



***Federal Railroad Administration  
Office of Railroad Safety  
Accident and Analysis Branch***

***Accident Investigation Report  
HQ-2015-1005***

***CSX Transportation (CSX)  
Martin, SC  
January 27, 2015***

***Note that 49 U.S.C. §20903 provides that no part of an accident or incident report, including this one, 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.***

**SYNOPSIS**

On January 27, 2015, at 2:17 a.m., EST, northbound CSX Transportation (CSX) Freight Train Q198-27 derailed after entering the Sandoz Spur and impacting a standing set of tank cars. Train Q198-27 was operating in track warrant control territory at the time of the accident at a recorded speed of 41 mph. The accident occurred near Martin, South Carolina, at CSX Milepost (MP) AMH 489.20, on CSX's Augusta Subdivision. The mainline switch, lined reverse for the spur track, displayed a green flag indicating it was lined normal for a main line move. The accident resulted in a collision with a cut of six hazardous materials cars derailing two, and causing a release of material. Both members of the train crew sustained minor injuries. The accident resulted in damage to 2 locomotives, 11 intermodal cars from the northbound train, and 2 tank cars from the industry lead.

At the time of the accident, it was dark and weather conditions were clear with an air temperature of approximately 37 degrees.

The accident was caused by vandalism to the main line switch located at MP AMH 489.20. The Sandoz Spur switch had been lined and locked in the reverse position and the switch target turned to show a normal mainline move to the approaching train.

**TRAIN SUMMARY**

1. Name of Railroad Operating Train #1 CSX Transportation	1a. Alphabetic Code CSX	1b. Railroad Accident/Incident No. 000140697
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**GENERAL INFORMATION**

1. Name of Railroad or Other Entity Responsible for Track Maintenance CSX Transportation	1a. Alphabetic Code CSX	1b. Railroad Accident/Incident No. 000140697
2. U.S. DOT Grade Crossing Identification Number	3. Date of Accident/Incident 1/27/2015	4. Time of Accident/Incident 2:17 AM
5. Type of Accident/Incident Other (Describe in Narrative)		
6. Cars Carrying HAZMAT 6	7. HAZMAT Cars Damaged/Derailed 2	8. Cars Releasing HAZMAT 2
	9. People Evacuated 20	10. Subdivision AUGUSTA
11. Nearest City/Town MARTIN, SC	12. Milepost (to nearest tenth) AMH489.2	13. State Abbr. SC
	14. County ALLENDALE	
15. Temperature (F) 37 °F	16. Visibility Dark	17. Weather Clear
	18. Type of Track Main	
19. Track Name/Number Single Main	20. FRA Track Class Freight Trains-60, Passenger Trains-80	21. Annual Track Density (gross tons in millions) 17.9
		22. Time Table Direction North

**OPERATING TRAIN #1**

1. Type of Equipment Consist: Freight Train					2. Was Equipment Attended? Yes		3. Train Number/Symbol Q198-27				
4. Speed (recorded speed, if available) R - Recorded 41 MPH E - Estimated		Code R	5. Trailing Tons (gross excluding power units) 3501		6a. Remotely Controlled Locomotive? 0 = Not a remotely controlled operation 1 = Remote control portable transmitter 2 = Remote control tower operation 3 = Remote control portable transmitter - more than one remote control transmitter				Code 0		
6. Type of Territory Signalization: <u>Not Signaled</u> Method of Operation/Authority for Movement: <u>Direct Train Control</u> Supplemental/Adjunct Codes: <u>P</u>											
7. Principal Car/Unit		a. Initial and Number	b. Position in Train	c. Loaded (yes/no)	8. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box		Alcohol	Drugs			
(1) First Involved (derailed, struck, etc.)		CSXT 3097	1	no			0	0			
(2) Causing (if mechanical, cause reported)		N/A	0	no	9. Was this consist transporting passengers?				No		
10. Locomotive Units (Exclude EMU, DMU, and Cab Car Locomotives.)	a. Head End	Mid Train		Rear End		11. Cars (Include EMU, DMU, and Cab Car Locomotives.)	Loaded		Empty		
		b. Manual	c. Remote	d. Manual	e. Remote		a. Freight	b. Pass.	c. Freight	d. Pass.	e. Caboose
(1) Total in Train	2	0	0	0	0	(1) Total in Equipment Consist	26	0	0	0	0
(2) Total Derailed	2	0	0	0	0	(2) Total Derailed	8	0	0	0	0
12. Equipment Damage This Consist 3004074		13. Track, Signal, Way & Structure Damage 41348									
14. Primary Cause Code M503 - Vandalism of track or track appliances, e.g., objects placed on track, switch thrown, etc											
15. Contributing Cause Code M503 - Vandalism of track or track appliances, e.g., objects placed on track, switch thrown, etc											
Number of Crew Members					Length of Time on Duty						
16. Engineers/Operators	17. Firemen	18. Conductors		19. Brakemen	20. Engineer/Operator		21. Conductor				
1	0	1		0	Hrs: 8 Mins: 47		Hrs: 8 Mins: 47				
Casualties to:	22. Railroad Employees	23. Train Passengers	24. Others		25. EOT Device?		26. Was EOT Device Properly Armed?				
Fatal	0	0	0		Yes		Yes				
Nonfatal	2	0	0		27. Caboose Occupied by Crew?				N/A		
28. Latitude 33.068728000			29. Longitude -81.476697000								

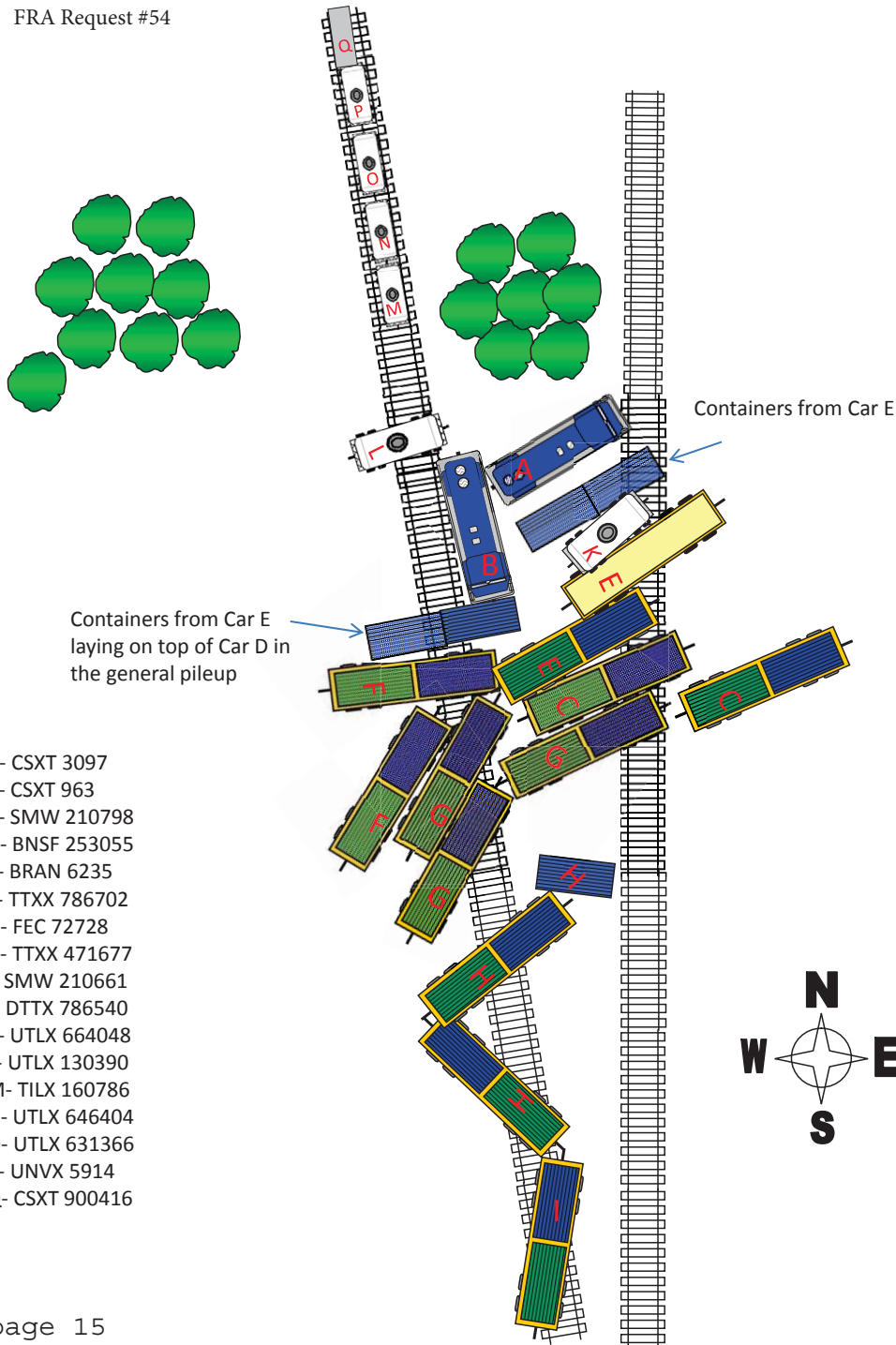
SKETCHES

Accident Sketch

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Accident Sketch

FRA Request #54



## NARRATIVE

## Circumstances Prior To the Accident

On January 26, 2015, CSX Transportation (CSX) Train Q198-27 originated at East Savannah, Georgia. The train crew consisted of a locomotive engineer and a conductor. All train crew members went on duty at 5:30 p.m., EST, at CSX's Augusta Yard in Augusta, Georgia. This was the home terminal for all crew members, and all received more than their statutory off-duty time period prior to reporting for duty.

The crew began their day dead heading to Savannah, where they boarded Train Q198-27, which consisted of 2 locomotives and 26 loaded intermodal cars. It was 3,766 feet long and weighed 3,501 tons. The train was scheduled to travel to Augusta with no set-outs or pick-ups along the way.

Train Q198-27 departed East Savannah at 10:13 p.m., on January 26, 2015, destined for Augusta. The train traversed both CSX's Columbia and Augusta Subdivisions along its route to Augusta. The Class I initial terminal airbrake test was performed at East Savannah, on January 26, 2015, at 9:30 p.m., by the Golden Isles Terminal Railroad employees. EOT CSXE 44969 was last calibrated on August 28, 2014, and tested by the train crew at 10:10 p.m., on January 26, 2015. A locomotive brake test was conducted at 9:50 p.m., on January 26, 2015, by the Locomotive Engineer.

Train Q198-27 approached the accident area at a recorded speed of 41 mph. Maximum authorized speed for this train is 49 mph. The Locomotive Engineer was seated at the controls and the Conductor was seated on the west side of the leading locomotive. The train's timetable direction of travel was north. The geographic direction was southwest. Timetable directions are used throughout this report.

The track was tangent for approximately 1-mile prior to the switch located at Milepost (MP) AMH 489.20, where the accident occurred. The grade in the area of the accident was relatively flat with no obstructions affecting the train crew's vision.

## The Accident

The train approached the accident site at a recorded speed of 41 mph per the event recorder on the lead locomotive. The maximum authorized freight speed at this location is 49 mph, as designated in CSX Florence Division Timetable 7.1.

As Train Q198-27 approached the switch located at MP AMH489.20, the train crew indicated that their vision was clear and they did not notice anything unusual. Crew interviews revealed that they remembered seeing the switch position indicator displaying a green target just before they were both thrown from their seats. At about 2:17 a.m., on January 27, 2015, Train Q198-27 collided head-on into six standing tank cars and an unoccupied caboose (switching platform) on the Sandoz Lead Track after traversing through the vandalized switch located at MP AMH 489.20. The collision resulted in the derailment of the two-unit locomotives, the first eight cars of Train Q19827 and two of the standing tank cars located on the Sandoz Lead Track.

After the train came to a rest in a general pileup, the crew began to hear and smell hazardous materials that were leaking from the impacted tank cars that had been setting on the spur track. The crew made their way through the wreckage to the nearest road crossing, approximately two-tenths of a mile south, where they found a car passing by and were able to call for help.

The impacted tank cars, which were punctured, released approximately 19,000 gallons of hydrochloric acid. The derailed locomotives lost approximately 2,500 gallons of diesel. Twenty people were evacuated from surrounding homes and businesses within a 1/2 mile radius, as a result of the accident. The evacuation included a total of 19 employees from two local industries and one person from a nearby residence. The initial evacuation was initiated by Allendale County Emergency Management with cooperation from the Savannah River Site Emergency responders at 3:54 a.m. and 6:33 a.m., respectively. The evacuation was lifted at 10:00 a.m. on January 27, 2015. Employees from the local industries returned to the plants and resumed operations at 7:00 p.m. local time.

The equipment damages from the accident totaled \$3,004,074 and the track and signal damages totaled \$41,348 according to CSX reports submitted to the Federal Railroad Administration (FRA).

## Analysis

FRA dispatched a team to investigate the accident and determine a probable cause of the derailment. The DVR video recovered from the previous train that traversed the area in a northward direction showed the switch lined in the normal position with the switch target displaying a green target for a normal movement. The DVR footage from Train Q198-27, also viewed by FRA personnel, showed the switch target changing from green to red and back to green. The video also showed what appeared to be the shadow of an individual moving across the track in the area of the switch located at MP AMH 489.20.

FRA's field investigation showed the switch located at MP AMH 489.20 was lined and locked in the reverse position. The switch target had been tampered with to display a green flag for a normally lined switch. The Federal Bureau of Investigation (FBI) was called to the scene and removed the switch stand for further analysis at their facility in Virginia. CSX and the FBI believe that the accident was caused by vandalism but have not made an official cause as of the time of this report.

#### Overall Conclusion

It is the determination of FRA that the accident was caused by the tampering with and vandalism of the switch at MP AMH 489.20 on CSX's Augusta Subdivision. The Sandoz Spur switch had been lined and locked in the reverse position and the switch target turned to show a normal mainline move to the approaching train.

#### Probable Cause

Vandalism of track or track appliances (e.g., objects placed on track, switch thrown, etc.).