
Turbulence injury, McDonnell Douglas DC-9-51, July 25, 2001

Micro-summary: This McDonnell Douglas DC-9-51 encountered moderate turbulence during descent, breaking a passenger's ankle.


Event Date: 2001-07-25 at 1210 EDT


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


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

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		NTSB ID: CHI01LA245		Aircraft Registration Number: N780NC	
		Occurrence Date: 07/25/2001		Most Critical Injury: Serious	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Detroit		State MI	Zip Code 48242	Local Time 1210	Time Zone EDT
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer McDonnell Douglas		Model/Series DC-9-51		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 July 25, 2001, at approximately 1210 eastern daylight time, a DC-9-51, N780NC, operated by Northwest Airlines as flight 490, encountered moderate turbulence during a descent into the Detroit Metro Airport (DTW), Detroit, Michigan. One passenger suffered a broken ankle. There were no other injuries to the two flight crewmembers, three flight attendants, or to the other 91 passengers on board. The airplane did not receive any damage. The 14 CFR Part 121 flight was operating in visual meteorological conditions and an IFR flight plan was filed. The flight departed from Atlanta, Georgia, at 1048 eastern daylight time.</p> <p>The captain reported that prior to departure the captain trainee made a passenger announcement which included the probability of turbulence along the route of flight, especially during the descent into Detroit. The captain reported that he turned on the weather radar prior to the descent into DTW. He reported the captain trainee turned on the seat belt sign and made a passenger announcement commenting that they should expect turbulence during the descent. The captain reported they encountered light turbulence when they started the descent and although there were no storm cells visible on the radar for their flight path, there was an indication of light rain.</p> <p>The captain reported that he instructed the captain trainee to call the lead flight attendant to assure they were seated and strapped in as a precaution. He reported that when the trainee captain opened the door he noticed the lead flight attendant was already seated with a shoulder harness on. The captain reported they continued the descent in light turbulence and between an altitude of 18,000 feet and 12,000 feet, they encountered several moderate "bumps." He reported that approximately 30 seconds later, they were informed that an off duty flight attendant had been out of her seat when they encountered the moderate turbulence and that she had broken her ankle. The captain reported that the remainder of the flight was uneventful with little or no turbulence.</p> <p>The injured off duty flight attendant reported, "Just before the descent began into Detroit, several passengers went to the lavatory and returned with no difficulty. I chose to give all other passengers the opportunity to go before I did. The flight was continuing smoothly as I made my way from my seat on the right side of the exit row, aft to the lavatory. While returning to my seat, the aircraft began to encounter some moderate turbulence as is normal while descending. I held to the seat backs to support myself as I walked forward toward my seat. As I neared my seat, the aircraft encountered a severe pocket of air with absolutely no warning whatsoever. I was lifted into the air as the aircraft dipped, then falling to the floor of the cabin. I could tell immediately that my ankle was broken because of its angle, and the terrible pain."</p> <p>A review of the flight data recorder data revealed the vertical acceleration of the airplane between 14,429 feet and 11,114 feet varied between .56 g's and 1.39 g's.</p>					
FACTUAL REPORT - AVIATION					
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 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: CHI01LA245				
		Occurrence Date: 07/25/2001				
		Occurrence Type: Accident				
Landing Facility/Approach Information						
Airport Name Wayne County		Airport ID: DTW	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 McDonnell Douglas		Model/Series DC-9-51		Serial Number 9871		
Airworthiness Certificate(s): Transport						
Landing Gear Type: Tricycle						
Homebuilt Aircraft? No	Number of Seats: 130	Certified Max Gross Wt.	121000 LBS	Number of Engines: 2		
Engine Type: Turbo Jet	Engine Manufacturer: P&W	Model/Series: JT8D-17 (H)	Rated Power: 17000 LBS			
- Aircraft Inspection Information						
Type of Last Inspection AAIP	Date of Last Inspection	Time Since Last Inspection Hours	Airframe Total Time 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 Northwest Airlines, Inc.		Street Address 5101 Northwest Drive				
		City St. Paul	State MN	Zip Code 55111		
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: Northwest Airlines			Operator Designator Code: NWAA			
- 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 Only						
FACTUAL REPORT - AVIATION						

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: CHI01LA245
	Occurrence Date: 07/25/2001
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth	Age 55
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Sex: M	Seat Occupied: Left	Principal Profession: Civilian Pilot	Certificate Number:
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Certificate(s): Airline Transport; Commercial

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

Rotorcraft/Glider/LTA: Helicopter

Instrument Rating(s): Airplane; Helicopter

Instructor Rating(s): None

Type Rating/Endorsement for Accident/Incident Aircraft? Yes	Current Biennial Flight Review?
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Medical Cert.: Class 1	Medical Cert. Status: Valid Medical--w/ waivers/lim.	Date of Last Medical Exam: 03/2001
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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	7058	7029								
Pilot In Command(PIC)										
Instructor										
Last 90 Days										
Last 30 Days										
Last 24 Hours	5	5								

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 Atlanta	State GA	Airport Identifier ATL	Departure Time 1048	Time Zone EDT
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Destination Detroit	State MI	Airport Identifier DTW	
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Type of Clearance: IFR

Type of Airspace: Class A

Weather Information

Source of Briefing: Company

Method of Briefing: Aircraft Radio; Teletype

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: CHI01LA245
	Occurrence Date: 07/25/2001
	Occurrence Type: Accident

Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
DTW	1154	EDT	640 Ft. MSL	NM	Deg. Mag.
Sky/Lowest Cloud Condition: Few			7000 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Broken		18000 Ft. AGL	Visibility: 10	SM	Altimeter: 29.93 "Hg
Temperature: 26 °C	Dew Point: 17 °C	Wind Direction: 30		Density Altitude: Ft.	
Wind Speed: 10	Gusts:	Weather Conditions at Accident Site: Visual 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

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				3	3
Other Crew					
Passengers		1		91	92
- TOTAL ABOARD -		1		96	97
Other Ground					
- GRAND TOTAL -		1		96	97

National Transportation Safety Board

FACTUAL REPORT

AVIATION



NTSB ID: CHI01LA245

Occurrence Date: 07/25/2001

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

Pamela S. Sullivan

Additional Persons Participating in This Accident/Incident Investigation:

Arthur R Mueller
Operations Inspector
FAA
8800 Beck Road
Belleville, MI 48111