
Turbulence injury, Boeing 737-724, February 19, 2002

Micro-summary: This Boeing 737-724 encountered turbulence while climbing, injuring a flight attendant.

Event Date: 2002-02-19 at 1830 CST


Investigative Body: National Transportation Safety Board (NTSB), USA

Investigative Body's Web Site: <http://www.nts.gov/>

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		NTSB ID: NYC02LA065		Aircraft Registration Number: N24736	
		Occurrence Date: 02/19/2002		Most Critical Injury: Serious	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Beaumont	State TX	Zip Code 77705	Local Time 1830	Time Zone CST	
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Boeing		Model/Series 737-724		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>On February 19, 2002, about 1830 central standard time, a Boeing 737-724, N24736, operated by Continental Airlines, Inc., as flight 1558, encountered turbulence near Beaumont, Texas. One flight attendant was seriously injured. There were no injuries to the 2 certificated airline transport pilots, 2 other flight attendants, or 70 passengers. The airplane was not damaged. Instrument meteorological conditions prevailed at the time of occurrence, for the flight that departed George Bush Intercontinental Airport (IAH), Houston, Texas, destined for Ronald Regan Washington National Airport (DCA), Washington, DC. Flight 1558 was being operated on a instrument flight rules (IFR) flight plan, and conducted under 14 CFR Part 121.</p> <p>The captain stated:</p> <p>"...The briefing [to the flight attendants] was standard...The takeoff and climb out were uneventful. While being vectored by ATC, we climbed to 15,000 ft. ATC then cleared us to BPT (Beaumont). I cannot recall how far from BPT the incident occurred. Radar was showing no significant weather in front of us. Still at 15,000 feet, I was flying in and out of thin stratus clouds. I broke out to find a cumulus cloud in front of the AC. I immediately started a right turn, but it was too close and the AC went through the top of the cloud. At this point we encountered the turbulence...."</p> <p>The first officer stated:</p> <p>"...The weather was windy with multiple cloud layers and no defined ceiling; but for the most part was overcast. The climb-out was bumpy with continuous chop, as we popped in and out of the cloud layers.</p> <p>The injured flight attendant stated:</p> <p>"...Takeoff was normal as we left Houston. After getting the recycle seat belt signal...I started with my aft galley position. I pulled out the beverage cart and parked it on aircraft right in the galley and set the brake. I turned and faced the front of the aircraft (I was going to go into the lave to get some paper towels for the beverage cart) as I was standing there, the aircraft seemed to suddenly drop out from under my feet and I went up into the air. Then as I was coming back down, the aircraft seemed to snap back up, at which time my left leg hit the floor first, and then I ended up on my tail bone on the floor..."</p> <p>A non-duty status flight attendant assumed the duties of the injured flight attendant. The injured flight attendant told the cockpit crew that he could wait until arrival at Washington to receive medical attention.</p> <p>The captain had briefed the flight crew prior to departure. According to Continental Airlines</p>					
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National Transportation Safety Board

FACTUAL REPORT

AVIATION

NTSB ID: NYC02LA065

Occurrence Date: 02/19/2002

Occurrence Type: Accident

Narrative (Continued)

procedures, the captain will conduct a crew briefing each day or when there was a crew change. The brief should include:

"...an introduction of crewmembers, departure, en route and destination weather, appropriate open logbook write-ups and other pertinent information the captain considers necessary for the safe conduct of the flight."

There was no specific direction for the flight crew to brief the flight attendants on when they could begin cabin service.


When asked, what specific direction Continental Airlines used to indicate when flight attendants could leave their seats to begin cabin service, the Director of Safety Investigations for Continental Airlines, reported there was no specific written direction. However, he added the usual practice was for flight attendants to use the illumination of the sterile cockpit light as an indication to remain seated, and once the sterile cockpit light was extinguished, it was alright to begin cabin service, unless otherwise instructed.


According to flight recorder data from Continental Airlines, while at 15,000 feet, and an indicated airspeed of 326 knots, the airplane encountered a peak g load of + 2.575, which decreased to + 0.631, and then eventually returned to 1.0 g. The pitch attitude which had been 1.58 degrees nose up, momentarily increased to 1.76 degrees nose up, the decreased to -1.05 degrees down before stabilizing.

According to the weather contained in the flight release for flight 1558, the significant weather portion for eastern Texas included scattered to occasional broken lines of thunderstorms, moving slowly eastward.

The 1800 and 1900 NEXRAD radar returns showed areas of precipitation in the Beaumont area.

A special weather observation, at 1843, from the Beaumont/Port Arthur Airport, Beaumont, Texas, included winds from 200 degrees at 12 knots, with gusts to 20 knots, visibility 6 statute miles, light rain and mist, a few clouds at 900 feet, broken clouds at 2,900 feet, overcast clouds at 3,700 feet, and the rain began at 31 minutes past the hour.

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: NYC02LA065				
		Occurrence Date: 02/19/2002				
		Occurrence Type: Accident				
Landing Facility/Approach Information						
Airport Name		Airport ID:	Airport Elevation Ft. MSL	Runway Used	Runway Length	Runway Width
Runway Surface Type: Unknown						
Runway Surface Condition: Unknown						
Type Instrument Approach: Unknown						
VFR Approach/Landing: Unknown						
Aircraft Information						
Aircraft Manufacturer Boeing		Model/Series 737-724		Serial Number 28803		
Airworthiness Certificate(s): Transport						
Landing Gear Type: Retractable - Tricycle						
Homebuilt Aircraft? No		Number of Seats: 129		Certified Max Gross Wt. 154500 LBS		Number of Engines: 2
Engine Type: Turbo Fan		Engine Manufacturer: CFM International		Model/Series: CFM 56-7		Rated Power: 20000 LBS
- Aircraft Inspection Information						
Type of Last Inspection Continuous Airworthiness		Date of Last Inspection 01/2002		Time Since Last Inspection 433.35 Hours		Airframe Total Time 8935.5 Hours
- Emergency Locator Transmitter (ELT) Information						
ELT Installed? No		ELT Operated? No		ELT Aided in Locating Accident Site? No		
Owner/Operator Information						
Registered Aircraft Owner Continental Airlines Inc.		Street Address 1600 Smith St.				
		City Houston		State TX	Zip Code 77002	
Operator of Aircraft Same as Reg'd Aircraft Owner		Street Address Same as Reg'd Aircraft Owner				
		City		State	Zip Code	
Operator Does Business As:				Operator Designator Code: COAA		
- Type of U.S. Certificate(s) Held:						
Air Carrier Operating Certificate(s): Flag Carrier/Domestic						
Operating Certificate:			Operator Certificate:			
Regulation Flight Conducted Under: Part 121: Air Carrier						
Type of Flight Operation Conducted: Scheduled; Domestic; Passenger/Cargo						

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: NYC02LA065
	Occurrence Date: 02/19/2002
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 43
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Sex: M	Seat Occupied: Left	Principal Profession: Civilian Pilot	Certificate Number: On File
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Certificate(s): Airline Transport; Flight Instructor; Commercial; Flight Engineer

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): Airplane Single-engine

Type Rating/Endorsement for Accident/Incident Aircraft? Yes	Current Biennial Flight Review? 12/2001
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Medical Cert.: Class 1	Medical Cert. Status: Valid Medical--no waivers/lm.	Date of Last Medical Exam: 11/2001
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	11926	5554	1717	10209	2982					
Pilot In Command(PIC)	3499	1513	1600	1899	874					
Instructor	1400		1356	44	339					
Last 90 Days	109	109		109						
Last 30 Days	35	35		35	8					
Last 24 Hours										

Seatbelt Used? Yes	Shoulder Harness Used? No	Toxicology Performed? No	Second Pilot? Yes
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Flight Plan/Itinerary

Type of Flight Plan Filed: IFR				
Departure Point	State	Airport Identifier	Departure Time	Time Zone
Houston	TX	IAH	1811	CST
Destination	State	Airport Identifier		
Washington	DC	DCA		


Type of Clearance: IFR

Type of Airspace: Class E

Weather Information

Source of Briefing:
Company

Method of Briefing: In Person

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Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
BPT	1843	CDT	16 Ft. MSL	NM	Deg. Mag.
Sky/Lowest Cloud Condition: Few			900 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Broken		2900 Ft. AGL	Visibility: 6	SM	Altimeter: 29.82 "Hg
Temperature: 19 °C	Dew Point: 19 °C	Wind Direction: 200		Density Altitude: Ft.	
Wind Speed: 12	Gusts: 20	Weather Conditions at Accident Site: Instrument Conditions			
Visibility (RVR): Ft.	Visibility (RVV)	SM	Intensity of Precipitation:		
Restrictions to Visibility: None					
Type of Precipitation: None					

Accident Information

Aircraft Damage: None	Aircraft Fire: None	Aircraft Explosion: None
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Classification: U.S. Registered/U.S. Soil

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot				1	1
Second Pilot				1	1
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants		1		2	3
Other Crew					
Passengers				70	70
- TOTAL ABOARD -		1		74	75
Other Ground					
- GRAND TOTAL -		1		74	75

National Transportation Safety Board

FACTUAL REPORT

AVIATION



NTSB ID: NYC02LA065

Occurrence Date: 02/19/2002

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

Robert L. Hancock

Additional Persons Participating in This Accident/Incident Investigation:

William Osborne
Aviation Safety Inspector
Federal Aviation Administration
Dulles, VA

Eugene A Carroll
Director Safety Investigations
Continental Airlines
Houston, TX