Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2010-06

CSX Transportation (CSX)
Meyersdale, PA
February 6, 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-2010-6

1.Name of Railroad Operating Train #1: CSX Transportation [CSX]	1a. Alphabetic Code: CSX	1b. Railroad Accident/Incident No.: R000072996
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: CSX Transportation [CSX]	4a. Alphabetic Code: CSX	4b. Railroad Accident/Incident No.: R000072996
5. U.S. DOT_AAR Grade Crossing Identification Number:	6. Date of Accident/Incident: Month 02 | Day 06 | Year 2010	7. Time of Accident/Incident: 02:15:00 ☑ 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: 01

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

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr	16. State Code	17. County
Glencoe	201.4	N/A	PA	SOMERSET

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
24 F	4	6	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 NUMBER 2	3	51	3

OPERATING TRAIN #1

26. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car — A. Spec. MoW Equip. — Code	27. Was Equipment Attended? 1. Yes 2. No — Code	28. Train Number/Symbol
1	1	U 88303

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?
65 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

30. Trailing Tons *(gross tonnage, excluding power units)*: 17300

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

31a. Remotely Controlled Locomotive?: 0

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	CSXT710040	1	yes
(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
N/A	N/A

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	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	130	0	0	0	0
(2) Total Derailed	108	0	0	0	0

37. Equipment Damage This Consist	38. Track, Signal, Way, & Structure Damage	39. Primary Cause Code	40. Contributing Cause Code
$2,000,000.00	$200,500.00	H699	M199

Number of Crew Members

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

Length of Time on Duty

45. Engineer/Operator	46. Conductor
Hrs 7 Mi 15	Hrs 7 Mi 15

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: 1

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

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

OPERATING TRAIN #2

53. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car — A. Spec. MoW Equip. — Code	54. Was Equipment Attended? 1. Yes 2. No — Code	55. Train Number/Symbol
N/A	N/A	N/A

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

DEPARTMENT OF TRANSPORTATION
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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 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 N/A
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)*

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

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

Rail Equipment Involved

111. Equipment Code N/A
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)*

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.

1. Yes 2. No		1. Yes 2. No	
108. Locomotive Headlight Illuminated? 1. Yes 2. No	Code	107. Locomotive Audible Warning Sounded? 1. Yes 2. No	Code

U.S. Department of Transportation
Federal Railroad Administration

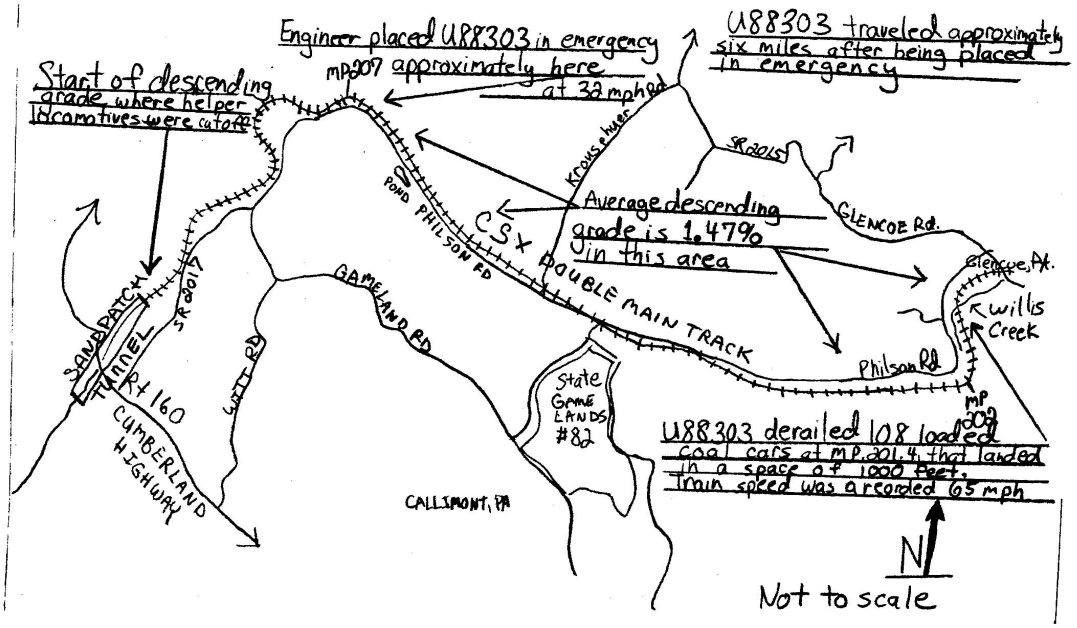
FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2010-06
IIC ID# 22353
Report

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

DIRECTION of travel, CSX U88303 →

CSX U88303 derailed 108 of 130 loaded coal cars at Glencoe, PA on February 6, 2010 in thirty inches of snow. Locomotives did not derail



137. SYNOPSIS OF THE ACCIDENT

On February 6, 2010 at 2:15 a.m. EST CSX loaded coal train U883-03, operating from Connellsville, PA to Baltimore, MD, derailed 108 coal hopper cars at milepost BF 201.4 at Glencoe, PA. The train was traveling in an eastward direction according to the CSX Baltimore division timetable, which is also the geographical direction. At the time of the accident it was dark and snowing heavily. There were 24-30 inches of snow on the ground and near white out conditions. The train consisted of two GE locomotives, CSX 565 and CSX 50, and 130 loaded coal hopper cars. The train was 6581 feet long and had a trailing tonnage of 17,300 tons. The derailment occurred while descending the 1.47% Sandpatch grade operating on the Main Track number two. There were no reported injuries or hazardous materials released. Estimated damages including equipment, track, and signal, is a reported $2,200,500.

The Federal Railroad Administration (FRA) investigation has determined the cause of the derailment to be excessive speed. Contributing factors were extreme weather conditions and train handling, as the engineer should have refreshed his brakes more often in the extreme weather conditions that were encountered that night. FRA and CSX are not in agreement as to the cause of this derailment.

138. NARRATIVE

CIRCUMSTANCES PRIOR TH THE ACCIDENT

On February 5, 2010 eastward CSX train U883-03 made up of two six-axle AC locomotives, CSX 565 (GE W44AH) and CSX 50 (GE CW44AC) and 130 loaded coal hopper cars departed Connellsville, PA en route to Baltimore, MD. The train was 6,581 feet long and weighed 17,300 tons. The Locomotive Engineer and Conductor were on duty at 7:00 p.m. on February 5, 2010 at Connellsville. Both crew members received the required statutory off-duty rest period prior to reporting for duty. After a class III train air brake test was performed at Connellsville the train departed with helper locomotives on the rear at 9:05 p.m. At 10:00 p.m. the train passed a type one defect detector at milepost 251.9 and received a message that the detector was not working. CSX Rule 4303 A (c) requires that if a defect detector is not working, the train must be stopped and walked to inspect for possible problems. It took approximately 90 minutes to inspect the train, no defects were found

The engineer stated, and the download data indicates, that he conditioned his brakes throughout his trip due to the inclement weather as required by CSX Air Brake and Train Handling rule 5655. He stated that the last time he conditioned his brakes was before Garrett at MP 219.5, by making a minimum brake pipe reduction and then went to at least 10 psi or greater before releasing the application after Yoder, MP 218.4. This was approximately 8 miles before the train stopped, using air and locomotive dynamic brakes, when the crew removed the helper locomotives at the tunnel on the top of Sandpatch grade. The helper crew then restored the End of Train Device (EOTD) on the rear of train U883-03.

THE ACCIDENT

The EOTD air pressure was about 76 psi when the train began its descent on Main Track number two. The engineer applied minimum power to get the train moving. The engineer then went to locomotive dynamic brake, eventually going to full dynamic brake. After reaching a speed of about 19 mph the engineer began applying the automatic train brakes while remaining in full locomotive dynamic brake. Realizing his speed was not decreasing, the engineer made a full service brake application at a speed of about 30 mph, and held it for about a minute. When the speed of the train increased to about 32 mph, the engineer placed the train in

emergency, which initiated an emergency application from the head end and the EOTD at the rear of the train simultaneously. The lead locomotive, CSX 565, has a feature in the brake software which initiates an emergency application at the EOTD when the train is placed in emergency via the automatic brake valve handle.

The train continued to gain speed for about 6 miles on the descending average grade of 1.47 percent. Grade is the change in vertical elevation that is expressed as percentage. For example, a change in vertical elevation of one foot over a distance of 100 feet represents a 1 percent grade. At the time the derailment occurred the recorded train speed was 65 mph. The derailment occurred at mile post 201.4 at 2:15 a.m. on February 6, 2010. The locomotives did not derail. The first 108 cars did derail and were piled up in an area of about 1,000 feet. The remaining 22 cars did not derail and remained upright and in line. FRA safety inspectors did not arrive at the derailment site until Monday, February 8, 2010. This was due to nearly impassable roads in the area of the derailment because of the 24-30 inches of snow. FRA safety inspectors who took part in investigating the derailment were Operating Practices Inspector, Signal and Train Control Inspector and Track Inspectors. When FRA inspectors arrived at the derailment site, the derailed coal cars were piled up along the right of way. This work was done by RJ Corman and Hulcher Corp. both of which are derailment cleanup companies. They were in the process of restoring both main tracks and the right of way. Main Track number two was back in service on February 9, 2010 at 9:00 a.m.

ANALYSIS AND CONCLUSION

ANALYSIS-FATIGUE:

FRA obtained fatigue-related information for the 10 day period preceding this accident/incident, including the 10-day work history (on-duty/off-duty cycles) for all of the employees involved.

CONCLUSION:

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

ANALYSIS-TRAIN HANDLING AND ENGINEER OPERATION:

The engineer stated, and the download data shows, that he conditioned his brakes through\out the trip due to the excessive snow fall that the crew encountered during the trip. This was in compliance with the CSX Air Brake and Train Handling rule 5655. He did however state that the last time he conditioned his brakes was before Garrett at MP 219.5, by making a minimum brake pipe reduction and then went to at least 10 psi or greater before releasing the application after Yoder, MP 218.4. This was approximately 8 miles before the train stopped, using train air and locomotive dynamic brakes, to remove the helper locomotives at the tunnel on the top of Sandpatch grade. Due to the 24-30 inches of snow on the ground and near white out conditions, the engineer of U883-03 should have conditioned his brakes more frequently as snow fall amounts of this nature will cause snow to build up very quickly between the brake shoes and the wheels.

CONCLUSION:

Due to the 24-30 inches of snow on the ground and near white out conditions, the engineer of U883-03 should have conditioned his brakes more frequently as snow fall amounts of this nature will cause snow to build up very quickly between the brake shoes and the wheels. This was a contributing factor to this accident.

ANALYSIS-TRACK:
Number 2 track was tied and surfaced in October of 2009. Track 2 had 141 lb rail laid on the high and low side of the curve in October of 2008. CSX used victor tie plates when the rail was laid. Victor plates are 18 inch mountain plates with Pandrol clips pressed into the plates to secure the rail. The curve at the derailment site was ground with a rail grinder in 2009. The Sperry Rail test car traversed this portion of the track in January of 2010 with no rail defects found. The CSX TGG-2 Geometry Car also covered this portion of the track on January 14, 2010, with no defects in this area. The track was inspected on 2-5, 2-3, 1-31, 1-28, 1-27, and 1-25, 2010.

CONCLUSION:

The track was within 49 CFR 213 regulations and was not a causal factor in the derailment of CSX U883-03

ANALYSIS-SIGNAL:

The method of operation used in this area is Traffic Control System ABS-261. The maximum authorized speed is 30 miles per hour. U883-03 received a malfunction message at the HK defect detector at mile post BF 251.5. CSX Rule 4303 a (c) requires that if a defect detector is not working, the train must be stopped and walked to inspect for possible problems. The crew walked the train and found no defects. The train crew received a good message (no defects) from both the Meyersdale and the Casselman defect detectors. The signal system was not damaged during the derailment. All pertinent downloads and test documentation was reviewed. FRA S&TC inspector inspected the FRA signal test and inspection records for the signal maintainer section involved in the derailment. No defects were found pertaining to the signal records inspected. In addition the FRA Inspector checked the maintenance records for Meyersdale and Casselman defect detectors and both detectors were determined to be in compliance with CSX maintenance schedule.

CONCLUSION:
The signal system was within 49 CFR 236 regulations. It was operating as designed and was not a causal factor in the derailment of CSX U883-03.

ANALYSIS-EQUIPMENT:

CSX Train U883-03 originated as CSX E72701 in Newport News, Virginia as an empty 130 coal hopper car unit coal train where it received a class one brake test on February 2, 2010 at 5:30 pm. From Newport News it went to Grafton, West Virginia and from Grafton it went to Newell, Pennsylvania to be loaded at the Bailey coal mines. When it departed the Bailey mines as a loaded coal train, it became CSX U883-03. CSX assures me that this train was never off air for more than four hours and stayed together as a unit train. The class one brake test performed at Newport News, VA satisfies the federal requirement. CSX U883-03 was re-crewed at Connellsville, Pa with the crew that was involved in the derailment at Sandpatch grade. No exceptions were noted on the class one brake slip. A two pound leak was recorded on the class one brake slip, which is within the allowable federal regulation. The EOTD number recorded on the air slip was 44185, which was the EOTD that was taken off the last car of the accident train at Glencoe, Pa. Before the crew left Connellsville, PA they performed a class three continuity brake test.
The locomotives were brought to the CSX shop in Cumberland, Maryland. FRA inspected the locomotives, CSX 565 & CSX 50, and found no anomalies. No moisture was present in any of the four main reservoir tanks on the locomotives. The desiccant air dryer indicators were blue, which indicated no sign of moisture in the compressed air system on the locomotives. Moist air would have a detrimental effect on rolling stock brake systems, especially in cold weather. This was not the case with CSX Train U883-03.
According to CSX Baltimore Division Timetable Number Six, Keystone Subdivision Special Instructions relating to air brake and train handling Rule 5559, the speed of a 17,300 ton unit train descending Sandpatch grade is restricted to 25 mph. A minimum of 18 effective dynamic braking axles are required for a 17,100 to 18,000 ton unit train on a 1.0% to 1.5% descending grade. The two GE locomotives on this train were six axle CW 44AH and CW 44AC locomotives with extended range dynamic brake which were rated for nine axles each and did meet the CSX requirement for dynamic braking for a train of this tonnage in this territory. CSX Operating Rules, Section Three, Part 50 (2) (B) states “2. A train must be stopped using an emergency application of the air brakes on descending grades of one percent (1%) or more, as designated in Special Instructions, if; b. the train’s speed reaches 5 mph more than the maximum speed permitted for that train.” The locomotive engineer placed the train in emergency at 32 mph.

CONCLUSION:

The cause of this derailment was excessive speed. Contributing factors were extreme weather conditions, namely thirty inches of snow, and the fact that the engineer should have conditioned his brakes more frequently as snow fall amounts of this nature will cause snow to build up very quickly between the brake shoes and the wheels. FRA and CSX are not in agreement on the cause of the derailment. The FRA form F6180.54 report that is provided by CSX lists the primary cause code in box number 38 as M199 (other extreme environmental conditions) but in the narrative box number 52 states “ SCX Train U883-03 derailed due to excessive speed account excessive snow and ice build up on brake rigging.” FRA spoke to CSX officials and they chose to keep the cause code as is.
The last train to pass over this area on track number two was eastbound CSX Train Q352-05 at 7:49 pm on

February 5, 2010. There were no snow plows called to plow the Sandpatch grade area during this storm. The initial automatic brake application made by the engineer had virtually no effect on the speed of CSX Train U883-03. This is more than likely because there was an excessive amount of snow packed in between the brake shoes and the wheels of this train which built up quickly due to the large amount of snow on the ground. This greatly reduced the coefficient of friction between the wheels and the brake shoes. The effective braking of the loaded coal train was very low. The snow between the brake shoes and wheels eventually melted. But by the time the incident occurred the speed of the train, combined with the grade of the track and the tonnage of the train, caused the train to become uncontrollable. An engineer from Railroad Friction Products Corporation, manufacturer of Cobra® brake shoes, in Laurinburg, North Carolina stated that studies have shown that there are just too many variables as to when built up snow between brake shoes and the wheels will melt during a brake application. Moisture content of the snow, amount of snow, outside ambient temperature, speed and weight of the train are among the many factors that affect train braking in snow.

ANALYSIS -TOXICOLOGICAL TESTING:

Drug and Alcohol testing was not performed on the crew of CSX Train U883-03. CSX gave the following reason; “All Concerned, Conductor and Engineer of train U883-03 were not administered FRA Post Accident Category I Testing due to the following factors:

Initial reports on derailment indicated 8 cars involved, not approaching$1,000,000.00 damage,
no HAZMAT release reported, no evacuation
reported and no FRA reportable injury reported.
An immediate walking inspection could not be made due to extreme
weather conditions
It was several hours after the incident until the true scale of the derailment
became apparent
Conductor and Engineer of train U88303 were not administered FRA Optional
Reasonable Cause Testing due to the following factors:
Cause of derailment was under investigation
Reasonable Cause Testers from EMSI were contacted, in the event
Human Factor was determined to be an issue, but was unable to travel to
crew location, Cumberland, MD due to severe winter weather conditions.”

CONCLUSION:

According to 49 CFR 219 subpart C, Post-Accident Toxicological Testing, the crew of CSX Train U883-03 did in fact meet the criteria and should have been tested for drugs and alcohol. FRA operating practices inspector recommended a violation in his F6180.96 inspection report number 23, dated March 11, 2010.

OVERALL CONCLUSION

Neither crew fatigue, the track or the signal system were causal factors in this derailment. The cause of this derailment was speed, with contributing factors being extreme weather conditions and train handling, as the engineer should have refreshed his brakes more often in the extreme weather conditions that were encountered that

PROBBLE CAUSE AND CONTRIBUTING FACTORS:

The cause of this derailment was excessive speed and the contributing factors of this derailment were 24-30 inches of snow on the ground and near white out conditions. The download shows the recorded speed of this train was 65 mph at the time of derailment. According to CSX Baltimore Division Timetable Number Six, Keystone Subdivision Special Instructions relating to air brake and train handling Rule 5559, the speed of a 17,300 ton unit train descending the 1.47% Sandpatch grade is restricted to 25 mph. Based on the evidence collected, the engineer of CSX Unit Coal Train U883-03 should have conditioned the train brakes more frequently during this trip. As snow fall amounts of this volume will cause snow to build up very quickly between the brake shoes and the wheels. In this instance, snow built up between the brake shoes and wheels and caused a low coefficient of friction, thus causing very low effective braking.

CSX has taken the following steps to ensure derailments of this nature do not happen again. They have

updated the special instructions for descending Sand Patch grade and are currently in the process of continuing the education of their engineers and conductors in the handling of trains in steep grade territories, inclement winter weather operations and helper operations. CSX is in the process of writing a strategic extreme inclement winter weather plan, which will be added to their Keystone subdivision timetable special instructions 5559.