

Federal Railroad Administration Office of Safety Headquarters Assigned Accident Investigation Report HQ-2005-33

> Union Pacific (UP) Blairstown, Iowa April 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 (FEDERAL RAILR	OF TRA OAD A	ANSPORT DMINIST	FATIO FRATI	ON ION	FRAFA	ACTUA	L RA	ILR	OAD A	CC	IDENT F	REPOI	RT]	FRA Fi	le #	<u>HQ-200</u>)5-3	3	
1.Name of Railroad C	1a.	1a. Alphabetic Code					b. Railroad Accident/Incident No.													
2.Name of Railroad O	2a	2a. Alphabetic Code 2					0405CB009 2b. Railroad Accident/Incident													
Union Pacific RR C		A11 1	UP	4.			D-11 1	0405CI	3009	1										
3.Name of Railroad R	3a.	3a. Alphabetic Code					Railroad A	Accident	/Inci	dent No.										
4. U.S. DOT_AAR G	5. D	5. Date of Accident/Incident					N/A 6. Time of Accident/Incident													
		Month Day Year																		
7. Type of Accident/In	ndicent	ment		4. Side c	ollision		7.	7. Hwy-rail crossing			Explosi	on-deton	ation 13							
(single entry in cod	1 	8. RR grade crossing 11. Fire/violent rupture (describe in narrative)																		
8 Core Corruina		3. Rear e	nd coll	ision	sion 6. Broken Train collision				9. Obstruction 12. Oth				npacts						01	
S. Cars Carrying 9. HAZMAT Cars HAZMAT 17 Damaged/Derailed					d 0 HAZMAT				0 Evacuated					0			council Bluffs			
13. Nearest City/Town	n				14. Milepost					15.	5. State Abbr Code			16. County						
		Blairs	town		(to nearest t				07.8		N/A					BENTON				
17. Temperature (F) (specify if minus)		18. Visit	oility Dawn	(single entry) Code 3.Dusk			19. W	er (singl	r (single entry) r 3 Rain 5 Sleet			de	20. Type of Track			k C		Code		
57	F	2.	Day	4.I	Dark	2	2	. Clou	udy 4. Fog		6.Snow		1	2. Yard 4. In		Industry			1	
21. Track Name/Num	ber				22. FRA Tra Class (1)				Code	23.	3. Annual Track Density			24. Time Table			Direction (
			Trac	k No. 1	1		. ,		5		millions)	1	12.38						3	
							OPER	ATI	NG TRA	AIN	#1									
25. Type of Equipment 1. Freight train 4. Work train 7. Yard/switching A. Spec. MoW Equip. Code 26. Was Equipment Code 27. Train Number/Syn Attended?													/Symbol							
3. Commuter train 6. Cut of cars 9. Maint/inspect.car 1 1. Yes 2. No 1 QNPC																				
28. Speed (recorded s	28. Speed (recorded speed, if available) Code 30. Method(s) of Operation (enter code(s) that apply) 30a. Remotely Controlled Locomotive?														ive?					
R - Recorded a. ATCS g. Automatic block m.Special instructions 0 = Not a4emonthy confidented E - Estimated 28 MPH R b. Auto train control h. Current of traffic n. Other than main track 1 = Remote control portable																				
29. Trailing Tons (gross to	nnage,			. Auto trair . Cab	ıstopi i	. Time ta .Track w	able/tr /arran	ain orders t control	s o. F p. (Positive train	control	mativa)	2 = Rem 3 = Rem	ote cont	rol to trol	ower			
excluding power units) e. Traffic k. Direc									c control		Code	(s)		transmitter - more than one						
	11803 f. Interlocking 1.Yard limits b N/A N/A N/A remote control transmitter 0														0					
31. Principal Car/Unit		a. Initial	and Nu	ımber	b. Positio	on in Train	n c. I	Loade	ed(yes/no)	32	2. If railroad enter the	employe	e(s) teste hat were	ed for drug positive i	g/alcoho in	l use	,		Drugs	
(1) First involved (derailed, struck, e		1				N/A the appr			priate bo	x.	1			N/A	+	N/A				
(2) Causing (if mec	hanical	l U	P 9458	;	1				I/A	3	33. Was this	consist t	ransport	ing passer	ngers? (ers? (Y/N)			N/A	
34. Locomotive Units a. Head					rain	Re	ar End		35. Car	rs			Lo	ade	Empty					
		End	b. Ma	nual	c. Remote	d. Manua	l c. Rei	mote	(1)			a.	Freight	b. Pass.	c. Fre	ight	d. Pass.	e. (Caboose	
(1) Total in Train		0		0	0	0	0		(1) 1 ota	I in E	equipment Co	onsist	0	0	0		0		0	
(2) Total Derailed	1	0		0	0	0	0		(2) Total	l Der	ailed		0	0	()	0		0	
This Consist	ge	0	:	37. Tra & !	7. Track, Signal, Way, & Structure Damage 1 0				38. Primary Cause Code N/A					39. Contributing Cause Code N/A						
Image A structure Damage Number of Crew Members									Length of Time on Duty											
40. Engineer/ 41. Firemen 4				42. Conductors 43. Brakemen					44. Engineer/Operator					45. Conductor						
N/A	N/A			N/A			N/A		Hrs 0			Mi	0	Hrs 0 Mi 0				0		
Casualties to:	46. Raili	road Emplo	oyees 4	7. Tra	in Passenger		$- \begin{vmatrix} 49. \text{ EOT Device} \\ 1. \text{ Yes } 2. \text{ No} \end{vmatrix} $					50. Was EOT Device Properly Armed? 1. Yes 2. No N/A								
Fatal	ratal 0			0 0			0	51. Caboose Occupied by C			/ Crew?	w?								
Nonfatal N/A					0		1. Yes 2. No										N/A			
						0	PERAT	ГINC	G TRAIN	N #2										
52. Type of Equipment 1. Freight train 4. Work train 7. Yard/switching A. Spec. MoW Equip. Code 53. Was Equipment Code 54. Train Number/Symbol																				
Consist (single ent	ury) 2. 3.	Commuter	r train	6. Cu	t of cars 9.	Maint./in	spect.ca	r			1		1. Yes	2. No 1			CNA	CNAP W11		
55. Speed (recorded s	speed, if	available)	Code	e 57.	Method(s)	of Operati	on (enter	nter code(s) that apply)						57a. Remotely Controlled Locomotive?					
R - Recorded a. ATCS g. Autor E - Estimated 0 MPH R b. Auto train control b. Curre								natic b nt of tr	tic block m.Special instructions of traffic n. Other than main track						U = Not a remotely controlled 1 = Remote control portable					
I		1		1 0					-					1		•				

50. Total grand samage. exclusing room with selecting	DEPARTMEN FEDERAL RA	NT OF T	RAN DADI	SPORT MINIST	TATIO RAT	ON ION	FRA FA	ACTUA	L RAILR	OAD AC	CII	DENT I	REPO	ORT	F	RA File #	<u>HQ-200</u>	<u>5-33</u>	
$ \begin{array}{ c c c c c c c c c c c$	56. Trailing Tons (gross tonnage, excluding power units) d e						Auto train Cab Traffic	ain orders o. Positive train control control p. Other (Specify in narrative) c control					2 = Remo 3 = Remo transmit remote c						
$\begin{split} & \text{Price} \text{Carlind} \text$	18909					f.	Interlockin	g 1.	Yard limits		b	N/A 1	N/A	N/A N/A		0			
I) Part introverse (1) Part introv	58. Principal Car/Unit a. Initial and Nu					lumber	b. Posit	ion in Trair	1 c. Load	led(yes/no)	59.	If railroad	i emple	oyee(s) teste er that were	ed for drug	g/alcohol us	se,	Druge	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	(1) First involved UP (derailed, struck, etc) 5501							138		no	the appropriate box.					0			
Diamond Loconsolve Units a. Head Marrai c. Remote Manual c. Remote Gamma c. Remote Gamma c. Remote Gamma c. Caboo (1) Total in Train 2 0 0 0 1 (1) Total in Equipment Consult 133 0 1 <td colspan="5">(2) Causing (if mechanical cause reported) 0</td> <td></td> <td></td> <td>0</td> <td></td> <td>N/A</td> <td colspan="6">60. Was this consist transporting passengers? (Y/N)</td> <td>)</td> <td>N</td>	(2) Causing (if mechanical cause reported) 0							0		N/A	60. Was this consist transporting passengers? (Y/N))	N	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	61. Locomotive Units a. Head End b. Mar			Mid anual 1	Train c. Remote	Rea d. Manual	ar End	62. Cars Lo a. Freight					ade b. Pass.	e. Caboose					
(2) Total Derailed 0 0 0 1 (2) Total Derailed 1 0 0 0 0 61. Figurement Parage This corsis 229558 61. Track. Signal. Way, & Structure Damage 0 1.6. Figure Could Code Hoto 0 0 0 67. Engineer/ Operators 0 Figure Restors 0 0.0 1.8 5 Mid 45 Conductor 0 0 0 1.9 2.00 1 1.7 2.00 1 1.7 2.00 1 1.7 2.00 1.0 1.7 2.00 1.0 1.0	(1) Total in Train			2		0 0		0	1	(1) Total in	n Equ	Equipment Consist		135	0	0	0	0	
63. Figurent Damage This Coolst 225558 64. Frank, Signal, Way & Structure Damage 0 65. Frank Takes Code Code Length of Time on Duty EBHL 70. Engineer/ Operators 68. Fittemen (The Signal Way 60. Fittemen (The Signal Way 70. Engineer/ (The Signal Way 71. Engineer/ (The Signal Way 72. Combustor 72. Combustor </td <td>(2) Total Der</td> <td colspan="2">(2) Total Derailed 0</td> <td>0</td> <td>0</td> <td>0</td> <td>1</td> <td>(2) Total D</td> <td>Derail</td> <td>ed</td> <td></td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td>	(2) Total Der	(2) Total Derailed 0		0	0	0	1	(2) Total D	Derail	ed		1	0	0	0	0			
Number of Cow Members Length of Time on Day Length of Time on Day 7. Engineer/ Operators 68. Firemen 60. Conductors 70. Brakemen 71. Engineer/ 0 71. Engineer/ His 72. Conductor 72. Conductor Gausslies to: 73. Railroad Employee 74. Train Passengern 75. Other 76. EOP Device? 77. Was EOT Device Properly Armol? Final 0 0 0 78. Cohoeo Occupied by Crew? 77. Schooe Occupied by Crew? 2 79. Type Crouk-Trainer, F. F. R. J. Other Motor Vehicle Code 83. Equipment Train (canding) 61.Light Loco(3) (noving) 74. Jight(4) (stranding) 79. Type Crouk-Trainer, F. F. R. J. Other Motor Vehicle Code Rail Equipment Train (canding) 61.Light Loco(3) (noving) 74. Jight(4) (stranding) 80. Vehicle Speed (81. Direction gographical) Code NA 83. Equipment Train (canding) 80.Dire (coperly in narrative) NA 28. Sotiion (81. Direction gographical) Code NA 85. Circumstance 1. Rail Equipment Struck Highway User NA 1. Highway User 2. Rail Equip	63. Equipment Da This Consist	63. Equipment Damage 6 This Consist 229558					ack, Signal, Structure Da	Way, amage	0	65. Primar Code	i5. Primary Cause 66. Contributing Cause Code H605 Code				use	E04L			
67. Eggineer/ Operators 68. Firemen 60. Conductors 70. Brakemen 71. Engineer/ Operators 72. Condector 72. Conductor Casualites to: 73. Railroad Employee 74. Train Passengers 75. Other 1 1 0 0 76. Engineer/ Operators 77. Was EOT Device Property Armed? Nonfatal 0 0 0 0 1. Yes 2. No 1 1. Yes 2. No 2 Maintail 0 0 0 0 1. Yes 2. No 1 1. Yes 2. No 2 To Device Vertup Figure Property Armed? 8. Exployment 3. Train (stanang) GLight Loco(1) (consing) Code 1. Yes 2. No 1 1. Yes 2. No 1 N/A 80. Vehicle Speed 81. Direction gegraphica) Code Kit N/A		1		Numbe	r of C	rew Me	mbers	0 1				I		Length of	Time on D	uty			
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	67. Engineer/	68.	Firen	nen		69. Co	nductors	70. Bra	akemen	71. Engin	eer/O	perator			72. Con	ductor			
Casualities to: 73. Railroad Employees 74. Train Passengers 75. Other 76. EOT Device? 77. Was EOT Device? Morend? Fatal 0 0 0 1. Yes 2. No 1 79. Type Truck-Trailler, F, Bas 1. Other Motor Vehicle Code 33. Equipment 3. Train (standing) 6. Light Loco(s) (moving) Code 80. Vehicle Speet B. Direction georgraphical Code 35. Equipment 3. Chaining spating) 4. Car(s) (moving) 7. Light(s) (standing) NAA 80. Vehicle Speet B. Direction georgraphical Code Code 5. Circumstance 0 5. Car(s) (maxing) NAA 80. Vehicle Speet B. Direction georgraphical Code S. Car(s) (maxing) NA NA 82. Position 0 1. North 2.South 3.East 4.West N/A S. Car(s) (maxing) NA S. Car(s) (maxing) NA 86. Was the hightway user and/or rail equipment involved Code S. Car(s) (maxing) NA S. Car(s) (maxing) NA 86. Was the hightway user and/or rail equipment involved Code S. Car(s) (maxing) N	Operators 1	Operators 1 1				1		0		Hrs	5	M	i 45		Mi 45				
Fatal0001. Yes2. No1Nonfatal0001. Yes2. No1Nonfatal00001. Yes2. No178. TogotHighway UserInvolvedRail EquipmentRail Equipment2. No219. TypeC. Tuck-Tniler, F. BasJ. Oher Moor VehicleCode33. Equipment3. Train (standing)5. Light Loco(s) (moving)Code8. AucoD. Feldol BusK. ObersteinN/ANAState 4. NoNA4. Catr(s) (moving)1. State 4. No80. Vehicle Speed81. Direction geographical)CodeCode4. Position of Car Unit in Train084. Position of Car Unit in Train081. Statel do Crossing 2. Stopped on Crossing 3. Moving Over CrossingN/AN/A86. Was there a hazardous materials release byCode1. Highway User2. Rail Equipment Struck Highway User2. Rail Equipment Struck Highway UserN/A86. State here the name and quantity of the hazardous materials Released, if any.N/A87. Type of1. Gates4. Wrig Wags7. Crosshuck in D.Fagged by crewCode(s)N/AN/AN/A87. Type of1. GatesCode9. Diver Trows Branck or was Struck by Scond Train80. Location of WarningN/AN/AN/A81. LinkownN/AN/AN/A82. Stade of Vehicle ApproachN/AN/A83. Standard FLSCode9. Divers Trows Branck or was Struck by Scond Train <td< td=""><td>Casualties to:</td><td>73. R</td><td>lailroa</td><td>ad Emplo</td><td>oyees</td><td>74. Tra</td><td>in Passenge</td><td>rs 75. Oth</td><td>ier</td><td colspan="5">76. EOT Device?</td><td colspan="5">77. Was EOT Device Properly Arm</td></td<>	Casualties to:	73. R	lailroa	ad Emplo	oyees	74. Tra	in Passenge	rs 75. Oth	ier	76. EOT Device?					77. Was EOT Device Properly Arm				
Nonfaul 0 0 0 1 Y8 Choose Occupied by Crew? 2 79. Type High way User Involved Rail Equipment Involved Rail Equipment Involved Strain (standing) 6.Light Loco(s) (moving) Code A Auu D. Pick-Up Track Trailer, F. Bus J. Other Motor Vehicle NA Strain (standing) 5.Light Loco(s) (moving) VLaght(standing) Strain (standing) 6.Light Loco(s) (moving) NIA 80. Vehicle Speed 81. Ditriction geographical) Code NA B.Other (speciry in narrative) NIA 81. Fuck IE Am H. Motorycle M. Other (spec: in narrative) NIA Standiaution of Car Unit in Train 0 82. Position 81. Ditriction geographical) Code 84. Position of Car Unit in Train 0 82. Position 1. North 2.South 3.East 4.West N/A 84. Position of Car Unit in Train 0 85. Uncentrastance N/A Standiauter Intrastous materials released, if any: N/A N/A 1. Highway User 2. Rail Equipment Struck Highway User N/A N/A 87. Trapped Lidates 4.Wig Wages 7.Cossing Caninter Unit Standis Stop sign:	Fatal			0			0		0	1. Y	1. Yes 2. No 1 1. Yes 2. No							1	
Highway User Nork Rail Equipment Rail Equipment Code 79. Type C. Truck-Truiler. F. Bus J. Other Motor Vehicle Code 83. Equipment 3. Train (standing) 6. Light Locot(s) (moving) Code 81. Truck LW H. Motocycle M. Other (opec. in narrative) N/A Strain (standing) 5. Carlo (standing) 8. Other (opecity in narrative) N/A 80. Vehicle Speed (est. MPH at impact) 81. Direction geographical) Code 84. Position of Car Unit in Train 0 85. Circumstance Code 1. Rail Equipment Struck Highway User N/A 80. Wesh the inghvay user and/or rail equipment involved Code N/A Rest Austrobus Materials release by Code 1. Rail Equipment Struck Highway User N/A 86. Was there a hazerdous materials released, if any. Marning 3. Standard FLS N/A N/A N/A N/A 87. Type of I.Gates 4. Wig Wags 7. Crossing Warning Interconnected with Highway Viser 2. Rail Equipment 3. Both 4. Neither N/A 87. Type of I.Gates 4. Wig Wags 7. Crossing Warning Interconnected with Highway Signals 1. Neithesprecial Lightis 1. Yes	Nonfatal			0			0		78. Caboo	ose O 1.	ccupied by Yes	y Crew	v? 2. No				2		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				Highwa	ay Us	er Inv	olved						Rail I	Equipment	Involved	1			
A. Auo D. P.Rd-Up Track, G. School Bus, K. Pedestrian 1. Unler Motor venue 1. Train(units public) 3. Unler Motor venue 1. Train(units public) 4. Cards() (moving) 7. Light(s) (tanding) 8. Other (specify in narrative) N/A 80. Vehicle Speed (est. MPH at impact) 81. Direction geographical Code (st. MPH at impact) 81. Direction geographical Code 84. Position of Car Unit in Train 0 82. Position 1. North 2. South 3.East 4.West N/A 84. Position of Car Unit in Train 0 83. Direction of Car Unit in Train 0 85. Circumstance Code 4. Trapped 1. North 2. South 3.East 4.West N/A 85. Circumstance Code 1. Highway User 2. Rail Equipment involved Code 86. Was there the name and quantity of the hazardous materials? N/A 87. Type of 1. Gates 4. Wig Wags 7. Crossbucks 10. Flagged by crew Crossing 2. Cantilever FLS 5. Halw, traffic signals 8.Stop signs 1. Nea 80. Location of Warning 0 0 9. Code(s) N/A N/A 81. Direct of Warning 0. Sold of Vehicle Approach 1. Yes 1. Yes 2. Koid of Vehicle Approach 1. Yes 1. Yes 2. No 3. Opposite Side of Vehicle Approach N/A N/A N/A 91. DiverY 94. Divier/s Gender <t< td=""><td>79. Type</td><td></td><td>I. Other</td><td>M-4 X-1-</td><td></td><td>Code</td><td colspan="8">de 83. Equipment</td><td>Code</td></t<>	79. Type		I. Other	M-4 X-1-		Code	de 83. Equipment								Code				
S0. Vehicle Speed (est. MPH at impact) S1. Direction (est. MPH at impact) S1. Directi	A. Auto D. Pick B. Truck E. Van	strian	arrative)	N/A	N/A 2.Train(units pulsing) 5.Car(s) (standing) 7.Light(s) (standing) N/A 2.Train(units pulsing) 5.Car(s) (standing) 8.Other (spacific in parenting)														
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	80. Vehicle Spee	geograph	ical)	Code	Code 84. Position of Car Unit in Train														
82. Position Code 85. Circumstance Code 1. Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing N/A 2. Rail Equipment Struck Highway User N/A 86e. Was the highway user and/or rail equipment involved in the impact transporting harardous materials? N/A 86b. Was there a hazardous materials release by Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither N/A 86b. Was there a hazardous materials release by Code 87. Type of 1. Gates 4. Wig Wags 7. Crossbucks 10.Flagged by crew 88. Signaled Crossing Warning Code 89. Whistle Ban Code 1. Yes 2. Cantifever FLS 5. Hwy, traffic signals 8. Stop signs 11. Other (spec: in narr.) 88. Signaled Crossing Warning Code 89. Whistle Ban Code 1. Code ion of Warning 3.Standard FLS 6.Audible 9. Watchman 12. None 88. Signals 1. Yes 2. No 3. Unknown N/A 2. Side of Vehicle Approach N/A N/A N/A 2. No 3. Unknown N/A 2. No 3. Opposite Side of Vehicle Approach N/A 2. No 3. Unknown N/A 3. Unknown N/A 3	(est. MPH a	outh 3.East	4.West	N/A		0													
A. Trapped N/A 2. Rail Equipment Struck by Highway User N/A 86a. Was the highway user and/or rail equipment involved in the impactruous materials? Code 86b. Was there a hazardous materials release by Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither N/A 86b. Was there a hazardous materials release by Code 86c. State here the name and quantity of the hazardous materials released, if any. N/A N/A N/A N/A 87. Type of I.Gates 4. Wig Wags 7. Crossbucks 10.Flagged by crew (See instructions for codes) 89. Whistle Ban 1. Yes 0 N/A N/A N/A N/A N/A N/A 2. No 3. Ophosite Side of Vehicle Approach N/A N/A N/A N/A 2. No 3. Unknown N/A 97. Driver Passed Standing Code 95. Driver Drove Behind or in Front of Train Code 96. Driver 1. Order (specify in antraive) N/A N/A 97. Driver Passed Standing Code 98. View of Track Obscured by (primary obstruction) N/A 3. Unknown N/A 3. Unknown N/A 97. Driver Passed Standing Code 98. View	82. Position 1.Stalled on 0	loving Over	Crossing	Code	1. Rail Equipment Struck Highway User								Code						
86a. Was the highway user and/or rail equipment involved in the impact transporting bazardous materials? Code 86b. Was there a hazardous materials release by Code 1. Highway User 2. Rail Equipment 3. Both 4. Neither N/A 86c. State here the name and quantity of the hazardous materials released, if any. N/A N/A N/A 87. Type of 1. Gates 4. Wig Wags 7. Crossbucks 10. Flagged by crew Quantity of the hazardous materials released, if any. 88. Signaled Crossing Warning (See instructions for codes) 89. Whistle Ban Code Quee Code(s) N/A N/A N/A N/A N/A N/A N/A 0. Location of Warning Q. Locat	4. Trapped								N/A	2. Rail Ed	quipn	nent Struc	k by H	lighway Use	er			N/A	
1. Highway User 2. Rail Equipment 3. Both 4. Neither N/A 1. Highway User 2. Rail Equipment 3. Both 4. Neither N/A 86c. State here the name and quantity of the hazardous materials released, if any. N/A N/A 87. Type of 1. Gates 4. Wig Wags 7. Crossbucks 10. Flagged by crew (See instructions for codes) 89. Whistle Ban 1. Yes 87. Type of 1. Gates 4. Wig Wags 7. Crossbucks 10. Flagged by crew (See instructions for codes) 89. Whistle Ban 1. Yes 2. No Code(s) N/A N/A N/A N/A N/A N/A N/A 90. Location of Warning Code 91. Crossing Warning Interconnected with Highway Signals Code 92. Crossing Illuminated by Street Code 1. Soth Sides 1. Yes 2. No 3. Unknown N/A N/A N/A 93. Driver's 94. Driver's Gender Code 95. Driver Drove Behind or in Front of Train Code 96. Driver 1. Yes 2. No 3. Unknown N/A 97. Driver Pased Standing Highway Vehicle N/A 1. Yes 2. No 3. Unknown <td colspan="8">86a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials?</td> <td>Code</td> <td>86b. Was t</td> <td>here</td> <td>a hazardo</td> <td>us mat</td> <td>erials releas</td> <td>e by</td> <td></td> <td></td> <td>Code</td>	86a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials?								Code	86b. Was t	here	a hazardo	us mat	erials releas	e by			Code	
S66: State here the name and quantity of the hazardous materials released, if any. N/A S7. Type of I. Gates 4. Wig Wags 7. Crossbucks IO:Flagged by crew S86: State here the name and quantity of the hazardous materials released, if any. N/A S67: Type of I. Gates 4. Wig Wags 7. Crossbucks IO:Flagged by crew S88. Signaled Crossing Warning Code 88. Signaled Crossing Warning Code 89. Whistle Ban Code Odd(s) N/A N/A N/A N/A N/A Odd(s) N/A N/A N/A N/A N/A N/A N/A N/A N/A Standard FLS A. Winkown N/A N/A N/A N/A N/A N/A N/A N/A N/A Standard FLS Standard FLS Standard FLS <th< td=""><td>1. Highway Us</td><td>ser 2. R</td><td>ail Eq</td><td>uipment</td><td>3.</td><td>Both</td><td>4. Neither</td><td></td><td>N/A</td><td>1. High</td><td>way</td><td>User 2.</td><td>Rail E</td><td>quipment</td><td>3. Both</td><td>4. Neithe</td><td>r</td><td>N/A</td></th<>	1. Highway Us	ser 2. R	ail Eq	uipment	3.	Both	4. Neither		N/A	1. High	way	User 2.	Rail E	quipment	3. Both	4. Neithe	r	N/A	
87. Type of Crossing 2. Cantilever FLS 4. Wig Wags 7. Crossbucks in Standard FLS 10.Flagged by crew 11.Other (spec. in narr.) 88. Signaled Crossing Warning (See instructions for codes) 89. Whistle Ban I. Yes 2. No 0.0 Code(s) N/A N/A N/A N/A N/A N/A N/A 90. Location of Warning I. Both Sides Code 91. Crossing Warning Interconnected with Highway Signals Code 92. Crossing Illuminated by Street Lights or Special Lights Code 3. Opposite Side of Vehicle Approach N/A N/A N/A N/A N/A N/A 93. Driver's Age 94. Driver's Gender Code 95. Driver Drove Behind or in Front of Train and Struck or was Struck by Second Train 1. Yes Code 3. Unknown 96. Driver 1. Drove around or thru the Gate 3. Did not Stop 4. Stopped on Crossing 3. Did not Stop Code 3. Did not Stop Stopped and then Proceeded 3. Did not Stop 5. Other (specify in narrative) N/A 97. Driver Passed Standing Highway Vehicle N/A N/A 1. Yes 2. No 3. Unknown N/A 3. Did not Stop N/A N/A 101. Casulties to Highway-Rail Mixed Injured 1. Stilled 2.Lipured 3. Uninjured N/A 1. Yes 2. No N/A	86c. State here the	e name an	d qua	ntity of t	he haz	zardous	materials re	eleased, if a	iny. N/A										
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109. SYNOPSIS OF THE ACCIDENT

An eastbound UP freight train collided with a stopped eastbound UP freight train on April 13, 2005, at 1:45 p.m. The accident occurred near Blairstown, Iowa, at UP milepost (MP) 107.8 on the UP Council Bluffs Service Unit, Clinton Subdivision.

The fireman in training (FIT), of the striking train was injured when he jumped from the locomotive prior to the collision. The three locomotives and first five cars of the striking train were derailed as a result of the collision; four of the five cars came to rest fouling the other main track. The rear distributed power unit (DPU) UP 5591 and last rear car of the standing train were derailed. Total reportable damages for this accident were \$1,278,813.

At the time of the accident, it was daylight and clear with a temperature of 57°F.

The accident was caused by the crew of the striking train failing to comply with General Code of Operating Rules (GCOR) 17.5.1 - ATC Rule - Over 40 mph; 17.5.2 - ATC Rule - Under 40 mph; and 6.27 Movement at Restricted Speed (see attachment # 43).

Contributing factor was a faulty check valve within the locomotive air brake system which prevented the train brakes from applying when the main brake handle was positioned to the suppression position.

110. NARRATIVE

Circumstances Prior to the Accident

Train Symbol UP QNPCH-12

The crew of Train Symbol QNPCH-12 included a locomotive engineer, a fireman in training (FIT) to become an engineer, and a conductor. They went on duty at 9 a.m., CDT, April 13, 2005, at Boone, Iowa. This was the home terminal for all crew members, and all received at least the statutory off-duty period prior to reporting for duty.

Their assigned freight train consisted of three locomotives, 104 loaded, and 11 empty cars. It was 8,114 feet long and weighed 11,803 tons. The crew was scheduled to operate the train from Boone to Clinton, Iowa, a distance of approximately 200 miles. The train had received a Class 1 initial terminal air brake test at North Platte, Nebraska, on April 12, 2005, at 5:25 p.m., the day prior to the accident.

Train Symbol UP CNAPW-11

The crew of Train Symbol CNAPW-11 included a fireman in training (FIT), locomotive engineer, and a conductor. They went on duty at 8 a.m., CDT, April 13, 2005, at Boone. This was the home terminal for all crew members, and all received more than the statutory off duty period prior to reporting for duty.

Their assigned freight train consisted of two locomotives, 135 loaded, and 0 empty cars, with a DPU locomotive on the rear of the train (UP 5591). The train was 7,512 feet long and weighed 18,909 gross tons. The crew was scheduled to operate the train between Boone and Clinton, Iowa, a distance of approximately 200 miles.

Events prior to Accident

The method of operation in this area is by signal indications of an Automatic Train Control System (ATC) which is arranged to govern movements with the current of traffic. There are no wayside signals in this area, and the current of traffic direction is to the left. Through this area, the UP operates on two main tracks, with a east/west timetable direction, with main Track No. 1 to the North, and main Track No. 2 to the South. The maximum authorized timetable speed across this subdivision is 70 mph with various speed restrictions in effect.

In this area of the railroad, the track is tangent to MP 109.8 where there is a 2-degree 7-minute curve to the right to MP 109.4, followed by a tangent to MP 107.9, where there is a 1-degree curve to the left to the point of the accident. There is a .57-percent-descending grade approaching the accident site which gradually levels and then rises to a .16-percent ascending grade at the point of collision.

The crew of Train Symbol CNAPW-11 reported nothing unusual occurred prior to the restricted signal they received at approximately MP 108. They contacted the Train Dispatcher at the Harriman Dispatching Center in Omaha, Nebraska, and were told that they would be stopping at the next hold point for about 20 minutes for some maintenance-of-way work being preformed ahead of them. They stopped approximately one-half mile west of the hold point so the train would not block any grade crossings.

The crew of Train Symbol QNCPH-12 stated after reviewing their train orders and track bulletins, they departed Boone at approximately 9:50 a.m. CDT with the FIT (student engineer) operating the train, the engineer in the middle seat, and the conductor seated in the left seat of UP 9458, the lead and controlling locomotive of the train. The crew stated that the first portion of the trip was uneventful until reaching Marshalltown, Iowa, MP 150, where they received an undesired emergency application of the train's air brake system, immediately following the student engineer making approximately a 10-lb. air brake pipe reduction.

The Accident

After recovering the train's air, they continued operating eastward and reported the trip was uneventful until they experienced their first restricting cab signal of the trip at milepost MP 110.09. The train was traveling at approximately 32 mph, and the FIT reported he acknowledged the restricting aspect by depressing the train's cab signal acknowledging device. Although the FIT did not immediately make an air brake reduction of the train's air brake system at the time he received the restricting cab signal aspect to comply with restricted speed, he stated he did operate the locomotive's throttle which was in position "notch 8" at the time, a notch at a time until reaching throttle position "notch 1".

The train's speed continued to increase as they were operating in an area of descending grade (0.02 percent), until the train reached a speed of 41 mph at MP 109.40, where the on-board ATC system sounded the overspeed whistle. All three crew members reported the FIT placed the train's main air brake lever in the suppression position at this time, and further stated the sound from the venting air seemed suppressed and unlike the normal sound that they would have expected to hear. The train continued to gradually gain speed until it reached a speed of 45 mph.

GCOR's 17.5.1, and 17.5.2, both require the engineman to reduce the train's speed to restricted speed if the cab signal aspect continues to display restricting. GCOR 6.27 defines restricted speed (in part) as, prepared to stop within half range of vision looking out for train, engine, car, men working on tracks, derail or switch not properly lined, not exceeding 20 mph.

As the Train Symbol QNCPH-12 approached MP 107.8, where Train Symbol CNAPW-11 was stopped on main Track No. 1 ahead, the FIT sighted the headlight of the DPU locomotive on the rear of the train and realized a collision was imminent.

The FIT stated he shouted to the engineer and conductor there was a train on the track ahead, as he placed the main brake handle in the emergency position and quickly exited though the door behind the engineer's controls, ran to the rear of the locomotive, and jumped toward the south side of the train. The engineer and conductor remained aboard the locomotive and braced themselves for the impact.

Train Symbol QNPCH-12 impacted with the DPU (UP5591) on the rear of Train Symbol CNAPW-11 at a recorded speed of 28 mph. No injuries were received by the crew members of either train other than the FIT of the striking train received a laceration to the back of his head that required stitches and numerous abrasions to his back after jumping from the rear of the lead locomotive unit.

As a result of the impact, the three locomotive units and two of the first five cars from Train Symbol QNPCH-12 derailed. The first three cars of Train Symbol QNPCH-12 landed on their sides, blocking both mains, and the coal car from Train Symbol CNAPW-11 was completely destroyed, with the DPU resting in the upright position on top of the remains and contents of the car. There were hazardous materials in the consist of the striking train, but none involved in the derailment. The fuel tanks of the second locomotive of Train Symbol QNPCH-12 were punctured, spilling approximately 2,000 gallons of diesel fuel. FRA reportable damages are estimated to be a total of \$725,813, and total cost estimated at \$1,278,813 including clean-up.

Analysis

Post-accident toxicological testing was performed on all crew members of both Train Symbols QNPCH-12 and CNAPW-11. Results for all crew members were negative.

An in-depth inspection was performed to train line and braking equipment of those cars on Train Symbol QNPCH-12 which were not derailed as a result of the collision. Although there were minor defects noted during the inspection, there were no exceptions noted which would have prevented the brakes from applying at the time the crew stated they placed the train's main air brake handle in the suppression position.

Preliminary tests were also performed to the ATC equipment aboard UP 9458, the lead and controlling of Train Symbol QNPCH-12. Although no exceptions were taken during these preliminary tests, it should be noted the locomotive sustained significant damage and not all tests could be performed as a result of the damage. The ATC equipment box was secured and the locomotive was moved to the locomotive shop in Little Rock, Arkansas, for further testing and repairs.

Due to substantial damage sustained in the collision, the locomotive required a "one-time-move" waiver from FRA prior to being transported to Little Rock "Jenks" locomotive shop. After the waiver was granted on April 21, the locomotive was transported to Little Rock and arrived on April 25, 2005. Some repairs were required before further testing could be initiated such as replacement of the ATC receiver bars and portions of the locomotive's air line, which were damaged on the underside of the locomotive in the collision.

After initial repairs were completed, an FRA team arrived on April 26, 2005, and along with UP managers, began in-depth testing of the locomotives air brake system and on-board ATC system. It was quickly discovered a one-way check valve within the number 8 pipe of the locomotive's air brake system was defective. The defective valve allowed air to pass in the wrong direction when the main brake handle was placed in the suppression position. This allowed air pressure to drive the release control valve up in its cylinder and prevented air from reducing in the equalizing reservoir, thereby circumventing the full service brake application of the train's air brakes.

Due to the fact the restricting aspect of the on-board ATC system occurred while the train was traveling at less than medium speed (40 mph), the system only required the crewman operate the acknowledging device. An on-board ATC restricting cab signal by rule requires the crew to reduce the train's speed to 20 mph and operate in accordance with the requirements of restricted speed as defined within the General Code of Operating Rules (GCOR). When the crew failed to comply with the requirements of restricted cab signal and allowed the train's speed to exceed 40 mph, this constitutes an overspeed condition causing the overspeed whistle to sound and requiring the automatic brakes be applied at the full service rate within 8 seconds, or a penalty brake application will be initiated by the ATC system. Since the FIT placed the locomotive's automatic brake handle in the suppression position within 8 seconds, this satisfied the requirements of the ATC system. The ATC system recognized the action taken by the FIT when he placed the automatic brake handle in the suppression position and had the number 8 pipe check valve not failed, the train would have stopped prior to colliding with Train Symbol CNAPW-11.

The defective check valve was removed from UP 9458 and disassembled to determine what caused the valve to fail. It was readily evident the internal spring which returns the shuttle to the "check" position was folded within the cylinder and binding with the shuttle. This binding action combined with the reduced spring action caused by the folded spring allowed the shuttle to not return to the "check" position on an intermittent basis.

Conclusions

Several immediate actions were recommended by FRA to determine the extent of the problem related to the number 8 pipe check valve as it relates to other locomotives so equipped. The following initiatives have been implemented by the Union Pacific Railroad Company (UP):

Operating Practices

- System General Order # 5 with changes to rules 9.8, 17.3, 17.5.1, 17.5.2, and 17.5.3.
- 72-hour Safety Stand-down.
- Simulator training to include the collision scenario.
- Crew contacts at on-duty points.
- Deployment of FTX testing teams.

Mechanical

On locomotives equipped with the 30ACDW Air Brake System, a task has been issued to qualify the Number 8 check valve. Changed Outbound Consist Departure Test to include testing of the No. 8 Check Valve.

Form FRA F 6180.39 (11/06)

6

FRA FACTUAL RAILROAD ACCIDENT REPORT

Purchase the No. 8 Check Valve from vendor which is refurbished and tested versus rebuilding in-house.

An additional recommendation was made to address the operating requirements should a crew experience a similar situation where placing the automatic brake in suppression fails to slow the train.

All recommendations were well received by UP and have since been implemented. A locomotive maintenance instruction (LMI) has been issued along with instructions on how to test for a defective number 8 pipe check valve. This test is currently being performed during the initial terminal air brake test for the train.

An operating rule change was issued requiring the crew to initiate an emergency application of the train's braking system should a suppression application fail to slow the train.

The actions taken by UP should detect a similar defective number 8 pipe check valve prior to the train being dispatched its initial terminal. Should an intermittent failure escape detection at the time of the initial terminal air brake test, the operating rule change addresses the action required to be taken by the crew.

Probable Cause & Contributing Factors

The primary cause was determined to be H605 - Failure to comply with restricted speed in connection with the restrictive indication of a block or interlocking signal.

The secondary cause was determined to be E04L -Other brake components damaged, worn, broken, or disconnected (LOCOMOTIVE).