Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2006-60

Burlington Northern Santa Fe
Marshal, TX
July 1, 2006

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-2006-60

1.Name of Railroad Operating Train #1: BNSF Rwy Co. [BNSF]	1a. Alphabetic Code: BNSF	1b. Railroad Accident/Incident No.: GC0706100
2.Name of Railroad Operating Train #2: N/A	2a. Alphabetic Code: N/A	2b. Railroad Accident/Incident: N/A
3.Name of Railroad Responsible for Track Maintenance: BNSF Rwy Co. [BNSF]	3a. Alphabetic Code: BNSF	3b. Railroad Accident/Incident No.: N/A
4. U.S. DOT_AAR Grade Crossing Identification Number:	5. Date of Accident/Incident: Month 07 / Day 01 / Year 2006	6. Time of Accident/Incident: 12:53: ☐ 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): 03

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Division
0	0	0	0	GULF

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr	15. State Code	16. County
Marshall	71.8	N/A	TX	HARRISON

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
96 F		2		1		1

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
Single Main Track		5	0		1

OPERATING TRAIN #1

25. Type of Equipment Consist (single entry)	A. Spec. MoW Equip.	Code	26. Was Equipment Attended? 1. Yes 2. No	Code	27. Train Number/Symbol
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		1	1	1	QLAC MEM12 7

28. Speed (recorded speed, if available) R - Recorded E - Estimated: 20 MPH; Code: R

29. Trailing Tons (gross tonnage, excluding power units): 5513

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)				
e	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: 0

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	N/A
(2) Causing (if mechanical cause reported)	N/A	N/A	N/A

32. 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

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	3	0	0	0	0
(2) Total Derailed	0	0	0	0	0

35. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	72	0	0	0	0
(2) Total Derailed	0	0	0	0	0

36. Equipment Damage This Consist	37. Track, Signal, Way, & Structure Damage	38. Primary Cause Code	39. Contributing Cause Code
106000	0	H605	N/A

Number of Crew Members

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

Length of Time on Duty

44. Engineer/Operator	45. Conductor
Hrs 2 Mi 38	Hrs 2 Mi 38

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	50. Was EOT Device Properly Armed? 1. Yes 2. No
1	1

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

OPERATING TRAIN #2

52. Type of Equipment Consist (single entry)	A. Spec. MoW Equip.	Code	53. Was Equipment Attended? 1. Yes 2. No	Code	54. Train Number/Symbol
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		1	1	1	EMLM RWMO 40

55. Speed (recorded speed, if available) R - Recorded E - Estimated: 0 MPH; Code: R

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
3012			e 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)	BNSF 8259	128	N/A		N/A	N/A
(2) Causing (if mechanical cause reported)	0	N/A	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	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	2	0	0	0	2	(1) Total in Equipment Consist	0	0	125	0	0
(2) Total Derailed	0	0	0	0	1	(2) Total Derailed	0	0	3	0	0

63. Equipment Damage This Consist	64. Track, Signal, Way, & Structure Damage	65. Primary Cause Code	66. Contributing Cause Code
307194	0	H605	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	N/A	1	N/A	Hrs 2 Mi 8	Hrs 2 Mi 8

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 | 1

77. Was EOT Device Properly Armed? 1. Yes 2. No | 1

78. Caboose Occupied by Crew? 1. Yes 2. No | 2

Highway User Involved

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

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

81. Direction geographical) — Code: N/A
1.North 2.South 3.East 4.West

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

86a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? — Code: N/A
1. Highway User 2. Rail Equipment 3. Both 4. Neither

Rail Equipment Involved

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

84. Position of Car Unit in Train: N/A

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

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

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
Code(s): N/A N/A N/A N/A N/A N/A N/A

88. Signaled Crossing Warning (See instructions for codes) — Code: N/A

89. Whistle Ban — Code: N/A
1. Yes
2. No
3. Unknown

90. Location of Warning — Code: N/A
1. Both Sides
2. Side of Vehicle Approach
3. Opposite Side of Vehicle Approach

91. Crossing Warning Interconnected with Highway Signals — Code: N/A
1. Yes
2. No
3. Unknown

92. Crossing Illuminated by Street Lights or Special Lights — Code: N/A
1. Yes
2. No
3. Unknown

93. Driver's Age: 0

94. Driver's Gender — Code: N/A
1. Male
2. Female

95. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train — Code: N/A
1. Yes 2. No 3. Unknown

96. Driver — Code: N/A
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)

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

98. View of Track Obscured by (primary obstruction) — Code: N/A
1. Permanent Structure 3. Passing Train 5. Vegetation 7. Other (specify in narrative)
2. Standing Railroad Equipment 4. Topography 6. Highway Vehicle 8. Not obstructed

101. Casulties to Highway-Rail Crossing Users	Killed	Injured
	0	0

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

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

102. Highway Vehicle Property Damage (est. dollar damage): 0

103. Total Number of Highway-Rail Crossing Users (include driver): 0

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

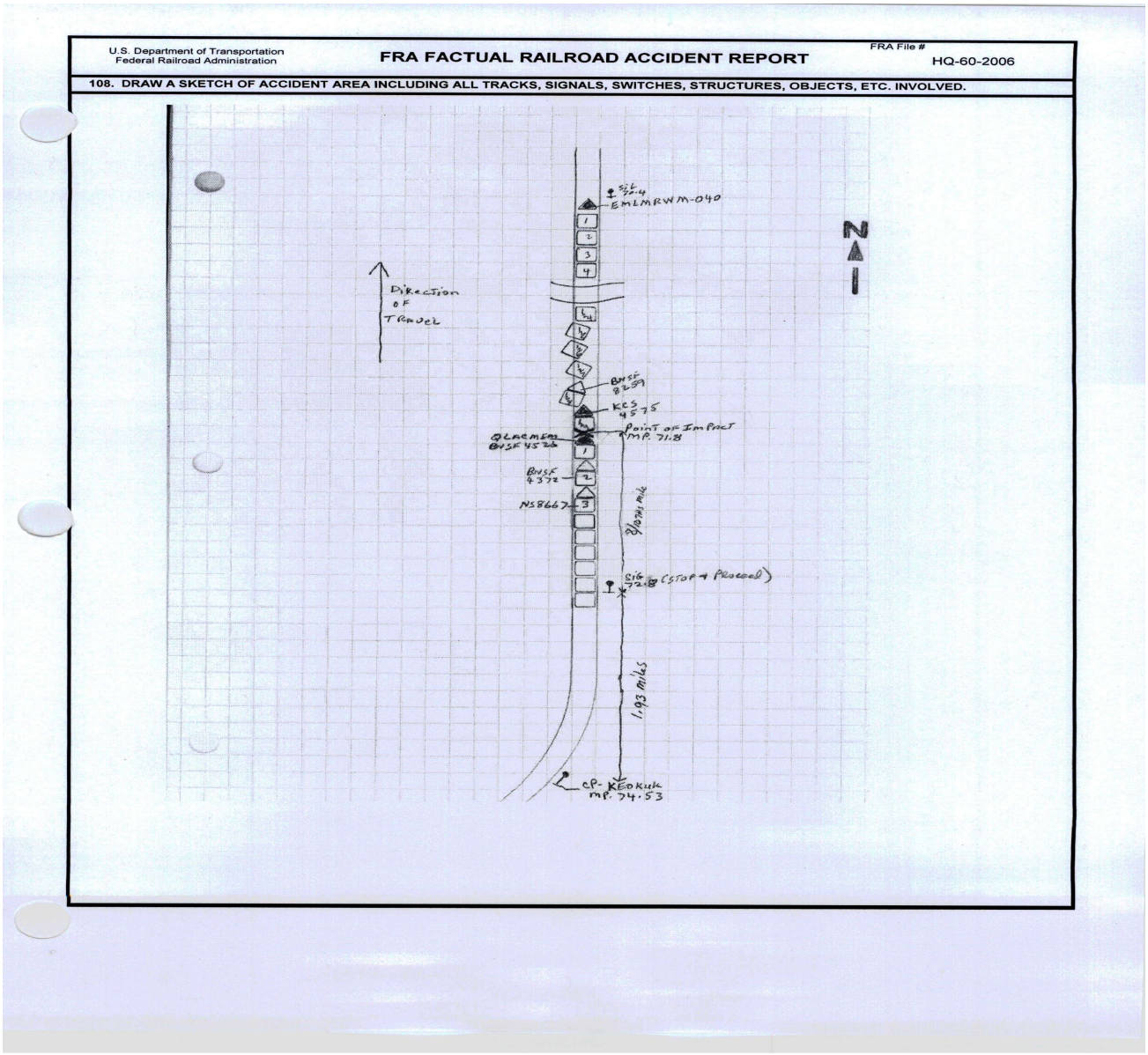
105. Locomotive Auxiliary Lights Operational? — Code: N/A
1. Yes 2. No

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

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

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

HQ-60-2006.jpg



109. SYNOPSIS OF THE ACCIDENT

A northbound BNSF freight train collided with the rear end of a stopped freight train on July 1, 2006 at 12:53 p.m. The accident occurred near Marshall, Texas, at UP milepost 71.8, on the Union Pacific Little Rock Subdivision.

There were no injuries to either train crew. The striking train sustained damage of about $106,000. The struck train and consist sustained about $307,194 in damages. There was no track structure damage. Three of the struck train's 125 empty coal cars and one of two distributive power locomotives were derailed as a result of the collision.

At the time of the accident, it was daylight and clear. The temperature was 96 °F.

The accident was caused by a failure to comply with restricted speed in connection with the restrictive indication of Intermediate Signal 72.8.

110. NARRATIVE

Circumstances prior to the accident:

The crew of train QLACMEM1-27D included a locomotive engineer and conductor. They first went on duty at 10:15 a. m. CST, July 1, 2006 at BNSF Longview Yard which is home terminal for both employees. Both crew members had received more than the statutory off duty period prior to reporting for duty.

Their assigned freight train consisted of 3 locomotives, 72 loaded intermodal cars, and no empties. The train was 6,403 feet long and weighed 5,513 tons. The train was scheduled to travel to Memphis, Tennessee, with no pick-ups or set outs in route. The train was a detour train originating on the BNSF railroad at Los Angeles, CA., interchanged to the UP at Longview, TX for a final destination of Memphis, TN. The train received a class 1 brake test and inspection at Los Angeles, California on June 13, 2006.

As the northbound train approached the accident area, the engineer was seated at the controls on the east side of the leading locomotive. The conductor was seated on the west side of the leading locomotive. Prior to the accident the striking train had encountered a red "stop and proceed" signal at milepost 71.8, which conveyed information to stop, then proceed at restricted speed. This signal was displayed because northbound ELMRWMO-40 was stopped in the block in advance of the striking train.

Topography:

The area in advance of the accident site is slightly down hill from milepost 72.7 to the point of impact at milepost 71.8. The degree of drop is from .72 to .09. Approximately one-half mile from milepost 71.8 there is a long sweeping left hand down hill curve with a site distance of approximately 800 feet.

The railroad timetable direction of the train was north. The geographic direction of the train was east. Timetable directions are used throughout this report.

Method of Operation:

As indicated by UP timetable, the method of operation is (CTC) Centralized Traffic Control .

Weather:

The weather was reported as clear, in daylight, with a temperature of 96 degrees F.

The Accident:

After complying with the red "stop and proceed signal, the train accelerated to 26 mph approaching the accident area. This speed was recorded by the event recorder of the controlling locomotive. The restricted speed indication conveyed by the signal at milepost 72.7 required that the locomotive not exceed 20 mph. The engineer said that prior to the collision, he "looked away and lost his place", becoming aware of the impending collision when the conductor told him to "plug" the train. The conductor said that he thought their train might have been going a little too fast, upon leaving signal 72.7, but assumed the engineer had control of the train. The conductor then saw the DP engine of the leading train, EMLMRWM040 come into view and shouted to the engineer to "plug" the train. He then went to the floor until after impact. The Impact caused the derailment of one distributive power locomotive and three empty coal cars of the struck train. The only indication of a problem that the struck train's crew had was when their train went into emergency. No injuries were sustained by either train's crew.

Once the striking train stopped, the conductor got off to look at the locomotive they struck to check for injured personnel, not realizing that it was a distributive power rear remote unit. He then checked for fires and fuel leakage from the engines. There were no fires, leaks, or release of HAZMAT. After this initial inspection, he notified the dispatcher of the collision.

BNSF's Trainmaster was dispatched to the scene, arriving at approximately 2:40 p.m. He observed that three cars and one DP engine had derailed. He then conducted interviews with the conductor and engineer. The Trainmaster then escorted the crew of the striking train to the hospital for D&A tests, arriving at the hospital at approximately 4:00p.m.

Analysis:

Results of the D&A tests on the crew of the striking train were negative. No tests were ordered for the crew of the struck train.

Union Pacific's Manager of Signal and Signal Maintainer was notified at approximately 2:20 p.m. The Manager of Signals ordered all signal locations sealed prior to testing including CPRO 75,the last control point northbound passed by the striking train, the intermediate signal 72.7 where the stop and proceed red signal occurred, and intermediate signal 70.4 where the head end of the struck train was located when the accident occurred. No exceptions were noted on any involved signal locations.

Union Pacific track maintenance personnel inspected the involved trackage and verified that there was no damage to the track.

The striking locomotive was equipped with a speed indicator and an event recorder as required. The recorder data was downloaded by the trainmaster at the accident site and analyzed at BNSF's facility at Longview, Texas. The analysis disclosed that the locomotive engineer was not in compliance with all applicable railroad operating and train handling requirements.

Conclusions:

In the course of this investigation, BNSF alleged that the engineer was utilizing a cell phone while operating his train, in violation of Union Pacific's "Cab Red Zone" special instructions in effect 1hrs. Sunday, June 18, 2006 which instruct that during Cab Red Zone "CRZ",use of cell phones are prohibited unless train operations require there use". During BNSF's investigation, the engineer stated that he was familiar with the requirements of "CRZ", but the conductor stated that he was not aware of the requirements. The engineer stated during BNSF's investigation that he was not utilizing the cell phone during the "CRZ" time frame. In response to this allegation FRA subpoenaed the engineer's cell phone records. A comparison of time stamps from the phone records usage data with the signal data log from Union Pacific, and the signal awareness forms completed by the conductor indicate the engineer was utilizing his cell phone during the critical "CRZ" time frame between passage of a restrictive "advance approach" signal at CPR 076 (Pirkey) to the "approach" signal at CPR0 75 (Keokuk).

Data from the striking locomotive also indicates that the train speed was gradually increasing from the stop and proceed signal in excess of the required "restricted speed" of 20 mph to a speed of 26 mph for a distance of 4,901 feet prior to the engineer placing the train in emergency. The speed data recorder indicated 20 mph on impact.

Probable cause and contributing factors:

Analysis disclosed that the locomotive engineer was not in full compliance with all applicable railroad operating and train handling requirements.
Data procured from the engineer's personal cell phone records compared with the signal awareness form compiled by the conductor indicate that the engineer was utilizing the cell phone, in violation of "Cab Red Zone" rules requirements.

Train speed data obtained from the event recorder indicate that the engineer was also in violation of "restricted speed" requirements .
Upon completion of BNSF's formal investigation, the engineer was issued "Notification of Certificate Suspension" and the conductor was removed from service on 07/06/06.

The FRA determined that the probable cause was a failure to comply with the restricted speen in connection with the restrictive indication of the intermediate signal 72.8.