	0 = Not a remotely controlled; 1 = Remote control portable; 2 = Remote control tower; 3 = Remote control transmitter - more than one remote control transmitter
30. Trailing Tons *(gross tonnage, excluding power units)*: N/A	Code(s): g | j | N/A | N/A | N/A	0

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	BNSF 98020	1	N/A
(2) Causing *(if mechanical cause reported)*	0	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/A

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	0	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	0	0	0
(2) Total Derailed	1	0	0	0	0

37. Equipment Damage This Consist	38. Track, Signal, Way, & Structure Damage	39. Primary Cause Code	40. Contributing Cause Code
$201,500.00	$0.00	H607	N/A

Number of Crew Members

41. Engineer/ Operators	42. Firemen	43. Conductors	44. Brakemen
2	0	0	0

Length of Time on Duty

45. Engineer/Operator	46. Conductor
Hrs 9 Mi 10	Hrs 0 Mi 0

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

50. EOT Device? 1. Yes 2. No	51. Was EOT Device Properly Armed? 1. Yes 2. No
N/A	N/A

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

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
1	1	CNAMCXE029

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?
0 MPH — R	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)*: 15966

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): g | j | N/A | N/A | N/A

2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter: 0

59. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	CEFX67299	114	yes
(2) Causing *(if mechanical cause reported)*	0	0	N/A

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

Alcohol	Drugs
0	0

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	2	0	0	0	0
(2) Total Derailed	0	0	0	0	0

63. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	112	0	0	0	0
(2) Total Derailed	0	0	0	0	0

64. Equipment Damage This Consist: $72,928.00

65. Track, Signal, Way, & Structure Damage: $0.00

66. Primary Cause Code: H607

67. Contributing Cause Code: N/A

Number of Crew Members

68. Engineer/ Operators	69. Firemen	70. Conductors	71. Brakemen
1	0	1	0

Length of Time on Duty

72. Engineer/Operator: Hrs 4 Mi 25

73. Conductor: Hrs 4 Mi 25

Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other
Fatal	0	0	0
Nonfatal	0	0	0

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

78. Was EOT Device Properly Armed? 1. Yes 2. No: 1

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: 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. Code: 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)*: N/A

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

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

Rail Equipment Involved

111. Equipment Code: 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)*: N/A

112. Position of Car Unit in: N/A

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110. Position	Code	113. Circumstance	Code
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped	N/A	1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User	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	N/A	114b. Was there a hazardous materials release 1. Highway User 2. Rail Equipment 3. Both 4. Neither	N/A

114c. State here the name and quantity of the hazardous materials released, if any.
N/A

115. Type 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
Code(s)	N/A	N/A	N/A	N/A	N/A	N/A	N/A					

116. Signaled Crossing *(See instructions for codes)*	Code	117. Whistle Ban 1. Yes 2. No 3. Unknown	Code
	N/A		N/A

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

121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	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		N/A		N/A		N/A

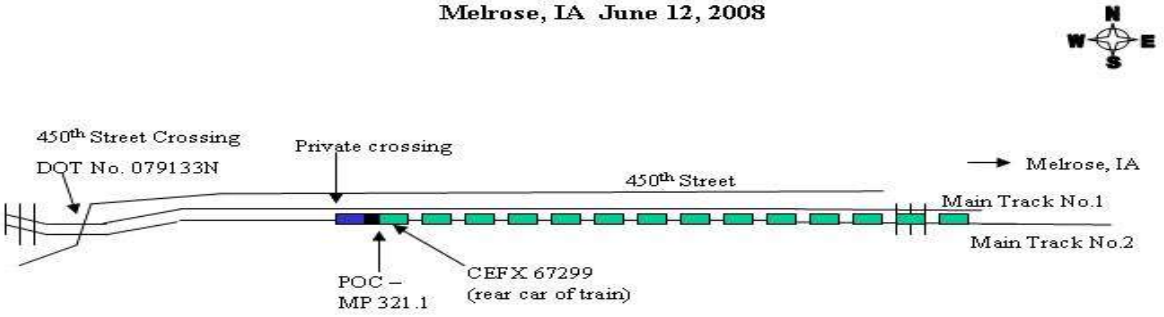
125. Driver Passed Highway Vehicle 1. Yes 2. No 3. Unknown	Code	126. View of Track Obscured by *(primary obstruction)* 1. Permanent Structure 2. Standing Railroad Equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicle 7. Other *(specify in narrative)* 8. Not obstructed	Code
	N/A		N/A

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

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

Report No. HQ-2008-54,
Collision, BNSF near
Melrose, IA June 12, 2008



Direction of travel for Brandt Road Railer Truck → East

Stopped Coal Train Symbol C NAMCXE0 29

Brandt Road Railer Truck 98020

Ballast Car No. BN 958481 being pulled by Brandt Road Railer Truck

POC Point of collision

Note: Diagram not to scale. Only rear cars of Train Symbol C NAMCXE0 29 are represented.

This sketch is based on photographs provided by BNSF and photographs taken by a Federal Railroad Administration (FRA) inspector.

137. SYNOPSIS OF THE ACCIDENT

On Thursday, June 12, 2008, at 4:10 p.m., CST, an eastbound Burlington Northern Santa Fe Railway Company (BNSF) Brandt Roadrailer, Unit No. 98020, pulling one loaded car of ballast, hopper Car No. BN 958481, collided into the rear car of stopped eastbound BNSF loaded coal Train C NAMCXE0-29. The collision occurred 2.5 miles west of the town of Melrose, Iowa, at BNSF Milepost (MP) 321.1, on Main Track No. 2 of the Nebraska Division, Ottumwa Subdivision, in Monroe County. The crew of BNSF Train C NAMCXE0-29 reported an undesired emergency brake application while they were sitting still with the head-end of the train located at MP 320. Inspection of the train revealed that the Brandt Roadrailer had collided with the rear car of the train. Both crewmembers of the Brandt Roadrailer were injured. No hazardous materials were involved.

Damage estimates to equipment total $274,428. No damages were reported to track or signal equipment.

At the time the collision occurred, the weather conditions were daylight and cloudy, a temperature of 76 °F, and rain had temporarily stopped in the area.

The cause of the collision was determined to be cause code H607, failure to comply with restricted speed or its equivalent not in connection with a block or interlocking signal.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

The crew of the Brandt Roadrailer consisted of an operator and a ground man. Both were qualified BNSF group 2 machine operators. The crew went on duty at 7 a.m., CST, on June 12, 2008, at Ottumwa, Iowa, which was the crew's away terminal. Both crewmembers were fully rested and had been off duty for approximately 14 hours prior to reporting for duty.

Their assignment consisted of driving the Brandt Roadrailer from Ottumwa to Chariton, Iowa, by the highway and unloading two cars of ties in the Chariton Yard. When this was completed, they were to pull a loaded car of ballast, Car BN 958481, by rail from Chariton eastward to the east passing siding at Maxon, Iowa, a distance of approximately 33.5 miles by rail.

With the ties unloaded, the crew proceeded to attach the Brandt Roadrailer to the car of ballast and ready the car for movement. Information provided by BNSF estimates the total weight of the car between 97 and 112 tons. An air test was performed on the car and the air brakes were determined to be working properly. The passenger/ground man of the Brandt Roadrailer obtained Track Warrant 992, which gave them authority to proceed eastward from MP 335 to CP Halpin on Main Track # 2, not to foul limits ahead of BNSF 9838 east or BNSF 8837 east. BNSF 8837 east was Train C NAMCXEO 29. The warrant was joint with another maintenance-of-way (MOW) employee who would be operating an additional piece of rail equipment eastward behind them. Track Warrant 992 was Okayed at 3:43 p.m. The maximum authorized speed for the Brandt Roadrailer is 20 mph as outlined in the Engineering Instructions for Roadway Equipment 14.12.5 (2). The crew had observed both eastbound trains go by prior to proceeding eastward.

Approaching the collision site, the operator of the Brandt Roadrailer was seated on the north side of the east facing cab and the passenger/ground man was seated on the south side of the cab. The timetable and geographic direction for the Brandt Roadrailer's movement was east. Timetable directions are used throughout this report.

The crew of BNSF Train C NAMCXEO 29 consisted of an engineer and conductor. The crew went on duty at 11:45 a.m., on June 12, at Creston, Iowa, which was the crew's away terminal. Both crewmembers received more than the required off-duty time prior to reporting for duty.

Their assigned train consisted of 2 locomotives, both at the head-end, coupled to 112 loaded hopper cars of coal. The train was 6,094 feet in length with 15,986 gross trailing tons, excluding power units. The train was scheduled to travel from Creston to Galesburg, Illinois, with no pick-ups or setouts while en route. The initial terminal air brake test and inspection had been performed on this train at Donkey Creek Station in Wyoming, on June 9, as BNSF empty coal Train E CXENAM0254. BNSF loaded coal Train C NAMCXEO 29 received a 1,000-mile inspection at Lincoln, Nebraska, on June 11, 2008. The locomotives had a current daily inspection so an inspection was not performed by the crew prior to departing Creston. They held a valid track warrant, Warrant 986, to proceed eastward from MP 339 to CP Halpin on Main Track # 2. Their warrant was Okayed at 3:07 p.m., on June 12, by dispatcher RAL. BNSF Train C NAMCXEO 29 departed Creston at 12:35 p.m., on June 12, en route to Galesburg. The maximum authorized speed for this train is 50 mph as outlined in the Nebraska Division Timetable # 6, effective December 13, 2006.

BNSF Train C NAMCXEO 29 had proceeded east until required to stop, with the head-end of the train at MP 320, to wait for a clear of wayside block signal to proceed.

Main Track # 2 in the area the collision occurred, MP 321.1, is 136-pound welded rail attached to wood ties. The track at the collision site is tangent for approximately 700 feet to the west and then a 1-degree 0-minute, left-hand curve and then tangent for approximately 340 feet and followed by a 3-degree 23-minute, right-hand curve immediately followed by a 2-degree 59-minute, left-hand curve. The grade to the west is ascending at varying rates of 0.22- percent at MP 321.1 to 0.88-percent at MP 322. The track east of the collision site is tangent for approximately 2,450 feet and then a 2-degree 32-minute, left-hand curve immediately followed by a 1-degree 11-minute, right-hand curve and then tangent again for approximately 5,985 feet. The grade to the east is descending at varying rates from 0.22-percent at the collision site to 0.04-percent at MP 320.

THE ACCIDENT

The crew of eastbound BNSF loaded coal train C NAMCXEO 29 had stopped their train on Main Track # 2 and was waiting on a clear block signal to proceed. They had stopped at 3:47:07 p.m., on June 12, as verified by the event recorder data in lead Locomotive BNSF 8837. The head-end of the train was at MP 320. Maximum authorized speed for this train is 50 mph as outlined in the Nebraska Division Timetable No. 6, effective December 13, 2006.

The BNSF Brandt Roadrailer # 98020 and the carload of ballast it was pulling were traveling eastward on Main Track # 2. Approaching the collision site, they had just gone through a 2-degree 59-minute, left-hand curve followed by a 3-degree 23-minute, right-hand curve, and were going through a 1-degree 0-minute, left-hand curve when they saw the rear car of BNSF Train C NAMCXEO 29. Prior to seeing the rear car of the train, their view around the curve had been obstructed by trees and vegetation along the railroad right-of-way. The operator of the Brandt Roadrailer applied the truck brakes and the passenger/ground man in the Brandt Roadrailer set an emergency brake application on Car # BN 958481 that they were pulling. The crew reported that they could not get stopped due to poor rail conditions. The crew reported that the rail was wet from the rain that had been falling and was greasy from the rail lubricators in the curves. Both crewmembers reported that their speed at the time they saw the rear car of the train was approximately 25 mph. The maximum authorized speed for the Brandt Roadrailer when pulling cars is 20 mph as outlined in Engineering Instructions for Roadway Equipment 14.12.5(2). They collided with the rear of Car CEFX 67299, which caused an undesired emergency brake application to BNSF Train C NAMCXEO 29 at 4:10:25 p.m., as verified by the event recorder in lead Locomotive BNSF 8837.

The train crew of BNSF Train C NAMCXEO 29 notified the dispatcher that they experienced an undesired emergency application of the train air brakes while sitting still at MP 320. As the conductor was walking back inspecting the train, emergency vehicles passed by on the road heading in the direction of the rear of the train. The conductor flagged down an emergency responder and found out that someone had run into the back of the train. When the conductor arrived at the rear of the train, he discovered that the Brandt Roadrailer had collided with the train and the wreckage was blocking Main Tracks # 1 and # 2. Both crewmembers in the Brandt Roadrailer were trapped in the cab of the truck that had ended up on top of the last car of the train. The dispatcher was notified of the situation.

The passenger/ground man in the Brandt Roadrailer had called 911 to get medical help with his personal cell phone. The passenger/ground man was taken to a near-by hospital and treated for abrasions to the right wrist and hand, left hand, right foot and ankle, and then released. The operator was taken by Life Flight to a Des Moines, Iowa, hospital for treatment of a compound fracture to the right tibia and fibula, and a large wound to the right calf muscle.

A call to the Monroe County Sheriff's Office by FRA verified that the 911 call was made at 4:14 p.m., on June 12, 2008, by the ground man of the Brandt Roadrailer. Agencies dispatched to the scene include the Monroe County Sheriff, Monroe County Ambulance, Melrose Fire Department, Albia Fire Department, Lucas County Ambulance, Russell Fire Department, and Life Flight out of Des Moines.

ANALYSIS AND CONCLUSIONS:

ANALYSIS - TOXICOLOGICAL TESTING:

The operator of the Brandt Roadrailer received post-accident toxicological testing under railroad authority. The passenger/ground man was held at the railroad office in Ottumwa, after he was released from the hospital, for post-accident toxicological testing; however, the collector could not reach them due to bad weather and flooding that was occurring. The passenger/ground man was not tested. The crew of BNSF Train NAMCXEO 29 was not tested.

CONCLUSION:

The results were negative for the operator. Intoxication was not a factor.

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 of the employees involved.

CONCLUSION:

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

ANALYSIS - QUALIFICATIONS:

Qualifications for operating the Brandt Roadrailer on BNSF include a valid CDL, DOT qualified through BNSF Vehicle Services Group, current book of rules qualifications, and Brandt Roadrailer Training at the BNSF Technical Training Center.

Documents produced during the interview process verified that the operator and ground man had a valid class "B" CDL operator's license and were DOT qualified through the BNSF Vehicle Services Group. Training records for both employees provided by BNSF show that they had completed the 2008 operating rules qualification in March 2008. The operator had completed the Brandt Roadrailer training in January 2006 and the ground man had completed the Brandt Roadrailer training in February 2007.

CONCLUSION:

Both crewmembers of the Brandt Roadrailer were qualified operators.

ANALYSIS -VOICE DATA RECORDINGS/WARRANT:

Voice data recordings supplied by BNSF of the dispatcher talking to the ground man of the Brandt Roadrailer verify that the track warrant was issued and that it had been copied correctly.

CONCLUSION:

The Brandt Roadrailer had a valid track warrant to occupy Main Track No. 2 from MP 335 to CP Halpin that

was Okayed at 3:43 p.m., on June 12, 2008, by dispatcher RAL.

ANALYSIS - TRACK WARRANT:

Documents provided by BNSF for Train Symbol C NAMCXEO 29 show that the Train had a track warrant to occupy Main Track No. 2 from MP 339 to CP Halpin that was Okayed at 3:07 p.m., on June 12, 2008, by dispatcher RAL.

CONCLUSION:

Train Symbol C NAMCXEO 29 had a valid track warrant for the same section of track as the Brandt Roadrailer.

ANALYSIS - VOICE DATA RECORDINGS/SPEED:

Voice data recordings revealed the dispatcher asking the Brandt Roadrailer passenger/ground man what track speed they would be traveling at prior to giving them a track warrant and he replied 30 mph.

CONCLUSION:

The passenger/ground man is unaware of the maximum authorized speed allowed when pulling a railcar with the Brandt Roadrailer.
ANALYSIS - REPORTS OF INTERVIEW/SPEED:

During the interview process, both the operator and passenger/ground man of the Brandt Roadrailer were asked what the maximum authorized speed was with the Brandt Roadrailer. Both employees responded saying their maximum authorized speed is 60 mph. The operator of the Brandt Roadrailer commented that they would never try to travel 60 mph with the Roadrailer. When both employees were asked what speed they normally traveled with the Brandt Roadrailer, they both replied saying 25 to 30 mph.

CONCLUSION:

Both crewmembers of the Brandt Roadrailer have represented that they are unaware of the maximum authorized speed for the Brandt Roadrailer or the fact that it varies from 30 mph when it is operated by itself to 20 mph when pulling cars as outlined in Engineering Instruction (EI) 14.12.5 and MOW Operating Rules (MWOR) 6.50.1.

ANALYSIS - EVENT RECORDER DATA:

Lead Locomotive BNSF 8837 of BNSF Train C NAMCXEO 29 was equipped with an event recorder as required. The event recorder data was downloaded by the BNSF road foreman at the collision site. The event recorder data shows that BNSF Train C NAMCXEO 29 had stopped at 3:47:07 p.m., on June 12, at MP 320 for 23 minutes 18 seconds, prior to experiencing the emergency train air brake application at 4:10:25 p.m.

CONCLUSION:

The collision between Brandt Roadrailer BNSF 98020 and the rear of Car CEFX 67299 of BNSF Train C NAMCXEO 29 occurred at 4:10:25 p.m., on June 12.

ANALYSIS - SPEED:

The Brandt Roadrailer is not equipped with any type of recording device so exact speed that they were traveling is unknown. Track Warrant 992 which authorized their movement from MP 335 (at Chariton) to CP Halpin was Okayed at 3:43 p.m. Both crewmembers of the Brandt Roadrailer stated that they never left MP 335 prior to getting the warrant. The collision at MP 321.1 occurred at 4:10:25 p.m., as verified by the event recorder data. This means that they traveled 13.9 miles in 27 minutes. This calculates to an average speed of 30.6 mph. This also does not take into consideration the time it took to pull out of the yard track, line the switch for movement to Main Track # 2, pull out onto Main Track # 2, and to line the switch back and lock it before proceeding east.

CONCLUSION:

The crew failed to comply with restricted speed or its equivalent as outlined in El 14.12.5 and MWOR 6.50.1.

ANALYSIS - SIGHT DISTANCE:

Photographs taken by FRA show the trees and vegetation along the south side of Main Track # 2 in the 1-degree 0-minute in a left-hand curve west of the collision site which prohibited the operator of the Brandt Roadrailer from seeing the rear car of the train at MP 321.1 until they were almost out of the curve. Sight distance as measured by the BNSF Nebraska division engineer for the operator of the Brandt Roadrailer to the rear car of BNSF Train C NAMCXEO 29 was approximately 736 feet.

CONCLUSION:

Sight distance was very minimal.

ANALYSIS - MWOR 6.50 - MOVEMENT OF ON-TRACK EQUIPMENT:

This rule in part states: On-track equipment must move at a speed that will allow stopping within half the range of vision short of: train, engine, railroad car, etc.

CONCLUSION:

The operator of the Brandt Roadrailer failed to operate the equipment in compliance with rule MWOR 6.50.

ANALYSIS - MWOR 6.50.1 – MAXIMUM AUTHORIZED SPEED:

This rule in part states: When determining the proper speed, take into consideration the following: track conditions, such as grade, curvature and rail condition, load, sight distance, visibility, other conditions that might adversely affect the safe operation of on-track equipment.

During the interview process, both crewmembers of the Brandt Roadrailer stated that rail conditions were poor and that they could not see around the curve because of the trees and vegetation. The track charts provided by BNSF of the area show that they were on a descending grade and had gone through a series of curves prior to the collision.

CONCLUSION:

The operator of the Brandt Roadrailer failed to yield to the conditions and adjust his manner of operation accordingly.

ANALYSIS - MWOR 6.51 MAINTAINING A SAFE BRAKING DISTANCE:

This rule in part states: On-track equipment operators are responsible for maintaining a safe braking distance between their on-track equipment and other on-track equipment, trains and engines.

CONCLUSION:
The operator failed to comply with this rule.

ANALYSIS - AIR BRAKES:

Both crewmembers of the Brandt Roadrailer stated that an air brake test was performed on Car BN 958481 prior to leaving MP 335, and that the air brakes were operational. FRA contacted the BNSF car-men from Fort Madison, Iowa, that made the repairs to Car BN 958481 after the collision occurred. The car-men stated that they made repairs to the air brake train line and combination dirt collector, and cut-out cock but that the remainder of the air brake system was not damaged in the collision.

A copy of the BNSF car repair bill verifies the repairs made. The car-men also stated that a single car air

brake test was performed on Car BN 958481 and that it passed.

CONCLUSION:

It is highly probable that the air brakes on Car BN 958481 were functioning properly on the day the collision occurred.

ANALYSIS - BRANDT ROADRAILLER BRAKES:

Both crewmembers of the Brandt Roadrailer stated that they were unaware of any problems with the brakes on the Brandt Roadrailer and that they were working fine. Tests could not be performed because the equipment was destroyed in the collision.

CONCLUSION:

It is highly probable that the brakes on the Brandt Roadrailer were functioning properly on the day the collision occurred.

OVERALL CONCLUSIONS:

The operator of the Brandt Roadrailer was not in compliance with the railroads operating rules. The crew of the Brandt Roadrailer was the only witnesses to the collision. The crew operated the Brandt Roadrailer at a speed that exceeded the maximum authorized limit which hindered their ability to stop within one-half their range of vision short of BNSF Train C NAMCXEO 29. No equipment deficiencies were identified during the investigation that could have contributed to the cause. Based on the analysis, fatigue was not a factor.

The railroad and the FRA investigator agree that the cause of the collision be listed as cause code H607, failure to comply with restricted speed or its equivalent not in connection with a block or interlocking signal.

PROBABLE CAUSE & CONTRIBUTING FACTORS

Probable cause of the collision was failure to comply with restricted speed or its equivalent. Both crewmembers of the Brandt Roadrailer were aware that they were following behind a train, and were aware of the poor track conditions and short sight distance prior to the collision occurring. Failure of the operator to properly react to these conditions was a significant contributing factor identified during this investigation.