Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2008-60

Canadian National-North America (CN)
Brazil, MS
July 1, 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-2008-60

1.Name of Railroad Operating Train #1: Canadian National - North America [CN]	1a. Alphabetic Code: CN	1b. Railroad Accident/Incident No.: 599800
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: Canadian National - North America [CN]	4a. Alphabetic Code: CN	4b. Railroad Accident/Incident No.: 599800

5. U.S. DOT_AAR Grade Crossing Identification Number: 300642S	6. Date of Accident/Incident: Month 07 Day 01 Year 2008	7. Time of Accident/Incident: 06:40: ☐ 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: 07

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

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr / Code	17. County
Brazil	84.23	N/A / MS	TALLAHATCHIE

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
85 F	2	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	4	48	4

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	M30271-01

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?
50 MPH — R	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 — 0
30. Trailing Tons *(gross tonnage, excluding power units)*: 11074	Code(s): e N/A N/A N/A N/A	

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	IC1029	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: N/A; Drugs: N/A

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	78	0	50	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
$1,501.00	$0.00	M399	M301

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 4 Mi 15	Hrs 4 Mi 15

Casualties to:	47. Railroad Employees	48. Train Passengers	49. Other
Fatal	0	0	3
Nonfatal	0	0	1

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
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 J

108. Vehicle Speed *(est. MPH at impact)* 0

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

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 1

112. Position of Car Unit in 1

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

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

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

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
	1		2		2

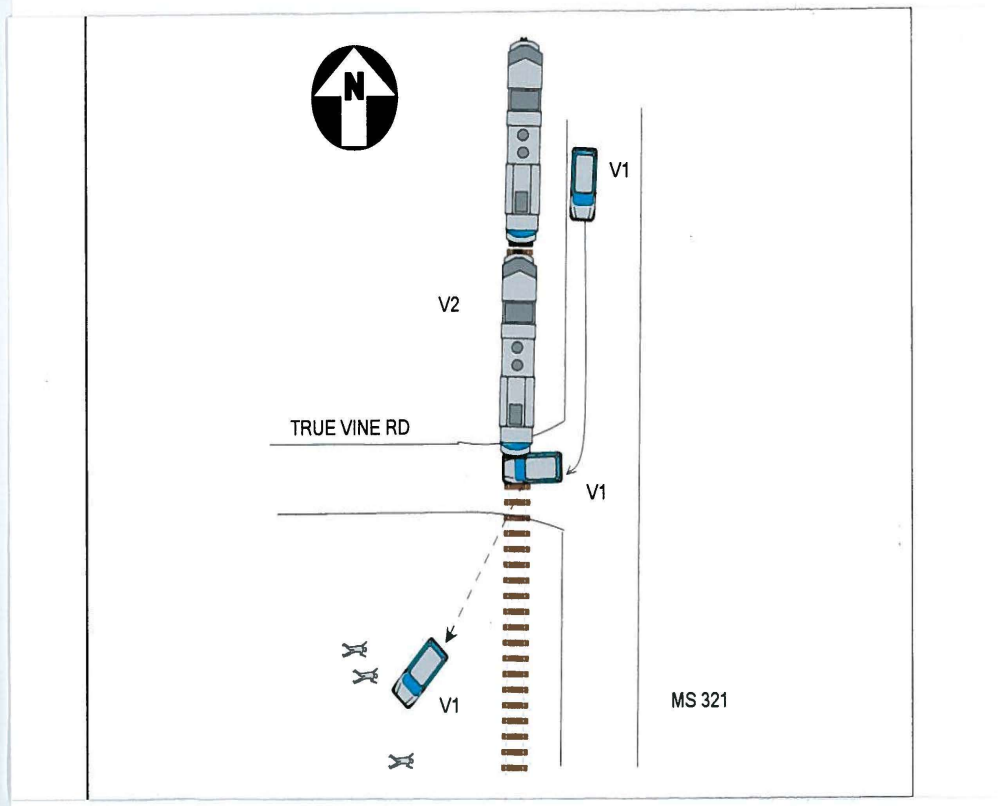
121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)*	Code
26		1		2		4

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
	2		8

Casualties to:	Killed	Injured	127. Driver 1. Killed 2.Injured 3. Uninjured	Code	128. Was Driver in the Vehicle? 1. Yes 2. No	Code
				1		1
129. Highway-Rail Crossing Users	3	1	130. Highway Vehicle Property Damage *(est. dollar damage)*	1500	131. Total Number of Highway-Rail Crossing Users *(include driver)*	4

132. Locomotive Auxiliary Lights? 1. Yes 2. No	Code	133. Locomotive Auxiliary Lights Operational? 1. Yes 2. No	Code
	1		1
134. Locomotive Headlight Illuminated? 1. Yes 2. No	Code	135. Locomotive Audible Warning Sounded? 1. Yes 2. No	Code
	1		1

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



137. SYNOPSIS OF THE ACCIDENT

On July 1, 2008, at 6:40 p.m., southbound Canadian National (CN) Train M30271-01 struck a vehicle traveling east to west at Truevine Church Road highway-rail grade crossing DOT # 300 642 S. The accident occurred in Brazil, Mississippi (MS) at CN milepost (MP) 84.23 on the Yazoo Subdivision. The method of operation in the accident area is by a Traffic Control System (TCS).

There were a total of four occupants in the vehicle. The male automobile driver and two passengers (one male and one female) were fatally injured, another passenger (male) was critically injured. The automobile was completely destroyed. There were no injuries to the train crew members. CN estimated the damage to their lead locomotive was $1,501. There were no rail cars derailed as a result of the collision.

At the time of the accident, it was daylight and clear. The temperature was 85 °F.

The probable cause of the accident was the driver failed to yield the right-of-way to the train and stopped on the crossing. A contributing cause was the driver's positive toxicological test for marijuana.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

On July 1, 2008, CN Train M30271-01 originated in Memphis, Tennessee (TN). The train consisted of two locomotives (leading Locomotive IC 1029 and trailing Locomotive IC 1037) with 128 cars (78 loads, 47 empties, and 3 tank cars containing residue). The crew consisted of a locomotive engineer, a conductor, and a brakeman. The conductor was regularly assigned to this train, the engineer was an extra board engineer, and the brakeman was a trainee. All three were familiar with this track segment. The crew reported for duty following required statutory rest period and departed Memphis Yard following a Class 1 Brake Test.

CN Train M30271-01 was operating at 50 miles per hour (mph) as it approached the highway-rail grade crossing at Truevine Church Road on the main track. The engineer was seated on the right (west) side of the lead locomotive cab, the conductor was seated on the left (east) side, and the brakeman was seated in the center jump seat.

The track in the accident area is tangent and the grade is practically level. The maximum authorized speed for freight trains is 60 mph.

The CN timetable direction of the train is south. The geographical direction is south. Timetable direction is used in this report.

THE ACCIDENT

CN TRAIN No.M30271-01:

The engineer stated that about 6:40 p.m. CN Train M30271-01 was traveling southbound on the main track approaching Truevine Church Road. The train was operating at 50 mph, as recorded by the locomotive event recorder on the lead locomotive (IC 1029). The maximum authorized speed for this line segment is 60 mph for freight trains. The engineer observed a Chevy Blazer traveling in the same direction on County Road 321,

which runs parallel to the track for several miles in this area. He did not notice the number of occupants in the Blazer. The engineer stated that he sounded the audible warning (train horn) for the upcoming highway-rail grade crossing at Truevine Church Road; this is recorded on the event recorder. He stated that the Blazer turned onto Truevine Church Road and seemed to stop, fouling the track. He made an application of the train air brake system about the same time of the collision.

The conductor and brakeman confirm the engineer's account, adding that they noticed there were four occupants in the vehicle. The conductor added that one occupant in the rear seat made eye contact with him just prior to the collision.

THE VEHICLE:
The highway vehicle, a 1988 Chevy Blazer, was traveling east to west and the point of impact was in the east lane of the highway-rail grade crossing surface. The impact occurred on the passenger side of the vehicle at the point where the door and body join. The vehicle was thrown 66 feet to the west side of the track, impacted the ground and continued another 29 feet, finally coming to rest upright, 121 feet from the point of impact. Three of the occupants were ejected and one was partially ejected.

After the train stopped, the engineer made an emergency transmission to the CN dispatcher and remained on the lead locomotive. The train stopped 2,093 feet from the point of impact. The conductor and brakeman walked back to the accident scene to see if they could be of assistance. After the accident, the entire crew was relieved of duty and transported to their home terminal at Memphis, TN.

A Tallahatchie County Sheriff Deputy overheard the 911 call that came in to the auxiliary Sheriff's Office in nearby Sumner, MS. He proceeded to the accident scene, arriving at about 6:42 p.m. Emergency Medical Services were notified at 6:42 p.m. and arrived at the scene at 6:51 p.m. Three of the occupants of the automobile were pronounced deceased at the scene and one occupant (14 year old male) was airlifted to a medical facility in Memphis.

ANALYSIS AND CONCLUSIONS:

The automobile involved was a 1988 Chevrolet S10 Blazer. This is a mid-sized two door Sport Utility Vehicle (SUV). The SUV was occupied by a male driver, age 26, and three passengers; two males, ages 14 and 7, and a female, age 12.

A toxicological test was performed at the autopsy on the remains of the driver and the test revealed positive indications for marijuana.

Truevine Church Road is a paved road that intersects County Road 321, which runs parallel with the CN Main Track. Truevine Church Road is 20 feet wide with no stop bars and is protected by cross bucks only. The distance between County Road 321 and the Main Track is 56 feet.

A witness at the scene stated to the Tallahatchie County Sheriff's Office that the SUV tried to make it across the tracks in front of the train. Another witness stated to a newspaper reporter (The Sun-Sentinel) that "the train's whistle was loud and was blowing furiously".

The locomotive was equipped with a headlight, auxiliary lights, and an audible warning device required by Federal regulations. These devices were tested at the locomotive shop in Memphis, TN. The locomotive was equipped with a speed indicator and an event recorder as required. The event recorder was downloaded by CN mechanical personnel at the accident site and analyzed in Memphis. The analysis concluded that the engineer was in compliance with all applicable railroad operating and train handling requirements.

ANALYSIS - FATIGUE

FRA uses an overall effectiveness rate of 77.5 percent as the baseline for fatigue analysis, which is equivalent to blood alcohol content (BAC) of 0.05. At or above this baseline, we do not consider fatigue as probable for any employee. Software sleep settings vary according to information obtained from each employee. If an employee does not provide sleep information, FRA uses the default software settings. Train crew members were tested using these methods.

CONCLUSION: - Train crew fatigue did contribute to the cause of the incident.

PROBABLE CAUSE

The probable cause of the accident was the driver failed to yield the right-of-way to the train and stopped on the crossing. A contributing cause was the driver's positive toxicological test for marijuana.