Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2005-77

Union Pacific (UP)
Gibbon, Nebraska
September 13, 2005

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-2005-77

1.Name of Railroad Operating Train #1: Union Pacific RR Co. [UP]	1a. Alphabetic Code: UP	1b. Railroad Accident/Incident No.: 0905NP017
2.Name of Railroad Operating Train #2: N/A	2a. Alphabetic Code: N/A	2b. Railroad Accident/Incident: N/A
3.Name of Railroad Responsible for Track Maintenance: Union Pacific RR Co. [UP]	3a. Alphabetic Code: UP	3b. Railroad Accident/Incident No.: 0905NP017
4. U.S. DOT_AAR Grade Crossing Identification Number	5. Date of Accident/Incident: Month 09 / Day 13 / Year 2005	6. Time of Accident/Incident: 06:15:00 ☑ AM ☐ PM

7. 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): 01

8. Cars Carrying HAZMAT	9. HAZMAT Cars Damaged/Derailed	10. Cars Releasing HAZMAT	11. People Evacuated	12. Division
0	0	0	0	North Platte

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr	15. State Code	16. County
Gibbon	179.9	N/A	NE	BUFFALO

17. Temperature (F) (specify if minus)	18. Visibility (single entry) 1. Dawn 2. Day 3.Dusk 4.Dark	Code	19. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow	Code	20. Type of Track 1. Main 2. Yard 3. Siding 4. Industry	Code
57 F		1		1		1

21. Track Name/Number	22. FRA Track Class (1-9, X)	Code	23. Annual Track Density (gross tons in millions)	24. Time Table Direction 1. North 3. East	Code
Main Track No. 3		5	197		3

OPERATING TRAIN #1

25. 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	26. Was Equipment Attended? 1. Yes 2. No	Code	27. Train Number/Symbol
	1	1. Yes	1	CJRHP911

28. Speed (recorded speed, if available) R - Recorded E - Estimated: 49 MPH | Code: R

29. Trailing Tons (gross tonnage, excluding power units): 18968

30. 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): d | e | N/A | N/A | N/A

30a. 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

31. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)
(1) First involved (derailed, struck, etc)	N/A	82	yes
(2) Causing (if mechanical cause reported)	0	0	N/A

32. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
0	0

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

34. 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

35. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	134	0	0	0	0
(2) Total Derailed	27	0	0	0	0

36. Equipment Damage This Consist	37. Track, Signal, Way, & Structure Damage	38. Primary Cause Code	39. Contributing Cause Code
113405	399430	T299	N/A

Number of Crew Members

40. Engineer/ Operators	41. Firemen	42. Conductors	43. Brakemen
N/A	0	1	0

Length of Time on Duty

44. Engineer/Operator	45. Conductor
Hrs 7 Mi 35	Hrs 7 Mi 35

Casualties to:	46. Railroad Employees	47. Train Passengers	48. Other
Fatal	0	0	0
Nonfatal	N/A	0	0

49. EOT Device? 1. Yes 2. No	50. Was EOT Device Properly Armed? 1. Yes 2. No
1	1

51. Caboose Occupied by Crew? 1. Yes 2. No: N/A

OPERATING TRAIN #2

52. 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	53. Was Equipment Attended? 1. Yes 2. No	Code	54. Train Number/Symbol
	N/A	1. Yes	N/A	N/A

55. Speed (recorded speed, if available) R - Recorded E - Estimated: N/A MPH | Code: N/A

57. Method(s) of Operation (enter code(s) that apply)
a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track

57a. Remotely Controlled Locomotive?
0 = Not a remotely controlled; 1 = Remote control portable

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56. 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

58. 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

59. 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

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

61. 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

62. 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

63. Equipment Damage This Consist: N/A

64. Track, Signal, Way, & Structure Damage: N/A

65. Primary Cause Code: N/A

66. Contributing Cause Code: N/A

Number of Crew Members

67. Engineer/ Operators	68. Firemen	69. Conductors	70. Brakemen
N/A	N/A	N/A	N/A

Length of Time on Duty

71. Engineer/Operator: Hrs N/A Mi N/A

72. Conductor: Hrs N/A Mi N/A

Casualties to:	73. Railroad Employees	74. Train Passengers	75. Other
Fatal	N/A	N/A	N/A
Nonfatal	N/A	N/A	N/A

76. EOT Device? 1. Yes 2. No: N/A

77. Was EOT Device Properly Armed? 1. Yes 2. No: N/A

78. Caboose Occupied by Crew? 1. Yes 2. No: N/A

Highway User Involved

79. Type — 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)

80. Vehicle Speed (est. MPH at impact): N/A

81. Direction geographical) — Code: N/A
1.North 2.South 3.East 4.West

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

86a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? — Code: N/A
1. Highway User 2. Rail Equipment 3. Both 4. Neither

Rail Equipment Involved

83. 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)

84. Position of Car Unit in Train: N/A

85. Circumstance — Code: N/A
1. Rail Equipment Struck Highway User
2. Rail Equipment Struck by Highway User

86b. Was there a hazardous materials release by — Code: N/A
1. Highway User 2. Rail Equipment 3. Both 4. Neither

86c. State here the name and quantity of the hazardous materials released, if any.: N/A

87. Type of Crossing Warning — Code(s): N/A | N/A | N/A | N/A | N/A | N/A | N/A
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

88. Signaled Crossing Warning (See instructions for codes) — Code: N/A

89. Whistle Ban — Code: N/A
1. Yes
2. No
3. Unknown

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

91. Crossing Warning Interconnected with Highway Signals — Code: N/A
1. Yes
2. No
3. Unknown

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

93. Driver's Age: N/A

94. Driver's Gender — Code: N/A
1. Male
2. Female

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

96. Driver — Code: N/A
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)

97. Driver Passed Standing Highway Vehicle — Code: N/A
1. Yes 2. No 3. Unknown

98. View of Track Obscured by (primary obstruction) — Code: N/A
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

101. Casulties to Highway-Rail Crossing Users	Killed	Injured
	N/A	N/A

99. Driver Was — Code: N/A
1. Killed 2.Injured 3. Uninjured

100. Was Driver in the Vehicle? — Code: N/A
1. Yes 2. No

102. Highway Vehicle Property Damage (est. dollar damage): N/A

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

104. Locomotive Auxiliary Lights? — Code: N/A
1. Yes 2. No

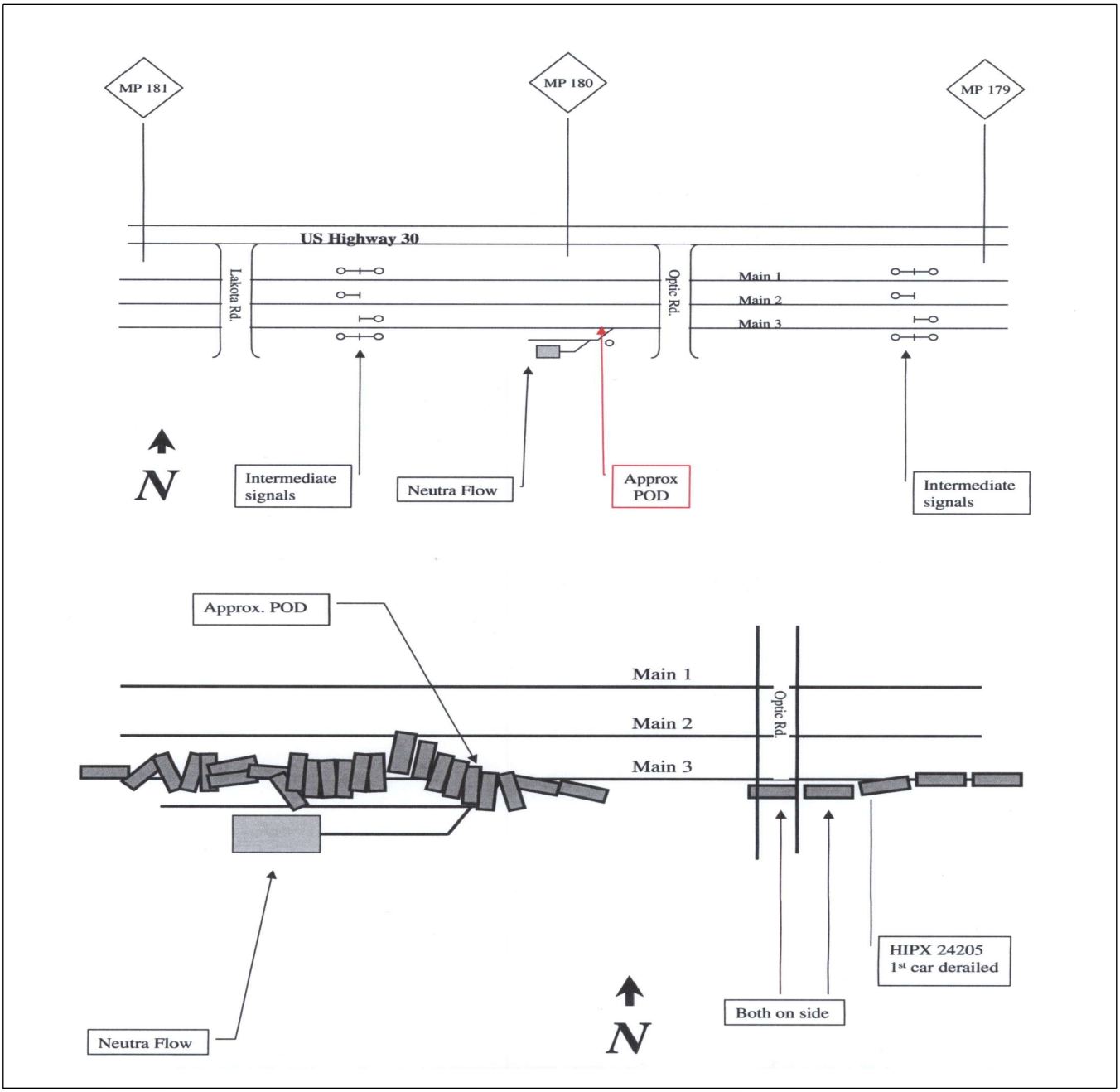
105. Locomotive Auxiliary Lights Operational? — Code: N/A
1. Yes 2. No

106. Locomotive Headlight Illuminated? — Code: N/A
1. Yes 2. No

107. Locomotive Audible Warning Sounded? — Code: N/A
1. Yes 2. No

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

HQ-2005-77 Sketch.jpg



109. SYNOPSIS OF THE ACCIDENT

An eastbound loaded coal train derailed the 80th through 106th head cars of their train on
September 13, 2005, at 6:15 a.m. CDT. The derailment occurred approximately 4.3 miles east of Gibbon, Nebraska, at milepost (MP) 179.9, on main Track No. 3, of the UP Kearney Subdivision.

As a consequence to the accident, the derailed cars also blocked main Tracks No. 1 and No. 2, that run parallel on the north side of main Track No. 3. There were no injuries or hazardous material spills as result of the derailment. Monetary damages reported for the derailment totaled $1,532,835.

At the time of the accident, it was dawn with cloudy skies and a temperature of 57 °F.

The probable cause of the derailment was determined to be a broken rail, although the exact type of break was not determined.

110. NARRATIVE

The following information was obtained from an investigation that was conducted by the Federal Railroad Administration.

Circumstances Prior to the Accident

The train crew of Train Symbol CJRHP9-11 consisted of an engineer and conductor. They first went on duty at 11:15 p.m., CDT, September 12, 2005, at North Platte Terminal in North Platte, Nebraska. This was their home terminal and both had received more than the required statutory off-duty period prior to reporting for duty.

Their assigned train consisted of two locomotives on the head end, 134 loaded coal cars, and a remote locomotive on the rear-end. The loaded unit coal train was 7,458 feet long and weighed 18,968 tons. This crew was scheduled to take the train to Marysville, Kansas.

There was no work performed en route after departing and the trip was uneventful for the 108 miles leading up to the derailment.

As the eastbound train approached the accident area, the locomotive engineer was seated at the controls on the south side of the lead locomotive. The conductor was seated on the north side of the same locomotive.

The track structure through, and leading up to, the accident site is tangent track with very little grade at this location. It is constructed of 133-pound continuous welded rail on concrete crossties. A left-hand turnout was also located at the derailment sight. The turnout was a No. 10 turnout with a spring-rail frog on concrete ties that leads to two stub tracks owned by Nutra-Flow, a fertilizer company. It was a trailing movement over this turnout.

The railroad timetable direction and geographical direction of the train is east.

The Accident
The train was being operated at 48 mph approaching the derailment area. According to the train crew, they did not observe or feel anything unusual prior to this area. The speed at the time of the derailment was also 48 mph. Both speeds were recorded by the event recorder of the controlling locomotive. Maximum authorized speed for this train was 50 mph as designated in current UP Council Bluffs Area Timetable No. 2.

Analysis and Conclusions

Analysis
The two crew members of Train Symbol CJRHP9-11 were FRA mandatory post-accident toxicologically tested after the accident. The test results obtained from the FRA Alcohol and Drug Control Program Manager were negative.

The event recorders for both lead locomotives revealed nothing inconsistent with normal train handling at, or 10 miles prior to, the time of the derailment.

The last ultrasonic rail detection test through this area was on August 29, 2005, and the last geometry car survey with the railroad's EC-4 car, was on July 7, 2005, with no defects noted in the immediate area.

Two suspicious pieces of broken rail found in the derailment were sent to the UP lab in Omaha, Nebraska, for analysis. There was some receiving batter on the

ends of these rails, but no indications of defects could be found. The lab determined the batter happened after the derailment and did not contribute to the cause.

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Conclusion

The railroad was in compliance with their own and all applicable FRA standards. There were no witnesses to the accident, other the train crew, who stated they didn't feel anything out of the ordinary before they experienced the undesired emergency application of the train's air brakes.

Nothing was found at the derailment that could positively be attributed as the cause. The data reviewed from the event recorder ruled out train handling as a cause. There were no marks found on the rail or ties prior to the point of derailment (POD) . There were also no track components, i.e. bridges, grade crossings, or culverts, at the POD area that could have contributed to the cause. The one turnout near the POD was a trailing point move. The spring wing rail frog and switch point were recovered, and showed no signs that they were contacted by the outer edge of a wheel or other contributory factors. The grade and curvature of the track were not a factor in this derailment for the speed involved.

It was found that the 79 rail cars prior to the first car derailed had marks on their south wheels. The marks were progressively worse from the cars at the head of the train to the last car to stay on the rail. This indicated that a rail most likely broke under one of the locomotives in this train, causing the eventual accident.

Probable Cause & Contributing Factors

T-299 Other rail and joint bar defects. Although field investigations and lab analysis concluded a broken rail was the probable cause of this derailment, it was impossible to determine the exact rail defect due to the extensive damage to the rail