



Aviation Investigation Final Report

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|--------------------------------|-----------------------------------|-------------------------|---------------------|
| Location: | Atlanta, Georgia | Accident Number: | DCA13CA128 |
| Date & Time: | July 12, 2013, 05:38 Local | Registration: | N863DA |
| Aircraft: | Boeing 777-232 | Aircraft Damage: | None |
| Defining Event: | Turbulence encounter | Injuries: | 1 Serious, 278 None |
| Flight Conducted Under: | Part 121: Air carrier - Scheduled | | |

Analysis

According to the flight and cabin crew statements, Atlanta Approach Control advised the crew that radar was showing an area of rain on the arrival route although the flight crew did not see any areas of precipitation on the airborne weather radar. During the descent to 11,000 feet the seatbelt sign was illuminated and the captain, who was the pilot monitoring, cycled the seatbelt sign and called the flight attendant (FA) at the 1L door via the interphone to notify the cabin crew to be seated. Before the 1L flight attendant was able to relay the message to all of the FAs to be seated, as they were all preparing the cabin for arrival, the airplane encountered several distinct jolts of turbulence. According to the flight data recorder data, as the airplane was descending through about 13,200 feet, the vertical acceleration fluctuated between +1.56 g's and +0.024 g's over a period of about 10 seconds.

During the turbulence the 4Rc FA who was in the aisle near the 3R door was lifted into the air and fell back down to the floor on her feet and knees. The FA was assisted to the 3R jumpseat, the flight crew was notified of the injury, and they requested paramedics meet the airplane upon arrival

The 4Rc FA was transported to the hospital where she was diagnosed with two broken ankles.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Unexpected encounter with convective turbulence while the flight attendants were preparing the cabin for arrival.

Findings

Environmental issues

Convective turbulence - Effect on personnel

Factual Information

History of Flight

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|------------------------|---------------------------------------|
| Enroute-descent | Turbulence encounter (Defining event) |
|------------------------|---------------------------------------|

Pilot Information

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|----------------------------------|---|--|---------------|
| Certificate: | Airline transport | Age: | 56 |
| Airplane Rating(s): | Single-engine land; Multi-engine land | Seat Occupied: | Left |
| Other Aircraft Rating(s): | Glider | Restraint Used: | |
| Instrument Rating(s): | Airplane | Second Pilot Present: | Yes |
| Instructor Rating(s): | None | Toxicology Performed: | No |
| Medical Certification: | Class 1 Unknown | Last FAA Medical Exam: | June 26, 2013 |
| Occupational Pilot: | Yes | Last Flight Review or Equivalent: | May 5, 2013 |
| Flight Time: | 13394 hours (Total, all aircraft), 1136 hours (Total, this make and model), 5757 hours (Pilot In Command, all aircraft), 87 hours (Last 90 days, all aircraft), 1 hours (Last 24 hours, all aircraft) | | |

Co-pilot Information

| | | | |
|----------------------------------|--|--|-------------------|
| Certificate: | Airline transport | Age: | 52 |
| Airplane Rating(s): | Single-engine land; Multi-engine land | Seat Occupied: | Right |
| Other Aircraft Rating(s): | None | Restraint Used: | |
| Instrument Rating(s): | Airplane | Second Pilot Present: | Yes |
| Instructor Rating(s): | None | Toxicology Performed: | No |
| Medical Certification: | Class 1 Unknown | Last FAA Medical Exam: | February 20, 2013 |
| Occupational Pilot: | Yes | Last Flight Review or Equivalent: | January 15, 2013 |
| Flight Time: | 9499 hours (Total, all aircraft), 616 hours (Total, this make and model), 517 hours (Pilot In Command, all aircraft), 94 hours (Last 90 days, all aircraft), 1 hours (Last 24 hours, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|------------------------|---------------------------------------|--------------------|
| Aircraft Make: | Boeing | Registration: | N863DA |
| Model/Series: | 777-232 | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | |
| Airworthiness Certificate: | Transport | Serial Number: | 29735 |
| Landing Gear Type: | Retractable - Tricycle | Seats: | 400 |
| Date/Type of Last Inspection: | | Certified Max Gross Wt.: | |
| Time Since Last Inspection: | | Engines: | 2 Turbo jet |
| Airframe Total Time: | | Engine Manufacturer: | ROLLS-ROYC |
| ELT: | | Engine Model/Series: | RB.211 SERIES |
| Registered Owner: | DELTA AIR LINES INC | Rated Power: | 22000 Lbs thrust |
| Operator: | DELTA AIR LINES INC | Operating Certificate(s) Held: | Flag carrier (121) |
| Operator Does Business As: | | Operator Designator Code: | DALA |

Meteorological Information and Flight Plan

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|---|-------------------------|---|-------------------|
| Conditions at Accident Site: | Visual (VMC) | Condition of Light: | Night/dark |
| Observation Facility, Elevation: | KATL | Distance from Accident Site: | 29 Nautical Miles |
| Observation Time: | 04:52 Local | Direction from Accident Site: | 227° |
| Lowest Cloud Condition: | Scattered / 3200 ft AGL | Visibility | 7 miles |
| Lowest Ceiling: | Broken / 4800 ft AGL | Visibility (RVR): | |
| Wind Speed/Gusts: | / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29.9 inches Hg | Temperature/Dew Point: | 23°C / 22°C |
| Precipitation and Obscuration: | | | |
| Departure Point: | Dubai (OMDB) | Type of Flight Plan Filed: | IFR |
| Destination: | Atlanta, GA (KATL) | Type of Clearance: | IFR |
| Departure Time: | 11:38 UTC | Type of Airspace: | |

Wreckage and Impact Information

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|----------------------------|---------------------|-----------------------------|---------------------------|
| Crew Injuries: | 1 Serious, 14 None | Aircraft Damage: | None |
| Passenger Injuries: | 264 None | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 1 Serious, 278 None | Latitude, Longitude: | 33.909999,-84.083053(est) |

Administrative Information

Investigator In Charge (IIC): Helson, David

Additional Participating Persons:

Original Publish Date: September 1, 2015

Last Revision Date:

Investigation Class: [Class](#)

Note: This accident report documents the factual circumstances of this accident as described to the NTSB.

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=87472>

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](#).