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

# *Accident Investigation Report*
# *HQ-2013-6*

***CSX Transportation (CSX)***
***Haysi, VA***
***March 23, 2013***

***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.***

U.S. Department of Transportation
Federal Railroad Administration

# FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File #HQ-2013-6

## TRAIN SUMMARY

| 1. Name of Railroad Operating Train #1 | 1a. Alphabetic Code | 1b. Railroad Accident/Incident No. |
|---|---|---|
| CSX Transportation | CSX | R000114306 |

## GENERAL INFORMATION

| 1. Name of Railroad or Other Entity Responsible for Track Maintenance | 1a. Alphabetic Code | 1b. Railroad Accident/Incident No. |
|---|---|---|
| CSX Transportation | CSX | R000114306 |

| 2. U.S. DOT Grade Crossing Identification Number | 3. Date of Accident/Incident | 4. Time of Accident/Incident |
|---|---|---|
| | 3/23/2013 | 9:40 AM |

5. Type of Accident/Incident
Derailment

| 6. Cars Carrying HAZMAT | 7. HAZMAT Cars Damaged/Derailed | 8. Cars Releasing HAZMAT | 9. People Evacuated | 10. Subdivision |
|---|---|---|---|---|
| 10 | 10 | 1 | 0 | Kingsport |

| 11. Nearest City/Town | 12. Milepost *(to nearest tenth)* | 13. State Abbr. | 14. County |
|---|---|---|---|
| Haysi | | VA | DICKENSON |

| 15. Temperature (F) | 16. Visibility | 17. Weather | 18. Type of Track |
|---|---|---|---|
| 43 °F | Day | Clear | Main |

| 19. Track Name/Number | 20. FRA Track Class | 21. Annual Track Density *(gross tons in millions)* | 22. Time Table Direction |
|---|---|---|---|
| Single Main | Freight Trains-40, Passenger Trains-60 | 30.5 | North |

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## OPERATING TRAIN #1

| 1. Type of Equipment Consist: | 2. Was Equipment Attended? | 3. Train Number/Symbol |
|---|---|---|
| Freight Train | Yes | Q697-22 |

| 4. Speed (recorded speed, if available) R - Recorded E - Estimated | Code | 5. Trailing Tons (gross exluding power units) | 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 |
|---|---|---|---|---|
| 16 MPH | R | 6431 | | 0 |

6. Type of Territory

Signalization:

N/A

Method of Operation/Authority for Movement:

N/A

Supplemental/Adjunct Codes:

D, N/A

| 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.)* | ETCX1032 | 39 | yes | | 0 | 0 |
| (2) Causing *(if mechanical, cause reported)* | N/A | 39 | yes | 9. Was this consist transporting passengers? | | No |

| 10. Locomotive Units (Exclude EMU, DMU, and Cab Car Locomotives.) | a. Head End | Mid Train b. Manual | Mid Train c. Remote | Rear End d. Manual | Rear End e. Remote | 11. Cars (Include EMU, DMU, and Cab Car Locomotives.) | Loaded a. Freight | Loaded b. Pass. | Empty c. Freight | Empty d. Pass. | e. Caboose |
|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) Total in Train | 2 | 0 | 0 | 0 | 0 | (1) Total in Equipment Consist | 45 | 0 | 19 | 0 | 0 |
| (2) Total Derailed | 0 | 0 | 0 | 0 | 0 | (2) Total Derailed | 10 | 0 | 8 | 0 | 0 |

| 12. Equipment Damage This Consist | 13. Track, Signal, Way & Structure Damage |
|---|---|
| 852605 | 125000 |

14. Primary Cause Code

E41C - Side bearing clearance excessive

15. Contributing Cause Code

E41C - Side bearing clearance excessive

| 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: 25 | Hrs: 8 Mins: 25 |

| Casualties to: | 22. Railroad Employees | 23. Train Passengers | 24. Others | 25. EOT Device? | 26. Was EOT Device Properly Armed? |
|---|---|---|---|---|---|
| | | | | Yes | Yes |
| Fatal | 0 | 0 | 0 | 27. Caboose Occupied by Crew? | |
| Nonfatal | 0 | 0 | 0 | | N/A |

| 28. Latitude | 29. Longitude |
|---|---|
| 37.207220000 | -82.269742000 |

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## CROSSING INFORMATION

| Highway User Involved | | Rail Equipment Involved |
|---|---|---|
| 1. Type<br>N/A | | 5. Equipment<br>N/A |
| 2. Vehicle Speed *(est. mph at impact)*<br>0 | 3. Direction *(geographical)*<br>N/A | 6. Position of Car Unit in Train<br>0 |
| 4. Position of Involved Highway User<br>N/A | | 7. Circumstance<br>N/A |
| 8a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials?<br>N/A | | 8b. Was there a hazardous materials release by<br>N/A |
| 8c. State here the name and quantity of the hazardous material released, if any. | | |

| 9. Type of Crossing Warning | 10. Signaled Crossing Warning | 11. Roadway Conditions |
|---|---|---|
| 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew<br>2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other *(spec. in narr.)*<br>3. Standard FLS 6. Audible 9. Watchman 12. None<br>N/A | | N/A |

| 12. Location of Warning | 13. Crossing Warning Interconnected with Highway Signals | 14. Crossing Illuminated by Street Lights or Special Lights |
|---|---|---|
| N/A | N/A | N/A |

| 15. Highway User's Age | 16. Highway User's Gender | 17. Highway User Went Behind or in Front of Train and Struck or was Struck by Second Train | 18. Highway User |
|---|---|---|---|
| 0 | N/A | N/A | N/A |

| 19. Driver Passed Standing Highway Vehicle | 20. View of Track Obscured by *(primary obstruction)* |
|---|---|
| N/A | N/A |

| Casualties to: | Killed | Injured | 21. Driver was | 22. Was Driver in the Vehicle? |
|---|---|---|---|---|
| | | | N/A | N/A |
| 23. Highway-Rail Crossing Users | 0 | 0 | 24. Highway Vehicle Property Damage *(est. dollar damage)* 0 | 25. Total Number of Vehicle Occupants *(including driver)* 0 |

| 26. Locomotive Auxiliary Lights? | 27. Locomotive Auxiliary Lights Operational? |
|---|---|
| N/A | N/A |
| 28. Locomotive Headlight Illuminated? | 29. Locomotive Audible Warning Sounded? |
| N/A | N/A |

10. Signaled Crossing Warning

1 - Provided minimum 20-second warning
2 - Alleged warning time greater than 60 seconds
3 - Alleged warning time less than 20 seconds
4 - Alleged no warning
5 - Confirmed warning time greater than 60 seconds
6 - Confirmed warning time less than 20 seconds
7 - Confirmed no warning
N/A - N/A

Explanation Code

A - Insulated rail vehicle
B - Storm/lightning damage
C - Vandalism
D - No power/batteries dead
E - Devices down for repair
F - Devices out of service
G - Warning time greater than 60 seconds attributed to accident-involved train stopping short of the crossing, but within track circuit limits, while warning devices remain continuously active with no other in-motion train present
H - Warning time greater than 60 seconds attributed to track circuit failure (e.g., insulated rail joint or rail bonding failure, track or ballast fouled)
J - Warning time greater than 60 seconds attributed to other train/equipment within track circuit limits
K - Warning time less than 20 seconds attributed to signals timing out before train's arrival at the crossing/ island circuit
L - Warning time less than 20 seconds attributed to train operating counter to track circuit design direction
M - Warning time less than 20 seconds attributed to train speed in excess of track circuit's design speed
N - Warning time less than 20 seconds attributed to signal system's failure to detect train approach
O - Warning time less than 20 seconds attributed to violation of special train operating instructions
P - No warning attributed to signal systems failure to detect the train
R - Other cause(s). Explain in Narrative Description

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## SYNOPSIS

On March 23, 2013, at 9:40 a.m., CSX Transportation Train Q69722 derailed. The derailment occurred in the Russell Tunnel, located at Milepost Z-11.5 on the Kingsport Subdivision, near Haysi, Virginia. The train was operating in Timetable direction North on Single Main Track at a recorded speed of 16 mph. Operating conditions were clear skies with a temperature of 43 degrees Fahrenheit at the time of the derailment. There we no injuries or evacuations.

Eighteen cars derailed. Ten loaded cars containing hazardous materials and eight empties were extensively damaged. Loaded Tank Car ETCX 623811 had its protective housing coverlid ripped off, causing it to release an estimated 1,114 gallons of Propionic Acid. The total cost of equipment damage is listed at $852,605. Damages to track and structure are $125,000.

FRA's investigation into the derailment concluded that the probable cause was E41C; excessive side bearing clearance on covered hopper car, ETCX1032.

## NARRATIVE

Circumstances Prior to the Accident

CSX Transportation (CSX) Train Q697-22 originated in Hamlet, North Carolina (NC), with a destination of Elkhorn City, Kentucky (KY). On March 22, 2013, the train was given a Class I Air Brake Test for 47 mixed freight cars. The brake test was completed with a recorded two pound leakage at 9:10 p.m. The telemetry placed on the rear of the train, CSXE 28476, was tested on March 21, 2013, in Hamlet, NC, at 9:15 p.m. The train departed Hamlet, NC, consisting of two locomotives, CSXT-109 and CSXT-11, and 47 cars. The train was operated in Timetable direction, north. Timetable directions are used throughout this report. At Erwin, Tennessee (TN), Train Q697-22 was reduced in size to 45 cars and was re-crewed.

The main track on CSX's Kingsport Subdivision runs from Elkhorn City, KY (Milepost (MP) Z-0.5) to Erwin, TN (MP Z-133.7). Trackage on the Kingsport Subdivision is primarily used for coal and mixed freight traffic. Railroad records indicate annual gross tonnage is 30 million gross tons.

On March 23, 2013, the crew of CSX Train Q697-22 was called to operate from Erwin, TN, to Elkhorn City, KY.

The new crew consisted of an engineer and conductor. On duty time was 1:15 a.m. in Erwin, TN. The Engineer was off-duty for 13 hours and 15 minutes; the Conductor was off duty for 12 hours and 15 minutes prior to beginning covered service. The crew acquired the appropriate bulletin orders and conducted a job safety briefing. The departing train crew made a pick-up of 19 additional cars that were added to the departing train consist. A Class I brake test was performed and the train departed Erwin at 3:32 a.m. with 2 locomotives, 45 loads, and 19 empties of mixed freight. Train Q697-22 was 3,767 feet in length, with 6,431 trailing tons, continuing in a north direction. Method of operation is governed by automatic block signals.

While en route between Erwin and the point-of-derailment (POD), Train Q697-22 operated over seven defect detectors without any warnings or failures. The train crew experienced no unusual occurrences during the trip up to this point. The Engineer was seated at the controls of the locomotive, located on the right side of the northbound train. The Conductor was stationed across from the Engineer, on the left side of the northbound locomotive.

The topography at the POD had a 10.25-degree, right hand curve. There is a 0.35-percent descending grade in a north direction as the train approached the derailment site.

The Accident

The Engineer and Conductor were both stationed in the cab of the Lead Locomotive, CSXT-109. Just previous to the derailment, Train Q697-22 passed by a wayside signal located at Haysi, Virginia. The signal displayed a clear indication and was acknowledged by the crew.

At 9:44 a.m., the time of the derailment (indicated by the event recorder), the train was traveling north on the CSX Kingsport Subdivision. The train was traveling at a recorded speed of 16 miles per hour (mph) at the POD. Maximum authorized speed as designated by CSX's Timetable is 25 mph. At 9:44:32 a.m., an emergency air brake application occurred to the train. The event recorder indicates that the Engineer was operating the train with the throttle in the off position, no train brake or dynamic braking was being applied (the train was coasting). This was confirmed by the locomotive event recorder. The lead locomotive came to a stop at MP Z-9.8.

The derailment occurred inside the Russell Tunnel, at MP Z-11.5. The nearest Control Point (CP) to the derailment is Haysi Junction, located at MP Z-11.7.

The POD was identified at 127 feet inside the portal of the tunnel. The total tunnel length is 448 feet. The 39th car in the train, ECTX- 1032, derailed in the tunnel. The train continued moving and dragged the ECTX- 1032 along the ground for 1.3 miles until it was pulled into the switch, north of the bridge. This impact caused a chain reaction derailment to the 36th through 38th car and the 40th through 53rd car.

Covered Hopper ETCX 1032 was coupled to the south end of the tank car, ETCX 623811, causing it to derail onto its right side into the ditch line. This tank car then impacted a small rock cliff, ripping the protective housing cover lid from the top of the car. The tank car came to rest against a clay embankment which helped to prevent the flow of product. CSX and Eastman Chemical calculated that approximately 1,114 gallons of product spilled. No hazardous materials entered the McClure River and there was no evacuation.

The train crew was relieved from duty at the site at 1:14 p.m. They were transported back to their home terminal, in Erwin, and were finally released at 9:30 p.m. The crew performed covered service for a period of 11 hours and 59 minutes, and was on duty for a total period of 19 hours and 15 minutes. They did not exceed the hours of service. The derailment did not meet the current reporting threshold of $1,000,000, meaning post-accident alcohol and drug testing was not required.

A walking inspection revealed 18 cars derailed. Car 36, CSXT 398338, an empty box car, was the first car derailed. Car 53, SHPX 202172, a loaded Lumber, was the last car derailed. Of the 18 cars derailed, 4 came to rest in the McClure River. None contained hazardous materials. Emergency responders on the scene did not notice any leaks or anything unusual. No hazardous materials were reportedly released into the river.

The tonnage graph indicates that the 26th through 37th car were empties. Cars in positions 36 and 37 were the first two involved in the derailment. Cars in positions 38 and 39 were loads. Cars in positions 40 through 47 were empties. The remaining cars, 48 through 64, were loads.

Analysis – Track, Signal, Way, and Structure Damage

FRA, Motive Power and Equipment, and Track Inspectors, measured track gage, cross level, alignment, and curve evaluation. The CSX Track Team and FRA's Track Inspector established the POD where a visual inspection of track conditions was performed. Inspection was conducted of the rail, tie plates, rail clips, and cross ties, rail height, width base, width of head, web, depth of the head, depth of the base, and bolt hole evaluation.

The POD occurred in the Russell Tunnel at MP Z-11.5 near Haysi, 127 feet inside the north portal of the tunnel. The tunnel is 448 feet in length. The main track is FRA Class 2 track with a Timetable speed of 25 mph. Based on the track speed and tonnage, track inspections are required to be performed twice weekly with at least one calendar day interval between inspections.

In the derailment area, the track is constructed of 141-pound continuous welded rail, seated on Pandrol Rail Plates, and attached using steel screw lags. North of the tunnel, approximately 0.1 mile is the south switch for Rex Siding. Rex Siding is 1.2 miles in length; the north switch is located at MP Z-10.2.

Derailed car, ECTX 1032, encountered the trailing switch at the north end of Rex Siding. This began a domino effect, causing the derailment of the remaining cars involved. The derailed cars traveled 70 feet to the south end of Russell Fork Bridge. There the cars veered to the east and west sides of the bridge.

Upon arrival at the derailment site, the POD was discovered and track notes were taken. Stations were marked and measurements were taken to determine track gage, surface, and alignment. A total of 21 stations were marked at 15 feet and 6 inches apart. All measurements were taken under load in coordination with a CSX locomotive and train crew.

Track Gage: The widest track gage measurement obtained was at Station Number 3, leading up to the POD. The gage at this location measured 57-1/4 inches. Maximum gage for FRA Class 2 Track is 57-3/4 inches. No exception was taken to gage of the track.

Cross level: The greatest deviation in cross level was noted between Station Number 5 and Station Number 9, leading up to the POD. The maximum difference in cross level in 62 feet was 1-1/8 inches. Maximum difference in cross level for FRA Class 2 tracks is 2-1/4. No exception was taken to the cross level of the track.

Alignment: The average degree of curvature noted in the subject curve was 10.25 degrees. The largest deviation leading up to the derailment was at station Number 1, this measurement was 9.5 inches, and this is a ¾ inch line deviation. The maximum alignment deviation for FRA Class 2 track is 3 inches. No exception was taken to the track alignment.

Curve Elevation: An elevation measurement of 2-5/8 inches was noted at four stations throughout the curve, leading to the POD. In accordance with the maximum allowable

Curve Elevation: An elevation measurement of 2-5/8 inches was noted at four stations throughout the curve, leading to the POD. In accordance with the maximum allowable curving speeds (V-max), a 10.25 degree curve with 2-5/8 inch elevation is acceptable for speeds up to 27 mph. No exception was taken to the curve speeds.

A review of CSX track inspection records from January 2, 2013, through March 17, 2013, was conducted. This review verified the required inspections were conducted and the location and nature of deviation from the requirements of FRA Track Safety Standards were specified. No deficiencies were noted during the track inspection records review.

At the POD, the vertical alignment is a 10.25-degree, right hand curve. There is a 0.35-percent descending grade in a north direction. This is the same direction of travel as the derailed train. The track has a descending grade in relation to northbound movement; the grade by MP is as follows:

• Z-13.5 – 0.33
• Z-13.0 – 0.35
• Z-12.8 – 0.70
• Z- 12.0 – 0.35
• Z- 11.0 – 0.35
• Z- 10.5 – 0.32
• Z- 10.0 – 0.80

Conclusion:

The track components and geometry measurements taken at the POD exceed FRA minimum Track Safety Standards as set forth in Title 49 Code of Federal Regulations Part 213. While some track irregularities were noted, none were below FRA minimum safety standards. As such, track was not the probable cause of the derailment.

Analysis – ETCX 1032, First Derailed Car

FRA Inspectors contacted the CSX Mechanical Team, and reviewed the investigation data. The focused inspection pointed to a covered hopper car, ETCX 1032. The concern was that while the train was traveling at a speed of 16 mph, the car may have rocked off. Investigators focused on "rock off" as a probable cause.

ETCX 1032 was unevenly loaded with plastic pellets. The car was given a full mechanical inspection due to side bearing wear. The preliminary inspection also disclosed the AR side bearing plate contained eight shims and the AL side did not contain any shims. In addition, three out of the four wheels sets have been recently replaced.

The CSX Mechanical Team inspected ETCX 1032 and discussed the possibility of shifted lading and excessive side bearing clearance on this car. This car was loaded with plastic pellets. The CSX Team and FRA inspectors were concerned with number of shims applied to the AL, AR, BL, and BR side bearing. Measurements and shims were discussed in the CSX and FRA inspection reports. During freight car repair, the Association of American Railroads' (AAR) Field Manual Rule 62 permits the railroads to use addition shims to set the proper side bearing height. There is no limit of shims specified for car repair. The car had three new wheel sets applied to the trucks.

At Johnson City, TN, there is a Norfolk Southern Railway (NS)/CSX Interchange Point. The movement records revealed that CSX received this car in interchange from NS. Hollow-worn tread may have been the reason the wheel sets were removed. This car is owned by Eastman Chemical in Kingsport, TN.

Conclusion:
CSX was in compliance with their standards and all applicable Federal regulatory standards. FRA concluded that the probable cause was E41C which is excessive side bearing clearance on car ETCX 1032.

Analysis – Additional Equipment Derailed

FRA's Hazardous Materials Inspection conducted at the accident site disclosed the following:

There were two hazardous materials tank cars involved in this derailment, ETCX 623811 and TCLX 17648.

ETCX 623811 was a loaded tank car placarded UN 3463, Propionic Acid, Class 8 (3), PG II, RQ (Propionic Acid). The tank car was located at position number 38; it derailed after crossing the bridge traveling west. The covered hopper, ETCX 1032, possibly the first car derailed, was coupled to the east-end of the tank car, creating a chain reaction. ETCX 623811 derailed, and turned onto its right side into the ditch line.

The tank car then impacted a small rock cliff, ripping the protective housing cover from the top of car. The protective housing cover and the valve handle were laying approximately 85 feet to the east of the tank car. The tank car came to rest, on its side, lying against a clay embankment; approximately 1,114 gallons of product was released into the ditch area. The ballast and dirt ditch line, created a small dike, preventing the release from going into the river.

TCLX 17648 was a residue tank car placarded UN 1824, Sodium Hydroxide Solution, Class 8, PG II, RQ (Sodium Hydroxide). This tank car was located at position number 41; it derailed off the bridge down onto a secondary roadway, and was moved up the embankment on the west side of the bridge by the B-end onto the edge of the roadway. The 2-inch auxiliary bottom outlet valve was ripped off; there was no release of product from this tank car. The tank car did have extensive damage. The tank car in the river did not contain hazardous materials.

Rail cars at positions 36 through 53, for a total of 18 cars derailed. Rail cars at positions 1 through 35, and 54 through 64 remained on the tracks.

Train Q697-22 contained the following loaded and residue hazardous materials shipments:

• CSXT 251896 - loaded covered hopper at position 3 containing UN 1942//Ammonium Nitrate//Class 5.1//PG III
• CSXT 259842 - loaded covered hopper at position 4 containing UN 1942//Ammonium Nitrate//Class 5.1//PG III
• CSXT 260924 - loaded covered hopper at position 5 containing UN 1942//Ammonium Nitrate//Class 5.1//PG III
• CSXT 254834 - loaded covered hopper at position 6 containing UN 1942//Ammonium Nitrate//Class 5.1//PG III
•
• UTLX 650634 - residue tank car at position 32 containing UN 3257//Elevated Temperature Liquid, N.O.S. // (Phthalic Anhydride)//Class 9//PG III/RQ (Phthalic Anhydride)
• UTLX 650642 - residue tank car at position 33 containing UN 3257//Elevated Temperature Liquid, N.O.S. // (Phthalic Anhydride)//Class 9//PGIII//RQ (Phthalic Anhydride)

• *ETCX 623811 - loaded tank car at position 38 containing UN 3463//Propionic Acid//Class 8// (3//PG II//RQ Propionic Acid)
• *TCLX 17648 - residue tank car at position 41 containing UN 1824//Sodium Hydroxide Solution//Class 8//PG II//RQ (Sodium Hydroxide)

*Designates the two tank cars that contained hazardous materials and were involved in the derailment.

Conclusion:

Hazardous Material Transportation was not the probable, nor a contributing cause of this derailment.

Analysis – Motive Power & Equipment:

The lead locomotive was equipped with a working headlight, auxiliary lights, speed indicator, audible warning device, and an event recorder, as required. The Engineer stated that the locomotives were inspected before departing Erwin. No locomotive defects were reported.

Conclusion: The locomotive safety devices were in compliance with Federal requirements.

Analysis – Locomotive Engineer Operating Performance:

The locomotive was equipped with a speed indicator and event recorder as required. The relevant event recorder data was downloaded by the Road Foreman of Engines

The locomotive was equipped with a speed indicator and event recorder as required. The relevant event recorder data was downloaded by the Road Foreman of Engines (RFE) at the accident site. The downloaded data was reviewed on a lap top computer at the site by the RFE and FRA's Operating Practices inspector. A data download analysis was performed and forwarded to FRA.

The synopsis of the locomotive event recorder disclosed that the locomotive's controls had been placed in idle 5,135 feet prior to the derailment. During a period of 2 minutes and 42 seconds before the derailment, the train was drifting (coasting). There was no indication that the train or locomotive brakes had been applied. Train speed during this time frame, was a constant 16 mph. Timetable-Maximum Authorized Speed for this location is 25 mph.

Conclusion: The Engineer was in compliance with all applicable railroad and train handling requirements.

Analysis – Post-Accident Toxicological Testing

Drug and Alcohol, Post-Accident Toxicological Testing was not conducted on the Engineer and/or Conductor.

Conclusion: Alcohol and/or drugs were not a factor in the derailment.

Analysis – Crew Member Fatigue

FRA's Fatigue Analysis and hours of service performance review was conducted for both the Engineer and Conductor of the train. FRA obtained fatigue-related information for the 10-day period preceding this accident/incident, including the 10-day work history (on-duty/off-duty cycles) for all of the employees involved.

Conclusion: Upon analysis of that information, FRA concluded fatigue was not probable for any of the employees.

Overall Conclusions:

Locomotive equipment was inspected in accordance with Federal regulations and found to be without any known defects and was ruled out as a probable cause.

Track in the derailment area was inspected, prior inspection records were reviewed, and there were no known defects that would have contributed to the derailment.

Post-Accident Toxicological Testing was not conducted on the crew members. Railroad records did not indicate the possibility of any signs or symptoms of alcohol or drug use. A Fatigue analysis was conducted and disclosed no evidence of crew member fatigue and was ruled out as a probable or contributing cause of the derailment.

Hazardous material transportation was not a probable or contributing factor in the derailment.

Probable Cause & Contributing Factors

On-track equipment received an initial terminal brake test prior to departure. There were no recorded deficiencies recorded at the time.

FRA's investigation into the derailment concluded that the probable cause was E41C: excessive side bearing clearance on covered hopper car, ETCX 1032.