Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2008-59

Union Pacific (UP)
Portland, OR
June 26, 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-2008-59

1.Name of Railroad Operating Train #1: Union Pacific RR Co. [UP]	1a. Alphabetic Code: UP	1b. Railroad Accident/Incident No.: 0608PD014
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.: 0608PD014
5. U.S. DOT_AAR Grade Crossing Identification Number:	6. Date of Accident/Incident: Month 06 | Day 26 | Year 2008	7. Time of Accident/Incident: 06:35: ☑ 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
2	1	0	0	Portland Serv Unit

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr	16. State Code	17. County
Portland	6.9	N/A	OR	MULTNOMAH

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
58 F	1	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
Single Main	4	31.1	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	APDNP-26

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?
39 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)*: 6784	Code(s): e | N/A | 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)*	CNW520003	44	yes
(2) Causing *(if mechanical cause reported)*	CNW520003	44	yes

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

36. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	51	0	29	0	0
(2) Total Derailed	22	0	14	0	0

37. Equipment Damage: This Consist	38. Track, Signal, Way, & Structure Damage	39. Primary Cause Code	40. Contributing Cause Code
$380,000.00	$374,600.00	E61C	N/A

Number of Crew Members

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

Length of Time on Duty

45. Engineer/Operator	46. Conductor
Hrs 3 Mi 5	Hrs 3 Mi 5

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 — 2

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

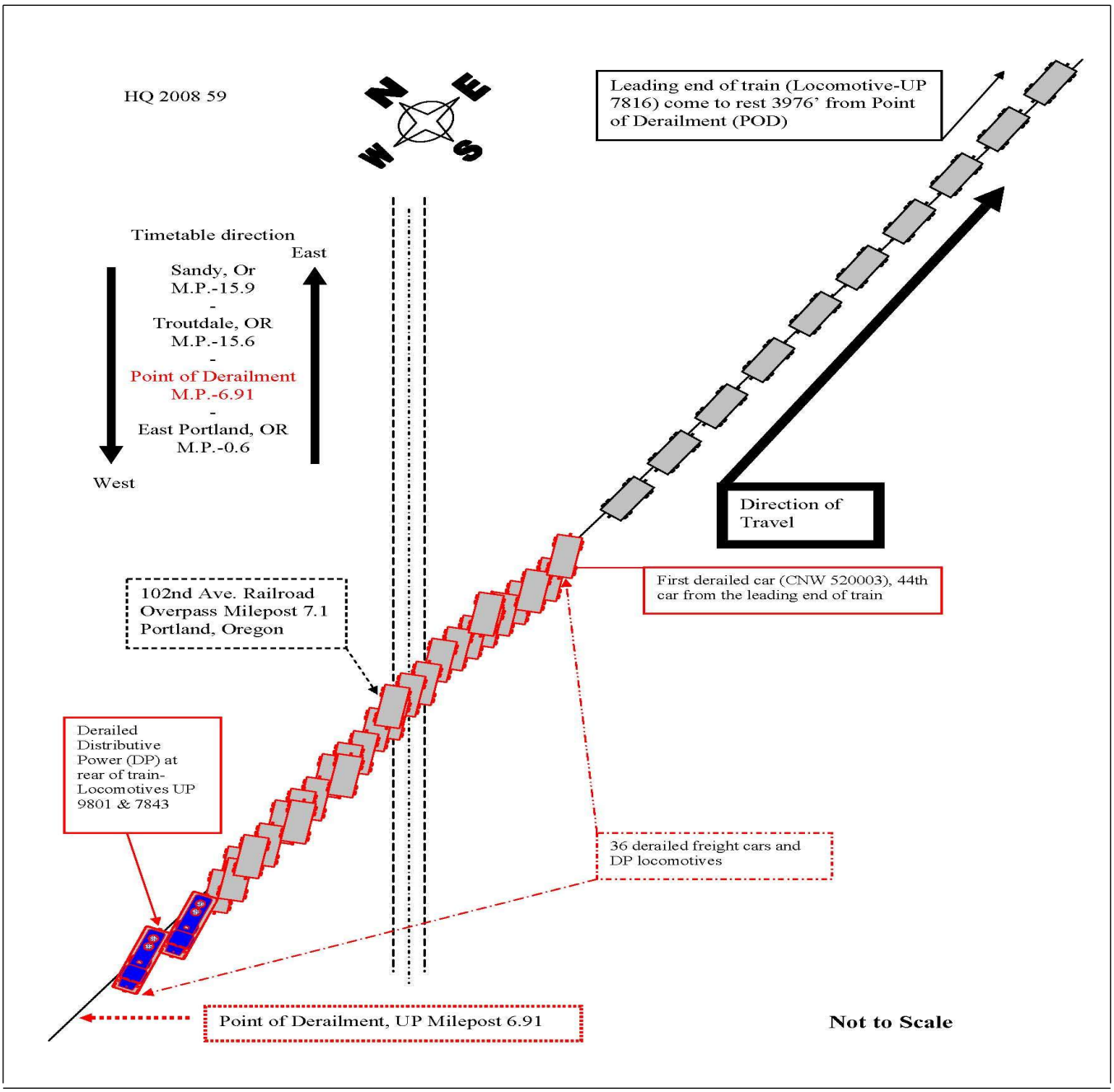
121. Age	122. Driver's Gender 1. Male 2. Female	Code	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)*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

On June 26, 2008 at approximately 6:35 a.m. PDT eastbound Union Pacific Railroad Company (UP) freight train APDNP-26 derailed. The accident occurred on the UP Portland Service Unit, Portland Subdivision, of the Graham Line, on a single Main Track at milepost 6.9 located approximately seven miles east of Portland, Oregon. Two Distributive Power Unit (DPU) locomotives and the rear 36 railcars of the 80 car train derailed.

There was no release of hazardous material and no injuries to the train crew employees.

As a result of the accident the connecting ramp from Interstate 205 to Interstate 84 was closed during the Portland rush hour creating major delays and extensive media coverage.

Reported total estimated damage was $702,520 (track damage of $374,600, and equipment damage of $327,920).

The weather was mostly clear with a temperature of 58° F.

The probable cause of the derailment was a broken wheel rim FRA Code E61C on the R-2 wheel of the 44th car in the train. - CNW 520003.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

The crew assigned to operate eastbound UP freight train # APDNP-26 included a locomotive engineer, a conductor, a student engineer, and a pilot. The crew went on duty at their home terminal at 3:30 a.m. PDT on June 26, 2008 at the UP Albina Rail Yard in Portland, Oregon. Prior to reporting for duty all crew members received the required statutory off duty rest period.

The train consisted of three locomotives attached to the head end of the train, 51 loaded and 29 empty mixed freight rail cars, and two Distributed Power Unit (DPU) locomotives attached to the rear of the train. The train was 6,710 feet in length and weighed 6,782 tons. The train originated in Portland and was traveling east en route to North Platte, Nebraska, a distance of approximately 1,300 miles.

The train received a Class One Air Brake Test at 1:20 a.m. on June 26, 2008 in Portland prior to departure. After conducting a job briefing and being delaying by other train movements, the train departed Albina at 5:57 a.m.

As the train approached the accident site at a recorded speed of 39 mph the student engineer was seated at the controls located on the right (south) side of the locomotive. The engineer was sitting in a jump seat located behind and to the left of the student engineer. The conductor was seated at the conductors table on the left (north) side of the locomotive. The pilot was sitting in a seat behind the conductor. The conductor was performing paper work and monitoring the radio. The engineer was instructing the student engineer and the pilot was an instructor in the use of DPU locomotives.

Approaching the accident site from west to east the track is tangent 1,000 feet to milepost 6.7, a 2-degree curve to the left to the point of derailment (POD) at milepost 6.9, and 2,944 feet beyond. The track grade in the accident area is 0.17 percent ascending. The train came to a stop approximately 3,976 feet east of the POD.

In the accident area trains operate on a single main track under the authority of a Traffic Control System (TCS). The UP Portland Area Timetable # 3, effective June 26, 2005, authorizes a maximum freight train speed of 50 mph on FRA Class 4 track. The timetable and geographic direction that the train was traveling at the time of the derailment was east. Time Table direction will be used throughout this report.

THE ACCIDENT

The student engineer and the conductor stated as they approached the accident site that the trip had been uneventful. The train was being operated at a recorded speed of 39 mph when, according to the train crew, they felt a tug on the train as if the brakes had begun to apply. The student engineer increased the throttle from the Run 2 position to the Run 4 position. The train continued the tugging sensation and began slowing down. The student engineer reduced the throttle and a train line induced emergency air brake application occurred. The train then slowed to a stop.

As soon as the train stopped the crew determined there were no injuries and the conductor walked back and inspected the train. He discovered the two DPU locomotives and 36 railcars had derailed in a straight line with thirty cars remaining upright and six lumber cars on their sides.

ANALYSIS AND CONCLUSIONS:

The first car to derail was the 44th head car. The derailed cars were the rear 36 cars of the 80 car train.

The accident did not meet the requirement for FRA Post Accident Toxicology Testing, as required under Title 49 CFR, Part 219. The crew was not tested.

ANALYSIS: - FATIGUE

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

CONCLUSION:

Upon analysis of that data information FRA concluded fatigue was not probable for any of the train crew employees.

Inspection of the data printout from the locomotive event recorder revealed no unusual events related to train handling. The times shown on the event recorder printout were off by 13 minutes and the corrected time of the derailment was 6:35 a.m.
Inspection of the track indicates that the derailment occurred at milepost 6.9 and the train traveled 3,976 feet east before coming to a stop subsequent to the incident. The track is constructed of wooden railroad cross ties that were installed in 2003, and 133 lb rail relayed in 1992. No exceptions to the track structure were noted.

Prior to departure the train received all required equipment tests including a Class One Air Brake Test on June 26, 2008 in Portland. In addition to the airbrake test performed, railcar CNW 520003, the first car to derail, had been inspected on June 23, June 24 and June 25 during movements from Brooklyn Yard to Albina Yard and prior to its release on UP freight train APDNP-26.

Inspection of the derailed equipment indicated a defective condition on the 44th car, number CNW 520003. The rim on the R-2 wheel of CNW 520003 had broken. The wheel is a 36 inch heat treated curved plate Type CH36, serial number 506276, and was built in October, 1997. The wheel was sent to a laboratory for further analysis. The laboratory concluded that the wheel broke under traffic resulting in the derailment.

As a result of the accident the connecting ramp from Interstate 205 to Interstate 84 was closed during the Portland rush hour creating major delays and extensive media coverage.

PROBABLE CAUSE AND CONTRIBUTING FACTORS:

The probable cause of the derailment was a broken wheel rim FRA Code E61C on the R-2 wheel of the 44th

car in the train, - CNW 520003 - E61C - Broken Rim.