



Aviation Investigation Final Report

Location:	Reno, Nevada	Accident Number:	DCA19CA081
Date & Time:	February 13, 2019, 14:55 Local	Registration:	N613CZ
Aircraft:	Embraer ERJ170	Aircraft Damage:	Minor
Defining Event:	Turbulence encounter	Injuries:	1 Serious, 4 Minor, 59 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

On February 13, 2019 about 1232 PST, Compass Airlines flight 5763, an Embraer ERJ 175, N613CZ, encountered turbulence while in cruise flight at flight level (FL) 340 and subsequently diverted to Reno-Tahoe International Airport (KRNO), Reno, Nevada. Of the 75 passengers and crew onboard, one flight attendant sustained serious injuries while two flight attendants and two passengers received minor injuries. The airplane sustained minor damage. The flight was operating under the provisions of 14 Code of Federal Regulations Part 121 as a regularly scheduled passenger flight from the John Wayne-Orange County Airport (KSNA), Santa Ana, California to Seattle-Tacoma International Airport (KSEA), Seattle, Washington.

According to the flight crew, about 40 minutes into the flight when the airplane was in smooth air and “between cloud layers”, the captain informed the flight attendants that they could begin cabin service but left the seatbelt sign illuminated for passengers because there was a report of “occasional light chop”. About 20 minutes later, the flight encountered an area of severe turbulence that lasted about 8 seconds and caused the airplane to rapidly gain altitude and the traffic collision avoidance system (TCAS) to issue a resolution advisory (RA) for opposite-direction traffic 1,000 ft above them. The first officer (FO), who was the flying pilot, disengaged the autopilot and applied forward control pressure to comply with the RA. The FO could not obtain the target flight path vector directed by the TCAS, so the captain assisted on the controls to obtain the desired pitch attitude. After the airplane descended back to its assigned altitude, the TCAS RA cleared, and the captain informed air traffic control of the turbulence and TCAS RA.

According to the flight attendants (FA), the turbulence was encountered as they were beginning the beverage service. Two of the FAs impacted the ceiling before falling to the floor and one passenger, who had been in the lavatory at the time of the encounter had a small head laceration. As a result of the injuries, the captain declared an emergency and the flight diverted

to KRNO. The FA in the aft galley was assisted by a medically qualified passenger and remained on the floor until landing due to her injuries. She was transported to the hospital and diagnosed with a broken arm.

Post accident examination of the weather satellite data depicted cloud patterns aloft consistent with the presence of a convective updraft coincident with the flight's location at the time of the turbulence encounter. The convection appeared to be "embedded" with stratiform clouds and may not have been visually identifiable by the flight crew.

Probable Cause and Findings

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

an inadvertent encounter with convective turbulence that resulted in a TCAS RA, which required an abrupt control input by the flight crew to resolve the conflict.

Findings

Environmental issues	Convective turbulence - Effect on personnel
Personnel issues	Aircraft control - Flight crew

Factual Information

History of Flight

Enroute-cruise	Turbulence encounter (Defining event)
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Pilot Information

Certificate:	Airline transport; Commercial; Flight instructor	Age:	32, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	January 24, 2019
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	January 27, 2019
Flight Time:	4270 hours (Total, all aircraft), 2727 hours (Total, this make and model), 1962 hours (Pilot In Command, all aircraft), 116 hours (Last 90 days, all aircraft), 39 hours (Last 30 days, all aircraft)		

Co-pilot Information

Certificate:	Airline transport; Commercial	Age:	30, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	3-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:	November 26, 2018
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	October 28, 2018
Flight Time:	2233 hours (Total, all aircraft), 674 hours (Total, this make and model), 566 hours (Pilot In Command, all aircraft), 195 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Embraer	Registration:	N613CZ
Model/Series:	ERJ170 200LR	Aircraft Category:	Airplane
Year of Manufacture:	2008	Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	17000203
Landing Gear Type:	Retractable - Tricycle	Seats:	83
Date/Type of Last Inspection:	Continuous airworthiness	Certified Max Gross Wt.:	89353 lbs
Time Since Last Inspection:		Engines:	Turbo fan
Airframe Total Time:	30469.12 Hrs	Engine Manufacturer:	General Electric
ELT:	C126 installed, not activated	Engine Model/Series:	CF34-8E5
Registered Owner:	Delta Air Lines Inc	Rated Power:	14510 Lbs thrust
Operator:	Compass Airlines	Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:	Delta Connection	Operator Designator Code:	C77A

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:		Visibility	
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	Convective / Convective
Wind Direction:		Turbulence Severity Forecast/Actual:	Severe / Severe
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:			
Departure Point:	Santa Ana, CA (SNA)	Type of Flight Plan Filed:	IFR
Destination:	Reno, NV (RNO)	Type of Clearance:	IFR
Departure Time:		Type of Airspace:	Class A

Wreckage and Impact Information

Crew Injuries:	1 Serious, 2 Minor, 2 None	Aircraft Damage:	Minor
Passenger Injuries:	2 Minor, 57 None	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Serious, 4 Minor, 59 None	Latitude, Longitude:	39.473502,-119.81758

Administrative Information

Investigator In Charge (IIC): Bower, Daniel

Additional Participating Persons:

Original Publish Date: January 26, 2021

Last Revision Date:

Investigation Class: [Class 4](#)

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

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=98982>

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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](#).