

Federal Railroad Administration Office of Safety Headquarters Assigned Accident Investigation Report HQ-2008-16

MARC (MARC) Washington, DC February 07, 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.

FEDERAL RAILE					FRA FA	ACTUA	L RAI	LRO	AD AC	CCID	ENT F	REPORT		I	FRA Fi	le#	HQ-200	8-16	
1.Name of Railroad (Operating	g Train #1						1a A1	lphabetic	Code			1b. F	Railroad A	ccident	t/Incid	dent No.		
Amtrak [ATK]								14. 71	-	ATK				8	361748				
2.Name of Railroad C MARC Train Serv								2a. Al	lphabetic	Code MACZ			2b. R	ailroad A	ccident 861748		lent No.		
3.Name of Railroad O N/A	Operating	g Train #3						3a. Al	lphabetic	Code N/A			3b. F	Railroad A	ccident N/A	t/Incid	dent No.		
4.Name of Railroad F Amtrak [ATK]	Responsi	ble for Trac	k Main	tenano	ce:			4a. Alphabetic Code ATK							ailroad Accident/Incident No. 861748				
5. U.S. DOT_AAR G	Grade Cro	ossing Ident	ification	n Nun	nber				te of Acci	ident/Ir		ear 2008	7. T	Fime of Accident/Incident 10:03:00					· M
8. Type of Accident/I	ndicent	1. Deraili	nent		4. Side c	ollision		7. Hwy-rail crossing 10. Explosion-detonati									<u></u> С	ode	
(single entry in coo		2. Head o	on collis		5. Rakin	omsion g collision n Train co		8. RI	R grade crossing 11. Fire/violent ru					/1 1 1					03
9. Cars Carrying		3. Rear er			o. broke		Cars Rele		ostruction	1	12. Peop	Other impacole	JIS		13. Div	ision			
HAZMAT	0	Damaged	/Deraile	ed	N/A		ZMAT		N/A		Evacuate	ed		0		MID	-ATLAN	TIC	
14. Nearest City/Tow		INGTON,	DC			15. Mile (to r	earest ter	nth) 35.7		16. Stat	e Abbr N/A	Code DC	17.	County	VASHI	NGT	ON, DC		
18. Temperature (F)		19. Visib		(sing	le entry)	Code	20. We		(single	entry)	- "	Code		21. Typ				(Code
(specify if minus)) F	1.1	Dawn Day	3.D		2	1.	Clear Cloudy	3. Rai	in 5.	Sleet .Snow	1		1. M	ain 3.	Sidir			2
22. Track Name/Nu		23. FRA Clas	Track s (1-9, X)) ,			nual Trac	k Density in		25. Tim	e Table 1. Nort			С	Code				
			1:	3			OPER		1		llions)	N/A			2. Sout	h 4.	West		2
26 77 677 1		P		4 337	1	** 1/ *			G TRA		G 1	27. Was E		mont c		100.5		1 (0	
26. Type of Equipme Consist (single er	ntry) 2	. Freight tra . Passenger	train	5. Sin	gle car 8	. Yard/swi . Light loc	o(s).		pec. MoV	V Equip	1	Attend	led?		Code	28. 1	Frain Nun		Symbol
	of cars 9						8	1. Y		2. No	1		711						
29. Speed (recorded	speed, if	available)	Code		Method(s)	-			ode(s) t	-	ply) ial instru	ations		31a. Rem				motiv	e?
R - Recorded E - Estimated	12	MPH	R		ATCS Auto train		. Automa		CK	•	r than ma			0 = Not a 1 = Remo		•			
				1	Auto train		Time tab	ole/train	n orders	o. Posi	tive train	control		2 = Remo		•			
30. Trailing Tons (excluding powe		onnage,		d.	Cab Traffic	k. Direct traffic control Code(s) tra							3 = Remo	tter - m	ore th				
		N/A		f.	Interlocking	g 1.	Yard lim	its		f	N/A N	/A N/A N	√A	remote o	control	transı	mitter		0
32. Principal Car/Uni	t	a. Initial	and Nur	nber	b. Positio	on in Trair	ı c. L	.oaded(yes/no)	-		employee(s)		_					
(1) First involved (derailed, struck, e	etc)	MA	RC 491	2		1		N/A	A	1		number that priate box.	were	positive ii	n		Alcohol 0	D	rugs 0
(2) Causing (if med cause reported)	chanica)	1	0			0		N/A	1	34.	Was this	consist trans	porti	orting passengers? (Y			Y/N)		N
35. Locomotive Unit	ts	a. Head End	b. Man	Mid T ual ₁	rain c. Remote		ar End l c. Rem	note	36. Cars			a. Freig			c. Frei	Emp ight	oty d. Pass.	e. Ca	aboose
(1) Total in Trair	n	1	C)	0	0	0	(1) Total i	n Equi	oment Co	onsist	0	0	C)	0		0
(2) Total Deraile		0	C)	0	0	0	(2) Total I	Deraile	d	(0	0	C)	0		0
37. Equipment Dama This Consist	_	\$165,000.00	、 I		ck, Signal, V	-	\$5,350.00	n I	39. Primar Code	ry Caus	ie I	H607		40. Cont	ributing	g Cau		I211	
	<u> </u>	Numbe				8-							h of 7	Time on D	Outy		1	211	
41. Engineer/	42. Fir	emen	4	13. Co	nductors	44. Bra	akemen		45. Engin	eer/Op	erator			46. Con	ductor				
41. Engineer/ 42. Firemen 43. Conductors 0 1 1						(0			Hrs	2	Mi 4			Н	lrs	2	Mi	4
Casualties to: 47. Railroad Employees 48. Train Passen						rs 49. 0	Other	5	60. EOT I								Properly		
Fatal 0 0							0		1. Ye 52. Caboo		. No runied by	Crew?		1.	Yes		2. No	1	N/A
Nonfatal		0			0		0		52. Cubo(1. Y			No					N	N/A
							PERAT	ING T	ΓRAIN	#2									
53. Type of Equipme Consist (single en	ntry) 2.	Freight tra Passenger	train :	5. Sin	gle car 8.	Yard/swi	o(s).	A. Sp	ec. MoW	Equip	ı	54. Was E Attend	ed?		ode	55. T	rain Nun		
		Commuter				Maint./in	•				3	1. Y	es 2		1		419/M		
56. Speed (recorded	speed, if	available)	Code	1	Method(s) of ATCS	•	,						58a. Remotely Controlled Locomotive? 0 = Not a remotely controlled						
R - Recorded E - Estimated	0	MPH	R		ATCS Auto train	_				•	ial instru r than ma			0 = Not a 1 = Rem					

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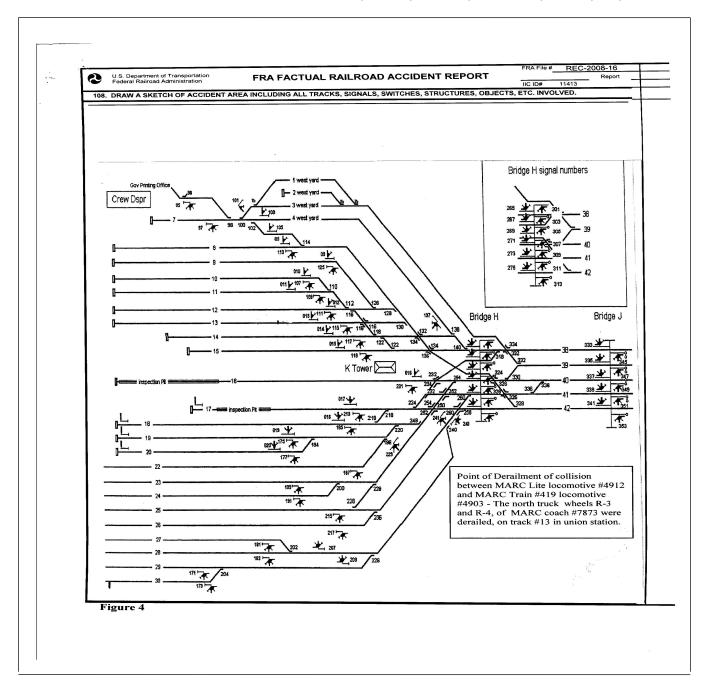
DEPARTMENT OF FEDERAL RAILR					FRA FA	ACTUAI	L RAILR	OAD AC	CIDENT RI	EPORT	F	RA File #	HQ-200	<u>8-16</u>	
57. Trailing Tons (gro		age,		d. (Auto train Cab Fraffic Interlocking	j.T k.	Γime table/to rack warran Direct traffi ard limits	t control p	o. Positive train co o. Other (Specify Code(s) f N/A N/A	ontrol in narrative)	3 = Remo transmit	ote control to te control ter - more control tran	than one	0	
59. Principal Car/Uni	it	a. Initial	and N	umber	b. Positi	ion in Train	c. Load	led(yes/no)	1		sted for drug/alcohol use,				
(1) First involved (derailed, struck,	etc)	MA	RC 49	03		7		no	enter the nu the appropri	imber that wer riate box.	e positive i	n	Alcohol 0	Drugs 0	
(2) Causing (if me cause reported		al	0			0	1	N/A	61. Was this c	onsist transpor	ting passen	ting passengers? (Y/N)			
62. Locomotive Uni	ts	a. Head End	b. Ma	Mid Ti	ain c. Remote		r End c. Remote	63. Cars		a. Freight	b. Pass.	En c. Freight	npty d. Pass.	e. Caboose	
(1) Total in Train	ı	1		0	0	1	0	(1) Total in	Equipment Con	sist 0	4	0	2	0	
(2) Total Deraile	d	0	(0	0	0	0	(2) Total Derailed 0			0	0	1	0	
64. Equipment Dama		** -= 000 0			k, Signal,		\$5,350.00	66. Primar Code	y Cause	**	67. Contr	ributing Ca	use		
This Consist	;	\$165,000.00 Numbe		& Str ew Mer	ructure Dar nbers	nage `	,550.00	Code		H607 Length of	Time on D	outy		H211	
68. Engineer/	69. Fi	remen		70. Co	nductors	71. Bra	kemen	72. Engine	eer/Operator		73. Con	ductor			
Operators 1		0	_		1		1		Hrs 5	Mi 38		Hrs	5	Mi 38	
Casualties to:	74. Rai	lroad Emplo	oyees 7	75. Traii	n Passenge	rs 76. Oth	er	77. EOT D		_		EOT Devid			
Fatal		0			0		0	1. Y		2	1.	Yes	2. No	N/A	
Nonfatal					2			79. Caboo	se Occupied by O	Crew?					
Nonratai		0			3	0	0 PERATIN	G TRAIN	1. Yes		N/A				
80. Type of Equipmen	nt 1	. Freight tra	in	4. Worl	k train 7	Yard/switc				31. Was Equip	ment Co	ode 82.	Train Nun	nber/Symbol	
Consist (single en	try) 2	. Passenger . Commuter	train	5. Sing	le car 8.	Light loco	(s).	Spee. 1.15 ()	N/A	Attended?	LN	I/A	N/A	,	
83. Speed (recorded)						Maint./insp of Operation		r code(s) th	at apply)	1. 103	- 1	otely Contr	olled Loco	motive?	
R - Recorded	·r · · · ·				ATCS	-	Automatic b		n.Special instruct	ons		remotely c			
E - Estimated	N/A	MPH	N/A	b	Auto train	control h.	Current of to	гаппс	. Other than mair			ote control	•		
84. Trailing Tons (gross to	nnage,			Auto traii		Fime table/tı Track warran	rain orders O	o. Positive train co o. Other (Specify	in norrativa)		te control to te control	ower		
excluding power	r units)				Cab Fraffic	•	Direct traffi		Code(s)	in narrative)		ter - more	than one		
		N/A		f. I	nterlocking	g 1.Y	ard limits		N/A N/A N/A	A N/A N/A	remote c	ontrol tran	smitter	N/A	
86. Principal Car/Uni	it	a. Initial	and N	umber	b. Positi	ion in Train	c. Load	led(yes/no)	87. If railroad e	nployee(s) test	ted for drug	g/alcohol us	se,		
(1) First involved			N/A		,	N/A		N/A		imber that wer	e positive i	n [Alcohol	Drugs	
(derailed, struck,			1 \ /A					IV/A	the appropr			N/A			
(2) Causing (if me cause reported		al	N/A		ı	N/A]	N/A	88. Was this c	onsist transpor	ting passen	N/A			
89. Locomotive Uni	ts	a. Head		Mid Tı			r End	90. Cars			oaded		npty	G 1	
(1) m . 1: m :		End	b. Ma		c. Remote		c. Remote	(1) T . 11	T		b. Pass.	c. Freight		e. Caboose	
(1) Total in Train		N/A		I/A	N/A	N/A	N/A		Equipment Cons		N/A	N/A	N/A	N/A	
(2) Total Deraile	ı	N/A	N.	/A	N/A	N/A	N/A	(2) Total D	erailed	N/A	N/A	N/A	N/A	N/A	
 Equipment Dama This Consist 	ige	NT/A			k, Signal,		NT/A	93. Primary	y Cause Code	NT/A	94. Contr	ributing Ca	use	NI/A	
This Consist		N/A Numbe	r of Cr	ew Mer	ucture Dan	nage	N/A			N/A Length of	Time on D	ntv		N/A	
95. Engineer/	96 Fi	remen	1 01 C1		onductors	98. Bra	kemen	99. Engine	eer/Operator	Lenguror	100. Cor				
Operators N/A	70.11	N/A			N/A		N/A	_	Hrs N/A	Mi N/A	100. Col	Hrs	N/A	Mi N/A	
Casualties to:	101. Ra	nilroad Emp	loyees	102. Т	rain	103. Ot	her	104. EOT				s EOT Dev		ly	
Fatal N/A					N/A	1	N/A	1. Y	es 2. No ose Occupied by	N/A	1.	Yes	2. No	N/A	
Nonfatal		N/A		N	N/A		N/A	100. Cabo	1. Yes	2. No				N/A	
		Highw	ay Use	er Invo	lved				R	ail Equipmen	t Involved	d			
107.	Penila -		_	0.1			Code	111. Equip			6 T : - L - 1	Looc(s)		Code	
C. Truck-T A. Auto D. Pick-Up	Truck	F. Bus G. School			Motor Veh trian	ıcle		1.Train(uni	3.Tr its pulling) 4.Ca	ain (standing)	o.Light(s	Loco(s) (n s) (standin	noving)		
B. Truck E. Van	<u> </u>	H. Motorcy				narrative)	N/A		its pushing) 5.Ca			(specify in		N/A	
108. Vehicle Speed		I	109.		geographi		Code	112. I osition of Car Olit in							
(est. MPH at in	npact)	N/A	1.Nor	th 2.So	uth 3.East	4.West	N/A				N/A				

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	ENT OF TRA			FRAF	FACTU.	AL RAILR	OAD AC	CCII	DENT I	REPORT	Γ	F	RA File # H	Q-2008-	<u>16</u>
110. Position						Code	113. Circu	ımstar	nce						Code
1.Stalled o 4. Trapped	n Crossing 2.St	opped o	n Crossing	3.Moving Ov	er Crossin	g N/A	1			k Highway k by Highw					N/A
	highway user a					Code	114b. Wa	as the	re a hazar	dous mater	ials release	;			Code
	pact transporting	•				ı N/A	1 High	avov l	Hear 2	Rail Equip	ment 3	Roth	4. Neither		N/A
	User 2. Rail E						1. High	iway (0801 2.	Kan Equip	ment 3.	Dom	4. INCHIEC		IV/A
114c. State he	ere the name and	quantit	y of the haz	ardous materia	als release	d, if any. N/A									
115. Type	1.Gates 2.Cantilever FI		ig Wags			10.Flagged by 11.Other (spec		1	Signaled	Crossing		Code	117. Whistle	Ban	Code
			wy. tranne s udible		_	12.None	III IIa11.)	(3	see msiru	ctions for c	odes)		2. No		
Code(s)	N/A	N/A	N/A	N/A	N/A	N/A	N/A				N	N/A	3. Unkno	own	N/A
118. Location 1. Both Sic	U			Code	1	ossing Warning	_		Code		sing Illum		-		Code
	Vehicle Approac	ch				1. Yes	>				. Yes				
	e Side of Vehicle		ach	N/A		2. No 3. Unknown			N/A		. No . Unknown	ı			N/A
121.	122. Driver's C	Gender	Code 123			or in Front of	Code	le 1	1 Drove	r around or	thru tha Gu	nto	4 C: 1 4	a :	Code
Age	1. Male			and Struck of	r was Stru 2. No	ck by Second 7 3. Unknown				ed and ther			 Stopped on C Other (specified) 	_	
N/A	2. Female		N/A	1. Tes	2. NO	3. Ulikilowi	N/A	A	3. Did n				narrat		N/A
125. Driver Pa		Code	126. Vi	ew of Track O	bscured b	y (primary ob	struction)								Code
Highway V		I N/		Permanent Str			ng Train 5.	_		7. Oth	` 1	•	arrative)		l NI/A
1. Yes 2. No	3. Unknown	N/A	2. 3	Standing Railr		ment 4. Topo	graphy 6.	High			obstructed				N/A
Casualties	to:		Killed	Injured	127. Dr	iver ed 2.Injured 3.	Uninjured		Code N/A		Was Drive 1. Yes	er in th	e Vehicle? 2. No		Code N/A
129. Highway-	Rail Crossing U	sers	N/A	N/A	1	ghway Vehicle t. dollar damaş		amage	N/A		Total Num (include di		Highway-Rai	l Crossing N/A	Users
132. Locomot	ive Auxiliary Li	ghts?				Code	133. Locoi	motiv	e Auxilia	y Lights O	perational?	?			Code
1. Y	es	2. 1	No			N/A	1.	. Yes		2. 1	No				N/A
134. Locomot	ive Headlight Ill	uminate	d?			Code	135. Locoi	motiv	e Audible	Warning S	ounded?				Code
1. Y	es	2. 1	No			N/A	1.	. Yes		2. 1	No				N/A

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



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137. SYNOPSIS OF THE ACCIDENT

On Thursday, February 7,2008, at approximately 10:03 AM, a southbound MARC locomotive No.4912 collided with MARC passenger train No. 419. The collision occurred in Washington, DC at milepost 135.7, on track No. 13, in Union Station.

There were 14 passengers and 1 employee slightly injured. Locomotive No. 4912 sustained damage of about \$165,000. Locomotive No. 4903 sustained damage of about \$3,000. Neither one derailed. However, there was 1 car derailed in the 5th position MARC train No. 419 with estimated damages of \$10,000.

At the time of the collision, it was daytime with clear weather. The temperature was about 52 degrees F.

The accident was caused by failure to comply with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without notifying the Engineer.

CIRCUMSTANCES PRIOR TO THE ACCIDENT:

The crew SP-711A, south included a locomotive Engineer, and a Conductor. They first went on duty at 7:59 a.m. EST, February 7, 2008, at Washington terminal in Washington, DC. This is their home terminal and they received more than the statutory off duty period, prior to reporting for duty.

MARC Train No.417, arrived on 13 track at Washington Union Station at 9:02 a.m. with the following consist south to north:

Cab Car- 7854, 7802, 7813, 7816, 7815, 7876, 7798, Motor - 4912.

MARC Train 419 arrived in 13 track, stopping just short of MARC 417 at 9:55a.m. and began detraining passengers from the following consist:

Cab Car- 7852, 7825, 7800, 7808, 7873, 7895, Motor - 4903.

At 10:03 AM on February 7, 2008, MARC commuter train No. 419 was positioned on No. 13 track in Union Station, Washington, DC and was struck from behind by a light locomotive. Immediately before the incident, the commuter train had entered Union Station in the push mode and passengers were debarking from the commuter train. Fourteen of the passengers who were onboard the commuter train as the collision occurred were slightly injured. All injures are minor with four claiming back injuries. All were transported to local hospitals as a precautionary measure.

In addition to the 14 passenger injuries, the engineer on the revenue passenger train (MARC Train No. 419) is reporting a slight head injury. That engineer was located in the operating compartment of cab control car, which was on the south (lead) end of the train located on No. 13 track. At the time of the impact, he was applying a hand brake.

The conductor was positioned at the controls on the south end of MARC locomotive No. 4912. The engineer was positioned on the north end of MARC locomotive No. 4912. The railroad timetable direction of the train was south.

138. NARRATIVE

THE ACCIDENT:

Marc locomotive No. 4912

The download of the event recorder shows that the speed at the time of collision was 12 miles per hour. The maximum speed on this track is 15 mph.

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At 9:02 a.m. Marc train No. 417 arrived in Washington Union Station on Track 13. The train consisted of seven (7) cars 7798,7876,7875,7816,7813,7802,7854, and one (1) locomotive No. 4912.

At approximately 9:40am, Washington Terminal Yard Crew SP711A, received instructions from KTower to walk to 13 track and remove MARC Motor 4912 from the rear of MARC 417, proceed north and follow the next train in. At approximately 9:50am, yard crew SP711A, proceeded North out of 13 track, routed to 38 track, and stopped just North of H-Bridge.

At 9:56 a.m., yard crew SP711A received a restricting signal at H-Bridge to proceed South. The Conductor on the point of the movement, via radio communication called the restricting signal to Engineer and told him to comeback 15 cars. MARC 4912 then proceeded South from H-Bridge to 13 track traversing the following switches: 140 switch, 136/134 slip switch, 122 crossover, 118 switch and the 1181116 slip switch into 13 track. MARC Motor 4912 traveled a distance of approximately 783 feet from where it stopped North of H-Bridge until it collided with MARC 419 in 13 track at approximately 9:57am.

At 10:00am, MARC Conductor of job SP711A, called the Washington Commuter Services Control Center and requested medical assistance. In addition, a radio call was made to K-Tower requesting medical assistance on Track 13. K-Tower responded by calling the Division Control Center and also the Washington Commuter Services Control Center. Calls were made to DC Fire and Rescue and the Fire Department sent out the first units at 10:08am.

Amtrak Mid-Atlantic Division management were called to the scene. In addition, personnel from the mechanical department were also called. Information from the collision, such as event recorder downloads, measurements, and inspections were started at this time.

The impact caused extensive damage to MARC motor 4912, MARC locomotive No. 4903 and caused the derailment of the north truck, wheels R3-4 of MARC car No. 7873. In addition to the equipment damage there was also 80 feet of rail that had rolled over.

In addition to the equipment damage, there were also fourteen (14) passenger injuries and one (1) employee injury.

ANALYSIS and CONCLUSIONS:

MARC locomotive NO. 4912 was equipped with a speed indicator and an event recorder as required. The relevant event recorder data was downloaded by the trainmaster at the accident site. The analysis disclosed that the Conductor was not in compliance with all applicable railroad operating and train handling requirements. FRA reviewed the results of this analysis, and concurred with the conclusions. The Conductor operating MARC locomotive No. 4912 did not comply with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without notifying the Engineer.

The following are the results of the Signal and Train Control investigation for the MARC collision that occurred on February 7, 2008 in Washington, DC on the Mid Atlantic Division, Washington Tenninal Sub, Milepost (MP) 135.

The Amtrak signal forces were notified at approximately 1010 hrs. and were dispatched to K-Tower and the H Signal Bridge. At this location trains are operated by signal indication of an interlocking system with NORAC Operating Rules in effect. An operational test to recreate the scenario was conducted, and a 24 hour signal watch was implemented and no exceptions were noted.

On February 8, 2008 a FRA signal inspection was conducted at this location. The inspection consisted of interviewing the Assistant Division Engineer, Signal Supervisor, and signal maintainers. All pertinent downloads and test documentation were reviewed. The conditions that existed at the time of the accident were recreated and the signal system was found to be working as intended. An inspection report number 14 with no exceptions taken is included as an attachment.

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This rear end collision was due to human factor. The Conductor on the leading end of this shove move was not in compliance with NORAC Operating Rules, and NEC system special instructions. This employee was given a 90 day suspension from work, because of not complying with railroad operating rules. These issues have been discussed with Amtrak supervision, and will be further reviewed during an upcoming focused inspection at Union Station.

PROBABLE CAUSE & CONTRIBUTING FACTORS:

The probable cause of this collision is non compliance with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without notifying the Engineer.

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FEDERAL RAILF					FRAF	ACTUA	L RAI	LROAD A	ACC	CIDE	NT R	EPORT		I	FRA Fi	le#	HQ-200	8-16	
1.Name of Railroad (Operating	Train #1						1a. Alphabe	tic Co	ode.			1b. F	Railroad A	cciden	t/Inci	dent No.		
Amtrak [ATK]								ra. rapiace	AT					8	861748				
2.Name of Railroad C MARC Train Serv								2a. Alphabe		ode ACZ			2b. R	ailroad A	ccident 861748		lent No.		
3.Name of Railroad O N/A	Operating	Train #3						3a. Alphabe	tic Co				3b. F	Railroad A	.cciden	t/Inci	dent No.		
4.Name of Railroad I	Responsi	ble for Trac	k Main	tenano	ce:			4a. Alphabetic Code ATK 4b. Railro							ailroad Accident/Incident No.				
5. U.S. DOT_AAR C	Grade Cro	ssing Ident	ification	n Nun	nber			6. Date of A Month 02	ccide			ar 2008	7. T	861748 ime of Accident/Incident 10:03:00					
0.77. 64.11.47		1. Derailı	nent		4 0:1	411. 1		7. Hwy-rail crossing 10. Explosion-detonati						10:03:00				ш	
8. Type of Accident/I (single entry in cod		2. Head o	on collis			g collision		8. RR grad	e cros	-	11. 1	Fire/violent	ruptı		(desc.		n		ode 03
9. Cars Carrying		Rear er 10. HAZI			6. Broke	n Train co	llision Cars Relea	9. Obstruct	10n	1′		Other impac	ets		13. Div	rision			
HAZMAT	0	Damaged			N/A	HAZ	ZMAT	N/	A	12. People Evacuated				0	13. DIV		O-ATLAN	TIC	
14. Nearest City/Tow	n					15. Mile	epost iearest ter	1th)	16.	. State	Abbr	Code	17.	County					
	WASH	INGTON,			7	'	13	35.7			/A	DC					ON, DC		
18. Temperature (F) (specify if minus))	19. Visib	oility Dawn	(sing	le entry) usk	Code	20. We		le en Rain	try) 5.Sl	eet	Code		21. Typ	e of Tra ain 3.		na	(Code
(speedy ty minus)	F		Day		ark	2		Cloudy 4. l			now	1			ard 4.				2
22. Track Name/Nu	mber		13	2		23. FRA Clas	Track ss (1-9, X)	Code	24	(gros	ss tons i			25. Tim	e Table 1. Nort				Code
			1.	3			ODED /	1 ATING TR	AIN	millio	ons)	N/A			2. Sout	h 4.	West		2
26 Type of Equipme		Eusiaht tus		4 W/o	ork train 7	Vand/arri					Codo	27. Was E	anin	ment (Code	20.5	Facin Non	a la ou/	Cramb of
26. Type of Equipme Consist (single en		. Freight tra . Passenger				 Yard/swi Light loc 		A. Spec. M	OWI	equip.	Code	Attend		mem (oue	20.	Frain Nur	noei/,	Symbol
	3	. Commute	r train	6. Cut	of cars 9	. Maint./in	spect.car				8	1. Y		2. No	1		711		
29. Speed (recorded	speed, if	available)	Code	31.	Method(s)	of Operation	on (e	nter code(s						31a. Rem				motiv	ve?
R - Recorded		MDH	R		ATCS		. Automa			•	l instruc han mai			0 = Not a 1 = Remo		-			
E - Estimated	12	MPH	K	1	Auto train		i. Current . Time tab	or trarric de/train orde						2 = Remo		•			
30. Trailing Tons excluding powe		onnage,		d.	Cab Traffic	j.Track warrant control p. Other (Specify in narrative) 3							3 = Rem transmi			nan one			
		N/A		f.	Interlockin	g 1.	Yard limi	its		f N	J/A N/	A N/A N	J/A	remote	control	transı	mitter		0
32. Principal Car/Uni	t	a. Initial a	and Nur	nber	b. Positi	on in Trair	n c. Le	oaded(yes/no) 3	3. If ra	ilroad e	mployee(s)	teste	d for drug	/alcoho	ol use	,		
(1) First involved (derailed, struck, e	etc)	MA	RC 491	2		1		N/A				umber that riate box.	were	positive i	n		Alcohol 0	Е	Orugs 0
(2) Causing (if med	chanica	l	0			0		N/A		34. Wa	as this c	onsist trans	porti	ng passen	gers? (Y/N)		İ	N
35. Locomotive Uni		a. Head	b. Man	Mid T	rain c. Remote		ar End	36. Ca	36. Cars			a. Frei			c Fre	Emp	oty d. Pass.	e C	aboose
(1) Total in Train	n	End 1	b. Man		0	0	0		e (1) Total in Eq			.)	0	(.110		0	C. C	0
(2) Total Deraile	·d	0	0	,	0	0	0	(2) Tota	al De	railed			0	0	(,	0		0
37. Equipment Dama	age		-	_	ck, Signal,	Way,		39. Prii	narv	Cause		-		40. Cont	_	_			
This Consist	5	\$165,000.00	\ I		cture Dama	-	\$5,350.00	Code	iiui y	Cuuse	1	H607		Code	Hounns	g Cau		I211	
		Number										Lengt	h of T	Time on D					
41. Engineer/	42. Fir		4	13. Co	nductors	44. Bra	akemen	45. En		r/Opera) (°		46. Con		[+c	2	Mi	4
Operators 1 0 1 Casualties to: 47. Railroad Employees 48. Train Passen							0		Hı		2	Mi 4				Írs			
Casualties to:	47. Rail		yees 48	3. Trai		rs 49. (Other	50. EO	Г De [,] Yes	vice? 2. N	Jo				EOT D Yes		Properly 2. No		ed? N/A
Fatal 0 0							0				pied by	Crew?		1.	105		2.110		11/71
Nonfatal		0			0		0			1. Yes			No					1	N/A
						O	PERAT	ING TRAI	N #2	2									
53. Type of Equipme Consist (single en	a	Freight tra Passenger				Yard/swi	_	A. Spec. M	oW E	Equip.	Code	54. Was E Attend		nent C	ode	55. T	rain Nun	iber/S	Symbol
Commise (single en	ury)	Commuter		•	_	. Maint./in					3	1. Y	es 2	2. No	1		419/M	IARC	
56. Speed (recorded	speed, if	available)	Code	1	Method(s)	•	,	nter code(s						58a. Rem	-			motiv	ve?
R - Recorded E - Estimated	0	МРН	R	1	ATCS Auto train	_	. Automa . Current			•	l instruc han mai			0 = Not a $1 = Rem$					

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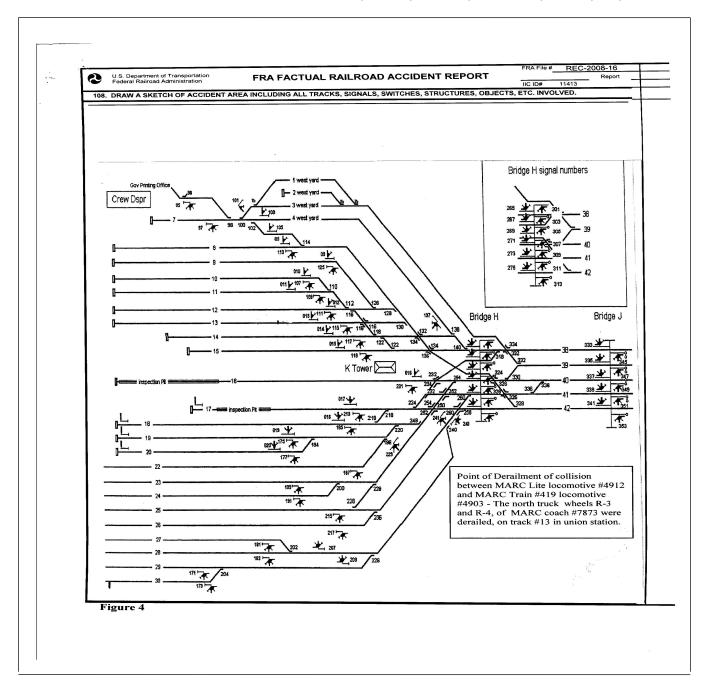
DEPARTMENT (FEDERAL RAILR					FRA FA	ACTUAI	L RAILR	OAD AC	CIDENT RI	EPORT	F	RA File #	HQ-200	<u>8-16</u>	
57. Trailing Tons (gro excluding power		age, N/A		d. (Auto train Cab Traffic Interlocking	j.T k.	Γime table/to rack warran Direct traffi ard limits	t control p	<u> </u>	in narrative)	3 = Remo transmit remote c	ote control to te control ter - more control tran	than one smitter	0	
59. Principal Car/Uni	it	a. Initial	and N	umber	b. Posit	ion in Train	c. Load	led(yes/no)	60. If railroad 6						
(1) First involved (derailed, struck,	etc)	MA	RC 490	03		7		no	the appropri	imber that wer	e positive i	e positive in Alcohol Di			
(2) Causing (if medicause reported		al	0			0	1	N/A	61. Was this c	onsist transpor	ting passen	gers? (Y/N	D	Y	
62. Locomotive Unit	ts	a. Head End	b. Ma	Mid Ti mual	rain c. Remote		r End c. Remote	63. Cars		a. Freight	b. Pass.	En c. Freight	npty d. Pass.	e. Caboose	
(1) Total in Trair	ı	1		0	0	1	0	(1) Total in	Equipment Con	sist 0	4	0	2	0	
(2) Total Deraile	d	0	(0	0	0	0	(2) Total D	erailed	0	0	0	1	0	
64. Equipment Dama		** -= 000 0			k, Signal,		\$5,350.00	66. Primar Code	y Cause	**	67. Contr	ributing Ca	use		
This Consist	;	\$165,000.00 Numbe		& Str ew Mer	ructure Dai nbers	nage `	,550.00	Code		H607 Length of	Time on D	outy		H211	
68. Engineer/	69. Fi	remen		70. Co	nductors	71. Bra	kemen	72. Engine	eer/Operator		73. Con	ductor			
Operators 1		0			1		1		Hrs 5	Mi 38		Hrs	5	Mi 38	
Casualties to:	74. Rai	lroad Emplo	oyees 7	75. Traii	n Passenge	rs 76. Oth	er 	77. EOT D		_		EOT Devid			
Fatal		0			0		0	1. Y		2	1.	Yes	2. No	N/A	
Nonfatal					3		0	79. Caboo	se Occupied by O					N/A	
Nonratar		0			3	0	-	G TRAIN	1. Yes	2. No					
80. Type of Equipmen	nt 1	. Freight tra	in	4. Worl	k train 7.	Yard/switc				31. Was Equip	ment Co	ode 82.	Train Nun	nber/Symbol	
Consist (single en	try) 2	. Passenger		·		Light loco		•	N/A	Attended? 1. Yes	2 No N	J/A	N/A		
83. Speed (recorded)						Maint./insp of Operation		r code(s) th	at apply)	1. 103	- 1	otely Contr	olled Loco	motive?	
R - Recorded	1 3	,			ATCS	-	Automatic b	olock n	n.Special instruct		0 = Not a	remotely c	ontrolled		
E - Estimated	N/A	MPH	N/A		Auto train		Current of to	гаппс	. Other than mair			ote control	•		
84. Trailing Tons (gross to	nnage,		1	Auto traii Cab		i ime table/ti Track warran	t control P	o. Positive train co o. Other (Specify	in narrative)		te control to te control	ower		
excluding power	r units)			1	Traffic	•	Direct traffi		Code(s)			ter - more			
		N/A		f. I	nterlocking	g 1.Y	ard limits		N/A N/A N/A	A N/A N/A	remote c	ontrol tran	smitter	N/A	
86. Principal Car/Uni	it	a. Initial	and N	umber	b. Posit	on in Train	c. Load	led(yes/no)	87. If railroad e		_	-	se,		
(1) First involved (derailed, struck,	ata)		N/A]	N/A		N/A	enter the m	imber that wer	e positive i	n [Alcohol	Drugs N/A	
(2) Causing (if me		al				***					box. N/A st transporting passengers? (Y/N)				
cause reported			N/A		1	N/A		N/A	001 11 40 11110 0					N/A	
89. Locomotive Unit	ts	a. Head End	b. Ma	Mid Ti	rain c. Remote		r End c. Remote	90. Cars			b. Pass.	c. Freight	npty d Pass	e. Caboose	
(1) Total in Train	1	N/A		//A	N/A	N/A	N/A	(1) Total in	Equipment Cons		N/A	N/A	N/A	N/A	
(2) Total Deraile	d	N/A	N/	/A	N/A	N/A	N/A	(2) Total D	erailed	N/A	N/A	N/A	N/A	N/A	
91. Equipment Dama	ige		1	92. Trac	k, Signal,	Way,	!	93. Primary	y Cause Code		94. Contr	ributing Ca	use	ı	
This Consist		N/A			ucture Dan		N/A	-		N/A	Code	J		N/A	
		Numbe	r of Cr	ew Mer						Length of	Time on D				
95. Engineer/ Operators N/A	96. Fi	remen N/A			onductors N/A	98. Brai	kemen N/A	_	eer/Operator Hrs N/A	Mi N/A	100. Cor	nductor Hrs	N/A	Mi N/A	
Casualties to:	101. Ra		loyees	-		103. Ot	her	104. EOT			105. Was	s EOT Dev	ice Proper	ly	
Casualties to: 101. Railroad Employees Fatal N/A					N/A	1	N/A	1. Y	es 2. No	N/A	1.	Yes	2. No	N/A	
Nonfatal		N/A		ı	N/A		N/A	106. Cabo	ose Occupied by 1. Yes	Crew?				ı N/A	
		Highw	av Use							ail Equipmen	ıt Involve	d.			
107.			, 0.50				Code	111. Equip		2quipinen				Code	
C. Truck-T A. Auto D. Pick-Up	railer.	F. Bus			Motor Veh	icle	Code		3.Tr	ain (standing)	6.Light	Loco(s) (n	noving)	Code	
B. Truck E. Van	TIUCK	H. Motorcy				narrative)	N/A		its pulling) 4.Ca its pushing) 5.Ca	(s) (standin (specify in		N/A	
108. Vehicle Speed			109.		geograph		Code	<u> </u>	on of Car Unit in	(similaris)		, or sony in		'	
(est. MPH at im	ipact)	N/A	1.Nor	th 2.So	uth 3.East		N/A				N/A				

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	ENT OF TRAI RAILROAD AI			FRAF	ACTU.	AL RAILR	OAD AC	CCII	DENT I	REPOI	RT	F	FRA File # H	Q-2008-1	<u>16</u>
110. Position						Code	113. Circu	ımstar	nce						Code
1.Stalled o 4. Trapped	n Crossing 2.St	opped o	n Crossing	3.Moving Ov	er Crossin	g N/A	1. Rail Ed 2. Rail Ed			_	•	er			N/A
	highway user a					Code	114b. Wa	as the	re a hazar	dous ma	terials rel	ease			Code
	pact transporting	•				ı N/A	1 High	vivor, 1	User 2.	Doil Ear	inmont	2 Poth	4. Neither		N/A
	User 2. Rail E	• •					1. High	iway (0501 2.	Kan Eqt	принен	3. D 0til	4. INCILIE		IV/A
114c. State he	ere the name and	quantit	y of the haz	ardous materia	ils release	d, if any. N/A									
	1.Gates 2.Cantilever FL 3.Standard FLS	S 5.H	/ig Wags wy. traffic s udible	ignals 8.Stop	signs	10.Flagged by 11.Other (spec 12.None		ı	Signaled See instru			Code	117. Whistle 1. Yes 2. No	Ban	Code
Code(s)	J.Dittaridard T.D.	N/A	N/A	N/A	N/A	N/A	N/A					N/A	3. Unkno	wn	N/A
118. Location 1. Both Sic	les	,	,	Code	1	ossing Warning th Highway Sig	_		Code		U	luminated pecial Lig	by Street hts		Code
	Vehicle Approace e Side of Vehicle		ach	N/A		2. No 3. Unknown			N/A		2. No 3. Unkno	own			N/A
121. Age	122. Driver's C 1. Male 2. Female	ender	Code 12			or in Front of ck by Second 7 3. Unknown		rain 1. Drove a			around or thru the Gate 4. Stopped 6 d and then Proceeded 5. Other (sp			_	Code
N/A	2. I cinaic		N/A				N/A	A	3. Did n	ot Stop			narrat	ive)	N/A
125. Driver Pa Highway V	ehicle	Code	1.1	Permanent Str	ucture		ng Train 5.	_					narrative)		Code
1. Yes 2. No	3. Unknown	N/A	2.1	Standing Railr		ment 4. Topo	graphy 6.	High			lot obstru		*****		N/A Code
Casualties	to:		Killed	Injured	1	ed 2.Injured 3.	3		Code N/A		1. Ye	es	ne Vehicle? 2. No		N/A
129. Highway-	Rail Crossing U	sers	N/A	N/A	1	ghway Vehicle t. dollar damaş		amage	N/A	13		Number o le driver)	f Highway-Rail	l Crossing N/A	g Users
	ive Auxiliary Li	ghts?				Code	133. Locoi	motiv	e Auxilia	ry Lights	Operatio	nal?	·		Code
1. Y	es	2. 1	No			N/A		Yes			2. No				N/A
134. Locomoti	ive Headlight Ill	uminate	ed?			Code	135. Locoi	motiv	e Audible	Warnin	g Sounde	1?			Code
1. Y	es	2. 1	No			N/A	1.	Yes		2	2. No				N/A

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



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137. SYNOPSIS OF THE ACCIDENT

On Thursday, February 7,2008, at approximately 10:03 AM, a southbound MARC locomotive No.4912 collided with MARC passenger train No. 419. The collision occurred in Washington, DC at milepost 135.7, on track No. 13, in Union Station.

There were 14 passengers and 1 employee slightly injured. Locomotive No. 4912 sustained damage of about \$165,000. Locomotive No. 4903 sustained damage of about \$3,000. Neither one derailed. However, there was 1 car derailed in the 5th position MARC train No. 419 with estimated damages of \$10,000.

At the time of the collision, it was daytime with clear weather. The temperature was about 52 degrees F.

The accident was caused by failure to comply with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without notifying the Engineer.

CIRCUMSTANCES PRIOR TO THE ACCIDENT:

The crew SP-711A, south included a locomotive Engineer, and a Conductor. They first went on duty at 7:59 a.m. EST, February 7, 2008, at Washington terminal in Washington, DC. This is their home terminal and they received more than the statutory off duty period, prior to reporting for duty.

MARC Train No.417, arrived on 13 track at Washington Union Station at 9:02 a.m. with the following consist south to north:

Cab Car- 7854, 7802, 7813, 7816, 7815, 7876, 7798, Motor - 4912.

MARC Train 419 arrived in 13 track, stopping just short of MARC 417 at 9:55a.m. and began detraining passengers from the following consist:

Cab Car- 7852, 7825, 7800, 7808, 7873, 7895, Motor - 4903.

At 10:03 AM on February 7, 2008, MARC commuter train No. 419 was positioned on No. 13 track in Union Station, Washington, DC and was struck from behind by a light locomotive. Immediately before the incident, the commuter train had entered Union Station in the push mode and passengers were debarking from the commuter train. Fourteen of the passengers who were onboard the commuter train as the collision occurred were slightly injured. All injures are minor with four claiming back injuries. All were transported to local hospitals as a precautionary measure.

In addition to the 14 passenger injuries, the engineer on the revenue passenger train (MARC Train No. 419) is reporting a slight head injury. That engineer was located in the operating compartment of cab control car, which was on the south (lead) end of the train located on No. 13 track. At the time of the impact, he was applying a hand brake.

The conductor was positioned at the controls on the south end of MARC locomotive No. 4912. The engineer was positioned on the north end of MARC locomotive No. 4912. The railroad timetable direction of the train was south.

138. NARRATIVE

THE ACCIDENT:

Marc locomotive No. 4912

The download of the event recorder shows that the speed at the time of collision was 12 miles per hour. The maximum speed on this track is 15 mph.

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FRA File # HQ-2008-16

At 9:02 a.m. Marc train No. 417 arrived in Washington Union Station on Track 13. The train consisted of seven (7) cars 7798,7876,7875,7816,7813,7802,7854, and one (1) locomotive No. 4912.

At approximately 9:40am, Washington Terminal Yard Crew SP711A, received instructions from KTower to walk to 13 track and remove MARC Motor 4912 from the rear of MARC 417, proceed north and follow the next train in. At approximately 9:50am, yard crew SP711A, proceeded North out of 13 track, routed to 38 track, and stopped just North of H-Bridge.

At 9:56 a.m., yard crew SP711A received a restricting signal at H-Bridge to proceed South. The Conductor on the point of the movement, via radio communication called the restricting signal to Engineer and told him to comeback 15 cars. MARC 4912 then proceeded South from H-Bridge to 13 track traversing the following switches: 140 switch, 136/134 slip switch, 122 crossover, 118 switch and the 1181116 slip switch into 13 track. MARC Motor 4912 traveled a distance of approximately 783 feet from where it stopped North of H-Bridge until it collided with MARC 419 in 13 track at approximately 9:57am.

At 10:00am, MARC Conductor of job SP711A, called the Washington Commuter Services Control Center and requested medical assistance. In addition, a radio call was made to K-Tower requesting medical assistance on Track 13. K-Tower responded by calling the Division Control Center and also the Washington Commuter Services Control Center. Calls were made to DC Fire and Rescue and the Fire Department sent out the first units at 10:08am.

Amtrak Mid-Atlantic Division management were called to the scene. In addition, personnel from the mechanical department were also called. Information from the collision, such as event recorder downloads, measurements, and inspections were started at this time.

The impact caused extensive damage to MARC motor 4912, MARC locomotive No. 4903 and caused the derailment of the north truck, wheels R3-4 of MARC car No. 7873. In addition to the equipment damage there was also 80 feet of rail that had rolled over.

In addition to the equipment damage, there were also fourteen (14) passenger injuries and one (1) employee injury.

ANALYSIS and CONCLUSIONS:

MARC locomotive NO. 4912 was equipped with a speed indicator and an event recorder as required. The relevant event recorder data was downloaded by the trainmaster at the accident site. The analysis disclosed that the Conductor was not in compliance with all applicable railroad operating and train handling requirements. FRA reviewed the results of this analysis, and concurred with the conclusions. The Conductor operating MARC locomotive No. 4912 did not comply with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without notifying the Engineer.

The following are the results of the Signal and Train Control investigation for the MARC collision that occurred on February 7, 2008 in Washington, DC on the Mid Atlantic Division, Washington Tenninal Sub, Milepost (MP) 135.

The Amtrak signal forces were notified at approximately 1010 hrs. and were dispatched to K-Tower and the H Signal Bridge. At this location trains are operated by signal indication of an interlocking system with NORAC Operating Rules in effect. An operational test to recreate the scenario was conducted, and a 24 hour signal watch was implemented and no exceptions were noted.

On February 8, 2008 a FRA signal inspection was conducted at this location. The inspection consisted of interviewing the Assistant Division Engineer, Signal Supervisor, and signal maintainers. All pertinent downloads and test documentation were reviewed. The conditions that existed at the time of the accident were recreated and the signal system was found to be working as intended. An inspection report number 14 with no exceptions taken is included as an attachment.

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This rear end collision was due to human factor. The Conductor on the leading end of this shove move was not in compliance with NORAC Operating Rules, and NEC system special instructions. This employee was given a 90 day suspension from work, because of not complying with railroad operating rules. These issues have been discussed with Amtrak supervision, and will be further reviewed during an upcoming focused inspection at Union Station.

PROBABLE CAUSE & CONTRIBUTING FACTORS:

The probable cause of this collision is non compliance with restricted speed. A contributing factor is the Conductor failed to give proper distances to the Engineer when backing up and also changed the method of communication, Radio communication to hand signals, without notifying the Engineer.

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