

Federal Railroad Administration Office of Safety Headquarters Assigned Accident Investigation Report HQ-2008-23

> Amtrak (ATK) Des Moines, IA March 2, 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.

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DEPARTMENT FEDERAL RAILF	OF TRA ROAD A	ANSPORT DMINIST	ATIC RATI	ON ON	FRAFA	ACTU.	AL RA	ILR	ROAD AG	CCIE	DENT R	EPORT		I	FRA Fi	le #	<u>HQ-200</u>	8-23	
1.Name of Railroad Operating Train #1									1a. Alphabetic Code					1b. Railroad Accident/Incident No.					
Amtrak [ATK] 2.Name of Railroad (2a.	2a. Alphabetic Code N/A					2b. Railroad Accident/Incident No.												
3.Name of Railroad (3a.	. Alphabetic	Code			3b. I	3b. Railroad Accident/Incident No.												
N/A										N/A				N/A					
4.Name of Railroad I Amtrak [ATK]	4a. Alphabetic Code ATK					4b. I	4b. Railroad Accident/Incident No. 107219												
5. U.S. DOT_AAR C	6. l Mo	Date of Acc onth 03	ident/I	ncident v 02 Ye	ar 2008	7. T	. Time of Accident/Incident 07:30:00 🗸 AM				PM								
8 Type of Accident/I	ndicent	1. Deraili	nent		1 Side c	ollision		7	7. Hwy-rail crossing 10. Explosion-de				deton	onation 13. Other Code					
(single entry in code box) 2. Head on collision 5. Raking collision									8. RR grade crossing 11. Fire/violent rupture (describe in narrative)						ı				
		3. Rear er	nd colli	sion	6. Broke	n Train c	ollision	9.	. Obstruction	n	12. Other impac				narra	tive)		12	
9. Cars Carrying HAZMAT		10. HAZ		11.	Cars Rel	leasin	asing		12. People			13. Div							
	0 Damaged/Derailed N/A						ZMAI		N/A		Evacuated		0			MID-ATLANTI		TIC	
14. Nearest City/Tow	'n					15. Mi	lepost	anth)		16. Sta	te Abbr	Code	17.	. County					
	WAS	HINGTO	V			(to nearest			136		N/A	DC		V	VASHI	NGT	ON, DC		
18. Temperature (F)		19. Visit	ility	(sing	le entry)	Code	20. V	Veath	eather (single en			Code	21. Tvp		e of Track			Code	
(specify if minus)	1.1	Dawn	3.D	usk		1	. Clear 3. Rain			5.Sleet			1. Main 3. S			ıg	I .	
40) F	2	Day	4.L	Dark	2	2	2. Clo	udy 4. Fo	g 6	6.Snow 1			2. Yard 4.		. Industry		2	
22. Track Name/Nu	mber					23. FR	A Track	2	Code 24. Annual Track Density			Density		25. Time Table Dire			ction East	Code	
			TRAG	CK 25		Cia	188 (1-9, 2	~)	1	m	illions)	N/A	1		2. Sout	h 4.	West	2	
						1	OPER	ATI	ING TRA	IN #1									
26. Type of Equipme	ent 1.	. Freight tra	un	4. Wo	ork train 7	. Yard/sv	vitching	A	. Spec. MoV	V Equi	p. Code	27. Was	Equip	ment (Code	28. 7	rain Nur	nber/Symbol	
Consist (single en	ntry) 2.	. Passenger	train	5. Sin	igle car 8	. Light lo	co(s).		1			Atten	ded?					,	
	3.	. Commute	r train	6. Cu	t of cars 9	. Maint./i	nspect.ca	ır			8	1. `	Yes	2. No	1		LiteEr	1g659	
29. Speed (recorded	speed, if	available)	Code	31.	Method(s)	of Opera	tion (ente	r code(s) t	that ap	oply)			31a. Rem	otely C	ontrol	lled Loco	motive?	
R - Recorded a. ATCS g. Autom									block	m.Spec	eial instruc	tions n track		0 = Not a	remote	ely co	ntrolled		
E - Estimated	8	MPH	ĸ	b.	Auto train	control	h. Currer i Time t:	it of t able/t	raffic	o. Posi	itive train o	control		1 = Rem	ote cont	rol po	wer		
30. Trailing Tons (gross tonnage, d Cab i. Track									nt control	p. Oth	er (Specif	in narrat	ive)	3 = Rem	ote con	trol	wei		
excluding power units) e. Traffic k. Direc									ic control		Code(s)		transmi	tter - m	ore th	an one		
		N/A		f.	Interlocking	g	l.Yard lir	nits		f	N/A N/.	A N/A	N/A	remote	control	transr	nitter	0	
32. Principal Car/Uni	t	a. Initial	and Nu	mber	b. Positio	on in Tra	in c.	Load	ed(yes/no)	33. If	f railroad e	mployee(s) teste	d for drug	g/alcoho	ol use,		1	
(1) First involved		1		1	N/A		enter the m	umber that	were	positive i	n		Alcohol	Drugs					
(derailed, struck, e	etc)					-	_			1	the appropriate	nate box.					N/A	N/A	
(2) Causing (if means cause reported	chanical ')			0		ľ	N/A	34.	Was this c	onsist tran	sporti	ng passen	gers? (Y/N)		N			
35. Locomotive Uni	ts	a. Head	h Mo	Mid T	rain	R d Manu	ear End	mote	36. Cars			a Fr	Lo eight	aded b Pass	c Fre	Emp	ty 1 Pass	e Caboose	
(1) Total in Train	n	1	0. 1414	0	0	0	0		(1) Total	in Equi	ipment Cor	nsist	0	0	()	0	0	
(2) Total Deraile	d	0		0	0	0	0		(2) Total	Deraile	ed		0	0		,	0	0	
37. Equipment Dama	age	-			1 6: 11												-	-	
This Consist	1	\$17,850.00	3	8. 1ra & Stru	ck, Signal, v icture Dama	\$0.00		39. Primary Cause			40. Contributing Cause								
	- 1	Number	of Cre	ew Me	mbers	50					Lengt			n of Time on Duty				N/A	
41. Engineer/ 42. Firemen					onductors	44. Brakemen			45. Engineer/Operator					46. Conductor					
Operators 1		0			0		0		Hrs 1 Mi			Mi 0		Hrs 0 Mi			Mi 0		
Casualties to:	47. Railr	road Emplo	yees 4	8. Trai	in Passenger	s 49.	49 Other		50. EOT 1	Device	?			51. Was	EOT D	Device Properly A		Armed?	
Fatal	Eatal 0						0	1. Yes 2. No N/A						1. Yes 2. No N/A					
Patai 0					0		0		52. Caboose Occupied by Crew?							1			
Nonfatal		0		0 0					1. Yes 2. No									N/A	
						C	PERA	ΓIN	G TRAIN	#2									
53. Type of Equipme	ent 1.	Freight tra	in	4. Wo	rk train 7.	Yard/sw	itching	A.	Spec. MoW	V Equip	p. Code	54. Was I	Equip	ment C	lode	55. T	rain Nun	nber/Symbol	
Consist (single en	(try) = 2.	Passenger	train	5. Sin	gle car 8.	Light lo	co(s).					Atten	ded?) 			A		
56 Smart 1	3.	Commuter	uain	6. Cut	ot cars 9.	Maint./i	nspect.ca	r	1 / 1	1	6	1. \	(es)	2. No	1	out.	Ind T		
B - Recorded	speed, if	available)	Code	58. a	ATCS	or Opera	g. Autor	ente natic 1	<i>r code(s) t</i> block	m Spor	oply) cial instruc	tions		0 = Not c	otery C	remotely controlled Locomotive?			
E - Estimated	0	MPH	Е	b.	. Auto train	control	h. Currer	nt of t	raffic	n. Othe	er than mai	n track		0 = Not a remotely controlled 1 = Remote control portable					
		1		1									- 1						

DEPARTMENT FEDERAL RAILF	OF TRAI ROAD AI	NSPORT OMINIST	FATIO FRATI	ON ION	FRA FA	CTUAL	RAILR	OAD AC	CID	DENT REI	PORT	F	RA File	# <u>HQ-200</u>	8-23		
57. Trailing Tons (gross tonnage, excluding power units)					. Auto train Cab Traffic	stop i. T j.T k. l	Time table/ti rack warran Direct traffie	ain orders o. Positive train control t control p. Other (<i>Specify in narrative</i>) c control Code(s)				2 = Remo 3 = Remo transmit					
		N/A		f.	Interlocking	1.Y	ard limits		f	N/A N/A	N/A N/A	remote c	0				
59. Principal Car/Un	it	a. Initial	and N	lumber	b. Positio	n in Train	c. Load	ed(yes/no)	60. If railroad employee(s) te			ted for dru					
(1) First involved (derailed struck etc) ATK 1735			5	1		N	J/A	the appropriate box.			Alcoho			Drugs			
(2) Causing (if mechanical							61 Was this consist transpo			ting passengers? (V/N)			N/A				
cause reported) 0				0		1	N/A				ing pusser	Y					
62. Locomotive Units a. Head End b. Ma			Mid T anual	Train c. Remote	Rea 1. Manual	r End c. Remote	63. Cars			Lo a. Freight	b. Pass.	c. Freig	Empty ht d. Pass.	e. Caboose			
(1) Total in Train 0		0		0	0	0	0	(1) Total in Equipment Co		pment Consis	t 0	10	0	0	0		
(2) Total Deraile	ed	0		0	0	0	0	(2) Total Derailed 0			0	0	0	0	0		
64. Equipment Dama	age			65. Tra	5. Track, Signal, Way,			66. Primary Cause				67. Contributing Cause					
This Consist	5	5,056.00	r of Ci	& S	tructure Dam	age	\$0.00	Code		N/A Length of	Code N/A						
68. Engineer/	69. Fire	men		70. Co	onductors	71. Brak	temen	72. Engin	eer/Or	perator	Lengur or	73. Con	ductor				
Operators 0	0				1		1		Hrs 0 Mi 0				Hrs 1 M				
Casualties to:	74. Railro	oad Empl	oyees	75. Tra	in Passengers	76. Othe	76. Other		77. EOT Device?			78. Was	Armed?				
Fatal		0			0		0		1. 1cs 2. NO N/A 70. Cobooco Occupied by Craw?					1. 105 2. 100			
Nonfatal		4			1		0		1. Yes 2. No					I			
						OI	OPERATIN		[#3								
80. Type of Equipment 1. Freight train 4. Work train 7. Yard/switching A. Spec. MoW Equip. Code 81. Was Equipment Code 82. Train Number/Sym Consist (single entry) 2. Passenger train 5. Single car 8. Light loco(s). 81. Was Equipment Code 82. Train Number/Sym											nber/Symbol						
3. Commuter train 6. Cut of cars 9. Maint./inspect.car N/A									N/A	1. Yes	2. No N	I/A	N/A				
S3. Speed (recorded speed, if available) Code 85. Method(s) of Operation (ente R - Recorded								r code(s) th	n <i>at ap</i> n.Spec	pply) vial instruction	15	0 = Not a	remotely	controlled	motive?		
E - Estimated	N/A	MPH	N/A	a. b.	Auto train co	ontrol h.	Current of ti	raffic ⁿ	. Othe	er than main t	ack	1 = Remo	ote contro	ol portable			
84. Trailing Tons (gross tonnage, c. Auto train stop i. Time table/								ain orders	o. Posi o. Othe	tive train con	trol	2 = Remo 3 = Remo	te contro	l tower			
excluding power units) d. Cab J. Irack warra excluding power units) e. Traffic k. Direct traff								c control		Code(s)	nurrunve)	transmit	ter - mor	e than one			
	N/A		f.	Interlocking	1.Y	ard limits		N/A	N/A N/A	N/A N/A	remote c	ontrol tra	unsmitter	N/A			
86. Principal Car/Un	it	a. Initial	and N	lumber	b. Positio	n in Train	c. Load	led(<i>yes/no</i>) 87. If railroad employee(s) tested for drug/alcoho					g/alcohol	use,			
(1) First involved			N/A		N	A		N/A		enter the nun	ber that were	e positive i	n	Alcohol	Drugs		
(aerailed, struck, etc) (2) Causing (if mechanical)								88.	Was this cor	sist transport	ing passer	gers? (Y)	N/A /N)	N/A			
cause reported	<i>l)</i>		N/A		N/	A	- Fed	N/A			1 T-		l r		N/A		
89. Locomotive Uni	its	a. Head End	b. Ma	Mid T anual 1	frain c. Remote	Real	c. Remote	90. Cars			a. Freight	b. Pass.	c. Freig	ht d. Pass.	e. Caboose		
(1) Total in Train	n	N/A	N	J/A	N/A	N/A	N/A	(1) Total in	Equip	pment Consis	t N/A	N/A	N/A	N/A	N/A		
(2) Total Deraile	ed	N/A	N	I/A	N/A	N/A	N/A	(2) Total E	Deraile	d	N/A	N/A	N/A	N/A	N/A		
91. Equipment Dama	age		·	92. Tra	ick, Signal, W	′ay,		93. Primar	y Cau	se Code		94. Cont	ributing (Cause			
This Consist		N/A		& St	ructure Dama	ige	N/A	N/A Code N/A							N/A		
05 Engineer/	OC Ein	Numbe	er of Ci	lo7 C	Conductors	08 Brol	aman	Length of Time on Duty									
Operators N/A	90. File	N/A		<i>,</i> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	N/A	I∕A	99. Engineer/Operator 100. Con Hrs N/A Mi N/A						N/A	Mi N/A			
Casualties to:	101. Rail	road Emr	lovees	102.	Train	103. Oth	ner	104. EQT 105 Was EQT Device Property						lv			
Fatal	N/A			N/A		N/A		1. Yes 2. No N/A 1. Yes 2. No 1							N/A		
Nonfatal				_			IN/A		106. Caboose Occupied by Crew?								
NonTatai N/A N/A							N/A		1. 1	res	2. No				N/A		
Highway User Involved									Rail Equipment Involved								
C. Truck-T	Frailer. F	. Bus	J	. Other	Motor Vehic	le	Code			3.Trai	(standing)	6.Light	Loco(s)	(moving)	Code		
A. Auto D. Pick-Uj B. Truck E. Van	p Iruck C	 School Motorc 	Bus J ycle I	K. Pede M. Othe	estrian er (spec. in na	(rrative)	N/A	1.1rain(units pulling) 4.Car(s)(moving) 7.Light(s) (standing) 2.Train(units pushing) 5.Car(s)(standing) 8.Other (specify in narrative)							N/A		
108. Vehicle Speed			109.		geographic	al)	Code	112. Position of Car Unit in									
(est. MPH at impact) N/A 1.North 2.South 3.East 4.West N/A									N/A								

DEPARTMENT OF TRANSPORTATION FRA FACTUAL RAILROAD ACCIDENT REPORT FRA File # HQ-2008-23 FEDERAL RAILROAD ADMINISTRATION FRA FACTUAL RAILROAD ACCIDENT REPORT FRA File # HQ-2008-23												-23	
110. Position	110. Position Code 113. Circumstance												
1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 1. Rail Equipment Struck Highway User 4. Trapped N/A													N/A
114a. Was the	e highway user	and/or ra	uil equi	pment	involved		Code	114b. Wa	is there a haza	rdous material	s release		Code
in the impact transporting hazardous materials?											N/A		
1. Highway User 2. Rail Equipment 3. Both 4. Neither												1.011	
114c. State here the name and quantity of the hazardous materials released, if any.													
115. Type 1. Gates 4 Wig Wags 7 Crossbucks 10 Flagged by crew 116. Signaled Crossing Code 117. Whistle Ban												Code	
Crossing 2,Cantilever FLS 5.Hwy. traffic signals 8.Stop signs 11.Other (spec. in narr.) Warning 3,Standard FLS 6.Audible 9.Watchman 12.None (See instructions for codes) 2.No													
Code(s)	N/A	N/A	N	/A	N/A	N/A	N/A	N/A	3. Unknown				
Image: Instruction of Warning Code 119. Crossing Warning Code 120. Crossing Illuminated by Street 1 Both Sides with Highway Signals Lights or Special Lights											d by Street ghts	Code	
2. Side of					1. Yes			1. 1	Yes				
3. Opposite Side of Vehicle Approach N/A 2. No									N/A 2. No 3. Unknown				N/A
121.	122. Driver's	Gender	Code	123.	Driver Drov	ve Behind o	r in Front of	Code	124. Driv	er			Code
Age	1. Male				and Struck o	r was Struc	k by Second	Frain	1. Drov	e around or th	ru the Gate	4. Stopped on Crossing	
N/A	N/A 2. Female 1. Yes 2. No 3. Unknown 2. Stopped and then Proceeded 5. Other (specify in narrative) N/A N/A 3. Did not Stop narrative)									5. Other (specify in narrative)	N/A		
125. Driver Pa	ssed	Cod	e 12	6. Viev	w of Track C	bscured by	(primary ob	struction)					Code
Highway V	ehicle			1. Pe	ermanent Str	ucture	Passi	ng Train 5. '	Vegetation	7. Other	(specify in	narrative)	1
1. Yes 2. No	3. Unknown	N/.	A	2. St	tanding Railı	oad Equipr	nent 4. Topo	graphy 6. l	Highway Vehi	cle 8. Not o	ostructed		N/A
Casualties to: Killed Injured							/er d 2 Injured 3	Uniniured	Code ured N/A		128. Was Driver in the Vehicle?		
129. Highway-Rail Crossing Users N/A N/A						130. Hig (est.	130. Highway Vehicle Property Damage N/A 131. Total Number of Highway (ast_dallar_damage) N/A (include driver)					of Highway-Rail Crossin	g Users
132. Locomotive Auxiliary Lights? Code 133. Locomotive Auxiliary Lights Operational?											Code		
1. Yes 2. No							N/A 1. Yes 2. No				N/A		
134. Locomot	ive Headlight I	lluminat	ed?				Code	135. Locor	notive Audibl	e Warning Sou	inded?		Code
1. Yes 2. No								1.	1. Yes 2. No				

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



137. SYNOPSIS OF THE ACCIDENT

On Sunday, March 02, 2008, at approximately 7:30 AM, there was a collision between Amtrak locomotive 659 moving southbound, and the occupied consist of Amtrak Train 98 that was standing on track twenty-five in Washington, D.C. Union Station. The collision resulted in approximately \$20,000 damage to the locomotive and first two passenger cars of the train and minor injuries to seven passengers and four service attendant employees.

There was no hazardous material release and at the time of the incident it was daylight, clear and 40 degrees.

The accident was caused by a failure of the engineer to properly control the speed of the locomotive while coupling to the cars.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT:

The train crew assigned to operate outbound ATK Train 98 north of Washington consisted of an engineer, conductor, and assistant conductor. All three members of the crew reported for duty at Washington, D. C. at 6:30 a.m. EST after the required statutory off duty rest period of fourteen hours. A utility conductor assigned to couple the locomotive to ATK Train 98 was on duty at Washington, D.C. at 7:00 a.m. EST with required statutory off duty rest period of nine hours and 30 minutes.

After reporting for duty and conducting a job briefing, the conductor on ATK Train 98 contacted the Train Director at K-Tower and received instructions to get electric locomotive 659 from Track 29 and proceed north to H-bridge in preparation to couple to train when it arrived in Track 25. A job briefing was then held between the members of the outbound crew.

A collision between Amtrak locomotive 659 and the occupied consist of Amtrak train 98 occurred on Track 25 in Union Station, Washington, D.C. Union Station is on the Amtrak Mid-Atlantic Division of the Northeast Corridor, near MP 136. The latest timetable in effect is No. 1 dated April 24, 2006. The Operating Rules in effect are Norac Operating Rules Eight Edition, dated January 1, 2003. This area is governed under General Order No. 105 dated October 29, 2007 describing the method of operation as Interlocking Rules. The maximum authorized speed on Track 25 is 15 miles per hour.

At approximately 7:12 AM, the engineer alone proceeded north out of Track 29 with ATK Locomotive 659 and completed a running brake test of the locomotive brakes. He then continued through an Interlocking into Track 24 where he stopped just north of H-bridge. He then cut-out the control stand operation, walked to the south end of the locomotive, set-up the control stand operation to proceed south and waited for further instructions.

Inbound ATK Train 98 arrived northbound on Track 25 at Washington Union Station at 7:14 a.m. with two diesel-electric locomotives and ten passenger coach cars. The train was secured and passengers began departing the train. The diesel locomotives were uncoupled and moved north out of Track 25 to the

locomotive servicing facility.

Track 25 has a slight descending grade into Union Station. The railroad timetable direction was south. Timetable directions are used throughout this report.

THE ACCIDENT:

After receiving instructions, the engineer on locomotive 659 observed that the route was lined for southward movement and proceeded south, departing from H-bridge with a restricting indication. After entering the north end of Track 25, the engineer brought the locomotive to a stop (for safety purposes) approximately two rail car lengths north of ATK Train 98. After the safety stop, he proceeded south to meet the utility conductor to complete the coupling of locomotive 659 to ATK Train 98's consist. After restarting, the engineer on 659 proceeded south with intentions of making his second safety stop near where the utility conductor was located on the station platform.

Because of the limited visibility provided from the operating controls of the type HHP-8 high-speed locomotive, it was necessary for the engineer to stand up and lean over the control console to observe the utility conductor and the track ahead. The locomotive is designed with a conical nose with the controls situated at the middle of the operating cab, making visibility for distances less than 20 feet or along either side of the locomotive impossible. While standing and leaning forward, the engineer's left hand was holding the throttle and his right hand was holding the locomotive brake.

Before the engineer could accomplish his second safety stop, the locomotive lurched forward under power from about ten feet away and collided with ATK Train 98's consist at a recorded speed of eight MPH. Allegedly, the engineer inadvertently applied power to the locomotive instead of braking. This action resulted in the collision of the locomotive with of ATK Train 98 at approximately 7:30 a.m.

At approximately 7:35 a.m., the Train Director at K-Tower was instructed to call emergency response organizations to respond for potential injuries associated with the collision. In addition, a radio call was made to K-tower requesting medical assistance on Track 25. Calls were made to D. C. fire and rescue departments who were the first to arrive.

The impact caused extensive damage to Amtrak HHP8 659, baggage car 1735, and car 62002. There were no infrastructure issues associated with this collision. In addition to the equipment damage, there were also four on-board service employee injuries and seven injuries to passengers who were on the train. The passenger injuries were not serious, and only one employee was transported to a medical facility and treated for minor injuries.

ANALYSIS and CONCLUSIONS

ANALYSIS - TOXICOLOGICAL TESTING:

The engineer was drug and alcohol tested in concurrence with existing FRA Regulations. The results of these tests were negative. The remaining members of the crew were not at the scene at the time of the collision and were not considered to have contributed to the accident.

CONCLUSION:

Intoxication was not considered a factor.

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 that fatigue was not probable for any of the employees.

ANALYSIS - LOCOMOTIVE ENGINEER OPERATING PERFORMANCE:

The locomotive is designed with a conical nose and with the controls situated at the middle of the operating cab. This particular design creates a visual obstruction. Because of this circumstance, the engineer stood up out of the seat box to gain a better view. While standing and leaning forward, the engineer's left hand was holding the throttle and his right hand was holding the locomotive brake. Before the engineer could accomplish his second safety stop, the locomotive lurched forward under power from about ten feet away and collided with ATK Train 98's consist at a recorded speed of eight MPH. The engineer inadvertently applied power to the locomotive instead of braking.

CONCLUSION:

Engineer error was the direct cause of this collision. The engineer was in noncompliance with railroad operating rules.

ANALYSIS - LOCOMOTIVE SSFETY SYSTEMS:

Locomotive ATK 659 was equipped with a headlight, the auxiliary lights, and the audible warning devices required by Federal regulations. The locomotive engineer tested these devices prior to the movement of this locomotive. A locomotive download of the locomotive operation was also performed after the collision and the data revealed that the devices functioned as intended.

CONCLUSION:

Locomotive Safety Systems were not a factor.

ANALYSIS - TRACK:

FRA conducted a thorough inspection of Track 25 at Union Station including the approaching area to the collision. The inspections revealed that there were no non-complying conditions with the track structure.

CONCLUSION:

Track conditions were not a factor.

ANALYSIS - TRACK SIGNALS:

As per railroad procedure, Amtrak officials placed a signal person on a 24 hour watch of the track signal operations that govern and control the entrance in and out of Track 25 at Union Station.

CONCLUSION:

Signal systems operations were not a factor

OVERALL CONCLUSION:

The design of the high-speed HHP8 locomotive does not provide adequate up-close visibility. The controls are located in the center of the cab and the engineer cannot see directly in front of or to either side of the locomotive while seated. To observe the utility employee, who would be directing the coupling activity from the station platform, the engineer stood-up and leaned to the left over the control stand. Although the exact circumstances are not known, apparently when leaning to observe the utility employee out the side window, the engineer's leg bumped his arm and pushed the throttle forward when the locomotive was approximately ten feet from the end of the cars.

The experienced employees involved in making up ATK Train 98 should have recognized the visibility limitations of the HHP type locomotive and utilized alternative procedures for accomplishing this task. The engineer should have made his safety stop while seated and then continued the movement after a job briefing.

The conductor could have worked together with the engineer by riding the movement and passing signals to the engineer from a location that provided better visibility within the cab. The utility employee could have directed the movement by radio, thereby avoiding the necessity for the engineer to leave his seat.

Amtrak created an action plan to reduce the possibility of accidents of this type occurring in the future. That plan includes increasing communications testing; increasing supervisor interaction with train and engine service employees; clarifying the role of utility employees; and reviewing and modifying rules designating the engineer's operating location.

PROBABLE CAUSE:

FRA investigation results agree with Amtrak officials that the cause of the collision was a failure of the engineer to control the use of train brakes and failure to control the speed of the movement.