
Wheel separation, Boeing 737-200, November 18, 1994

Micro-summary: This Boeing 737-200 lost a main wheel on takeoff.


Event Date: 1994-11-18 at 0706 CST


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


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

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		NTSB ID: FTW95IA049		Aircraft Registration Number: N988UA	
		Occurrence Date: 11/18/1994		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place SPRINGFIELD		State MO	Zip Code 65800	Local Time 0706	Time Zone CST
Airport Proximity: On Airport		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer BOEING		Model/Series B-737-200		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 November 18, 1994, at 0706 central standard time, a Boeing 737-200, N988UA, sustained minor damage during takeoff from Springfield, Missouri. The crew of five and 52 passengers were not injured. Instrument meteorological conditions prevailed for United Airlines Flight 1487, scheduled Title 14 CFR Part 121 service to Denver, Colorado.</p> <p>During interviews and on the enclosed Pilot/Operator report, the information in this paragraph was reported. The crew heard a "slight scraping sound" during the rotation from runway 02. A witness reported to the Springfield Air Traffic Control Tower (ATCT) that airplane debris was found on the runway. The parts were identified as brake assembly components from a Boeing 737 and Springfield ATCT notified the flight crew. The crew reported that all cockpit indications were normal and that they would continue the flight to the destination. Upon arrival at Denver, the tower confirmed the left outboard main wheel was missing. The crew was cleared for a landing on runway 35R and taxied to the ramp without further incident.</p> <p>The airplane components were visually examined on November 23, 1994, at Denver, Colorado, by company maintenance personnel (enclosed statement), a Federal Aviation Administration (FAA) inspector, and a NTSB investigator (enclosed statement). The axle nut retaining ring and nut were not available. Threads on the outer spindle were damaged and "appeared to be rolled outboard." All components were forwarded to the United Airlines facility at San Francisco, California, for further examination.</p> <p>On January 7, 1995, at San Francisco, California, the components (enclosed report) were reexamined at the company engineering facility by company engineers, metallurgists, a FAA inspector, and a NTSB investigator. Six recovered rollers had "severely damaged rolling surfaces; however, all the roller ends were relatively free of scuffing damage, which indicated adequate lubrication and bearing axle preload." There was no indication in or around the keyway of "reportable defect or damage pre-existing the failure event." The left hand axle outboard "end had severe resultant damage consistent with a primary outboard wheel bearing failure."</p> <p>On February 17, 1995, company personnel (statement enclosed) reported that the axle nut lock washer and lock ring were never recovered; however, there is physical evidence "that they were installed at the time of the incident." They further stated that the "primary cause of this incident was a failure of either the inboard or outboard wheel bearing assembly."</p>					
FACTUAL REPORT - AVIATION					
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		NTSB ID: FTW95IA049			
		Occurrence Date: 11/18/1994			
		Occurrence Type: Incident			
Landing Facility/Approach Information					
Airport Name SRINGFIELD	Airport ID: SGF	Airport Elevation 1267 Ft. MSL	Runway Used 2	Runway Length 7000	Runway Width 150
Runway Surface Type: Asphalt					
Runway Surface Condition: Dry					
Type Instrument Approach:					
VFR Approach/Landing: None					
Aircraft Information					
Aircraft Manufacturer BOEING		Model/Series B-737-200		Serial Number 73721750	
Airworthiness Certificate(s): Transport					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 107	Certified Max Gross Wt. 117000 LBS	Number of Engines: 2		
Engine Type: Turbo Jet	Engine Manufacturer: P&W	Model/Series: JT8D-7B	Rated Power: 14000 LBS		
- Aircraft Inspection Information					
Type of Last Inspection Continuous Airworthiness	Date of Last Inspection 12/1993	Time Since Last Inspection 2215 Hours	Airframe Total Time 42144 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?	ELT Operated?	ELT Aided in Locating Accident Site?			
Owner/Operator Information					
Registered Aircraft Owner UNITED AIRLINES		Street Address P. O. BOX 66100			
		City CHICAGO	State IL	Zip Code 60666	
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: UALA		
- 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					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: FTW951A049
	Occurrence Date: 11/18/1994
	Occurrence Type: Incident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 40
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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; Commercial; Foreign

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

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

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--no waivers/lim.	Date of Last Medical Exam: 09/1994
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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	5338	542								
Pilot In Command(PIC)	5338	542								
Instructor										
Last 90 Days		96								
Last 30 Days		69								
Last 24 Hours		2								

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

Type of Flight Plan Filed: IFR	
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Departure Point Same as Accident/Incident Location	State	Airport Identifier SGF	Departure Time 0706	Time Zone CST
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Destination DENVER	State CO	Airport Identifier DEN	
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Type of Clearance: IFR

Type of Airspace: Class D

Weather Information

Source of Briefing:
Company; Flight Service Station

Method of Briefing:

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Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
SGF	0650	CST	1267 Ft. MSL	0 NM	0 Deg. Mag.
Sky/Lowest Cloud Condition: Unknown			0 Ft. AGL	Condition of Light: Dawn	
Lowest Ceiling: Obscured		100 Ft. AGL	Visibility: 1 SM	Altimeter: 30.00	"Hg
Temperature: 9 °C	Dew Point: 8 °C	Wind Direction: 260		Density Altitude: Ft.	
Wind Speed: 7	Gusts:	Weather Conditions at Accident Site: Instrument Conditions			
Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM	Intensity of Precipitation: Unknown			
Restrictions to Visibility: Fog					
Type of Precipitation: None					

Accident Information		
Aircraft Damage: Minor	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				52	52
- TOTAL ABOARD -				57	57
Other Ground	0	0	0		0
- GRAND TOTAL -	0	0	0	57	57

National Transportation Safety Board

FACTUAL REPORT

AVIATION



NTSB ID: FTW95IA049

Occurrence Date: 11/18/1994

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

JOYCE M. SMITH,

Additional Persons Participating in This Accident/Incident Investigation:

JOHN MARTIN
FAA FSDO
DENVER, CO 80201