Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2007-04

Union Pacific (UP)
Gore, Oklahoma
January 17, 2007

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-2007-4

1.Name of Railroad Operating Train #1: Union Pacific RR Co. [UP]	1a. Alphabetic Code: UP	1b. Railroad Accident/Incident No.: 0107WH012
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: Union Pacific RR Co. [UP]	4a. Alphabetic Code: UP	4b. Railroad Accident/Incident No.: 0107WH012
5. U.S. DOT_AAR Grade Crossing Identification Number:	6. Date of Accident/Incident: Month 01 Day 17 Year 2007	7. Time of Accident/Incident: 12:50: ☐ 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	Witchita

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr	16. State Code	17. County
Gore	548.5	N/A	OK	SEQUOYAH

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
35 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
Single Main Track	4	38	2

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	CROWB914

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?
15 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)*: 18886	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)*	ETRX750089	25	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

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	1
(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	133	0	0	0	0
(2) Total Derailed	14	0	0	0	0

37. Equipment Damage: This Consist	38. Track, Signal, Way, & Structure Damage	39. Primary Cause Code	40. Contributing Cause Code
$707,317.00	$624,790.00	T220	N/A

Number of Crew Members

41. Engineer/ Operators	42. Firemen	43. Conductors	44. Brakemen
2	0	1	0

Length of Time on Duty

45. Engineer/Operator	46. Conductor
Hrs 9 Mi 13	Hrs 9 Mi 13

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

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?
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)*: 0

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

64. Equipment Damage This Consist: $0.00

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

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
0	0	0	0

Length of Time on Duty

72. Engineer/Operator: Hrs 0 Mi 0

73. Conductor: Hrs 0 Mi 0

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: 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 0

84. Trailing Tons *(gross tonnage, excluding power units)*: 0

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
0	0

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

90. 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

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. 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

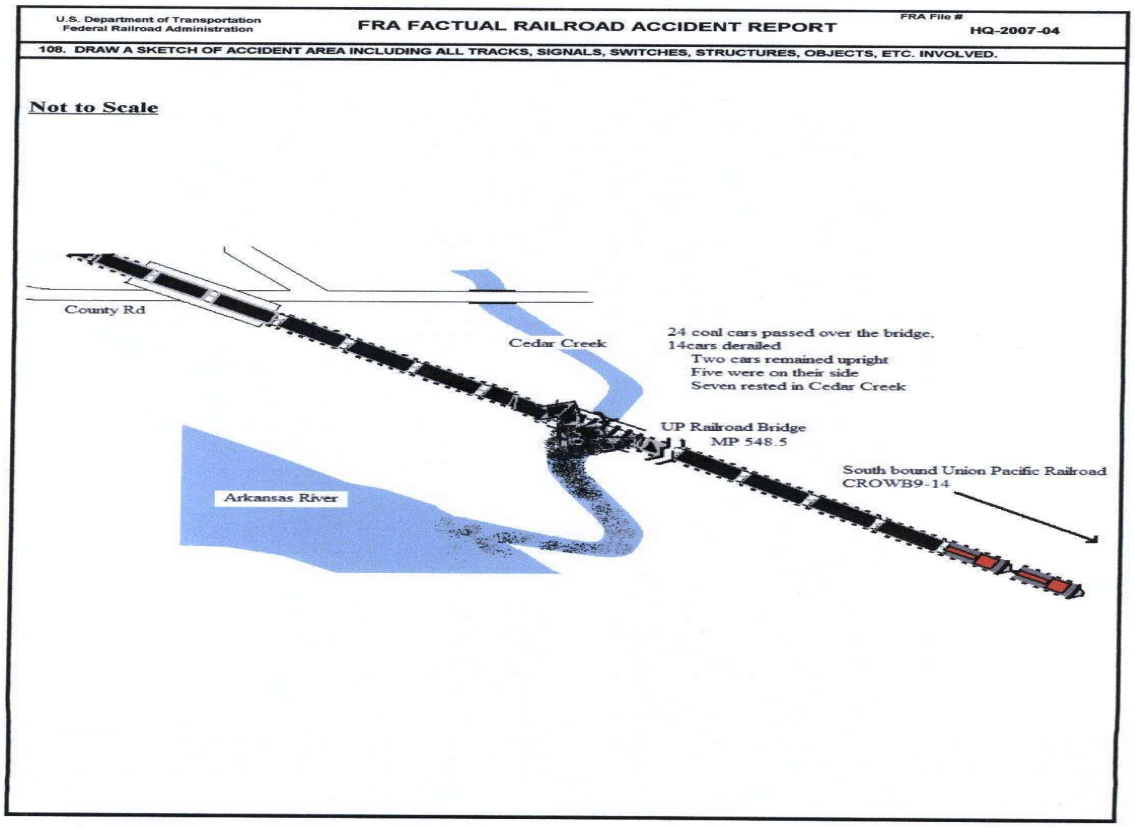
121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)*	Code
0		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	0	0	130. Highway Vehicle Property Damage *(est. dollar damage)*	0	131. Total Number of Highway-Rail Crossing Users *(include driver)*	0

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.



137. SYNOPSIS OF THE ACCIDENT

A southbound Union Pacific Railroad (UP) freight train derailed on January 17, 2007, at approximately 12:50 p.m. The accident occurred near Gore, Oklahoma, at UP Milepost 548.6, on the UP Wagoner Subdivision.

A bridge at that location was destroyed. A total of 14 cars derailed; two remained upright, five turned over on their side, and seven fell off the bridge into Cedar Creek. There were no injuries to the train crew. There was extensive damage to track, roadbed, bridge, and equipment totaling about $1,328,000.

At the time of the incident it was daylight and cloudy, the temperature was 35º F. Exposed surfaces in the area were covered with ice due to a previous storm.

The accident, as stated in the UP incident report, was caused by a broken rail (detail fracture).

138. NARRATIVE

Circumstances Prior to the Accident

At 3:09 a.m. CST, on January 17, 2007, a Union Pacific Railroad (UP) train crew consisting of an engineer, a conductor, and a student engineer reported for duty at the UP terminal office in Coffeyville, Kansas. The crew attended to necessary paperwork and held a job briefing, then were transported to Parsons, Kansas where they boarded the southbound CROWB9-14. All members of the crew received more than the statutory off duty period prior to reporting for duty.

Their assigned freight train consisted of two lead locomotives, 113 loaded cars of coal, and one remote locomotive located at the rear of the train. The train, scheduled to travel to Van Buren, Arkansas, was 7404 feet long, and weighed 18886 tons.

The CROWB9-14 proceeded south from the Parsons terminal with the student engineer at the controls of the leading locomotive, the conductor was seated at the left side of the locomotive and the engineer was seated in the center of the locomotive between the conductor and student engineer.
The railroad timetable direction of the train was south. The geographic direction was southeast. Timetable directions are used throughout this report.

Approaching the area of the accident from the north there are in succession a 3-degree, 11-minute curve to the left and a tangent 1.4 miles to the point of the accident and several miles beyond. There is a .31 percent ascending grade.

As the train approached the north switch at the siding at Braggs, the crew encountered a red stop signal indication and the student engineer stopped the train to allow the conductor to inspect and operate the switch manually, assuring that the switch was functional and properly positioned for movement of the train. The conductor then boarded the locomotive and, after receiving permission from the dispatcher to pass the red signal, the crew proceeded to move the train south at restricted speed.

Southward UP Coal Train # CROWB9-14 continued to proceed at restricted speed through the area due to a succession of red signal indications. The train crew's view was unobstructed as they ascended a hill in approach to a bridge at UP mile post 548.6. The student locomotive engineer utilized the dynamic engine brakes of the lead locomotives to control the train as the head end of the train passed over the crest of the hill, at the same time he used the remote locomotive to push the rear portion of the train up the hill. The train proceeded without incident and the crew did not observe any defective conditions of the track as they progressed through the area and over the bridge which was located at Cedar Creek.

After approximately 24 cars had passed over the bridge an automatic emergency application of the train air brake system occurred. Slack action of the train was not noted by the crew as the train came smoothly to a stop. The crew concluded that there had been a malfunction of the train brake system, or the train brake line had been broken. They did not anticipate that there had been a derailment or other incident.

As the train came to a stop, the engineer looked out of the locomotive window to investigate the cause of the emergency brake application. At the same time, the student engineer wlked out of the back door of the locomotive and both crew members observed that cars were derailed at the bridge. the engineer and conductor left the locomotive and proceeded to the point of the derailment to investigate. The student engineer remained on the locomotive and contacted the dispatcher to report the incident.

During this time, the Manager of Track Maintenance (MTM) on the EC-4 car was monitoring the company radio when he overheard the conversation between the dispatcher and the student engineer concerning the derailment. After clearing the main track at Saginaw, Oklahoma, the members of the team including the MTM, the Director of Track Maintenance (DTM), and the Manager of Bridge Maintenance (MBM) departed by vehicle to the site of the derailment.

When they arrived, they assessed the derailed train by parking at a highway-rail grade crossing located approximately one fourth mile north of the bridge and walked the remaining distance. The MTM observed that derailed coal cars were on their side and some were resting in Cedar Creek below the bridge, which had collapsed.

Further observation revealed a broken rail end on the east rail in approach to (north of) the bridge. As the MTM continued his investigation, he noted that the surface of the wheels on the leading locomoptive and subsequent cars were marked on the east side, consistent with marks left by a fractured rail.

After the arrival of UP forces at the site, the crew members of UP Coal Train # CROWB9-14 were removed and taken to Van Buren, Arkansas. At Van Buren they were taken to the Crawford Memorial Hospital for toxicological testing.

ANALYSIS AND CONCLUSION

ANALYSIS:

A sheet of ice covered exposed surfaces as a result of an ice storm which had passed through the area earlier in the week. Ice surrounded expossed cables, wires and power transmission lines producing power outage conditions to surrounding communities. Loss of electrical power also affected the signal system of the railroad and signals remained red (stop indication) through the area traveled by the southbound UP Coal Train # CROWB9-14. The condition caused concern that rail switches may not function properly and instructions were included with the train bullitens to ensure that the train crews stopped and inspected all switches en-route.

The train crew stoppeed at the north end of the siding at Braggs when they encountered a red signal, and in order to comply with instructions included in the train bulliten, the conductor attended to the switch which had been left lined for other than movement by the crew of a northbound train which had passed over the switch previously. After the conductor inspected and re-aligned the switch, the UP Train CROWB9-14 proceeded to move south.

Due to the icey conditions and familiarity with the process of starting train movement at this location, the engineer took over train operations from the student engineer to advance the train from the stopped position. After the train resumed movement, the engineer returned control of the train to the student engineer.

The engineer remained seated near the student engineer in order to observe his operating procedures as they progressed. the train moved at restricted speed (15 mph) without incident past two additional red intermediate signals located at UP mile post 552.7 and mile post 549.3, and through a highway-rail grade crossing at mile post 548.94 in approach to the bridge at mile post 548.6.

As the train traveled over the bridge, the crew did not notice or hear anything out of the ordinary until an emergency application of the train air brakes occurred. Crew members were unaware that cars had derailed on the bridge until they observed the event from ythe locomotive cab.

After the derailment, the crew waited for approximately two hours before the arrival of the UP Investigative Team which took their statments and removed them from the locomotive. They were then transported by high -rail truck to an awaiting van and then to the Van Buren Terminal where written statments were collected before transporting them to the hospital for tests.

CONCLUSION:

The traincrew was in full compliance with Railroad and all other applicable Federal Standards and Rules. The locomotive engineer of the southboud train had been closely observing the operationg practices of the student engineer and did not note any exceptions to his actions. The train was operating at a recorded speed of 15 mph.

Marks on the rail wheels at the derailment site was a good indication that there was a broken rail which caused the marks.

The toxicological tests returned negative results for all crew mambers. No discipline was administered to any crew members or other rail employees.

PROBABLE CAUSE & CONTRIBUTING FACTORS

The accident occurred as a result of a broken rail (detail fracture) as reflected in the UP Railroad Incident Report. Investigation has not revealed any circumstances or conditions to indicate otherwise.