



Aviation Investigation Final Report

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| Location: | Salt Lake City, Utah | Accident Number: | WPR14LA346 |
| Date & Time: | August 14, 2014, 09:41 Local | Registration: | N758SW |
| Aircraft: | Boeing 737 7H4 | Aircraft Damage: | Substantial |
| Defining Event: | Ground handling event | Injuries: | 5 None |
| Flight Conducted Under: | Part 121: Air carrier - Scheduled | | |

Analysis

The commercial air carrier airplane was parked at the boarding gate with the crew onboard. A tug driver from another airline was pulling four baggage carts in the non-movement area adjacent to the boarding gates. A security video showed that the second cart hit a drain cover and detached from the preceding cart. The loose baggage carts then rolled across the ramp and into the side of the airplane, resulting in substantial damage. There were no injuries.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The disconnection of baggage carts that subsequently collided with the parked airplane following the tug driving over a dip in the roadway.

Findings

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| Personnel issues | (general) - Ground crew |
| Environmental issues | Ground equipment - Contributed to outcome |
| Environmental issues | Rough terrain - Effect on operation |

Factual Information

History of Flight

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| Standing-engine(s) not oper | Ground handling event (Defining event) |
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On August 14, 2014, about 0941 mountain daylight time, a Boeing 737-700 airplane, N758SW, was struck by a runaway baggage cart while sitting at the boarding gate, at the Salt Lake City International Airport (KSLC), Salt Lake City, Utah. The two airline transport pilots and three cabin crewmembers were not injured. The fuselage was substantially damaged. The airplane was registered to, and operated by, the Southwest Airlines Company, Dallas, Texas, as Southwest Flight 579, as a Title 14 Code of Federal Regulations Part 121 domestic passenger flight. An instrument flight rules flight plan was filed. The airplane was being prepared to board passengers when the event occurred.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) on August 14, a representative of the Southwest Airlines Company said that he had been advised of the event in Salt Lake City, and received photographs showing structural damage to the airplane. He said the baggage cart had been on the end of a string of carts being pulled by a tug belonging to Delta Airlines. The cart came loose while being towed and rolled into the airplane, penetrating the side of the fuselage.

During a subsequent telephone conversation, a representative of Delta Airlines reported that a tug, belonging to Delta Airlines, had been pulling several baggage carts in the non-movement area adjacent to the airplane boarding gates. She said an airport surveillance video showed the second cart in the string hit a pothole and detached from the preceding cart. The loose baggage carts rolled across the ramp and into the side of the airplane.

Prior to the accident, there were no reported mechanical anomalies with the airplane.

According to a Salt Lake City Airport Police report, the Delta Employee who drove the event tug stated he was pulling a string of four baggage carts behind his tug, northbound on the airfield road on the east side of the Bravo Concourse. He said he was coming from Gate B-3 heading north to the baggage cart boneyard. He further reported that when he arrived at the boneyard, there was only 1 baggage cart attached to the tug. He did not know when or where the 3 missing carts had detached from the string.

A Southwest employee reported to the police that he was pulled up to the rear-belt loader on gate B-17. He detached 2 baggage carts from his tug and got back in his tug. He looked up and saw 3 Delta baggage carts rolling towards the belt-loader. He yelled to his fellow-employee to watch out, and the baggage carts swerved at the last second and collided with the airplane.

The second Southwest employee reported that he was standing by the belt-loader with his back to the airplane when he heard someone scream, "Lookout!!!" He turned around just as the carts impacted the airplane. He reported that the carts impacted the airplane so hard the rear carts spun around.

The police report went on to report that security video recordings were obtained and showed that in the areas of Gates B-13 and B-15, the Delta Employee could be seen driving the tug out of his traffic lane veering to his left into the south bound traffic lane. The Employee reported that, that was done to avoid an airplane taxiing away from Gate B-15.

The report continued that, while traveling north in the southbound lane, the Delta Employee drove over a drain cover east of Gate B-15. When the baggage carts passed over the drain cover, the second baggage cart disconnected from the first baggage cart.

According to a Delta representative, after being notified of the event, Delta inspected the tug and baggage carts involved. They reported that all connection parts (tongues and springs) were found to be in good condition. Delta also reported that an additional video showed the tug maneuvering in a gate area for an extended period of time with the same carts attached. Delta reported that the tug driver stated he was confident the carts were properly connected.

Previous Events

During the airlines' investigations, employees at both Southwest and Delta reported knowing about the dip in the driving lane at the drain cover near Gate B15. Employees stated other similar disconnection events had occurred, but since the events did not result in damage or injury, documentation could not be located or did not exist.

The Southwest station manager reported that in November of 2013 an event occurred at the same spot in which a baggage cart disconnected from a tug. He stated the event was brought to the attention of airport authorities who stated the surface could not be leveled at that time because of the winter weather. The Station Manager further stated no action has been taken by the airport since that time.

Pilot Information

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| Certificate: | Airline transport | Age: | 44, Male |
| Airplane Rating(s): | Single-engine land; Single-engine sea; Multi-engine land | Seat Occupied: | Left |
| Other Aircraft Rating(s): | None | Restraint Used: | 4-point |
| Instrument Rating(s): | Airplane | Second Pilot Present: | Yes |
| Instructor Rating(s): | None | Toxicology Performed: | No |
| Medical Certification: | Class 1 Without waivers/limitations | Last FAA Medical Exam: | August 15, 2014 |
| Occupational Pilot: | Yes | Last Flight Review or Equivalent: | |
| Flight Time: | 15500 hours (Total, all aircraft), 9500 hours (Total, this make and model) | | |

Aircraft and Owner/Operator Information

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| Aircraft Make: | Boeing | Registration: | N758SW |
| Model/Series: | 737 7H4 7H4 | Aircraft Category: | Airplane |
| Year of Manufacture: | 1999 | Amateur Built: | |
| Airworthiness Certificate: | Normal; Transport | Serial Number: | 27873 |
| Landing Gear Type: | Tricycle | Seats: | 151 |
| Date/Type of Last Inspection: | August 6, 2014 Condition | Certified Max Gross Wt.: | 154500 lbs |
| Time Since Last Inspection: | | Engines: | 2 Turbo fan |
| Airframe Total Time: | 53349 Hrs | Engine Manufacturer: | CFM INTL. |
| ELT: | C126 installed, not activated | Engine Model/Series: | CFM56 SERIES |
| Registered Owner: | SOUTHWEST AIRLINES CO | Rated Power: | 24200 Lbs thrust |
| Operator: | SOUTHWEST AIRLINES CO | Operating Certificate(s) Held: | Flag carrier (121) |

Meteorological Information and Flight Plan

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| Conditions at Accident Site: | Visual (VMC) | Condition of Light: | Day |
| Observation Facility, Elevation: | | Distance from Accident Site: | |
| Observation Time: | | Direction from Accident Site: | |
| Lowest Cloud Condition: | Few / 6000 ft AGL | Visibility | 10 miles |
| Lowest Ceiling: | None | Visibility (RVR): | |
| Wind Speed/Gusts: | 5 knots / None | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 140° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 30.07 inches Hg | Temperature/Dew Point: | 22°C / 15°C |
| Precipitation and Obscuration: | | | |
| Departure Point: | | Type of Flight Plan Filed: | None |
| Destination: | | Type of Clearance: | None |
| Departure Time: | | Type of Airspace: | |

Airport Information

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|-----------------------------|-------------------------|----------------------------------|------|
| Airport: | SALT LAKE CITY INTL SLC | Runway Surface Type: | |
| Airport Elevation: | 4227 ft msl | Runway Surface Condition: | |
| Runway Used: | | IFR Approach: | None |
| Runway Length/Width: | | VFR Approach/Landing: | None |

Wreckage and Impact Information

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|----------------------------|--------|-----------------------------|-----------------------|
| Crew Injuries: | 5 None | Aircraft Damage: | Substantial |
| Passenger Injuries: | | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 5 None | Latitude, Longitude: | 40.786388,-111.973052 |

Administrative Information

Investigator In Charge (IIC): Lewis, Lawrence

Additional Participating Persons:

Original Publish Date: July 16, 2018

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=89880>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).