Turbulence injuries, Boeing 737-200, April 17, 2001

Micro-summary: This Boeing 737-200 encountered severe turbulence during climb, injuring two flight attendants.

Event Date: 2001-04-17 at 0830 EDT

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

Investigative Body's Web Site: http://www.ntsb.gov/

Cautions:

1. Accident reports can be and sometimes are revised. Be sure to consult the investigative agency for the latest version before basing anything significant on content (e.g., thesis, research, etc).

2. Readers are advised that each report is a glimpse of events at specific points in time. While broad themes permeate the causal events leading up to crashes, and we can learn from those, the specific regulatory and technological environments can and do change. Your company's flight operations manual is the final authority as to the safe operation of your aircraft!

3. Reports may or may not represent reality. Many many non-scientific factors go into an investigation, including the magnitude of the event, the experience of the investigator, the political climate, relationship with the regulatory authority, technological and recovery capabilities, etc. It is recommended that the reader review all reports analytically. Even a "bad" report can be a very useful launching point for learning.

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National Transportation Safety Board		NTSB ID:	ATL01LA049	9	Aircraft Registration Number: N253UA					
FACTUAL REPORT	ľ	Occurrenc	e Date: 04/17	7/2001	Most Critical Injury: Serious					
AVIATION CETYBON OC			e Type: Accic	lent	Investigated By: NTSB					
Location/Time										
Nearest City/Place	State	Zip	Code	Local Time	Time Zone					
Jacksonville	FL	32	2099	0830	EDT					
Airport Proximity: Off Airport/Airstrip	Distar	nce From La	anding Facility:	0	Direction From	m Airpor	t: 0			
Aircraft Information Summary			1				1			
Aircraft Manufacturer			Model/Series	3			Type of Aircraft			
Boeing			737-200				Airplane			
Sightseeing Flight: No		A	ir Medical Tr	ansport Flight: No						
Narrative										
Definition of the statement of tacks conditions and discumstances partiment to the acoidem/findemt About 0830 eastern daylight time, on April 17, 2001, a Boeing Aircraft Company 737-200. N253UA, operated by US Airways as Flight 2686, encountered severe turbulence during climb out from Baltimore-Washington International Airport in Baltimore, Maryland. Flight 2686 was operated under the provisions of Title 14 CFR Part 121, as a scheduled, domestic passenger flight from Baltimore, Maryland, to Jacksonville, Florida. The flight departed Baltimore-Washington, Maryland, at an undetermined time. There were four crewmembers and 73 revenue passengers on board. One cabin attendant received serious injuries, and another cabin attendant received minor injuries. Undetermined weather conditions at altitude prevailed at the time of the accident. The flight operated under instrument flight rules with a flight plan filed. The flight continued to Jacksonville, Florida, without further incident. According to the pilot, no significant forecasts or pilot reports for turbulent weather were given during the preflight weather briefing by the dispatcher for his route of flight. Approximately 12-15 minutes after takeoff, at an altitude of 19,000 feet, the airplane unexpectedly encountered several areas of moderate turbulence. The "FASTEN SEAT BEIT" sign was illuminated at the time of the encounter and the flight attendants were in the cabin preparing to serve the passengers. As they continued their duties, one flight attendant was thrown to the floor during an encounter. After the pilot instructed the flight attendants to take their seats, he was told that one flight attendants had sustained an ankle injury. The flight continued and landed at Jacksonville, Florida, without further incident. A review of National Weather Service information revealed that an AIRMET issued at 0945 hours forecast " occasional moderate turbulence between FL240 and FL350 associated with an upper trough. Conditions expected to continue bey										

National Transportation Safety Board	NTS	NTSB ID: ATL01LA049										
FACTUAL REPORT	Occi	Occurrence Date: 04/17/2001										
AVIATION		Occurrence Type: Accident										
Landing Facility/Approach Information												
Airport Name	Airp	ort ID:	Airport Eleva	ation	Run	way Used	Runwa	ay Length	n Ru	nway Width		
JACKSONVILLE INTL	JAX					8000	.,	15				
Runway Surface Type: Unknown												
Runway Surface Condition: Unknown												
Type Instrument Approach: Unknown												
VFR Approach/Landing: Unknown												
Aircraft Information									.			
Aircraft Manufacturer			Model/						Serial N	Number		
Boeing			737-2	.00					253			
Airworthiness Certificate(s): Transport												
Landing Gear Type: Retractable - Tricycle												
Homebuilt Aircraft? No Number of Seats: 73 Certified Max Gross Wt. 117500 LBS Number of Engines:												
Engine Type: Turbo Jet		Engine Manufacturer: Model/Series: P&W JT8D-9							ted Power: 5000 LBS			
- Aircraft Inspection Information												
Type of Last Inspection	Dat	Date of Last Inspection Time Since Last Inspection						Airframe 1	otal Time			
Continuous Airworthiness	04	04/2001					Ho	ours	Ę	1151 Hours		
- Emergency Locator Transmitter (ELT) Ir	nformation											
ELT Installed? Yes	ELT Operated? No ELT Aided in Locating Accident Site? No											
Owner/Operator Information												
Registered Aircraft Owner			Street A	ddress 2345 Cr	vstal [Drive						
US Airways		City State Zip C								Zip Code		
		+	Street A	Arlinton						VA	22227	
Operator of Aircraft			Slieel A		s Reg'	d Aircra	aft Owner					
Same as Reg'd Aircraft Owner		City						State	Zip Code			
Operator Does Business As: U.S. Airways Operator Designator Code: 1057												
- Type of U.S. Certificate(s) Held:												
Air Carrier Operating Certificate(s): Flag Carrier/Domestic												
Operating Certificate:	Operating Certificate: Operator Certificate:											
Regulation Flight Conducted Under: Part 121: Air Carrier												
Type of Flight Operation Conducted: Scheduled; Domestic; Passenger Only												
FACTUAL REPORT - AVIATION Page 2												

National Transportation Safety Board NTSB ID: ATLO						A049							
	ACTUAL RI		•	Occur	Occurrence Date: 04/17/2001								
	Z	1 ×											
AVIATION Occurrence Type: Accident													
L	First Pilot Information												
										Date of Birth	Age		
On File	n File On File On File 37												37
Sex: M	Sex: M Seat Occupied: Left Principal Profession: Civilian Pilot Certificate Number: On File												
Certificate(s): Airline Transport; Commercial													
Airplane R	Airplane Rating(s): Multi-engine Land												
Rotorcraft	/Glider/LTA: None	Э											
Instrument	t Rating(s): Airol	ane											
	Instrument Rating(s): Airplane Instructor Rating(s): None												
Type Ratir	ng/Endorsement fo	or Accident/Ir	ncident Ai	rcraft? Yes			0	Current Bi	ennial Flig	ht Re	view? 02/	2001	
Medical C	ert.: Class 1	Medica	al Cert. S	tatus: Valid	Medicalno	waivers	/lim.		Date	of Las	t Medical	Exam: 03/2001	
		I											
- Flight Tir	me Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Mult-Engine		Night Instr Actual		instrument Simu	lated	Rotorcraft	Glider	Lighter Than Air
Total Time	e	11663											
<u> </u>	ommand(PIC)												
Instructor													
Last 90 Da		12				_			_		+		
Last 30 Da	-										-		
	Jsed? Yes	Shou	l Ider Harr	ness Used? \	 /es		Toxic	oloav Per	formed?			Second Pilot? Y	 es
							1.5			10			
Flight Plan/Itinerary													
	ight Plan Filed: IF	R											
Departure	-						State		Airport Ider	ntifier	Den	arture Time	Time Zone
Baltimore							FL		BWI		1205		EDT
											<u> </u>		
Destination Jacksonville							State FL		Airport Identifier JAX				
Type of Clearance: IFR													
Type of Airspace: Class A													
Weather Information													
Source of Briefing: Company													
Method of Briefing: Teletype													
FACTUAL REPORT - AVIATION Page 3													

National Transportation Safety Board			NTSB ID:	NTSB ID: ATL01LA049									
FACTUAL REPORT			Occurren	Occurrence Date: 04/17/2001									
	AVIATION Occurrence Type: Accident							-					
Weather Information													
WOF ID	Observation Time	Time Zone	WOF Elevat	ion	WOF Di	stance Fron	n Acci	dent Site	ent Site Direction From Accident Site				
ORF	1206	EDT	26 Ft	. MSL				0 NM			0 Deg.	Mag.	
Sky/Lowes	st Cloud Condition: Sca	ttered	•		•	1200 Ft. AG	GL .	Condition of	Condition of Light: Day				
Lowest Ce	iling: Broken		1600 Ft.	AGL	Visibility: 7			SM	SM Altimeter: 29.92			"Hg	
Temperatu	ure: 5 °C	Dew Point:	3 °C	Wind	Direction:	30			De	nsity Altitude:	-1153	Ft.	
Wind Spee	ed: 16	Gusts:		Weather Conditions at Accident Site: Instrument Conditions									
Visibility (F	RVR): Ft	. Visibility (F	RVV)	SM	Intensit	of Precipit	ation:						
Restriction	s to Visibility: None	•			1								
Type of Pro	Type of Precipitation: None												
Accident	Information												
Aircraft Da	mage: None		Aircraft Fir	e: None)			Aircraft Exp	olosio	n None			
Classificati	ion: U.S. Registered/L	J.S. Soil											
- Injury Su	mmary Matrix	Fatal S	erious Mino	or	None	TOTAL							
First Pi	ilot				1	1							
Second	d Pilot				1	1							
Studen	t Pilot												
	nstructor						-						
Check													
Flight E	Engineer												
	Attendants		1	1	1	3							
Other C													
Passer	-				73		1						
- TOTAL A			1	1	76	78	-						
Other C			1	1	76	70							
- GRAND TOTAL - 1 1 76 78													
	FACTUAL REPORT - AVIATION Page 4												
			FACTUAL	. KEPO	KI - AV	IATION					P	age 4	

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AVIATION Occurrence Type: Accident Administrative Information Investigator-In-Charge (IIC) Phillip Powell Additional Persons Participating in This Accident/Incident Investigation:	National Transportation Safety Board	NTSB ID: ATL01LA049	
AVIATION Occurrence Type: Accident Administrative Information Investigator-In-Charge (IIC) Phillip Powell Additional Persons Participating in This Accident/Incident Investigation:	FACTUAL REPORT	Occurrence Date: 04/17/2001	
Administrative Information Investigator-In-Charge (IIC) Phillip Powell Additional Persons Participating in This Accident/Incident Investigation:	AVIATION TYBO	Occurrence Type: Accident	
Phillip Powell Additional Persons Participating in This Accident/Incident Investigation:			
Dave King Otlando FSDO	Additional Persons Participating in This Accident/	Incident Investigation:	
	Dave King Orlando FSDO		