



# Aviation Investigation Final Report

<b>Location:</b>	Denver, Colorado	<b>Accident Number:</b>	DCA19CA010
<b>Date &amp; Time:</b>	October 12, 2018, 09:16 Local	<b>Registration:</b>	N926FR
<b>Aircraft:</b>	Airbus A319	<b>Aircraft Damage:</b>	None
<b>Defining Event:</b>	Turbulence encounter	<b>Injuries:</b>	1 Serious, 1 Minor, 22 None
<b>Flight Conducted Under:</b>	Part 121: Air carrier - Scheduled		

## Analysis

On October 12, 2018, about 0916 MDT, Frontier Airlines flight 190, an Airbus A319, N926FR, encountered turbulence while climbing through 24,000 feet after departure from Denver International Airport (DEN), Denver, Colorado. Of the 24 passengers and crew onboard, one flight attendant received serious injuries. The airplane was not damaged. The regularly scheduled passenger flight was operating under 14 *Code of Federal Regulations* Part 121 from DEN to Austin Bergstrom International Airport (AUS), Austin, Texas.

According to the flight crew, the flight encountered only intermittent light turbulence during the initial climb. However, as the airplane was climbing through flight level 240, they encountered continuous moderate turbulence. The airplane began to accelerate rapidly so the captain disconnected the autopilot and increased the climb. There was no convective activity in the area and no reports of any turbulence from other airplanes.

At the time of the turbulence encounter, two flight attendants in the aft galley were preparing for cabin service. Initially, the turbulence was light, however, when flight attendants felt the intensity increasing, they moved to get into their jump seats. Before they could get in their seats, they were both thrown into the air and then onto the floor. One flight attendant injured her ankle and the other injured her knee.

The captain called back to the cabin and was told that one of the flight attendants was seriously injured. He declared a medical emergency and requested paramedics meet the flight on arrival. After landing, one flight attendant was transported to a local hospital where she was diagnosed with a broken ankle.

## Probable Cause and Findings

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

inadvertent encounter with clear air turbulence resulting in a flight attendant receiving serious injuries.

## Findings

<b>Environmental issues</b>	Clear air turbulence - Effect on personnel
<b>Environmental issues</b>	Clear air turbulence - Awareness of condition
<b>Environmental issues</b>	Clear air turbulence - Ability to respond/compensate

## Factual Information

### History of Flight

Initial climb	Turbulence encounter (Defining event)
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### Pilot Information

Certificate:	Airline transport; Commercial	Age:	48
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Unknown
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	July 16, 2018
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	June 3, 2018
Flight Time:	3368 hours (Total, all aircraft), 3368 hours (Total, this make and model)		

### Co-pilot Information

Certificate:	Airline transport; Commercial	Age:	39,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	Unknown
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	December 21, 2017
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	May 28, 2018
Flight Time:	625 hours (Total, all aircraft), 625 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Airbus	<b>Registration:</b>	N926FR
<b>Model/Series:</b>	A319 111	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	2004	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Transport	<b>Serial Number:</b>	2198
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	150
<b>Date/Type of Last Inspection:</b>	September 1, 2018 Continuous airworthiness	<b>Certified Max Gross Wt.:</b>	155200 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Turbo fan
<b>Airframe Total Time:</b>	697614 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Cfm Intl.
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	CFM56 SERIES
<b>Registered Owner:</b>		<b>Rated Power:</b>	
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	Flag carrier (121)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	F3LA

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Unknown	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/ None
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	/ Moderate
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	
<b>Precipitation and Obscuration:</b>			
<b>Departure Point:</b>	Denver, CO (DEN )	<b>Type of Flight Plan Filed:</b>	
<b>Destination:</b>	Austin, TX (AUS )	<b>Type of Clearance:</b>	Unknown
<b>Departure Time:</b>		<b>Type of Airspace:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious, 1 Minor, 3 None	<b>Aircraft Damage:</b>	None
<b>Passenger Injuries:</b>	19 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious, 1 Minor, 22 None	<b>Latitude, Longitude:</b>	39.516944,-104.403892

## Administrative Information

Investigator In Charge (IIC):	Ward, Effie Lorenda		
Additional Participating Persons:			
Original Publish Date:	January 6, 2022	Investigation Class:	4
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.		
Investigation Docket:	<a href="https://data.nts.gov/Docket?ProjectID=98501">https://data.nts.gov/Docket?ProjectID=98501</a>		

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