

Federal Railroad Administration Office of Safety Headquarters Assigned Accident Investigation Report HQ-2008-27

CSX Transportation (CSX) Hawesville, KY March 12, 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	TATIC RATI	ON ON	FRAFA	ACTU.	AL RA	ILR	OAD A	CCII	DENT	REPO	ORT]	FRA F	ile #	<u>HQ-200</u>	<u>18-27</u>
1.Name of Railroad (1a.	1a. Alphabetic Code					b. Railroad Accident/Incident No.											
2.Name of Railroad C	2a. Alphabetic Code CSX						2b. Railroad Accident/Incident No.											
3.Name of Railroad O	3a. Alphabetic Code						000044306 b. Railroad Accident/Incident No.											
N/A 4 Name of Railroad H	A Alphabetic Code					4b	Railroad A	N/A	t/Inci	dent No								
CSX Transportatio	CSX						000044306											
5. U.S. DOT_AAR C	6. I Mo	Date of Acconth 03	cident/.	Incident y 12	Year 2	008 /.	09:4	ccident/ 2:			PM							
8. Type of Accident/Indicent 1. Derailment 4. Side collision									Hwy-rail c	crossin	g 10	. Explo	sion-deto	nation 13	. Other		 	Code
(single entry in co	(single entry in code box) 2. Head on collision 5. Raking collision 3. Rear end collision 6. Broken Train or								RR grade	crossir m	ng 11	. Fire/v	olent rup	oture	13			
9. Cars Carrying		10. HAZ	MAT C	lars	0. BIOKE		Cars Rel	leasin	asing		12. Peo	ple	impacts	13. Div			1	
HAZMAT	0	Damaged	/Derail	ed	0	HA	ZMAT		0		Evacua	ted		0			Louisvill	e
14. Nearest City/Tow	n				15. Milepost			onth)	16. Sta		State Abbr Code		le 1	17. County				
	Ha	awesville			(10 h			90.3			N/A KY			HAN			СК	
18. Temperature (F)	\ \	19. Visib	ility Dawn	(sing	le entry)	Code	20. V	Veath	er (single	entry)	entry)		ode	21. Typ	pe of Track			Code
(specify if minus) 41	F	2.1	Day	4.E	Dark	2	2	. Cloudy 4. Fog		og .	g 6.Snow		1	1. Ma 2. Ya		ard 4. Industry		1
22. Track Name/Nu	mber					23. FR	A Track	0	Code 24. Annual Track De			ick Den	sity 25. Tin		me Table Direction			Code
		LH	&STL s	single	main	Cli	iss (1-9, 2	x)	3	(gross tons in millions) 9.0			9.0		2. Sout	th 4.	West	4
							OPER	RATI	NG TRA	IN #1	1			-				
26. Type of Equipment 1. Freight train 4. Work train 7. Yard/switching A. Spec. MoW Equip. Code 27. Was Equipment Code 28. Train Number/Symbol													nber/Symbol					
Consist (single entry) 2. Passenger train 5. Single car 8. Light loco(s).											1		1. Yes	2. No 1 BR200602				0602
29. Speed (recorded speed, if available) Code 31. Method(s) of Operation (enter code(s) that apply) [31a. Remotely Controlled Locomotiv												omotive?						
R - Recorded a. ATCS g. Autor									olock	m.Spe	cial instruction of the second s	uctions	k	0 = Not a	a remot	ely co	ontrolled	
E - Estimated 15 MPH E b. Auto train control h. Curre									raffic rain orders	o. Pos	sitive train	n contro	1	1 = Rem 2 = Rem	ote con	trol p trol to	ortable	
30. Trailing Tons (gross tonnage, d. Cab j.Track								varran	it control	p. Otł	ner (Spec	ify in n	arrative)	3 = Rem	ote con	ntrol		
e. Traffic k. Dire									c control		Code	$\frac{v(s)}{v(a \mid x)}$		remote	control	trans	nan one mitter	
32. Principal Car/Uni	t	a. Initial	and Nu	mber	b. Positio	on in Tra	in c.	Loade	ed(ves/no)	33.1	f railroad	employ	vee(s) tes	ted for drug	z/alcoho	ol use		
(1) First involved		0		N	J/Δ		enter the	numbe	that wer	e positive i	n	F	Alcohol	Drugs				
(derailed, struck, e	etc)	1	0			0		1	V/11		the appro	opriate t	oox.				N/A	N/A
(2) Causing (if med cause reported))	!	0			0		N	J/A	34.	. Was this	consis	transpor	ting passen	igers? (Y/N)		N/A
35. Locomotive Uni	ts	a. Head End	h Ma	Mid T	rain c Remote	F d. Manu	ear End al c. Re	mote	36. Cars	3			L a. Freigh	oaded t b. Pass.	c. Fre	Emp ight	pty d. Pass.	e. Caboose
(1) Total in Train	ı	0	(0	0	0	0)	(1) Total	in Equ	ipment C	onsist	0	0	(0	0	0
(2) Total Deraile	d	0	(D	0	0	0)	(2) Total	Derail	ed		0	0	(0	0	0
37. Equipment Dama	ige		3	8. Tra	ck. Signal. V	Way.			30 Prime	arv Ca	1150			40. Com		a Cau		
This Consist		\$37,828.00		& Stru	icture Dama	ge	\$0.00		Code H607 Code					N/A				
41 Engineer/	42 Ein	Number	r of Cre	$\frac{13}{43}$ Co	mbers	rakemen		45 Engi	Lengt			Length of	of Time on Duty					
Operators 1	Engineer/ 42. Firemen 4. Operators 1				0		44. Diakemen		45. Engineer/Operator Hrs 5 Mi 1			12	Hrs 0 Mi 0			Mi 0		
Casualties to:	47. Railr	oad Emplo	vees 4	8. Trai	in Passenger	·s 49.	49 Other		50. EOT Device?			12	51. Was	EOT D	Device	e Properly	Armed?	
Fatal		0	-		0		0		1. Yes 2. No N/A			N/A	1. Yes 2. No N/A				N/A	
N 6 (1	+								52. Caboose Occupied by Crew?			?						
NonTatal		1			0		0			1.	Yes		2. No					N/A
	1	End also to		4 11/-	ala tanàn 7	(OPERA'	TINC	G TRAIN	[#2								
53. Type of Equipme Consist (single on	nt 1. (trv) 2.	Passenger	train	4. wo 5. Sin	gle car 8.	Light lo	co(s).	A.	Spec. MoV	✓ Equi	ip. Code	54. V	vas Equij Attended?	pment (Code	55.1	I'rain Nun	nber/Symbol
	3.	Commuter	train	6. Cut	of cars 9.	Maint./i	nspect.ca	r			1		1. Yes	2. No	1		TB20	00601
56. Speed (recorded	speed, if	available)	Code	58.	Method(s)	of Opera	tion ((enter	r code(s)	that a	pply)			58a. Ren	notely C	Contro	olled Loco	omotive?
R - Recorded a. ATCS g. Automatic block m.Special instructions 0 = Not a remotely controlled E - Estimated 0 MPH E b. Auto train control h. Current of traffic n. Other than main track 1 = Remote control portable																		

DEPARTMENT FEDERAL RAILF	OF TRA ROAD AI	NSPORT OMINIST	ΓΑΤΙΟ ΓRATI	ON ON	FRA FA	CTUAL	RAILR	OAD AC	CIDE	INT REPO	ORT	F	RA File	# <u>HQ-200</u>	08-27		
57. Trailing Tons (gross tonnage, excluding power units)					c. Auto train stop i. Time table/tr d. Cab j.Track warrani e. Traffic k. Direct traffic				rain orders o. Positive train control t control p. Other (<i>Specify in narrative</i>) c control Code(s)				2 = Remote control tower 3 = Remote control transmitter - more than one				
N/A				f. Interlocking 1.Ya			ard limits	urd limits		p N/A 1	N/A N/A	remote control transmitter			0		
59. Principal Car/Unit a. Initial and Nu				umber	b. Positio	n in Train	c. Load	led(yes/no)	60. If 1	railroad emp	loyee(s) tes	ted for dru	•				
(1) First involved (densiled struck sto) 0				0		N	N/A	enter the number that we the appropriate box			e positive in Alcohol			Drugs			
(deratiea, struck, etc)							61 Was this consist transpo			ting passengers? (V/N)			N/A				
cause reported) 0			0		1					ung passengers: (1/14)			N/A				
62. Locomotive Units a. Head End b. Mar			Mid T mual	rain c. Remote	Rea 1. Manual	r End c. Remote	63. Cars			Lo a. Freight	aded b. Pass.	c. Freig	Empty ht d. Pass.	e. Caboose			
(1) Total in Train		1		0	0	0	0	(1) Total in	1 Equipment Consist 0		0	0	0	0			
(2) Total Deraile	ed	0		0	0		0	(2) Total E	Derailed		0	0	0	0	0		
64. Equipment Dama	age			65. Tra	5. Track, Signal, Way,			66. Primary Cause				67. Contributing Cause					
This Consist	\$	16,960.00 Numbe) er of Cr	& St ew Me	ructure Dam	Couc			1607 Length of	Time on D	utv		N/A				
68. Engineer/	69. Fire	emen		70. Co	nductors	temen	72. Engin	eer/Oper	rator		73. Con	ductor					
Operators 1		0			0		0		Hrs 5 Mi 12				Hrs 0 Mi (
Casualties to:	74. Railr	ailroad Employees 75. 7			n Passengers	76. Othe	er	77. EOT I	Device?			78. Was EOT Device Prop			y Armed?		
Fatal		0			0		0		1. Tes 2. NO N/A					1. res 2. No			
Nonfatal	1				0		0		1. Yes 2. No					1			
	1		I			OI	PERATIN	G TRAIN	1 #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/S Consist (single entry) 2. Passenger train 5. Single car 8. Light loco(s). A. Spec. MoW Equip. Code 81. Was Equipment Code 82. Train Number/S											nber/Symbol						
83 Speed (recorded	3. Commuter train 6. Cut of cars 9. Maint./inspect.car								hat appl	IN/A	1. Yes 2	2. No	otely Cor	trolled Loco	amotive?		
R - Recorded	speeu, ij t	ivanable)	Couc	a.	ATCS	g. 1	Automatic b	olock ⁿ	n.Special	1 instructions		0 = Not a	remotely	controlled			
E - Estimated	N/A	MPH	N/A	b.	Auto train co	ontrol h.	Current of the	raffic ⁿ	a. Other t	than main tra	ck	1 = Remo	ote contro	ol portable			
84. Trailing Tons	84. Trailing Tons (gross tonnage, d Cab i. Track warra								p. Other	(Specify in r	arrative)	2 = Remo 3 = Remo	ote contro	ol tower ol			
excluding powe	r units)			e.	Traffic	k. 1	Direct traffi	c control		Code(s)		transmit	ter - mor	than one	1		
	N/A		f.	Interlocking	l.Y	ard limits		N/A N	N/A N/A	N/A N/A	Tennote C	onnorna	ansintuei	N/A			
86. Principal Car/Un	it	a. Initial	and N	umber	b. Positio	n in Train	c. Load	led(yes/no)	ailroad emplo	oyee(s) test	ed for drug	g/alcohol	use,	Director			
(1) First involved (derailed, struck,	(1) First involved (derailed, struck, etc.) N/A				N	A		N/A	the	e appropriate	box.	positive i	11	Alconol N/A	Drugs N/A		
(2) Causing (<i>if mechanical</i> <i>cause reported</i>) N/A					N	A]	N/A	88. W	Vas this consi	st transport	ting passengers? (Y/N) N/A					
89. Locomotive Uni	its	a. Head		Mid T	rain	Rea	r End	90. Cars			Lo	aded	I	Empty			
(1) Total in Trai		End	b. Ma	inual	c. Remote	I. Manual	c. Remote	(1) Total in	Emine	ant Consist	a. Freight	b. Pass.	c. Freig	t d. Pass.	e. Caboose		
	1	IN/A		/A	IN/A	IN/A	IN/A				IN/A	N/A		N/A			
(2) Total Deraile	ed	N/A		/A	N/A	N/A	N/A	(2) Total L	Derailed	~ .	N/A	N/A	N/A	N/A	N/A		
91. Equipment Dama This Consist	age	N/A	1	92. Tra & St	ck, Signal, W ructure Dama	'ay, Ige	N/A	95. Primary Cause Code 94. Contributing Cause N/A Code N/A							N/A		
	I	Numbe	er of Cr	ew Me	mbers	0 1		Length of Time on Duty									
95. Engineer/	96. Fire	emen		97. C	97. Conductors 98. Braken			99. Engineer/Operator 100. Conductor							M: M		
Operators N/A		N/A			N/A	1	N/A		Hrs N	N/A M	i N/A	Hrs N/A Mi N/A					
Casualties to:	101. Rail	01. Railroad Employees			Train	103. Oth	103. Other		104. EOT 105. Was EOT Device Properly						ly I N/A		
Fatal	N/A				N/A	N	N/A		N/A 1.105 2.100 N/. 106. Caboose Occupied by Crew?								
Nonfatal N/A					N/A	1	N/A	1. Yes 2. No N/A							N/A		
	Highway User Involved									Rail Equipment Involved							
107. C. Truck-7	Frailer. F	7. Bus	Ţ	. Other	Motor Vehia	le	Code	111. Equipment 3. Train (standing) 6. Light Loco(s) (moving) Code									
A. Auto D. Pick-Up B. Truck F. Van	p Truck (G. School	Bus k	K. Pede	strian	reation	N/A	1.Train(units pulling) 4.Car(s) (moving) 7.Light(s) (standing) 2.Train(units pugling) 5.Car(s) (standing) 8. Other (standing) N/A									
108. Vehicle Speed	I		109.	ouie	geographic	al)	Code	112. Position of Car Unit in 5.0000 (standing) 6.0000 (specify in narrative)									
(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-2008-27 FEDERAL RAILROAD ADMINISTRATION FRA FACTUAL RAILROAD ACCIDENT REPORT FRA File # HQ-2008-27												27			
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	highway user a	and/or ra	il equi	pment	involved		Code	114b. Wa	is there a haza	rdous materials	release		Code		
in the impact transporting hazardous materials?											N/A				
1. Highway User 2. Kail Equipment 3. Both 4. Neither 1977 1. Highway Cost 2. Kail Equipment 5. Both 4. Neither															
114c. State here the name and quantity of the hazardous materials released, if any. N/A															
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.) (See instructions for codes) 1. Yes Warning 3.Standard FLS 6.Audible 9.Watchman 12.None 2. No															
Code(s)	(s) N/A N/A N/A N/A N/A N/A N/A 3. Unknown								3. Unknown	N/A					
118. Location of Warning Code 119. Crossing Warning Code 120. Crossing Illuminated by Street											Code				
1. Both Sid	les					with	h Highway Si	gnals		Lights or	Special Lig	hts			
2. Side of Vehicle Approach 1. Y									1	1. Ye	s				
3. Opposite Side of Vehicle Approach N/A 3							3. Unknown N/A 3. Unknown					N/A			
121.	122. Driver's	Gender	Code	123.	Driver Drov	e Behind o	or 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 thru	the Gate	4. Stopped on Crossing			
N/A	2. Female	; 	N/A		1. Yes	2. No	3. Unknowi		2. Stopp 3. Did r	ot Stop	ceeded	5. Other (specify in narrative)	N/A		
125 Driver Pe	and		12	6 Via	w of Trook C	becaured by		1		F					
Highway V	ehicle	Cod	e 12	1 P	ermanent Str	ucture	(primary ob 3 Passi	struction)	Vegetation	7 Other	(specify in	narrative)	Code		
1. Yes 2. No	3. Unknown	N/.	4	2. S	tanding Rail	oad Equipr	nent 4. Topo	graphy 6.	Highway Vehi	cle 8. Not obs	tructed		N/A		
Compliants Killed Inight 127. Driver Code 128. Was Driver in the Vehicle?									ne Vehicle?	Code					
Casualues to: Killed Injured						1. Kille	d 2.Injured 3.	Uninjured	N/A	A 1.	1. Yes 2. No				
129. Highway-Rail Crossing Users N/A N/A						130. Hig (est.	130. Highway Vehicle Property Damage 131. To (est. dollar damage) N/A					otal Number of Highway-Rail Crossing nclude driver) N/A			
132. Locomotive Auxiliary Lights? Code 133. Locomotive Auxiliary Lights Operational?											Code				
1. Yes 2. No							N/A 1. Yes 2. No				N/A				
134. Locomotive Headlight Illuminated? Code 135. Locomotive Audible Warning Sounded?												Code			
1. Yes 2. No N/A 1. Yes 2. No											N/A				





137. SYNOPSIS OF THE ACCIDENT

On March 12, 2008, about 9:42 a.m. EST, a CSX Transportation Inc. (CSX) Ballast Regulator Machine collided with a standing Double Broom Machine at mile post (MP) OHR 90.3 CSX LH & STL Subdivision. The collision occurred about 4.4 miles west of Hawesville, Kentucky (KY), in Hancock County.

The Ballast Regulator Operator suffered minor injuries, and the Double Broom Machine Operator sustained severe head and back injuries. He was transported to the nearest hospital in Owensboro, KY for initial treatment. He was then airlifted to the Trauma Center at University Hospital in Louisville, KY for further treatment.

Damages include \$37,828 to the Ballast Regulator BR-200602 and \$16,960 to the Double Broom Machine TB-200601 for a total of \$54,788.

At the time of the collision, it was daylight, the weather was clear, and the temperature was 41 °F.

The probable cause of the accident is the failure of the Ballast Regulator Operator to control his speed and stop short of the standing Double Broom Machine, in accordance with the provisions of CSX Railroad Operating Rule 720.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

On March 12, 2008, at 4:30 a.m. (EST), a CSX Machine Operator (Operator) working with the T-9 Tie and Surfacing Units on the CSX LH & STL Subdivision reported for duty in Owensboro, KY. This employee is not covered by the hours of service regulations. Eastern standard times will be utilized throughout this report. After an initial job briefing, the Operator and several other CSX employees boarded a CSX bus and were transported from Owensboro to their work location at Big River's Road near Hawesville, KY.

When they arrived, the CSX T-9 Unit Foreman conducted a job briefing with the employees prior to starting work. Following the briefing at 6:15 a.m., the Foreman approached the Operator and instructed him to accompany the Employee in Charge (EIC) to CSX Skillman Yard at MP OHR 82.2. The Foreman directed the Operator to take charge of Ballast Regulator BR-200602 traveling by track from Skillman Yard to the work site. The EIC would obtain all necessary track authorities to operate the machine over the Main Track.

When the Operator and EIC arrived at Skillman Yard, about 7:30 a.m., the Operator conducted the required daily machine inspection on the Ballast Regulator. He recorded the inspection in the machine's log book. When the operator started the machine, an air pressure warning light came on alerting him of a problem with the machine's air system. He checked his air pressure gauge, which indicated 20 psi, 100 psi below normal operating air pressure for the machine. He contacted the CSX mechanic and requested he come to Skillman Yard to inspect the machine.

After the mechanic arrived, he inspected the machine and found a defective moisture drain valve in the air system. He determined that to be the cause for the lack of air pressure. The mechanic repaired the valve, tested the air brakes, and determined the machine to be working correctly.

At 9:08 a.m. the EIC received a 704 Track Authority from the CSX SA Train Dispatcher. The EIC then contacted the Operator at 9:10 and issued him permission to enter into his 704 Authority with the Ballast Regulator. The Operator proceeded westbound from Skillman Yard into Skillman siding, then entered the LH

& STL single main track from the west end of Skillman siding. He proceeded westbound on the Main Track. The EIC instructed the Operator to stop short of the Maintenance of Way (MoW) red boards posted at MP OHR 88.5. Upon arrival, he was to contact the EIC for permission to enter the 707 Authority to occupy the Track where the T-9 Tie and Surfacing Units were working near MP OHR 90.3.

When the Operator arrived at the red boards at MP OHR 88.5 with the Ballast Regulator, he contacted the EIC at 9:35 a.m. and requested permission to enter the 707 Authority area. The EIC granted permission to enter the working limits and advised him to watch out for on-track equipment ahead of his location. The Operator responded that he understood the instructions and proceeded westbound into the 707 Authority limits.

Approaching the accident site from the east near MP OHR 90.0, the single Main Track is level grade for about five hundred feet leading into a descending grade of 0.22% at MP OHR 90.2. The track gradually proceeds into an ascending grade of 0.07% near the point of the impact with a 3-degree right hand curve located at MP OHR 90.3.

Railroad timetable direction for the Ballast Regulator is westbound, geographic direction is west. Timetable directions are used throughout this report. The method of operation at the single main track location of the accident is a Traffic Control System (TCS). The CSX T-9 Tie and Surfacing Units were occupying the Main Track in accordance with the CSX operating rule 707 issued to the EIC by the SA Train Dispatcher in Jacksonville, Florida (FL).

THE ACCIDENT

At 9:37 a.m., as the operator proceeded westbound on the Main Track approaching the accident site, he encountered a 3-degree right hand curve at MP OHR 89.9. He shifted the Ballast Regulator to a neutral gear position to allow the machine to coast and slow down while approaching the other machines in the T-9 Unit. The Operator began to apply the machine's air brakes to slow the speed of the machine. When the machine failed to react to the brake application, he noticed the brake pressure dropped to zero. Realizing the air brakes would not stop the machine, he applied the parking brake, but it failed to slow the machine. He panicked and placed the Ballast Regulator into reverse, but failed to stop the machine. The Ballast Regulator collided with the Double Broom Machine standing idle on the Main Track.

A CSX mechanic, within close proximity of the accident location, heard the crash and saw the Ballast Regulator operator running towards him yelling that he couldn't stop the machine. The mechanic immediately went to the Double Broom Machine and found the operator of that machine lying on the floor unconscious. The mechanic immediately contacted the CSX Manager of Work Equipment notifying him of the accident. He then contacted 911 for emergency assistance. Other CSX employees from the work group were on scene to help. At 9:51 a.m., the Hancock County Emergency Rescue arrived at the accident site, about 9 minutes following the 911 call. They transported the operator of the Double Broom Machine to the Owensboro Hospital in Owensboro, KY. He was then flown to the trauma unit at the University Hospital in Louisville, KY. The operator of the Ballast Regulator sustained minor injuries.

ANALYSIS AND CONCLUSION

ANAYSIS - TOXICOLOGICAL TESTING:

Toxicological test samples were collected pursuant to Federal authority reasonable suspicion testing protocol. CSX has provided the results of the tests.

CONCLUSION:

Evidence during the course of the investigation does not support impairment due to the effects of alcohol or drug intoxication as a causal or contributing factor. Toxicological test results were negative.

ANALYSIS - FATIGUE:

Federal Railroad Administration (FRA) uses an overall effectiveness rate of 77.5 percent as the baseline for fatigue analysis, which is equivalent to blood alcohol content (BAC) of 0.05. At or above this baseline, we do

not consider fatigue as probable for any employee. Software sleep settings vary accordingly to information obtained from each employee. If an employee does not provide sleep information, FRA uses the default software settings.

FRA obtained fatigue related information, including a 10-day work history, for the employee involved in the accident.

CONCLUSION:

FRA concluded fatigue was not evident for this employee.

ANALYSIS - FRA MECHANICAL INSPECTIONS:

An FRA Motive Power and Equipment Inspector (MP&E) from FRA Region 2 participated in a mechanical inspection of the Ballast Regulator and Double Broom Machine involved in the roadway maintenance machine accident. This inspection took place on March 14, 2008, at the CSX Maintenance of Way Equipment Shop in Richmond, Virginia.

CONCLUSION:

The mechanical inspection, service brake test, and parking brake test disclosed no non-compliant mechanical conditions on the roadway maintenance machines and resulted in no exceptions noted by the inspector which could have caused or been a contributing factor to the severity of the accident.

ANALYSIS- FRA TRACK INSPECTION:

Approaching the accident site from the east direction, an FRA walking track inspection was conducted concerning the track structure at MP OHR 89.0 to MP OHR 90.5. Track speed in this location is 35 mph, Class 3. At that point, the track structure consisted of single Main Track, constructed with 115 lb. Continuous Welded Rail (CWR). New crossties were installed from MP OHR 89.0 to MP OHR 90.5 on March 10 & 11, 2008. The gauge measured 56 ½" throughout the locations. Cross-level and horizontal alignments measured 0" throughout the accident area. The crossties and rail fastening system were found to be structurally sound and in good condition. CSX conducted an FRA main line track inspection through the accident location on March 11, 2008, and took no exceptions.

CONCLUSION:

All track measurements taken in the course of the post accident investigation indicate the track structure was maintained in accordance to 49 CFR, Part 213 Federal Track Safety Standards (TSS). The track and track structure conditions were not a contributing factor to the accident.

ANALYSIS - CELLULAR PHONE RECORDS:

Phone records were obtained through a subpoena issued by FRA Chief Counsels Office concerning the phone usage of the Ballast Regulator Machine Operator on the day of the accident while operating the machine on the main track prior to, and at the time of the accident.

CONCLUSION:

All cellular phone records obtained indicate that the Ballast Regulator Machine Operator was not communicating on the cellular phone while operating the machine prior to, or at the time the accident occurred.

CONCLUSION:

A review of the daily maintenance log books for the Ballast Regulator (BR-200602) dated between January and March 2008, revealed that numerous maintenance machine inspection records were missing and unavailable for FRA's review. Other machine inspection records revealed that the machine operator who was assigned to operate the Ballast Regulator, failed to provide a date on the inspection record at the time the

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daily machine inspection was conducted. Numerous records failed to show documentation as to whether or not all electrical and mechanical components of the machine were functioning properly at the time of the inspection.

Maintenance machine inspection records are provided with a Pass or Fail column on the front of the report for operators to record functioning or defective conditions. Various records failed to show any indication of Pass or Fail conditions of the ballast regulators operating components.

A maintenance machine inspection record dated March 4, 2008, contained documented maintenance items that needed repair by a machine operator who performed the inspection on the Ballast Regulator prior to starting up the machine. The maintenance inspection record contained a machine operator's name as being the employee who inspected the Ballast Regulator, when in reality it was inspected by another machine operator.

According to the CSX Manager of Work Equipment, it is a requirement that when a machine operator performs an inspection prior to start up, that operator is required to sign the inspection record as the operator who performed the inspection. CSX On-Track Worker Rules and Qualifications, Section 7, Rule No.712, paragraph No. 2 states that each on-track roadway maintenance machine and hi-rail vehicle must be inspected each calendar day before being used and must have an operator's manual on equipment.

A review of the daily maintenance log books for the Double Broom Machine (TB200601) dated between February and March 2008 revealed that numerous maintenance machine records were unavailable for FRA's review. Inspection records for the entire month of January were missing due to misplacement and not available for FRA's review. It was clearly evident while reviewing the records, that the machine operators who inspected the Double Broom Machine documented every inspection. They noted each component of the machine had been inspected, including documenting defective mechanical components in need of repair.

Eyewitnesses indicated that the machine operator appeared to be operating the Ballast Regulator at a faster rate of speed than permitted. CSX Operating Rules effective October 1, 2007, Rule 720 "Maximum Speed" states "Do not exceed the speed that will permit stopping within one-half the range of vision, the speed authorized for trains on the same track, or the speed listed below (table), or whichever is less." The table identifies the speed for tampers, ballast regulators, and other self- propelled on-track equipment not previously designated to be 30 mph. The Ballast Regulator was not equipment with an event recorder to verify the actual speed of the machine at impact.

The Ballast Regulator operator had a sight distance of about 1,070 feet prior to impacting the rear of the Double Broom Machine. The operator of the Ballast Regulator was unsuccessful in stopping the machine within half the range of vision.

The CSX Machine Operator reported other than experiencing the lack of air pressure on the Ballast Regulator earlier that morning at Skillman Yard, he had encountered no unusual events or circumstances prior to the accident during the course of the trip.

PROBABLE CAUSE AND CONTRIBUTING FACTORS:

The probable cause of the accident is the failure of the Ballast Regulator Operator to control his speed in accordance with the provisions of CSX Railroad Operating Rule 720.

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