Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2010-11

Montreal, Maine and Atlantic Railway, Ltd. (MMA)
Brownville Junction, ME
February 26, 2010

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-2010-11

1.Name of Railroad Operating Train #1: Montreal, Maine and Atlantic Rwy, Ltd. [MMA]	1a. Alphabetic Code: MMA	1b. Railroad Accident/Incident No.: 10022601
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: Montreal, Maine and Atlantic Rwy, Ltd. [MMA]	4a. Alphabetic Code: MMA	4b. Railroad Accident/Incident No.: 10022601
5. U.S. DOT_AAR Grade Crossing Identification Number:	6. Date of Accident/Incident: Month 02 Day 26 Year 2010	7. Time of Accident/Incident: 03:45:00 ☑ 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: 04

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

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr	16. State Code	17. County
Brownville Jct	0	ME	23	PISCATAQUIS

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
30 F	4	5	2

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
BACK LEAD	1	N/A	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	2	001

29. Speed *(recorded speed, if available)* R - Recorded E - Estimated — Code	30. Trailing Tons *(gross tonnage, excluding power units)*
12 MPH R	N/A

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

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

31a. 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

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	MMA8553	1	no
(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

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	3	0	0	0	0
(2) Total Derailed	2	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	0	0	0	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
$100,000.00	$0.00	H017	H999

Number of Crew Members

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

Length of Time on Duty

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

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

50. EOT Device? 1. Yes 2. No — N/A

51. Was EOT Device Properly Armed? 1. Yes 2. No — 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	203

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 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)*: 3707

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): 1 | N/A | 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)*	MMA8578	1	N/A
(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
N/A	N/A

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

62. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote	63. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	2	0	0	0	0	(1) Total in Equipment Consist	31	0	2	0	0
(2) Total Derailed	0	0	0	0	0	(2) Total Derailed	0	0	0	0	0

64. Equipment Damage This Consist: $60,000.00

65. Track, Signal, Way, & Structure Damage: $3,500.00

66. Primary Cause Code: H017

67. Contributing Cause Code: H999

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 8 Mi 45

73. Conductor: Hrs 8 Mi 45

Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other
Fatal	0	0	0
Nonfatal	1	0	0

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

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

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: 0

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)*	0	0	N/A
(2) Causing *(if mechanical cause reported)*	0	0	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	90. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	0	0	0	0	0	(1) Total in Equipment Consist	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0	(2) Total Derailed	0	0	0	0	0

91. Equipment Damage This Consist: $0.00

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

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
0	0	0	0

Length of Time on Duty

99. Engineer/Operator: Hrs 0 Mi 0

100. Conductor: Hrs 0 Mi 0

Casualties to:	101. Railroad Employees	102. Train	103. Other
Fatal	0	0	0
Nonfatal	0	0	0

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

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

113. Circumstance	Code
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?	Code
1. Highway User 2. Rail Equipment 3. Both 4. Neither	N/A

114b. Was there a hazardous materials release	Code
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	4.Wig Wags	7.Crossbucks	10.Flagged by crew
	2.Cantilever FLS	5.Hwy. traffic signals	8.Stop signs	11.Other *(spec. in narr.)*
	3.Standard FLS	6.Audible	9.Watchman	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
	N/A

117. Whistle Ban	Code
1. Yes 2. No 3. Unknown	N/A

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

119. Crossing Warning with Highway Signals	Code
1. Yes 2. No 3. Unknown	N/A

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

121. Age	122. Driver's Gender	Code
N/A	1. Male 2. Female	N/A

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

124. Driver	Code
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)*	N/A

125. Driver Passed Highway Vehicle	Code
1. Yes 2. No 3. Unknown	N/A

126. View of Track Obscured by *(primary obstruction)*	Code
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	N/A

Casualties to:	Killed	Injured
129. Highway-Rail Crossing Users	N/A	N/A

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

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

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

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

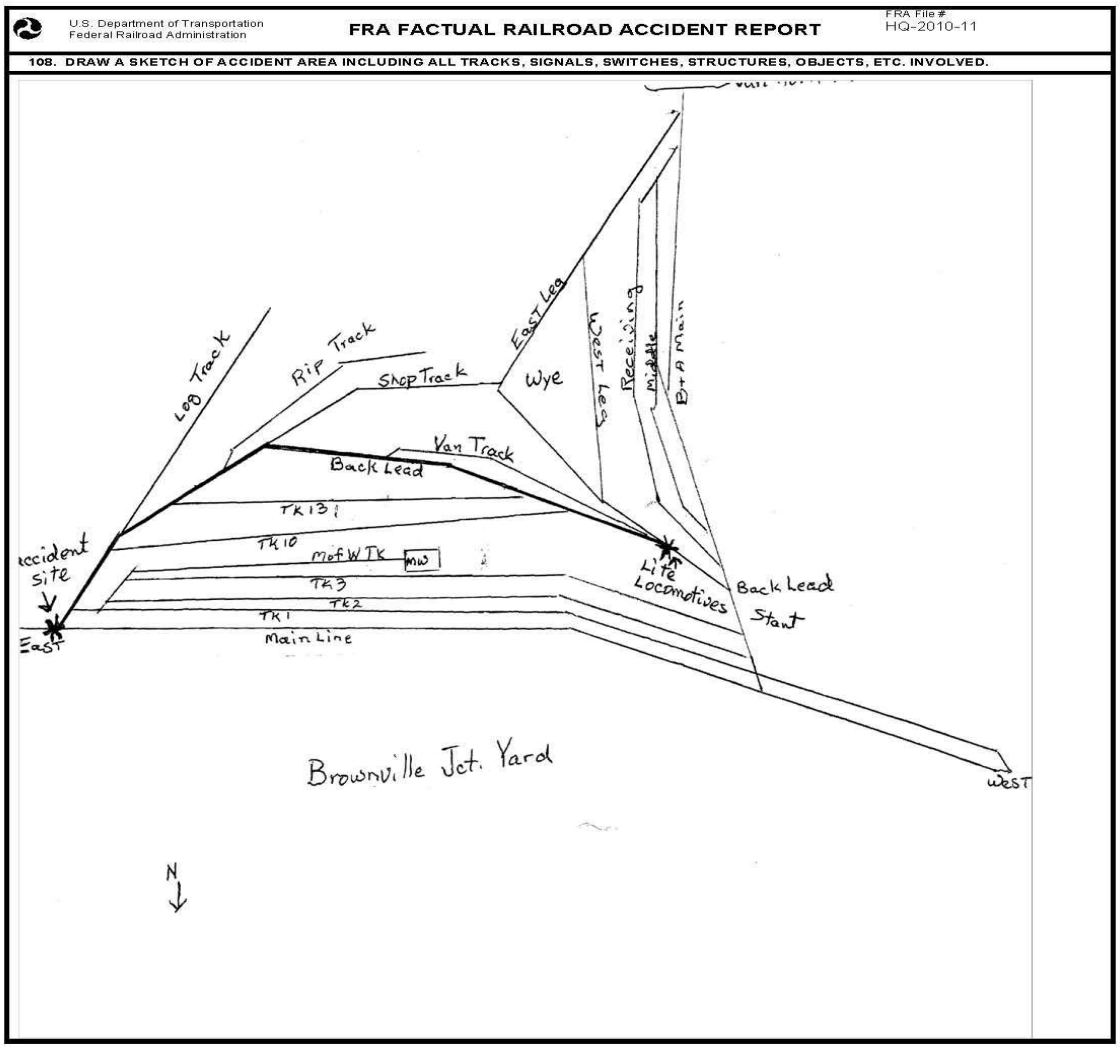
132. Locomotive Auxiliary Lights?	Code
1. Yes 2. No	N/A

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

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

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

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



137. SYNOPSIS OF THE ACCIDENT

On 2/26/2010, at Brownville Junction, Maine, 3 Montreal, Maine & Atlantic (MMA)locomotives (MMA 8553-MMA 5017 and MMA 758) were set off at the west end of the back lead in Brownville Junction Yard. None of the hand brakes on the 3 locomotives were applied nor were the independent or automatic brake systems cut in on the 3 locomotives. The air trapped in the brake cylinders bled off and the brakes released. The locomotives rolled east uncontrolled down a 1% grade through Brownville Junction Yard for 3/4 of a mile resulting in a side collision with train #203's locomotives,(MMA 2001 and MMA 8578)which were on the Brownville Junction Running track (CP Main). The crew of train #203 were on the locomotives when they realized that a collision was imminent and jumped off just prior to impact.

One crew member sustained a sprained knee due to the jump. There was considerable damage to the locomotives and 2 locomotives were derailed. The cause of the accident was determined to be “failure to properly secure engines–railroad employees” H017, and a contributing cause “Other train operations/human factors H999". FRA’s investigation determined that even though there was a job briefing conducted, there was no specific discussion of which of the three crew memembers would be tasked with securing the light locomotives when they were finally set off. At the time of the accident, it was dark, windy and sleeting and the temperature was hovering at 30 degrees.

138. NARRATIVE

Circumstances Prior to the Accident

Train #420, a single engineer job, reported for duty at the Derby Shops at 7:30 P.M. and after preparing and inspecting his unit he departed and operated his train to Brownville Junction, ME. Upon arrival at Brownville Jct Yard, train #420 performed various switching operations in preparation for train #202's arrival from Northern Maine Jct and train #001's arrival from Millinocket. Train #202 arrived shortly after train #420 had completed his first set of switching duties. After the arrival of #202 the two crews worked together switching out #202 and beginning to build #203 for a return trip to Northern Maine Jct.

Train #203 began making up their train on the east end of the CP Main, and the single engineer assignment the crew of #420 continued switching on the west end of the Yard. Train #001, arriving from Millinocket, called for permission to enter Brownville Jct Yard. The #420 was working on the west end of the yard, instructed #001 to hold at Van Horn Street Crossing until he was in the clear and ready for them to enter the yard limits. Once he was cleared up, the #420 engineer instructed the #001 to proceed into the west end of the yard, where the two crews met and held a job briefing.

After the job briefing concluded, several switching moves were performed by the crews of train #001 and train #420 as they set off cars from train #001. After setting cars on the back lead, the cars were picked up and taken by Train #203 down to the east end of the yard and placed into the consist they had built for their return to Northern Maine Junction. Train #001 then set out 3 light locomotives (MMA 8553, MMA 5017, and MMA 758) on the back lead. The crews of train #001 and train #420, then picked up 2 different locomotives and doubled their trains together. When train #001 was made up, it departed the yard heading west to Canada.

The Accident

As soon as train #001 departed the yard the single engineer on train #420 noticed that the 3 light locomotives were no longer on the back lead where they had been set out. Upon noticing that the locomotives had

apparently moved he attempted to radio the crew on train #203 who were still working on the other end of the yard, in an attempt to warn them that the light locomotives might be moving towards them. Receiving no response from the crew on train #203, the lone engineer proceeded to get his remote control locomotive in order to go to the other end of the yard to check on the crew of train #203.

Before he was able to get his locomotive set up to move the lone engineer overheard the Rail Traffic Controller (RTC) call the conductor on train #001 and ask him if he had set a hand brake on the 3 locomotives that they had set off at Brownville Jct. The conductor of train #001 replied that he thought the lone engineer of train #420 had secured the locomotives. The RTC said that all 3 locomotives had rolled through the yard uncontrolled and collided with the side of train #203's power. The results of the collision were that locomotive 8553 was completely derailed and listing with considerable side damage, including a punctured fuel tank with a release of approximately 300 gallons of diesel fuel. Locomotive 5017 had one truck completely derailed and significant side damage. The locomotives on train #203 weren't derailed, but they both had considerable side damage. The track damage was minor due to the fact that the derailed equipment did not move far after it derailed.

Analysis and Conclusions

Analysis

Discussions with MMA mechanical and operations personnel revealed that the three light locomotives that were set off by train #001 were found after the accident with no hand brakes applied and the brake valves were all cut out. This was confirmed by interviewing the crew members of train #001 and the single engineer of Train #420. The crew members, all three of whom were qualified locomotive engineers, had each thought the other crew member secured the air brakes and applied the hand brakes on the light locomotives.

Conclusion

The 3 locomotives were not secured properly in accordance with the MMA operating rules. Not being secured in the proper fashion allowed the brakes to bleed off after the locomotives were set off on the back lead. Additionally, not having any hand brakes applied allowed the light locomotives to roll free for 3/4 of a mile and collide with Train #203's locomotives which were at the east end of Brownville Jct Yard.

Analysis

Interviews with the crews of trains #001 and #420 disclosed that the job briefing did not include specific discussion as to who would be responsible for properly securing the 3 locomotives and applying the hand brakes once they were set off. MMA's Air Brake and Train Handling Rules place the responsibility for locomotives on the engineer of the consist.

Conclusion

A more thorough job briefing would have included a discussion of which crew member would be responsible for ensuring that the 3 locomotives were properly secured prior to their departure.

Analysis

Federal Railroad Administration (FRA) mechanical personnel performed testing on the 3 locomotives that had rolled uncontrolled through Brownville Jct Yard. FRA's testing disclosed that there was leakage on the brake cylinders of the light locomotives that allowed the independent brakes to release after just 27 minutes as shown on the event recorder read outs after the accident.

Conclusion

Leakage of the air brake system on the 3 locomotives which were set off by train #001 allowed the independent brakes to release.
Fatigue Analysis

FRA obtained fatigue-related information for the 10-day work history preceeding the accident for the engineer

and conductor of train #001 and engineer of train #420.

Conclusion

Upon analysis of that information, FRA concluded fatigue was not a factor in this accident.

Analysis-Toxicological-Testing

The carrier performed FRA required testing on the engineer and conductor of train #001 and the engineer of train #420.

Conclusion

The results indicated that Intoxication was not a factor in this accident.

Probable Cause & Contributing Factors

The probable cause of the accident was the failure of the crews on train #001 and/or #420 to secure the 3 locomotives according to Federal regulation, 49 CFR 232.103(n) and railroad operating rules. An incomplete job briefing may have also contributed to the cause.