Aviation Investigation Final Report

Location:	Over the, Atlantic Ocean	**Accident Number:**	DCA23LA421
Date & Time:	August 18, 2023, 19:11 Local	**Registration:**	N209UA
Aircraft:	Boeing 777-222	**Aircraft Damage:**	None
Defining Event:	Turbulence encounter	**Injuries:**	1 Serious, 8 Minor, 247 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

United Airlines flight 918 encountered clear air turbulence during cruise flight, while en route to the London Heathrow International Airport (LHR), London, United Kingdom resulting in one flight attendant (FA) sustaining a serious injury. The flight originated at Dulles International Airport (IAD), Dulles, Virginia.

The flight crew reported that their preflight weather briefing revealed no significant areas of weather or turbulence over their planned route to LHR. During their preflight checks an open status message "PASS ADDRESS SYSTEM" displayed on their engine indication and crew alerting system (EICAS) display and maintenance was called. A technician responded who reinitialized the entire passenger address (PA) system and cleared the status message.

The flight crew reported that prior to the JOBOC intersection, there was minimal light turbulence, and the seatbelt sign had been on and off sporadically as required. They also indicated that no turbulence was identified in their immediate vicinity from their inflight weather resources. About 80 nm east of JOBOC, the flight encountered very light turbulence and the first officer (FO), who was the pilot flying, made the PA announcement: "Flight Attendants take your seats." In a postaccident statement, the captain reported that while in the forward lavatory, the flight encountered very light turbulence and he heard through the lavatory wall, the FO make the PA announcement: "Flight Attendants take your seats." However, because he did not hear the PA announcement over the lavatory speaker he didn't know if the rest of the crew or passengers heard this announcement. The in-flight service manager (ISM), who was in the cockpit at the time also heard the FO make the announcement "Flight Attendants take your jumpseats."

As the captain attempted to take his seat (left seat) the flight encountered a moderate turbulence spike that made his knees buckle and threw him back down into the 1st observer's

seat. He indicated that he was able to flash the seatbelt sign on and off three times rapidly. The flight crew then executed all the steps of the TURBULENCE IMMEDIATE ACTION GUIDE. The turbulence ended as abruptly as it had begun. The captain then made a PA announcement "Flight attendants check in." The ISM advised the captain that all the flight attendants had been knocked to the floor and one was seriously injured. The flight crew contacted dispatch and advised of the clear air turbulence encounter. The dispatcher had no reports of turbulence from any other United flights in the area.

According to the cabin crew, they did not hear the PA announcement "Flight Attendants take your seats" and therefore they were completing their normal duties when, without warning, the airplane encountered turbulence. One FA, who was delivering meals at the time of the turbulence encounter, was thrown down, impacted the floor, and was injured. According to the ISM, shortly after the encounter, the captain came on the PA and said "Flight Attendants, Check In." The cabin crew heard that announcement and the ISM reported to the flight crew that one FA was on the floor and was unable to get up.

Upon being notified of the injured FA, the flight crew declared a medical emergency and requested paramedics meet the aircraft at the gate in LHR. The injured FA was moved to an unoccupied passenger seat, given ice, and was assisted by an onboard medical doctor for the rest of the flight. After landing the FA was transported to a local hospital where she was diagnosed with a fractured left fibula.

A postaccident functional check of the passenger address system revealed no malfunctions or anomalies with the system.

Probable Cause and Findings

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

An inadvertent encounter with clear air turbulence during cruise flight.

Findings

Environmental issues	Clear air turbulence - Effect on personnel
Environmental issues	Clear air turbulence - Awareness of condition
Personnel issues	Knowledge of meteorologic cond - Cabin crew
Personnel issues	Knowledge of meteorologic cond - Flight crew
Personnel issues	Illness/injury - Cabin crew

Factual Information

History of Flight

Enroute-cruise	Turbulence encounter (Defining event)

Pilot Information

Certificate:	Airline transport; Commercial; Flight engineer	**Age:**	64
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	None	**Second Pilot Present:**	
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1 Waiver time limited special	**Last FAA Medical Exam:**	August 4, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	21000 hours (Total, all aircraft), 3441 hours (Total, this make and model), 18307 hours (Pilot In Command, all aircraft), 214 hours (Last 90 days, all aircraft), 73 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Co-pilot Information

Certificate:	Airline transport; Commercial	**Age:**	48
Airplane Rating(s):	Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	June 20, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	15000 hours (Total, all aircraft), 1575 hours (Total, this make and model), 10000 hours (Pilot In Command, all aircraft), 245 hours (Last 90 days, all aircraft), 88 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Flight instructor Information

Certificate:		**Age:**	
Airplane Rating(s):		**Seat Occupied:**	Rear
Other Aircraft Rating(s):		**Restraint Used:**	5-point
Instrument Rating(s):		**Second Pilot Present:**	
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	0 hours (Total, all aircraft), 0 hours (Total, this make and model)		

Cabin crew Information

Certificate:		**Age:**	
Airplane Rating(s):		**Seat Occupied:**	Unknown
Other Aircraft Rating(s):		**Restraint Used:**	4-point
Instrument Rating(s):		**Second Pilot Present:**	
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Cabin crew Information

Certificate:		**Age:**	
Airplane Rating(s):		**Seat Occupied:**	Unknown
Other Aircraft Rating(s):		**Restraint Used:**	4-point
Instrument Rating(s):		**Second Pilot Present:**	
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Cabin crew Information

Certificate:	**Age:**	
Airplane Rating(s):	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	**Restraint Used:**	4-point
Instrument Rating(s):	**Second Pilot Present:**	
Instructor Rating(s):	**Toxicology Performed:**	
Medical Certification:	**Last FAA Medical Exam:**	
Occupational Pilot:	**Last Flight Review or Equivalent:**	
Flight Time:		

Cabin crew Information

Certificate:	**Age:**	
Airplane Rating(s):	**Seat Occupied:**	Unknown
Other Aircraft Rating(s):	**Restraint Used:**	4-point
Instrument Rating(s):	**Second Pilot Present:**	
Instructor Rating(s):	**Toxicology Performed:**	
Medical Certification:	**Last FAA Medical Exam:**	
Occupational Pilot:	**Last Flight Review or Equivalent:**	
Flight Time:		

Aircraft and Owner/Operator Information

Aircraft Make:	Boeing	**Registration:**	N209UA
Model/Series:	777-222	**Aircraft Category:**	Airplane
Year of Manufacture:	1999	**Amateur Built:**	
Airworthiness Certificate:	Normal; Transport	**Serial Number:**	30215
Landing Gear Type:	Tricycle	**Seats:**	380
Date/Type of Last Inspection:	September 22, 2023 Continuous airworthiness	**Certified Max Gross Wt.:**	568669 lbs
Time Since Last Inspection:		**Engines:**	2 Turbo fan
Airframe Total Time:	92517 Hrs as of last inspection	**Engine Manufacturer:**	P&W
ELT:	Installed	**Engine Model/Series:**	PW4000 SER
Registered Owner:	UNITED AIRLINES INC	**Rated Power:**	60000 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:	CYQX	**Distance from Accident Site:**	
Observation Time:	18:40 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	65 knots /	**Turbulence Type Forecast/Actual:**	Clear air /
Wind Direction:		**Turbulence Severity Forecast/Actual:**	Moderate /
Altimeter Setting:		**Temperature/Dew Point:**	
Precipitation and Obscuration:			
Departure Point:	Dulles, VA (KIAD)	**Type of Flight Plan Filed:**	IFR
Destination:	London, OF (LHR)	**Type of Clearance:**	IFR;Cruise
Departure Time:	22:20 Local	**Type of Airspace:**	Class A

Wreckage and Impact Information

Crew Injuries:	1 Serious, 8 Minor, 4 None	**Aircraft Damage:**	None
Passenger Injuries:	243 None	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 8 Minor, 247 None	**Latitude, Longitude:**	40,-60

Administrative Information

Investigator In Charge (IIC):	Hauf, Michael
Additional Participating Persons:	Ryan Hurling; United; Chicago, IL FAA AVP100
Original Publish Date:	March 12, 2024
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=192927