Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2006-63

Union Pacific
Klamath Falls, OR
July 14, 2006

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-2006-63

1.Name of Railroad Operating Train #1 Union Pacific RR Co. [UP]	1a. Alphabetic Code UP	1b. Railroad Accident/Incident No. 0706PD009
2.Name of Railroad Operating Train #2 Union Pacific RR Co. [UP]	2a. Alphabetic Code UP	2b. Railroad Accident/Incident 0706PD009
3.Name of Railroad Responsible for Track Maintenance: Union Pacific RR Co. [UP]	3a. Alphabetic Code UP	3b. Railroad Accident/Incident No. N/A
4. U.S. DOT_AAR Grade Crossing Identification Number	5. Date of Accident/Incident Month 07 / Day 14 / Year 2006	6. Time of Accident/Incident 05:00: ☐ 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) — **04**

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

13. Nearest City/Town	14. Milepost (to nearest tenth)	15. State Abbr	15. State Code	16. County
Klamath Falls	427.6	N/A	OR	KLAMATH

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
75 F	2	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 CRS Crossover	1	45	4

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: 7

26. Was Equipment Attended? 1. Yes 2. No — Code: 1

27. Train Number/Symbol: LIM49-14

28. Speed (recorded speed, if available) — Code
R - Recorded
E - Estimated 7 MPH — R

29. Trailing Tons (gross tonnage, excluding power units): 1350

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): l | n | 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; 2. South 4. West
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	14	yes
(2) Causing (if mechanical cause reported)	N/A	N/A	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	1	0	0	0	0
(2) Total Derailed	0	0	0	0	0

35. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	13	0	0	0	0
(2) Total Derailed	2	0	0	0	0

36. Equipment Damage This Consist	37. Track, Signal, Way, & Structure Damage	38. Primary Cause Code	39. Contributing Cause Code
5280	20404	H307	N/A

Number of Crew Members

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

Length of Time on Duty

44. Engineer/Operator	45. Conductor
Hrs 10 Mi 0	Hrs 10 Mi 0

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 — 2

50. Was EOT Device Properly Armed? 1. Yes 2. No — N/A

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: 1

53. Was Equipment Attended? 1. Yes 2. No — Code: 1

54. Train Number/Symbol: QPDRV-13

55. Speed (recorded speed, if available) — Code
R - Recorded
E - Estimated 10 MPH — R

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)	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)	2 = Remote control tower 3 = Remote control transmitter - more than one remote control transmitter
8502			e g l N/A N/A	0

58. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded (yes/no)	59. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.	Alcohol	Drugs
(1) First involved (derailed, struck, etc)	HLSC3 003	69	yes		N/A	N/A
(2) Causing (if mechanical cause reported)	0	N/A	N/A	60. Was this consist transporting passengers? (Y/N)		N

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

62. Cars	Loade a. Freight	Loade b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	59	0	22	0	0
(2) Total Derailed	0	0	0	0	0

63. Equipment Damage This Consist	64. Track, Signal, Way, & Structure Damage	65. Primary Cause Code	66. Contributing Cause Code
36636	0	H307	N/A

Number of Crew Members				Length of Time on Duty	
67. Engineer/ Operators	68. Firemen	69. Conductors	70. Brakemen	71. Engineer/Operator	72. Conductor
1	0	1	0	Hrs 1 Mi 0	Hrs 1 Mi 0

Casualties to:	73. Railroad Employees	74. Train Passengers	75. Other
Fatal	0	0	0
Nonfatal	0	0	0

76. EOT Device? (1. Yes 2. No)	77. Was EOT Device Properly Armed? (1. Yes 2. No)	78. Caboose Occupied by Crew? (1. Yes 2. No)
1	1	N/A

Highway User Involved

79. Type	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

80. Vehicle Speed (est. MPH at impact)	81. Direction geographical) 1.North 2.South 3.East 4.West	Code
N/A		N/A

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

86a. 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)	Code
	N/A

Rail Equipment Involved

83. 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

84. Position of Car Unit in Train
N/A

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

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

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

87. Type of 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	N/A	

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

89. Whistle Ban (1. Yes 2. No 3. Unknown)	Code
	N/A

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

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

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

93. Driver's Age	94. Driver's Gender (1. Male 2. Female)	Code
0		N/A

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

96. 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

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

98. 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

101. Casulties to Highway-Rail Crossing Users	Killed	Injured
	0	0

99. Driver Was (1. Killed 2.Injured 3. Uninjured)	Code
	N/A

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

102. Highway Vehicle Property Damage (est. dollar damage)	103. Total Number of Highway-Rail Crossing Users (include driver)
0	0

104. Locomotive Auxiliary Lights? (1. Yes 2. No)	Code
	N/A

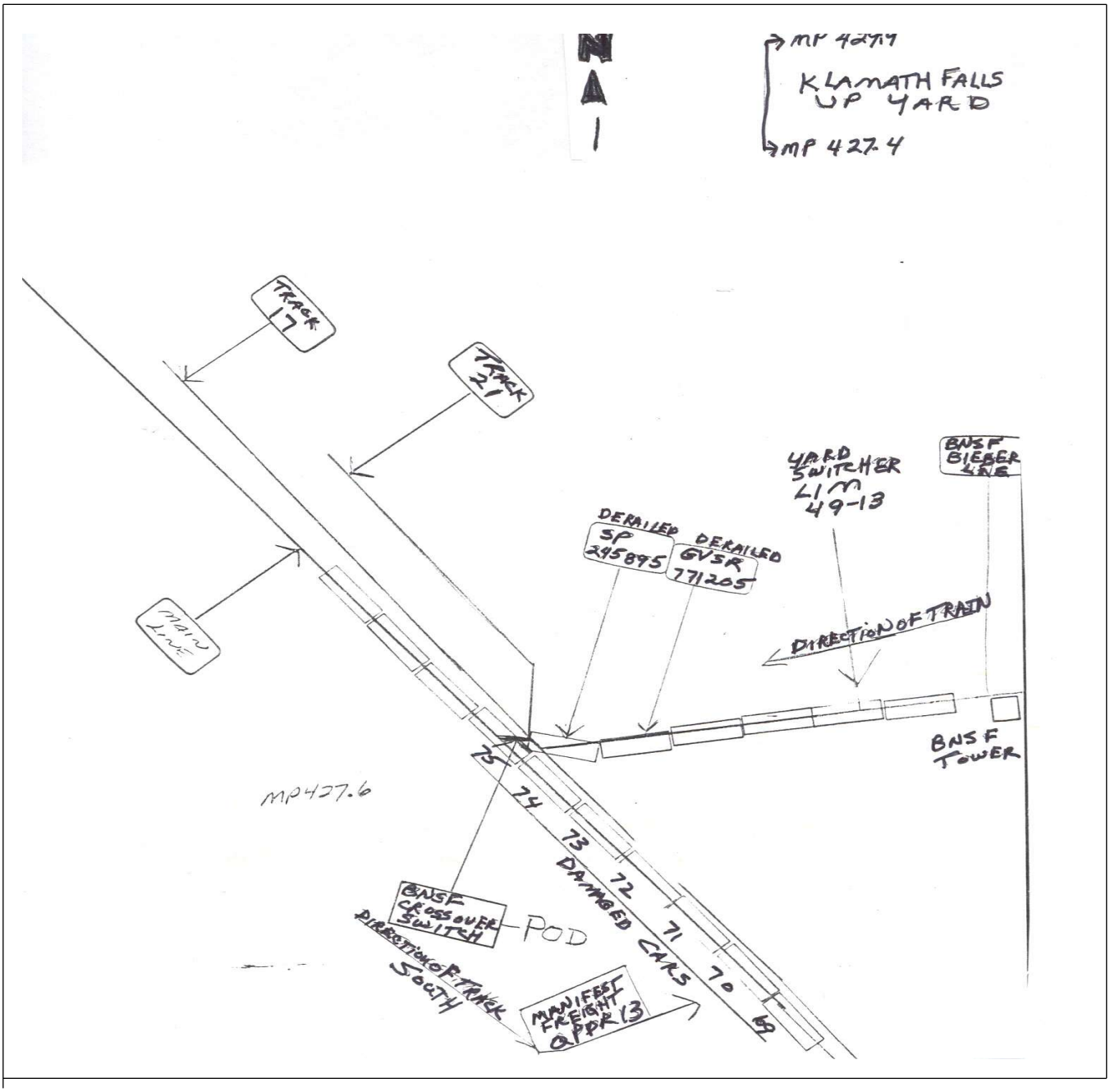
105. Locomotive Auxiliary Lights Operational? (1. Yes 2. No)	Code
	N/A

106. Locomotive Headlight Illuminated? (1. Yes 2. No)	Code
	N/A

107. Locomotive Audible Warning Sounded? (1. Yes 2. No)	Code
	N/A

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

HQ-63Sketch.jpg



109. SYNOPSIS OF THE ACCIDENT

On July 14, 2006, at 5:00 p.m., PDT, a westbound Union Pacific Railroad (UP) yard switch train, LIM49-14, collided with UP QPDRV-13, a freight train moving southbound. The side collision derailed the two leading cars of the 13 cars being shoved ahead of the locomotive by the yard switch crew. No cars were derailed on the freight train. The collision occurred at the main track crossover switch located at UP milepost 427.6 on the Portland Service Unit, Cascade Subdivision, in Klamath Falls, Oregon. This location is where BNSF Railway Company (BNSF) owned track connects with UP owned track.

The yard switch train consisted of one locomotive and 13 loaded cars. The southbound freight train consisted of three locomotives, 59 loaded cars and 22 empty cars.

The yard switch train crew was transferring the 13 cars (shoving ahead of the locomotive) from the BNSF yard to the UP yard when the train entered the crossover switch which was improperly lined for their intended movement. The cars were shoved onto the UP main track and collied with the 69th car of the southbound freight train.

According to the crew, the air brakes were coupled and operating, but were not tested as this was a switching move.

At the time of the collision the yard switch train was operating at a recorded speed of 7 mph and the southbound freight train was operating at a recorded speed of 10 mph.

There were no injuries to any train crew members and no release of hazardous materials.

At the time of the accident it was sunny, clear, and 75° F.

The railroad reported equipment damage of $41,916 and track damage of $20,400.

The probable cause of the collision was even though the brakeman was in the area of the leading end of the shoving movement, he did not have the switches lined properly for the intended movement, and did not control the movement.

"Shoving movement, man on or at leading end of movement, failure to control the movement."

110. NARRATIVE

Circumstances Prior to the Accident

LIM49-14 (yard switch train)

The conductor, brakeman and engineer assigned to the yard switch train reported for duty at UP's Klamath Falls yard, which is their home terminal, at 7:00 a.m. PDT, on July 14, 2006. Prior to reporting for duty they received at least a required statutory off duty period. The cars they were handling consisted of one locomotive and 13 loaded cars. It was 910 feet long and weighed 1,350 tons. The crew reported no mechanical problems with the locomotive or cars prior to movement.

The UP crew was assigned to move 13 cars, ahead of their engine, from the BNSF yard to the UP yard in Klamath Falls.

In the area of the accident the train was operating under "other than main track" and "yard track" operating rules. Maximum operating train speed in the area is 10 mph.

At the time of the accident the engineer was seated at the controls located on the right (north) side of the locomotive, the conductor was seated on the left (south) side of the locomotive and the brakeman was on the ground near the track 17 yard switch of the UP yard. The track 17 yard switch is located just north of the main track crossover switch , where the collision occurred.

Approaching the accident site through the crossover, the track has a 0.4-percent descending grade.

QPDR-13 (southbound freight train)

The conductor and engineer assigned to the freight train, symbol QPDR-13, went on duty at the Klamath Falls, their home terminal, at 4:00 p.m. PDT, on July 14, 2006. Prior to reporting for duty they received at least a required statutory off duty period. The southbound freight train consisted of three locomotives, 59 loaded cars and 22 empty cars. The train was 6037 feet long and weighed 8,502 tons. It was a freight train traveling from Klamath Falls to Dunsmere, California, a distance of 107 miles.

At the time of the accident the engineer was seated at the controls located on the right (west) side of the locomotive (cab), the conductor was seated on the left (east) side of the locomotive (cab).

Approaching the accident site the track is tangent with a 0.4-percent ascending grade.

In the accident area, trains operate on a single main track under the authority of a traffic control system and yard limit rules. The UP Portland Service Unit, Timetable No. 3, effective 0001 Sunday, June 26, 2005, authorizes a maximum freight train speed of 25 miles per hour. The timetable and geographic direction the train was traveling was south.

The Accident

The UP yard switch crew was transferring 13 loaded cars from the BNSF yard to the UP yard by shoving the cars ahead of the locomotive with the short nose of the locomotive toward the cars. While making the movement the train was traveling westbound. The transfer distance was approximately one half mile. The transfer

was intended to go from the BNSF yard to UP yard track 17 then onto track 21.

The southbound freight train was traveling on a single main track.

The yard switch crew conducted a job briefing, via company radio, in the BNSF yard, prior to movement. It was determined during the briefing that the brakeman would drive ahead of the train in a vehicle and protect the shoving movement and make sure all the switches were properly lined for their intended destination. Before starting their movement toward the UP yard, the brakeman informed the engineer, by radio, that the train could be operated with no obstructions for 60 freight car lengths and all switches were lined for the proper movement.

After starting the movement the engineer saw a southbound freight train and asked the brakeman which track was occupied by the southbound train. The brakeman verified the train was on the main track and was not on any track the yard switch train would occupy. The brakeman of the yard switch train again communicated by radio that the track 17 switch was lined for their intended route and instructed the engineer to keep shoving the train on the clear track. Shortly thereafter, the crews of both trains heard the brakeman say stop, stop, stop on the radio. Both the yard switch train and the southbound freight stopped.

Upon investigation, the conductor of the yard switch train observed the crossover switch from track 17 to the main track was lined and locked toward the main track and that the yard switch train had collied with the freight train, derailing the lead two cars they were shoving. The conductor also determined that no cars on the southbound freight had derailed.

The investigation also revealed that prior to the accident the brakeman on the yard switch train drove past the crossover switch, parked the vehicle he was driving, then walked back past the crossover switch and lined the track 17 switch for movement. The brakeman then observed the train enter the crossover and strike the southbound freight train that was traveling on the main track. The brakeman told investigating officers that he did not notice that the crossover switch was improperly lined.

As a result of the collision seven cars on the freight train received damage.

Analysis and Conclusion

The railroad reported equipment damage of $41,916 and track damage of $20,400.

The accident did not meet the requirements of FRA Post Accident Toxicology Testing, as required by Title 49 CFR, Part 219, Subpart C. However, the UP tested all crew members of the yard switch train under their own reasonable cause authority. The results were negative.

The brakeman stated that he did not observe the crossover switch improperly lined for movement prior to the accident.

Probable Cause

The FRA determined that the probable cause of the collision was even though the brakeman was in the area of the leading end of the shoving movement, he did not have the switches lined properly for the intended movement, and did not control the movement.

"Shoving movement, man on or at leading end of movement, failure to control the movement."