



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Hebron, Kentucky	Accident Number:	DCA23LA445
Date & Time:	September 7, 2023, 02:32 UTC	Registration:	N37531
Aircraft:	Boeing 737-9	Aircraft Damage:	None
Defining Event:	Turbulence encounter	Injuries:	1 Serious, 70 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

United Airlines flight 1759 encountered moderate turbulence while descending through 11,000 ft for landing at Cincinnati/Northern Kentucky International Airport (CVG) Hebron, Kentucky, and a flight attendant (FA) fractured her pelvis.

The flight crew reported that while descending on the SARGO-3 arrival into CVG they observed a single cloud with no apparent vertical development at about 11,000 ft. With no indication of an adverse ride from air traffic control (ATC), their onboard weather applications or their weather radar, the pilots elected to continue. Upon entering the cloud, the flight encountered about 2 seconds of moderate turbulence. Following the turbulence encounter the flight crew received a call from the cabin advising them that a FA had been injured.

The aft FA assigned to jumpseat 2L reported that she was completing her duties in the aft galley and was seated in her jumpseat but had not fastened her safety harness, when suddenly and without warning, they encountered severe turbulence. She was thrown into the air, struck the ceiling and impacted the floor on her side fracturing her pelvis. Upon being notified of the injury, the flight crew declared a medical emergency and requested paramedics meet the aircraft at the gate. The injured FA was transported to the hospital where she was diagnosed with a fractured pelvis.

At the time of the turbulence encounter there were no active significant meteorological information (SIGMETs), convective SIGMETs, airman's meteorological information (AIRMETs), or pilot reports (PIREPs) of any significant turbulence.

Probable Cause and Findings

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

An inadvertent encounter with convectively induced turbulence (CIT) during descent.

Findings

Environmental issues	Convective turbulence - Effect on personnel
Environmental issues	Convective turbulence - Awareness of condition
Personnel issues	Knowledge of meteorologic cond - Flight crew

Factual Information

History of Flight

Enroute-descent	Turbulence encounter (Defining event)
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Pilot Information

Certificate:	Airline transport	Age:	36,Male
Airplane Rating(s):	Single-engine land; 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:	
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	February 6, 2023
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	February 6, 2023
Flight Time:	(Estimated) 11000 hours (Total, all aircraft), 3400 hours (Total, this make and model), 2500 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 50 hours (Last 30 days, all aircraft)		

Co-pilot Information

Certificate:	Airline transport; Flight instructor	Age:	48,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	4-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	Toxicology Performed:	
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	May 8, 2023
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	April 26, 2023
Flight Time:	(Estimated) 15700 hours (Total, all aircraft), 10500 hours (Total, this make and model), 2000 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft), 17 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Boeing	Registration:	N37531
Model/Series:	737-9	Aircraft Category:	Airplane
Year of Manufacture:	2022	Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	66119
Landing Gear Type:	Retractable - Tricycle	Seats:	188
Date/Type of Last Inspection:	Continuous airworthiness	Certified Max Gross Wt.:	195200 lbs
Time Since Last Inspection:		Engines:	2 Turbo fan
Airframe Total Time:		Engine Manufacturer:	CFM INTL
ELT:	C91 installed, not activated	Engine Model/Series:	LEAP-1B-28G06
Registered Owner:	UNITED AIRLINES INC	Rated Power:	27900 Lbs thrust
Operator:	UNITED AIRLINES INC	Operating Certificate(s) Held:	Flag carrier (121)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night
Observation Facility, Elevation:	KCVG, 883 ft msl	Distance from Accident Site:	39 Nautical Miles
Observation Time:	22:52 Local	Direction from Accident Site:	238°
Lowest Cloud Condition:	Few / 7000 ft AGL	Visibility	10 miles
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	None / Convective
Wind Direction:	190°	Turbulence Severity Forecast/Actual:	N/A / Moderate
Altimeter Setting:	29.85 inches Hg	Temperature/Dew Point:	22°C / 21°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Houston, TX	Type of Flight Plan Filed:	IFR
Destination:	Cincinnati, OH	Type of Clearance:	IFR
Departure Time:	00:47 UTC	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	1 Serious, 3 None	Aircraft Damage:	None
Passenger Injuries:	67 None	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Serious, 70 None	Latitude, Longitude:	38.7509,-85.2676

Administrative Information

Investigator In Charge (IIC): Banning, David

Additional Participating Persons: AVP-100; Federal Aviation Administration ; Washington , DC

Original Publish Date: October 17, 2023

Last Revision Date:

Investigation Class: [Class 4](#)

Note: The NTSB did not travel to the scene of this accident.

Investigation Docket: <https://data.ntsb.gov/Docket?ProjectID=193031>

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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](#).