



National Transportation Safety Board
Office of Railroad, Pipeline and Hazardous Materials Investigations
Human Performance and Survival Factors Division
Washington, D.C. 20594

Survival Factors Group Chairman's Factual Report

Crashworthiness Investigation

July 29, 2016

A. Accident Information

Railroad: National Railroad Passenger Corporation (Amtrak)
Train No. 4
Location: Cimarron, Kansas
Date: March 14, 2016
Time: 12:02 am CDT¹
Number: DCA16MR004

B. Group Members

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National Transportation Safety Board

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Federal Railroad Administration

Marie LaPosta
Amtrak

Charlie Cox
Amtrak

¹ Times in this report are Central Daylight Time.

C. On Scene Group Participants

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D. Synopsis

On March 14, 2016, at 12:02am CDT, Amtrak train #4 (Southwest Chief) derailed near MP372.9 in the vicinity of Cimarron, KS. This LA to Chicago train consisted of two locomotives and 10 cars. Four cars were derailed on their sides, one car derailed and was leaning, two cars derailed upright, and one car derailed a single truck. There were approximately 130 passengers and 14 crew members on board. Initial reports indicated that between 10 and 33 passengers were transported and/or treated for injuries at two area medical centers. The American Red Cross responded to assist with passengers.

This event occurred on the BNSF Railway Company (BNSF), La Junta Division. The maximum allowable speed on this section of rail is 60 mph for passenger trains and 40 mph for freight trains. Total damages were reported as \$3,247,355.

Parties to the investigation were Amtrak, BNSF, FRA, BMWED, SMART, BLET, and the Gray County Sheriff's Office.

E. Details of the Investigation

1. Train Configuration

The following table shows the type and placement of the equipment in train 4.

Position in Consist	Equipment Type	Number
1	Locomotive	153
2	Locomotive	152
3	Baggage	61023
4	Superliner II Sleeper	39023
5	Superliner II Sleeper	32109
6	Superliner II Sleeper	32071
7	Superliner II Diner	38044
8	Superliner I Lounge	33020
9	Superliner I Coach	34042
10	Superliner I Coach/Baggage	31013
11	Superliner I Coach	34056
12	Superliner I Coach	34046

Table 1. The consist for train 4.

2. Damage Description

Train 4 was examined at the site before the train was moved and after the cars were uprighted and re-railed. The equipment is described in reference to the direction of travel of the eastbound train. The south side of the equipment is referred to as the right side, and the north side is referred to as the left side.

The first three passenger cars, sleeper cars 39023, 32109, and 32071, came to rest upright. Inside of the cars, there was no significant damage or evidence of injury. All of the windows were in place.



Figure 1- Coach 39023 Room 21



Figure 2- Coach 32109 Room B

The fourth passenger car, diner 38044, came to rest upright. On the lower level in the kitchen, the appliances were secure, and kitchen supplies remained on the storage shelves. On the upper level in the seating area, the seats and tables were secure. Some service items such as bowls of condiments had fallen on the floor.



Figure 3- The cooking area in diner 38044

The fifth passenger car, lounge 33020, came to rest tilted about 30 degrees to the north. On the upper level in the seating area, the seats and tables were secure. Some service items such as napkins had fallen on the floor. On the lower level, the seats and tables were secure. One emergency window was removed from inside of the car. The emergency tools and supplies were in place in their cabinets on both levels.



Figure 4- Lounge 33020

The sixth passenger car, coach 34042, came to rest tilted about 80 degrees and leaning onto a dirt berm. On the left side of the car, two exterior zip strips on the second and tenth upper level windows were partially pulled out.² The exterior zip strip from the second lower level window was not in place. The bottom of the side entry door was bent inward. On the right side of the car, the center frame section of the sixth window (next to the interior stairwell) was cut, and the windows were removed. Three emergency windows were removed from inside of the car.

Inside of coach 34042, five interior emergency window zip strips were found torn. Seven seat pairs on the right side of the upper level were unlocked and partially rotated. The emergency equipment and supplies were in the upper level cabinet. On the lower level of the car, there was a large pile of ballast and dirt at the side entry door. The cord securing the American's with Disabilities (ADA) ramp in its storage area was not secure. Three lower level seats were unlocked and partially rotated. The emergency tools and supplies were in the lower level cabinet.

² For this report, the windows are numbered in reference to the train's direction of travel (east). The numbering begins at the front of the car and increases toward the rear of the car.



Figure 5- Coach 34042

The seventh passenger car, coach 31013, came to rest tilted about 80 degrees and leaning onto the dirt berm. On the left side of the car, the exterior zip strip on the first upper level window was partially pulled out, and the window and its frame (next to seat pair 55/56) was dislodged inward into the car. On the second upper level window, the zip strip and gasket were partially dislodged. On the eleventh upper level window, one window (next to seat pair 1/2) was completely separated from the window frame. For the side entry door and the baggage area door, the bottoms of the doors were bent inward into the car. The battery compartment doors were compromised, and debris entered the battery area. Near the battery area and baggage door, wires were stripped out of a junction box. On the right side of the car, five right side upper level windows were removed.

Inside of coach 31013, near the dislodged window at seat pair 55/56, there was dirt and ballast on the floor and seats behind this seat pair. Near the dislodged window at seat pair 1/2, there was a large pile of dirt between this seat and a bulkhead behind the seat. On the upper level, three seat pairs on the right side were unlocked and partially rotated. The light sticks were removed from the upper level emergency tool cabinet. On the lower level, there was a large amount of ballast and dirt at the baggage door and a small amount dirt and ballast at the side entry door. The emergency tools and supplies were in the lower level cabinet.



Figure 6- Coach 31013 near seat pair 55/56

The eight passenger car, coach 34056, came to rest tilted about 80 degrees and leaning onto the dirt berm. There was horizontal scraping on the side sheet, blue decal, and windows. On the left side of the car, the zip strips on the three lower level windows were not in place. On the tenth and eleventh upper level windows, the exterior zip strips were partially pulled out. The bottom of the side entry door was bent inward. On the right side of the car, three upper level windows were removed.

Inside of coach 34056, in the stairwell, there were smears of blood on the walls and window. On the lower level, one right side seat pair, 73/74, was completely separated from its floor and wall attachment points. The cord securing the ADA ramp in its storage area was not secure. There was a small amount of ballast and dirt at the side entry door. The emergency tools and supplies were in the lower level cabinet. On the upper level of the car, the light sticks were removed from the emergency tool cabinet.



Figure 7- Coach 34056 Seats 73/74

The ninth passenger car, coach 34046, came to rest tilted about 80 degrees and leaning onto the dirt berm. On the left side of the car, there was horizontal scraping on the side sheet and flattening of the roof line above the fourth through eighth windows. The leading edges of the second and eleventh windows were slightly pushed inward.

Inside of coach 34046, on the upper level, seven seat pairs on the right side of the car were unlocked and partially rotated. The stairwell bulkheads were separated from the ceiling. The luggage racks on the left side of the car were bent and displaced upward. The emergency tools and supplies were in the upper level cabinet. On the lower level of the car, the emergency tools and supplies were in the cabinet. The cord securing the ADA ramp in its storage area was secure.



Figure 8- Coach 34046

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