



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

***Accident Investigation Report  
HQ-2014-1028***

***Amtrak (National Railroad Passenger Corporation) (ATK)  
Kalamazoo, MI  
November 18, 2014***

***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.***

**TRAIN SUMMARY**

1. Name of Railroad Operating Train #1 Amtrak (National Railroad Passenger Corporation)	1a. Alphabetic Code ATK	1b. Railroad Accident/Incident No. 135262
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**GENERAL INFORMATION**

1. Name of Railroad or Other Entity Responsible for Track Maintenance Amtrak (National Railroad Passenger Corporation)		1a. Alphabetic Code ATK	1b. Railroad Accident/Incident No. 135262	
2. U.S. DOT Grade Crossing Identification Number 545476F		3. Date of Accident/Incident 11/18/2014	4. Time of Accident/Incident 4:36 PM	
5. Type of Accident/Incident Hwy-Rail Crossing				
6. Cars Carrying HAZMAT 0	7. HAZMAT Cars Damaged/Derailed 0	8. Cars Releasing HAZMAT 0	9. People Evacuated 0	10. Subdivision Michigan
11. Nearest City/Town Kalamazoo		12. Milepost (to nearest tenth) 147.7	13. State Abbr. MI	14. County KALAMAZOO
15. Temperature (F) 17 °F	16. Visibility Day		17. Weather Snow	18. Type of Track Main
19. Track Name/Number Single Main Track		20. FRA Track Class Freight Trains-110, Passenger Trains-110		21. Annual Track Density (gross tons in millions) 3
				22. Time Table Direction East



## CROSSING INFORMATION

<b>Highway User Involved</b>		<b>Rail Equipment Involved</b>	
1. Type Auto		5. Equipment Train (Units Pulling)	
2. Vehicle Speed ( <i>est. mph at impact</i> ) 25	3. Direction ( <i>geographical</i> ) North	6. Position of Car Unit in Train 1	
4. Position of Involved Highway User Moved over Crossing		7. Circumstance Rail Equipment Struck Highway User	
8a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? Neither		8b. Was there a hazardous materials release by Neither	
8c. State here the name and quantity of the hazardous material released, if any. N/A			
9. Type of Crossing Warning 1. Gates 4. Wig wags 7. Crossbucks 10. Flagged by crew 2. Cantilever FLS 5. Hwy. traffic signals 8. Stop signs 11. Other ( <i>spec. in narr.</i> ) 3. Standard FLS 6. Audible 9. Watchman 12. None 7, 1, 6, 3, 5		10. Signaled Crossing Warning	11. Roadway Conditions Snow/Slush
12. Location of Warning Both Sides		13. Crossing Warning Interconnected with Highway Signals Yes	14. Crossing Illuminated by Street Lights or Special Lights No
15. Highway User's Age 21	16. Highway User's Gender Male	17. Highway User Went Behind or in Front of Train and Struck or was Struck by Second Train No	18. Highway User Went around the gate
19. Driver Passed Standing Highway Vehicle Yes		20. View of Track Obscured by ( <i>primary obstruction</i> ) Not Obstructed	
Casualties to:	Killed	Injured	21. Driver was Killed 22. Was Driver in the Vehicle? Yes
23. Highway-Rail Crossing Users 3	0	24. Highway Vehicle Property Damage ( <i>est. dollar damage</i> ) 5000	25. Total Number of Vehicle Occupants ( <i>including driver</i> ) 3
26. Locomotive Auxiliary Lights? Yes		27. Locomotive Auxiliary Lights Operational? Yes	
28. Locomotive Headlight Illuminated? Yes		29. Locomotive Audible Warning Sounded? Yes	

### 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

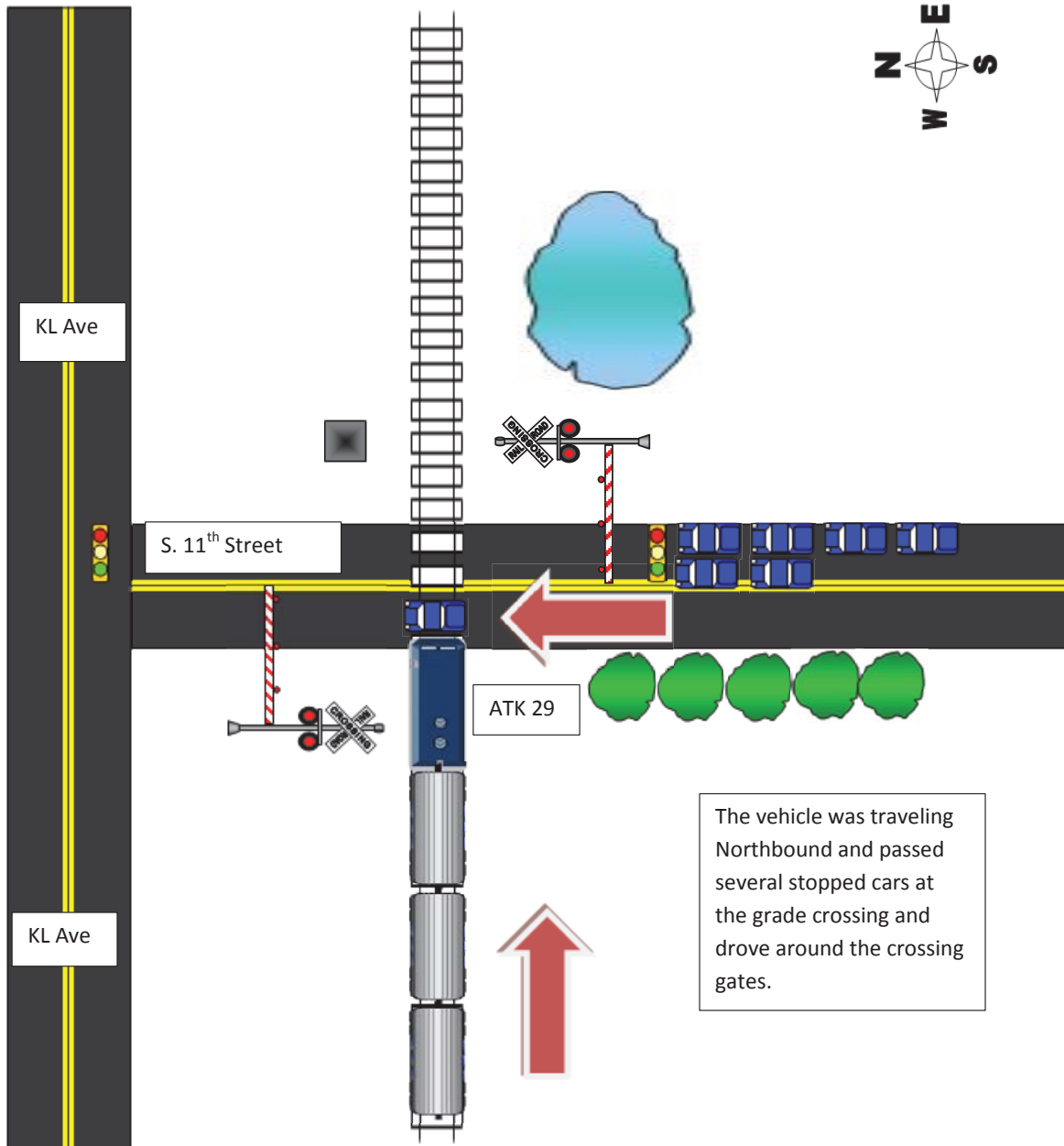
- A - Insulated rail vehicle
- B - Storm/lightning damage
- C - Vandalism
- D - No power/batteries dead
- E - Devices down for repair
- F - Devices out of service
- G - Warning time greater than 60 seconds attributed to accident-involved train stopping short of the crossing, but within track circuit 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

SKETCHES

HQ-2014-18

Amtrak 352 Grade Crossing Collision Oshtemo TWP, MI. November 18, 2014

\* Not to scale



**SYNOPSIS**

On November 18, 2014, at approximately 4:36 p.m., EST, Amtrak Passenger Train Number 352 operating eastbound from Chicago, Illinois, to Battle Creek, Michigan, struck an occupied automobile on the 11th Street South public highway-rail grade crossing. The accident occurred in the Township of Oshtemo, Michigan, at Milepost 147.7 on the Amtrak Michigan Subdivision.

As a result of the accident, the driver and the two passengers were fatally injured. There were no injuries to the train crew or the passengers. There was no track damage or signal damage. The equipment damage was approximately \$2,700.

At the time of the accident, it was snowing and the temperature was 17 degrees Fahrenheit.

The cause of the accident was the driver of the automobile failed to stop behind active warning devices (gates, bells and lights) at the highway-rail grade crossing.

**NARRATIVE**

**Circumstances Prior to the Accident:**

The crew of Amtrak 352 consisted of a locomotive engineer, student engineer, conductor, and assistant conductor. The crew reported for duty at 8:23 a.m., EST, November 18, 2014, in Battle Creek, Michigan. This was the home terminal for all crew members, and all crew members received more than the statutory required time off prior to reporting for duty. The crew operated their train from Battle Creek to Union Station at Chicago, Illinois, uneventfully.

A locomotive inspection was completed by a qualified mechanical person at 8:00 a.m., CST, on train Amtrak 352 at Chicago. As the crew prepared to depart Union Station for the return trip to Battle Creek, they tested the locomotive bell and headlights while under the canopy at Union Station. The locomotive whistle was tested at the first grade crossing with no exceptions. All locomotive safety devices were working as intended. A running air brake test was performed prior to departing Chicago.

The locomotive engineer was seated on the conductor's side (north side) of the controlling locomotive. The student engineer was seated at the controls of the locomotive (south side). The conductor was positioned in the second passenger car. Amtrak 352 consisted of two locomotives and five passenger cars. Amtrak 352 had 111 passengers aboard in addition to the four train crew members.

In the area of where the accident occurred, the track is a single main track with a maximum speed limit of 95 mph. Single track begins at Control Point (CP) 161 located at Milepost (MP) 161.5 and continues to CP 147, located at MP 147.1, where it begins two main tracks. Amtrak 352 was traveling east on a 0.37-percent descending grade. The timetable direction and geographical direction are both east and timetable direction will be used throughout this report.

**The Accident:**

As Amtrak 352 approached the public highway grade crossing of 11th Street South at 82 mph, the engineer and student engineer observed the lights flashing and the gates activated with the gates in the down position. They observed two vehicles stopped behind the lowered crossing gates on the south side of the crossing. The student engineer and engineer saw a vehicle go around the stopped cars and into the path of the train at the crossing. The train dispatcher contacted the local authorities and three fire departments were dispatched to the scene. Records indicate that the fire department was dispatched at 4:36 p.m., EST. The first fire unit arrived on the scene at 4:43 p.m. The Michigan State Police also responded to the accident scene.

There was no derailment of the train, no hazardous material involved, and no evacuation of passengers due to this accident. There was no toxicological testing performed on the train crew. The Federal Railroad Administration (FRA) does not require such testing for this type of accident.

**The Collision:**

Witnesses observed the vehicle drive around two vehicles that were stopped at the grade crossing and proceed around the gates. Amtrak 352 impacted the midpoint of the driver's side of the vehicle that drove around the gates at 11th Street South, located at MP 147.7.

**Highway Vehicle:**

The vehicle was traveling south to north on 11th Street South. The vehicle was traveling northbound while in the southbound lane and drove around several stopped cars at the grade crossing. The vehicle continued to drive north around the crossing gates. The roadway speed limit for 11th Street South is 35 mph. Amtrak 352 struck the vehicle at a recorded train speed of 82 mph.

From the point of impact, the vehicle was pushed by the front of the locomotive approximately 4,650 feet and over another grade crossing. Amtrak 352 came to a stop at MP 148.6.

The locomotive engineer and student engineer stayed in the locomotive to establish radio communications with the Amtrak dispatcher. The conductor performed a walking inspection of the train and observed the vehicle on the front of the locomotive.

All three occupants of the vehicle were pronounced deceased by the Kalamazoo Michigan Medical Examiner at 5:15 pm on the date of the accident, Tuesday, November 14, 2014.

**Analysis and Conclusions:**

**Analysis - Toxicological Testing:** Records received during the investigation from the Western Michigan School of Medicine, indicated AIT Laboratories in Indianapolis, Indiana, conducted the toxicological testing of the remains of all three occupants of the vehicle. The results indicated the driver of the vehicle and one passenger tested positive for narcotic.

**Analysis - Highway-Rail Grade Crossing:** The highway-rail crossing at grade is equipped with gates, warning lights, and bells. This crossing also has a traffic signal that is interconnected with the active crossing warning. There is an advance warning sign posted approximately 200 feet from the crossing. There are also pavement markings that are within 100 feet of the crossing. The pavement markings were not clearly visible on the snow-covered road.

The vegetation on the southwest side of the grade crossing is not on railroad property. The railroad has a whistle post located approximately ¼-mile west of the grade crossing. The location of the whistle post was verified by a FRA Signal and Train Control Safety Inspector.

The active warning devices were tested on November 20, 2014, between 9:00 a.m. and 2:30 p.m., EST, in the presence of an Amtrak Signal Maintainer and a FRA Signal and Train Control Safety Inspector.

**Conclusions:** The crossing is in relatively good condition. The active warning devices functioned as intended.

**Analysis - Locomotive Safety Devices:** The leading locomotive was equipped with a headlight, auxiliary lights, and the audible warning device required by Federal regulations. Records indicate these devices were tested prior to departing Chicago. The locomotive safety devices functioned as intended.

**Conclusions:** The locomotive safety devices were in full compliance with Federal regulations.

**Analysis - Locomotive Engineer Operating Performance:** The locomotive was equipped with a speed indicator, an event recorder, as required. The relevant event recorder data was downloaded by the Amtrak Road Foreman at the accident site. The downloaded data was analyzed by Amtrak at the Amtrak facility in Chicago. The downloaded data was analyzed independently by a qualified FRA Operating Practices Safety Inspector in Chicago as well.

**Conclusions:** The student engineer, who was operating the locomotive, was in compliance with all applicable railroad operating and train handling requirements.

**Fatigue Analysis:** 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 the locomotive engineer, student engineer, conductor, and assistant conductor.

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

Overall Conclusion: The railroad was in full compliance with its own operating rules and all applicable Federal regulations. The accident occurred because the driver of the vehicle failed to stop at the highway-rail grade crossing.